

INVERTER PACKAGED AIR-CONDITIONERS

(Split system, air to air heat pump type)

HYPER INVERTER FLOOR STANDING TYPE

Single type Twin type
FDF71VNXWVH
100VNXWVH
100VSXWVH
125VNXWVH
125VSXWVH
140VNXWVH

STANDARD INVERTER FLOOR STANDING TYPE

140VSXWVH

Single type FDF71VNPWVH 90VNPWVH 100VNPWVH

MICRO INVERTER FLOOR STANDING TYPE

Single type Twin type
FDF100VNAWVH
100VSAWVH
125VNAWVH
125VSAWVH
125VSAWVH
140VNAWVH
140VSAWVH
140VSAWVH

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1. HYPER INVERTER PACKAGED AIR-CONDITIONERS

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■ How to read the model name

Example: FDF 140 VNXW P VH

Series code
Single type
P: Twin type

Applicable power source...See the specification
Product capacity
Model name

FDF: Floor standing type
FDC: Outdoor unit

1.1 SPECIFICATIONS

(1) Single type

			Model	FDF71V	NXWVH			
Item				Indoor unit FDF71VH	Outdoor unit FDC71VNX-W			
Power sour	ce			1 Phase, 220-240V	7 50Hz / 220V 60Hz			
	Nominal cooling capacity	(range)	kW	7.1 [3.2 (Min.) - 8.0 (Max.)]				
	Nominal heating capacity	(range)	kW	8.0 [3.6 (Min	8.0 [3.6 (Min.) - 9.0 (Max.)]			
	Power consumption	Cooling			97			
	Power consumption	Heating	kW [2.	21			
	Max power consumption			4.	11			
	Cooling			8.7	/ 9.1			
	Running current	Heating	Α	9.9 /	10.4			
	Inrush current, max currer	nt		5 ,	19.1			
Operation	Power factor	Cooling	%	98				
data		Heating	/"		7			
	EER	Cooling			61			
	COP	Heating		3.	62			
	Sound power level	Cooling		55	66			
		Heating						
	Sound pressure level	Cooling	dB(A)	P-Hi: 42 Hi: 39 Me: 35 Lo: 33	51			
	·	Heating	` ′		51			
	Silent mode sound	Cooling		_	49.0 / 47.0 (Normal / Silent)			
F	pressure level	Heating		-	46.5 / 45.5 (Normal / Silent)			
	nensions (Height × Width ×	Depth)	mm	1850 × 600 × 329	750 × 880 (+88) × 340			
Exterior app				Ceramic white	Stucco white			
(Munsell co	,			(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent			
(RAL color)	, , , , , , , , , , , , , , , , , , , ,		l.a	(RAL 7047) near equivalent 47	(RAL 7044) near equivalent			
Net weight			kg		60 RMT5118SWP1 × 1			
Compressor type & Q'ty			kW		Direct line start			
	Compressor motor (Starting method)							
	Refrigerant oil (Amount, type) Refrigerant (Type, amount, pre-charge length)			D20 0.75 in authors unit (Incl. th	0.675 (DIAMOND FREEZE MB75)			
		e length)	kg	Louver fin & inner grooved tubing	ne amount for the piping of 30m) M shape fin & inner grooved tubing			
Heat exchanger Refrigerant control					pansion valve			
Fan type &				Centrifugal fan x 1	Propeller fan × 1			
	(Starting method)		w	157 < Direct line start >	86 < Direct line start >			
T all motor ((Starting metriod)	Cooling			60			
Air flow		Heating	m³/min	P-Hi:18 Hi:16 Me:14 Lo:12	50			
Available ex	xternal static pressure		Pa	0	_			
Outside air	intake			Not possible	_			
Air filter, Qu	uality / Quantity			Plastic net × 1 (Washable)	_			
Shock & vit	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea	ater		W	_	20 (Crank case heater)			
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5, RCH-E3 Wireless: RCN-KIT4-E2				
control	Room temperature contro	I		Thermostat b	by electronics			
CONTROL	Operation display			-	- -			
Safety equi	ipments			Frost protection, Serial signal error prot Refrigerant	ction, Overcurrent protection, ection, Indoor fan motor error protection, leak detection			
	In (:				sure control), Cooling overload protection,			
	Refrigerant piping size	Liquid line	mm	I/U φ9.52 (3/8") Pipe φ9.52				
	(O.D.)	Gas line			5/8") × 1.0 φ 15.88 (5/8")			
 	Connecting method			Flare piping	Flare piping			
Installation	Attached length of piping		m					
data	Insulation for piping				Liquid & Gas lines)			
	Refrigerant line (one way)		m		x.50			
Vertical height diff. between O/U and I/U		m	(0 /	Max.15 (Outdoor unit is lower)				
Drain nump, may lift height				Hose connectable with VP20	Hole size $\phi 20 \times 4$ pcs.			
Drain pump, max lift height			mm ^					
			A	-	.0			
		mbor	Α		.u ble) / Terminal block (Screw fixing type)			
IP number	cting wires Size × Core nu	linei		φ i.6mm × 3 cores (including earth cal	IP24			
Standard a	coossorios	-			IP24 —			
Option part	· · · · · · · · · · · · · · · · · · ·			Mounting kit	or: LB-KIT2			
	he data are measured at the	followin~	conditio					
INOLES (I) II	ne data are measured at the	lollowing	COHAITIO	115.	The pipe length is 7.5m.			

Item	em Indoor air temperature Outdoor air temperature			Standards	
Operation	DB	WB	DB	WB	Staridards
Cooling	27°C	19℃	35°C	24°C	ISO5151-T1
Heating	20)°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF100\	/NXWVH	
Item				Indoor unit FDF100VH	Outdoor unit FDC100VNX-W	
Power sour	rce				/ 50Hz / 220V 60Hz	
	Nominal cooling capacity	/ (range)	kW	10.0 [3.5 (Min	.) - 11.2 (Max.)]	
	Nominal heating capacity	(range)	kW	11.2 [2.7 (Min	.) - 12.5 (Max.)]	
	Power consumption	Cooling]		66	
	·	Heating	kW		94	
	Max power consumption				10	
	Running current	Cooling			/ 12.3	
		Heating	A		/ 13.5	
	Inrush current, max curre			5 ,	25	
Operation	Power factor	Cooling	- %		8	
data		Heating	, , ,		9	
	EER	Cooling			76	
	COP	Heating		3.	81	
	Sound power level	Cooling		65	67	
	'	Heating			50	
	Sound pressure level	Cooling	dB(A)	P-Hi:53 Hi:51 Me:49 Lo:44	53	
		Heating	. ` ′		51	
	Silent mode sound	Cooling		_	49.0 / 48.0 (Normal / Silent)	
Francisco disc	pressure level	Heating		1050 000 000	48.0 / 48.0 (Normal / Silent)	
	nensions (Height × Width >	(Depth)	mm	1850 × 600 × 329	1300 × 970 × 370	
Exterior app (Munsell co				Ceramic white	Stucco white	
(RAL color)	- /			(N8.0) near equivalent (RAL 7047) near equivalent	(4.2Y7.5 / 1.1) near equivalent (RAL 7044) near equivalent	
Net weight			ka	(NAL 7047) Hear equivalent	97	
			kg	49	97 RMT5126SWP3 × 1	
	Compressor type & Q'ty				Direct line start	
-	Compressor motor (Starting method)			<u>_</u>	0.9 (M-MB75)	
	Refrigerant oil (Amount, type) Refrigerant (Type, amount, pre-charge length)				e amount for the piping of 30m)	
Heat excha		e lengin)	kg	Louver fin & inner grooved tubing	M shape fin & inner grooved tubing	
Refrigerant					pansion valve	
Fan type &				Centrifugal fan × 1	Propeller fan × 2	
	(Starting method)		W	157 < Direct line start >	86 × 2 < Direct line start >	
Air flow	(otarting method)	Cooling	m³/min	P-Hi: 27 Hi: 26 Me: 23 Lo: 19	100	
Available ex	xternal static pressure	Heating	Pa	0	0	
Outside air	·		ια	Not possible	_	
	uality / Quantity			Plastic net × 1 (Washable)	_	
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)	
Electric hea			W		20 (Crank case heater)	
	Remote control			(Option) Wired : RC-EX3A, RC-E5.	RCH-E3 Wireless: RCN-KIT4-E2	
Operation	Room temperature contro	ol		Thermostat by electronics		
control	Operation display	-			-	
Safety equi				Frost protection thermosta Internal thermo Abnormal discharge t	tion for fan motor it, Refrigerant leak detection stat for fan motor emperature protection.	
	Refrigerant piping size	Liquid line	mm		(3/8") × 0.8 O/U φ 9.52 (3/8")	
	(O.D.)	Gas line	mm	φ 15.88 (5/8") φ 15.88 (5/8")	5/8") × 1.0 φ 15.88 (5/8")	
	Connecting method			Flare piping	Flare piping	
Installation	Attached length of piping	3	m	-	_	
data	Insulation for piping			Necessary (both I		
	Refrigerant line (one way		m	<u> </u>	Max.100	
	Vertical height diff. between	O/U and I/U	m		Max.15 (Outdoor unit is lower)	
Drain hose			mm	Hose connectable with VP20	Hole size φ20 × 3 pcs.	
	Drain pump, max lift height				_	
	ided breaker size		Α		-	
	ked rotor ampere)		Α		.0	
	cting wires Size × Core nu	umber			Terminal block (Screw fixing type)	
IP number				IPX0	IP24	
Standard ad	·			Mounting kit		
Option part	S			Motion sensor : LB-KIT2		

Item	Indoor air temperature		e Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19℃	35°C	24°C	ISO5151-T1
Heating	20)°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF100 ¹	VSXWVH			
Item				Indoor unit FDF100VH	Outdoor unit FDC100VSX-W			
Power sour	ce			3 Phase, 380-415\	/ 50Hz / 380V 60Hz			
	Nominal cooling capacity	(range)	kW	10.0 [3.5 (Min	.) - 11.2 (Max.)]			
	Nominal heating capacity	(range)	kW	11.2 [2.7 (Min.) - 16.0 (Max.)]				
	Power consumption	Cooling			66			
	1 ower consumption	Heating	kW		2.95			
	Max power consumption				90			
	Running current	Cooling		4.6	/ 4.8			
	Turring current	Heating	A		/ 5.2			
	Inrush current, max curre	_		5 ,	14			
Operation	Power factor	Cooling	%		34			
data		Heating	/*		36			
	EER	Cooling			76			
	COP	Heating		3.	80			
	Sound power level	Cooling		65	67			
	Souria potro: lovo:	Heating						
	Sound pressure level	Cooling	dB(A)	P-Hi:53 Hi:51 Me:49 Lo:44	53			
	<u> </u>	Heating	()		51			
	Silent mode sound	Cooling		-	49.0 / 48.0 (Normal / Silent)			
	pressure level	Heating		-	48.0 / 48.0 (Normal / Silent)			
	nensions (Height × Width ×	Depth)	mm	1850 × 600 × 329	1300 × 970 × 370			
Exterior app				Ceramic white	Stucco white			
(Munsell co	,			(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent			
(RAL color)				(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	99			
	or type & Q'ty				RMT5134SWP4 × 1			
	or motor (Starting method)		kW	<u> </u>	Direct line start			
	oil (Amount, type)		L	_	0.9 (M-MB75)			
	(Type, amount, pre-charge	e length)	kg	,	e amount for the piping of 30m)			
Heat excha	<u> </u>			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant					pansion valve			
Fan type &				Centrifugal fan × 1	Propeller fan × 2			
Fan motor ((Starting method)	1- "	W	157 < Direct line start >	86 × 2 < Direct line start >			
Air flow		Cooling Heating	m³/min	P-Hi: 27 Hi: 26 Me: 23 Lo: 19	100			
	xternal static pressure		Pa	0	0			
Outside air	intake			Not possible	_			
Air filter, Qu	ality / Quantity			Plastic net × 1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea	ater		W	_	20 (Crank case heater)			
Operation	Remote control				RCH-E3 Wireless: RCN-KIT4-E2			
control	Room temperature contro	ol		Thermostat by electronics				
	Operation display			-	_			
Safety equi	pments			Frost protection thermosta Internal thermo	stion for fan motor at, Refrigerant leak detection stat for fan motor temperature protection.			
	Refrigerant piping size (O.D.)	Liquid line Gas line	mm	I/U φ9.52 (3/8") Pipe φ9.52	(3/8") × 0.8 O/U φ9.52 (3/8") 5/8") × 1.0 φ15.88 (5/8")			
	Connecting method	uas III le		φ13.88 (3/8) φ13.88 (3/8) γ 13.88 (3/8)	Flare piping			
Installation	Attached length of piping	-	m	riare pipirig —	i iaie pipilig			
data	Insulation for piping		m		 Liquid & Gas lines)			
uala	Refrigerant line (one way) length	m		Max.100			
	Vertical height diff. between 0				Max.15 (Outdoor unit is lower)			
	Drain hose	oro ariu i/U	m	Hose connectable with VP20	Hole size $\phi 20 \times 3$ pcs.			
Drain nose Drain pump, max lift height			mm		Τισία δίζα ψέσι χ ο μόδι			
			mm A	-	<u> </u>			
Recommended breaker size L.R.A. (Locked rotor ampere)			A		.0			
	cting wires Size × Core nu	mher	^		.u 'Terminal block (Screw fixing type)			
IP number	oung wires poize x Core nu	IIIDEI		φ i.emin × 3 cores + earth cable /	IP24			
Standard a	ccessories			Mounting kit	IF24 -			
Option part					or: LB-KIT2			
	he data are measured at th	e following	conditio		The pipe length is 7.5m.			

Item	Item Indoor air temperature Outdoor air temperature		Standards		
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20	°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

			Model	FDF125	/NXWVH
Item				Indoor unit FDF125VH	Outdoor unit FDC125VNX-W
Power sour	ce			1 Phase, 220-240\	7 50Hz / 220V 60Hz
	Nominal cooling capacity	y (range)	kW	12.5 [3.5 (Min	.) - 14.0 (Max.)]
	Nominal heating capacity	y (range)	kW	14.0 [2.7 (Min	.) - 17.0 (Max.)]
	5	Cooling		3.	74
	Power consumption	Heating	kW	3.	88
	Max power consumption		1 1	7.	10
		Cooling		16.4	/ 17.2
	Running current	Heating	Α		/ 17.8
	Inrush current, max curre		1 '`	5 ,	27
Operation	,	Cooling			9
data	Power factor	Heating	%		9
data	EER	Cooling			34
	COP	Heating			61
	COF	Cooling		3.	68
	Sound power level	Heating		67	70
			}		53
	Sound pressure level	Cooling	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	53
	0:1 1 1	Heating			-
	Silent mode sound	Cooling		_	50.0 / 49.0 (Normal / Silent)
F	pressure level	Heating		-	50.0 / 48.0 (Normal / Silent)
	nensions (Height × Width	× Depth)	mm	1850 × 600 × 329	1300 × 970 × 370
Exterior app				Ceramic white	Stucco white
(Munsell co	lor)			(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent
(RAL color)				(RAL 7047) near equivalent	(RAL 7044) near equivalent
Net weight			kg	49	97
Compressor type & Q'ty				_	RMT5134SWP3 × 1
Compresso	or motor (Starting method)		kW	<u> </u>	Direct line start
Refrigerant	oil (Amount, type)		L	-	0.9 (M-MB75)
Refrigerant	(Type, amount, pre-charg	je length)	kg	R32 4.0 in outdoor unit (Incl. th	e amount for the piping of 30m)
Heat excha	nger			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant	control			Electronic ex	pansion valve
Fan type &	Q'ty			Centrifugal fan × 1	Propeller fan × 2
	(Starting method)		W	157 < Direct line start >	86 × 2 < Direct line start >
Air flow	,	Cooling Heating	m³/min	P-Hi:29 Hi:26 Me:23 Lo:19	100
Available ex	kternal static pressure	1	Pa	0	0
Outside air	· · · · · · · · · · · · · · · · · · ·			Not possible	_
	ality / Quantity			Plastic net × 1 (Washable)	
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)
Electric hea			W	—	20 (Crank case heater)
	Remote control			(Ontion) Wired : BC-EX3A BC-E5	RCH-E3 Wireless : RCN-KIT4-E2
Operation	Room temperature contr	rol			by electronics
control	Operation display	<u> </u>		mormodati	-
Safety equi				Frost protection thermosta Internal thermo	tion for fan motor It, Refrigerant leak detection stat for fan motor emperature protection.
	Refrigerant piping size (O.D.)	Liquid line Gas line	mm	I/U φ9.52 (3/8") Pipe φ9.52 φ15.88 (5/8") φ15.88 ((3/8") × 0.8 O/U φ9.52 (3/8") (5/8") × 1.0 φ15.88 (5/8")
	Connecting method	Gus III IC		φ13.88 (3/8) φ13.88 (3	Flare piping
Installation	Attached length of piping	7	m	- Hare piping	i iaio pipilig
data	Insulation for piping	J	111		
uala	Refrigerant line (one way	v) length	m		Max.100
	Vertical height diff. between	<u>,, </u>	m	<u> </u>	Max.15 (Outdoor unit is lower)
	Drain hose	U/U ariu i/U	m	Hose connectable with VP20	` '
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		100:	HOSE CONNECTABLE WITH VP20	Hole size $\phi 20 \times 3$ pcs.	
			mm	_	_
Recommended breaker size A					
	ked rotor ampere)		Α		.0
	cting wires Size × Core no	umber		,	Terminal block (Screw fixing type)
IP number				IPX0	IP24
Standard ad				Mounting kit	
Option part					sor : LB-KIT2
INotes (1) Th	ne data are measured at th	ne following	conditio	ne -	The pipe length is 7.5m.

Item	Item Indoor air temperature Outdoor air temperature		Standards		
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20)°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

Mode			Model	FDF125	VSXWVH			
Item				Indoor unit FDF125VH	Outdoor unit FDC125VSX-W			
Power sour	rce			3 Phase, 380-415\	/ 50Hz / 380V 60Hz			
	Nominal cooling capacit	y (range)	kW	12.5 [3.5 (Min	.) - 14.0 (Max.)]			
	Nominal heating capacit	y (range)	kW	14.0 [2.7 (Min	.) - 18.0 (Max.)]			
	Dower consumption	Cooling		3.	74			
	Power consumption	Heating	kW	3.	88			
	Max power consumption	า		8.	90			
	Running current	Cooling		6.1	/ 6.4			
	nulling current	Heating	Α [6.4	/ 6.7			
	Inrush current, max curr	ent		5 ,	14			
Operation	Power factor	Cooling	%	89				
data		Heating	/"		8			
	EER	Cooling			34			
	COP	Heating		3.	61			
	Sound power level	Cooling		67	68			
		Heating		·	70			
	Sound pressure level	Cooling	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	53			
		Heating	`		54			
	Silent mode sound	Cooling			50 / 49 (Normal / Silent)			
Exterior dia	pressure level	Heating		 1850 × 600 × 329	50 / 48 (Normal / Silent) 1300 × 970 × 370			
	mensions (Height × Width	× Deptri)	mm	Ceramic white	Stucco white			
Exterior ap				(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent			
(RAL color)	- /			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	99			
	or type & Q'ty		Ng		RMT5134SWP4 × 1			
	or motor (Starting method)		kW	_	Direct line start			
	oil (Amount, type)	<u>'</u>	L		0.9 (M-MB75)			
	(Type, amount, pre-charge	ge length)	kg	B32 4.0 in outdoor unit (Incl. the	e amount for the piping of 30m)			
	Heat exchanger			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant					pansion valve			
Fan type &				Centrifugal fan × 1	Propeller fan ×2			
	(Starting method)		W	157 < Direct line start >	86 x 2 < Direct line start >			
Air flow	,	Cooling Heating	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	100			
Available ex	xternal static pressure	1	Pa	0	0			
Outside air				Not possible	_			
Air filter, Qu	uality / Quantity			Plastic net × 1 (Washable)	_			
Shock & vil	bration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea	ater		W	-	20 (Crank case heater)			
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5,	RCH-E3 Wireless: RCN-KIT4-E2			
control	Room temperature cont	rol		Thermostat by electronics				
CONTROL	Operation display			-	_			
Safety equi	ipments			Frost protection thermosta Internal thermo	tion for fan motor tt, Refrigerant leak detection stat for fan motor emperature protection.			
	Refrigerant piping size	Liquid line	m		(3/8") × 0.8 O/U φ9.52 (3/8")			
	(O.D.)	Gas line	mm	φ15.88 (5/8") φ15.88 (5	5/8") × 1.0 φ15.88 (5/8")			
	Connecting method	·		Flare piping	Flare piping			
Installation	Attached length of pipin	g	m	_	_			
data					Liquid & Gas lines)			
	Refrigerant line (one wa		m		Max.100			
	Vertical height diff. between Drain hose	O/U and I/U	m	Max.50 (Outdoor unit is higher) Max.15 (Outdoor unit is lower) Hose connectable with VP20 Hole size \$\phi 20 \times 3\$ pcs.				
Drain pump, max lift height			mm	_	_			
Recommen	Recommended breaker size			-	_			
L.R.A. (Loc	ked rotor ampere)		Α	5	.0			
Interconnec	cting wires Size × Core n	umber		φ1.6mm × 3 cores + earth cable	Terminal block (Screw fixing type)			
IP number				IPX0	IP24			
Standard a	ccessories			Mounting kit	_			
Option part					sor : LB-KIT2			
INIotoc (1) TI	he data are manaured at t	ممانين والمرام	conditio		The pine length is 7.5m			

Item	Item Indoor air temperature Outdoor air temperature		Standards		
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20	°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

			Model	FDF140	/NXWVH			
Item	Item			Indoor unit FDF140VH Outdoor unit FDC140VNX-W				
Power sour	rce				/ 50Hz / 220V 60Hz			
Nominal cooling capacity (range)		kW	14.0 [3.5 (Min.) - 16.0 (Max.)]					
	Nominal heating capacity (range)		kW	16.0 [2.7 (Min	.) - 18.0 (Max.)]			
	Power consumption	Cooling]	4.62				
		Heating	kW		69			
	Max power consumption				10			
	Running current	Cooling			/ 21.2			
		Heating	A		/ 21.5			
	Inrush current, max curre				27			
Operation	Power factor	Cooling	- %		9			
data		Heating	, ,	99 3.03				
	EER	Cooling						
	COP	Heating		3.	41			
	Sound power level	Cooling		67	69			
		Heating			71			
	Sound pressure level	Cooling	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	57			
		Heating	. ` ′		50 / 40 /h / 0			
	Silent mode sound	Cooling		_	50 / 49 (Normal / Silent)			
Frake sile se elise	pressure level	Heating		1050 000 000	51 / 48 (Normal / Silent)			
	nensions (Height × Width >	(Deptn)	mm	1850 × 600 × 329	1300 × 970 × 370			
Exterior app				Ceramic white	Stucco white			
(Munsell co (RAL color)	,			(N8.0) near equivalent (RAL 7047) near equivalent	(4.2Y7.5 / 1.1) near equivalent (RAL 7044) near equivalent			
Net weight			l.o.	(NAL 7047) Hear equivalent	97			
	or type & Q'ty		kg	49 	97 RMT5134SWP3 × 1			
	or type & Q ty or motor (Starting method)		kW		Direct line start			
	oil (Amount, type)		L	<u>_</u>	0.9 (M-MB75)			
	(Type, amount, pre-charg	o longth)	kg		e amount for the piping of 30m)			
Heat excha		e lengin)	ky	Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant control				<u> </u>	pansion valve			
Fan type &				Centrifugal fan x 1	Propeller fan × 2			
	(Starting method)		W	157 < Direct line start >	86 × 2 < Direct line start >			
Air flow	(Ottarting metriod)	Cooling	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	100			
	utawaal atatia muaasi wa	Heating		0				
Outside air	xternal static pressure		Pa	-	0 —			
				Not possible Plastic net × 1 (Washable)	_			
	uality / Quantity oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea			W	hubber sleeve (for fair filotor)	20 (Crank case heater)			
Liectric ries	Remote control		V V	(Ontion) Wired : BC-EY3A BC-E5	RCH-E3 Wireless : RCN-KIT4-E2			
Operation	Room temperature control	ol			by electronics			
control	Operation display							
Safety equi	Safety equipments			Overload protection for fan motor Frost protection thermostat, Refrigerant leak detection Internal thermostat for fan motor Abnormal discharge temperature protection.				
	Refrigerant piping size	Liquid line	mm	I/U φ9.52 (3/8") Pipe φ9.52	(3/8") × 0.8 O/U φ9.52 (3/8")			
	(O.D.)	Gas line	mm	φ15.88 (5/8") φ15.88 (ξ	5/8") × 1.0 φ15.88 (5/8")			
	Connecting method			Flare piping	Flare piping			
Installation	Attached length of piping	1	m	_	_			
data	Insulation for piping			Necessary (both I				
	Refrigerant line (one way		m	<u> </u>	Max.100			
	Vertical height diff. between Drain hose	O/U and I/U	m	Max.50 (Outdoor unit is higher) Hose connectable with VP20	Max.15 (Outdoor unit is lower)			
Drain			po ma	nose connectable with VP20	Holes size $\phi 20 \times 3$ pcs.			
	o, max lift height		mm		_			
	ided breaker size		A					
	ked rotor ampere)	ımbor	Α		.0			
IP number	cting wires Size × Core nu	an iber		φ i.omm × 3 cores + earth cable /	Terminal block (Screw fixing type)			
Standard a	coessories			Mounting kit	IP24 —			
Option part					or: LB-KIT2			
Sphon part				MOTOLI SELIS	OI. LD INIL			

Item	Indoor air t	emperature	Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C 19°C		35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF140'	VSXWVH			
Item				Indoor unit FDF140VH	Outdoor unit FDC140VSX-W			
Power sour	ce			3 Phase, 380-415V 50Hz / 380V 60Hz				
	Nominal cooling capacity (range)		kW	14.0 [3.5 (Min	.) - 16.0 (Max.)]			
	Nominal heating capacity	(range)	kW	16.0 [2.7 (Min.) - 20.0 (Max.)]				
	Power consumption	Cooling		4.	62			
	Fower consumption	Heating	kW	4.70				
	Max power consumption			8.90				
	Running current	Cooling		7.4 / 7.7				
	Running current	Heating	Α	7.7	/ 8.0			
	Inrush current, max curre	nt		5 ,	14			
Operation	Power factor	Cooling	%	9	01			
data	Fower lactor	Heating	70	8	39			
	EER	Cooling		3.	03			
	COP	Heating		3.41				
	Sound power level	Cooling		67	69			
	Sourid power level	Heating		07	71			
	Sound pressure level	Cooling Heating	dB(A)	P-Hi: 55 Hi: 51 Me: 49 Lo: 44	54			
	Silent mode sound	Cooling			50 / 49 (Normal / Silent)			
	pressure level	Heating			51 / 48 (Normal / Silent)			
Exterior dim	nensions (Height × Width ×		mm	1850 × 600 × 329	1300 × 970 × 370			
Exterior app		Борин,		Ceramic white	Stucco white			
(Munsell co				(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent			
(RAL color)	,			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	99			
	or type & Q'ty		ı.g		RMT5134SWP4 × 1			
	or motor (Starting method)		kW		Direct line start			
	oil (Amount, type)		L		0.9 (M-MB75)			
	(Type, amount, pre-charge	a length)	kg		e amount for the piping of 30m)			
Heat excha	() 1 / 0	e letigiti)	- Kg	Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant					pansion valve			
Fan type &				Centrifugal fan x 1	Propeller fan × 2			
			w	157 < Direct line start >	86 × 2 < Direct line start >			
Air flow	Fan motor (Starting method) Air flow Cooling		m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	100			
		Heating						
	kternal static pressure		Pa	0	0			
Outside air				Not possible	_			
	ality / Quantity			Plastic net × 1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea			W		20 (Crank case heater)			
Operation	Remote control				RCH-E3 Wireless : RCN-T-5AW-E2			
control	Room temperature contro	ol		Thermostat t	by electronics			
	Operation display			_				
Safety equi	pments			Frost protection thermosta Internal thermo	ction for fan motor at, Refrigerant leak detection stat for fan motor temperature protection.			
	Refrigerant piping size (O.D.)	Liquid line Gas line	mm	I/U φ9.52 (3/8") Pipe φ9.52	(3/8") × 0.8 O/U φ9.52 (3/8") 5/8") × 1.0 φ15.88 (5/8")			
	Connecting method	GGG III IO		Flare piping	Flare piping			
Installation	Attached length of piping		m	—				
data	Insulation for piping	,						
Gala	Refrigerant line (one way) length	m		Max.100			
	Vertical height diff. between 0		m		Max.15 (Outdoor unit is lower)			
	Drain hose	, J and 1/ U		Hose connectable with VP20	Hole size $\phi 20 \times 3$ pcs.			
Drain numn	n, max lift height		mm					
	ided breaker size		A	_				
	ked rotor ampere)		A		.0			
	cting wires Size × Core nu	mher	_ ^		.u Terminal block (Screw fixing type)			
IP number	July Wiles Joize x Cole IIu	IIIDEI		φ1.onim x 3 cores + earth cable /	IP24			
Standard a	coesories			Mounting kit	IF24 			
Option part					or : LB-KIT2			
	ne data are measured at the	e following	conditio		The pipe length is 7.5m.			

Item	Indoor air t	emperature	Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C 19°C		35°C	24°C	ISO5151-T1
Heating	20	20°C		6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

(2) Twin type

			Model	FDF140V	NXWPVH			
Item				Indoor unit FDF71VH (2 units)	Outdoor unit FDC140VNX-W			
Power sour	ce			1 Phase, 220-240V 50Hz / 220V 60Hz				
	Nominal cooling capacity	y (range)	kW	14.0 [3.5 (Min.) - 16.0 (Max.)]				
	Nominal heating capacity (range)		kW	16.0 [2.7 (Min.) - 18.0 (Max.)]				
	Power consumption	Cooling		3.	78			
	Power consumption	Heating	kW	4.	26			
	Max power consumption	1		7.10				
	Running current	Cooling		16.6	/ 17.4			
	nulling current	Heating	A	18.7	/ 19.6			
	Inrush current, max curre	ent		5 ,	27			
Operation	Power factor	Cooling	% -		9			
data		Heating	/0		9			
	EER	Cooling			71			
	COP	Heating		3.	75			
	Sound power level	Cooling		55	69			
	Cooling				71			
	Sound pressure level		dB(A)	P-Hi: 42 Hi: 39 Me: 35 Lo: 33	54			
	· .	Heating	' '					
	Silent mode sound	Cooling			50 / 49 (Normal / Silent)			
	pressure level	Heating			51 / 48 (Normal / Silent)			
	nensions (Height × Width	× Depth)	mm	1850 × 600 × 329	1300 × 970 × 370			
Exterior app				Ceramic white	Stucco white			
(Munsell co	,			(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent			
(RAL color)			len.	(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	47	97 RMT5134SWP3 × 1			
	or type & Q'ty or motor (Starting method)		kW		Direct line start			
	oil (Amount, type)	-	L	_	0.9 (M-MB75)			
	(Type, amount, pre-charge	ro lonath)	kg	P32.4.0 in outdoor unit (Incl. the	e amount for the piping of 30m)			
Heat excha		ge lerigili)	kg	Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant				<u> </u>	pansion valve			
Fan type & Q'ty				Centrifugal fan × 1	Propeller fan × 2			
	(Starting method)		W	157 < Direct line start >	86 × 2 < Direct line start >			
	(Ottai ting Thothod)	Cooling						
Air flow		Heating	m³/min	P-Hi:18 Hi:16 Me:14 Lo:12	100			
Available ex	xternal static pressure	1	Pa	0	0			
Outside air	· · · · · · · · · · · · · · · · · · ·			Not possible	_			
Air filter, Qu	ality / Quantity			Plastic net × 1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea	ater		W		20 (Crank case heater)			
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5,	RCH-E3 Wireless : RCN-KIT4-E2			
Operation	Room temperature contr	ol		Thermostat b	by electronics			
control	Operation display			-				
Safety equi	Safety equipments			Overload protection for fan motor Frost protection thermostat, Refrigerant leak detection Internal thermostat for fan motor Abnormal discharge temperature protection.				
	Refrigerant piping size	Liquid line	mm	$1/U \phi 9.52 (3/8")$ ② $\phi 9.52 (3/8") \times 0.8$	① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")			
	(O.D.)	Gas line	mm	φ 15.88 (5/8") ② φ 15.88 (5/8") × 1.0	① ϕ 15.88 (5/8") × 1.0 ϕ 15.88 (5/8")			
	Connecting method			Flare piping	Flare piping			
Installation	Attached length of piping	g	m	_	_			
data	Insulation for piping			, ,	_iquid & Gas lines)			
	Refrigerant line (one way		m	<u> </u>	Max.100			
	Vertical height diff. between	O/U and I/U	m	·	Max.15 (Outdoor unit is lower)			
	Drain hose			Hose connectable with VP20	Hole size φ20 x 3 pcs.			
	o, max lift height		mm	-	_			
	ided breaker size		Α	-	_			
	ked rotor ampere)		Α		.0			
	cting wires Size × Core n	umber			Terminal block (Screw fixing type)			
IP number				IPX0	IP24			
Standard a				Mounting kit				
Option part		6 II .	L		sor : LB-KIT2			
INotes (1) Th	ne data are measured at th	ne tollowina	condition	ns.	The pipe length is 7.5m.			

Notes (1) The data are measured at the following conditions.

Item	Indoor air t	emperature	Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C 19°C		35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
 (6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
 (7) Branching pipe set "DIS-WA1G"×1 (Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

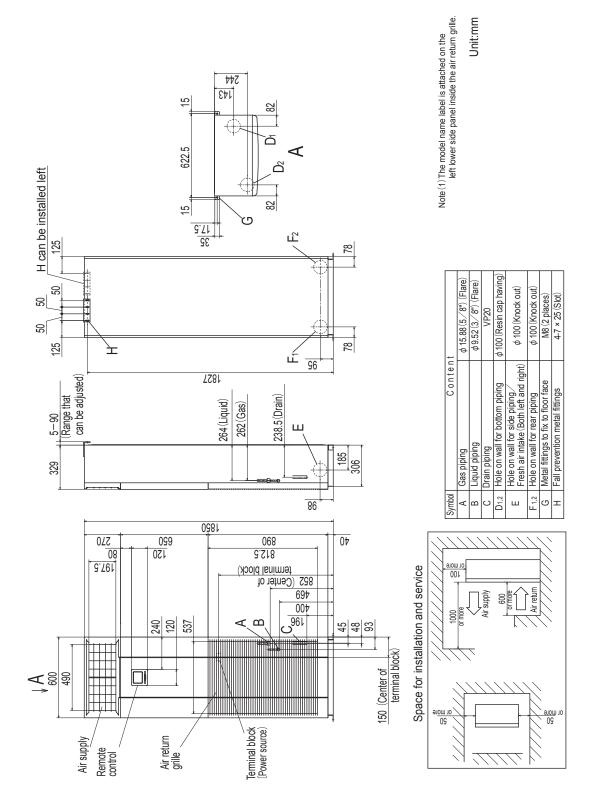
		,	Model	FDF140V	SXWPVH				
Item				Indoor unit FDF71VH (2 units)	Outdoor unit FDC140VSX-W				
Power sour	Power source			3 Phase, 380-415V 50Hz / 380V 60Hz					
Nominal cooling capacity (range)		(range)	kW	14.0 [3.5 (Min	.) - 16.0 (Max.)]				
	Nominal heating capacity	(range)	kW	16.0 [2.7 (Min.) - 20.0 (Max.)]					
	Dower concumution	Cooling		3.	78				
	Power consumption	Heating	kW	4.27					
	Max power consumption			8.	8.90				
	Dunning august	Cooling		6.1	/ 6.4				
	Running current	Heating	A	7.0	7.3				
	Inrush current, max curre	nt		5 ,	14				
Operation	Power factor	Cooling	%	g	00				
data	Fower lactor	Heating	70	8	9				
	EER	Cooling		3.	71				
	COP	Heating		3.	75				
	Cound nower level	Cooling		EE	69				
	Sound power level	Heating		55	71				
	C	Cooling	-ID(A)	D. I. 10. III . 00. M 05. I 00	5.4				
	Sound pressure level	Heating	dB(A)	P-Hi: 42 Hi: 39 Me: 35 Lo: 33	54				
	Silent mode sound	Cooling		-	50 / 49 (Normal / Silent)				
	pressure level	Heating		-	51 / 48 (Normal / Silent)				
Exterior din	nensions (Height × Width ×	Depth)	mm	1850 × 600 × 329	1300 × 970 × 370				
Exterior app	pearance			Ceramic white	Stucco white				
(Munsell co	olor)			(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent				
(RAL color)	•			(RAL 7047) near equivalent	(RAL 7044) near equivalent				
Net weight			kg	47	99				
	or type & Q'ty	,		_	RMT5134SWP4 × 1				
	or motor (Starting method)		kW	_	Direct line start				
Refrigerant	oil (Amount, type)		L	_	0.9 (M-MB75)				
	(Type, amount, pre-charge	e lenath)	kg	R32 4.0 in outdoor unit (Incl. th	e amount for the piping of 30m)				
Heat excha	(7) /1 0			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing				
	Refrigerant control				pansion valve				
Fan type &				Centrifugal fan × 1	Propeller fan × 2				
	(Starting method)	0	W	157 < Direct line start >	86 × 2 < Direct line start >				
Air flow	Cooling		m³/min	P-Hi:18 Hi:16 Me:14 Lo:12	100				
		Heating							
	xternal static pressure		Pa	0	0				
Outside air				Not possible	_				
	uality / Quantity			Plastic net × 1 (Washable)	_				
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)				
Electric hea			W		20 (Crank case heater)				
Operation	Remote control				, RCH-E3 Wireless : RCN-KIT4-E2				
control	Room temperature contro	ol		Thermostat t	by electronics				
	Operation display			-					
Safety equi	pments			Frost protection thermosta Internal thermo	tion for fan motor at, Refrigerant leak detection stat for fan motor temperature protection.				
	Refrigerant piping size	Liquid line Gas line	mm	I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8	① ϕ 9.52 (3/8") × 0.8 O/U ϕ 9.52 (3/8") ① ϕ 15.88 (5/8") × 1.0 ϕ 15.88 (5/8")				
	(O.D.) Connecting method	Uas IIIIE		φ 15.66 (5/6) ② φ 15.66 (5/6) × 1.0	Flare piping				
Installation	Attached length of piping		m	riare piping —	Flare piping				
	Insulation for piping		m		 Liquid & Gas lines)				
data	Refrigerant line (one way	longth	m		Max.100				
	Vertical height diff. between (m		Max.15 (Outdoor unit is lower)				
	Drain hose	J/U allu I/U	m	Hose connectable with VP20	Hole size $\phi 20 \times 3$ pcs.				
Drain purs	n max lift height		mm	11056 COTHECTABLE WITH ALSO	ι ισιε δίζε φέσι x ο μόδ.				
	o, max iiit neignt ided breaker size		mm A	_	<u> </u>				
	ked rotor ampere)		A		.0				
	cting wires Size × Core nu	ımbor	A						
	ung wires joize x Core nu	iiiiber		φ1.6mm × 3 cores + earth cable /	/ Terminal block (Screw fixing type)				
IP number									
Standard a	· · · · · · · · · · · · · · · · · · ·			Mounting kit	or: LB-KIT2				
Option part	s he data are measured at th	o followin -	oonditi -		For: LB-KIT2 The pipe length is 7.5m.				
NOTES III II	ne data are measured at in	- man will	THE RESERVE OF						

Item	Indoor air t	emperature	Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Staridards
Cooling	27°C 19°C		35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
 (6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
 (7) Branching pipe set "DIS-WA1G"×1 (Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

1.2 EXTERIOR DIMENSIONS

(1) Indoor units Models FDF71VH, 100VH, 125VH, 140VH



PGA000Z842

Unit:mm

(2) Outdoor unit

Model FDC71VNX-W

- Notes

 (1) It must not be surrounded by walls on the four sides.
 (2) The unit must be fixed with anchor bolts. An anchor bolt must not
 - (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction. protrude more the 15mm.

φ 15.88 (5 / 8") (Flare) φ 9.52 (3/8") (Flare)

Content

Service valve connection (liquid side) Service valve connection (gas side)

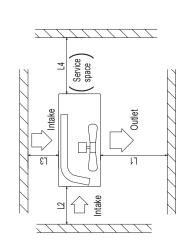
Pipe / cable draw-out hole

ပ

Drain discharge hole

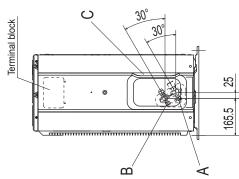
M10 × 4 places ϕ 20 × 4 places

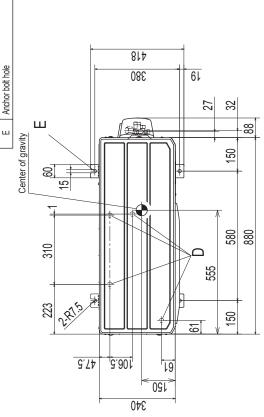
- (4) Leave 1m or more space above the unit.(5) A wall in front of the blower outlet must not exceed the units height.(6) The model name label is attached on the lower right corner of the front.

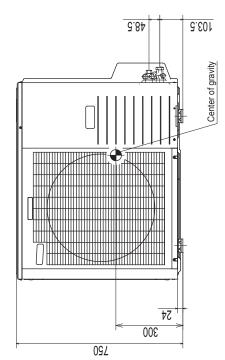


			_	
Ħ	200	Open	100	250
н	Open	250	150	250
-	Open	300	100	250
Examples of installation Dimensions	L1	L2	F3	L4

Minimum installation space

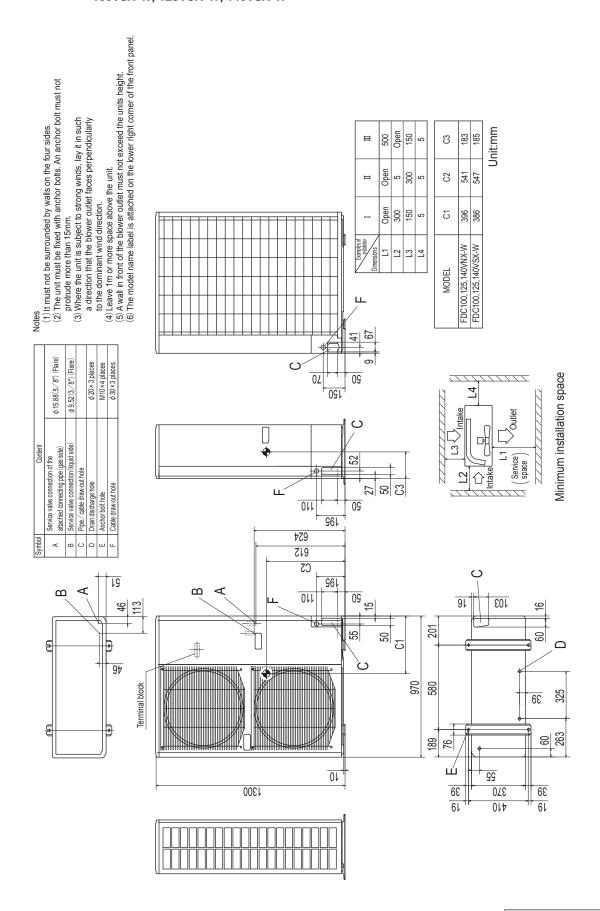






PCA001Z879

Models FDC100VNX-W, 125VNX-W, 140VNX-W 100VSX-W, 125VSX-W, 140VSX-W

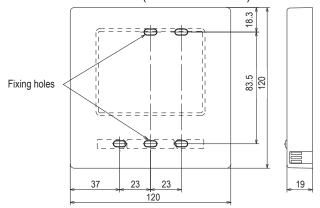


(3) Remote control (Option parts)

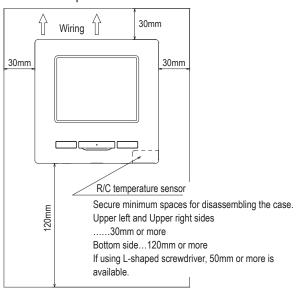
(a) Wired remote control

Model RC-EX3A

Dimensions (Viewed from front)



Installation space



• Do not install the remote control at following places.

- 1) It could cause break-down or deformation of remote control.
 - · Where it is exposed to direct sunlight
 - Where the ambient temperature becomes 0 °C or below, or 40 °C or above
 - · Where the surface is not flat
 - · Where the strength of installation area is insufficient
- 2) Moisture may be attached to internal parts of the remote control, resulting in a display failure.
 - · Place with high humidity where condensation occurs on the remote control
 - · Where the remote control gets wet
- 3) Accurate room temperature may not be detected using the temperature sensor of the remote control.
 - · Where the average room temperature cannot be detected
 - Place near the equipment to generate heat
 - Place affected by outside air in opening/closing the door
 - Place exposed to direct sunlight or wind from air-conditioner
 - Where the difference between wall and room temperature is large
- 4) When you are using the automatic grille up and down panel in the IU, you may not be able to confirm the up and down motion.
 - Where the IU cannot be visually confirmed

R/C cable:0.3mm² x 2 cores

When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm². Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

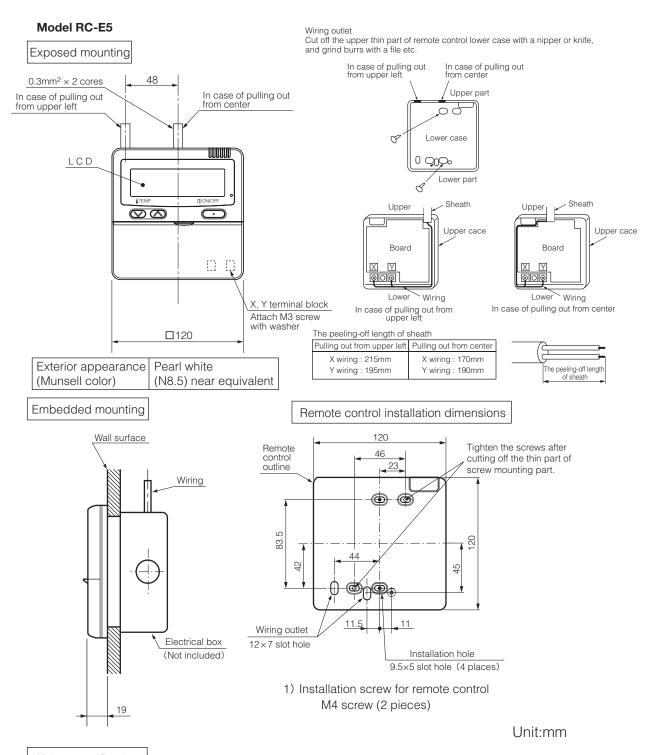
≦ 200 m	0.5 mm ² x 2 cores
≦300m	0.75 mm ² x 2 cores
≤ 400m	1.25 mm ² x 2 cores
≦ 600m	2.0 mm ² x 2 cores

• When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.

It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.

The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.

Adapted RoHS directive



Wiring specifications

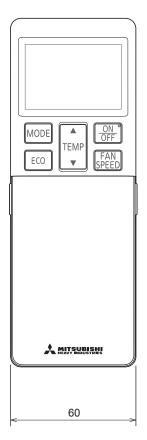
If the prolongation is over 100m, change to the size below.
 But, wiring in the remote control case should be under 0.5mm². Change the wire size outside of
the case according to wire connecting. Waterproof treatment is necessary at the wire connecting
section. Be careful about contact failure.

Length	Wiring thickness
100 to 200m	0.5mm ² × 2 cores
Under 300m	0.75mm ² × 2 cores
Under 400m	1.25mm ² × 2 cores
Under 600m	2 0mm² x 2 cores

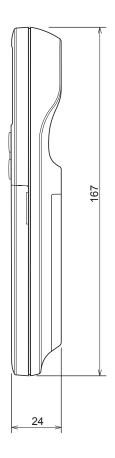
PJZ000Z295

(b) Wireless remote control

RCN-E2



Unit: mm

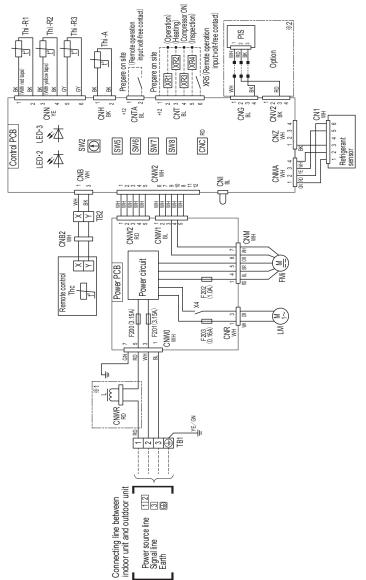


1.3 ELECTRICAL WIRING

(1) Indoor units

Models FDF71VH, 100VH, 125VH, 140VH

Meaning of marks	f marks
Item	Description
CNB-Z	Connector
F200-203	Fuse
FMi	Fan motor
_	Reactor
LED•2	Indication lamp (Green-Normal operation)
ED•3	Indication lamp (Red-Inspection)
PIS	Motion sensor
ΓW	Louver motor
SW2	Remote control communication address
SW5	Plural units Master / Slave setting
9MS	Model capacity setting
SW7-1	Operation check
SW8-4	Reset the alarm of refrigerant sensor
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Temperature sensor (Remote control)
Thi-A	Temperature sensor (Return air)
Thi-R1,2,3	Temperature sensor (Heat exchanger)
X4	Relay for LM
■mark	Closed-end connector



Notes 1.---- indicates wiring on site.

- 2. See the wiring diagram of outdoor unit about the line between
 - indoor unit and outdoor unit.
- 3. Use twin core cord (0.3mm² \times 2) at remote control line. See spec sheet of remote control in case that the total length is more than 100m.
- Do not put remote control line alongside power source line. Section 1 (%1) is provided on the models 100-140 only. Section 2(%2) shows electric circuit of motion sensor (Option). The alarm of refrigerant sensor can reset until 2 times.

(2) Outdoor units

Power source 1 Phase 220-240V 50Hz / 220V 60Hz

Model FDC71VNX-W

Hem Description Compressor mator CM Compressor mator CM Compressor mator CH Cank case heater SEXT Cank case heater SEXT Availary reley for CAIS SEXS Availary reley for CAIS SEXS Solemed valve for solong SMT Expansion valve for heating GSH1 High pressure switch Thro-A Couldoor air sissor Thro-D Impenditue sersor (Discharge pipe)	The K1,R2 Pempetative sersion The S Emmpetative sersion Suction piper Low pressure sersion Low pressur
Neanir	Tho-R1 Tho-R1 IPM TBM TBM TBM CNA-2- SW9 SW9 SW3-5- LED2 LLLD2 L1.12
	Obor marks Mark Color BK Black BL Blue BR Blue BR Brown OR Orange PP Red VF Yellow YG Yellow YG Yellow YG Yellow
	No.
	CNO2 CNO2 SNO3 SNO3 SNO3 SNO3 SNO3 SNO3 SNO3 SNO3
FM01	SASS SASS SASS SASS SASS SASS SASS SAS
TO INDOOR UNIT TO I	CHOR CONFERT C
HW 13 (4A)	PCB1
14 12 11 11 11 11 11 11 11 11 11 11 11 11	ACTOR MWH PT 122 MWH PT 124 MWH PT 125 MWH P

SW3-1	SW3-1 Defrost control change	The defrost operation interval becomes shorter by turning ON this switch. This switch should be tuned ON in the area where outside temperature becomes below the freezing point.
SW3-2	SW3-2 Snow guard fan control	When this switch is turned ON, the outdoor fain will unfor 10 seconds in every 10 minutes, when outdoor temperature falls to a 3° Cor loves and the compressors is not cunning when the un't is used in a very snowy country, set this switch to ON.
SW5-3,4	SW5-3,4 Trial operation	Method of trial operation can be performed by using SW5-3. 2 Cooling that a operation will be performed when SW5-4 is OFF and hearing trial operation when SW5-4 is OFF and hearing trial operation when SW5-4 is ON. 3. Be sure to turn OFF SW5-3 after the trial operation is finished.

_			:						
	Model	Model MAX over current (A)	Power cable size (mm ²)	Power cable size Power cable length Indoor-outdoor (mm²) (m) (m) (mm²) (mm²)	Indoor-outdoor wire size × number (mm²)	Earth wire size (mm²)	SW3-2	SW3-2 Snow guard fan control	
	71	20	3.5	17	φ1.6mm×3	φ1.6mm			
									7
• -	The spe	The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.	e above table are for un in the construction instr-	nits without heaters. Fructions of the indoor u	or units with heaters, ruit.	efer	SW5-3,	SW5-3,4 Trial operation	
•	Switchg	 Switchgear of circuit breaker capacity which is calculated from MAX. over current should be chosen 	apacity which is calcula	ated from MAX. over c	urrent should be chos	en			
	along th	along the regulations in each country.	ountry.						
•	The cat	The cable specifications are based on the assumption that a metal or plastic conduit is used with no	ased on the assumption	n that a metal or plasti	ic conduit is used with	ou			
_	more th	more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling	ned in a conduit and a v	voltage drop is 2%. Fo	or an installation falling				
	outside	outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation	ease follow the internal	cabling regulations. A	dapt it to the regulatio	L			\neg
	1 - 4								

Power cable, indoor-outdoor connecting wires

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effect in each country.	efer
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Don't operate SW3-3,SW5-1,SW5-2,SW7,SW8

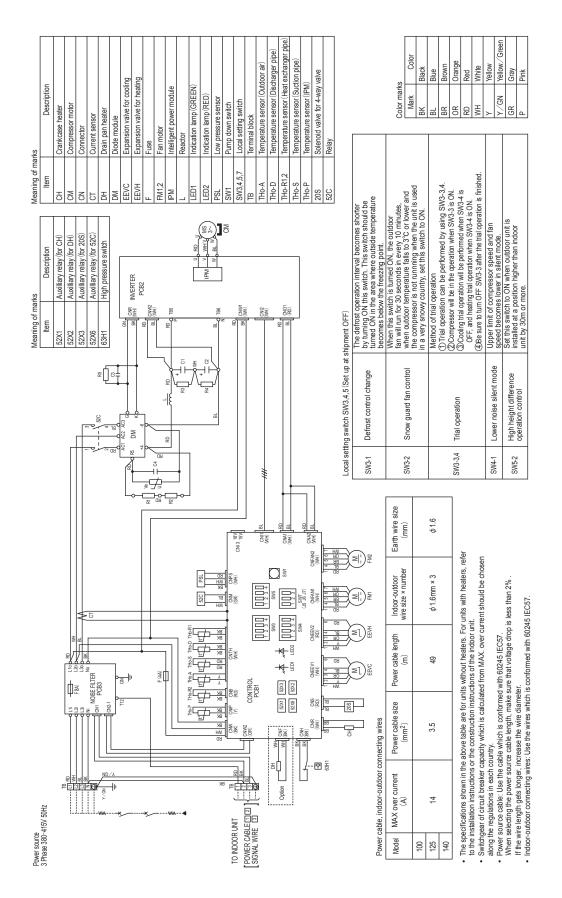
PCA001Z880

REACTOR PWB7

Models FDC100VNX-W, 125VNX-W, 140VNX-W

																				or air)	rge pipe)	inger pipe)	(adid t									
	nescription	Crankcase heater	Compressor motor	Connector	Current sensor	Drain pan heater	Diode module	Expansion valve for cooling	Expansion valve for heating	Fuse	Fan motor	Intelligent power module	Reactor	Indication lamp (GREEN)	Indication lamp (RED)	Low pressure sensor	Pump down switch	Local setting switch	Terminal block	Temperature sensor (Outdoor air)	Temperature sensor (Discharge pipe)	Temperature sensor (Heat exchanger pipe)	Temperature sensor (Suction pipe)	Temperature sensor (IPM)		ē.		and	pesn	3-3.4. 3-3 is ON. SW3-4 is is ON. ration		
Meaning of marks	Item	ᆼ	CM	S	СТ	품	DM	EEVC	EEVH	ட	FM1,2	IPM	_	LED1	LED2	PSL	SW1	SW3,4,5,7	TB	THo-A	TH0-D	THo-R1,2	THo-S	THo-P		becomes shorter switch should be utside temperatu	the cutdoor	very 10 minutes, s to 3°C or lower.	when the unit is switch to ON.	med by using SW eration when SW sperformed when ion when SW3-4 after the trial ope	ed and fan	tdoor unit is ian indoor
a citation of	Description	Solenoid valve for 4-way valve	Auxilliary relay (for CH)	Auxilliary relay (for DH)	Auxilliary relay (for 20S)	High pressure switch			Color marks	Mark					~	Pink		RD Red	WH White	寸	Y/GN Yellow/Green				shipment OFF)	The defrost operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature	When this switch is tumed ON the cutdoor	when this switch is tuffed On, the outdoor fan will run for 30 seconds in every 10 minutes, when outdoor temperature falls to 3°C or lower and	the compressor is not runnning when the unit is used in a very snowy country, set this switch to ON.	Method of trial operation ① Trial operation can be performed by using SW(3-3,4, @ Ornpresson will be in the operation when SW(3-3 is ON, @ Cooling trial operation will be performed when SW(3-4 is ON, @ OFF, and heating trial operation when SW(3-4 is ON, off and heating trial operation when SW(3-4 is ON, off an operation when SW(3-4 is ON, off an operation when SW(3-4 is ON, off an operation).	Upper limit of compressor speed and fan speed becomes lower in silent mode.	Set this switch to ON when outdoor unit is installed at a position higher than indoor
Meaning of marks	tem	20S Soleno	52X1 Auxillia	52X2 Auxillia	52X3 Auxillia	63H1 High pi		FM2	$\left(\mathbf{z}\right)$		GX 76 86 86 86 86 86 86 86	B 48	CNFANZ	i i i i i i i i i i i i i i i i i i i] ‰			<u> </u>	BK	<u>_</u>	-	THo-R2	ocal setting switch SW3,4,5 (Set up at shipment OFF)	Defrost control change		Snow guard fan control		Trial operation	Lower noise silent mode	High height difference
								FM1	≥		18 18 18 18	8 40	CNEAN1	HW.	No High	SW5	ON THE	OFF 2 3	SW7 (JS JS J7)	SHW)	BD MH BK	<u> </u>	- Isl		Local settir	SW3-1		SW3-2		SW3-3,4	SW4-1	SW5-2
								EEVH	(>	_ [)	HA HA	1 - N	CNEV2			SW3	ON TITLE		SW4] []	BK BK	<i>\$</i>	7	10-A THO-P								
					L	3 2 .		EEVC	(No.		OX HA	V	CNEEV1			¥" ¥"	LEDI LEDZ		Ē	OW.	KD KD BK BK BK BK BK BK			THO-R1 THO-D THO-S TI		Earth wire size (mm)		φ1.6		ifer n		
			a F		TO INDOOR UNIT	B SIGNAL WIRE	_))				α	e ec	2		CONTROL PCB1	52X1 52X3		707	ONO		X8 X	CH 205 185-7 L		63H1 1		Indoor-outdoor wire size × number		φ1.6mm ×3		The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit. Switchgear of circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country. Power source cable: Use the eable which is conformed with 60245 IECS7. When salection the nower source cable landth make sure that voltage of contributes than 2%.	60245 IEC57.	
				α.	\$ [8					HW HW		CNI1 (BKI				CNA2	SW41	- Liwe	HM HM	Н	,	Option		Power cable length (m)	21		0.7	nits without heaters. Fuctions of the indoor ted from MAX. over do with 60245 IEC57.	ter.	
					2 E GN	<u>س</u>	F(4A)							CNIZ IIII B.	CNIA ## BL	CMACT1 Lincol	- d	8 8		N Z					nnecting wires	Power cable size (mm²)		5.5		above table are for ur r rhe construction instr ppacity which is calcula ountry. able which is conforme	crease the wire diames: Use the wires which	
		Power source	ZH09.077./ZH0	F(30A) F(8A)	N NOISE FILTER	20€ 2°0€	GSI	<u>"₩</u>	9	MO		78 G&	- Q ≥ Q	INVERTER PCR2	IPM	8	Z o d	N N N	- (MS) A/F MODULE		CM	≱ I —	1		Power cable, indoor-outdoor connecting wires	MAX over current (A)	25	3 3	77	The specifications shown in the above table are for units without heaters. For units with heat to the installation instructions or the construction instructions of the indoor unit. Switchgear of circuit breaker capacity which is calculated from MAX, over current should be along the regulations in each country. When solarcine cable, Use the cable which is conformed with 60245 IECS. When selection the nawer source cable leaves than 2%.	If the wire length gets longer, increase the wire diameter. Indoor-outdoor connecting wires: Use the wires which is conformed with	
		r source	sse 220-240V 50	8	₹	N9/-	-#ı-	*_		→ >_	_		L						1.	NS	-li•				Power co	Model	100	125	140	The sper to the in: Switchge along the Power so When see	If the wir	

Models FDC100VSX-W, 125VSX-W, 140VSX-W



1.4 NOISE LEVEL

Notes (1) The data are based on the following conditions.

Ambient air temperature: Indoor unit 27°CWB. Outdoor unit 35°CDB.

- (2) The data in the chart are measured in an anechoic room.
- (3) The noise levels measured in the field are usually higher than the data because of reflection.

(1) Indoor units

(a) Sound power level

1) Model FDF71VH

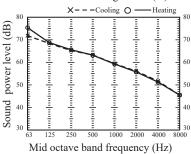
a) Air flow:P-Hi Noise level Cooling:55 dB (A) Heating:55 dB (A) -Cooling O --Heating Sound power level (dB) 250 500 1000 2000 4000 Mid octave band frequency (Hz)

b) Air flow:Lo Noise level Cooling:47 dB (A) Heating:47 dB (A) -Cooling O --Heating power level (dB) Sound 1000 2000

4000

2) Model FDF100VH

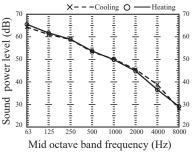
a) Air flow:P-Hi Noise level Cooling:65 dB (A) Heating:65 dB (A)



b) Air flow:Lo Noise level Cooling:56 dB (A) Heating:56 dB (A)

Mid octave band frequency (Hz)

250 500



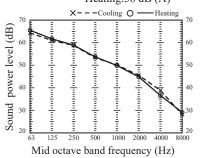
3) Models FDF125,140VH

a) Air flow:P-Hi Noise level Cooling:67 dB (A)

X---Cooling O -Heating Sound power level (dB) Mid octave band frequency (Hz)

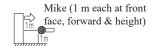
Heating:67 dB (A)

b) Air flow:Lo Noise level Cooling:56 dB (A) Heating:56 dB (A)

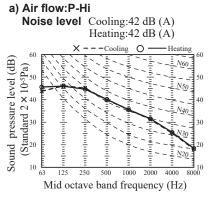


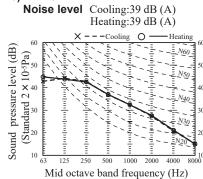
(b) Sound pressure level

Measured based on JIS B 8616 Mike position as right

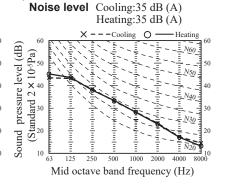


1) Model FDF71VH



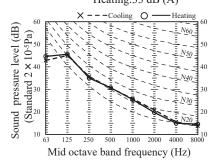


b) Air flow:Hi



c) Air flow:Me

d) Air flow:Lo Noise level Cooling:33 dB (A) Heating:33 dB (A)



2) Model FDF100VH a) Air flow:P-Hi

Noise level Cooling:53 dB (A)

Heating:53 dB (A)

**Total Cooling:53 dB (A)

**Heating:53 dB (A)

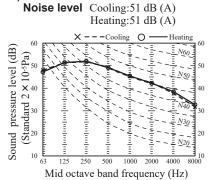
**Total Cooling:53 dB (A)

**Total Cooling:53 dB (A)

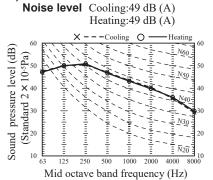
**Heating:53 dB (A)

**Total Cooling:53 dB (A)

**Total Co



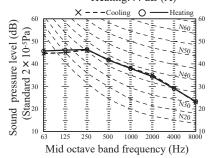
b) Air flow:Hi



c) Air flow:Me

d) Air flow:Lo

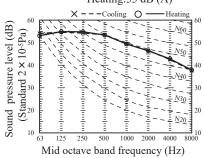
Noise level Cooling:44 dB (A) Heating:44 dB (A)



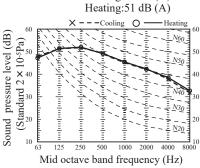
3) Models FDF125,140VH

a) Air flow:P-Hi

Noise level Cooling:55 dB (A) Heating:55 dB (A)

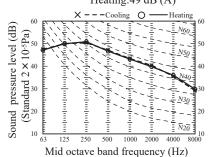


b) Air flow:Hi Noise level Cooling:51 dB (A)



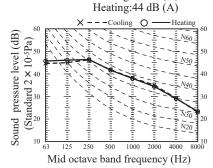
c) Air flow:Me

Noise level Cooling:49 dB (A) Heating:49 dB (A)



d) Air flow:Lo

Noise level Cooling:44 dB (A)

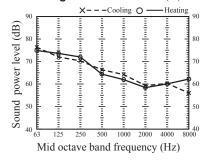


(2) Outdoor units

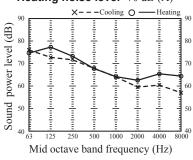
(a) Sound power level

(i) Rated capacity value

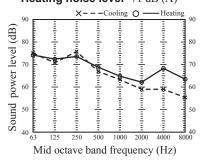
Models FDC100VNX-W,100VSX-W Cooling noise level 67 dB (A) Heating noise level 67 dB (A)



Models FDC125VNX-W,125VSX-W Cooling noise level 68 dB (A) Heating noise level 70 dB (A)

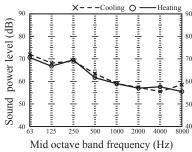


Models FDC140VNX-W,140VSX-W Cooling noise level 69 dB (A) Heating noise level 71 dB (A)

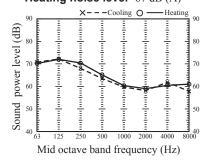


(ii) Silent mode (Normal)

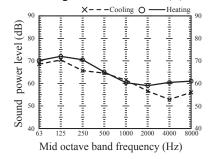
 $\begin{array}{c} \textbf{Models FDC100VNX-W,100VSX-W} \\ \textbf{Cooling noise level} & 65 \text{ } dB \text{ } (A) \\ \textbf{Heating noise level} & 64 \text{ } dB \text{ } (A) \end{array}$



Models FDC125VNX-W,125VSX-W Cooling noise level 66 dB (A) Heating noise level 67 dB (A)

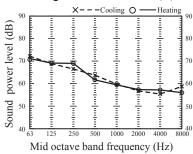


Models FDC140VNX-W,140VSX-W Cooling noise level 68 dB (A) Heating noise level 67 dB (A)

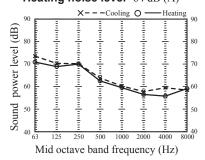


(iii) Silent mode (Silent)

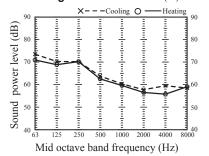
Models FDC100VNX-W,100VSX-W Cooling noise level 64 dB (A) Heating noise level 64 dB (A)



Models FDC125VNX-W,125VSX-W Cooling noise level 65 dB (A) Heating noise level 64 dB (A)



Models FDC140VNX-W,140VSX-W Cooling noise level 65 dB (A) Heating noise level 64 dB (A)



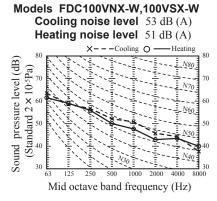
(b) Sound pressure level

Measured based on JIS B 8616

Mike position: at highest noise level in position as mentioned below

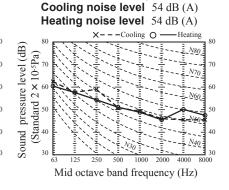
Distance from front side 1m Height 1m

(i) Rated capacity value



Mid octave band frequency (Hz)

Models FDC125VNX-W,125VSX-W

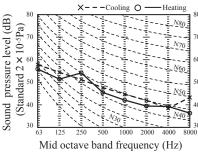


Models FDC140VNX-W,140VSX-W

(ii) Silent mode (Normal)

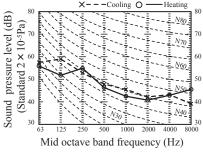
Models FDC100VNX-W,100VSX-W
Cooling noise level 49 dB (A)
Heating noise level 48 dB (A)

X---Cooling O — Heating

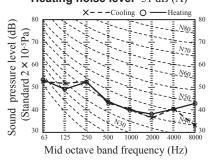


Models FDC125VNX-W,125VSX-W
Cooling noise level 50 dB (A)
Heating noise level 50 dB (A)

X---Cooling O — Heating

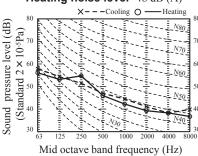


Models FDC140VNX-W,140VSX-W Cooling noise level 50 dB (A) Heating noise level 51 dB (A)

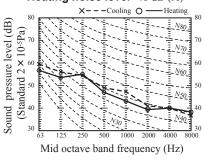


(iii) Silent mode (Silent)

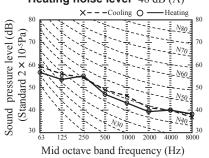
Models FDC100VNX-W,100VSX-W Cooling noise level 48 dB (A) Heating noise level 48 dB (A)



Models FDC125VNX-W,125VSX-W Cooling noise level 49 dB (A) Heating noise level 48 dB (A)



Models FDC140VNX-W,140VSX-W Cooling noise level 49 dB (A) Heating noise level 48 dB (A)



1.5 TEMPERATURE DISTRIBUTION

Indoor temperature

Cooling 27°CDB / 19°CWB

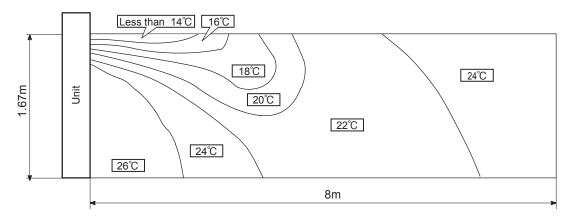
Heating 20°CDB

Note: These figures represent the typical main range of temperature at the center of air outlet within the published conditions.

In the actual installation, they may differ from the typical figures under the influence of air temperature conditions, ceiling height, operation conditions and obstacles.

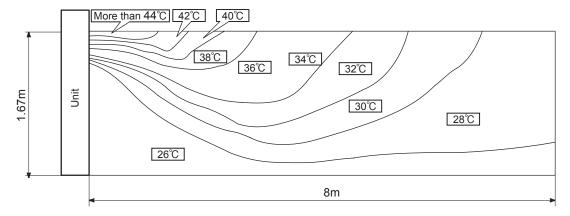
Cooling Air flow:Hi (Louver position:Horizontal)

Temperature distribution



Heating Air flow:Hi (Louver position:Horizontal)

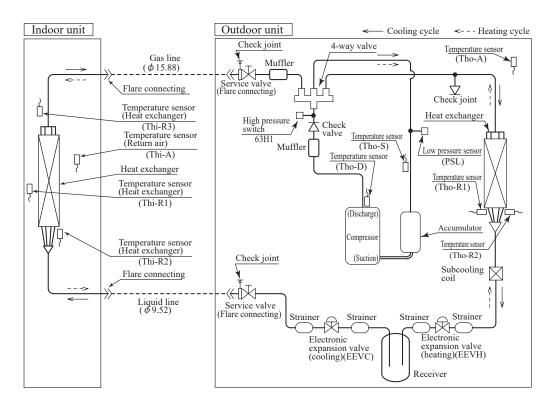
Temperature distribution



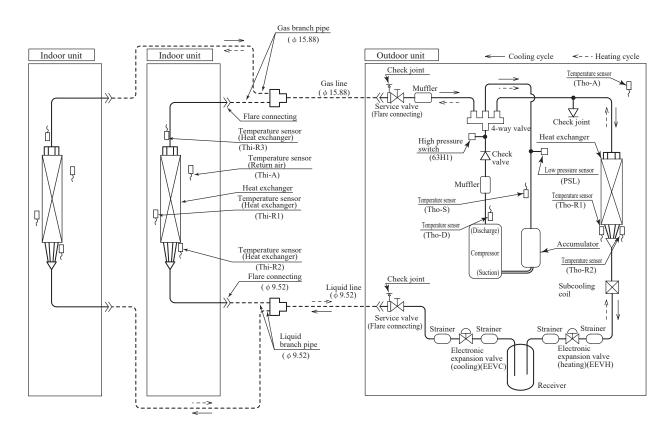
1.6 PIPING SYSTEM

(1) Single type

Models 71, 100, 125, 140



(2) Twin type Model 140



Preset point of the protective devices

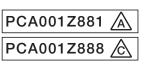
Parts name	Mark	Equipped unit	100, 125, 140 model
		unit	
Temperature sensor (for protection overloading in heating)	Thi-R	Indoor unit	Active 63°C Inactive 56°C
Temperature sensor (for frost prevention)	Thi-R	Indoor unit	Active 1.0°C Inactive 10°C
Temperature sensor (for protection high pressure in cooling)	Tho-R	Outdoor unit	Active 63°C Inactive 51°C
Temperature sensor (for detecting discharge pipe temperature)	Tho-D	Outdoor unit	Active 115°C Inactive 85°C
High pressure switch (for protection)	63H1	Outdoor unit	Active 4.15MPa Inactive 3.15MPa
Low pressure sensor (for protection)	· PSI Onidoor		Active 0.079MPa Inactive 0.227MPa

1.7 RANGE OF USAGE & LIMITATIONS

0		See next page.
Operating temperature ran	ge	When used below -5°C, install a snow hood (locally procured).
Recommendable area to in	nstall	Considering to get sufficient heating capacity, the area where the averaged lowest ambient air temperature in day time during winter is above 0°C, and it has no accumulation of snow.
Installation site		The limitations of installation space are shown in the page for exterior dimensions. Install the indoor unit at least 2.5m higher than the floor surface.
Temperature and humidity of indoor unit in the ceiling (No	•	Dew point temperature : 23°C or less, relative hummdity : 80% or less
Limitations on unit and pipi	ng installation	See page 32.
Compressor	Cycle Time	7 minutes or more (from OFF to OFF) or (from ON to ON)
ON-OFF cycling	Stop Time	3 minutes or more
	Voltage range	Rating ±10%
Power source	Voltage drop at start-up	Min.85% of rating
	Phase-to-phase unbalance	3% or less

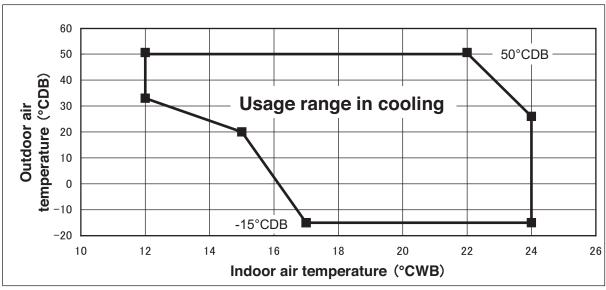
Note (1) Do not install the unit in places which:

- 1) Flammable gas may leak.
- 2) Carbon fiber, metal particles, powder, etc. are floating.
- 3) Cosmetic or special sprays are used frequently.
- 4) Exposed to oil splashes or steam (e.g. kitchen and machine plant).
- 5) Exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent).
- 6) Exposed to ammonia substance (e.g. organic fertilizer).
- 7) Matters affecting devices, such as sulfuric gas, chlorine gas, acid, alkali, etc. may generate or accumulate.
- 8) Chimney smoke is hanging.
- 9) Sucking the exhaust gas from heat exchanger.
- 10) Adjacent to equipment generating electromagnetic waves or high frequency waves.
- 11) There is light beams that affect the receiving device of indoor unit in case of the wireless specification.
- 12) Snow falls heavily.
- 13) At an elevation of 1000 meters or higher.
- 14) On mobile machine (e.g. vehicle, ship, etc.)
- 15) Splashed with water to indoor unit (e.g. laundry room).
- 16) Indoor units of twin and triple specifications separately in a room with partition.
- Note (2) If ambient temperature and humidity exceed the above conditions, add polyurethane foam insulation (10mm or thicker) on the outer plate of indoor unit
- Note (3) Both gas and liquid pipes need to be coverd with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.
- Note (4) When snow accumulate, install a snow hood on site.
- Note (5) The indoor unit shall be installed in a room with minimum installation area or more according to the refrigerant charge amount. (for details, refer to installation sheet)

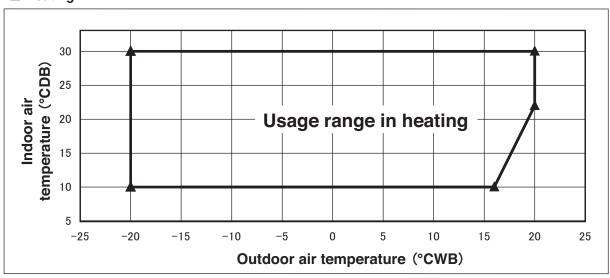


Operating temperature range

■ Cooling



Heating



Decline in cooling and heating capacity or operation stop may occur when the outdoor unit is installed in places where natural wind can increase or decrease its design air flow rate.

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"CAUTION" Cooling operation under low outdoor air temperature conditions

PAC models can be operated in cooling mode at low outdoor air temperature condition within above temperature range. However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]

In case of severely low temperature condition

- 1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
- 2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, mount the flex flow adapter (prepared as option part) or like such devices onto the outdoor unit in order to divert the strong wind.

[Reason]

Under the low outdoor air temperature conditions of -5°C or lower, the outdoor fan is controlled at lower or lowest speed by outdoor fan control, but if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop more.

This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

() () () () () () () () () ()	- Control of Control o			Marks appearing in the drawing	in the drawing
Descriptions	Models for outdoor unit	or urnit	Dimensional limitations	Single type	Twin type
o in the second of the second	FDC71		≥ 50m	-	
One-way pipe lengin	FDC100·125·140	140	3 ≤ L ≤ 100m		L+L1+L2
Main pipe length	FDC100·125·140	140	≥ 100m		7
One-way pipe length after first branch	FDC100·125·140	140	≥ 30m		L1, L2
	FDC100·125	10	≥ 10m		
One-way pipe length difference from the first branch to the indoor unit	200		≥ 3m		L1 - L2 L2 - L1
	04-007	ı	≥ 10m		i
	When outdoor unit is	FDC71	≥ 30m	=	Ξ
4	positioned higher	FDC100 · 125 · 140	≥ 50m (2)	Γ	Г
Elevation difference between indoor and outdoor units	When outdoor unit is	FDC71		Ξ	=
	positioned lower	FDC100·125·140	E C VII	Γ	Г
Elevation difference between indoor units			≥ 0.5m		4
Single type Indoor unit Indoor unit is positioned higher, dimensional limitation change from 30m to 50m by changing SW5-2 of outdoor unit control PCB to ON.	Twin type Indoor unit Outdoor unit as possible. itation change from 30m to 50m by changing	Twin type Twin type Twin type FDC100-125-140 3 SW5-2 of outdoor unit control	Branch piping set (option) DIS-WA1G I POB to ON.		

1.8 SELECTION CHART

Correct the cooling and heating capacity in accordance with the operating conditions. The net cooling and heating capacity can be obtained in the following way.

Net capacity = Capacity shown in the capacity tables (1.8.1) × Correction factors shown in the table (1.8.2) (1.8.3) (1.8.4)

Caution: In case that the cooling operation during low outdoor air temperature below -5°C is expected, install the outdoor unit where it is not influenced by natural wind. Otherwise protection control by low pressure will be activated much more frequently and it will cause insufficient capacity or breakdown of the compressor in worst case.

1.8.1 Capacity tables

(1) Single type

Model FDF71VNXWVH Indoor unit FDF71VH Outdoor unit FDC71VNX-W

Cooling n	node															(kW)
Outdoor							Ind	loor air t	empera	ture						
air	18°	CDB	21°	CDB	23°0	CDB	26°	CDB	27°0	CDB	28°	CDB	31°0	CDB	33°	CDB
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°(CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15	İ				İ		6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
-10	İ				İ		6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
-5	i				i		6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
0					5.98	4.66	6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
5	i –				5.98	4.66	6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
11	İ				5.98	4.66	6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
13	ĺ				5.98	4.66	6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
15	ĺ				5.98	4.66	6.36	5.01	6.54	4.97	6.74	4.93	7.15	5.19	7.55	6.30
17	ĺ –				6.40	4.84	6.81	5.19	7.01	5.15	7.23	5.10	7.66	5.36	8.10	6.75
19					6.83	5.02	7.26	5.37	7.47	5.32	7.71	5.28	8.18	5.53	8.65	7.21
21					6.78	5.00	7.20	5.35	7.41	5.30	7.65	5.26	8.13	5.51	8.61	7.17
23					6.72	4.98	7.14	5.32	7.35	5.28	7.60	5.24	8.08	5.50	8.57	7.14
25	ĺ		6.28	5.09	6.69	4.96	7.11	5.31	7.33	5.27	7.57	5.23	8.06	5.49	8.55	7.12
27			6.25	5.07	6.66	4.95	7.08	5.30	7.30	5.26	7.64	5.26	7.99	5.46		
29			6.11	5.01	6.53	4.89	6.99	5.26	7.25	5.24	7.55	5.22	7.86	5.42		
31			5.98	4.95	6.39	4.83	6.90	5.23	7.20	5.22	7.46	5.19	7.73	5.38		
33	5.52	4.59	5.78	4.86	6.26	4.78	6.81	5.19	7.15	5.20	7.37	5.16	7.60	5.33		
35	5.33	4.50	5.62	4.79	6.12	4.72	6.72	5.15	7.10	5.18	7.28	5.12	7.47	5.29		
37	5.20	4.43	5.48	4.72	5.96	4.65	6.50	5.07	6.85	5.09	7.05	5.04	7.26	5.22		
39	5.06	4.37	5.34	4.66	5.79	4.58	6.28	4.98	6.60	4.99	6.82	4.96	7.04	5.15		
41	4.93	4.30	5.20	4.60	5.62	4.51	6.06	4.90	6.34	4.90	6.59	4.88	6.83	5.09		
43	4.80	4.24	5.06	4.54	5.46	4.44	5.84	4.82	6.09	4.81	6.36	4.80	6.62	5.02		
46	4.60	4.15	4.85	4.45	5.21	4.34	5.52	4.70	5.71	4.67	6.01	4.68	6.31	4.92		
50	3 73	3.66	3.96	3.88	4 29	3 98	4 59	4 36	4 77	4 34	4 91	4 31	5.05	4 54		

Heating	mode	: HC				(kW)
Outdo	or air		Indoor	air temp	erature	
tempe	rature			°CDB		
°CDB	°CWB	16	18	20	22	24
-19.8	-20	5.17	5.09	5.00	4.91	4.83
-17.7	-18	5.35	5.26	5.18	5.09	5.00
-15.7	-16	5.52	5.44	5.36	5.27	5.18
-13.5	-14	5.65	5.57	5.49	5.40	5.30
-11.5	-12	5.92	5.83	5.74	5.65	5.56
-9.5	-10	6.18	6.09	6.00	5.90	5.81
-7.5	-8	6.45	6.35	6.26	6.16	6.06
-5.5	-6	6.63	6.53	6.43	6.33	6.23
-3.0	-4	6.81	6.70	6.60	6.49	6.39
-1.0	-2	6.99	6.88	6.77	6.66	6.56
1.0	0	7.17	7.06	6.94	6.83	6.72
2.0	1	7.26	7.14	7.03	6.91	6.80
3.0	2	7.42	7.32	7.22	7.11	6.99
5.0	4	7.73	7.67	7.61	7.49	7.36
7.0	6	8.05	8.02	8.00	7.87	7.74
9.0	8	8.37	8.37	8.38	8.21	8.05
11.5	10	8.69	8.72	8.76	8.56	8.35
13.5	12	9.08	9.13	9.17	8.99	8.82
15.5	14	9.48	9.53	9.58	9.43	9.28
16.5	16	9.68	9.73	9.78	9.65	9.51

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Model FDF100VNXWVH Indoor unit FDF100VH Outdoor unit FDC100VNX-W

Cooling n	node															(kW)
Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°0	CWB	14°0	CWB	16°C	CWB	18°C	CWB	19°C	CWB	20°C	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					İ		11.26	8.30	11.76	8.31	12.09	8.23	12.75	8.58	13.41	8.39
-10					İ		11.26	8.30	11.76	8.31	12.09	8.23	12.75	8.58	13.41	8.39
-5					İ		11.26	8.30	11.76	8.31	12.09	8.23	12.75	8.58	13.41	8.39
0					10.51	7.74	11.35	8.34	11.76	8.31	12.11	8.24	12.80	8.60	13.49	8.41
5					10.77	7.85	11.43	8.38	11.76	8.31	12.13	8.24	12.85	8.62	13.58	8.44
11					10.68	7.81	11.33	8.33	11.66	8.27	12.02	8.20	12.75	8.58	13.47	8.41
13					10.59	7.77	11.23	8.29	11.56	8.22	11.92	8.16	12.64	8.54	13.36	8.37
15					10.50	7.73	11.13	8.25	11.45	8.18	11.81	8.12	12.54	8.51	13.26	8.34
17					10.34	7.66	10.98	8.19	11.30	8.12	11.65	8.06	12.37	8.45	13.08	8.28
19					10.21	7.60	10.82	8.12	11.14	8.06	11.49	8.00	12.20	8.39	12.90	8.22
21					10.10	7.55	10.71	8.08	11.02	8.01	11.36	7.95	12.03	8.33	12.71	8.16
23					9.98	7.50	10.59	8.03	10.90	7.96	11.22	7.90	11.87	8.27	12.52	8.10
25			9.35	7.67	9.93	7.48	10.53	8.00	10.83	7.94	11.15	7.87	11.79	8.25	12.43	8.08
27			9.30	7.65	9.87	7.46	10.47	7.98	10.77	7.92	11.27	7.92	11.77	8.24		
29			9.12	7.56	9.70	7.38	10.29	7.91	10.58	7.84	11.10	7.85	11.63	8.19		
31			8.94	7.48	9.53	7.30	10.10	7.83	10.39	7.77	10.94	7.79	11.48	8.14		
33	8.48	7.04	8.77	7.40	9.35	7.23	9.92	7.76	10.19	7.69	10.77	7.73	11.34	8.09		
35	8.22	6.91	8.55	7.30	9.18	7.16	9.74	7.69	10.00	7.62	10.60	7.67	11.20	8.04		
37	7.99	6.80	8.33	7.20	8.97	7.07	9.53	7.61	9.80	7.54	10.37	7.58	10.93	7.96		
39	7.76	6.69	8.11	7.10	8.76	6.98	9.33	7.52	9.60	7.47	10.14	7.50	10.67	7.87		
41	7.53	6.58	7.89	7.00	8.55	6.89	9.12	7.44	9.40	7.39	9.90	7.42	10.41	7.78		
43	7.30	6.47	7.68	6.91	8.34	6.80	8.91	7.36	9.20	7.32	9.67	7.33	10.15	7.70		
46	6.78	6.22	7.16	6.68	7.83	6.59	8.44	7.18	8.75	7.15	9.24	7.18	9.73	7.56		
50	6.27	5.98	6.64	6.45	7.32	6.38	7.96	7.00	8.30	6.99	8.81	7.03	9.32	7.43		

Heating	Heating mode : HC (kW)										
Outdo	oor air		Indoor	air temp	erature						
tempe	erature			°CDB							
°CDB	°CWB	16	18	20	22	24					
-19.8	-20	10.06	9.87	9.70	9.53	9.35					
-17.7	-18	10.14	9.98	9.82	9.65	9.47					
-15.7	-16	10.23	10.08	9.94	9.77	9.59					
-13.5	-14	10.55	10.37	10.20	10.01	9.81					
-11.5	-12	11.14	10.93	10.70	10.47	10.23					
-9.5	-10	11.31	11.25	11.20	10.95	10.71					
-7.5	-8	11.31	11.25	11.20	10.96	10.73					
-5.5	-6	11.31	11.25	11.20	10.96	10.73					
-3.0	-4	11.31	11.25	11.20	10.96	10.73					
-1.0	-2	11.31	11.25	11.20	10.96	10.73					
1.0	0	11.31	11.25	11.20	10.96	10.73					
2.0	1	11.31	11.25	11.20	10.96	10.73					
3.0	2	11.31	11.25	11.20	10.96	10.73					
5.0	4	11.31	11.25	11.20	10.96	10.73					
7.0	6	11.31	11.25	11.20	10.96	10.73					
9.0	8	11.85	11.78	11.70	11.47	11.24					
11.5	10	12.39	12.30	12.21	11.98	11.76					
13.5	12	12.94	12.88	12.82	12.66	12.49					
15.5	14	13.49	13.46	13.43	13.33	13.22					
16.5	16	13.77	13.75	13.74	13.66	13.59					

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency. These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.

Corresponding refrigerant piping length :7.5m

Level difference of Zero.

(3) Symbols are as follows

TC :Total cooling capacity (kW)

SHC :Sensible heat capacity (kW)

HC :Heating capacity (kW)

Model FDF100VSXWVH Indoor unit FDF100VH Outdoor unit FDC100VSX-W

Outdoor							Ind	oor air t	emperat	ure						
air	18°0	8°CDB 21°CDB 23°CDB			CDB	26°0	DDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB	
temperature	12°0	12°CWB 14°CWB		CWB	16°CWB		18°C	18°CWB		19°CWB		CWB	22°CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					i		11.26	8.30	11.76	8.31	12.09	8.23	12.75	8.58	13.41	8.39
-10					i		11.26	8.30	11.76	8.31	12.09	8.23	12.75	8.58	13.41	8.39
-5					i		11.26	8.30	11.76	8.31	12.09	8.23	12.75	8.58	13.41	8.39
0					10.51	7.74	11.35	8.34	11.76	8.31	12.11	8.24	12.80	8.60	13.49	8.41
5					10.77	7.85	11.43	8.38	11.76	8.31	12.13	8.24	12.85	8.62	13.58	8.44
11					10.68	7.81	11.33	8.33	11.66	8.27	12.02	8.20	12.75	8.58	13.47	8.41
13					10.59	7.77	11.23	8.29	11.56	8.22	11.92	8.16	12.64	8.54	13.36	8.37
15					10.50	7.73	11.13	8.25	11.45	8.18	11.81	8.12	12.54	8.51	13.26	8.34
17					10.34	7.66	10.98	8.19	11.30	8.12	11.65	8.06	12.37	8.45	13.08	8.28
19					10.21	7.60	10.82	8.12	11.14	8.06	11.49	8.00	12.20	8.39	12.90	8.22
21					10.10	7.55	10.71	8.08	11.02	8.01	11.36	7.95	12.03	8.33	12.71	8.16
23					9.98	7.50	10.59	8.03	10.90	7.96	11.22	7.90	11.87	8.27	12.52	8.10
25			9.35	7.67	9.93	7.48	10.53	8.00	10.83	7.94	11.15	7.87	11.79	8.25	12.43	8.08
27			9.30	7.65	9.87	7.46	10.47	7.98	10.77	7.92	11.27	7.92	11.77	8.24		
29			9.12	7.56	9.70	7.38	10.29	7.91	10.58	7.84	11.10	7.85	11.63	8.19		
31			8.94	7.48	9.53	7.30	10.10	7.83	10.39	7.77	10.94	7.79	11.48	8.14		
33	8.48	7.04	8.77	7.40	9.35	7.23	9.92	7.76	10.19	7.69	10.77	7.73	11.34	8.09	Î	
35	8.22	6.91	8.55	7.30	9.18	7.16	9.74	7.69	10.00	7.62	10.60	7.67	11.20	8.04	Î	
37	7.99	6.80	8.33	7.20	8.97	7.07	9.53	7.61	9.80	7.54	10.37	7.58	10.93	7.96		
39	7.76	6.69	8.11	7.10	8.76	6.98	9.33	7.52	9.60	7.47	10.14	7.50	10.67	7.87		
41	7.53	6.58	7.89	7.00	8.55	6.89	9.12	7.44	9.40	7.39	9.90	7.42	10.41	7.78		
43	7.30	6.47	7.68	6.91	8.34	6.80	8.91	7.36	9.20	7.32	9.67	7.33	10.15	7.70		
46	6.78	6.22	7.16	6.68	7.83	6.59	8.44	7.18	8.75	7.15	9.24	7.18	9.73	7.56		
50	6.27	5.98	6.64	6.45	7.32	6.38	7.96	7.00	8.30	6.99	8.81	7.03	9.32	7.43		

(kW)		Heating	mode	: HC				(kW)				
		Outdo	or air		Indoor air temperature							
DB		tempe	rature			°CDB						
WB		°CDB	°CWB	16	18	20	22	24				
SHC		-19.8	-20	10.22	9.96	9.70	9.40	9.10				
8.39		-17.7	-18	10.76	10.60	10.45	10.16	9.88				
8.39	П	-15.7	-16	11.31	11.25	11.19	10.92	10.65				
8.39		-13.5	-14	11.31	11.25	11.19	10.93	10.67				
8.41	П	-11.5	-12	11.31	11.25	11.20	10.94	10.69				
8.44	П	-9.5	-10	11.31	11.25	11.20	10.95	10.71				
8.41	ı	-7.5	-8	11.31	11.25	11.20	10.96	10.73				
8.37	П	-5.5	-6	11.31	11.25	11.20	10.96	10.73				
8.34	П	-3.0	-4	11.31	11.25	11.20	10.96	10.73				
8.28		-1.0	-2	11.31	11.25	11.20	10.96	10.73				
8.22		1.0	0	11.31	11.25	11.20	10.96	10.73				
8.16		2.0	1	11.31	11.25	11.20	10.96	10.73				
8.10	ı	3.0	2	11.31	11.25	11.20	10.96	10.73				
8.08	П	5.0	4	11.31	11.25	11.20	10.96	10.73				
	П	7.0	6	11.31	11.25	11.20	10.96	10.73				
		9.0	8	11.85	11.78	11.70	11.47	11.24				
		11.5	10	12.39	12.30	12.21	11.98	11.76				
		13.5	12	12.94	12.88	12.82	12.66	12.49				
		15.5	14	13.49	13.46	13.43	13.33	13.22				
		16.5	16	13.77	13.75	13.74	13.66	13.59				
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Model FDF125VNXWVH Indoor unit FDF125VH Outdoor unit FDC125VNX-W

(kW) Heating mode : HC (kW) Cooling mode

Outdoor	Indoor air temperature																
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°CDB		31°CDB		33°0	33°CDB	
temperature	12°C	CWB	14°C	CWB	16°CWB		18°0	18°CWB		19°CWB		CWB	22°CWB		24°CWB		
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
-15	i				i		11.89	8.83	12.37	8.82	12.71	8.73	13.39	9.11	14.07	8.90	
-10							11.89	8.83	12.37	8.82	12.71	8.73	13.39	9.11	14.07	8.90	
-5					ĺ		11.95	8.86	12.57	8.90	12.94	8.82	13.67	9.21	14.40	9.01	
0					11.69	8.49	12.71	9.18	13.21	9.16	13.61	9.08	14.40	9.47	15.19	9.26	
5					12.68	8.95	13.46	9.50	13.85	9.42	14.28	9.35	15.14	9.74	15.99	9.53	
11					12.84	9.02	13.62	9.57	14.01	9.49	14.44	9.41	15.31	9.80	16.18	9.60	
13					12.99	9.09	13.77	9.63	14.16	9.55	14.60	9.48	15.49	9.87	16.38	9.66	
15					13.14	9.16	13.92	9.70	14.31	9.61	14.77	9.54	15.67	9.93	16.57	9.73	
17					12.94	9.07	13.73	9.62	14.12	9.53	14.57	9.46	15.46	9.85	16.35	9.65	
19					12.76	8.98	13.53	9.53	13.93	9.45	14.37	9.38	15.24	9.78	16.12	9.57	
21					12.62	8.92	13.38	9.46	13.77	9.39	14.20	9.31	15.04	9.70	15.89	9.50	
23					12.48	8.85	13.23	9.40	13.62	9.32	14.03	9.25	14.84	9.63	15.65	9.42	
25			11.69	9.04	12.41	8.82	13.16	9.37	13.54	9.29	13.94	9.21	14.74	9.59	15.54	9.38	
27			11.62	9.00	12.34	8.79	13.08	9.34	13.46	9.26	14.09	9.27	14.71	9.58			
29			11.40	8.89	12.12	8.69	12.86	9.24	13.22	9.16	13.88	9.19	14.53	9.52			
31			11.17	8.78	11.91	8.59	12.63	9.14	12.98	9.06	13.67	9.10	14.35	9.45			
33	10.36	8.20	10.84	8.62	11.69	8.49	12.40	9.05	12.74	8.97	13.46	9.02	14.18	9.39			
35	10.33	8.19	10.71	8.56	11.47	8.39	12.18	8.95	12.50	8.87	13.25	8.94	14.00	9.32			
37	10.03	8.03	10.43	8.43	11.21	8.28	11.92	8.85	12.25	8.77	12.96	8.83	13.67	9.21			
39	9.73	7.88	10.16	8.30	10.95	8.16	11.66	8.74	12.00	8.67	12.67	8.72	13.34	9.09			
41	9.43	7.73	9.88	8.17	10.68	8.04	11.40	8.63	11.75	8.57	12.38	8.61	13.01	8.98			
43	9.13	7.58	9.60	8.04	10.42	7.93	11.14	8.53	11.50	8.47	12.09	8.50	12.69	8.86			
46	8.49	7.26	8.96	7.74	9.81	7.66	10.44	8.25	10.70	8.17	11.08	8.13	11.47	8.45			
50	7.85	6.95	8.33	7.45	9.19	7.40	9.74	7.97	9.90	7.87	10.08	7.76	10.26	8.06			

Heating mode : HC (kW)										
Outdo	or air		Indoor	air temp	erature					
tempe	rature			°CDB						
°CDB	°CWB	16	18	20	22	24				
-19.8	-20	10.37	10.18	10.00	9.82	9.64				
-17.7	-18	10.43	10.26	10.10	9.92	9.74				
-15.7	-16	10.49	10.34	10.19	10.02	9.84				
-13.5	-14	10.79	10.61	10.44	10.24	10.04				
-11.5	-12	11.37	11.15	10.92	10.68	10.44				
-9.5	-10	11.96	11.68	11.40	11.12	10.84				
-7.5	-8	12.55	12.22	11.88	11.56	11.23				
-5.5	-6	12.90	12.63	12.35	12.03	11.72				
-3.0	-4	13.25	13.04	12.82	12.51	12.20				
-1.0	-2	13.61	13.45	13.29	12.99	12.69				
1.0	0	13.96	13.86	13.76	13.47	13.17				
2.0	1	14.13	14.07	14.00	13.71	13.41				
3.0	2	14.13	14.07	14.00	13.71	13.41				
5.0	4	14.13	14.07	14.00	13.71	13.41				
7.0	6	14.13	14.07	14.00	13.71	13.41				
9.0	8	14.81	14.72	14.63	14.34	14.06				
11.5	10	15.49	15.37	15.26	14.98	14.70				
13.5	12	16.18	16.10	16.02	15.74	15.45				
15.5	14	16.87	16.83	16.79	16.49	16.20				
16.5	16	17.21	17.19	17.17	16.87	16.57				

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.

These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions. Corresponding refrigerant piping length :7.5m

Level difference of Zero.

(3) Symbols are as follows
TC: Total cooling capacity (kW)
SHC: Sensible heat capacity (kW) HC :Heating capacity (kW)

Model FDF125VSXWVH Indoor unit FDF125VH Outdoor unit FDC125VSX-W

Cooling n	node															(kW
Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	26°CDB		27°CDB		CDB	31°0	CDB	33°CDB	
temperature	12°C	CWB	14°0	14°CWB		16°CWB		18°CWB		19°CWB		CWB	22°CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					i		11.89	8.83	12.37	8.82	12.71	8.73	13.39	9.11	14.07	8.90
-10					i		11.89	8.83	12.37	8.82	12.71	8.73	13.39	9.11	14.07	8.90
-5					i		11.95	8.86	12.57	8.90	12.94	8.82	13.67	9.21	14.40	9.01
0					11.69	8.49	12.71	9.18	13.21	9.16	13.61	9.08	14.40	9.47	15.19	9.26
5					12.68	8.95	13.46	9.50	13.85	9.42	14.28	9.35	15.14	9.74	15.99	9.53
11					12.84	9.02	13.62	9.57	14.01	9.49	14.44	9.41	15.31	9.80	16.18	9.60
13					12.99	9.09	13.77	9.63	14.16	9.55	14.60	9.48	15.49	9.87	16.38	9.66
15					13.14	9.16	13.92	9.70	14.31	9.61	14.77	9.54	15.67	9.93	16.57	9.73
17					12.94	9.07	13.73	9.62	14.12	9.53	14.57	9.46	15.46	9.85	16.35	9.65
19					12.76	8.98	13.53	9.53	13.93	9.45	14.37	9.38	15.24	9.78	16.12	9.57
21					12.62	8.92	13.38	9.46	13.77	9.39	14.20	9.31	15.04	9.70	15.89	9.50
23					12.48	8.85	13.23	9.40	13.62	9.32	14.03	9.25	14.84	9.63	15.65	9.42
25			11.69	9.04	12.41	8.82	13.16	9.37	13.54	9.29	13.94	9.21	14.74	9.59	15.54	9.38
27			11.62	9.00	12.34	8.79	13.08	9.34	13.46	9.26	14.09	9.27	14.71	9.58		
29			11.40	8.89	12.12	8.69	12.86	9.24	13.22	9.16	13.88	9.19	14.53	9.52		
31			11.17	8.78	11.91	8.59	12.63	9.14	12.98	9.06	13.67	9.10	14.35	9.45		
33	10.36	8.20	10.84	8.62	11.69	8.49	12.40	9.05	12.74	8.97	13.46	9.02	14.18	9.39		
35	10.33	8.19	10.71	8.56	11.47	8.39	12.18	8.95	12.50	8.87	13.25	8.94	14.00	9.32		
37	10.03	8.03	10.43	8.43	11.21	8.28	11.92	8.85	12.25	8.77	12.96	8.83	13.67	9.21		
39	9.73	7.88	10.16	8.30	10.95	8.16	11.66	8.74	12.00	8.67	12.67	8.72	13.34	9.09		
41	9.43	7.73	9.88	8.17	10.68	8.04	11.40	8.63	11.75	8.57	12.38	8.61	13.01	8.98		
43	9.13	7.58	9.60	8.04	10.42	7.93	11.14	8.53	11.50	8.47	12.09	8.50	12.69	8.86		
46	8.49	7.26	8.96	7.74	9.81	7.66	10.44	8.25	10.70	8.17	11.08	8.13	11.47	8.45		
50	7.85	6.95	8.33	7.45	9.19	7.40	9.74	7.97	9.90	7.87	10.08	7.76	10.26	8.06		

(kW)		Heating	mode	: HC				(kW)
		Outdo	or air		Indoor	air temp	erature	
DB	П	tempe	rature			°CDB		
WB		°CDB	°CWB	16	18	20	22	24
SHC		-19.8	-20	11.30	11.10	10.90	10.70	10.50
8.90		-17.7	-18	11.98	11.75	11.52	11.34	11.16
8.90		-15.7	-16	12.63	12.45	12.27	12.05	11.84
9.01		-13.5	-14	12.84	12.68	12.51	12.29	12.06
9.26		-11.5	-12	13.27	13.14	13.01	12.76	12.51
9.53		-9.5	-10	14.13	14.07	14.00	13.71	13.41
9.60	П	-7.5	-8	14.13	14.07	14.00	13.71	13.41
9.66	П	-5.5	-6	14.13	14.07	14.00	13.71	13.41
9.73	П	-3.0	-4	14.13	14.07	14.00	13.71	13.41
9.65		-1.0	-2	14.13	14.07	14.00	13.71	13.41
9.57		1.0	0	14.13	14.07	14.00	13.71	13.41
9.50	П	2.0	1	14.13	14.07	14.00	13.71	13.41
9.42	П	3.0	2	14.13	14.07	14.00	13.71	13.41
9.38	П	5.0	4	14.13	14.07	14.00	13.71	13.41
	П	7.0	6	14.13	14.07	14.00	13.71	13.41
		9.0	8	14.81	14.72	14.63	14.34	14.06
	П	11.5	10	15.49	15.37	15.26	14.98	14.70
		13.5	12	16.18	16.10	16.02	15.74	15.45
		15.5	14	16.87	16.83	16.79	16.49	16.20
		16.5	16	17.21	17.19	17.17	16.87	16.57

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Model FDF140VNXWVH Indoor unit FDF140VH Outdoor unit FDC140VNX-W

(kW) Heatin Cooling mode

Outdoor	Indoor air temperature															
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°0	CWB	14°0	14°CWB		16°CWB		18°CWB		19°CWB		CWB	22°CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					i		11.46	8.66	12.05	8.69	12.38	8.61	13.04	8.99	13.70	8.78
-10					İ		11.46	8.66	12.05	8.69	12.38	8.61	13.04	8.99	13.70	8.78
-5					ĺ		11.48	8.67	12.08	8.70	12.43	8.63	13.13	9.02	13.84	8.83
0					11.06	8.21	12.02	8.89	12.51	8.87	12.88	8.80	13.63	9.19	14.38	9.00
5					11.84	8.56	12.57	9.12	12.93	9.04	13.33	8.97	14.13	9.37	14.93	9.18
11					12.32	8.78	13.17	9.37	13.59	9.31	14.01	9.24	14.86	9.63	15.70	9.43
13					12.80	9.00	13.77	9.63	14.25	9.59	14.70	9.52	15.59	9.90	16.48	9.70
15					13.28	9.23	14.37	9.90	14.91	9.87	15.38	9.80	16.32	10.18	17.26	9.97
17					13.49	9.33	14.46	9.94	14.94	9.88	15.42	9.81	16.36	10.19	17.30	9.98
19					13.50	9.33	14.55	9.98	14.98	9.90	15.45	9.83	16.40	10.21	17.34	9.99
21					13.56	9.36	14.54	9.97	14.97	9.89	15.43	9.81	16.35	10.19	17.26	9.97
23					13.63	9.39	14.53	9.97	14.95	9.89	15.40	9.80	16.29	10.17	17.19	9.94
25			12.78	9.59	13.66	9.41	14.52	9.97	14.95	9.88	15.39	9.80	16.27	10.16	17.15	9.93
27			12.89	9.65	13.69	9.42	14.52	9.96	14.94	9.88	15.63	9.90	16.33	10.18		
29			12.64	9.52	13.45	9.31	14.28	9.86	14.70	9.78	15.42	9.81	16.13	10.11		
31			12.39	9.39	13.21	9.20	14.05	9.75	14.47	9.68	15.20	9.72	15.93	10.03		
33	10.35	8.20	11.45	8.92	12.97	9.08	13.81	9.65	14.24	9.58	14.98	9.63	15.73	9.96		
35	10.27	8.16	11.29	8.84	12.73	8.97	13.57	9.55	14.00	9.48	14.76	9.54	15.53	9.88		
37	10.21	8.13	11.14	8.77	12.48	8.85	13.31	9.43	13.73	9.37	14.47	9.42	15.21	9.76		
39	10.15	8.10	10.98	8.69	12.22	8.73	13.05	9.32	13.46	9.26	14.18	9.31	14.89	9.65		
41	10.10	8.07	10.83	8.62	11.97	8.62	12.78	9.21	13.19	9.15	13.89	9.19	14.58	9.53		
43	10.04	8.04	10.68	8.54	11.72	8.50	12.52	9.10	12.92	9.04	13.59	9.07	14.26	9.42		
46	9.24	7.63	9.77	8.11	10.56	7.99	11.11	8.52	11.40	8.44	11.83	8.40	12.25	8.72		
50	8.45	7.24	8.86	7.70	9.40	7.49	9.71	7.96	9.88	7.86	10.06	7.76	10.24	8.05		

Heati	Heating mode : HC (kW)											
Out	do	or air		Indoor	air temp	erature						
tem	ре	rature			°CDB							
°CDI	В	°CWB	16	18	20	22	24					
-19.	8	-20	11.01	10.95	10.90	10.66	10.42					
-17.	7	-18	11.50	11.28	11.05	10.70	10.34					
-15.	7	-16	12.33	12.06	11.78	11.42	11.06					
-13.	5	-14	12.60	12.31	12.03	11.67	11.31					
-11.5	5	-12	13.15	12.83	12.51	12.15	11.79					
-9.5	5	-10	13.70	13.35	13.00	12.63	12.27					
-7.5	5	-8	14.25	13.87	13.49	13.12	12.75					
-5.5	5	-6	14.67	14.36	14.04	13.68	13.32					
-3.0		-4	15.09	14.85	14.60	14.25	13.90					
-1.0	ī	-2	15.52	15.34	15.16	14.82	14.47					
1.0		0	15.94	15.83	15.72	15.38	15.04					
2.0	П	1	16.15	16.08	16.00	15.66	15.33					
3.0	П	2	16.15	16.08	16.00	15.66	15.33					
5.0	П	4	16.15	16.08	16.00	15.66	15.33					
7.0	╗	6	16.15	16.08	16.00	15.66	15.33					
9.0	T	8	16.93	16.82	16.72	16.39	16.06					
11.5	5	10	17.70	17.57	17.44	17.12	16.80					
13.5	5	12	18.49	18.28	18.08	17.43	16.78					
15.5	5	14	19.27	19.00	18.72	17.74	16.75					
16.5	5	16	19.67	19.36	19.04	17.89	16.74					

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.

These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.

Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)
HC :Heating capacity (kW) HC :Heating capacity (kW)

Model FDF140VSXWVH Indoor unit FDF140VH Outdoor unit FDC140VSX-W

Cooling II	lloue															(KVV)	
Outdoor							Ind	oor air t	emperat	ure							
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	DB	27°0	CDB	28°0	DDB	31°0	CDB	33°CDB		
temperature	12°0	CWB	14°C	CWB	16°C	CWB	18°C	CWB	19°CWB		20°C	CWB	22°CWB		24°C	24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
-15	i						11.46	8.66	12.05	8.69	12.38	8.61	13.04	8.99	13.70	8.78	
-10	i						11.46	8.66	12.05	8.69	12.38	8.61	13.04	8.99	13.70	8.78	
-5	i –						11.48	8.67	12.08	8.70	12.43	8.63	13.13	9.02	13.84	8.83	
0					11.06	8.21	12.02	8.89	12.51	8.87	12.88	8.80	13.63	9.19	14.38	9.00	
5	ĺ				11.84	8.56	12.57	9.12	12.93	9.04	13.33	8.97	14.13	9.37	14.93	9.18	
11					12.32	8.78	13.17	9.37	13.59	9.31	14.01	9.24	14.86	9.63	15.70	9.43	
13					12.80	9.00	13.77	9.63	14.25	9.59	14.70	9.52	15.59	9.90	16.48	9.70	
15					13.28	9.23	14.37	9.90	14.91	9.87	15.38	9.80	16.32	10.18	17.26	9.97	
17					13.49	9.33	14.46	9.94	14.94	9.88	15.42	9.81	16.36	10.19	17.30	9.98	
19					13.50	9.33	14.55	9.98	14.98	9.90	15.45	9.83	16.40	10.21	17.34	9.99	
21					13.56	9.36	14.54	9.97	14.97	9.89	15.43	9.81	16.35	10.19	17.26	9.97	
23					13.63	9.39	14.53	9.97	14.95	9.89	15.40	9.80	16.29	10.17	17.19	9.94	
25			12.78	9.59	13.66	9.41	14.52	9.97	14.95	9.88	15.39	9.80	16.27	10.16	17.15	9.93	
27			12.89	9.65	13.69	9.42	14.52	9.96	14.94	9.88	15.63	9.90	16.33	10.18			
29			12.64	9.52	13.45	9.31	14.28	9.86	14.70	9.78	15.42	9.81	16.13	10.11			
31			12.39	9.39	13.21	9.20	14.05	9.75	14.47	9.68	15.20	9.72	15.93	10.03			
33	10.35	8.20	11.45	8.92	12.97	9.08	13.81	9.65	14.24	9.58	14.98	9.63	15.73	9.96			
35	10.27	8.16	11.29	8.84	12.73	8.97	13.57	9.55	14.00	9.48	14.76	9.54	15.53	9.88			
37	10.21	8.13	11.14	8.77	12.48	8.85	13.31	9.43	13.73	9.37	14.47	9.42	15.21	9.76			
39	10.15	8.10	10.98	8.69	12.22	8.73	13.05	9.32	13.46	9.26	14.18	9.31	14.89	9.65			
41	10.10	8.07	10.83	8.62	11.97	8.62	12.78	9.21	13.19	9.15	13.89	9.19	14.58	9.53			
43	10.04	8.04	10.68	8.54	11.72	8.50	12.52	9.10	12.92	9.04	13.59	9.07	14.26	9.42			
46	9.24	7.63	9.77	8.11	10.56	7.99	11.11	8.52	11.40	8.44	11.83	8.40	12.25	8.72			
50	8.45	7.24	8.86	7.70	9.40	7.49	9.71	7.96	9.88	7.86	10.06	7.76	10.24	8.05			

ŀ	Heating mode : HC (kW)									
ı	Outdo	or air		Indoor	air temp	erature				
	tempe	rature			°CDB					
	°CDB	°CWB	16	18	20	22	24			
ĺ	-19.8	-20	12.26	12.08	11.90	11.84	11.77			
ı	-17.7	-18	13.37	13.22	13.07	12.83	12.59			
	-15.7	-16	14.48	14.36	14.24	13.82	13.40			
ı	-13.5	-14	14.76	14.63	14.49	14.11	13.72			
-	-11.5	-12	15.34	15.17	15.00	14.68	14.36			
-	-9.5	-10	15.91	15.70	15.50	15.25	15.00			
1	-7.5	-8	16.48	16.24	16.00	15.82	15.64			
-	-5.5	-6	16.48	16.24	16.00	15.82	15.64			
-	-3.0	-4	16.48	16.24	16.00	15.82	15.64			
-	-1.0	-2	16.48	16.24	16.00	15.82	15.64			
-	1.0	0	16.48	16.24	16.00	15.82	15.64			
-	2.0	1	16.48	16.24	16.00	15.82	15.64			
	3.0	2	16.48	16.24	16.00	15.82	15.64			
ı	5.0	4	16.48	16.24	16.00	15.82	15.64			
ı	7.0	6	16.48	16.24	16.00	15.82	15.64			
ı	9.0	8	17.27	17.08	16.90	16.64	16.39			
-	11.5	10	18.06	17.93	17.79	17.47	17.14			
١	13.5	12	18.86	18.66	18.45	17.78	17.12			
	15.5	14	19.67	19.39	19.10	18.10	17.09			
	16.5	16	20.07	19.75	19.43	18.26	17.08			

(kW)

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(2) Twin type

Cooling mode

Model FDF140VNXWPVH Indoor unit FDF71VH (2 units) Outdoor unit FDC140VNX-W

(kW) Cooling mode Indoor air temperature Outdoor 18°CDB 21°CDB 23°CDB 26°CDB 27°CDB 28°CDB 31°CDB 33°CDB emperatu 14°CWB 16°CWB 20°CWB 12°CWB 18°CWB 19°CWB 22°CWB 24°CWB °CDB SHC TC SHC TC SHC TC SHC TC SHC TC SHC TC SHC TC SHC 11.46 9.55 12.05 9.56 12.38 9.47 13.04 9.97 13.70 9.75 -10 11.46 9.55 12.05 9.56 12.38 9 47 13.04 9.97 13.70 9.75 -5 11.48 9.56 12.08 | 9.58 12.43 9.49 13.13 | 10.00 13.84 9.79 12.02 9.76 5 11.84 9.27 12.57 9.97 12.93 9.89 13.33 9.81 14.13 10.32 14.93 10.11 11 12.32 9.47 13.17 | 10.20 | 13.59 | 10.13 14.01 | 10.05 14.86 | 10.56 15.70 10.34 13.77 10.44 14.25 10.38 10.80 16.48 10.57 12.80 9.67 14.70 10.30 15.59 13 13.28 9.88 14.37 10.68 14.91 10.63 16.32 11.05 13.49 9.97 14.46 10.72 14.94 10.65 15.42 10.56 16.36 11.06 17.30 10.82 14.55 10.76 17.34 10.83 19 14.98 10.66 16.40 13.50 9.98 15.45 10.58 11.07 10.00 14.54 10.75 14.97 10.66 16.35 11.05 17.26 10.81 23 13.63 10.03 14.53 10.75 14.95 10.65 15.40 10.56 16.29 11.04 17.19 10.79 25 12.78 10.28 13.66 10.05 14.52 10.74 14.95 10.65 15.39 10.55 16.27 11.03 17.15 10.78 10.33 12.89 13.69 10.06 14.52 10.74 14.94 10.65 15.63 10.64 16.33 29 12.64 10.22 13.45 9.96 14.28 10.65 14.70 10.55 15.42 10.56 16.13 10.98 31 12.39 10.10 13.21 9.85 14.05 10.55 14.47 10.46 15.20 10.48 15.93 | 10.91 10.35 8.84 11.45 9.67 12.97 9.75 13.81 10.46 14.98 10.40 35 10.27 8.81 11.29 9.60 12.73 9.65 13.57 10.36 14.00 10.29 14.76 10.32 15.53 10.78 37 10.21 8.78 11.14 9.53 12.48 9.54 13.31 10.26 13.73 10.18 14.47 10.21 15.21 10.67 39 10.15 8.75 10.98 9.46 12.22 9.43 13.05 10.16 13.46 10.08 14.18 10.11 14.89 10.57 10.10 8.72 10.83 9.39 11.97 9.32 12.78 10.06 13.19 9.98 10.00 14.58 10.47 43 10.04 8.69 10.68 9.32 11.72 9.22 12.52 9.95 11.11 9.42 12.92 9.88 13.59 9.90 14.26 10.36 12.25 9.73 10.56 8.74 8.92 11.40 9.33 11.83 9.28 9.40 8.28 9.71 8.91 9.88 8.80

Heating mode : HC (kW)								
Outd	oor air		Indoor	air temp	erature			
temp	erature			°CDB				
°CDB	°CWB	16	18	20	22	24		
-19.8	-20	11.01	10.95	10.90	10.66	10.42		
-17.7	-18	11.50	11.28	11.05	10.70	10.34		
-15.7	-16	12.33	12.06	11.78	11.42	11.06		
-13.5	-14	12.60	12.31	12.03	11.67	11.31		
-11.5	-12	13.15	12.83	12.51	12.15	11.79		
-9.5	-10	13.70	13.35	13.00	12.63	12.27		
-7.5	-8	14.25	13.87	13.49	13.12	12.75		
-5.5	-6	14.67	14.36	14.04	13.68	13.32		
-3.0	-4	15.09	14.85	14.60	14.25	13.90		
-1.0	-2	15.52	15.34	15.16	14.82	14.47		
1.0	0	15.94	15.83	15.72	15.38	15.04		
2.0	1	16.15	16.08	16.00	15.66	15.33		
3.0	2	16.15	16.08	16.00	15.66	15.33		
5.0	4	16.15	16.08	16.00	15.66	15.33		
7.0	6	16.15	16.08	16.00	15.66	15.33		
9.0	8	16.93	16.82	16.72	16.39	16.06		
11.5	10	17.70	17.57	17.44	17.12	16.80		
13.5	12	18.49	18.28	18.08	17.43	16.78		
15.5	14	19.27	19.00	18.72	17.74	16.75		
16.5	16	19.67	19.36	19.04	17.89	16.74		

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Notes(1) These data show average status

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.

These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.

Corresponding refrigerant piping length :7.5m

Level difference of Zero.

(3) Symbols are as follows

TC :Total cooling capacity (kW) SHC :Sensible heat capacity (kW) HC :Heating capacity (kW) Model FDF140VSXWPVH Indoor unit FDF71VH (2 units) Outdoor unit FDC140VSX-W

Cooling n	node (kW)															
Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°C	CWB	14°C	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15							11.46	9.55	12.05	9.56	12.38	9.47	13.04	9.97	13.70	9.75
-10							11.46	9.55	12.05	9.56	12.38	9.47	13.04	9.97	13.70	9.75
-5							11.48	9.56	12.08	9.58	12.43	9.49	13.13	10.00	13.84	9.79
0					11.06	8.95	12.02	9.76	12.51	9.73	12.88	9.65	13.63	10.16	14.38	9.95
5					11.84	9.27	12.57	9.97	12.93	9.89	13.33	9.81	14.13	10.32	14.93	10.11
11					12.32	9.47	13.17	10.20	13.59	10.13	14.01	10.05	14.86	10.56	15.70	10.34
13					12.80	9.67	13.77	10.44	14.25	10.38	14.70	10.30	15.59	10.80	16.48	10.57
15					13.28	9.88	14.37	10.68	14.91	10.63	15.38	10.55	16.32	11.05	17.26	10.81
17					13.49	9.97	14.46	10.72	14.94	10.65	15.42	10.56	16.36	11.06	17.30	10.82
19					13.50	9.98	14.55	10.76	14.98	10.66	15.45	10.58	16.40	11.07	17.34	10.83
21					13.56	10.00	14.54	10.75	14.97	10.66	15.43	10.57	16.35	11.05	17.26	10.81
23					13.63	10.03	14.53	10.75	14.95	10.65	15.40	10.56	16.29	11.04	17.19	10.79
25			12.78	10.28	13.66	10.05	14.52	10.74	14.95	10.65	15.39	10.55	16.27	11.03	17.15	10.78
27			12.89	10.33	13.69	10.06	14.52	10.74	14.94	10.65	15.63	10.64	16.33	11.05		
29			12.64	10.22	13.45	9.96	14.28	10.65	14.70	10.55	15.42	10.56	16.13	10.98		
31			12.39	10.10	13.21	9.85	14.05	10.55	14.47	10.46	15.20	10.48	15.93	10.91		
33	10.35	8.84	11.45	9.67	12.97	9.75	13.81	10.46	14.24	10.38	14.98	10.40	15.73	10.84		
35	10.27	8.81	11.29	9.60	12.73	9.65	13.57	10.36	14.00	10.29	14.76	10.32	15.53	10.78		
37	10.21	8.78	11.14	9.53	12.48	9.54	13.31	10.26	13.73	10.18	14.47	10.21	15.21	10.67		
39	10.15	8.75	10.98	9.46	12.22	9.43	13.05	10.16	13.46	10.08	14.18	10.11	14.89	10.57		
41	10.10	8.72	10.83	9.39	11.97	9.32	12.78	10.06	13.19	9.98	13.89	10.00	14.58	10.47		
43	10.04	8.69	10.68	9.32	11.72	9.22	12.52	9.95	12.92	9.88	13.59	9.90	14.26	10.36		
46	9.24	8.32	9.77	8.92	10.56	8.74	11.11	9.42	11.40	9.33	11.83	9.28	12.25	9.73		
50	8.45	7.95	8.86	8.53	9.40	8.28	9.71	8.91	9.88	8.80	10.06	8.70	10.24	9.12		

(kW)		Heating	mode	: HC				(kW)
		Outdo	or air		Indoor	air temp	erature	
DB		tempe	rature			°CDB		
WB		°CDB	°CWB	16	18	20	22	24
SHC		-19.8	-20	12.26	12.08	11.90	11.84	11.77
9.75		-17.7	-18	13.37	13.22	13.07	12.83	12.59
9.75	П	-15.7	-16	14.48	14.36	14.24	13.82	13.40
9.79		-13.5	-14	14.76	14.63	14.49	14.11	13.72
9.95		-11.5	-12	15.34	15.17	15.00	14.68	14.36
10.11		-9.5	-10	15.91	15.70	15.50	15.25	15.00
10.34		-7.5	-8	16.48	16.24	16.00	15.82	15.64
10.57	П	-5.5	-6	16.48	16.24	16.00	15.82	15.64
10.81	П	-3.0	-4	16.48	16.24	16.00	15.82	15.64
10.82		-1.0	-2	16.48	16.24	16.00	15.82	15.64
10.83		1.0	0	16.48	16.24	16.00	15.82	15.64
10.81		2.0	1	16.48	16.24	16.00	15.82	15.64
10.79		3.0	2	16.48	16.24	16.00	15.82	15.64
10.78	П	5.0	4	16.48	16.24	16.00	15.82	15.64
	П	7.0	6	16.48	16.24	16.00	15.82	15.64
		9.0	8	17.27	17.08	16.90	16.64	16.39
		11.5	10	18.06	17.93	17.79	17.47	17.14
		13.5	12	18.86	18.66	18.45	17.78	17.12
		15.5	14	19.67	19.39	19.10	18.10	17.09
		16.5	16	20.07	19.75	19.43	18.26	17.08

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.

These data show the case where the operation frequency of a compressor is fixed.

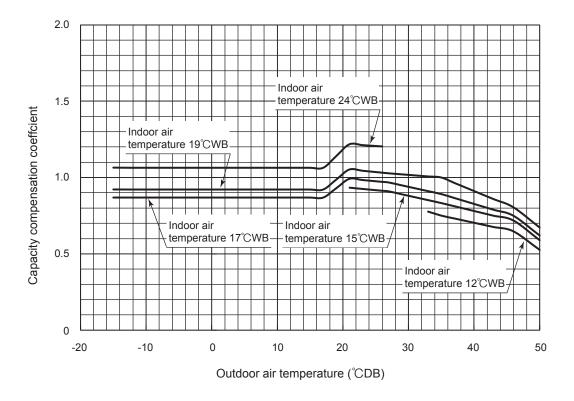
These data show the case where the operation fre
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length: 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC: Total cooling capacity (kW)
SHC: Sensible heat capacity (kW)
HC: Heating capacity (kW)

[References data]

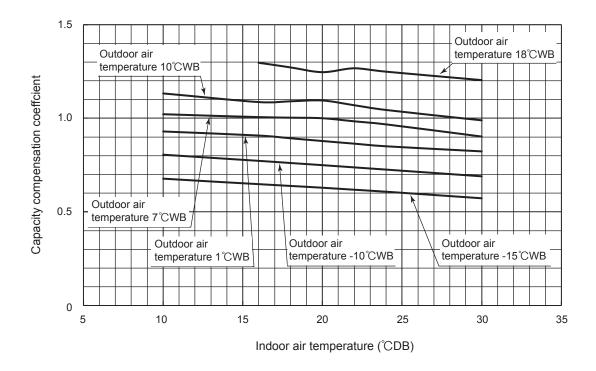
The following figures show capacity variation against outdoor and indoor temperature. Capacity compensation coefficient shows the ratio of maximum capacity at any temperature to nominal capacity.

(I)Model FDC71VNX-W

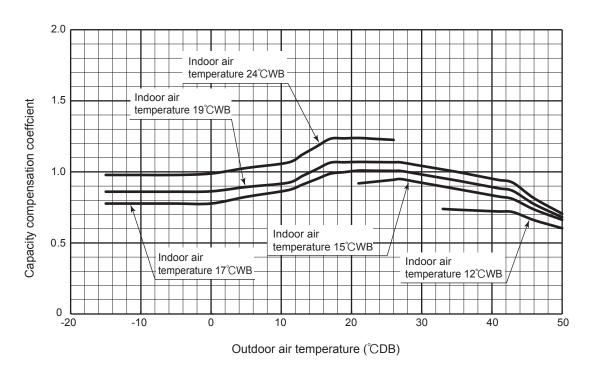
①Cooling



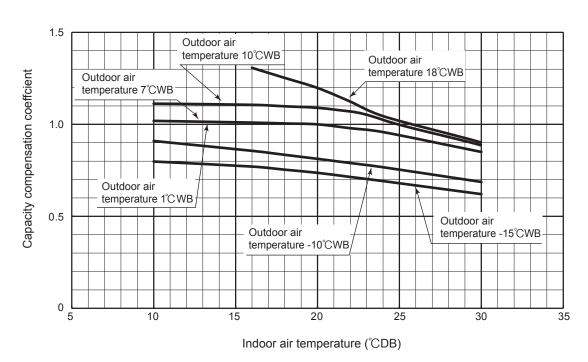
2Heating



(II)Models FDC100, 125, 140VNX-W, 100, 125, 140VSX-W ①Cooling



2Heating



1.8.2 Correction of cooling and heating capacity in relation to air flow rate control (fan speed)

Fan speed	P-Hi or Hi	Me	Lo
Coefficient	1.00	0.97	0.95

1.8.3 Correction of cooling and heating capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling and heating capacity in relation to the one way equivalent piping length between the indoor and outdoor units.

Models 71-140

Equivale	Equivalent piping length(1) (m)			10	15	20	25	30	35	40	45	50	55
Heating			1	1	1	1	1	0.998	0.998	0.993	0.993	0.988	0.988
	71 model		1	0.996	0.989	0.982	0.975	0.968	0.961	0.954	0.947	0.940	0.933
	100 model	φ 15.88	1	0.991	0.978	0.964	0.951	0.937	0.924	0.910	0.897	0.883	0.870
	125 model	ψ 13.88	1	0.986	0.968	0.950	0.932	0.914	0.896	0.878	0.860	0.842	0.824
Cooling	140 model		1	0.985	0.966	0.946	0.927	0.907	0.888	0.868	0.849	0.829	0.810
Cooming	71 model		1.008	1.006	1.003	1	0.997	0.994	0.991	0.988	0.985	0.982	0.979
	100 model	φ 19.05	1.016	1.013	1.007	1.002	0.996	0.991	0.985	0.980	0.974	0.969	0.963
	125 model \$\psi 19.03\$	1.022	1.018	1.009	1.001	0.992	0.984	0.975	0.967	0.958	0.950	0.941	
	140 model		1.026	1.021	1.011	1.002	0.992	0.983	0.973	0.964	0.954	0.945	0.935

Equivale	Equivalent piping length ⁽¹⁾ (m)			65	70	75	80	85	90	95	100	105
Heating			0.983	0.983	0.978	0.978	0.973	0.973	0.968	0.968	0.963	0.963
	71 model		_	_	_	_	_	_	_	_	_	_
	100 model	$\phi_{15.88}$	0.856	0.834	0.829	0.816	0.803	0.789	0.776	0.762	0.749	0.736
	125 model	ψ 13.88	0.806	0.788	0.770	0.752	0.734	0.716	0.698	0.680	0.662	0.644
Cooling	140 model		0.790	0.771	0.751	0.732	0.712	0.693	0.673	0.654	0.634	0.615
Cooming	71 model		_	_	_	_	_	_	_	_	_	_
	100 model	φ 19.05	0.959	0.955	0.951	0.948	0.944	0.940	0.936	0.932	0.929	0.926
	125 model	ψ 19.03	0.935	0.929	0.924	0.919	0.912	0.908	0.902	0.897	0.892	0.887
	140 model		0.928	0.920	0.913	0.907	0.900	0.894	0.888	0.882	0.876	0.870

Note (1) Calculate the equivalent length using the following formula.

However, install the piping so that the piping length is within +5 m of the limit length (actual length) for the respective types.

• Equivalent length =Actual length + (Equivalent bend length x number of bends in the piping.) Equivalent length per bend.

Gas pipe diameter (mm)	φ 12.7	φ 15.88	φ 19.05
Equivalent bend length	0.20	0.25	0.30

1.8.4 Height difference between the indoor unit and outdoor unit

When the outdoor unit is located below indoor units in cooling mode, or when the outdoor unit is located above indoor units in heating mode, the correction coefficient mentioned in the below table should be subtracted from the value in the above table.

Height difference between the indoor unit and outdoor unit in the vertical height difference	5m	10m	15m	20m	25m	30m
Adjustment coefficient	0.99	0.98	0.97	0.96	0.95	0.94

Height difference between the indoor unit and outdoor unit in the vertical height difference	35m	40m	45m	50m
Adjustment coefficient	0.93	0.92	0.91	0.90

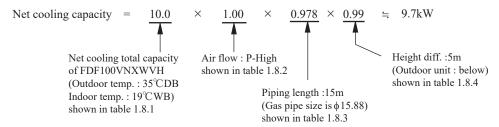
Piping length limitations

Model	FDC71VNX-W	FDC100-140VNX-W, FDC100-140VSX-W
Max. one way piping length	50m	100m
Max. vertical height difference	Outdoor unit is higher 30m Outdoor unit is lower 15m	Outdoor unit is higher 50m Outdoor unit is lower 15m

Note (1) Values in the table indicate the one way piping length between the indoor and outdoor units.

How to obtain the cooling and heating capacity

Example : The net cooling capacity of the model FDF100VNXWVH with the air flow "P-High", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0° C and outdoor dry-bulb temperature 35° C is



1.9 APPLICATION DATA

1.9.1 Installation of indoor unit

This manual is for the installation of the indoor unit. For electrical wiring work (Indoor unit), refer to page 46. For remote control installation, refer to page 54.

For wireless remote control installation, refer to page 207.

For wireless (Outdoor unit) and refrigerant pipe work installation for outdoor unit, refer to page 66 For motion sensor kit installation, refer to page 217.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, AWARNING and ACAUTION AWARNING: Wrong installation would cause serious consequences such as injuries or death. ACAUTION: Wrong installation might cause serious consequences depending on circumstances Both mentions the important items to protect your health and safety so strictly follow them by any means.

The meanings of "Marks" used here are as shown on the right:

• After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit. Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed

↑ WARNING

Installation should be performed by the specialist.

If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn

• Install the system correctly according to these installation manuals.

ation may cause explosion, injury, water leakage, electric shock, and fire

Check the density refered by the formula (accordance with ISO5149). If the density exceeds the limit density, please consult the dealer and install the ventilation system

 $\ensuremath{\bullet}$ Use the genuine accessories and the specified parts for installation.

If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.

Ventilate the working area well in case the refrigerant leaks during installation

If the refrigerant contacts the fire, toxic gas is produced

In case of R32, the refrigerant could be ignited because of its flammability

Install the unit in a location that can hold heavy weight.

oper installation may cause the unit to fall leading to a

●Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.

Improper installation may cause the unit to fall leading to accidents

 $\ensuremath{\bullet}$ Do not mix air in to the cooling cycle on installation or removal of the air-conditioner. If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injurie

• Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.

Power source with insufficient capacity and improper work can cause electric shock and fire • Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in

order not to apply unexpected stress on the terminal.

Loose connections or hold could result in abnormal heat generation or fire. • Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services

panel property.

Improper fitting may cause abnormal heat and fire

Check for refrigerant gas leakage after installation is completed.

If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced. •Use the specified pipe, flare nut, and tools for R32 or R410A.

Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle

● Tighten the flare nut according to the specified method by with torque wrench. If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period

● Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can

Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.

Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.

If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.

Stop the compressor before removing the pipe after shutting the service valve on pump down work.

If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.

•Only use prescribed option parts. The installation must be carried out by the qualified installer.

If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fir Do not repair by yourself. And consult with the dealer about repair

Improper repair may cause water leakage, electric shock or fire Consult the dealer or a specialist about removal of the air-conditioner.

Improper installation may cause water leakage, electric shock or fire.

Turn off the power source during servicing or inspection work. If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan

Do not run the unit when the panel or protection guard are taken off.

Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.

Shut off the power before electrical wiring work.

It could cause electric shock, unit failure and improper runn

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Perform earth wiring surely.

Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short-circuit.

Earth leakage breaker must be installed.

If the earth leakage breaker is not installed, it can cause electric shocks.

 Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.

Using the incorrect one could cause the system failure and fire.

 Do not use any materials other than a fuse of correct capacity where a fuse should be used. Connecting the circuit by wire or copper wire could cause unit failure and fire

 Do not install the indoor unit near the location where there is possibility of flammable gas leakage If the gas leaks and gathers around the unit, it could cause fire.

Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.)
or flammable gas (such as thinner, petroleum etc.) may be generated or accumulate
it could be sprayed with chemicals, or volatile flammable substances are handled.

It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire. Secure a space for installation, inspection and maintenance specified in the manual.

Insufficient space can result in accident such as personal injury due to falling from the installation place

Do not use the indoor unit at the place where water splashes such as laundry.

Indoor unit is not waterproof. It could cause electric shock and fire. Do not use the indoor unit for a special purpose such as food storage, cooling for precision

instrument, preservation of animals, plants, and a work of art. It could cause the damage of the items.

 Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics. Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might nfluence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.

 Do not install the remote control at the direct sunlight. It could cause breakdown or deformation of the remote control.

Do not install the indoor unit at the place listed below

Places where flammable gas could leak

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Places where thanmable gas could leak.

Place where than filter, metal powder or any powder is floated.

Place where the substances which affect the air-conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.

Places exposed to oil mist or steam directly.

On vehicles and ships

Places where machinery which generates high harmonics is used.

Places where cosmetics or special sprays are

Places where toesmeless or special spray frequently used. Highly salted area such as beach. Heavy snow area Places where the system is affected by smoke from a chimney. Altitude over 1000m

Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit
according to the installation manual for each model because each indoor unit has each limitation)

Locations with any obstacles which can prevent inlet and Do not install the motion sensor mounting panel at following place outlet air of the unit It could cause detection error, incapacity of detection, or

Locations where vibration can be amplified due to characteristic degradation insufficient strength of structure. Locations where the infrared receiver is exposed to the Place where vibration is applied to it for a long period of time

 Place where static electricity or electromagnetic wave generates
 Place where it is exposed to high temperature or humidity for a long period of time.
 Dusty place or where the lens face could be fouled or damaged. Locations where the intrared receiver is exposed to the direct sunlight or the strong light beam, (in case of the infrared specification unit) Locations where an equipment affected by high harmonics is placed, (IV set or radio receiver is placed within 5m) Locations where drainage cannot run off safely. It can affect performance or function and etc..

Do not put any valuables which will break down by getting wet under the air-conditioner.

n could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it dam Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.

It could cause the unit falling down and injury. Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.

sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit

• Install the drain pipe to drain the water surely according to the installation manual. Nater may drip in the room, damaging user's belongings, unless it is worked as instructed.

 Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work 0 If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can ccur, which can cause serious accidents

• For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps

Check if the drainage is correctly done during commissioning and ensure the space for inspection and maint • Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.

ncomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables Do not install the outdoor unit where is likely to be a nest for insects and small animals.

nsects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.

 Pay extra attention, carrying the unit by hand. Carry the unit with 2 people or more if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury.

Make sure to dispose of the packaging material.

Leaving the materials may cause injury as metals like nail and woods are used in the package Do not operate the system without the air filter

It may cause the breakdown of the system due to clogging of the heat exchanger.

 Do not touch any button with wet hands. It could cause electric shock

Do not touch the refrigerant piping with bare hands when in operation.

The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite Do not clean up the air-conditioner with water, and do not spray disinfectants etc. directly over the air-condition

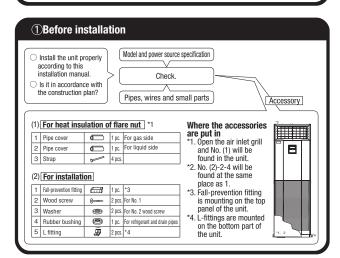
It could cause electrical shock or corrode parts.

 Do not turn off the power source immediately after stopping the operation. Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or bre

 Do not control the operation with the circuit breaker It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury

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2Selection of installation place for the indoor unit

- ① Select the suitable areas to install the unit under approval of the user
 - Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
 - Areas where there is enough space to install and service.
- *Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- -Areas where there is no obstruction of air flow on both air return grille and air supply port. -Areas where fire alarm will not be accidentally activated by the air-conditioner.
- Areas where the supply air does not short-circuit. ·Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.

Contact the sales company for details

- •Areas where dew point is lower than around 23°C and relative humidity is lower than 80%.
- There is some risk of condensation drop if the air-conditioner is operated under the severer condition
- If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe. Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- *Areas where any items which will be damaged by getting wet are not placed such as food, table wares.
- server, or medical equipment under the unit.

 Areas where there is no influence by the heat which cookware generates
- *Areas where not exposed to oil mist, powder and/or steam directly such as above fryer
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation. (A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air-conditioner might not work properly.)
- "When operating the suction air processing unit independently, it operates in the outdoor air processing mode. Blowout temperatures are not same at the standard unit operation and the outdoor air processing mode operations. Since the temperatures become higher during cooling or lower during heating, take care of the direction
- Avoid directing the blowout outlet to the space where people are present.
- 2 Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

Space for installation and service (Unite: mm) Air outlet 600 ATTENTION · Secure sufficient spaces for inspection and maintenance.

. WARNING

. Install the unit securely on a floor that can endure its weight sufficiently Insufficient strength or incorrect installation could result in injuries if the unit falls.

3 Carrying-in and installation of the unit

Carrying-in

ATTENTION

. Carry in the unit kept in a package as near as possible to the installation place.

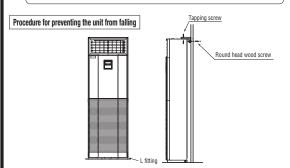
- When it is necessary to unpack the unit before carrying in, sufficient care must be taken not to damage it by using nylon slings or the like. Note) Do not hold on the air inlet grill, air outlet louver or other sections made of plastics.
- When placing the unit on the floor after unpacking, be sure to have its front face at the top.

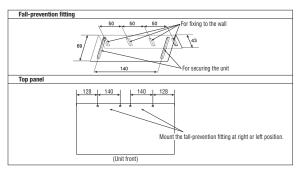
↑ WARNING

Carry with the front face at top

• Refrigerant R32 is combustible, though slightly. For this reason, make sure to observe following instructions.

When working indoors to install, repair or relocate a floor standing indoor unit, always carry a refrigerant sensor. If refrigerant leaks accidentally, it could cause intoxication or catch fire.



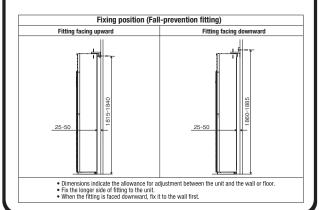


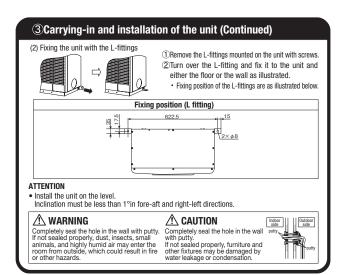
Procedure

(1) Fixing the unit with the fall-prevention fitting



- 1)Loosen screws (2 pcs.) and remove the fall-prevention fitting.
- 2Select a position to fix the fall-prevention fitting as illustrated and fix it to the top of unit and the wall





4 Refrigerant piping

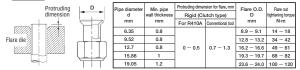
Caution

Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product. Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.

1) In case of reuse: Do not use old flare nut, but use the nut attached to the unit

2) In case of reuse: Flare the end of pipe replaced partially for R32 or R410A.

[AWARNING]: When flared joints are reused indoors, the flare part shall be re-fabricated. (only for R32)



•Use phosphorus deoxidized copper alloy seamless pipe (C1220T) for refrigeration pipe installation In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.

Do not use any refrigerant other than the designated refrigerant. Using other refrigerant except the designated refrigerant, may degrade inside refrigeration oil. And air

getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc. Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc

Use special tools for R32 or R410A refrigerant.

Work procedure

- Remove the flare nut and blind flanges on the pipe of the indoor unit.
 * Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
 (Gas may come out at this time, but it is not abnormal.)

Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.

Bend radius of pipe must be 4D or larger. Once a pipe

is bent, do not readjust the bending.

Do not twist a pipe or collapse to 2/3D or smaller.

- Make sure to use flare nuts assembled on the unions Usage of other flare nuts could cause refrigerant leakage.
- * Do a flare connection as follows:

 Make sure to hold the nut on indoor unit pipe side
- using double spanner method as indicated when fastening / loosening flare nuts in order to prevent
- unintentional twisting of the copper pipe.

 When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above.
- 3. Cover the flare connection part of the indoor unit with attached insulation material after a gas

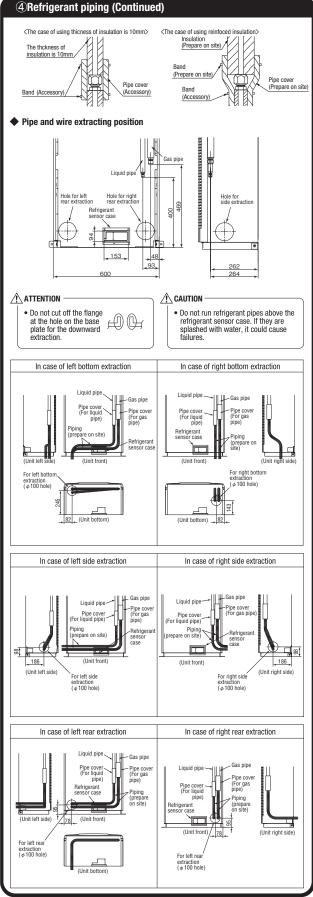
Torque wrench

- leakage inspection, and tighten both ends with attached straps.

 Make sure to insulate both gas pipes and liquid pipes completely.
- Incomplete insulation may cause dew condensation or water dropping.
 Use heat-resistant (120 °C or more) insulations on the gas side pipes.
 In case of using at high humidity condition, reinforce insulation of refrigerant pipes.
- Surface of insulation may cause dew condition or water dropping, if insulations are not reinfoced. Refrigerant is charged in the outdoor unit.
- As for the additional refrigerant charge for the indoor unit and piping, refer to the installation

Caution:

Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion. Refrigerating machine oil may be applied to the internal surface of flare only.



5Drain pipe

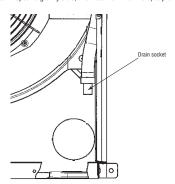
Caution

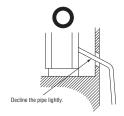
- Install the drain pipe according to the installation manual in order to drain properly.
- Imperfection in draining may cause flood indoors and wetting the household goods,etc.

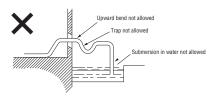
 Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
 Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Procedure

- 1. Connect the drain socket to the drain pipe (VP20) provided at site and fix the joint with adhesive tape, or the like.
- 2. When the pipe provided at site runs through a room, insulate the pipe with a commercial insulator (Polyethylene foam: Specific gravity 0.03, thickness 15mm or more) to prevent dewing.





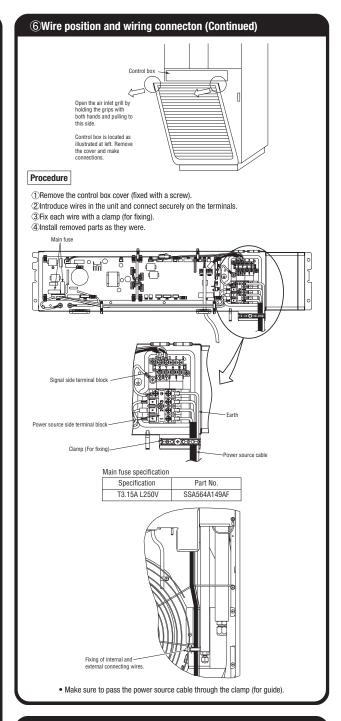


 Do not run drain pipes above the refrigerant sensor case. If water is splashed over them, it could cause troubles

6Wire position and wiring connecton

Control box position and power source cable connection

- Electric work must be made by qualified electricians according to the "Engineering standards concerning electric equipment", "Extension wiring regulations" and the electric wiring work manual. Be sure to use dedicated electric circuits.
- Make sure to use specified wires for wiring, and connect them securely. Clamp the wires to protect the terminal connection from external force.
- Make sure to protect the unit with the D-type grounding work.
- For details of wiring work, refer to the attached electric wiring work manual.



7Check list after installation

Check the following items after all installation work completed.

Check if;	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for gas leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Power source voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	

1.9.2 Electric wiring work installation



Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

SAFETY PRECAUTIONS	
 ●Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect your first of the precautionary items mentioned below are distinguished into two levels,	ourself.
Never do it under any circumstances.	
•Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short-	circuit.
Power source with insufficient capacity and improper work can cause electric shock and fire.	0
●This appliance shall be installed in accordance with national wiring regulations.	0
 Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal. Loose connections or hold could result in abnormal heat generation or fire. 	0
Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property. Improper fitting may cause abnormal heat and fire.	0
•Use the genuine option parts. And installation should be performed by a specialist. If you install the unit by yourself, it could cause water leakage, electric shock and fire.	0
 Do not repair by yourself. And consult with the dealer about repair. Improper repair may cause water leakage, electric shock or fire. 	0
Consult the dealer or a specialist about removal of the air-conditioner. Improper installation may cause water leakage, electric shock or fire.	0
Turn off the power source during servicing or inspection work. If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.	0
Shut off the power source before electrical wiring work. It could cause electric shock, unit failure and improper running.	0
△CAUTION	
Perform earth wiring surely. Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short-circuit.	•
 Earth leakage breaker must be installed. If the earth leakage breaker is not installed, it can cause electric shocks. 	0
Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.) Absence of breaker could cause electric shock.	Ö
Use the circuit breaker of correct capacity. Use an all poles disconnection device with a contact gap of 3mm or more according to overvoltage category III. Using the incorrect one could cause the system failure and fire.	Ŏ
•Do not use any materials other than a fuse of correct capacity where a fuse should be used. Connecting the circuit by wire or copper wire could cause unit failure and fire.	\bigcirc
 Use power source line of correct capacity. Using incorrect capacity one could cause electric leak, abnormal heat generation and fire. 	0
• Do not mingle solid cord and stranded cord on power source and signal side terminal block. In addition, do not mingle difference capacity solid or stranded cord. Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire.	0
 Do not turn off the power source immediately after stopping the operation. Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown. 	\bigcirc
•Do not control the operation with the circuit breaker. It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.	\bigcirc
•If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.	

	Control mo	de switch	ing	
■The control content of indoor units can be switched in following way. (is the default setting)				
Switch No.	Control content	Switch No.		Control content
SW2	Indoor unit address (0-Fh)	SW6-1-4	Model	capacity setting
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	SW7-1	ON	Operation check, Drain motor test run
SW5-2	waster/slave switching (plural/slave unit setting)	3001-1	OFF	Normal operation

Electric cable

Round crimp terminal

1 Electrical wiring connection

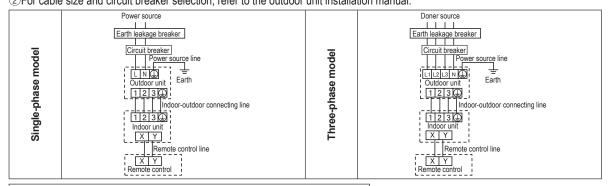
- ◆Electrical wiring work must be performed by an electrician an qualified by a local power provider. These wiring specifications are determined on the assumption that the following instructions are observed:

 - Do not use cords other than copper ones.

 Do not use any supply line lighter than one specified in parentheses for each type below
 - ordinary tough rubber sheathed cord (code designation 60245 IEC 53);
 ordinary polyvinyl chloride sheathed cord (code designation 60227 IEC 53);
- ② Connect the power source to the outdoor unit.
 ③ Pay extra attention so as not to confuse signal line and power source line connection, because an error in their connection can be burn all the boards at once
- Connect ground wires before connecting wires between the indoor and outdoor units and between indoor units. The ground wires need to be longer than the wires between the indoor and outdoor units, and protected from undue stress.
- Do not turn on the power source before completing the work.
- The ground wires must be connected by the Class D grounding connection.
- •Use the round crimp terminals for connections to the terminal block.
- Use dedicated branch circuits, avoiding combination with other devices. Otherwise, it could trip the power source breaker, resulting in secondary accidents.
- Install the overcurrent and earth leakage breakers (sensitivity current: 30 mA) specified to respective models.
 Do not connect indoor and outdoor signal cables to extension cables on the way. If the joint is wetted with intruding water, it could cause a ground insulation failure or poor connection, resulting in communication errors. (If it is inevitable to connect cables on the way, make sure to prevent the water intrusion completely.)
- When running wires (wires for power source, remote control, connecting between indoor and outdoor units, or other) behind the ceiling, protect them using copper or other pipes against assault by rat, or other.
- It is up to 3.5 mm² the size of power source cables connected to indoor units. When using cables of 5.5 mm² or larger, provide a dedicated pull box for branching connection to indoor units.
- If signal and power source cables are connected mistakenly, it could burn down all PCBs.
 - Even if the power source of 220/240/380/415 V is connected mistakenly to A-B signal cable, it is protected at initial occasion only.
 - If the remote control fails to detect the unit No. (address) at 15 minutes after turning the power on, check and repair all signal cables for misconnection.
 - ③ Cut the jumper wire J10SL1 of burnt PCB, and reconnect connectors CnK (yellow) and CnK1 (white) to CnK2 (black).
 ④ If any anomaly is found on wires between the A-B terminal block and the PCB, replace them.
- At the outside of indoor and outdoor units, take care to avoid direct contacts between remote control and power source cables.
- ■In no event connect the power source of 220/240/380/415 V to the remote control terminal block. It could cause failures.
- Connections of wiring between units, ground wire and remote control cable
 - ① When connecting wires between units, ground wire or remote control wire, connect them according to the number of terminals on the power source terminal block or signal terminal block in the control box. Connect the ground wire to the ground terminal on the power source terminal block.
- Make sure to install an earth leakage breaker for the power source. Select a breaker for inverter circuit.
 When the earth leakage breaker is exclusive for the earth leakage protection, it is necessary to connect also an isolating switch (Switch + Class B fuse) or wiring circuit breaker in series to the earth leakage breaker. 4 Install the isolating switch close to the unit.
- Connect wires securing by tightening screws firmly. Confirm also no connector or wire (from terminal) is disconnected in the control box.
- When installing an auxiliary electric heater, consult the electric heater manual or technical data.

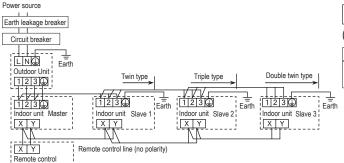
Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power source line to inside unit. * As for exceptional connecting method of power source, discuss with the power provider of the country with referring to technical documents, and follow its instruction. ②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.



Cable connection for a V multi configuration installation

- ①Connect the same pairs number of terminal block "①, ②, and ③" and "※ and ۞" between master and slave indoor units.
- ②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
- 3 Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
- When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the \(\triangle \) or \(\triangle \) button.



Method of setting Master/Slave of indoor unit

(Factory setting: "Master")

Indoor unit		Master	Slave 1	Slave 2	Slave 3	
	PCB	SW5-1	OFF	OFF	ON	ON
	SW	SW5-2	OFF	ON	OFF	ON

2 Remote control, wiring and functions

- Do not install it on the following places
 - 1 Places exposed to direct sunlight
 - 2 Places near heat devices
 - 3 High humidity places
 - 4 Hot surface or cold surface enough to generate condensation
 - ⑤ Places exposed to oil mist or steam directly.
 - (6) Uneven surface

Installation and wiring of remote control

- ① Install remote control referring to the attached installation manual.
- ② Wiring of remote control should use 0.3mm² × 2 core wires or cables.

The insulation thickness is 1mm or more. (on-site configuration)

3 Maximum prolongation of remote control wiring is 600 m.

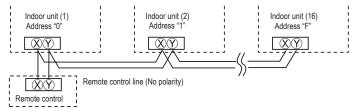
If the prolongation is over 100m, change to the size below.

But, wiring in the remote control case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

- 4 Avoid using multi-core cables to prevent malfunction.
- (5) Keep remote control line away from earth (frame or any metal of building).
- (i) Make sure to connect remote control line to the remote control and terminal block of indoor unit. (No polarity)

Control plural indoor units by a single remote control

- ① A remote control can control plural indoor units (Up to 16).
 - In above setting, all plural indoor units will operate under same mode and temperature setting.
- ② Connect all indoor units with 2 core remote control line.
- ③ Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.



Master/ slave setting when more than one remote control unit are used

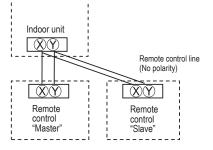
A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)

The air-conditioner operation follows the last operation of the remote control regardless of the master/slave setting of it.

Acceptable combination is "two (2) wired remote controls", "one (1) wired remote control and one (1) wireless kit" or "two (2) wireless kits".

Set one to "Master" and the other to "Slave".

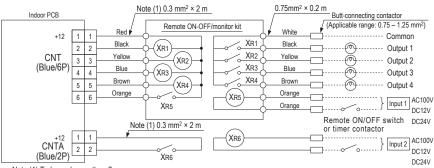
Note: The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.



No.	Item	Operation from the eco touch remote control (RC-EX series)
1	Check the number of units connected in the multi remote control system.	
2	Check if each unit is connected properly in the remote control system.	
3	Setting main/sub remote controls	
4	Checking operation data	
5	Checking inspection display	
6	Cooling test run from remote control	
7	Trial operation of drain pump from remote	$[Menu] \Rightarrow [Service setting] \Rightarrow [Installation settings] \Rightarrow [Service password]$

 \Rightarrow [Test run] \Rightarrow [Drain pump test run] \Rightarrow [Run]

(4) Function of CNT connector of indoor printed circuit board



Note (1) To be no longer than 2 m.

control

- ●XR1-4 are DC 12V relays. (Equivalent to Omron's LY2F)
- ●XR5 is a DC 12V, 24V or 100V relay. (Equivalent to Omron's MY2F)
- Maker and model of CNT connector (Site side)

Connector: Molex 5264-06 Terminal: Molex 5263T

●CNTA connector is used on FDT, or other. <Check with the specifications.> (Site side) Maker and model

Connector: J.S.T. Mfg. XAP02V-1-E Terminal: J.S.T. Mfg. SXA-01T-P0.6

●Output 1 – 4 and input1/2 can be selected/set as required from following items.

Output

1	RUN output
2	Heating output
3	Compressor ON output
4	Inspection (error) output
5	Cooling output
6	Fan ON output 1
7	Fan ON output 2

8	Fan ON output 3
9	Defrost/oil return output
10	Ventilation output
11)	Heater output
12	Free cleaning output
13	Indoor overload error output

Input

	1	RUN/STOP
	2	RUN permit prohibition
ĺ	3	Emergency stop
	(4)	Cooling/Heating

5	Setting temp. shift
6	Compulsory thermostat OFF
7	Temporary stop
8	Silent mode

Factory default setting

CNT-2	Output 1	RUN output
CNT-3	Output 2	Heating output
CNT-4	Output 3	Compressor ON output

CNT-5	Output 4	Inspection (error) output
CNT-6		RUN/STOP
CNTA	Input 2	RUN/STOP

•For the setting method, refer to the technical data.

⑤ Operation and setting from remote control

- A : Refer to the instruction manual
 B : Refer to this installation manual
 C : Loading a utility software via late

Setting & disp	olay item	Description	RC-E serie
.Remote con	troller network		
1 Control plusingle rem	ural indoor units by a note controller	A remote control can control plural indoor units up to 16 (in one group of remote control network). An address is set to each indoor unit.	
Controllers		A pair of remote controls (including option wireless remote control) can be connected within the remote control network. Set one to "Main" and the other to "Sub".	В
	, Switch manipulation		_
1 Menu	na a da	"Control", "State", or "Details" can be selected. (3-8)	A .
2 Operation 3 Set temp.	mode	"Cooling", "Heating", "Fan", "Dry" or "Auto" can be set. "Set temperature" can be set by 0.5°C interval.	A
4 Air flow di	rection	"Air flow direction" [Individual flap control] can be set.	A
5 Fan speed		"Fan speed" can be set.	A
6 Timer sett		"Timer operation" can be set.	A
7 ON/OFF	9	"On/Off operation of the system" can be done.	A
8 F1 SW		The system operates and is controlled according to the function specified to the F1 switch.	
9 F2 SW		The system operates and is controlled according to the function specified to the F2 switch.	Α
0 Select the		Select the language to display on the remote control. Select from English, German, French, Spanish, Italian, Dutch, Turkish, Portuguese, Russian, Polish, Japanese and Chinese.	A
Useful funct	· ·		
1 Timer settings	Set On timer by hour	The period of time to start operation after stopping can be set. The period of set time can be set within range of 1hour- 12houres (1hr interval). The operation mode, set temperature and fan speed at starting operation can be set.	А
	Set Off timer by hour	The period of time to stop operation after starting can be set. The period of set time can be set within range of 1hour- 12houres (1hr interval).	А
	Set On timer by clock	The clock time to start operation can be set. The set clock time can be set by 5 minutes interval. [Once (one time only)] or [Everyday] operation can be switched. The operation mode, set temperature and fan speed at starting operation can be set.	А
	Set Off timer by clock	The clock time to stop operation can be set. The set clock time can be set by 5 minutes interval. [Once (one time only)] or [Everyday] operation can be switched.	А
	Confirmation of timer settings	Status of timer settings can be seen.	Α
2 Favorite s [Administr	etting ator password]	Set the operation mode, setting temperature, air flow capacity and air flow direction for the choice setting operations. Set them for the Favorite set 1 and the Favorite set 2 respectively.	А
3 Weekly tin	ner	On timer and Off timer on weekly basis can be set. 8-operation patterns per day can be set at a maximum. The setting clock time can be set by 5 minutes interval. Holiday setting is available. The operation mode, set temperature and fan speed at starting operation can be set.	А
Home leav	ve mode ator password]	When leaving home for a long period like a vacation leave, the unit can be operated to maintain the room temperature not to be hotter in summer or not to be colder in winter. ■ The judgment to switch the operation mode (Cooling ⇔ Heating) is done by the both factors of the set temperature and outdoor air temperature. ■ The set temperature and fan speed can be set.	А
5 External V When the	entilation ventilator is combined.	On/Off operation of the external ventilator can be done. It is necessary to set from [Menu] ⇒ [Service setting] ⇒ [R/C function settings] ⇒ [Ventilation setting]. If the "Independent" is selected for the ventilation setting, the ventilator can be operated or stopped.	А

Operat	ion and setting fr	om remote control (continued)	
Setting & disp	olay item	Description	RC-EX
6 Select the	language	Select the language to display on the remote control. Select from English, German, French, Spanish, Italian, Dutch, Turkish, Portuguese, Russian, Polish, Japanese and Chinese.	Α
7 Silent mod	le control	The period of time to operate the unit by prioritizing the quietness can be set. Start and end can be set for the silent mode	А
1.Energy-savi	ng setting	Administrator password	
1 Sleep time		To prevent the timer from keeping ON, set hours to stop operation automatically with this timer. The selectable range of setting time is from 30 to 240 minutes. (10 minutes interval) When setting is "Enable", this timer will activate whenever the ON timer is set.	А
2 Peak-cut t	imer	Power consumption can be reduced by restricting the maximum capacity. Set the [Start time], the [End time] and the capacity limit % (Peak-cut %). 4-operation patterns per day can be set at maximum. The setting time can be changed by 5-minutes interval. The selectable range of capacity limit %(Peak-cut %) is from 0% to 40-80% (20% interval) Holiday setting is available.	А
3 Automatic	temp set back	After the elapse of the set time period, the current set temperature will be set back to the [Set back time.] The setting can be done in cooling and heating mode respectively. Selectable range of the set time is from 20 min. to 120 min. (10 min. interval). Set the [Set back temp.] by 1°C interval.	А
sensor is a	nsor control panel with the motion assembled.	When the motion sensor is used, it is necessary to set Enable or Disable for the "Power control" and the "Auto-off".	Α
5.Filter 1 Filter sign	Tiltor sign react	The filter cian and he was t	Λ.
reset		The filter sign can be reset.	A
3.User setting		The next cleaning date can be set.	A
1 Internal		The current date and time can be get ar revised	
settings	Clock setting	The current date and time can be set or revised. If a power failure continues no longer than 80 hours, the clock continues to tick by the built-in power source.	Α
	Date and time display	[Display] or [Hide] the date and/or time can be set, and [12H] or [24H] display can be set.	Α
	Summer time	When select [Enable], the +1hour adjustment of current time can be set. When select [Disable], the [Summer time] adjustment can be reset.	Α
	Contrast	The contrast of LCD can be adjusted higher or lower.	Α
	Backlight	Switching on/off a light can be set and period of the lighting time can be set within the range of 5 sec90 sec. (5 sec. interval).	Α
	Controller sound	It can set with or without [Control sound (beep sound)] at touch panel.	Α
	 	This is used to adjust the luminance of operation lamp.	Α
2 Administrator settings [Administrato password]	setting	 Permission/Prohibition setting of operation can be set. [On/Off] [Change set temp] [Change operation mode] [Change flap direction] [Change fan speed] [High power operation] [Energy-saving operation] [Timer] Request for administrator can be set. [Individual flap control] [Weekly timer] [Select the language] [Anti draft setting] 	А
	Outdoor unit silent mode timer	The period of time to operate the outdoor unit by prioritizing the quietness can be set. The [Start time] and the [End time] for operating outdoor unit in silent mode can be set. The period of the operation time can be set once a day by 5 minute intervals.	Α
	Setting temp range	The upper/lower limit of temperature setting range can be set. The limitation of indoor temperature setting range can be set for each operation mode in cooling and heating.	Α

	In the second	Description	RC-E
etting & disp		Description	serie
2 Administrator	Temp increment setting	The temperature increment setting can be changed by 0.5°C or 1.0°C.	Α
settings	Set temp display	Ways of displaying setting temperatures can be selected.	A
[Administrator password]	R/C display setting	Register [Room name] [Name of I/U] [Zone name] Display [Indoor temp display] or not. Display [Error code display] or not. Display [Heating stand-by display] [Defrost operation display] [Auto cooling/heating display] [Display temp of R/C, Room, Outdoor] or not	Α
	Change administrator	The administrator password can be changed. (Default	Α
	password	setting is "0000") The administrator password can be reset.	В
	F1/F2 function setting	Functions can be set for F1 and F2. Selectable functions: [Anti draft ON/OFF] [High power operation], [Energy-saving operation], [Silent mode cont.], [Home leave mode], [Favorite set 1], [Favorite set 2] and [Filter sign reset].	Α
Service settii	ng		
1 Installer settings [Service password]	Installation date	The [Installation date] can be registered. When registering the [Installation date], the [Next service date] is displayed automatically. (For changing the [Next service date], please refer the item of [Service & Maintenance])	В
	Company information	The [Company information] can be registered and can be displayed on the R/C. The [Company] can be registered within 26 characters. The [Phone No.] can be registered within 13 digits.	В
	Test run	On/Off operation of the test run can be done.	
	Cooling test run	The [Cooling test run] can be done at 5°C of set temperature for 30 minutes.	В
		Only drain pump can be operated.	
	Address setting of main IU	Main indoor unit address can be set. Only the main indoor unit can change operation mode and the sub indoor units dominated by the main indoor shall follow. The main indoor unit can domain 10 indoor units at a maximum.	В
	IU back-up function	When a pair of indoor units (2 groups) is connected to one unit of remote control, it can be set Enable or Disable for the [IU rotation], [IU capacity back-up] and [IU fault back-up]	В
	Motion sensor setting When the panel with the motion sensor is assembled.	Set Enable or Disable for the infrared sensor detectors of indoor units connected to the remote control. If Disable is selected, it cannot be control the motion sensor control for the energy-saving setting.	В
2 R/C function	Main/Sub R/C	The R/C setting of [Main/Sub] can be changed.	В
setting [Service password]	Return air temp	When two or more indoor units are connected to one unit of remote control, suction sensors, which are used for the judgement by thermostat, can be selected. It can be selected from [Individual], [Master IU] and [Average temp].	В
	R/C sensor	It can be set the mode to switch to the remote control sensor. It can be selected from cooling and heating.	В
	R/C sensor adjustment	The offset value of [R/C sensor] sensing temperature can be set respectively in heating and cooling.	В
	Operation mode	Enable or Disable can be set for each operation mode.	В
	°C / °F	Set the unit for setting temperatures. • °C or °F can be selected.	В
	Fan speed	Fan speeds can be selected.	В
	External input	When two or more indoor units are connected to one unit of remote control, the range to apply CNT inputs can be set.	В
	Ventilation setting	Combination control for ventilator can be set.	В
	Auto-restart	The operation control method after recovery of power failure happened during operation can be set. [Enable] or [Disable] of [Auto temp setting] can be selected.	B B
i	Auto temp setting		

Operati	on and setting fr	om remote control (continued)	
etting & disp	lay item	Description	RC-l
RILL settings	Fan speed setting	The fan speed for indoor units can be set.	В
)	Filter sign	The setting of filter sign display timer can be done from following patterns.	В
[Service	External input 1	The connect of control by external input 1 can be changed.	В
password]	External input 1 signal	The type of external input 1 signal can be changed.	В
	External input 2	The connect of control by external input 2 can be changed.	В
	External input 2 signal	The type of external input 2 signal can be changed.	В
	Heating thermo-OFF temp adjustment	The judgement temperature of heating thermo-off can be adjusted within the range from 0 to +3°C (1°C interval)	В
	Return temperature adjustment	The sensing temperature of return air temperature sensor built in the indoor unit can be adjusted within the range of ±2°C.	В
	Fan control in cooling thermo-OFF	Fan control, when the cooling thermostat is turned OFF, can be changed.	В
	Fan control in heating thermo-OFF	Fan control, when the heating thermostat is turned OFF, can be changed.	В
	Anti-frost temp	Judgment temperature for the anti-frost control during cooling can be changed.	В
	Anti-frost control	When the anti-frost control of indoor unit in cooling is activated, the fan speed can be changed.	В
	Keep fan operating after cooling is stopped	The time period residual fan operation after stopping or thermo-off in cooling mode can be set.	В
		The time period residual fan operation after stopping or thermo-off in heating mode can be set.	В
	Intermittent fan operation in heating	The fan operation rule following the residual fan operation after stopping or thermo-off in heating mode can be set.	В
		In case that the fan is operated as the circulator, the fan control rule can be set.	В
	. ,	When only the OA processing units are operated, control pressure value can be changed.	В
	Auto operation mode	The [Auto rule selection] for switching the operation mode automatically can be selected from 3 patterns.	В
	Thermo. rule setting	When selecting [Outdoor air temp. control], the judgment temperature can be offset by outdoor temperature.	В
		Auto switching range for the auto fan speed control can be set.	В
	IU overload alarm	If the difference between the setting temperature and the suction temperature becomes larger than the temperature difference set for the overload alarm, at 30 minutes after the start of operation, the overload alarm signal is transmitted from the external output (CNT-5).	В
	External output setting	Functions assigned to the external outputs 1 to 4 can be changed.	В
Service & Maintenance [Service	IU address	Max 16 indoor units can be connected to one remote control, and all address No. of the connected indoor units can be displayed. The indoor unit conforming to the address No. can be identified by selecting the address No. and tapping [Check] to operate the indoor fan.	В
password]	Next service date	The [Next service date] can be registered. The [Next service date] and [Company information] is displayed on the message screen.	ΑI
	Operation data	The [Operation data] for indoor unit and outdoor unit can be displayed.	В
	Error display		
	Error history	The error history can be displayed.	_
		The operation data just before the latest error stop can be displayed.	В
		Anomaly operation data can be erased.	
		The timer for the periodical check can be reset. The I/U settings memorized in the indoor PCB connected to the remote	
	Saving IU settings	control can be saved in the memory of the remote control. [Erase IU address] [CPU reset] [Restore of default setting]	В
	Special settings Indoor unit capacity	[Touch panel calibration] Address No. and capacities of indoor units connected to the	В
Contact com	display	remote control are displayed. Shows registered [Contact company] and [Contact phone].	В
Inspection	parry	onowa registereu [contact company] anu [contact phone].	
	on of Inspection	This is displayed when any error occurs.	Α
.PC connect		alopia, ouor. dily orior occasio.	, ,
USB conne		Weekly timer setting and etc., can be set from PC.	С
•		ng on the specifications of indoor and outdoor units which are co	mhin

1.9.3 Installation of wired remote control (Option parts)
(1) Model RC-EX3A

PJZ012A171 🛕

1) Safety precautions

Please read this manual carefully before starting installation work to install the unit properly. Every one of the followings is important information to be observed strictly.

≜ WARNING	Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.
∴ CAUTION	Failure to follow these instructions properly may cause injury or property damage.

It could have serious consequences depending on the circumstances.

The following pictograms are used in the text.



• Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

!WARNING

- Consult your dealer or a professional contractor to install the unit.

 Improper installation made on your own may cause electric shocks, fire or dropping of the unit.
- Installation work should be performed properly according to this installation manual.

Improper installation work may result in electric shocks, fire or break-down.

- Be sure to use accessories and specified parts for installation work.
 Use of unspecified parts may result in drop, fire or electric shocks.
- Install the unit properly to a place with sufficient strength to hold the weight.

If the place is not strong enough, the unit may drop and cause injury.

Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.

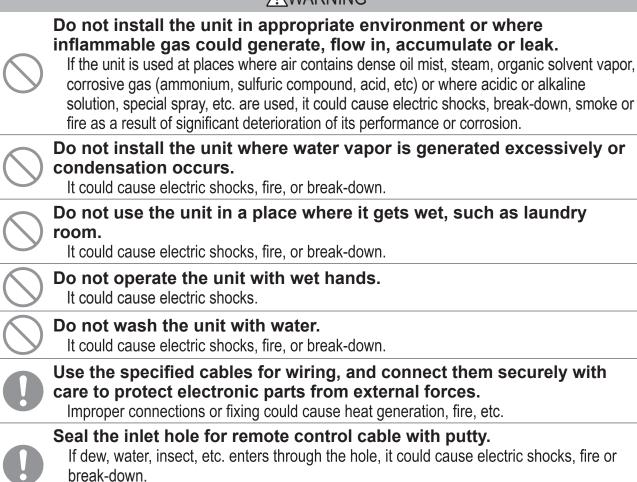
Power source with insufficient and improper work can cause electric shock and fire.

- Shut OFF the main power source before starting electrical work. Otherwise, it could result in electric shocks, break-down or malfunction.
- Do not modify the unit.

 It could cause electric shocks, fire, or break-down.
- Be sure to turn OFF the power circuit breaker before repairing/inspecting the unit.

 Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.

! WARNING



If dew or water enters the unit, it may cause screen display anomalies.

When installing the unit at a hospital, telecommunication facility, etc.,

take measures to suppress electric noises.

It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.

The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.

Do not leave the remote control with its upper case removed.

If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

ACAUTION

Do not install the remote control at following places.

- (1) It could cause break-down or deformation of remote control.
 - Where it is exposed to direct sunlight
 - Where the ambient temperature becomes 0 °C or below, or 40 °C or above
 - Where the surface is not flat
 - · Where the strength of installation area is insufficient
- (2) Moisture may be attached to internal parts of the remote control, resulting in a display failure.
 - Place with high humidity where condensation occurs on the remote control
 - Where the remote control gets wet
- (3) Accurate room temperature may not be detected using the temperature sensor of the remote control.
 - · Where the average room temperature cannot be detected
 - Place near the equipment to generate heat
 - Place affected by outside air in opening/closing the door
 - Place exposed to direct sunlight or wind from air-conditioner
 - Where the difference between wall and room temperature is large

To connect to a personal computer via USB, use the dedicated software.

Do not connect other USB devices and the remote control at the same time.

It could cause malfunction or break-down of the remote control/personal computer.

2) Accessories & prepare on site

Following parts are provided.

Accessories R/C main unit, wood screw (φ 3.5 x 16) 2 pcs., Quick reference

Following parts are arranged at site. Prepare them according to the respective installation procedures.

Item name	Q'ty	Remark
Switch box For 1 piece or 2 pieces (JIS C 8340 or equivalent)	1	
Thin wall steel pipe for electric appliance directly on a wall. (JIS C 8305 or equivalent)	As required	These are not required when installing directly on a wall.
Lock nut, bushing (JIS C 8330 or equivalent)	As required	
Lacing (JIS C 8425 or equivalent)	As required	Necessary to run R/C cable on the wall.
Putty	Suitably	For sealing gaps
Molly anchor	As required	
R/C cable (0.3 mm ² x 2 pcs.)	As required	See right table when longer than 100m

When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm². Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

≦ 200 m	0.5 mm ² x 2 cores
≦ 300m	0.75 mm ² x 2 cores
≦ 400m	1.25 mm ² x 2 cores
≦ 600m	2.0 mm ² x 2 cores

3) Installation place

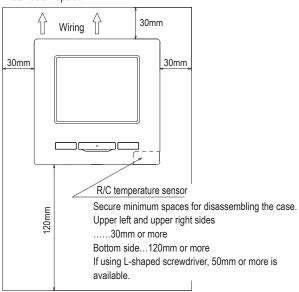
Secure the installation space shown in the figure.

For the installation method, "embedding wiring" or "exposing wiring" can be selected.

For the wiring direction, "Backward", "Upper center" or "Upper left" can be selected.

Determine the installation place in consideration of the installation method and wiring direction.

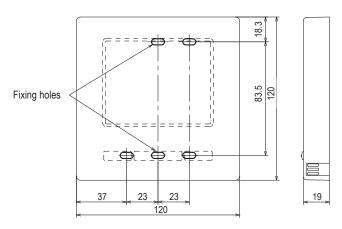
Installation space



4) Installation procedure

Perform installation and wiring work for the remote control according to the following procedure.

Dimensions (Viewed from front)



To disassemble the R/C case into the upper and lower pieces after assembling them once

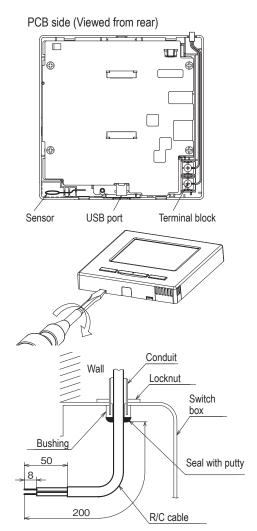
· Insert the tip of flat head screwdriver or the like in the recess at the lower part of R/C and twist it lightly to remove. It is recommended that the tip of the screwdriver be wrapped with tape to avoid damaging the case.

Take care to protect the removed upper case from moisture or dust.

In case of embedding wiring

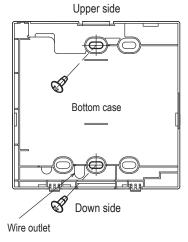
(When the wiring is retrieved "Backward")

① Embed the switch box and the R/C wires beforehand. Seal the inlet hole for the R/C wiring with putty.

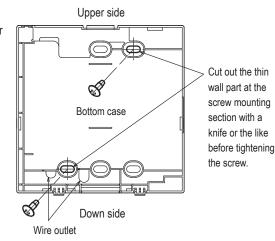


② When wires are passed through the bottom case, fix the bottom case at 2 places on the switch box.

Switch box for 1 pc.



Switch box for 2 pcs.

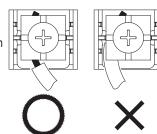


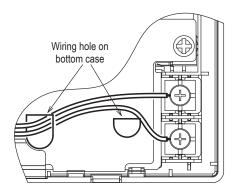
- ③ Connect wires from X and Y terminals of R/C to X and Y terminals of indoor unit. R/C wires (X, Y) have no polarity. Fix wires such that the wires will run around the terminal screws on the top case of R/C.
- 4 Install the upper case with care not to pinch wires of R/C.

Cautions for wire connection

Use wires of no larger than 0.5 mm² for wiring running through the remote control case. Take care not to pinch the sheath.

Tighten by hand $(0.7\ N\cdot m\ or\ less)$ the wire connection. If the wire is connected using an electric driver, it may cause failure or deformation.





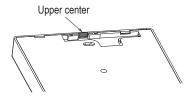
In case of exposing wiring

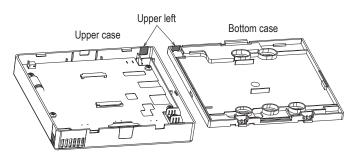
(When the wiring is taken out from the "upper center" or "upper left" of R/C)

1) Cut out the thin wall sections on the cases for the size of wire.

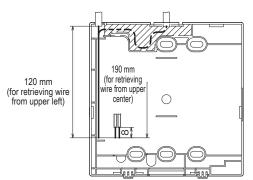
When taking the wiring out from the upper center, open a hole before separating the upper and bottom cases. This will reduce risk of damaging the PCB and facilitate subsequent work.

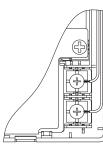
When taking the wiring out from the upper left, take care not to damage the PCB and not to leave any chips of cut thin wall inside.





- ② Fix the bottom R/C case on a flat surface with two wood screws.
- ③ In case of the upper center, pass the wiring behind the bottom case. (Hatched section)
- 4 Connect wires from X and Y terminals of R/C to X and Y terminals of indoor unit. R/C wires (X, Y) have no polarity. Fix wires such that the wires will run around the terminal screws on the top case of R/C.
- (5) Install the top case with care not to pinch wires of R/C.
- 6 Seal the area cut in 1 with putty.



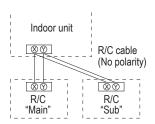


5) Main/Sub setting when more than one remote control are used

Up to two units of R/C can be used at the maximum for 1 indoor unit or 1 group.

One is main R/C and the other is sub R/C.

Operating range is different depending on the main or sub R/C.



R/C operation			Main	Sub
Run/Stop, Ch Change flap speed operat	nange set ter direction, Au ions	np., to swing, Change fan	0	0
High power of	peration, En	ergy-saving operation	0	0
Silent mode	control		0	×
Useful	Individual f	ap control	0	×
functions	Anti draft se	etting	0	×
	Timer		0	0
	Favorite se	tting	0	0
	Weekly tim	er	0	×
	Home leave	e mode	0	×
	External ve	ntilation	0	0
	Select the I	anguage	0	0
	Silent mode	e control	0	×
Energy-savin	g setting		0	×
Filter	Filter sign r	eset	0	0
User setting	Initial settin	gs	0	0
	Administrator settings	Permission/ Prohibition setting	0	×
		Outdoor unit silent mode timer	0	x
		Setting temp. range	0	×
		Temp increment setting	0	×
		Set temp. display	0	0
		R/C display setting	0	0
		Change administrator password	0	0
		F1/F2 function setting	0	0

			: operable ×: n	ot ope	erable
R/C operatio	ns			Main	Sub
Service	Installation	Installati	on date	0	×
setting	settings	Compan	y information	0	0
		Test run		0	×
		Static pr	essure adjustment	0	×
		Change	auto-address	0	×
		Address	setting of main IU	0	×
		IU back-	up function	0	×
		Motion s	ensor setting	0	×
	R/C function	Main/Su	b of R/C	0	0
	settings	Return a	ir temp.	0	×
		R/C sen		0	×
		R/C sen	sor adjustment	0	×
		Operation	n mode	0	×
		°C / °F		0	×
		Fan spe	ed	0	×
		External	input	0	×
		Upper/lo	wer flap control	0	×
		Left/righ	t flap control	0	×
		Ventilation	on setting	0	×
		Auto-res	tart	0	×
		Auto ten	np. setting	0	×
		Auto fan	speed	0	×
	IU settings			0	×
	Service &	IU addre	ess	0	0
	Maintenance	Next ser	vice date	0	×
		Operation	n data	0	×
			Error history	0	0
		display	Display/erase anomaly data	0	×
			Reset periodical check	0	0
		Saving I	U settings	0	×
		Special	Erase IU address	0	×
		settings	CPU reset	0	0
			Restore of default setting	0	×
			Touch panel calibration	0	0
		Indoor u	nit capacity display	0	×
	•				

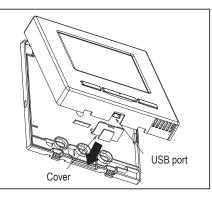
Advice: Connection to personal computer

It can be set from a personal computer via the USB port (mini-B). Connect after removing the cover for USB port of upper case.

Replace the cover after use.

Special software is necessary for the connection.

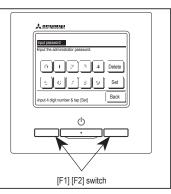
For details, view the web site.



Advice: Initializing of password

Administrator password (for daily setting items) and service password (for installation, test run and maintenance) are used.

- The administrator password at factory default is "0000". This setting can be changed (Refer to User's Manual).
 - If the administrator password is forgotten, it can be initialized by holding down the [F1] and [F2] switches together for five seconds on the administrator password input screen.
- Service password is "9999", which cannot be changed.
 When the administrator password is input, the service password is also accepted.



PJA012D730/B (2) Model RC-E5

Read together with indoor unit's installation manual.

MARNING

Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the

Loose connection or hold will cause abnormal heat generation or fire.

Make sure the power source is turned off when electric wiring work. Otherwise, electric shock, malfunction and improper running may occur.



⚠CAUTION

- Do not install the remote control at the following places in order to avoid malfunction.
 - (1) Places exposed to direct sunlight
- (4) Hot surface or cold surface enough to generate condensation
- (2) Places near heat devices
- (5) Places exposed to oil mist or steam directly
- (3) High humidity places
- (6) Uneven surface



Do not leave the remote control without the upper case.

In case the upper cace needs to be detached, protect the remote control with a packaging box or bag in



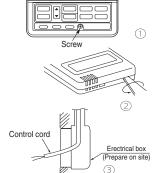
order to keep it away from water and dust. Remote control, wood screw (\$\phi\$ 3.5×16) 2 pieces

> Remote control cord (2 cores) the insulated thickness in 1mm or more. [In case of embedding cord] Erectrical box, M4 screw (2 pieces) [In case of exposing cord] Cord clamp (if needed)

Installation procedure

Accessories Prepare on site

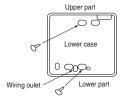
- Open the cover of remote control, and remove the screw under the buttons without fail.
- Remove the upper case of remote control. Insert a flat-blade screwdriver into the dented part of the upper part of the remote control, and wrench slightly.

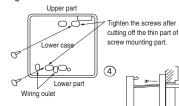


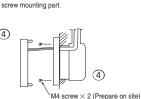
[In case of embedding cord]

3 Embed the erectrical box and remote control cord beforehand.

Prepare two M4 screws (recommended length is 12-16mm) on site, and install the lower case to erectrical box. Choose either of the following two positions in fixing it with screws.





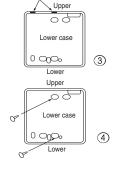


The thin part

- Connect the remote control cord to the terminal block. Connect the terminal of remote control (X,Y) with the terminal of indoor unit (X,Y). (X and Y are no polarity)
- Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.

[In case of exposing cord]

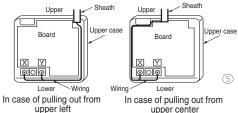
- You can pull out the remote control cord from left upper part or center upper part. Cut off the upper thin part of remote control lower case with a nipper or knife, and grind burrs with a file etc.
- ④ Install the lower case to the flat wall with attached two wooden screws.



Onnect the remote control cord to the terminal block.

Connect the terminal of remote control (X,Y) with the terminal of indoor unit (X,Y). (X and Y are no polarity)

Wiring route is as shown in the right diagram depending on the pulling out direction.



The wiring inside the remote control case should be within 0.3mm² (recommended) to 0.5mm². The sheath should be peeled off inside the remote control case.

The peeling-off length of each wire is as below.

Pulling out from upper left	Pulling out from upper center
X wiring: 215mm	X wiring: 170mm
Y wiring: 195mm	Y wiring: 190mm



- Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.
- In case of exposing cord, fix the cord on the wall with cord clamp so as not to slack.

Installation and wiring of remote control

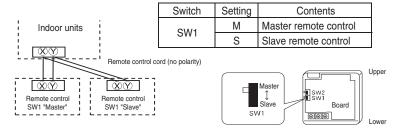
- ① Wiring of remote control should use 0.3mm² × 2 cores wires or cables. (on-site configuration)
- 2 Maximum prolongation of remote control wiring is 600 m.

If the prolongation is over 100m, change to the size below.

But, wiring in the remote control case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

Master/ slave setting when more than one remote controls are used

A maximum of two remote controls can be connected to one indoor unit (or one group of indoor units.)



Set SW1 to "Slave" for the slave remote control. It was factory set to "Master" for shipment.

Note: The setting "Remote control sensor enabled" is only selectable with the master remote control in the position where you want to check room temperature.

The air-conditioner operation follows the last operation of the remote control regardless of the master/ slave setting of it.

The indication when power source is supplied

When power source is turned on, the following is displayed on the remote control until the communication between the remote control and indoor unit settled.

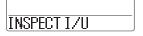
At the same time, a mark or a number will be displayed for two seconds first.

This is the software's administration number of the remote control, not an error cord.



When remote control cannot communicate with the indoor unit for half an hour, the below indication will appear.

Check wiring of the indoor unit and the outdoor unit etc.



The range of temperature setting

When shipped, the range of set temperature differs depending on the operation mode as below.

Heating: 16-30°C (55-86°F)

Except heating (cooling, fan, dry, automatic): 18-30°C (62-86°F)

●Upper limit and lower limit of set temperature can be changed with remote control.

Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30°C (68 to 86°F). Lower limit setting: valid except heating (automatic, cooling, fan, dry) Possible to set in the range of 18 to 26°C (62 to 79°F).

When you set upper and lower limit by this function, control as below.

 When @TEMP RANGE SET, remote control function of function setting mode is "INDN CHANGE" (factory setting), [If upper limit value is set]

During heating, you cannot set the value exceeding the upper limit.

[If lower limit value is set]

During operation mode except heating, you cannot set the value below the lower limit.

2. When ② TEMP RANGE SET, remote control function of function setting mode is "NO INDN CHANGE" [If upper limit value is set]

During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

[If lower limit value is set]

During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

How to set upper and lower limit value

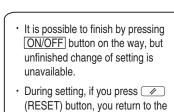
1. Stop the air-conditioner, and press (SET) and (MODE) button at the same time for over three seconds .

The indication changes to "FUNCTION SET ▼".

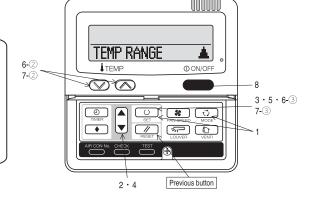
- 2. Press ▼ button once, and change to the "TEMP RANGE ▲ " indication.
- 3. Press (SET) button, and enter the temperature range setting mode.
- 4. Select "UPPER LIMIT \blacktriangledown " or "LOWER LIMIT \blacktriangle " by using $\boxed{\blacktriangle}$ $\boxed{\blacktriangledown}$ button.
- 5. Press (SET) button to fix.
- 6. When "UPPER LIMIT ▼" is selected (valid during heating)
 - ① Indication: " $\bigcirc \lor \land$ SET UP" \rightarrow "UPPER 30°C \lor "

 - ③ Press ◯ (SET) button to fix. Indication example: "UPPER 26°C" (Displayed for two seconds)

 After the fixed upper limit value displayed for two seconds, the indication will return to "UPPER LIMIT ▼".
- 7. When "LOWER LIMIT ▲" is selected (valid during cooling, dry, fan, automatic)
 - ① Indication: " \bigcirc $\lor \land$ SET UP" \rightarrow "LOWER 18°C \land "
 - ② Select the lower limit value with temperature setting button ☑ △. Indication example: "LOWER 24°C ∨ ∧" (blinking)
 - ③ Press (SET) button to fix. Indication for example: "LOWER 24°C" (Displayed for two seconds)
 After the fixed lower limit value displayed for two seconds, the indication will return to "LOWER LIMIT ▼".
- 8. Press ON/OFF button to finish.



previous screen.



The functional setting

The initial fortion setting for typical using is performed automatically by the indoor unit connected, when remote control and indoor unit are connected.

As long as they are used in a typical manner, there will be no need to change the initial settings.

If you would like to change the initial setting marked "O", set your desired setting as for the selected item.

The procedure of functional setting is shown as the following diagram.

[Flow of function setting] Record and keep the setting Consult the technical data etc. for each control details Stop air-conditioner and press

Stop air-conditioner and press

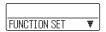
(MODE) buttons at the same time for over three seconds

Note 1: The initial setting marked * % " is decided by connected indoor and outdoor unit, and is automatically defined as following table. Function No.
Remote control function02
Remote control function02
Remote control function06
Remote control function07
Remote control function13 | International Content of the Conte ndoor and outdoor unit, and is automatically defined as f Model
"Auto-RIN" mode selectable indoor unit. Indoor unit without "Auto-RIN" mode Indoor unit without "Auto-RIN" mode Indoor unit with two or three step of air flow setting Indoor unit with automatically swing lower Indoor unit without automatically swing lower Indoor unit with three step of air flow setting Indoor unit with three step of air flow setting Indoor unit with two step of air flow setting Indoor unit with two step of air flow setting Item AUTO RUN SET Indoor unit with only one of air flow setting

			FUNCTION SET 🔻			
				No. are indicated only who	en	Note2: Fan setting of "HIGH SPEED"
(Remote control fu	inction)		(Indoor unit function) I/U FUNCTION ▲ plural indo		on .	Indoor unit air flow setting
	,		, ,,	Function		Fall tap \$4.00 - \$4.01 - \$4.01 \$4.00 - \$4.01 \$4.00 - \$4.01 \$4.00 - \$4.01 \$4.00 - \$4.01 \$4.00 - \$4.01
Function To 1 T-500 ESP SET	setting		1/U000 A 1/U001 \$	02 FAN SPEED SET	setting Standard	FAN STANDARD UH-Hi-Me-Lo Hi-Me-Lo Hi-Lo Hi-M
OT LOMBIER OF T		TO	Validate setting of ESP:External Static Pressure 170002≠		HIGH SPEED 1 X	SPEED HIGH III III III III III III III III II
	.6⊠ØESP WALID		Invalidate setting of ESP I/U003 ≑		HIGH SPEED 2	SPEED1, 2 On on on on one on one on one
02 AUTO RUN SET	AUTO RUN ON	1*	1/0004 \$	03 FILTER SIGN SET	INDICATION OFF	Initial function setting of some indoor unit is "HIGH SPEED".
	AUTO RUN OFF	- ×	Automatical operation is impossible		TYPE 1 O	The filter sign is indicated after running for 180 hours.
03 M⊠ TEMP SW	LASTORIA VALID	10	To set other indoor unit, press		TYPE 2 TYPE 3	The filter sign is indicated after running for 600 hours. The filter sign is indicated after running for 1000 hours.
	SMM AND SMM INVALID	1~	Temperature setting button is not working AIR CON No. button, which		TYPE 4	The filter sign is indicated after running for 1000 hours, then the indoor unit will be stopped by
04 EE MODE SW	LA- FSC HALTD	10	allows you to go back to the indoor	r O4 ⇒, POSITION		compulsion after 24 hours.
	는데 VALID 는데 INVALID	+	unit selection screen Mode button is not working (for example: I/I 1000 Å.)	04 >,- PUSTITUN	7	If you change the indoor function "04 > POSITION", you must change the remote control function "14 > POSITION" accordingly.
05 ① ON/OFF SW		10	Mode button is not working (for example: I/U 000 ▲).		4POSITION STOP O	You can select the louver stop position in the four.
	⊕⊕ VALID ⊕⊕ INVALID	+0	On/Off button is not working	OS TEXTERNAL INPUT	FREE STOP	The louver can stop at any position.
06 EE FAN SPEED SW			TOTIVOTI BULLOTTIS TION WORKING	03 Tentener ne or	LEVEL INPUT	
	송종 VALID 송종 INVALID	*	For any of the Mary to and sound the s	OE [describedancessonschape]	PULSE INPUT	
07 SEE LOUVER SW		- 2%	Fan speed button is not working	OP Income construction	INVALID O	
	SE⊒ VALID SE⊒ INVALID	×		am Introduction	VALID	Permission/prohibition control of operation will be valid.
08 1 TIMER SW	(OEZI INVALID	*	Louver button is not working	07 EMERGENCY STOP	INVALID O	
00 1 22 11111101	ଚ୍ଚା VALID ଚ୍ଚା INVALID	0		1	VALID	With the VRF series, it is used to stop all indoor units connected with the same outdoor unit imme
09 I ⊞SENSOR SET	[⊕@INVALID		Timer button is not working	1		When stop signal is inputed from remote on-off terminal "CNT-6", all indoor units are stopped imm
NS LEGITION OF L	SENSOR OFF	ТО	Remote thermistor is not working.	1		
	SENSOR ON	\blacksquare	Remote thermistor is working. Remote thermistor is working, and to be set for producing +3.0°C increase in temperature.	1	OFFSET +3.0%	To be reset for producing +3.0°C increase in temperature during heating.
	■SENSOR +3.0% ■SENSOR +2.0%	+	Remote thermistor is working, and to be set for producing +2.0°C increase in temperature.	08 I ₩ SP OFFSET	OFFSET +2.0% OFFSET +1.0%	To be reset for producing +2.0°C increase in temperature during heating. To be reset for producing +1.0°C increase in temperature during heating.
	■SENSOR +1.0°c		Remote thermistor is working, and to be set for producing +1.0°C increase in temperature.		NO OFFSET	
	■SENSOR -1.0% ■SENSOR -2.0%	+	Remote thermistor is working, and to be set for producing -1.0°C increase in temperature. Remote thermistor is working, and to be set for producing -2.0°C increase in temperature.		OFFSET +2.0%	To be reset producing +2.0°C increase in return air temperature of indoor unit.
	■SENSOR -3.0%		Remote thermistor is working, and to be set for producing -3.0°C increase in temperature.		OFFSET +1.5%	To be reset producing +2.0 C increase in return air temperature of indoor unit. To be reset producing +1.5 C increase in return air temperature of indoor unit.
10 AUTO RESTART	Tallial ID	10		09 RETURN AIR TEMP	OFFSET + 1.0%	To be reset producing +1.0°C increase in return air temperature of indoor unit.
	INVALID VALID	0			NO OFFSET O	To be reset producing -1.0°C increase in return air temperature of indoor unit.
11 VENT LINK SET					OFFSET - 1.5%	To be reset producing -1.5°C increase in return air temperature of indoor unit.
	NO VENT	10	In case of Single split series, by connecting ventilation device to CNT of the	10 TX: FAN CONTROL	OFFSET -2.0%	To be reset producing -2.0°C increase in return air temperature of indoor unit.
	VENT LINK		indoor printed circuit board (in case of VRF series, by connecting it to CND of the	IQ Jak Hill Gold Hole J	LOW FAIN SPEED 🔘	When heating thermostat is OFF, fan speed is low speed.
	VERT LINK		indoor printed circuit board), the operation of ventilation device is linked with the operation of indoor unit.		SET FAN SPEED	When heating thermostat is OFF, fan speed is set speed.
		+	In case of Single split series, by connecting ventilation device to CNT of the indoor printed		INTERMITTENCE	When heating thermostat is OFF, fan speed is operated intermittently.
	NO VENT LINK		circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit		FAN OFF	When heating thermostat is OFF, the fan is stopped. When the remote thermistor is working, "FAN OFF" is set automatically.
12 TEMP RANGE SET			board), you can operate /stop the ventilation device independently by (VENT) button.			Do not set "FAN OFF" when the indoor unit's thermistor is working.
12 100	INDN CHANGE	Τo	If you change the range of set temperature, the indication of set temperature			
	NO INDN CHANGE	Ť	will vary following the control.	11 FROST PREVENTION TEMP	TEMP HIGH	Change of indoor heat exchanger temperature to start frost prevention control.
	IND THUS OFFICE		If you change the range of set temperature, the indication of set temperature will not vary following the control, and keep the set temperature.		TEMP LOW	
13 I/U FAN	THT-MID-LD	T w	Air flow of fan becomes the three speed of & all - & a	10 Eggs pgsysurrau cauras		Minuting only with the Cinels only social
	HI-LO	- X	Air flow of fan becomes the two speed of *ant - *ar1.	- IC Innot incommon continut	FAN CONTROL ON	Working only with the Single split series. To control frost prevention, the indoor fan tap is raised.
	HI-MID 1 FAN SPEED	-	Air flow of fan becomes the two speed of *ant - *ant .	13 [DRAIN PUMP LINK]	FAN CONTROL OFF	
	I LAW SLAFFA	*	Air flow of fan is fixed at one speed.	13 JUNAIN PURPLINK	20 0	Drain pump is run during cooling and dry.
14 零户POSITION	_		If you change the remote control function "14 5 POSITION",	1	\$ 6 AND⊗	Drain pump is run during cooling, dry and heating.
	4POSITION STOP	10	you must change the indoor function "04 =>= POSITION" accordingly. You can select the louver stop position in the four.	1	© Ó AND X AND RE S Ó AND RE	Drain pump is run during cooling, dry, heating and fan. Drain pump is run during cooling, dry and fan.
	FREE STOP	Ľ	The louver can stop at any position.	14 S FAN REMAINING		
15 MODEL TYPE	HEAT PUMP	1 *	1		NO REMAINING O.5 HOUR	After cooling is stopped is OFF, the fan does not perform extra operation. After cooling is stopped is OFF, the fan perform extra operation for half an hour.
	COOLING ONLY	- X	1	1	1 HOUR	After cooling is stopped is OFF, the fan perform extra operation for an hour.
16 EXTERNAL CONTROL SET		_	Manual and a local late Out of the later and also the later and a	AE DE CHI DOMONICO	6 HOUR	After cooling is stopped is OFF, the fan perform extra operation for six hours.
	INDIVIDUAL	0	If you input signal into CnT of the indoor printed circuit board from external, the indoor unit will be operated independently according to the input from external.	15 × FAN REMAINING	NO REMAINING O	After heating is stopped or heating thermostat is OFF, the fan does not perform extra operation.
	FOR ALL UNITS		If you input into CNT of the indoor printed circuit board from external, all units which		0.5 HOUR	After heating is stopped or heating thermostat is OFF, the fan perform extra operation for half an I
17 ROON TEMP INDICATION SET			connect to the same remote control are operated according to the input from external.	1	2 HOUR 6 HOUR	After heating is stopped or heating thermostat is OFF, the fan perform extra operation for two hour After heating is stopped or heating thermostat is OFF, the fan perform extra operation for six hour
T Jacon Las Instantian City	INDICATION OFF	0		16 X: FAN INTERMITTENCE		nater reasing to ecopped or reasing memorata is OFF, the rain perform extra operation for six flour
	INDICATION ON		In normal working indication, indoor unit temperature is indicated instead of air flow		NO REMAINING O	During heating is stopped or heating thermostat is OFF, the fan perform intermittent operation for
18 XMSINDICATION			(Only the master remote control can be indicated.)		zominOFF sminON	with low fan speed after twenty minutes' OFF.
	INDICATION ON INDICATION OFF	0	l	1	sminOFF sminON	During heating is stopped or heating thermostat is OFF, the fan perform intermittent operation for
	ETWOTCHTTON OH:		Heating preparation indication should not be indicated.	17 PRESSURE CONTROL		with low fan speed after five minutes' OFF.
19 ℃/% SET	18	To	Temperature indication is by degree C.	1.5 IT NEODONE CONTINUE	STANDARD	
19 C/ F 3E1					TYPE1 *	Connected "OA Processing" type indoor unit, and is automatically defined.
IN C/ FAEI	*F	Ĭ			III X	Connected "OA Processing" type indoor unit, and is automatically defined.
[] C/ Faci	*F	ľ	Temperature indication is by degree F.		iirei *	Connected 'OA Processing type indoor unit, and is automatically defined.

How to set function

Stop air-conditioner and press (SET) (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼" will be displayed.

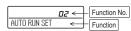


- 2. Press (SET) button.
- Make sure which do you want to set, "☐ FUNCTION ▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function)
- 4. Press ▲ or ▼ button. Selecct "■ FUNCTION ▼" (remote control function) or "I/U FUNCTION A" (indoor unit function).

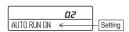


5. Press O (SET) button.

- 6. [On the occasion of remote control function selection]
 - ① "DATA LOADING" (Indication with blinking) Display is changed to "01 ₺₩₩ ESP SET".
 - ② Press ▲ or ▼ button. "No. and function" are indicated by turns on the remote control function table, then you can select from them. (For example)



③ Press (SET) button. The current setting of selected function is indicated. (for example) "AUTO RUN ON" \leftarrow If "02 AUTO RUN SET" is selected



④ Press ▲ or ▼ button. Select the setting.



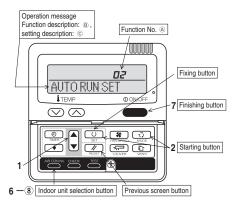
⑤ Press ◯ (SET)

"SET COMPLETE" will be indicated, and the setting will be completed.

Then after "No. and function" indication returns, Set as the same procedure if you want to set continuously ,and if to finish, go to 7.



7. Press ON/OFF button. Setting is finished.



[On the occasion of indoor unit function selection]

① "DATA LOADING" (Blinking for 2 to 23 seconds to read the data) Indication is changed to "02 FAN SPEED SET". Go to ②.

[Note]

(1) If plural indoor units are connected to a remote control, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.

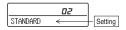


- (2) Press ▲ or ▼ button. Select the number of the indoor unit you are to set If you select "ALL UNIT ▼", you can set the same setting with
- (3) Press (SET) button.
- ② Press ▲ or ▼ button.

"No. and function" are indicated by turns on the indoor unit function table, then you can select from them. (For example)



③ Press O (SET) button.
The current setting of selected function is indicated. (For example) "STANDARD" ← If "02 FAN SPEED SET" is



- ④ Press ▲ or ▼ button. Select the setting
- S Press (SET) button.
 "SET COMPLETE" will be indicated, and the setting will be completed.

Then after "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7.



When plural indoor units are connected to a remote control, press the AIR CON No. button, which allows you to go back to the indoor unit selection screen. (example "I/U 000 \(\bigsize \)")

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is
- During setting, if you press (//)(RESET) button, you return to the previous screen.
- Setting is memorized in the control and it is saved independently of power failure.

[How to check the current setting]

When you select from "No. and funcion" and press set button by the previous operation, the "Setting" displayed first is the current setting.

(But, if you select "ALL UNIT ▼ ", the setting of the lowest number indoor unit is displayed.)

1.9.4 Installation of outdoor unit

(1) Model FDC71VNX-W

@ PSC012D127A

Inverter driven split PAC 71VNX-W

Designed for R32 refrigerant

Check before installation work

Model name and power source

Refrigerant piping length

Piping, wiring and miscellaneous small parts

Indoor unit installation manual

Institution with the recarding are divided into AWARNING and ACAUTION. The matters with possibilities leading to serious consequences such as death or serious personal injury or damage of the unit due to erroneous handling including including probability leading to serious consequences in some cases are listed in ACAUTION. These are very important precautions for safety. Be sure to observe all of them without fail. The meaning of "Marks" used here are as shown below.

•We recommend you to read this "SAFETY PRECAUTIONS" carefully before the installation work in order to gain full advantage of the functions of the unit and to avoid malfunction due to mishandling.

SAFETY PRECAUTIONS

When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces.

○This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to the page 42.

Never do it under any circumstance.

0

Always do it according to the instruction

●Units of single phase power source are equipment complying with IEC61000-3-12.
●Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual. ●Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new

WARNING \leq Tighten the flare nut by using double spanners and torque wrench according to prescribed method. Be sure not to tighten the flare nut too much. Installation must be carried out by the qualified installer.
 If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system

damage on the flare part by tightening with excess torque can cause burst or refrigerant leaks which open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test ompressor is operated in state of opening service valves before completed connection of refrigerant piping work, you trost tile or highy from an afrupt refrigerant outlieve and air can be sucked into refrigerant circuit, which can cause personal righty due to anomaticsly fight pressure in the refrigerant. Loose nare connection or da may result in lack of oxygen.

• Only use prescribed optional parts. The installation must be carried out by the qualified installer. If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.

 Be sure to switch off the power source in the event of installation, inspection or servicing.
 If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan. Do not perform any change of protective device itself or its setup condition.
 The force operation by short-circulting protective device of pressure switch and temperature control or the use of non specified component causer if or burst.

Stop the compressor before closing valve and disconnecting refrigerant pipes in case of pump down operation.
If dsconnecting refrigerant pipes in state of opening service valves before compressor stopping, you may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked, which can cause burst or personal injury due to anomalously high pressure in the refrigerant circuit. ● Consult the dealer or an expert regarding removal of the unit. Incorrect installation can cause water leaks, electric shocks or fire.

Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid joiling out of alignment, be sure by many up the unit 44-point support.
 An improper manner of profage such as 5-point support can cause death or serious personal injury due to faithing of the unit.

hot surface, poisonous gas is produced.

Use the original accessories and the specified components for installation.
 I pass both than those prescribed by its are used, it may cause fall of the unit, water leaks, electric shocks, lire, retrigerant leak, substanad performance, court failure and personal injury.

Install the system in full accordance with the instruction manual.
 Incorrect installation may cause bursts, personal injury, water leaks, elements.

revention measures. If the density of refrigerant exceeds the limit in the event of leakage, lack of oxygen can occur, which

 Ventilate the working area well in the event of refrigerant leakage during installation.
 If the refrigerant comes into contact with naked flames, poisonous gas is produced. ■ After completed installation, check that no refrigerant leaks from the system. If refrigerant leaks into the room and comes into contact with an oven or other hot su

● When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage accordance with ISO5149.

 This unit is designed specifically for R32.
 Using any other refrigerant can cause unit failure and personal injury. If disconnecting retrigerant pipes in state of opening service val injury from an abrupt refrigerant outflow and air can be sucked, high pressure in the refrigerant circuit.

Be sure to wear protective goggles and gloves while at work.

and "national

The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" withing paquation, and the system must be connected to the dedicated infortal.
 Power source with insufficient feached and incorrect function done by improger work can cause electric shocks and fire.

• Install the unit in a location with good support.
Unsultable of stableton locations can cause the unit to fall and cause material damage and personal injury.
Unsultable of installation locations are made last it can withte tand eart quakes and strong winds.

• Except the unit is subset when installed, so that it can withte tand eart quakes and strong winds.

Unsultable installation locations can cause the unit to fall and cause material damage and personal injury.

Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.
 Unconformable cables can cause electric leak, anomablus heat production or fire.

Be sure to shut off the power before starting electrical work.
 Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.

Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.
 If air enter in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.

Do not run the unit with removed panels or protections
 Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric

Be sure to fix up the service panels.
 Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water

 Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair.
 If you repair or modify the unit, it can cause water leaks, electric shocks or fire. Do not process or splice the power cord, or share the socket with other power plugs.

This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc. Do not bundle or wind or process the power cord. Do not deform the power cord by treading it.
 This may cause fire or heating. Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent
overloading the terminal business can cause anomalous heat production or fire. serious accidents due to burst of the refrigerant circuit Arrange the wiring in the control box so that it cannot be pushed up further into the box, install the service panel correctly, incorrect installation may result in overheating and fire. Use the prescribed pipes, flare nuts and tools for R32 and R410A.
 Using existing parts (for R22 or R407C) can cause the unit failure and: ● Do not perform brazing work in the airtight room It can cause lack of oxygen.

- 66 -

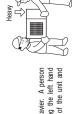
Notabilia as a unit designed for K410A			Dedicated R32 and R
■ Dn not use any refringerant orther than R32 R32 will rise to pressure about 1.6 times higher than that of a conventional refringerant R32 or R407€)	a)	Gaug	Gauge manifold
A cylinder containing RSD has a light light light of the top.	(q	Char	Charge hose
• A unit designed for R32 has adopted a different size indoor unit service valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake.	(5)	Elect) Electronic scale for refrige
The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been attered to raise strength against pressure. Accordingly, you are required to	(p	Torqu	Torque wrench
arrange dedicated RS2 tools listed in the table on the right before installing or servicing this unit.	(e)	Flare tool	tool
De de notes a charge cylinder. The use of a charge cylinder will cause the refrigerant composition to change, which results in performance degradation. Description of the composition of the com	(Protr	Protrusion control copper
■ In classical analysis and a control of the contr	g)	Vacu	Vacuum pump adapter
OFFICION.	h)	Gas	Gas leak detector

ronic scale for refrigerant charging

usion control copper pipe gauge

Dedicated R32 and R410A tools

HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.) The right hand side of the unit as viewed from the front (diffuser side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must had with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section. 2) Portage When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.



1) Delivery

△CAUTION

Deliver the unit as close as possible to the installation site before removing it from the packaging.
 When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes lifting it.

Wooden pallet

Notabilia as a unit designed for R410A

of installation location for the outdoor unit 3) Selection

5) Installation space

Walls surrounding the unit in the four sides are not acceptable.
 There must be a 1-meter of larger space in the above.
 There must be a 1-meter of larger space in the above.
 When more than one unit are installed side by side, provide a 250mm or wider interval between them as a service space.
 Order to facilitate servicing of controls, please provide a sufficient space between units so that their bp plates can be order to facilitate servicing of controls, please provide a sufficient space between units so that their bp plates can be

⊑

removed easily.

Where a danger of short-circuiting exists, install guide louvers.

Where a danger of short-circuiting exists, install guide louvers.

When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.

Where pling save and bury the outdoor unit, provide proper snow guards.

Ab barrier wall placed in front of the exhaust diffriser must not be higher than the unit.

Be sure to select a suitable installation place in consideration of following conditions.

A place where it is prictized, stalled and can endure the unit weight and will not allow wibration transmittance of the unit.

A place where it can be free from possibility to obthering neighbors due to noise or exhaust air from the unit.

A place where the unit is not expressed to oli splashes.

A place where the unit will not be effected by heat radiation from other heat source.

A place where the unit will not be affected by heat radiation from other heat source.

A place where the unit will not be affected by heat radiation from other heat source.

A place where the unit will not be sexured and enough sevice space can be sound from the radiation and the sound and enough sevice space can be sound from the sound and enough sevice space can be sound and sevice of the unit stelly.

A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

O place where the unit in places which exposed to a be breeze (e.g., coastal area) or calcium chloride (e.g., snow melting agent), exposed to ammonia substance (e.g., organic fertilizer).

4) Caution about selection of installation location

(1) If the unit is installed in the area where the snow will accumulate, following measures are required. The bottom plate of unit and intake, outlet may be blocked by snow.

Install the unit on the base so that the bottom is higher than snow cover surface.

2. Provide a snow hood to the outdoor unit on site. Regarding outline of a snow hood, refer to our technical manual.

② Notabilia for installation

500 Open 100 250 Open 250 150

300 100 250

7 2 2

71

Example installation

Size

Fasten

3. Install the unit under eaves or provide the roof on site.

∏, Intake

Anchor bolt fixed position

6) Installation

 Don't execute drain piping work by using a drain elbow and drain grommets (optional parts). [Refer to DRAIN PIPING WORK.]
 Recommend setting Defrost Control (SW3-1) and Snow Guard Fan Control (SW3-2). [Refer to Setting SW3-1, SW3-2.] water generated by defrost control may freeze, following measures are required.

Attach heater on a base plate on site, if there is possibility to freeze drain water.
 Traces that they proud has a conceptly drainage system, the drainage paths should have suitable measure against freezing but be sure in order the material of drainage paths with heat.

Use a thicker block to anchor deeper.

Use a long block to extend the width.

① Outlet

Anchor bolt position

(2) if the unit can be affected by strong wind, following measures are required. Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure. 3.The unit should be installed on the stable and level foundation. If the foundation is not level, te down the unit with wires. 2.install the outlet air blow side of the unit in a position perpendicular to the direction of wind.

1.Install the outlet air blow side of the unit to face a wall of building, or provide a fence or a windbreak screen.



Wind direction

7) To run the unit for a cooling operation, when the outdoor temperature

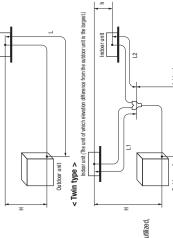
is -5°C or lower.

In installing the unit, fix the unit's legs with bolts specified on the above.
 The protuction of an anchor both on the front side must be kept within 16 and.
 Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
 Before to that above illustrations for information regarding ourcette foundations.
 In the above illustration and a gradient of 5 mm or less.)
 Intropoper installation can result in a compressor failure, broken piping within the unit and abnormal robes generation.

When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site. So that strong wind
will not blow against the outdoor heat exchanger directly. Regarding outline of a snow hood, refer to our technical manual.

< Single type >





(riser) Outdoor unit

> L1-L2 I _

M210m ≥30m **≤**15m ≥0.5m

When the outdoor unit is positioned higher,

One-way pipe length difference from the first branching point to the indoor unit

Elevation difference between indoor and outdoor units

When the outdoor unit is positioned lower,

I

2. REFRIGERANT PIPING WORK

Wind direction

Over 500 mm

Restrictions on unit installation and use

 Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation Check the following points in light of the indoor unit specifications and the installation site.

1+11+12 Twin type Marks appearting in the drawing 1, 12 Single type Dimensional limitations ≥50m ≥20m ≥50m Descriptions One-way pipe length after the first branching point One-way pipe length of refrigerant piping Main pipe length

○CAUTION

Elevation difference between indoor units

The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized,
different one-way pipe length restrictions should apply depending on its pipe size. For more information, please see "6. UTILZATION OF EXISTING PIPING."

2) Determination of pipe size

Determine refrigerant pipe size pursuant to the following guidelines based on the indoor unit specifications.

		Model 71V	II 71V
		Gas pipe	Liquid pipe
	b comment of the	φ15.88	$\phi_{9.52}$
מתמססותי		Flare	Flare
Refrigerant pig	Refrigerant piping (Main pipe L)	φ15.88	φ9.52
on the second section of the second section se	Indoor unit connectied	φ15.88	φ9.52
in the case a single type	Capacity of indoor unit	Mode	Model 71V
	Branching pipe set	-SIQ	DIS-WA1
4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Refrigerant piping (branch pipe L1,L2)	φ12.7	φ9.52
III ule case a twill type	Indoor unit connectied	φ12.7	$\phi 6.35$
	Capacity of indoor unit	Model	Model 40V ×2

Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clogging. Primary side Station valve Brazing must be performed under a nitrogen gas flow. Plug the end of the pipe with tape, or other material, and fill the pipe with nitrogen gas. Only use nitrogen <N2> About brazing Taping перотій

•When the 40V model is connected as an indoor unit, always use a ¢9.52 liquid pipe for the branch (branching pipe – indoor unit) and a different diameter joint supplied with the branching pipe set for connection with the indoor unit (¢6.35 on the indiud pipe set).

A fact 355 pipe is used for connection with a branching pipe, a refrigerant distribution disorder may occur, causing one of the indoor units to fall short of the rated capacity.

A face pipe must be a part of the main. A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.

A branching part must be dressed with a heat-installation material supplied as an accessory.

For the details of installation work required at and near a branching area, see the installation manual supplied with your branching pipe set. **○ CAUTION**

3) Refrigerant pipe wall thickness and material

Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

0-type pipe | 0-type pipe | 0-type pipe | 0-type pipe 15.88 12.7 **DD11111111** 9.52 0.8 6.35 Take care so that installed pipes may not touch components within a unit.
 If touching with an internal component, it will generate abnormal sounds and/or vibrations. Pipe diameter [mm]
Minimum pipe wall thickness [mm]
Pipe material* ● Flare connection is used between the unit and refrigerant pipe. Flare a pipe after engaging a flare nut not it. Hare dimensions for R52 are different from those for conventional R22 and R407C. Although we recommend the use of flaring tools designed specifically for R32, conventional flaring tools can also be used by adjusting the measurement of profusion B with a profusion control gauge.
■ The pipe should be anchored every 1.5m or less to isolate the vibration.
■ Tighten at flare joint securely with a double spanner. Carry out the on site piping work with the service valve fully closed.
 Give sufficient protection to a pipe end (compressed and blazed, or with an adhesive tape) so that water or foreign menters may not enter the piping.
 Elend a pipe to a radius as large as practical (R100 –R150) Do not bend a pipe repeatedly to correct Please remove the screw of a side cover and remove to the front.

How to remove the side cover

its form.

4) On-site piping work **∴ IMPORTANT**

*Phosphorus deoxidized seamless copper pipe C1220T, JIS H3300 NOTE

Select pipes having a wall thickness larger than the specified minimum pipe thickness.

Flared pipe end: A (mm) A 0.4

Copper pipe protrusion for flaring: B (mm) Copper pipe outer diameter φ15.88 Copper pipe outer diameter φ6.35 φ9.52 φ12.7 φ15.88 φ6.35 φ9.52 φ12.7

With a conventional tool

With an R32 tool

In the case of a rigid (clutch) type

0.7 - 1.3

0 - 0.5

Use a torque wrench. If a torque wrench is not available, fasten the flare nut manually first and then tighten it further, using the left table as a guide.

ot hold the valve cap area with a spanner. Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque. Do not apply refrigerating machine oil to the flared surface. It can cause refrigerant leakage. ngth

CAUTION

 \triangleleft

Do not apply force beyond proper fastening torque in tightening the flare nut.

0	Recommended len of a tool handle (mm)	150	200	
	Tightening angle (°)	45 - 60	30 – 45	.,
	Tightening torque (°)	14 – 18	34 - 42	
0	Service valve size (mm)	φ6.35 (1/4")	φ9.52 (3/8")	110777

		200	NO N		
or a tool nandle (mm)	150	200	250	300	
()	45 – 60	30 – 45	30 – 45	15 - 20	
(M-N)	14 – 18	34 – 42	49 – 61	68 – 82	
(mm)	5 (1/4")	(3/8")	.7 (1/2")	.88(5/8")	

5) Air tightness test

(1) Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the service

- valve's check joint equipped on the outdoor unit side. While conducting a test, keep the service valve shut all the time.

 A Plass the pressure to 0.5 Mar, and then stop. Lave it for five minutes to see if the pressure drops.

 b) Then raise the pressure to 1.5 Mar, and stop, Lave it for five minutes to see if the pressure drops.

 c) Then raise the pressure to 1.5 Mar, and stop, Lave it for five more minutes to see if the pressure drops.

 c) If no pressure of the specified level (4.15 MPa), and record the ambient temperature and the pressure.

 c) If no pressure of the specified level (4.15 MPa), and record the ambient temperature and the pressure.

 fall approximately 0.0 MPa. The pressure if changed, should be compensated for.

 fall approximately 0.0 MPa. The pressure if changed, should be compensated for.

 e) If a pressure drop is observed in checking e) and a) 0, a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair,
- © In conducting an air-tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances. conduct an air-tightness test again.

ndoor unit Outdoor unit Close

Pay attention to the following points in addition to the above for the R32 and compatible machines.

Airtighteness test completed

To prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a

Vacuuming completed

Run the vacuum pump for at least one hour after the vacuum gauge shows -101kPa or lower. (-755mmHg or lower)

When the system has remaining moisture inside or a leaky point, the vacuum gauge Check the system for a leaky point and then

6) Evacuation <Work flow> Confirm that the vacuum gauge indicator does not rise even if the system is left for one hour or more.

gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).

Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.

Vacuum gauge check Fill refrigerant

Additional refrigerant charge

draw air to create a vacuum again

indicator will rise.

 Calculate a required refrigerant charge volume from the following table. Item | Additional charge volume (kg) | Befricerant volume

acity	per meter of refrigerant piping (liquid pipe)	charged for shipment at the factory (kg)	covered without additional refrigerant charge	
Model 71V	0.054	2.75	30	

● This unit contains factory charged refrigerant covering 30m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 30m refrigerant piping. When refrigerant piping exceeds 30m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 30m.

● If an existing pipe system is used, a required refrigerant charge volume will vary depending on the liquid pipe size. For further information, please see "6. UTILIZATION OF EXISTING PIPING."

Formula to calculate the volume of additional refrigerant required

Additional charge volume (kg) = { Main pipe length (m) - Length covered without additional charge 30 (m) } x 0.054 (kg/m) + Total length of branch pipes (m) x 0.054 (kg/m)

"When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant

additionally.

(2) Charging refrigerant

Since R32 refrigerant must be charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
A charge refrigerant aways from the liquid phase shorte by the sarvice both with the sarvice both with the sarvice both with the sarvice both with the sarvice poth with the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is the cooling mode in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is the cooling the cooling may be cooling that the cooling t

NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the back side of the service panel

8) Heating and condensation prevention

- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc. Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.

- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.

(2) Use a heat insulating material that can withstand 120°C or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.

- All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.

Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).

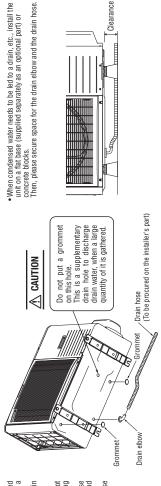
Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with

Although it is verified in a test that this air conditioning unit shows satisfactory performance under JIS condensation test conditions, both gas and liquid pipes need to be dressed with 20 mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.

3. DRAIN PIPING WORK

• Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a

- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate cauking material.
 Condensed water may flow out from vicinity of service valve or connected pipes.
 Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and frain grommets. (There is a risk of drain water freezing inside and blocking the drain.)
 Do not use drain elbow and grommet made of plastic for drain piping when base heater for outdoor unit is used. Plastic grommet and elbow will be damaged and burnt in worst case.
 Prepare another drain tray made of metallic material for collecting drain when base heate is used.



Clearance

For details of electrical cabling, refer to the indoor unit installation manual **ELECTRICAL WIRING WORK**

Bectrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country.

• Bectrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.

• Do not use any supply cord lighter than one specified in parentheses for each type below.

- braided cord (code designation) 602-45 IEC 51.

ordinary tough rubber sheathed cord (code designation 60245 IEC 53)
 flat twin tinsel cord (code designation 60227 IEC 41);

The first was anything lighter than polychloopene sheather flexible cond (code designation 60245 IEC57) for supply cords of parts of appliances for outdoor use.

•Council be anything lighter than polychloopene sheather flexible cond (code designation 60245 IEC57) for supply cords of parts of appliances for outdoor use.

•Council be unit to brack connecting the power table.

•A grounding wire must be connected before connecting the power rable.

•The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accordant such as an electric shock or a fire.

•Do not turn on the power until the electrical work is completeted.

•Do not turn on the power until the electrical work is completeted.

overheat accident)

-for power supply cables, use conduits.
 -for power supply cables (renote control and signaling wires) and other cables together outside the unit. Laying them together can result in the adminishing or a failure of the unit due to electric noises.

•Featen cables so that may not touch the piping, etc.

•When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely, (Improper cover attachment can result in mafunctioning or a failure of the unit, if water penetrates into the box.)

•Aways use at three-core cable for an indoor-outdoor connecting cable. Never use a shalled cable.

Power cable, indoor-outdoor connecting wires

- Always perform grounding system installation work with the power cord unplugged.
 Commercy a pair bearing a common ferminal number with an indoor-outdoor connecting wire.
 e) in cabing, fasten cables securely with cable alamps so that no external force may work on terminal connections.
 Grounding terminals are provided in the control box.

CAUTION Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation



Pe wire thickne X X number	φ1.6mm x	
Grounding wire thickness	φ1.6mm	
Cable length (m)	17	
MAX. over current (A)		
Power cable thickness (mm²)	3.5	
Power source	Single phase 3 wire 220-240V 50Hz 220V 60Hz	
Model 71V		

• The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instruction unit.

• Switchgar or circuit breaker capacity which is calculated from MAX, over current should be chosen along the regulations in each country.

(a) Power source cable. Use the cable which is conformed with 60245 IEC57. When selecting the power source cable length, make sure that voltage drop is less than 2% if the wire length gets longer, increase the wire diameter.

(b) Indoor-Outdoor connecting wires, Use the wires with its conformed with 60245 IEC57.

Op not connect to the grounding wire from another unit, but install a dedicated wire up to the grounding wire from Fasten cables and protect the terminal connections from In cabling, fasten cables securely with cable clamps so that no external force may work on Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire. It is attached on the back side of the service panel. SSA564A117 Shield cable Power source, signal line and ground terminal block Specification 4-core cable 250V 20A the distribution board. Main fuse specification Grounding terminal external force. Grounding terminals are provided in the control box. Wiring diagram Wiring clamp Model 717 Rat cable terminal connections. P Cabtyre cable

Ill set to 0FF for shipment

※1 Do not operate SW3-3, SW5-1, SW5-2, SW7, SW8-2, SW8-3.
※2 Refer to TECHNICAL MANUAL about SW9. (Pump down SW)

5. TEST RUN

∯ WARNING

A failure to observe these instructions can result in a compressor breakdown.

Before conduct a test run, make sure that the service valves are open.
 Iffun on power 6 hours prior to a test run to energize the creatk case heart.
 Without this operation, refrigerant may accumulate in the compressor and earth teakage breaker may be activated.
 In case of the first operation after tuming on power, even if the unit does not move for 30 minutes, it is not a breakdown.
 Awarsa give a 2-minute or longer interval before you start the unit again wherever it is stopped.
 Removing the service parel will expose high-voltage live parts and high-temperature parts, which are quite dangerous. Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

CAUTION
 CAUTION

When you operate switches for on-site setting, be careful not to touch a live part.
 You cannot check discharge pressure from the liquid service valve charge port.
 The A-way valve (20.5) is emegized during a healing operation.
 When power source is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off.
 If this procedure is not observed in turning on power again, "E-5" (Communication error) may occur.

• An insulation resistance value may drop to several M ohms immediately after installation or when the unit is left for a long time without power, because refrigerant is gathered in the compressor. When the earth-leakage breaker is actualed due to low insulation About insulation resistance

(1) Check whether a normal insulation resistance value is restored about 6 hours after power is turned. Turning on power will energize the compressor and heat it to evaporate refrigerant gathered in it.

Chisch whether the earth-leadage breaker is a farmanic resistant type.

This unit is equipped with an inverter and therefore, the use of a harmonic resistant type earth-leadage breaker is necessary to prevent a false actuation. resistance, please check the following:

1) Test run method

Please remove a side cover.

Check

Check item

When you leave the outdoor unit with power supplied to it, be sure to close the panel.

Items to check before a test run

Item

Item No.used in the installation manual

Cooling during a test run Heating during a test run

SW-5-3 SW-5-4 N 出 OFF -

N

Normal or After the test operation

(1) A test run can be initiated from an outdoor unit by using SW5-3 and SW6-4 for on-site setting.

SW5-3 and SW6-4 to on-site setting operation; when SW5-4 is OFF.

C) Switching SW6-3 and SW6-4 is OFF.

(3) The unit will start a cooling operation, when SW5-4 is OF.

 $\frac{1}{8}$ in case of the first operation after turning on the power source, when the unit runs in the cooling mode at outside temperature $\frac{1}{8}$ °C or lower, it automatically changes into the cooling mode after it runs in the heating mode for 10 minutes. (4) Do not fail to switch SW5-3 to OFF when a test run is completed.

2) Checking the state of the unit in operation

Please remove a service panel.

Use check joints provided on the piping before and after the churway valve installed inside the outdoor unit for checking discharge pressure and suction pressure. As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or healthing operation has been selected.

Setting SW3-1, SW3-2, SW3-4, on-site.

Please remove a service panel.

Charge port of the gas service valve (High pressure) Suction pressure (Low pressure) Check joint of the pipe Discharge pressure (High pressure) Suction pressure Heating operation Cooling operation

Electric

Test run procedure The contents of operation Indoor unit ᄪ (6) (1) Defrost control switching (SW3-1) When this switch is turned ON, the unit will run in the defrost mode more frequently. Set this switch to ON, when installed in a region where outdoor temperature falls below zero during the season the unit is run for a heating operation. (2) Show guard an acronfol (SM3-2) When this switch is turned on, the outdoor unit fan will run for 30 seconds in every 10 minutes, when outdoor temperature falls to 3°C or lower and the compressor is not running.

Check

Switches for on-site setting Power source, signal line and SW5
SW6
SW8
SW8
SW8 Û≷ pround terminal block 123 1234 Switches for on-site setting All set to OFF for shipment ₹****

Check whether the service valves are open.
 If an error has been canceled when 3 minutes have elapsed since a compressor stop, you can restart the unit by effecting Check Reset from the rende control unit.

vice valves shut

Low pressure error or operation with service (occurs mainly during a cooling operation)

63H1 actuation or operation with service valves shut (occurs mainly during a heating operation)

Blinking continuously Blinking continuously Blinking continuously

Open phase

Blinking once Blinking once Blinking once

E34 E40 E49

Failure event

When the unit is used in a very snowy country, set this switch to ON.
 Uower noise silent mode (SW3-4).
 Uower noise silent mode (SW3-4).

Failure diagnosis in a test run

Primted circuit board LED (The cycles of 5 seconds)

Green LED

Red LED

Error indicated on the remote control unit

Check power cables for loose contact or disconnection

The state of the electronic expansion valve.

If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

The following table illustrates the steady states of the electronic expansion valve.

		When the unit come	es to a normal stop	When the unit comes	to an abnormal stop
	wiell powel is tulled oil	During a cooling operation	During a heating operation	During a cooling operation	During a heating operation
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position
Valve for a heating operation	Full open position	Full open position	Complete shut position	Full open position	Full open position

This outdoor unit may start in the standby mode (waiting for a compressor startup), which can continue up to 30 minutes, to prevent the oil level in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure. 6) Heed the following on the first operation after turning on the circuit breaker.

6. UTILIZATION OF EXISTING PIPINGCheck whether an existing pipe system is reusable or not by using the following flow chart

<table of="" pipe="" restrictions="" size=""> ©:Sandard pipe size O:Usabe △:Restricted to shorter pipe length limits Cool ‡ : Cooling capacity drop</table>	0.11kg/m	φ12.7	φ15.88	◁	25	15	The pipe length should be at least 5m. If the pipe length is shorter than 5m, the quantity of refrigerant needs to be	reduced. Please consult with our distributor in the area, if you need to recover refrigerant and charge it again.				 Any combinations of pipe sizes not listed in 	the tableare not usable.				e reusable.>	In case of replacement of used branching pipes, please use our genuine branching pipes.			Additional charge volume (kg) = {Main pipe length (m) - Length covered without additional charge shown in the table (m) ×	Additional charge volume per meter of pipe shown in the table ($4g/m$). Total length of branch pipes (m) \times Additional charge volume per meter of pipe shown in the table ($4g/m$)	eds to be charged.	Example) When an 71V (single installation) is installed in a 30m long existing pipe system (liquid ϕ 12.7, gas ϕ 15.88), the quantity of refrigerant to charge additionally should be $(30m-25m) \times 0.11 kg/m = 0.55 kg$.	ion.>	13.
limits Cool ↓ :	0.054kg/m	φ9.52	Ф15.88	0	50	30	s shorter tha	you need to r	r daggie.			0.054kg/m	φ9.52	φ15.88		0	ng pipes an	se our genu			angth covered	nal charge von ditional charge	Il refrigerant ne	g existing pipe (30m-25m) x (oling operat	utor in the are
ır pipe length	0.0	φ9.52	φ12.7	C00l †	35	30	ipe length i	the area, if				0.05	Ď	φ12.7		0	h branchir	s, please u		am	15	es (m) × Adr	i, no additiona	in a 30m lon ally should be	n for a cod tem.	ıct our distrib
:tions> △:Restricted to shorte	er meter of pipe	Liquid pipe	Gas pipe	Usability	Maximum one-way pipe length	ength covered without additional charge	t least 5m. If the p	reduced. Please consult with our distributor in the area, if you need		anchina pipe>		efrigerant per 1 m	Liquid pipe	Gas pipe	Combination of capacity	40+40	<the are="" branching="" existing="" model="" of="" pipes="" reusable.="" types="" units="" which=""></the>	sed branching pipe		Formula to calculate additional charge volume	(kg) = {Main pipe ler	al length of branch pip	# If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged	When an 71V (single installation) is installed in a 30m long existing pipe system (liquid ϕ 12. the quantity of refrigerant to charge additionally should be (30m-25m) x 0.11kg/m = 0.55 kg.	«Where the existing unit cannot be run for a cooling operation.» Wash the pipe system or install a new pipe system.	If you choose to wash the pipe system, contact our distributor in the area.
<table of="" pipe="" restrictions="" size=""> ©:Standard pipe size O:Usable △:Restric</table>	Additional charge volume per meter of pipe	Tidi	Ga	n	Maximum one	Length covered with	length should be a	Please consult with	ping of pipe of	<pipe after="" branching="" pipe="" system="" the=""></pipe>	O:Standard pipe size O:Usable	Additional charging amount of refrigerant per 1m	Liqu	Gas	Combination type	Twin	del types of exist	replacement of us		o calculate additi	ditional charge volume	Tota	ain a negative figure a	When an 71V (single the quantity of refrige	re the existing u	you choose to wash t
< Table of ○:Standard	Additi	orio orid	2716 2di J		710		The pipe	reduced.		<pipe svs<="" td=""><td>:Standard</td><td>Additions</td><td></td><td>Pipe size</td><td>Model</td><td>717</td><td><the mo<="" td=""><td>In case of</td><td></td><td>Formula</td><td>Ado</td><td></td><td>% If you obt</td><td>Example)</td><td><whe wast</whe </td><td>•</td></the></td></pipe>	:Standard	Additions		Pipe size	Model	717	<the mo<="" td=""><td>In case of</td><td></td><td>Formula</td><td>Ado</td><td></td><td>% If you obt</td><td>Example)</td><td><whe wast</whe </td><td>•</td></the>	In case of		Formula	Ado		% If you obt	Example)	<whe wast</whe 	•
START START In the model was control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and an advanced for two control and advanced for two control a		NO Which of the following refrigeration oils	does the costing unit use? Suniso, MS, Barrel Freeze, HAB, Freol, for reusability.	egit not	euse satisfy all of the following?	() The pipe implies 3M or five the leader of pipe size restrictions. (2) The pipe size conformant to the leader of pipe size restrictions. (3) The pipe implies the pipe size restrictions.		When the outdoor until is below. I fain or less service with the word afform to call the call of the c	is the unit to install in the westing pipe system a YES Change the branching pipe to a specified type. Change is impossible.	Change	free of corrosion, flaws or dents? Repair	- Magar	(Prick Ambig put) gas dear not have not on the site. Impossible. (Prick Ambig put) gas dear not not be site. Impossible.	(ayanni toroxi) NO 4- Milghtness is OV Renorme is	Are there any branch pipes with no indoor unit competed? Remove those branches.	NO NO	Are hear in suiton materials of the existing plose system to reuse Requir the dramaged parts. Free plant insulation is accessed to both as and full plose). Free plant insulation is exercised to both as and full plose).	JOSEPH ON THE PROPERTY OF THE	Aren't there any bose pipe supports? Repair the damaged parts.	No kose pipe supports Some koose pipe supports Registr	The existing pipe system is reusable. The existing pipe system is not reusable. Install a new pipe system.	Where the existing unit can be run for a cooling operation >				 ◆ For the flare nut, do not use the old one, but use the one supplied with the outdoor unit. Process a flare to the dimensions specified for R32. ◆ Turn on-site setting switch \$W8-1 to the ON position. (Where the gas pipe size is ♦ 19.05)

(2) Models FDC100-140VNX-W, 100-140VSX-W

PSC012D143C €

Inverter driven split PAC 100, 125, 140 VNX-W 100, 125, 140 VSX-W Designed for R32 refrigerant

This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 42.

When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces

SAFETY PRECAUTIONS

- We recommend you to read this "SAFETY PRECAUTIONS" carefully before the installation work in order to gain full advantage of the functions of the unit and to avoid malfunction due to mishandling.

 The precautions described below are divided into

 WARNING | MARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | WARNING | W
- The meaning of "Marks" used here are as shown below.

Never do it under any circumstance.

- For 3 phase power source outdoor unit, EN61000-3-2 is not applicable if consent by the utility company or nortification to the utility company is given before usage.

 3 phase power source unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a house-hold appliance it could cause electromagnetic interference.

 In case of 125VMX and 140VMX, equipment complying with IEC 61000-3-12.

 Be sure 125VMX and 140VMX, equipment commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

 Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user

Check before installation work

- Model name and power source
- Refrigerant piping length
 Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

\triangle	WARNING
Installation must be carried out by the qualified installer. If you install the system by yourself, if may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system maillunction.	Tighten the flare nut by using double spanners and torque wrench according to prescribed method. Be sure not tighten the flare nut too much. Loose flare connection or damage on the flare part by tightening with excess torque can cause burst or refrigerant leaks with the contract of the contract
 Install the system in full accordance with the instruction manual. Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire. 	may result in lack of oxygen. Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness in the complete of the compl
• Use the original accessories and the specified components for installation. If parts other than those prescribed by us are used, it may cause fail of the unit, water leaks, electric shocks, fire, refrigerant leak, substandard performance, orthol failure and personal injury.	and evacuation. If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked into refrigerant circuit, which can ca burst or personal injury due to annonatowsh high oressure in the refriserant in
• When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage accordance with ISO5149. Consult the expert about prevention measures. If the density of refrigerant exceeds the limit in the event of leakage, lack of oxygen can occur, which	Only use prescribed option parts. The installation must be carried out by the qualified installer. If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
can cause serious accidents. • Ventilate the working area well in the event of refrigerant leakage during installation. If the refrigerant comes into contact with naked flames, poisonous ass is produced.	Do not perform any change of protective device itself or its setup condition The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of specified component can cause fire or burst.
After completed installation, check that no refrigerant leaks from the system. If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.	Be sure to switch off the power source in the event of installation, inspection or servicing. If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of
• Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid joiting out of alignment, be sure to hang up the unit at 4-point support. An improper manner of portage such as 3-point support can cause death or serious personal injury due to falling of the unit	Consult the dealer or an expert regarding removal of the unit. Incorrect installation can cause water leaks, electric shocks or fire.
An improper manner or portage such as 2-point support can cause orean or serious personal injury que to railing or the unit Install the unit in a location with good support. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.	Stop the compressor before closing valve and disconnecting refrigerant pipes in case of pump down operation. If disconnecting refrigerant pipes in state of opening service valves belone compressor stopping, you may incur frost bit injury from an abrupt refrigerant outflow and air can be sucked, which can cause burst or personal injury due to anomalo high onessure in the refrigorant circuit.
Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.	Be sure to wear protective goggles and gloves while at work.
■ The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. Power source with insufficient capacity and incorrect infunction done by immorrory work can cause electric shocks and fire.	 This unit is designed specifically for R32. Using any other refrigerant can cause unit failure and personal injury.
Power source with insumbent capaciny and incorrect function done by improper work can cause electric shocks and life, Be sure to shut off the power before starting electrical work. Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.	Ensure that no air enters in the refrigerant circuit when the unit is installed and removed. If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst personal injury.
 Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work. Unconformable cables can cause electric leak, anomalous heat production or fire. 	Do not run the unit with removed panels or protections Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or ele
Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks. Lose connections or cable mountings can cause anomalous heat production or fire.	shocks. Be sure to fix up the service panels. Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water.
• Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly. Incorrect installation may result in overheating and fire.	Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair. If you repair or modify the unit, it can cause water leaks, electric shocks or fire.
Do not perform brazing work in the airtight room It can cause lack of oxygen.	Do not process or splice the power cord, or share the socket with other power plugs. This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.
 Use the prescribed pipes, flare nuts and tools for R32 and R410A. Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit. 	 Do not bundle or wind or process the power cord. Do not deform the power cord by treading it. This may cause fire or heating.

Carry out the electrical work for ground lead with care Do not connect the ground lead to the pas line, water line, lightning conductor or beighnore line's ground lead. Incornect grounding can cause unit tauths such as electric shocke the short charge liver level connect the ground lead to the pass line, water level, epichore line's ground lead. Incornect grounding can cause unit tauths such as electric shocke the short level liver level connected liver level. Using the scorned crait treasure for all pole with connect capacity. Using the scorned crait treasure, for cause the unit mutuation and fine. Install inclutor or disconnect switch on the power source wiring in accordance with the local codes and regulations. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with ENEXOTO. The locality should be locked in accordance with the locality should be locked in accordance with the locality should be locked in accordance with the locality should be locked in accordance with the locality should be locality should be locked in accordance with the locality should be locality and locality. Pay streamform and the ground should be locality in accordance with the locality should be locality should be locality should be locality should be locality should be locality should be locality should be locality should be locality should b ⚠ **CAUTION** Do not use the base flame for outdoor unit which is corroded or damaged due to long peri Using an old and damage base flame can cause the unit falling down and cause personal injury. Do not use the base finame for outdoor unit which is corrected or damaged due to long periods of operation. Using an old and damage base finame cances the unit filling loom and cause preserval injury. Do not install the unit in the locations listed below Locations where cannot files, mails beyonder any provider is frosting. Locations where cannot files, mails beyonder any provider is frosting. Locations where comment or special signs, and other units and signs and installed the control of the 4 0 It can cause remarkative decreases in performance, consison and samage of components, maturaction and tre. © Do not install the unidous unit in this outdoors listed below. -Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood. -Locations where discharged hot air or the post count blows directly but an airmal or plants. The outfiel air can affect adversely to the plant etc. -Locations where vehandors and operation sound generated by the outdoor unit can effect seriously (on the wall or at the place near bed room) -Locations where vehandors and operation sound generated by the outdoor unit can effect seriously (on the wall or at the place near bed room) -Locations where an explainent affected by this harmonics is placed. (If V set or radio receiver is placed within 5m) -Locations where deninge cannot run off safely. 0 Do not use the unit for special purport it can cause the damage of the items. Do not touch any buttons with wet hands. It can cause electric shocks. Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury. During operation the retrigerant pipes become entermary not or entermary. Or Do not clean up the unit with water. It can cause electric shoots. Do not cleans the outdoor unit with any article placed on it. You may incur properly durings no personal injure from a fail of the article. Do not despon the outdoor unit. You may incur piperly from a drop or fail. Do not despon the seutdoor unit. This may cause injury. Instifficient space can result in accident such as personal playy due to failing from the institution place. When the outdoor with institution or not or high place, provise personance tolders and hundrals and personal and reaces and hundrals around the exideor unit. I safely facilities are not provided, it can cause personal injury due to failing from the institution place. Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics. Equipment such as inverties, districtly generates, medical high frequency equipments and telecommunication equipments can effect the system, and cause malfurctions and treadours. The system can also affect medical equipment and telecommunication equipment, and obtained its function or cause jamming. Do not install the outdoor writ in a location where insects and small animals can install. In location and small animals can enter the electric parts and cause demage or fire. Instruct the user to keep the surroundings clean.

Notabilia as a unit designed for R32

- Do not use any refrigerant other than R32. R32 will rise to pressure about 1.6 times higher than that of a conventional refrigerant (R22 or R407C).
- A cylinder containing R32 has a flight blue indication mark on the top:

 A cylinder containing R32 has a flight blue indication mark on the top:

 A unit designed for R32 has adopted a different size indoor unit service valve charge port and a different size indoor unit service valve charge port and a different size indoor unit service valve charge port and a different size indoor unit service valve charge port and a different size indoor unit service valve charge port and a different size indoor unit service valve charge port and a different size indoor unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedical R32 tools listed in the table on the right before installing or servicing this unit.

 All indoor units must be models designed exclusively for R32. Obeck connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

	Dedicated R32 and R410A tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector
	b) c) d) e) f)

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

ACAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position.

1) Delivery 1) Delivery

Deliver the unit as close as possible to the installation site before removing it from the packaging.

When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes iffining it. 3) Selection of installation location for the outdoor unit) Selection of installation location for the outdoor unit

wooden patient

Be sure to select a suitable installation place in consideration of following conditions.

A place where it is horizontal, stable and can endure the unit weight and will not allow whention transmittance of the unit.

A place where it can be fee from possibility of bethering neighbors due to noise or exhaust air from the unit.

A place where it can be fee from changer of flammable gas leakage.

A place where it can be fee from danger of flammable gas leakage.

A place where the unit will not be alfected by heat radiation from other heat source.

A place where the unit will not be alfected by heat radiation from other heat source.

A place where the unit will not be alfected by heat radiation from other heat source.

A place where pod air circulation can be secret, and emoly service space and be second for maintenance and service of the unit safely.

A place where chemical substances like sulfure cape, clindre gas, and and alkel (including ammonis), which can harm the unit, will not be generated and not remain.

A place where chemical substance like sulfure cape, clindre gas, and and alkel (including ammonis), which can harm the unit, will not be generated and not remain.

Do not install the unit in places which exposed to sea threeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

4) Caution about selection of installation location

- (1) If the unit is installed in the area where the snow will accumulate, fi The bottom plate of unit and intake, outlet may be blocked by snow.







- Since drain water generated by defrost control may freeze, following measures are required.

 Don't execute drain pinion work by using a drain elbow and drain grommets (optional parts), [lefer to DRAN PIPMG WORK.]

 Recommend setting befored Cortol's (SW-3 and Stowe Guard Fan Cortol's (SW-3 II), Effer to Setting SW3-1, SW3-2.]

 Atlach heater on a base plate on site, if there is possibility to freeze drain water.

 In case that the product has a corrective drainage yeakers, the drainage paths with heat.

 2) If the unit can be affected by strong wind, following measures are required.

 Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

 Install the outlet air blow side of the unit to face a wall or building, or drain in a position perpendicular or provide a fence or a windbreak screen.

 In the control of the control of wind.

 Wind direction







2) Portage

• The right hand side of the unit as viewed from the front (diffuser side) is heavier, carrying the right hand side must take heed of this fact. A person carrying the left must hold with his right hand the handle provided on the front panel of the unit and whand the corner column section.

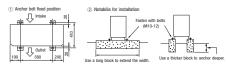


5) Installation space





6) Installation



- In installing the unit, fix the unit's legs with boits specified on the left.

 The profusion of an anchor boit on the front side must be kept within 15mm.

 Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.

 Refer to the left illustrations for information regarding concrete foundations.

 Install the unit in a level area. (With a gradient of 5mm or less.)

 Improper installation can result in a compressor failure, thorean piping within the unit and abnormal noise generation.

< Single type >

< Twin type :

7) To run the unit for a cooling operation, when the outdoor temperature is -5°C or lower.

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

stallation can result in a compressor failure or performance degradation

					Installation type		
Resitrictions	Model for outdoor units	Dimensional restrictions	Single type	Twin type	Triple type A	Triple type B	
	100VNX,125VNX,100VSX,125VSX	3m ≦		L+L1	-	-	
One-way pipe length	140/NX, 140/SX	≤ 100m (3)	L	L+L2	L+L1+L2+L3	L+L1+L2+L3	
	100/NX,125VNX,100VSX,125VSX	≤ 100m (3)			-	-	
Main pipe length	140VNX, 140VSX	≥ 100m (3)	-	L .	L	L	
One-way pipe length between the first branch from to the second branch	140VNX, 140VSX	≦ 5m	-	-	-	La	
One-way pipe length after the first branch	100VNX,125VNX,100VSX,125VSX			L1.L2	_	_	
une-way pipe length after the first branch	140VNX, 140VSX	≤ 30m	-	LI,LZ	L1, L2, L3	L1 (1)	
One-way pipe length from the first branch to indoor units through the second branch	140/NX, 140/SX	≤ 27m	-	-	-	La+L2, La+L3 (1)	
	100VNX,125VNX,100VSX,125VSX	≤ 10m			-		
One-way pipe length difference from the first branch to the indoor unit	*******	≤ 3m	-	IL1-L2I	L1-L2 , L2-L3 , L3-L1	1 -	
SO SIL SIGNOS SIIN	140VNX, 140VSX	≤ 10m	1		-	L1-(La+L2),L1-(La+L3) (1)	
One way pipe length difference from the second branch to the indoor unit	140/NX, 140/SX	≤ 10m	-	-	-	L2-L3	
Elevation difference between indoor and outdoor units	Outdoor unit is positioned higher,	≤ 50m (2)					
	Outdoor unit is positioned lower,	≤ 15m	H	н	Н	н	
Elevation difference between indoor units		≤ 0.5m	_	h	h1.h2.h3	h1.h2.h3	

△CAUTION

- The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size. For more information, see *6. URILIZATION OF EXISTING PIPMIC.*

 With the trip pipe connection, the way of use is different when the difference of one-way pipe length after the first branching point is 3m to 10m. For details, refer to the above table and right figure.

 Neep the pipe length difference between L1 and (a + L2) or ((a + L3) within 10m. Report one-way pipe.

 (2) When the undoor unit is softed at a position higher than the indoor or more, set SMS-2 on the control PCB to 0N.

 (3) Maximum piping length is limited up to 85m for SRKSO triple type combination, and 85m for FDESO triple type and FDEBO, FDE71 twin type.

2) Determination of nine size

		Mode	100V	Model	125V	Mo	W 140V
		Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
		φ15.88	d9.52	ø15.88	φ9.52	φ15.88	d9.52
0	utdoor unit connected	Flare	Flare	Flare	Flare	Flare	Flare
Refrige	rant piping (Main pipe L)	ф15.88	ф9.52	ф15.88	¢9.52	φ15.88	ф9.52
	Indoor unit connected	ф15.88	ф9.52	ф15.88	ф9.52	φ15.88	ф9.52
In the case of a single type	Capacity of indoor unit	Mod	el 100V	Mode	125V	Mod	el 140V
	Branching pipe set	DIS-V	WA1G	DIS	-WA1G	DIS	-WA1G
	Refrigerant piping (branch pipe L1,L2)	ф12.7	ф9.52	φ12.7	φ9.52	ф15.88	ф9.52
In the case of a twin type	Indoor unit connected	φ12.7	φ6.35	φ12.7	φ6.35	φ15.88	ф9.52
	Capacity of indoor unit	Model 50V×2		Model 6	90V×2	Model	71V×2
	Branching pipe set					DIS-TA1G	
	Refrigerant piping (branch pipe L1,L2,L3)	1				φ12.7	ф9.52
In the case of a triple type A	Indoor unit connected	1	_	_		φ12.7	φ6.35
	Capacity of indoor unit	1				Model 50Vx3	
	Branching pipe set					DIS-WA1G	
	Refrigerant piping (branch pipe La)	1				φ15.88	ф9.52
	Refrigerant piping (branch pipe L1)	1				φ12.7	ф9.52
n the case of a triple type B	Branching pipe set (After branch pipe La)	1	-	-		DIS	WA1G
	Refrigerant piping (branch pipe L2,L3)	1				φ12.7	ф9.52
	Indoor unit connected	1				φ12.7	φ6.35

- When the SOV or 60V model is connected as an indoor unit, always use a ⊕9.52 liquid pipe for the branch furanching pipe indoor unit) and a different diameter joint supplied with the branching pipe set for connection with the indoor unit (⊕6.35 on the liquid pipe side).

 If a ⊕6.55 pipe is used for connection with a branching pipe, a refligerant distribution disorder may occusing one of the indoor units to fall short of the rated capacity.

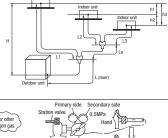
 A riser pipe must be a part of the main. A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.

 A branching part must be dressed with a heat-insulation material supplied as an accessory.

 For the deals of installation work required at and near a branching area, see the installation manual supplied with your branching pipe set.

 In the case of a type bype, branching pipe set shown in this table varies depending on the length difference of one way piping after the first branch. Please check the table above.
- About brazing

Only use nitrogen gas (Na) Brazing



< Triple type A > In case L1, L2, L3 difference < 3m

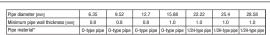
< Triple type B > In case L1, L2, L3 difference ≥ 3m

3) Refrigerant pipe wall thickness and material

Brazing must be performed under a nitrogen gas flow. Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clo

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

 This unit uses R32. Always use 1/2H pipes having a 1.0mm or thicker wall for φ19.05 or larger pipes, because 0-type pipes do not meet the pressure resistance requirement.



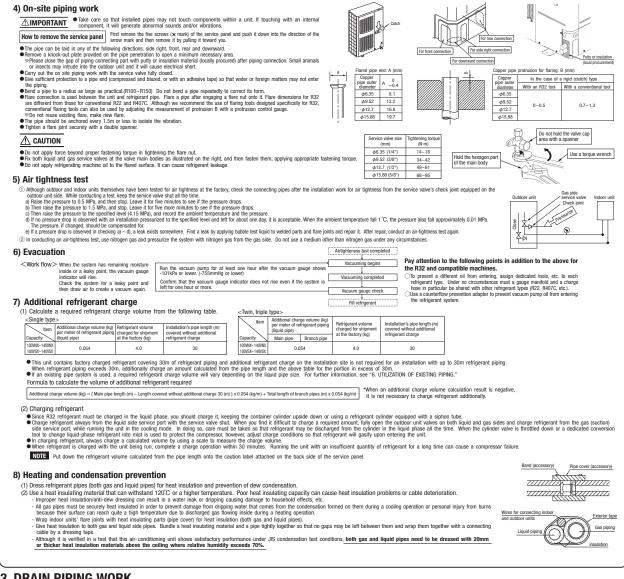
NOTE

Select pipes having a wall thickness larger than the specified minimum pipe thickness

ndary s... MPa Hand

I

Pipe diameter [mm]	6.35	9.52	12.7	15.88	22.22	25.4	28.58	
Minimum pipe wall thickness [mm]	0.8	0.8	0.8	1.0	1.0	1.0	1.0	
Pipe material*	O-type pipe	0-type pipe	0-type pipe	0-type pipe	1/2H-type pipe	1/2H-type pipe	1/2H-type pipe	
*Phosphorus deoxidized seamless copper pine C1220T JIS H 3300								



3. DRAIN PIPING WORK

•Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a problem.

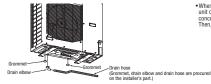
•Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate causking material.

•Condensed water may flow out from vicinity of service valve or connected pipes.

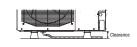
•Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)

•Do not use drain elbow and grommet made of plastic for drain piping when base heater for outdoor unit is used. Plastic grommet and elbow will be damaged and burnt in worst case.

•Prepare another drain tray made of metallic material for collecting drain when base heater is used.



 When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or concrete blocks. Then, please secure space for the drain elbow and the drain hose.



4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual. Exetrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country. Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country. For executing the country is a provider of the country. For executing the country is a provider of the country is a power of the country is a power of the country is a power of the country is a power of the country is a power of the country is a power of the country is a power of the country in the country is a power of the country is a power of the country in the country is a power of the country in the country in the country is a power of the country in the country in the country is a power of the country in the country in the country is a power of the country in the country in the country in the country i Do not turn on the power source until the electrical work is completeted.
 Do not use a condensive capacitor for power factor improvement under any circumstances. (It dose not improve power factor, *Do not use a condensive capacitor for power factor improvement under any circumstances, (it dose not improve power factor, while it can cause an abnormal overheat accident.)

*Por power source cables, use conduits.

*Do not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them •Do not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfinchroning or a failure of the unit due to electric noises.
•Fasten cables so that may not buch the piping, etc.
•When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)
•Always use a three-core cable for an indoor-outdoor connecting cable. (Never use a shield cable.
• Connect a part bearing a common terminal number with an indoor-outdoor connecting wire. Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.

In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.

Grounding terminals are provided in the control box. **O** ·× Earth leakage breaker
(Harmonic resistant type)
Switchgear or circuit breaker Earth leakage breaker (Harmonic resistant type) Switchgear or circuit breaker Signal line terminal block Cabtyre cable Flat cable 4 cores cable Shield cable Switchge Switchg ding terminal L1 N = Outdoor unit Main fuse specification

Model | Specification | L1 L2 L3 N ± Do not connect to the grounding wire from anothe unit, but install a dedicated wire up to the grounding wire from the distribution board Part No. 1 2/N 3 ± 100VNX-140VNX 1 2/N 3 ± 250V 30A 1 2/N 3 ± 1 2/N 3 ± Wiring guide 100VSX-140VSX Indoor unit X Y XY Wiring diagram Power cable, indoor-outdoor connecting wires X Y Remote control X Y Remote control Always perform grounding system installation work with the power cord unplugged.
 Always use an earth leakage circuit bear persent of inverter circuits to prevent a faulty operation. Outgoing cable direction Models 100VNX-140VNX Models 100VSX-140VSX As like the refrigerant pipe, it can be let out in any of the following directions: side right, front, rear and

Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number	
100VNX	Single phase 3 wires 220-240V 50Hz	5.5	25	21			
125VNX,140VNX	NX,140VNX 220V 60Hz	3.3	27	20		φ1.6mm x 3	
100VSX-140VSX	3 phase 4 wires 380-415V 50Hz	3.5	14	49	φ1.6mm	ф1.6mm х з	

● The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the indoor unit.

● Witholpar or cruital threaker capacity which is calculated from MAY more current above to the horses along the units of the construction.

capacity which is calculated from MAX, over current should be chosen along the regulations in each country.

		ection with the duct t	ype indoor unit.					
1	Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number	
1	100VNX	Single phase 3 wires	5.5	26	20			
П	125VNX	220-240V 50Hz		28	28			
П	140VNX	220V 60Hz		30	27	ф1.6mm	ф1.6mm x 3	
П	100VSX	3 phase 4 wires		15	46	φ1.011111	φ1.011111 x 3	
П	125VSX	380-415V 50Hz	3.5	16	43		i .	

(a) Power source cable: Use the cable which is conformed with 60245 IEC57. When selecting the power source cable length, make sure that voltage drop is less than 2%. If the wire length gets longer, increase the wire diameter.

(b) Indoor-uddoor connecting wires: Les the wires which is conformed with 60245 IEC57.

5. TEST RUN

- Before test run, make sure that the service valves are open.

 Before test run, turn ON power source for 6 hours in order to warm up the compressor.

 Without this operation, erforgarm thay accumulate in the compressor and earth leakage breaker may be activated.

 In case of the first operation after turning on power supply, even if the unit does not move for 30 minutes, it is not a breakdown.

The action of the service panel will expose high-voltage live parts and high-temperature parts, which are quite dangerous Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

- When you operate switches (SW3, SW4, SW5) for on-site setting, be careful not to touch a live part.
 Tou cannot check discharge pressure from the liquid service valve charge port.
 The 4-way valve (20S) is energized during a heating operation.
 When power source is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off. If this procedure is not observed in turning on power again, "Communication error between outdoor and indoor unit" may occur.

1) Test run method

- (1) A test run can be inititated from an outdoor unit by using SW3-3 and SW3-4 for on-site SW3-3 SW3-4 or on-site SW3-4 or on-site SW3-4

- setting.

 Setting SW3-3 to 0N will start the compressor.

 ON OFF —

2) Checking the state of the unit in operation

Use check joints provided on the piping before and after the four-way valve installed inside the unit for checking discharge pressure and suction pressure. As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or heating operation has been selected.

	Check joint of the pipe	gas service valve
Cooling operation	Discharge pressure (High pressure)	Suction pressure (Low pressure)
Heating operation	Suction pressure (Low pressure)	Discharge pressure (High pressure)

Cooling during a test run

Heating during a test run Normal or after the test operation

3) Setting SW3-1, SW3-2, SW5-2, SW4-1, on-site

4) Failure diagnosis in a test run

Error indicated on the		(The cycles of 5 seconds)	Failure event	Action
remote control unit	Red LED	Green LED	Tulidio Office	70001
E34	Blinking once	Blinking continuously	Open phase	Check power cables for loose contact or disconnection
E40	Blinking once	Blinking continuously	63H1 actuation or operation with service valves shut (occurs mainly during a heating operation)	Check whether the service valves are open.
E49	Blinking once	Blinking continuously	Low pressure error or operation with service valves shut (occurs mainly during a cooling operation)	If an error has been canceled when 3 minutes have elapsed since a compressor stop, you can restart the unit by effecting Check Reset from the remote control unit.
E57	Blinking once	Blinking continuously	Short of refrigerant error or operation with service valves shut (occurs mainly during a cooling operation)	effecting Check Reset from the remote control unit.

If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

5) The state of the electronic expansion valve.

The following table illustrates the steady states of the electronic expansion valve

	When power is turned on	When the unit com	nes to a normal stop	When the unit come	s to an abnormal stop
	Wileii power is turried on	During a cooling operation	During a heating operation	During a cooling operation	During a heating operation
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position
Valve for a heating operation Full open position		Full open position	Complete shut position	Full open position	Full open position

6) Heed the following on the first operation after turning on the circuit breaker.

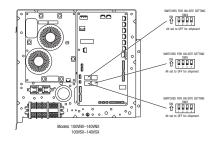
This outdoor unit may start in the standby mode (waiting for a compressor startup), which can continue up to 30 minutes, to prevent the oil level in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure.

A failure to observe these instructions can result in a compressor breakdown.

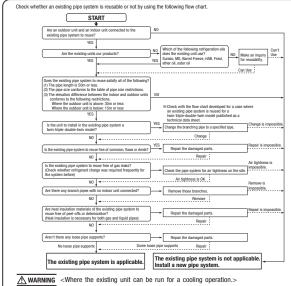
Items to check before a test run

• When you leave the outdoor unit with power supplied to it, be sure to close the panel. Item Noused in the Item Check item Check

Test	run procedure Always carry out a test run and check the following in order as list	ed.
Turn	The contents of operation	Check
1	Open the gas side service valve fully.	
2	Open the liquid side service valve fully.	
3	Close the panel.	
4	Where a remote control unit is used for unit setup on the installation site, follow instructions for unit setup on the installation site with a remote control unit.	
(5)	SW3-3 ON / SW3-4 OFF: the unit will start a cooling operation.	
(3)	SW3-3 ON / SW3-4 ON: the unit will start a heating operation.	
6	When the unit starts operation, press the wind direction button provided on the remote control unit to check its operation.	
7	Place your hand before the indoor unit's diffuser to check whether cold (warm) winds come out in a cooling (heating) operation.	
8	Make sure that a red LED is not blinking.	
9	When you complete the test run, do not forget to turn SW3-3 to the OFF position.	
68	Where onlines are used about their energies according to the respective instruction manuals	



6. UTILIZATION OF EXISTING PIPING



- Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))

 (1) Run the unit for 30 minutes for a cooling operation.

 (2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)

 (3) Close the liquid side service valve of the outdoor unit and pump down (refrigerant recovery)

 (4) Blow with nitrogen gas. Service if disclosered refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.

 For the flare nut, do not use the old one, but use the one supplied with the outdoor unit.

 Process a flare to the dimensions specified for R32.
- Process a later to the differentiations speciment or 142.

 ◆ Turn on-stres setting switch SW5-1 to the ON position. (Where the gas pipe size is \$\phi\$19.05)

 <a href="https://doi.org/10.100/j.nc/10.10

- <Table of pipe size restrictions>
- ©:Standard pipe size ○:Applicable
 △:Restricted to shorter pipe length limits ×:Not applicable

Additional	charging amount of refrigerant per 1m	0.02kg/m	0.054	lkg/m	0.11	kg/m
Pipe size	Liquid pipe	φ6.35	φ9.52	φ9.52	φ12.7	φ12.7
ripe size	Gas pipe	φ15.88	φ15.88	ф19.05	φ15.88	φ19.05
	Usability	Δ	0	○※1	Δ	△※1
100VNX 100VSX			100	100	50	50
100101	Length covered without additional charge	10	30	30	15	15
	Usability	Δ	0	○※1	Δ	△※1
125VNX 125VSX	Maximum one-way pipe length	20	100	100	50	50
120401	Length covered without additional charge	10	30	30	15	15
	Usability	Δ	0	○※1	Δ	△※1
140VNX 140VSX	Maximum one-way pipe length	20	100	100	50	50
140137	Length covered without additional charge	10	30	30	15	15

<Pipe system after the branching pipe>

			Aft	er 1st bra	anch #4	After	r 2nd bra	nch
Addition	nal charging amount of r	efrigerant per 1m		0.054kg/m	1		0.054kg/m	1
	Liqui	d pipe		φ9.52			ф9.52	
Pipe size	Gas	pipe	φ12.7	φ15.88	φ19.05 ∰ 1	φ12.7	φ15.88	φ19.05⊞ 1
Model	Combination type	Combination of capacity						
100V	Twin	50+50	0	0	×	-	-	-
125V	Twin	60+60	0	0	×	-	-	-
	Twin	71+71	×	0	0	-	-	-
140V	Triple A	50+50+50	0	0	×	-	-	-
	Trials D	50.50.50		CO.W.E	OWE	- 0		- 1

- Triple B 59-50-50 X □ 58 □ 50 □ C X □ 58 □ 65 □ C X □ 50 □ C X □

- <The model types of existing units of which branching pipes are reusable.>
- Models later than Type 8.

 F D C * * * 8 □ □ □

 F D C P * * * 8 □ □ □

The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R32.

• * * are numbers representing horsepower. __U_G is an alphanumeric letter.

Formula to calculate additional charge volume

Additional charge volume (R_0) = (Main pipe length (m) – Length covered without additional charge shown in the table (R_0)) ×

Additional charge volume per meter of pipe shown in the table (R_0)) +

Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (R_0) in table (R_0) in the table (R_0) in the table (R_0) in the table (R_0) in table

If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.

Example When an 140/ (single installation) is installed in a Zom long existing pipe system (qiaid φ12.7, gas φ19.05), the cause of control of the cont

1.9.5 Instructions for branching pipe set (DIS-WA1G, WB1G, TA1G, TB1G)

PSB012D865 ∕A

- This set is for R410A and R32 refrigerant.
- Select a branching pipe set correctly rated for the combined total capacity of connected indoor units and install it according to this manual. An improperly installed branching pipe set can cause degraded performance or an abnormal unit stop.
- Provide good heat insulation to the pipes by following instructions contained in this manual.
- Improper heat insulation can result in degraded performance or a water leak accident from condensation.
- Please make sure that only parts supplied as accessories or the manufacturer's approved parts are used in installing the unit, because a leak of refrigerant can result in a lack-of-oxygen accident, if it reaches a concentration beyond the tolerable limit.

This manual explains how to use a branching pipe set that is indispensable in connecting pipes for a twin/triple/double-twin configuration installation (system). For the details of piping work, unit installation work and electrical installation work, please refer to the installation manuals and installation guides supplied with your outdoor and indoor units.

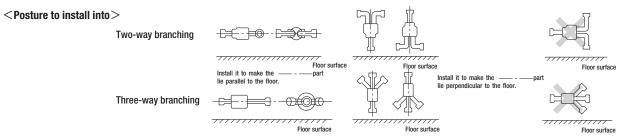
1. Branching pipe set specifications

- (1) Please make sure that you have chosen the right branching pipe set and the specifications of the parts contained in it by checking with the table below.
- (2) Connect pipes as illustrated in the table below. The pipe from an outdoor unit must be brazed to the pipe connection port "①" and the pipes from indoor units to "②," "③" and "④,"

Branching pipe set type	Supported outdoor/inc	loor unit combinations		Part	lists		
branching pipe set type	Outdoor unit model	Indoor unit model	Branching pipe set for a liquid pipe	Branching pipe set for a gas pipe	Different diameter pipe joint	Heat insulation material	
	3HP	1.5HP+1.5HP	ID9.52	ID15.88	Joint A		
	4HP	2HP+2HP			ID9.52 □□□■ 2 pieces		
DIS-WA1G	4111	1.5HP+2.5HP	0		Flare joint (for indoor unit side connection)	(AD	
(Two-way branching set)	5HP	2.5HP+2.5HP			(101 Illuool ullit side collilection)		
(Two way branching coty		2HP+3HP	ID9.52 🛱 ③	ID15.88 ID15.88	Joint B 2 pieces		
	6HP	3HP+3HP	1 piece	1 piece	0D15.88 D12.7	One each for liquid and gas	
	-	2HP+4HP	i piece	i piece			
		4HP+4HP	ID9.52				
DIS-WB1G (Two-way branching set)	8HP	3HP+5HP	0 0 0		Joint C 1 piece 0D12.7 ID9.52		
	10HP 12HP	5HP+5HP 6HP+6HP	1 piece (3)	1 piece ID15.88		One each for liquid and gas	
DIS-TA1G (Three-way branching set)	6HP	2HP+2HP+2HP	109.52 1 piece	ID12.7 ① 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Joint A ID9.52	One each for liquid and gas	
DIS-TB1G (Three-way branching set)	8HP	3HP+3HP+3HP	109.52 1 piece	1 piece	DJ Dint A 2 pieces	One each for liquid and gas	

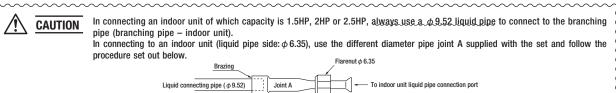
(3) To connect pipes for a Double Twin installation (involving 4 indoor units), please see 2-7. "Double Twin configuration."(4) A branching pipe set must always be installed into the posture as illustrated in the drawing below.

ID stands for inner diameter and OD, outer diameter.



2. Pipe connecting procedure

Braze the different diameter pipe joint found in the set matching the connected outdoor and indoor unit capacities according to the instructions set out below.



2-1 DIS-WA1G

Supported o	Indoor unit model	Liquid branching pipe	Gas branching pipe
3HP	1.5HP+1.5HP		Joint B
	2HP+2HP	Flare joint (φ 6.35) Joint A	Joint B 3 ID12.7
4HP	1.5HP+2.5HP	Connecting pipe (\$\phi 9.52\$) ID9.52 D9.52 CAUTION Reference Joint A Flare joint (\$\phi 6.35)	ID12.7
	2.5HP+2.5HP	(\$0.00)	Joint B 1015.88 1015.88 1015.88 1015.88 1015.88
5HP	2HP+3HP	Flare joint $(\phi 6.35)$ Joint A Connecting pipe $(\phi 9.52)$ ID9.52 $(\phi 9.52)$	Joint B (1) 1015.88 (1) 1015.88
	3HP+3HP	ID9.52 ID9.52 ID9.52	ID15.88 ID15.88 ID15.88
6НР	2HP+4HP	Flare joint $(\phi 6.35)$ Connecting pipe $(\phi 9.52)$	Joint B

2-2 DIS-WB1G

	combinations	Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model	Elquid brailorning pipe	das branching pipe
8HP	3HP+5HP	ID9.52	ID15.88
	4HP+4HP	Joint C ID9.52	ID15.88
10HP 12HP	5HP+5HP 6HP+6HP	ID9.52 ID12.73 (2) ID9.52	ID15.88 1D25.4]

2-3 DIS-TA1G Applicable to the difference in length of pipes after the branch being less than 3m * Connection is not allowed when the difference in length of pipes is larger than 3m.

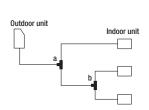
Supported of Outdoor unit model	ombinations Indoor unit model	Liquid branching pipe	Gas branching pipe
6НР	2HP+2HP+2HP	Connecting pipe Joint A (\$\phi 9.52)	1012.7 ① ② ③ ④

2-4 DIS-TB1G Applicable to the difference in length of pipes after the branch being less than 3m * Connection is not allowed when the difference in length of pipes is larger than 3m.

Supported c	ombinations	Liquid branching nine	Coo branching nine
Outdoor unit model	Indoor unit model	Liquid branching pipe	Gas branching pipe
8НР	3HP+3HP+3HP	ID9.52 3————————————————————————————————————	① ② ③ ④ D15.88

use the joint supplied with the branch piping set like *A

2-5. Triple type for same model/same capacity or different model/same capacity When the difference in length of pipes after the branch is longer than 3m and

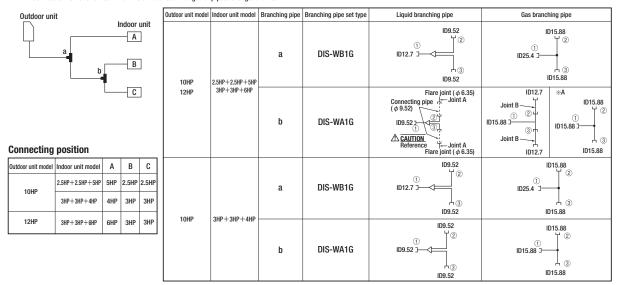


pes after th	e branch is	longer than 3	3m and shorter th	an 10m	
Outdoor unit model	Indoor unit model	Branching pipe	Branching pipe set type	Liquid branching pipe	Gas branching pipe
		a		Flare joint $(\phi 6.35)$ \longrightarrow Joint A Connecting pipe $(\phi 9.52)$ \longrightarrow $(\phi 9.52)$ \longrightarrow $(\phi 9.52)$ \longrightarrow $(\phi 9.52)$ \longrightarrow $(\phi 9.52)$ \bigcirc	Joint B (2) ID12.7 ID15.88 ID15.88
6НР	2HP+2HP+2HP	b	DIS-WA1G	Flare Joint $(\phi 6.35)$ Connecting pipe $(\phi 9.52)$ ID9.52 2 2 CAUTION Reference -1 Flare Joint $(\phi 6.35)$	Joint B Joint B Joint B Joint B
aup	alib alib alib	a	DIS-WB1G	ID9.52 ID9.52 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	ID15.88 ID25.4]
8HP	3HP+3HP+3HP	b	DIS-WA1G	ID9.52 (C) (D9.52 (D9.5	ID15.88 (D) (D) (D) (D) (D) (D) (D) (D) (D) (D)

2-6. Triple type for same model/different capacity or different model/different capacity

Applicable to the difference in length of pipes after the branch being less than 3m

* Connection is not allowed when the difference in length of pipes is larger than 3m.



Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like * A.

2-7. Double Twin type

Outdoor unit capacity	Indoor unit capacity	Branching pipe	Branching pipe set type	Outdoor unit model	Liquid branching pipe	Gas branching pipe	
8HP	2HP×4 units			8HP	ID9.52		
10HP	2.5HP×4 units			опг	Joint C ID9.52	ID15.88 무 ②	
12HP	3HP×4 units	a	DIS-WB1G		1-1112	ID25.4 3	
Outdoor unit b	Indoor unit			10HP 12HP	ID9.52 ID12.7 3————————————————————————————————————	∐ (§ ID15.88	
a	— <u> </u>		DIS WATE	8HP	Flare joint (ϕ 6.35) Connecting pipe Joint A (ϕ 9.52)	Joint B 20 Up 1D15.88 J Doint B D12.7	
		b	DIS-WA1G	10HP 12HP	A CAUTION Reference Flare joint (\$\phi\$ 6.35)	#A Joint B — Joi	

Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like * A.

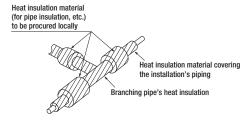
3. Heat insulation work

(1) Condensation can also occur on liquid pipes with this model. Please provide good heat insulation to both liquid and gas pipes.

(2) For the heat insulation of a branching pipe, always use the heat insulation material supplied with the set and provide heat insulation according to the instructions set out below.



1. It has an adhesive laver on the entire inner face. Remove a separator and wrap it around the branching pipe.



2. Apply a heat insulation material (to be procured locally) to the joint between the branching pipe's heat insulation and the heat insulation material covering the installation's piping as described above and wrap a tape over the gap shown as a hatched (///) area to complete dressing of the piping.

1.9.6 Safety precautions in handling air-conditioners with flammable refrigerant

R32 REFRIGERANT USED

PSA012B839K ∕k



This equipment uses flammable refrigerants. If the refrigerant is leaked, together with an external ignition source, there is a possibility of ignition.



There is information included in the user's manual and/or installation manual.



The user's manual should be read carefully.



A service personnel should be handing this equipment with reference to the installation manual.

- This safety precaution sheet is for R32 refrigerant. If you want to know the type of refrigerant in the unit, check the label attached to the outdoor unit.
- The precautionary items mentioned below are distinguished into two levels,

 MARNING and
 CAUTION

MARNING : Wrong installation would cause serious consequences such as injuries or death

⚠ CAUTION : Wrong installation might cause serious consequences depending on circumstances.

⚠ WARNING

- Strict compliance of the domestic laws must be observed when disposing the appliance
- Do not use means to accelerate the defrost operation process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- The ducts connected to an appliance shall not contain a potential ignition source

⚠ CAUTION

1. General

- The installation of pipe-work shall be kept to a
- Pipe-work shall be protected from physical damage.
- Compliance with national gas regulations shall be
- Mechanical connections shall be accessible for maintenance purposes
- Keep any required ventilation openings clear of obstruction.
- Servicing shall be performed only as recommended by the manufacturer.
- Equipment piping in the occupied space shall be installed in such a way to protect against accidental damage in operation and service.
- Precautions shall be taken to avoid excessive
- vibration or pulsation to refrigerating piping.

 Protection devices, piping and fitting shall be protected as far as possible against adverse effects for example, the danger of water collection and freezing in relief pipes or the accumulation of dirt and
- Provision shall be made for expansion and contraction of long runs of piping.
- Piping in refrigerating systems shall be designed and installed to minimize the likelihood hydraulic shock damaging the system.
- The indoor equipment and pipes shall be securely mounted and guarded to avoid accidental rupture of equipment from moving furniture or reconstruction
- Instructions for wiring to external zoning dampers and/or mechanical ventilation, to ensure that upon detection of a leak, the zoning dampers are driven fully open and additional mechanical ventilation is
- For appliances using A2L refrigerants, connected via an air duct system to one or more rooms, the supply and return air shall be directly ducted to the space Open areas such as false ceilings shall not be used as a return air duct.
- The following information requirements apply for enhanced tightness refrigerating systems using A2L
- Where safety shut off valves are specified, the minimum room area may be determined based on the maximum amount of refrigerant that can be leaked as determined in GG.12.2. (IEC 60335-2-40:2018)
- Where safety shut off valves are specified, the location of the valve in the refrigerating system relative to the occupied spaces shall be as described in GG.12.1.(IEC 60335-2-40:2018)

(2. Unventilated areas)

- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- If the refrigerant charge amount in the system is \ge 1.84 kg, an unventilated area where the appliance is installed shall be so constructed that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard.

(3. Qualification of workers

The staff in servicing operations must hold the national qualification or other relevant qualifications.

Information on servicing

4.1 Checks to the area

- · Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised
- For repair to the refrigerating system, 4.2 to 4.6 shall be completed prior to conducting work on the system.

4.2 Work procedure

- Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.
- 4.3 General work area
- All maintenance staff and others working in the local area shall be instructed on the nature of work
- being carried out.

 Work in confined spaces shall be avoided.
- 4.4 Checking for presence of refrigerant
- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres.
- Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically
- 4.5 Presence of fire extinguisher
- If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or ${\rm CO_2}$ fire extinguisher adjacent to the charging area.

- 4.6 No ignition sources
- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition such a manner that it may lead to the risk of fire or explosion.
- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposa during which refrigerant can possibly be released to the surrounding space.
- Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks.
- "No Smoking" signs shall be displayed.
- 4.7 Ventilated areaEnsure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work.
- A degree of ventilation shall continue during the period that the work is carried out.
- The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.
- 4.8 Checks to the refrigerating equipment
- Where electrical components are being changed, they shall be fit for the purpose and to the correct specification.
- At all times the manufacturer's maintenance and service guidelines shall be followed
- If in doubt consult the manufacturer's technical department for assistance.
- · The following checks shall be applied to
- installations using flammable refrigerants:

 the actual refrigerant charge size is in accordance with the room size within which the refrigerant containing parts are installed.
- the ventilation machinery and outlets are operating adequately and are not obstructed;

 – if an indirect refrigerating circuit is being used,
- the secondary circuit shall be checked for the presence of refrigerant,

 – marking to the equipment continues to the visible
- and legible. Markings and signs that are illegible shall be corrected.
- refrigerating pipe or components are installed in a position where they are unlikely to e exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

⚠ CAUTION

- 4.9 Checks to electrical devices
- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.
- If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.
- It the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used.
- This shall be reported to the owner of the equipment so all parties are advised
- · Initial safety checks shall include:
- that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while changing, recovering or purging the system
- that there is continuity of earth bonding.

5. Repairs to sealed components

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers etc.
- If it is absolutely necessary to have an electrical supply to equipment during servicing then a permanently operating from of leak detection shall be located at the most critical point to warm of a potentially hazardous situation.

 Particular attention shall be paid to the following to
- ensure that by working on electrical components the casing is not altered in such a way that the level of protection is affected.
- This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
- Ensure that the apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres
- Replacement parts shall be in accordance with the manufacturer's specifications.

6. Repair to intrinsically safe components

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a
- flammable atmosphere.
 The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer.
- Other parts may result in the ignition of refrigerant in the atmosphere from a leak

The use of silicone sealant can inhibit the effectiveness of some types of leak detection equipment. Intrinsically sate components do not have to be insulated prior to working on them.

(7. Cabling)

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

8. Detection of flammable refrigerants

- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.
- A halide torch (or any other detector using a naked flame) shall not be used. Electronic leak detectors may be used to detect
- refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
- Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
- Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed. Leak detection fluids are suitable for use with most
- refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

Examples of leak detection fluids are

- bubble method
- fluorescent method agents
- If a leak is suspected, all naked flames shall be removed/extinguished.

 If a leakage of refrigerant is found which requires
- brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.
- Removal of refrigerant shall be according to Item.9.

(9. Removal and evacuation

- When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used. However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration.
- The following procedure shall be adhered to:
- remove refrigerant:
- purge the circuit with inert gas; (option for A2L)
- evacuate;(option for A2L)purge with inert gas ;(option for A2L)
- open the circuit by cutting or brazing.
- The refrigerant charge shall be recovered into the
- correct recovery cylinders. For appliances containing flammable refrigerants,
- other than A2L refrigerants, the system shall be "flushed" with OFN to render the unit safe for flammable refrigerants.
- This process may need to be repeated several
- Compressed air or oxygen shall not be used for purging refrigerant systems.
 For appliances containing flammable refrigerants.
- other than A2L refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the to system with oxygen-free nitrogen and continuing fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.
- This process shall be repeated until no refrigerant is within the system.
- When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
- This operation is absolutely vital if brazing operations on the pipe-work are to take place. Ensure that the outlet for the vacuum pump is not
- close to any ignition sources and that ventilation is available.

10. Charging procedures

- In addition to conventional charging procedures, the following requirements shall be followed.
 - Ensure that contamination of different refrigerants dose not occur when using charging equipment. Hoses of lines shall be as short as possible to minimise the amount of refrigerant contained in
 - Cylinders shall be kept in an appropriate according to the instructions.
 - Ensure that the refrigerating system is earthed prior to charging the system with refrigerant. Label the system when charging is complete (if
 - not already).
 - Extreme care shall be taken not to overfill the refrigerating system.
- Prior to recharging the system, it shall be pressuretested with the appropriate purging gas.
- The system shall be leak-tested on completion of
- charging but prior to commissioning.

 A follow up leak test shall be carried out prior to
- leaving the site.

(11. Decommissioning

- Before carrying out this procedure, it is essential that the technician is' completely familiar with the equipment and all its detail.
- It is recommended good practice that all refrigerants are recovered safely.
- Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant.
- It is essential that electrical power is available before the task is commenced.
- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.c) Before attempting the procedure ensure that
- mechanical handling equipment is available, if required, for handling refrigerant cylinders
- all personal protective equipment is available and being used correctly,
- the recovery process is supervised at all times by a competent person,
- recovery equipment and cylinders conform to the appropriate standards.
- d) Pump down refrigerant system, if possible.
- e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- f) Make sure that cylinder is situated on the scales before recovery takes place.
- g) Start the recovery machine and operate in accordance with instructions.
- h) Do not overfill cylinders. (No more than 80 % volume liquid charge).
 i) Do not exceed the maximum working pressure of
- the cylinder, even temporarily
- When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked

12. Labelling

- Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed.
- For appliances containing flammable refrigerants. ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

A CAUTION

13. Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. When transferring refrigerant into cylinders, ensure
- that only appropriate refrigerant recovery cylinders are employed.
- Ensure that the correct number of cylinders for holding the total system charge is available
- All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant).
- Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order.
- Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

 The recovery equipment shall be in good working
- order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall
- be available and in good working order.

- Hoses shall be complete with leak-free disconnect couplings and in good condition.
- Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release.
- Consult manufacturer if in doubt.
 The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged.Do not mix refrigerants in recovery units and especially not in cylinders.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant dose not remain within the lubricant.
- The evacuation process shall be carried out prior to returning the compressor to the suppliers.

 Only electric heating to the compressor body shall
- be employed to accelerate this process.
- When oil is drained from a system, it shall be carried out safely.

14. Other safety precautions

- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant
- to flow between the refrigerating system parts. Flammable refrigerant used, refrigerant tubing protected or enclosed to avoid mechanical damage
- (IEC/EN 60335-2-40/A1).
 Tubing protected to extent that it will not be handled or used for carrying during moving of product (IEC/EN 60335-2-40/A1).
- Flammable refrigerant used, low temperature solder alloys, such as lead/tin alloys, not acceptable for pipe connections (IEC/EN 60335-2-40/A1)
- Do not use flare nut indoor which is locally procured.

Selection of installation location for the indoor unit

• Minimum installation area for indoor unit

⚠ CAUTION

The indoor unit shall be installed in a room with minimum installation area or more according to the refrigerant charge amount (factory refrigerant charge +additional refrigerant charge).

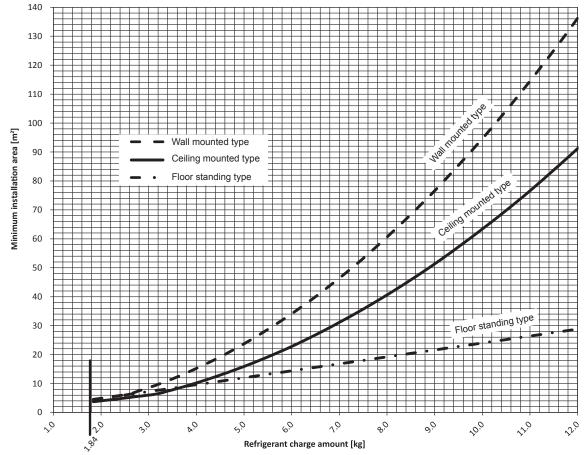
For factory refrigerant charge, refer to the outdoor unit label model name or installation sheet.

For additional refrigerant charge, refer to the outdoor unit installation sheet.

- If the refrigerant charge amount in the system is < 1.84 kg, there are no additional minimum floor area requirements.
- If the refrigerant charge amount in the system is \geq 1.84 kg, you need to comply with additional minimum floor area requirements as described in the following table.
- For further details regarding the installation location of indoor unit, refer to technical manual.

	frigerant amount [kg]	1.00	1.50	1.84	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50
	Ceiling mounted type H=2.2m			3.7	4.0	4.5	5.0	5.5	6.0	6.7	7.8	9.0	10.2	11.5	12.9
Minimum installation area [m²]	Wall mounted type H=1.8m		lo ements	4.5	4.9	5.5	6.1	7.2	8.6	10.0	11.6	13.3	15.2	17.1	19.2
	Floor standing type*			4.5	4.8	5.4	6.0	6.6	7.2	7.8	8.4	9.0	9.6	10.2	10.8
	frigerant amount [kg]	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	12.0
	Ceiling mounted type H=2.2m	15.9	19.2	22.8	26.8	31.1	35.7	40.6	45.8	51.3	57.2	63.4	69.8	76.6	91.2
Minimum installation area [m²]	Wall mounted type H=1.8m	23.7	28.7	34.1	40.0	46.4	53.2	60.6	68.4	76.6	85.4	94.6	104.3	114.5	136.2
	Floor standing type*	12.0	13.2	14.4	15.6	16.8	18.0	19.2	20.4	21.6	22.8	24.0	25.2	26.4	28.8

*For floor standing units with refrigerant leak sensor system, the minimum installation area is in accordance with IEC 60335-2-40:2018 Clause GG.2.2.



Ceiling opening area

A CAUTION

In case of installing the indoor unit in an enclosed ceiling space, ensure there is a sufficient ventilation opening around the unit. In the event of refrigerant leakage, this countermeasure would prevent an increased concentration of refrigerant.

1.10 TECHNICAL INFORMATION

Model FDF71VNXWVH

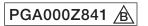
mala an continue1 - 1	s) to which the informat	on relates to:	If function includes heating: Indicate			
ndoor unit model name	FDF71VH		information relates to. Indicated va			
Outdoor unit model name	FDC71VN	₹-W	heating season at a time. Include a	it least the heating se	ason 'Avera	age'.
Function(indicate if present)			Average(mandatory)	Yes		
cooling	Yes		Warmer(if designated)	No		
neating	Yes		Colder(if designated)	No		
9				1 110		
tem	symbol	value unit	Item	symbol	value	class
Design load			Seasonal efficiency and energy eff	iciency class		
cooling	Pdesignc	7.10 kW	cooling	SEER	6.25	A+-
neating / Average	Pdesignh	6.00 kW	heating / Average	SCOP/A	4.03	A+
neating / Warmer	Pdesignh	- kW	heating / Warmer	SCOP/W	-	-
eating / Colder	Pdesignh	- kW	heating / Colder	SCOP/C	-	-
			16			unit
Declared capacity at outdoor tem neating / Average (-10°C)	perature I designh Pdh	6.00 kW	Back up heating capacity at outdoo			kW
0 0 1			heating / Average (-10°C)	elbu	0	kW
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outdoor temperature Tj	(•	outdoor temperature Tj	,	` /	
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-j=30°C	Pdc	5.05 kW	Tj=30°C	EERd	5.40]-
j=25°C	Pdc	3.30 kW	Tj=25°C	EERd	7.80	-
j=20°C	Pdc	1.80 kW	Tj=20°C	EERd	13.0]
eclared capacity for heating / Av		r	Declared coefficient of performanc		at indoor	
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j=2°C	Pdh	3.09 kW	Tj=2°C	COPd	3.95	
j=7°C	Pdh	2.00 kW	Tj=7°C	COPd	4.90	
j=12℃	Pdh	1.43 kW	Tj=12°C	COPd	6.00	1-
j=bivalent temperature	Pdh	6.00 kW	Tj=bivalent temperature	COPd	2.60	1-
j=operating limit	Pdh	4.59 kW	Tj=operating limit	COPd	2.30	-
			1			
Declared capacity for heating / W		r	Declared coefficient of performanc		at indoor	
emperature 20°C and outdoor te			temperature 20°C and outdoor tem		_	1
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_j=7°C	Pdh	- kW	Tj=7°C	COPd	-	
]=12°C	Pdh	- kW	Tj=12°C	COPd	-	-
j=bivalent temperature j=operating limit	Pdh Pdh	- kW - kW	Tj=bivalent temperature Tj=operating limit	COPd COPd	-	-
Declared capacity for heating / Co			Declared coefficient of performanc		indoor	
emperature 20°C and outdoor ter		- kW	temperature 20°C and outdoor tem			7
-j=-7°C	Pdh		Tj=-7°C	COPd		- 1⁻
-j=2°C	Pdh	- kW	Tj=2°C	COPd	-	
_j=7°C	Pdh	- kW	Tj=7°C	COPd	-	- 1
	Pdh	- kW	Tj=12°C	COPd	-	
j=bivalent temperature	Pdh	- kW	Tj=bivalent temperature	COPd	-	
j=operating limit	Pdh	- kW	Tj=operating limit	COPd	-	
j=-15℃	Pdh	- kW	Tj=-15°C	COPd	-	-
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Model FDF100VNXWVH

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heating	Yes			Colder(if designated)	No		
neating	162			Colder(ii designated)	INU		
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heating / Average	Pdesignh	11.2	kW	heating / Average	SCOP/A	3.84	A
	-	- 11.2	kW		SCOP/W	3.04	-
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Tj=30°C	Pdc	7.33	kW	Tj=30°C	EERd	5.33	7-
Tj=25°C	Pdc	4.66	kW	Tj=25°C	EERd	7.33	7-
Tj=20°C	Pdc	3.35	kW	Tj=20°C	EERd	10.9	7-
							-
Declared capacity for heating / Avera	age season, at indor	or		Declared coefficient of performance /	Average season	at indoor	
temperature 20°C and outdoor temperature				temperature 20°C and outdoor tempe			
Ti=-7°C	Pdh	9.91	kW	Ti=-7°C	COPd	2.66	7-
Tj=2°C	Pdh	5.99	kW	Tj=2°C	COPd	3.70	1_
Tj=7°C	Pdh	3.85	kW	Tj=7°C	COPd	4.90	╡_
Ti=12°C	Pdh	2.93	kW	Tj=12°C	COPd	6.05	Ⅎ゙
1 *	Pdh	11.2	kW	Tj=bivalent temperature	COPd	2.31	Ⅎ゙
Tj=bivalent temperature				11.			-{⁻
Tj=operating limit	Pdh	9.70	kW	Tj=operating limit	COPd	2.00	<u> </u>
				15			
Declared capacity for heating / Warr		or		Declared coefficient of performance /		at indoor	
temperature 20°C and outdoor temp			7	temperature 20°C and outdoor tempe			7
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd	-	- -
Tj=7°C	Pdh	-	kW	Tj=7°C	COPd	-	
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd	-	
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd	-	
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd	-	-
Declared capacity for heating / Colde	er season, at indoor			Declared coefficient of performance /	Colder season, at	indoor	
temperature 20°C and outdoor temperature	erature Tj			temperature 20°C and outdoor tempe	rature Tj		
Tj=-7°C	Pdh	-	kW	Tj=-7°C	COPd	-	7-
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd	_	1_
Ti=7°C	Pdh	-	kW	Tj=7°C	COPd	_	1_
Tj=12°C	Pdh	_	kW	Ti=12°C	COPd	_	1₋
Tj=bivalent temperature	Pdh	_	kW	Tj=bivalent temperature	COPd	_	1₋
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd	-	1₋
Tj=-15°C	Pdh	_	kW	Tj=-15°C	COPd	_	╡_
1]10 0	T UII		KVV	1]=-10 0	001 0		<u></u>
Pivolent temperature				Operating limit temperature			
Bivalent temperature	Tbiv	-10	°c		Tol	-20	°C
heating / Average		-10	→ .	heating / Average		-20	-
heating / Warmer	Tbiv	-	_°C	heating / Warmer	Tol	<u> </u>	°C
heating / Colder	Tbiv	-	°C	heating / Colder	Tol		°C
<u> </u>				16			
Cycling interval capacity	_		7	Cycling interval efficiency			7
for cooling	Pcycc	-	kW	for cooling	EERcyc	<u> </u>	- -
for heating	Pcych	-	kW	for heating	COPcyc		-
				7 (
Degradation coefficient			_	Degradation coefficient			_
cooling	Cdc	0.25	-	heating	Cdh	0.25	-
Electric power input in power modes	other than 'active m	node'	_	Annual electricity consumption			_
off mode	Poff	15	W	cooling	Qce	574	kWh/a
standby mode	Psb	15	W	heating / Average	Qhe	4084	kWh/a
thermostat-off mode	Pto(cooling)	52	W	heating / Warmer	Qhe	-	kWh/a
	Pto(heating)	87	w	heating / colder	Qhe	-	kWh/a
crankcase heater mode	Pck	5	w			-	•
			•	•			
Capacity control(indicate one of thre	e options)			Other items			
Capacity control(maicate one or and	o op.iioi.io)			Sound power level(indoor)	Lwa	65	dB(A)
				Sound power level(outdoor)	Lwa	67	dB(A)
fixed	No			Global warming potential	GWP	675	kgCO2eq.
staged	No			Rated air flow(indoor)	-	1620	m ³ /h
variable	Yes			Rated air flow(niddor)	_	6000	m ³ /h
- G. IGDIO	163			[.atod dir now(outdoor)		1 2000	101.711
Contact details for obtaining M	itsubishi Heavy Indu	etries Air (Conditionin-	Furone Ltd			
				ddlesex,UB11 1ET, United Kingdom			
	HIAE SERVICES B.		onunuye, Mi	Galosox, Obi i iti, Olilleu Kiliguoili			
			nΛ 1101 Ω	M Ameterdam Netherlanda			
	P.O.Box 23393 110			M Amsterdam, Netherlands			
	U.DUK ZOOBO 1 1Ul	אים ע AIIIS	widaiii, Nett	ionaliua			

Model FDF100VSXWVH

Information to identify the model(s) to wh	nich the informa	tion relates	to:	If function includes heating: Indicate the	heating season	the
Indoor unit model name	FDF100VI		ιο.	information relates to. Indicated values s		
Outdoor unit model name	FDC100V			heating season at a time. Include at leas		
Catagor and model name	11 DO 1004	JA-11		Theating season at a time. Include at leas	it the ricating se	ason Average.
Eunation/indicate if present)				Average(mandatory)	Yes	
Function(indicate if present)	Vaa			Average(mandatory)	No	
cooling	Yes Yes			Warmer(if designated)	No	
neating	res			Colder(if designated)	NO	
14	ar male at			H	ar male at	
Item	symbol	value	unit	Item	symbol	value class
Design load	Deleviene	40.0	7,,,,,	Seasonal efficiency and energy efficience	•	0.40
cooling	Pdesigno	10.0	kW	cooling	SEER	6.10 A++
heating / Average	Pdesignh	11.2	kW	heating / Average	SCOP/A	3.84 A
heating / Warmer	Pdesignh	-	kW	heating / Warmer	SCOP/W	
heating / Colder	Pdesignh	-	kW	heating / Colder	SCOP/C	
						unit
Declared capacity at outdoor temperatur	0		-	Back up heating capacity at outdoor tem		
heating / Average (-10°C)	Pdh	11.2	kW	heating / Average (-10°C)	elbu	0 kW
heating / Warmer (2°C)	Pdh	-	kW	heating / Warmer (2°C)	elbu	- kW
heating / Colder (-22°C)	Pdh	-	kW	heating / Colder (-22°C)	elbu	- kW
Declared capacity for cooling, at indoor to	temperature 27(19)℃ and		Declared energy efficiency ratio, at indo	or temperature 2	27(19)°C and
outdoor temperature Tj			_	outdoor temperature Tj		
Tj=35°C	Pdc	10.0	kW	Tj=35°C	EERd	3.76 -
Tj=30°C	Pdc	7.33	kW	Tj=30°C	EERd	5.33 -
Tj=25°C	Pdc	4.66	kW	Tj=25°C	EERd	7.33 -
Tj=20°C	Pdc	3.35	kW	Tj=20°C	EERd	10.9 -
				-		•
Declared capacity for heating / Average	season, at indo	or		Declared coefficient of performance / Av	erage season. a	at indoor
temperature 20°C and outdoor temperature				temperature 20°C and outdoor temperature		
Tj=-7°C	Pdh	9.91	kW	Tj=-7°C	COPd	2.66 -
Tj=2°C	Pdh	5.99	kW	Tj=2°C	COPd	3.70 -
Tj=7°C	Pdh	3.85	kW	Tj=7°C	COPd	4.90
Tj=12°C	Pdh	2.93	kW	Tj=12°C	COPd	6.05
Tj=bivalent temperature	Pdh	11.2	kW	Tj=12 C	COPd	2.31
	Pdh	9.70	kW		COPd	2.00
Tj=operating limit	ruii	9.70	KVV	Tj=operating limit	COFU	2.00 -
Declared conscitution bactime (10/aman)	+ ind-			Declared coefficient of newformance (M		st in deau
Declared capacity for heating / Warmer)I		Declared coefficient of performance / Wi		it iridoor
temperature 20°C and outdoor temperate			TLAM	temperature 20°C and outdoor temperate		
Tj=2°C	Pdh		kW	Tj=2°C	COPd	
Tj=7°C	Pdh	-	kW	Tj=7°C	COPd	<u>-</u>
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd	
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd	
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd	
Declared capacity for heating / Colder se				Declared coefficient of performance / Co		indoor
temperature 20°C and outdoor temperate	ure Tj		_	temperature 20°C and outdoor temperate	ure Tj	
Tj=-7°C	Pdh	-	kW	Tj=-7°C	COPd	
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd	
Tj=7°C	Pdh	-	kW	Tj=7°C	COPd	
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd	
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd	
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd	
Tj=-15°C	Pdh	-	kW	Tj=-15°C	COPd	
Bivalent temperature				Operating limit temperature		
heating / Average	Tbiv	-10	°C	heating / Average	Tol	-20 °C
heating / Warmer	Tbiv	-	°C	heating / Warmer	Tol	- °C
heating / Colder	Tbiv	-	℃	heating / Colder	Tol	- ℃
Ĭ			•	· · · · · · · · · · · · · · · · · · ·		
Cycling interval capacity				Cycling interval efficiency		
for cooling	Pcycc	-	kW	for cooling	EERcyc	
for heating	Pcych	-	kW	for heating	COPcyc	
, , , , , , , , , , , , , , , , , , ,	,				, -	1
Degradation coefficient				Degradation coefficient		
cooling	Cdc	0.25	7-	heating	Cdh	0.25 -
	040	0.20	1	aug	ou	0.20
Electric power input in power modes oth	er than 'active n	node'		Annual electricity consumption		
off mode	Poff	15	w	cooling	Qce	574 kWh/a
standby mode		,		ı ı::9		4084 kWh/a
thermostat-off mode		15	W	heating / Average	Ohe	
a.c.modat on mode	Psb	15 52	w	heating / Average	Qhe Qhe	
1	Psb Pto(cooling)	52	w	heating / Warmer	Qhe	- kWh/a
crankcasa hastar mode	Psb Pto(cooling) Pto(heating)	52 87	W W			
crankcase heater mode	Psb Pto(cooling)	52	w	heating / Warmer	Qhe	- kWh/a
	Psb Pto(cooling) Pto(heating) Pck	52 87	W W	heating / Warmer heating / colder	Qhe	- kWh/a
crankcase heater mode Capacity control(indicate one of three op	Psb Pto(cooling) Pto(heating) Pck	52 87	W W	heating / Warmer heating / colder	Qhe Qhe	- kWh/a - kWh/a
	Psb Pto(cooling) Pto(heating) Pck	52 87	W W	heating / Warmer heating / colder Other items Sound power level(indoor)	Qhe Qhe Lwa	- kWh/a - kWh/a
Capacity control(indicate one of three op	Psb Pto(cooling) Pto(heating) Pck ptions)	52 87	W W	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor)	Qhe Qhe Lwa Lwa	- kWh/a - kWh/a 65 dB(A) 67 dB(A)
Capacity control(indicate one of three op	Psb Pto(cooling) Pto(heating) Pck otions)	52 87	W W	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCO2eq.
Capacity control(indicate one of three op fixed staged	Psb Pto(cooling) Pto(heating) Pck otions)	52 87	W W	heating / Warmer heating / colder	Qhe Qhe Lwa Lwa	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCOzeq. 1620 m³/h
Capacity control(indicate one of three op	Psb Pto(cooling) Pto(heating) Pck otions)	52 87	W W	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCO2eq.
Capacity control(indicate one of three op- fixed staged variable	Psb Pto(cooling) Pto(heating) Pck etions) No No Yes	52 87 5	w w w	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor)	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCOzeq. 1620 m³/h
Capacity control(indicate one of three op fixed staged variable Contact details for obtaining Mitsut	Psb Pto(cooling) Pto(heating) Pck otions) No No Yes pishi Heavy Indu	52 87 5	W W W	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor)	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCOzeq. 1620 m³/h
Capacity control(indicate one of three op- fixed staged variable Contact details for obtaining more information Mitsut 5 Th	Psb Pto(cooling) Pto(heating) Pck stions) No No Yes pishi Heavy Indue Square, Stoci	52 87 5	W W W	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor)	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCOzeq. 1620 m³/h
Capacity control(indicate one of three operations of three operations of three operations of three operations of three operations of the o	Psb Pto(cooling) Pto(heating) Pck ottions) No No Yes oishi Heavy Indu te Square, Stocle E SERVICES B.	52 87 5 stries Air-C kley Park, UV.	W W W	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor) Europe, Ltd. ddlesex,UB11 1ET, United Kingdom	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCOzeq. 1620 m³/h
Capacity control(indicate one of three operations of three operations of three operations of three operations of three operations of the o	Psb Pto(cooling) Pto(heating) Pck ottions) No No Yes oishi Heavy Indu te Square, Stocle E SERVICES B.	52 87 5 stries Air-C kley Park, L V. B, Luna Are	W W W Conditioning Jxbridge, Mi	heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor) Europe, Ltd. ddlesex,UB11 1ET, United Kingdom	Qhe Qhe Lwa Lwa GWP	- kWh/a - kWh/a 65 dB(A) 67 dB(A) 675 kgCO2eq. 1620 m³/h



Model FDF125VNXWVH

Model(s): FDC125VNX-	-W / FDF125VH						
Outdoor side heat exchanger of air-o	conditioner :	air					
Indoor side heat exchanger of air-co	onditioner:	air					
Type: vapour compression							
if applicable : electric motor	r						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space	· · · · · · · · · · · · · · · · · · ·		
3 1 7	Prated,c	12.5	kW	cooling energy	η s,c	238.0	%
				efficiency			
Declared cooling capacity for part lo	ad at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization efficiency	ciency /	
Tj and indoor 27°C/19°C(dry/wet bull	•			1	factor for part load at given outdoor t	-	ï
, , , ,	,			, 3,	1 3	•	,
Tj=+35°C	Pdc	12.5	kW	Tj=+35°C	EERd or]
			-	1, 1000	GUEc,bin / AEFc,bin	334.0	%
Tj=+30°C	Pdc	9.25	kW	Tj=+30°C	EERd or		
			-	1, 1000	GUEc,bin / AEFc,bin	490.0	%
Tj=+25°C	Pdc	5.94	kW	Tj=+25°C	EERd or		
			'	1]-1230	GUEc,bin / AEFc,bin	684.0	%
Tj=+20°C	Pdc	3.35	kW	Tj=+20°C	EERd or		
,			·	1]-+20 C		1100.0	%
Degradation			1		GUEc,bin / AEFc,bin		J
coefficient for	Cdc	0.25					
	Cdc		-				
air conditioners**		<u> </u>	·				
Power consumption in other than 'ac	ctive mode						
Off mode	P _{OFF}	0.015	kW	Crankcase heate	er mode P _{CK}	0.005	kW
Thermostat-off mode	P _{TO}		kW		P _{SB}		kW
memostat-on mode	" то	0.067	J _V vv	Standby mode	r SB	0.015	I KVV
Other items							1
Canacity control		verieble	1	For air-to-air air		6000	m³/h
Capacity control		variable]	air flow-rate,outo	door measured]
			1				
Sound power level,	L_WA	68.0	dB				
outdoor			J				
			1				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
			,				
GWP of the		675	kg CO _{2eq.} (100years)				
refrigerant			(100years)				
	itsubishi heavy indu						
** If Cdc is not determined by measu	urement then the def	fault degrad	dation coeffic	ent air conditioner	rs shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-s	pilt air conditioners,t	he test resu	ult and perfor	mance data be ob	tained on the basis of the performan	се	
of the outdoor unit, with a combination	on of indoor unit(s) r	ecommend	ed by the ma	nufacturer or impo	orter.		

Information to identify the model(s) to which t	ne information	relates :		FDC125VN	IX-W / FDF125VH			
Outdoor side heat exchanger of heat pump :		air						
Indoor side heat exchanger of heat pump :		air						
Indication if the heater is equipped with a sup	plementary he			١	10			
if applicable : electric motor								
Parameters shall be declared for the average	heating seas	on , parame	ters for the	warmer and	colder heating season	ns are optional.		
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated heating capacity					Seasonal space			
Traced realing supporty	Prated,h	14.0	kW		heating energy	η s,h	153.1	%
					efficiency	•		
Declared heating capacity for part load at inde	nor temperatu	re 20°C	<u> </u>	1		f performance or gas utilization effici	opou/	
and outdoor temperature Tj	oor terriperatu	16 20 0				r for part load at given outdoor tempe		
and outdoor temperature 1)					auxiliary energy factor	Tor part load at given outdoor tempe	statures 1j	
T _j =-7°C	Pdh	10.1	kW		T _i =-7°C	COPd or		
	1 411				ارا ا		260.0	%
T _j =+2°C	Pdh	6.09	kW		T _i =+2°C	GUEh,bin / AEFh,bin COPd or		
1,-120	i dii		KVV		1,-120		375.0	%
T _j =+7°C	Pdh	3.98	kW		T _i =+7°C	GUEh,bin / AEFh,bin COPd or		
1,-+7 0	ruii	0.00	KVV		1 _j -+7 C		515.0	%
T = 140°0	D.III	2.93	134/		T - 140°0	GUEh,bin / AEFh,bin		
T _j =+12°C	Pdh	2.93	kW		T _j =+12°C	COPd or	610.0	%
T	D.II	11.4	134/		T	GUEh,bin / AEFh,bin	<u> </u>	
T _{biv} =bivalent temperature	Pdh	11.4	kW		T _{biv} =bivalent temperature	COPd or	240.0	%
						GUEh,bin / AEFh,bin		
T _{OL} =operation limit	Pdh	10.0	kW		T _{OL} =operation limit	COPd or	200.0	%
						GUEh,bin / AEFh,bin		
For air-to-water heat pumps :	Pdh	-	kW		For air-to-water heat	COPd or	_	%
T _j =-15°C					pumps:T _j =-15°C	GUEh,bin / AEFh,bin		
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)			
Bivalent temperature	T _{biv}	-10.0	°C		For water-to-air heat			
	•				pumps:Operation limit	t	-	°C
Degradation					T _{ol} temperature			
coefficient	C_{dh}	0.25	_					
heat pumps**								
	1							
Power consumption in modes other than 'acti-	re mode'				Supplementary heater			
l ower consumption in modes other than acti	ve mode				back-up heating capac	elbu	-	kW
Off mode	P _{OFF}	0.015	kW		back-up fleating capat	orty		'
Thermostat-off mode	P _{TO}		kW		T of			
Crankcase heater mode	P _{CK}		kW		Type of energy input	P_{SB}	0.015	kW
Oranicase neater mode	· CK	0.000	KVV		Standby mode			
Other items				1				
Other items					For air to air boot num			
		variable			For air-to-air heat pum	·	6000	m ³ /h
Capacity control		variable			air flow-rate,outdoor n	neasured		
Sound power level,	L_{WA}	70.0	dB		For water-/brine-to-air			3,,
outdoor measured					Rated brine or water f		-	m ³ /h
					outdoor side heat excl	hanger		l l
Emissions of nitrogen	NOx		mg/kWh					
oxides(if applicable)	***	-	fuel input					
			GCV					
GWP of the		675	kg CO _{2eq.}					
refrigerant			(100years)					
Contact details Mitsubish	heavy indust	ries thermal	systems,L	TD.				
** If Cdh is not determined by measurement to	hen the defau	t degradation	on coefficier	nt air conditi	oners shall be 0,25.		· · · · ·	
*** from 26 September 2018								
Where information relates to multi-spilt air co	nditioners.the	test result a	and performs	ance data h	e obtained on the basis	s of the performance		
of the outdoor unit, with a combination of indo						- p		
, mar a somemation of muc	(0) 1000		,		V			

Model FDF125VSXWVH

Model(s): FDC125VSX-W / FI							
Outdoor side heat exchanger of air-conditi		air					
Indoor side heat exchanger of air-condition	ner:	air					
Type: vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	D	40.5	110/	Seasonal space			0/
	Prated,c	12.5	kW	cooling energy	η s,c	238.0	%
				efficiency			
Declared cooling capacity for part load at o	given outdoor	temperatur	res	1	ciency ratio or gas utilization efficier	-	
Tj and indoor 27°C/19°C(dry/wet bulb)				auxiliary energy facto	or for part load at given outdoor tem	peratures T	j
T:- : 25°C	Pdc	12.5	kW				1
Tj=+35°C	Fuc	12.5		Tj=+35°C	EERd or	334.0	%
Tj=+30°C	Pdc	9.25	kW		GUEc,bin / AEFc,bin		
17-7-30 6	ruc	3.23		Tj=+30°C	EERd or	490.0	%
Tj=+25°C	Pdc	5.94	kW	T. 0500	GUEc,bin / AEFc,bin		
1,7 - 20 0	1 40	0.54],,,,	Tj=+25°C	EERd or	684.0	%
Tj=+20°C	Pdc	3.35	kW	T: . 00%0	GUEc,bin / AEFc,bin		
,, .25 5	. 40	0.00]	Tj=+20°C	EERd or	1100.0	%
Degradation			1		GUEc,bin / AEFc,bin		l
Degradation coefficient for	Cdc	0.25					
air conditioners**	Cuc		-				
all conditioners			_				
Power consumption in other than 'active m	node'						
Tower consumption in other than active in	loue						
Off mode	P_{OFF}	0.015	kW	Crankcase heater m	ode P _{CK}	0.005	kW
Thermostat-off mode	P_{TO}	0.067	kW	Standby mode	P_{SB}	0.015	kW
			_				J
Other items							
			_	For air-to-air air cond	ditioner:	6000	m ³ /h
Capacity control		variable		air flow-rate,outdoor	measured	0000	''' /''
			_				
Sound power level,	L_WA	68.0	dB				
outdoor	-vvA	00.0					
			_				
If engine driven:			mg/kWh				
Emissions of nitrogen	NOx ***	-	fuel input				
oxides			GCV				
		r	,				
GWP of the		675	kg CO _{2eq.}				
refrigerant			(100years)				
,	hi heavy indu						
** If Cdc is not determined by measurement	nt then the de	tault degra	dation coeffic	ent air conditioners sh	nall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-spilt air	conditioners,t	he test res	ult and perfor	mance data be obtain	ed on the basis of the performance		
of the outdoor unit, with a combination of i	ndoor unit(s) r	ecommend	ded by the ma	nufacturer or importer			

Information to identify the model(s) to which t	he information	relates ·		ED0405: 11	N/ M / EDE (05) " !				
Outdoor side heat exchanger of heat pump :	ne inionnation			FDC125VS	SX-W / FDF125VH				
Indoor side heat exchanger of heat pump :		air air							
Indication if the heater is equipped with a sup	plementary he			1	No				
if applicable : electric motor	,								
Parameters shall be declared for the average	heating seas	on , parame	eters for the	warmer and	d colder heating seasor	ns are optional.			
Item	Symbol		Unit		Item	Symbol		Value	Unit
Rated heating capacity	0,50.	7 4.40	0		Seasonal space	cymbo.		Value	
Trace nouting capacity	Prated,h	14.0	kW		heating energy efficiency	η s,h		151.0	%
Declared heating capacity for part load at ind	oor temperatu	ıre 20°C		1	Declared coefficient o	of performance or gas utilization	ation efficie	ncv /	
and outdoor temperature Tj						r for part load at given outd			
T _j =-7°C	Pdh	12.4	kW		T _j =-7°C	COPd or GUEh,bin / AEFh,bin		256.0	%
T _j =+2°C	Pdh	7.56	kW		T _j =+2°C	COPd or	•	366.0	%
T _j =+7°C	Pdh	4.90	kW		T _j =+7°C	GUEh,bin / AEFh,bin COPd or	ŀ	517.0	%
T _j =+12°C	Pdh	2.93	kW		T _j =+12°C	GUEh,bin / AEFh,bin COPd or	-	612.0	%
T _{biv} =bivalent temperature	Pdh	14.0	kW		T _{biv} =bivalent temperature	GUEh,bin / AEFh,bin COPd or		205.0	%
T _{OL} =operation limit	Pdh	10.9	kW		T _{OL} =operation limit	GUEh,bin / AEFh,bin COPd or		200.0	%
For air-to-water heat pumps :	Pdh	-	kW		For air-to-water heat	GUEh,bin / AEFh,bin COPd or		_	%
T _j =-15°C (if T _{OL} <-20°C)					pumps:T _j =-15°C (if T _{OL} <-20°C)	GUEh,bin / AEFh,bin	Ĺ]
Bivalent temperature	T _{biv}	-10.0	°C		For water-to-air heat pumps:Operation limit	t			oc .
Degradation		0.25			T _{ol} temperature	•]
coefficient heat pumps**	C_{dh}	0.25	-						
Power consumption in modes other than 'acti	we mode'		1	_	Supplementary heater	r			 1
Off mode	P _{OFF}	0.015	kW		back-up heating capa		elbu	-	kW
Thermostat-off mode	P _{TO}	-	kW		Time of operational		ſ		1
Crankcase heater mode	P _{CK}	-	kW		Type of energy input Standby mode		P _{SB}	0.015	kW
Other items					For air-to-air heat pun	nne.	[1
Capacity control		variable			air flow-rate,outdoor n			6000	m ³ /h
Sound power level, outdoor measured	L_{WA}	70.0	dB		For water-/brine-to-air Rated brine or water f outdoor side heat excl	iow-rate,		-	m³/h
Emissions of nitrogen oxides(if applicable)	NOx ***	-	mg/kWh fuel input GCV			ŭ			-
GWP of the refrigerant		675	kg CO _{2eq.} (100years)	,					
Daniel Lander		Li	Lauret 11						
Contact details Mitsubish ** If Cdh is not determined by measurement t	i heavy indust hen the defau				oners shall be 0.25				
	alo deidu	aogradali	556111616	an contait					
*** from 26 September 2018	nditioners #	toot recult	and norfor	onoo data L	a abtained on the h = -!-	of the performance			
Where information relates to multi-spilt air co of the outdoor unit, with a combination of indo						or the performance			
or the outdoor unit, with a combination of fluc	701 UIII(S) 1800	Janine lueu I	by use mail	and Cluffer Of	importer.				

Model FDF140VNXWVH

Model(s): FDC140VNX-W	FDF140VH						
Outdoor side heat exchanger of air-con	ditioner :	air					
Indoor side heat exchanger of air-condit	tioner :	air					
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space			
	Prated,c	14.0	kW	cooling energy	η s,c	230.0	%
				efficiency			
Declared cooling capacity for part load a Tj and indoor 27°C/19°C(dry/wet bulb)	at given outdoor	temperatu	res		fficiency ratio or gas utilization ctor for part load at given outdo	•	Гј
Tj=+35°C	Pdc	14.0	kW	Tj=+35°C	EERd or GUEc,bin / AEFc,bin	303.0	%
Tj=+30°C	Pdc	10.3	kW	Tj=+30°C	EERd or	463.0	%
Ti-+25°C	Pdc	6.57	lkW	T. 0500	GUEc,bin / AEFc,bin		
Tj=+25°C	Puc	6.57	J ^{KVV}	Tj=+25°C	EERd or	655.0	%
Tj=+20°C	Pdc	3.35	kW	T: .00%	GUEc,bin / AEFc,bin		+
17-120 0	i do	3.33	T _K VV	Tj=+20°C	EERd or	1090.0	%
Degradation			1		GUEc,bin / AEFc,bin		1
coefficient for	Cdc	0.25					
air conditioners**	Odo						
an conditioners			_				
Power consumption in other than 'active	e mode'						
Off mode	P _{OFF}	0.015	kW	Crankcase heater i	mode P _{CK}	0.005	kW
Thermostat-off mode	P _{TO}	0.067	kW	Standby mode	P_{SB}	0.015	kW
			_				•
Other items							
			_	For air-to-air air co	nditioner:	6000	m ³ /h
Capacity control		variable		air flow-rate,outdoo	or measured	0000]''' /''
Sound power level,] <u>.</u>				
outdoor	L_{WA}	69.0	dB				
			_				
If engine driven:			mg/kWh				
Emissions of nitrogen	NOx ***	-	fuel input				
oxides			GCV				
			_				
GWP of the		675	kg CO₂eq.				
refrigerant		675	(100years)				
			_				
la				<u> </u>			
Contact details Mitsul ** If Cdc is not determined by measurer	bishi heavy indu				shall he 0.25		
1	nent then the de	aun degra	iualion coelli	CICIL AII CONUILIONEIS	SHAII DE U,ZJ.		
*** from 26 September 2018					Section Heat and Administration		
Where information relates to multi-spilt						mance	
of the outdoor unit, with a combination of	ot indoor unit(s) i	recommen	aed by the m	anutacturer or import	er.		

Information to identify the model(s) to which to	he informatior	relates :		FDC140VN	X-W / FDF140VH			
Outdoor side heat exchanger of heat pump :		air						
Indoor side heat exchanger of heat pump :		air						
Indication if the heater is equipped with a sup	plementary he	eater :		1	No			
if applicable : electric motor								
Parameters shall be declared for the average	heating seas	on , parame	ters for the	warmer and	d colder heating season	ns are optional.		
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated heating capacity	•				Seasonal space			
	Prated,h	16.0	kW		heating energy	η s,h	149.4	%
					efficiency			
Declared heating capacity for part load at inde	oor temperatu	ıre 20°C		1	Declared coefficient of	f performance or gas utilization effic	ciency /	
and outdoor temperature Tj						for part load at given outdoor temp		
T _j =-7°C	Pdh	11.5	kW		T _i =-7°C	COPd or	054.0	0,
						GUEh,bin / AEFh,bin	251.0	%
T _j =+2°C	Pdh	7.00	kW		T _i =+2°C	COPd or	0.500	,
,					,	GUEh,bin / AEFh,bin	356.0	%
T _j =+7°C	Pdh	4.50	kW		T _i =+7°C	COPd or		i.,
,					,	GUEh,bin / AEFh,bin	531.0	%
T _i =+12°C	Pdh	2.90	kW		T _i =+12°C	COPd or		i.,
					,	GUEh,bin / AEFh,bin	610.0	%
T _{biv} =bivalent temperature	Pdh	13.0	kW		T _{biv} =bivalent	COPd or		İ
					temperature	GUEh,bin / AEFh,bin	230.0	%
T _{OL} =operation limit	Pdh	10.9	kW		T _{OL} =operation limit	COPd or		1
- OL - F			ļ		OL PERSON	GUEh,bin / AEFh,bin	200.0	%
For air-to-water heat pumps :	Pdh	-	kW		For air-to-water heat	COPd or		İ
T _i =-15°C	i dii		I		pumps:T _i =-15°C	GUEh,bin / AEFh,bin	-	%
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)			'
(· · · · · · · · · · · · · · · · · · ·					(OL 1 = 1)			
Bivalent temperature	T _{biv}	-10.0	°C		For water-to-air heat			1
Sivaion temperatare	· DIV		1		pumps:Operation limit	t	_	°C
Degradation					T _{ol} temperature			
coefficient	C_{dh}	0.25						1
heat pumps**	Odh							
				1				
Dever sensumption in modes other than lastin	io mode!				Cumplementer / beeter			Ī
Power consumption in modes other than 'acti	ve mode				Supplementary heater	elbu	-	kW
Off mode	P _{OFF}	0.015	kW		back-up heating capac	city		ı
Thermostat-off mode	P _{TO}		kW		Type of energy input			I
Crankcase heater mode	P _{CK}		kW			P_{SB}	0.015	kW
	OK .	5.000	J		Standby mode			1
Other items				1				
Other items					For air-to-air heat pum	ano:		Ī
Capacity control		variable			air flow-rate,outdoor n		6000	m ³ /h
Capacity control			l		all flow-rate,outdoor fr	neasureu		ı
Count of the same laws								I
Sound power level,	L_{WA}	71.0	dB		For water-/brine-to-air		_	m ³ /h
outdoor measured			l		Rated brine or water fi			,
Facilities of eitherne					outdoor side heat excl	nanger		l .
Emissions of nitrogen	NOx		mg/kWh					
oxides(if applicable)	***		fuel input					
			GCV					
				1				
GWP of the			kg CO₂eq.					
			(100years)					
refrigerant			Γ , ,					
Contact details	i books in the	rian th '	Lavate 1	I	ļ.			
Contact details ** If Cdh is not determined by measurement t	i heavy indust				oners shall be 0.25			
	alo deldu	asyradali	5561110161	an oonall				
*** from 26 September 2018						f th f		
Where information relates to multi-spilt air co						s or the performance		
of the outdoor unit, with a combination of indo	or unit(s) reco	ornmended b	by the manu	uracturer or	importer.			

Model FDF140VSXWVH

Model(s): FDC140VSX	C-W / FDF140VH						
Outdoor side heat exchanger of air-		air					
Indoor side heat exchanger of air-c	onditioner :	air					
Type: vapour compression							
if applicable : electric moto	or						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	,			Seasonal space	,		
3 1 7	Prated,c	14.0	kW	cooling energy	η s,c	230.0	%
				efficiency			
Declared cooling capacity for part le	oad at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization e	fficiency /	•
Tj and indoor 27°C/19°C(dry/wet bu	_	·			actor for part load at given outdoo	•	ï
							,
Tj=+35°C	Pdc	14.0	kW	Tj=+35°C	EERd or	202.0	0/
			_	,	GUEc,bin / AEFc,bin	303.0	%
Tj=+30°C	Pdc	10.3	kW	Tj=+30°C	EERd or	400.0	0/
			_		GUEc,bin / AEFc,bin	463.0	%
Tj=+25°C	Pdc	6.57	kW	Tj=+25°C	EERd or	655.0	0/
			·	,	GUEc,bin / AEFc,bin	655.0	%
Tj=+20°C	Pdc	3.35	kW	Tj=+20°C	EERd or	4000.0	0/
			_		GUEc,bin / AEFc,bin	1090.0	%
Degradation]				•
coefficient for	Cdc	0.25	-				
air conditioners**							
			_				
Power consumption in other than 'a	active mode'						
'							
Off mode	P _{OFF}	0.015	kW	Crankcase heater	r mode P _{CK}	0.005	kW
Thermostat-off mode	P_{TO}	0.067	kW	Standby mode	P_{SB}	0.015	kW
			_				•
Other items							
			_	For air-to-air air c	onditioner:	6000	m ³ /h
Capacity control		variable		air flow-rate,outdo	oor measured		
			_				
Sound power level,	L_{WA}	69.0	dB				
outdoor	-vvA	00.0					
			_				
If engine driven:	NO		mg/kWh				
Emissions of nitrogen	NOx ***	-	fuel input				
oxides			GCV				
			,				
GWP of the		675	kg CO _{2eq.}				
refrigerant			(100years)				
	/litsubishi heavy indu		-				
** If Cdc is not determined by meas	surement then the def	fault degra	dation coeffic	ent air conditioners	s shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-	spilt air conditioners,t	he test res	ult and perfor	mance data be obta	ained on the basis of the perform	ance	
of the outdoor unit, with a combinat	tion of indoor unit(s) r	ecommend	led by the ma	nufacturer or impor	rter.		

Information to identify the model(s) to which to	ne informatio	n relates :	FDC140VS	SX-W / FDF140VH			
Outdoor side heat exchanger of heat pump :		air					
Indoor side heat exchanger of heat pump :		air					
Indication if the heater is equipped with a sup	plementary h	eater:	1	No.			
if applicable : electric motor							
Parameters shall be declared for the average	heating seas	son , parameters for the	warmer and	d colder heating season	s are optional.		
Item	Symbol	Value Unit		Item	Symbol	Value	Unit
Rated heating capacity				Seasonal space			
	Prated,h	16.0 kW		heating energy	η s,h	146.0	%
				efficiency			
Declared heating capacity for part load at inde	oor temperati	ure 20°C		Declared coefficient of	f performance or gas utilizat	tion efficiency /	
and outdoor temperature Tj				auxiliary energy factor	for part load at given outdo	or temperatures T	
							_
T _j =-7°C	Pdh	13.7 kW		T _j =-7°C	COPd or	240.0	%
				_	GUEh,bin / AEFh,bin		4
T _j =+2°C	Pdh	8.4 kW		T _j =+2°C	COPd or	350.0	%
					GUEh,bin / AEFh,bin		_
T _j =+7°C	Pdh	5.4 kW		T _j =+7°C	COPd or	517.0	%
	.				GUEh,bin / AEFh,bin	-	-
T _j =+12°C	Pdh	2.9 kW		T _j =+12°C	COPd or	610.0	%
T bis-standard	Dall	15.5 kW		T	GUEh,bin / AEFh,bin	-	-
T _{biv} =bivalent temperature	Pdh	15.5 kW		T _{biv} =bivalent temperature	COPd or	200.0	%
T - an aration limit	Ddb	11.9 kW			GUEh,bin / AEFh,bin	<u> </u>	┥ !
T _{OL} =operation limit	Pdh	11.9 kW		T _{OL} =operation limit	COPd or	180.0	%
	Б. II				GUEh,bin / AEFh,bin		-
For air-to-water heat pumps : T _i =-15°C	Pdh	- kW		For air-to-water heat pumps:T _i =-15°C	COPd or GUEh,bin / AEFh,bin	- -	%
(if T _{OL} <-20°C)				(if T _{OL} <-20°C)	GOEN, DITT ALT 11, DIT	<u> </u>	
()				(II TOL (20 0)			
Bivalent temperature	T _{biv}	-10.0 °C		For water-to-air heat			7
	- DIV			pumps:Operation limit		-	°C
Degradation				T _{ol} temperature			
coefficient	C_{dh}	0.25					_
heat pumps**							
							_
Power consumption in modes other than 'activ	/e mode'			Supplementary heater	•	elbu -	kW
				back-up heating capac	city		
Off mode	Poff	0.015 kW					_
Thermostat-off mode	P _{TO}	0.087 kW		Type of energy input		P _{SB} 0.015	kW
Crankcase heater mode	P _{CK}	0.005 kW		Standby mode			
Other items							٦
				For air-to-air heat pum	nps:	6000	m ³ /h
Capacity control		variable		air flow-rate,outdoor n	neasured		_
							- I
Sound power level,	L_{WA}	71.0 dB		For water-/brine-to-air			3,,
outdoor measured				Rated brine or water fi		-	m ³ /h
				outdoor side heat excl	nanger		⊣ ∣
Emissions of nitrogen	NOx	mg/kWh					
oxides(if applicable)	***	fuel input					
		GCV					
			1				
GWP of the		kg CO _{2eq.}					
		675 (100years)					
refrigerant							
Contact details Mitsubish	heavy indus	tries thermal systems,L1	TD.				
** If Cdh is not determined by measurement t				oners shall be 0,25.			
*** from 26 September 2018							
Where information relates to multi-spilt air co	nditioners the	test result and perform	ance data h	e obtained on the hasis	of the performance		
of the outdoor unit, with a combination of indo					p		
,	(-).00	_,					

Model FDF140VNXWPVH

Model(s): FDC140VN	NX-W / FDF71VH (x2 u	nits)					
Outdoor side heat exchanger of a	ir-conditioner:	air					
Indoor side heat exchanger of air-	-conditioner :	air					
Type: vapour compression							
if applicable : electric mo	tor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	-			Seasonal space			
	Prated,c	14.0	kW	cooling energy	η s,c	325.0	%
				efficiency			
Declared cooling capacity for part	load at given outdoor	temperature	es	Declared energy	efficiency ratio or gas utilization e	efficiency /	
Tj and indoor 27°C/19°C(dry/wet b	-	·			factor for part load at given outdoo	-	j
Tj=+35°C	Pdc	14.0	kW	Tj=+35°C	EERd or	371.0	%
		г	,		GUEc,bin / AEFc,bin		
Tj=+30°C	Pdc	10.4	kW	Tj=+30°C	EERd or	575.0	%
		г	,		GUEc,bin / AEFc,bin		
Tj=+25°C	Pdc	6.65	kW	Tj=+25°C	EERd or	906.0	%
		г	,		GUEc,bin / AEFc,bin		
Tj=+20°C	Pdc	3.56	kW	Tj=+20°C	EERd or	1960.0	%
			,		GUEc,bin / AEFc,bin		
Degradation							
coefficient for	Cdc	0.25	-				
air conditioners**]				
Power consumption in other than	'active mode'						
Off mode	P_{OFF}	0.015	kW	Crankcase heate	er mode P _{CK}	0.005	kW
Thermostat-off mode	P_{TO}	0.000	kW	Standby mode	P_{SB}	0.015	kW
Other items				For air-to-air air	conditioner:] _
Capacity control		variable]	air flow-rate,outo		6000	m ³ /h
Sound power level,]				
outdoor	L_{WA}	69.0	dB				
			1				
If engine driven:			mg/kWh				
Emissions of nitrogen	NOx ***	-	fuel input				
oxides			GCV				
]				
GWP of the] 				
		675	kg CO _{2eq.} (100years)				
refrigerant], , ,				
Contact details	Mitsubishi heavy indus	stries therm	ıal systems I	TD			
** If Cdc is not determined by mea					rs shall be 0,25.		
*** from 26 September 2018		Ü			•		
	i_enilt air conditionors t	he test roc	ilt and porfor	mance data ha ah	tained on the basis of the porform	ance	
Where information relates to multi						ance	
of the outdoor unit, with a combina	auon oi indoor unit(s) r	ecommend	ed by the ma	nulacturer or impo	orter.		
L							

Information to identify the model(s) to which	the information	n relates :		FDC140VN	IX-W / FDF71VH (x2 u	nits)		
Outdoor side heat exchanger of heat pump :		air			,	•		
Indoor side heat exchanger of heat pump :		air						
Indication if the heater is equipped with a sup	plementary h			١	lo			
if applicable : electric motor								
Parameters shall be declared for the average	heating seas	on , parame	ters for the	warmer and	colder heating season	ns are optional.		
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated heating capacity					Seasonal space		T	
Trace realing supusity	Prated,h	16.0	kW		heating energy	η s,h	181.0	%
					efficiency			
Declared heating capacity for part load at inc	oor temperati	ıre 20°C		1	Declared coefficient of	f performance or gas utilization effic	riency /	
and outdoor temperature Tj						for part load at given outdoor temp		
,							,	
T _j =-7°C	Pdh	11.5	kW		T _i =-7°C	COPd or		1
,			ı		,	GUEh,bin / AEFh,bin	281.0	%
T _j =+2°C	Pdh	7.02	kW		T _i =+2°C	COPd or		İ
,					,	GUEh,bin / AEFh,bin	420.0	%
T _j =+7°C	Pdh	4.45	kW		T _i =+7°C	COPd or		
1,-1,0	i dii		I.v.		١١٫-٠٠		686.0	%
T _i =+12°C	Pdh	2.83	kW		T _i =+12°C	GUEh,bin / AEFh,bin COPd or		ł
1,-1,20	i dii		KVV		1,-1120		870.0	%
T., =hivalent temporature	Ddh	13.0	rw.		T., =biyalant	GUEh,bin / AEFh,bin		1
T _{biv} =bivalent temperature	Pdh	10.0	kW		T _{biv} =bivalent temperature	COPd or	240.0	%
	ъ.,	40.2	l			GUEh,bin / AEFh,bin		ł
T _{OL} =operation limit	Pdh	10.3	kW		T _{OL} =operation limit	COPd or	220.0	%
			ı			GUEh,bin / AEFh,bin	-	ł
For air-to-water heat pumps :	Pdh	-	kW		For air-to-water heat	COPd or	-	%
T _j =-15°C					pumps:T _j =-15°C	GUEh,bin / AEFh,bin		l
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)			
			ı					1
Bivalent temperature	T _{biv}	-10.0	°C		For water-to-air heat			
			ı		pumps:Operation limit	i	-	°C
Degradation					T _{ol} temperature			
coefficient	C_{dh}	0.25	-					
heat pumps**								
				4				
								1
Power consumption in modes other than 'acti	ve mode'				Supplementary heater	elbu	_	kW
			1		back-up heating capac	city		
Off mode	P _{OFF}	0.015	kW					1
Thermostat-off mode	P _{TO}	0.015	kW		Type of energy input	P_{SB}	0.015	kW
Crankcase heater mode	P _{CK}	0.005	kW		Standby mode	35]
				1				
Other items								
			•1		For air-to-air heat pum	nps:	6000	m³/h
Capacity control		variable			air flow-rate,outdoor m	neasured		J /
Sound power level,	L_{WA}	71.0	dB		For water-/brine-to-air	heat pumps :		
outdoor measured	-WA	71.0	db		Rated brine or water fi	iow-rate,	-	m³/h
					outdoor side heat excl	hanger		
Emissions of nitrogen			mg/kWh					-
oxides(if applicable)	NOx ***		fuel input					
,			GCV					
				1				
GWP of the			kg CO _{2eq.}					
refrigerant		675	(100years)					
Tomgorant			ı					
				1				
Contact details Mitsubish	i heavy indust	tries thermal	systems I	TD	!			
** If Cdh is not determined by measurement					oners shall be 0.25.			
		5			-,			
*** from 26 September 2018					basins at 100 to 100 to	f H		
Where information relates to multi-spilt air co						s or the performance		
of the outdoor unit, with a combination of inde	oor unit(s) rec	ommended b	by the manu	uracturer or i	mporter.			

Model FDF140VSXWPVH

Model(s): FDC140VSX-W / FDF71VH (x2 units)										
Outdoor side heat exchanger of air-conditioner : air										
Indoor side heat exchanger of air-co	onditioner :	air								
Type: vapour compression										
if applicable : electric motor	r									
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated cooling capacity	•			Seasonal space						
3 1 7	Prated,c	14.0	kW	cooling energy	η s,c	325.0	%			
				efficiency						
Declared cooling capacity for part lo	ad at given outdoor	temperatur	Declared energy	efficiency ratio or gas utilization e	fficiency /					
Tj and indoor 27°C/19°C(dry/wet bull	•		1	factor for part load at given outdoo	-	ï				
	,			, 3,	, ,	'	,			
Tj=+35°C	Pdc	14.0	kW	Tj=+35°C	EERd or]			
			-	1,7 100 0	GUEc,bin / AEFc,bin	371.0	%			
Tj=+30°C	Pdc	10.4	kW	Tj=+30°C	EERd or					
			-	1,7 100 0	GUEc,bin / AEFc,bin	575.0	%			
Tj=+25°C	Pdc	6.65	kW	Tj=+25°C	EERd or					
			-	113-1250		906.0	%			
Tj=+20°C	Pdc	3.56	kW	Tj=+20°C	GUEc,bin / AEFc,bin EERd or					
,			·	1]-+20 C		1960.0	%			
Degradation			1		GUEc,bin / AEFc,bin		J			
Degradation coefficient for	Cdc	0.25								
	Cdc		-							
air conditioners**			·							
Power consumption in other than 'ac	ctive mode									
Off mode	P _{OFF}	0.015	kW	Crankcase heate	er mode P _{CK}	0.005	kW			
Thermostat-off mode	P _{TO}		kW		P _{SB}		kW			
memostat-on mode	т то	0.000] _V vv	Standby mode	r SB	0.015	KVV			
Other items							1			
Capacity control		veriable	1	For air-to-air air o		6000	m³/h			
Capacity control		variable]	air flow-rate,outd	loor measured					
			1							
Sound power level,	L_WA	69.0	dB							
outdoor			J							
			, I							
If engine driven:	NOx		mg/kWh							
Emissions of nitrogen	***	-	fuel input							
oxides			GCV							
			,							
GWP of the		675	kg CO _{2eq.}							
refrigerant			(100years)							
	itsubishi heavy indu									
** If Cdc is not determined by measu	urement then the de	fault degrac	dation coeffic	ent air conditioner	s shall be 0,25.					
*** from 26 September 2018										
Where information relates to multi-spilt air conditioners, the test result and performance data be obtained on the basis of the performance										
of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.										

Information to identify the model(s) to which the information relates : FDC140VSX-W / FDF71VH (x2 units)									
Outdoor side heat exchanger of heat pump :		air				,			
Indoor side heat exchanger of heat pump :		air							
Indication if the heater is equipped with a sup	plementary h	eater :		١	No.				
if applicable : electric motor									
Parameters shall be declared for the average	heating seas	on , parame	ters for the	warmer and	d colder heating season	ns are optional.			
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit	
Rated heating capacity					Seasonal space				
	Prated,h	16.0	kW		heating energy	η s,h	165.0	%	
				-	efficiency				
Declared heating capacity for part load at inde	oor temperatu	ıre 20°C				of performance or gas utilization of			
and outdoor temperature Tj					auxiliary energy factor	r for part load at given outdoor te	emperatures Tj		
		12.7						1	
T _j =-7°C	Pdh	12.7	kW		T _j =-7°C	COPd or	256.0	%	
T = 10°0	Pdh	7.69	kW		T - + 2°0	GUEh,bin / AEFh,bin COPd or			
T _j =+2°C	Pull	7.00	KVV		T _j =+2°C		398.0	%	
T = 1.7°C	Pdh	4.96	kW		T = 17°C	GUEh,bin / AEFh,bin			
T _j =+7°C	Pull	4.30	KVV		T _j =+7°C	COPd or	587.0	%	
T _i =+12°C	Pdh	2.83	kW		T _i =+12°C	GUEh,bin / AEFh,bin COPd or			
1 _j -+12 0	Full	2.00	KVV		1 _j -+12 C		715.0	%	
T =hivelent temperature	Pdh	14.3	kW		T =hivelent	GUEh,bin / AEFh,bin COPd or			
T _{biv} =bivalent temperature	Pull	14.0	KVV		T _{biv} =bivalent temperature		230.0	%	
T	Pdh	11.9	kW		T _{OI} =operation limit	GUEh,bin / AEFh,bin COPd or			
T _{OL} =operation limit	Pull	11.5	KVV		T _{OL} -operation limit		210.0	%	
	D. II					GUEh,bin / AEFh,bin			
For air-to-water heat pumps : T _i =-15°C	Pdh		kW		For air-to-water heat pumps:T _i =-15°C	COPd or GUEh,bin / AEFh,bin	-	%	
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)	GOLII,DIII / ALI II,DIII		J	
(II 1 _{OL} <-20 0)					(II 1 _{OL} <-20 0)				
Bivalent temperature	T _{biv}	-10.0	°C		For water-to-air heat			1	
Bivalent temperature	1 DIV		Ü		pumps:Operation limit	t	_	°C	
Degradation					T _{ol} temperature				
coefficient	C_{dh}	0.25	_					J	
heat pumps**	- un								
				1					
Power consumption in modes other than 'activ	e mode'				Supplementary heater	r "		l	
					back-up heating capa	eib	u -	kW	
Off mode	P _{OFF}	0.015	kW			•		•	
Thermostat-off mode	P_{TO}	0.015	kW		Type of energy input	P _{si}	0.045	kW	
Crankcase heater mode	P _{CK}	0.005	kW		Standby mode	FSI	B 0.015	KVV	
Other items									
					For air-to-air heat pun	nps:	6000	m ³ /h	
Capacity control		variable			air flow-rate,outdoor n	neasured		l''' /''	
Sound power level,	L_{WA}	71.0	dB		For water-/brine-to-air	heat pumps :			
outdoor measured	-117		45		Rated brine or water f	ñow-rate,	-	m³/h	
					outdoor side heat excl	hanger			
Emissions of nitrogen	NOx		mg/kWh						
oxides(if applicable)	***	-	fuel input						
			GCV						
				1					
GWP of the			kg CO _{2eq.}						
refrigerant			(100years)	'					
ļ				ļ	ļ				
-	heavy indust								
** If Cdh is not determined by measurement the	nen the defau	ııı degradatio	n coefficie	nt air conditi	oners snall be 0,25.				
*** from 26 September 2018									
Where information relates to multi-spilt air conditioners, the test result and performance data be obtained on the basis of the performance									
of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.									
Î.									

Model FDF71VH, 100VH, 125VH, 140VH

Model(s): FDF71VH								
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Cooling capacity (sensible)	$P_{rated,c}$	5.1	kW	Total electric power input	P _{elec}	0.050	kW	
Cooling capacity (latent)	$P_{\text{rated,c}}$	2.0	kW	Sound power level (per speed setting,if applicable)	L_{WA}	55.0	dB	
Heating capacity	$P_{rated,h}$	8.0	kW					
Contact details Mitsubishi heavy industries thermal systems,LTD.								

Model(s): FDF100VH							
ltem	Symbol	Value	Unit	Item	Symbol	Value	Unit
Cooling capacity (sensible)	$P_{rated,c}$	7.2	kW	Total electric power input	P _{elec}	0.160	kW
Cooling capacity (latent)	P _{rated,c}	2.8	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB
Heating capacity	P _{rated,h}	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD.						

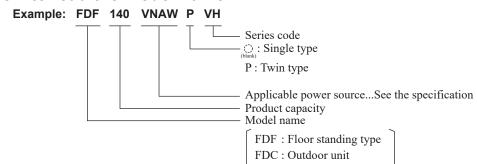
Model(s): FDF125VH								
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Cooling capacity (sensible)	$P_{rated,c}$	8.5	kW	Total electric power input	P _{elec}	0.210	kW	
Cooling capacity (latent)	P _{rated,c}	4.0	kW	Sound power level (per speed setting,if applicable)	L _{WA}	67.0	dB	
Heating capacity	$P_{\text{rated,h}}$	14.0	kW					
Contact details Mitsubishi heavy industries thermal systems,LTD.								

Model(s): FDF140VH								
ltem	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Cooling capacity (sensible)	$P_{rated,c}$	9.4	kW	Total electric power input	P _{elec}	0.210	kW	
Cooling capacity (latent)	$P_{\text{rated,c}}$	4.6	kW	Sound power level (per speed setting,if applicable)	L _{WA}	67.0	dB	
Heating capacity	$P_{rated,h}$	16.0	kW					
Contact details Mitsubishi heavy industries thermal systems,LTD.								

2. MICRO INVERTER PACKAGED AIR-CONDITIONERS CONTENTS

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■ How to read the model name



2.1 SPECIFICATIONS

(1) Single type

			Model		FDF100\	/NAWVH		
Item				Indoor unit	FDF100VH	Outdoor unit	FDC100VNA-W	
Power sour	ce				,	50Hz / 220V 60Hz		
	Nominal cooling capacit	ty (range)	kW		10.0 [4.0(Min.) - 11.2(Max.)]		
	Nominal heating capacit		kW		11.2 [4.0(Min.			
	Power consumption	Cooling				08		
		Heating	kW			94		
	Max power consumption					40		
	Running current	Cooling				15.6		
		Heating	A			15.0		
Operation	Inrush current, max curr					24		
data	Power factor	Cooling	%			0		
data		Heating	,,,			9		
	EER	Cooling				25		
	СОР	Heating			3.	81		
	Sound power level	Cooling		65	,)		69	
		Heating					70	
	Sound pressure level	Cooling	dB(A)	P-Hi:53 Hi:51	Me: 49 Lo: 44		54	
		Heating					55	
	Silent mode sound pres	sure level				48 / 44 (No	rmal / Silent)	
Exterior dim	nensions (Height x Width	x Depth)	mm	1850 × 60		845×9	70×370	
Exterior app	pearance			Ceramio	white		o white	
(Munsell co	olor)			(N8.0) near	equivalent	(4.2Y7.5/1.1)	near equivalent	
(RAL color)			(RAL 7047) n	ear equivalent	(RAL 7044)	near equivalent	
Net weight			kg	49)	7	77	
Compressor type & Q'ty						RMT5126	SSWP3 x 1	
Compressor motor (Starting method)			kW			Direct I	ine start	
Refrigerant oil (Amount, type)			L			0.9 (M	-MB75)	
Refrigerant (Type, amount, pre-charge length)			kg	R32 3.3	in outdoor unit (Incl. the	e amount for the piping	of 30m)	
Heat exchanger				Louver fin & inner	grooved tubing	M shape fin & inr	ner grooved tubing	
Refrigerant control					Electronic ex	oansion valve		
Fan type &				Centrifuga			er fan ×1	
an motor ((Starting method)		W	157 < Direct	line start >	86 < Direc	t line start >	
Air flow		Cooling	m³/min	P-Hi : 27 Hi : 26	Ma · 23 La · 10		75	
		Heating	111 / 11 1111		WC. 20 LO. 10		73 0	
	xternal static pressure		Pa		0			
Outside air				Not po				
	uality / Quantity			Plastic net ×1	,		_	
	oration absorber			Rubber sleeve	for fan motor)	Rubber sleeve (for fan motor & compressor		
Electric hea			W				20 (Crank case heater)	
Operation	Remote control			(Option) Wir		, RCH-E3 Wireless : F	RCN-KIT4-E2	
control	Room temperature cont	rol			Thermostat b	y electronics		
	Operation display				-	-		
Safety equi					Refrigerant I Internal thermos Abnormal discharge t	tor. Frost protection the eak detection stat for fan motor. emperature protection.		
	Refrigerant piping size	Liquid line	mm	I/U φ 9.52			9.52 (3/8")	
	(O.D.)	Gas line				5/8")x1.0 φ 15.88 (<u> </u>	
	Connecting method			Flare p			piping	
nstallation	Attached length of pipin	ig	m	_			_	
data	Insulation for piping				Necessary (both L			
	Refrigerant line (one wa		m			c.50		
	Vertical height diff. between	O/U and I/U	m		utdoor unit is higher)	Max.15 (Outdoor ur		
	Drain hose			Hose connectable with VP20 Hole size φ 20 x 3 pcs.				
	o, max lift height		mm	_			_	
	nded breaker size		Α		<u>-</u>			
	ked rotor ampere)		Α			.0		
Interconnecting wires Size x Core number						Terminal block (Screw	0 71 /	
IP number				IPX0 IP24				
Standard accessories				Mounti			_	
Option parts				Motion sensor : LB-KIT2				
Notes (1) The data are measured at the following cor Item Indoor air temperature				ons. tdoor air temperature		The pipe length is 7.5m.	1	
Oper	ration DB	WB		DB WB	Stand	dards		
	Cooling 27°C	10°C		25°C 24°C	19051	F4 T4	1	

Item	Indoor air t	emperature	Outdoor air	temperature	Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C 19°C		35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF100\	VSAWVH				
Item				Indoor unit FDF100VH	Outdoor unit FDC100VSA-W				
Power sour	rce				/ 50Hz / 380V 60Hz				
	Nominal cooling capacity	(range)	kW	10.0 [4.0(Min	.) - 11.2(Max.)]				
	Nominal heating capacity	(range)	kW	11.2 [4.0(Min	.) - 12.5(Max.)]				
	Dawer consumption	Cooling		3.09					
	Power consumption Heating Max power consumption		kW	2.94					
				10	.20				
	Dunning oursent	Cooling		4.8	/ 5.0				
	Running current	Heating	Α [4.6	/ 4.8				
Operation	Inrush current, max curren	nt		5 ,	15				
data	Power factor	Cooling	%	9	04				
uaia	Fower factor	Heating	70	9	3				
	EER	Cooling		3.	25				
	COP	Heating		3.	81				
	Sound power level	Cooling		65	69				
	Courta power lever	Heating			70				
	Sound pressure level	Cooling	dB(A)	P-Hi:53 Hi:51 Me:49 Lo:44	54				
	·	Heating		1 111.00 111.01 We . 10 E0 . 11	55				
	Silent mode sound pressu	ire level			48 / 44 (Normal / Silent)				
Exterior din	nensions (Height x Width x	Depth)	mm	1850 × 600 × 329	845×970×370				
Exterior app	pearance			Ceramic white	Stucco white				
(Munsell co	olor)			(N8.0) near equivalent	(4.2Y7.5/1.1) near equivalent				
(RAL color)			(RAL 7047) near equivalent	(RAL 7044) near equivalent				
Net weight			kg	49	78				
Compressor type & Q'ty				_	RMT5126SWP4 x 1				
Compresso	Compressor motor (Starting method)			-	Direct line start				
Refrigerant oil (Amount, type)			L	_	0.9 (M-MB75)				
Refrigerant	(Type, amount, pre-charge	length)	kg	R32 3.3 in outdoor unit (Incl. th	e amount for the piping of 30m)				
Heat excha	inger			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing				
Refrigerant	control			Electronic ex	pansion valve				
Fan type &	Q'ty			Centrifugal fan ×1	Propeller fan ×1				
Fan motor ((Starting method)		W	157 < Direct line start >	86 < Direct line start >				
Air flow		Cooling Heating	m³/min	P-Hi: 27 Hi: 26 Me: 23 Lo: 19	75 73				
Available ex	xternal static pressure		Pa	0	0				
Outside air	· · · · · · · · · · · · · · · · · · ·			Not possible	_				
Air filter, Qu	uality / Quantity			Plastic net ×1 (Washable)	_				
Shock & vib	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)				
Electric hea	ater		W	<u>-</u>	20 (Crank case heater)				
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5	, RCH-E3 Wireless : RCN-KIT4-E2				
control	Room temperature contro	I		Thermostat b	by electronics				
CONTROL	Operation display			-	- -				
Safety equi	ipments			Refrigerant l Internal thermo	otor. Frost protection thermostat. leak detection stat for fan motor. lemperature protection.				
	Refrigerant piping size	Liquid line			2 (3/8")x0.8				
	(O.D.)	Gas line	mm		(5/8")x1.0 φ 15.88 (5/8")				
	Connecting method			Flare piping	Flare piping				
Installation	Attached length of piping		m						
data	Insulation for piping			Necessary (both I	Liquid & Gas lines)				
	Refrigerant line (one way)	length	m		x.50				
	Vertical height diff. between O/		m	Max.50 (Outdoor unit is higher)	Max.15 (Outdoor unit is lower)				
	Drain hose			Hose connectable with VP20	Hole size φ 20 x 3 pcs.				
Drain pump, max lift height			mm	_	_				
Recommended breaker size			Α	-	_				
L.R.A. (Locked rotor ampere)			Α	5.0					
Interconnecting wires Size x Core number					Terminal block (Screw fixing type)				
IP number				IPX0	IP24				
Standard accessories				Mounting kit —					
Option part	ts			Motion sensor : LB-KIT2					
Notes (1) Th	he data are measured at the	following	conditio	ns.	The pipe length is 7.5m.				
· ·	totes (1) The data are measured at the following conditions.								

Item	Indoor air t	emperature	Outdoor air	temperature	Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C 19°C		35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

			Model	FDF125\	/NAWVH			
Item			ouo.	Indoor unit FDF125VH	Outdoor unit FDC125VNA-W			
Power source	 ce				/ 50Hz / 220V 60Hz			
	Nominal cooling capacity	(range)	kW	12.5 [5.0(Min	.) - 14.0(Max.)]			
	Nominal heating capacity		kW	- '	.) - 16.0(Max.)]			
		Cooling			65			
	Power consumption	Heating	kW		10			
	Max power consumption				40			
	Wax power consumption	Cooling			/ 22.5			
	Running current				<u></u>			
		Heating	Α		/ 20.0			
Operation	Inrush current, max curre				24			
data	Power factor	Cooling	%		4			
		Heating			3			
	EER	Cooling			69			
	COP	Heating		3.	42			
	Sound power level	Cooling		67	71			
	Souria power lever	Heating		01	7.1			
		Cooling	dB(A)	D.I. 55 II. 54 M. 40 I. 44	54			
	Sound pressure level	Heating		P-Hi:55 Hi:51 Me:49 Lo:44	56			
	Silent mode sound press	ure level		_	48 / 45 (Normal / Silent)			
	'				·			
Exterior dim	nensions (Height x Width x	Depth)	mm	$1850 \times 600 \times 329$	845×970×370			
Extorior				Ceramic white	Stucco white			
Exterior app					(4.2Y7.5/1.1) near equivalent			
(Munsell co				(N8.0) near equivalent				
(RAL color)			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	77			
Compressor type & Q'ty				_	RMT5126SWP3 x 1			
Compressor motor (Starting method)			kW	_	Direct line start			
Refrigerant	oil (Amount, type)		L	_	0.9 (M-MB75)			
Refrigerant (Type, amount, pre-charge length)			kg	R32 3.3 in outdoor unit (Incl. th	e amount for the piping of 30m)			
Heat exchai	Heat exchanger			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant				<u> </u>	pansion valve			
Fan type &				Centrifugal fan ×1	Propeller fan ×1			
	Starting method)		W	157 < Direct line start >	86 < Direct line start >			
r arr motor (<u>Starting motified</u>	Cooling		107 C Bildot iiilo otare >	75			
Air flow		Heating	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	73			
Available ov	tornal atatia propaura	rieating	Pa	0	0			
	ternal static pressure		Ра		-			
Outside air				Not possible	_			
	ality / Quantity			Plastic net ×1 (Washable)	_			
	ration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea			W	_	20 (Crank case heater)			
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5	, RCH-E3 Wireless : RCN-KIT4-E2			
control	Room temperature contro	ol		Thermostat b	by electronics			
CONTROL	Operation display			-	_			
					tor. Frost protection thermostat.			
Safety equip	oments				eak detection			
Caroty oqui	anonto				stat for fan motor.			
	Defrie event circle!-	T10 100			remperature protection.			
1	Refrigerant piping size	Liquid line	mm	I/U φ 9.52 (3/8") Pipe φ 9.53				
1	(O.D.)	Gas line			(5/8")x1.0 φ 15.88 (5/8")			
	Connecting method			Flare piping	Flare piping			
Installation	Attached length of piping	l	m					
data	Insulation for piping			Necessary (both I	_iquid & Gas lines)			
	Refrigerant line (one way) length	m	Ma	x.50			
Vertical height diff. between O/U and I/U		m	Max.50 (Outdoor unit is higher)	Max.15 (Outdoor unit is lower)				
Drain hose				Hose connectable with VP20	Hole size ϕ 20 x 3 pcs.			
Drain pump, max lift height			mm		—			
Recommended breaker size			A		<u>-</u>			
			A	5	0			
			Α	5.0 φ 1.6mm x 3 cores + earth cable / Terminal block (Screw fixing type)				
	Interconnecting wires Size x Core number			· · · · · · · · · · · · · · · · · · ·				
IP number				IPX0	IP24			
Standard ac				Mounting kit —				
Option parts					sor : LB-KIT2			
INotes (1) Th	Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.							

Notes (1) The data are measured at the following conditions.

The pipe length is 7.5m.

Item	Indoor air temperature		Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Staridards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF125\	VSAWVH			
Item				Indoor unit FDF125VH	Outdoor unit FDC125VSA-W			
Power source	ce			3 Phase, 380-415\	/ 50Hz / 380V 60Hz			
Nominal cooling capacity (range)		kW	12.5 [5.0(Min	.) - 14.0(Max.)]				
	Nominal heating capacity (range)		kW	14.0 [4.0(Min	.) - 16.0(Max.)]			
	Power consumption	Cooling		4.65				
	Fower consumption	Heating	kW		09			
	Max power consumption				.20			
	Running current	Cooling		7.2	/ 7.5			
		Heating			/ 6.6			
Operation	Inrush current, max curre				15			
data Power factor		Cooling	%	94 94				
data	Heating		/*					
	EER Cooling				69			
	COP	Heating		3.42				
	Sound power level	Cooling		67 71				
		Heating	l . _	- -				
	Sound pressure level	Cooling	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	54			
	·	Heating			56			
	Silent mode sound pressu	ure level			48 / 45 (Normal / Silent)			
Exterior dim	nensions (Height x Width x	Depth)	mm	1850 × 600 × 329	845×970×370			
Exterior app	pearance			Ceramic white	Stucco white			
(Munsell co	olor)			(N8.0) near equivalent	(4.2Y7.5/1.1) near equivalent			
(RAL color))			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	78			
Compressor	r type & Q'ty			_	RMT5126SWP4 x 1			
Compressor	r motor (Starting method)		kW	_	Direct line start			
Refrigerant oil (Amount, type)		L	_	0.9 (M-MB75)				
Refrigerant	(Type, amount, pre-charge	e length)	kg	R32 3.3 in outdoor unit (Incl. th	e amount for the piping of 30m)			
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant					pansion valve			
Fan type & 0				Centrifugal fan ×1	Propeller fan ×1			
Fan motor (Starting method)		W	157 < Direct line start >	86 < Direct line start >			
Air flow		Cooling Heating	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	75 73			
Available ex	ternal static pressure	1	Pa	0	0			
Outside air i				Not possible	_			
	ality / Quantity			Plastic net ×1 (Washable)	_			
	ration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric heat	ter		W		20 (Crank case heater)			
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5, RCH-E3 Wireless: RCN-KIT4-E2				
•	Room temperature contro	ol		Thermostat by electronics				
control	Operation display			-	_			
				Overload protection for fan motor. Frost protection thermostat.				
Safety equip	oments				Refrigerant leak detection			
, , ,				Internal thermostat for fan motor. Abnormal discharge temperature protection.				
	Refrigerant piping size	Liquid line			φ 9.52 (3/8")x0.8			
	(O.D.)	Gas line	mm		5.88 (5/8")x1.0 φ 15.88 (5/8")			
ı	Connecting method	_ GGO IIIIO		Flare piping	Flare piping			
Installation	Attached length of piping		m	—	— — —			
data Insulation for piping Refrigerant line (one way) length Vertical height diff. between O/U and I/U Drain hose			Necessary (both I	Liquid & Gas lines)				
		m	, ,	x.50				
		m	Max.50 (Outdoor unit is higher)	Max.15 (Outdoor unit is lower)				
			Hose connectable with VP20	Hole size ϕ 20 x 3 pcs.				
Drain pump, max lift height		mm						
Recommended breaker size		Α						
L.R.A. (Locked rotor ampere)		A	5.0					
Interconnecting wires Size x Core number				Terminal block (Screw fixing type)				
IP number				IPX0	IP24			
Standard accessories				Mounting kit —				
Option parts				<u> </u>	sor : LB-KIT2			
	ne data are measured at the	e followina	conditio		The pipe length is 7.5m.			
	Item Indoor air tor	U						

Item	Indoor air temperature		Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

 (4) Select the breaker size according to the own national standard.

 (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

			Model	FDF140	VNAWVH			
Item				Indoor unit FDF140VH	Outdoor unit FDC140VNA-W			
Power source	ce			1 Phase, 220-240	V 50Hz / 220V 60Hz			
	Nominal cooling capacity	(range)	kW	13.6 [5.0(Mir	n.) - 14.5(Max.)]			
	Nominal heating capacity	(range)	kW	15.5 [4.0(Mir	n.) - 16.5(Max.)]			
	Power consumption	Cooling		5	.35			
	Fower consumption	Heating	kW	4	.98			
	Max power consumption			6	5.40			
	Running current	Cooling		24.0	/ 25.1			
	Hulling Current	Heating	A	22.1 / 23.1				
Operation	Inrush current, max current			5	*,			
data	Power factor	Cooling	%	97				
uala		Heating	/0	98				
	EER Cooling			2	1.54			
	COP	Heating		3.11				
	Sound power level	Cooling		67	72			
	Courta power level	Heating			73			
	Sound pressure level	Cooling	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	56			
	Courta procedio lever	Heating		1 111.00 111.01 Well to 20.11	58			
	Silent mode sound pressu	ire level		_	49 / 45 (Normal / Silent)			
Exterior dim	nensions (Height x Width x I	Depth)	mm	1850 × 600 × 329	845×970×370			
Exterior app				Ceramic white	Stucco white			
(Munsell co				(N8.0) near equivalent	(4.2Y7.5/1.1) near equivalent			
(RAL color))			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	77			
	r type & Q'ty			_	RMT5126SWP3 x 1			
	r motor (Starting method)		kW	_	Direct line start			
	oil (Amount, type)		L	– 0.9 (M-MB75)				
Refrigerant	(Type, amount, pre-charge	length)	kg		ne amount for the piping of 30m)			
Heat exchar				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant	control			Electronic ex	xpansion valve			
Fan type & 0				Centrifugal fan ×1	Propeller fan ×1			
Fan motor (Starting method)		W	157 < Direct line start >	86 < Direct line start >			
Air flow		Cooling	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	75			
		Heating			73			
	ternal static pressure		Pa	0	0			
Outside air i				Not possible	_			
	ality / Quantity			Plastic net ×1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor) Rubber sleeve (for fan motor & con				
Electric hea			W	– 20 (Crank case heater)				
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5, RCH-E3 Wireless: RCN-KIT4-E2				
control	Room temperature control	l		Thermostat by electronics				
	Operation display				_			
					otor. Frost protection thermostat.			
Safety equip	oments				leak detection estat for fan motor.			
					temperature protection.			
	Refrigerant piping size	Liquid line			φ 9.52 (3/8")x0.8 O/U φ 9.52 (3/8")			
	(O.D.)	Gas line	mm -		15.88 (5/8")x1.0 φ 15.88 (5/8")			
	Connecting method			Flare piping	Flare piping			
Installation	Attached length of piping		m					
data	Insulation for piping	-		Necessary (both	Liquid & Gas lines)			
	Refrigerant line (one way)	length	m	Max.50				
	Vertical height diff. between O/U and I/U		m	Max.50 (Outdoor unit is higher) Max.15 (Outdoor unit is lower)				
Drain hose			Hose connectable with VP20 Hole size ϕ 20 x 3 pcs.					
Drain pump, max lift height		mm	_					
Recommended breaker size		Α		-				
L.R.A. (Locked rotor ampere)		Α		5.0				
Interconnecting wires Size x Core number				φ 1.6mm x 3 cores + earth cable / Terminal block (Screw fixing type)				
IP number			IPX0 IP24					
Standard accessories				Mounting kit —				
	Option parts			Motion sensor : LB-KIT2				
	ne data are measured at the	following	condition					
Thotas (1) The data are measured at the following conditions.					•			

Item	Indoor air temperature		Outdoor air temperature		Standards
Operation	DB WB		DB	WB	Staridards
Cooling	27°C	19℃	35°C	24°C	ISO5151-T1
Heating	20)°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF140\	/SAWVH			
Item				Indoor unit FDF140VH	Outdoor unit FDC140VSA-W			
Power sour				3 Phase, 380-415V	/ 50Hz / 380V 60Hz			
	Nominal cooling capacity	(range)	kW	13.6 [5.0(Min.	.) - 14.5(Max.)]			
	Nominal heating capacity	(range)	kW	15.5 [4.0(Min.) - 16.5(Max.)]				
	Power consumption	Cooling	kW	5.42				
	·	Heating			98			
	Max power consumption				.20			
	Running current Cooling		Α		/ 8.8			
		Heating			/ 8.3			
Operation	Inrush current, max curren	·		· · · · · · · · · · · · · · · · · · ·	15			
data	Power factor Coolin		%		4			
autu		Heating		91 2.51				
	EER	Cooling						
	СОР	Heating		3.				
	Sound power level	Cooling		67	72			
		Heating	15(4)		73			
	Sound pressure level	Cooling	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	56			
		Heating			58			
	Silent mode sound pressu	re level		_	49 / 45 (Normal / Silent)			
Exterior dim	nensions (Height x Width x I	Depth)	mm	1850 × 600 × 329	845×970×370			
				O-manaila sudata	0. 1.5			
Exterior app				Ceramic white	Stucco white			
(Munsell co				(N8.0) near equivalent	(4.2Y7.5/1.1) near equivalent			
(RAL color)			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	78			
	r type & Q'ty				RMT5126SWP4 x 1			
	r motor (Starting method)		kW		Direct line start			
	oil (Amount, type)		L		0.9 (M-MB75)			
	(Type, amount, pre-charge	length)	kg		e amount for the piping of 30m)			
Heat exchanger			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing				
Refrigerant					pansion valve			
Fan type &			14/	Centrifugal fan ×1	Propeller fan ×1			
Fan motor (Starting method)	0 "	W	157 < Direct line start >	86 < Direct line start >			
Air flow		Cooling	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	75			
A:		Heating	D-	0	73			
	ternal static pressure		Pa	0	0			
Outside air				Not possible	_			
	ality / Quantity			Plastic net ×1 (Washable) — Rubber sleeve (for fan motor) Rubber sleeve (for fan motor & co				
	ration absorber		W	,				
Electric hea	Remote control		VV	(Ontion) Wired - DC EVAA DC EE	20 (Crank case heater)			
Operation				(Option) Wired: RC-EX3A, RC-E5, RCH-E3 Wireless: RCN-KIT4-E2 Thermostat by electronics				
control	Room temperature control Operation display			I nermostat by electronics				
	Operation display	-		Overlead protection for fan me	tor. Frost protection thermostat.			
					leak detection			
Safety equip	pments			Internal thermostat for fan motor.				
					emperature protection.			
	Refrigerant piping size	Liquid line	mm		2 (3/8")x0.8 Ο/U φ 9.52 (3/8")			
	(O.D.)	Gas line			(5/8")x1.0 φ 15.88 (5/8")			
	Connecting method			Flare piping	Flare piping			
Installation	Attached length of piping		m					
data	Insulation for piping			Necessary (both L				
	Refrigerant line (one way) length		m	Max.50				
Vertical height diff. between O/U and I/U		m	Max.50 (Outdoor unit is higher) Max.15 (Outdoor unit is lower)					
Drain hose			Hose connectable with VP20 Hole size φ 20 x 3 pcs.					
Drain pump, max lift height		mm	_	_				
Recommended breaker size		Α	-					
L.R.A. (Locked rotor ampere)			Α	5.0				
Interconnecting wires Size x Core number			· · · · · · · · · · · · · · · · · · ·	Terminal block (Screw fixing type)				
IP number				IPX0	IP24			
Standard accessories				Mounting kit —				
	Option parts			Motion sensor : LB-KIT2				
Notes (1) The data are measured at the following con				s. The pipe length is 7.5m.				

Item	Indoor air temperature		Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

(2) Twin type

			Model	FDF140V	NAWPVH			
Item				Indoor unit FDF71VH (2 units)	Outdoor unit FDC140VNA-W			
Power sour	rce			1 Phase, 220-240\	/ 50Hz / 220V 60Hz			
	Nominal cooling capacit	y (range)	kW	13.6 [5.0(Min	.) - 14.5(Max.)]			
	Nominal heating capacit	, <u> </u>	kW	- '	.) - 16.5(Max.)]			
		Cooling		4.46				
	Power consumption	Heating	kW		49			
	Max power consumption				40			
	wax power concumption	Cooling			/ 20.5			
	Running current	Heating	Α		/ 20.6			
	Inrush current, max curre		^		24			
Operation	illusii current, max curre	Cooling			99			
data	Power factor		%		99			
	FED	Heating			05			
	EER	Cooling	{					
	COP	Heating		3.	46			
	Sound power level	Cooling		55	72			
		Heating			73			
	Sound pressure level	Cooling	dB(A)	P-Hi: 42 Hi: 39 Me: 35 Lo: 33	56			
	·	Heating] [58			
	Silent mode sound press	sure level		_	49 / 45 (Normal / Silent)			
Exterior dim	nensions (Height x Width)	v Denth)	mm	1850 × 600 × 329	845×970×370			
		. Dopuij						
Exterior app	pearance			Ceramic white	Stucco white			
(Munsell co	olor)			(N8.0) near equivalent	(4.2Y7.5/1.1) near equivalent			
(RAL color	·)			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight	<u>-</u>		kg	47	77			
Compresso	or type & Q'ty			_	RMT5126SWP3 x 1			
	or motor (Starting method)		kW	_	Direct line start			
	oil (Amount, type)		L	_	0.9 (M-MB75)			
	(Type, amount, pre-charge	ne lenath)	kg	R32 3 3 in outdoor unit (Incl. th	e amount for the piping of 30m)			
Heat excha		ge lengtin	Ng	Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
					pansion valve			
Refrigerant control Fan type & Q'ty				1				
			10/	Centrifugal fan ×1	Propeller fan ×1			
Fan motor ((Starting method)	10 "	W	157 < Direct line start >	86 < Direct line start >			
Air flow		Cooling	m³/min	P-Hi:18 Hi:16 Me:14 Lo:12	75			
		Heating			73			
	xternal static pressure		Pa	0	0			
Outside air				Not possible	_			
Air filter, Qu	uality / Quantity			Plastic net ×1 (Washable)	_			
Shock & vib	bration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea	ater		W	_	20 (Crank case heater)			
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5	, RCH-E3 Wireless : RCN-KIT4-E2			
control	Room temperature contr	rol		Thermostat b	by electronics			
COLLLOI	Operation display			-				
Safety equi	pments			Overload protection for fan motor. Frost protection thermostat. Refrigerant leak detection Internal thermostat for fan motor.				
					temperature protection.			
	Refrigerant piping size	Liquid line			① φ 9.52 (3/8")x0.8 O/U φ 9.52 (3/8")			
	(O.D.)	Gas line	mm	φ 15.88 (5/8") ②φ 15.88 (5/8")x1.0 (φ 15.88 (5/8")x1.0 φ 15.88 (5/8")			
	Connecting method	- GGO 11110		Flare piping	Flare piping			
Installation	Attached length of piping	α	m	—				
data	Insulation for piping	<u> </u>		Necessary (both I	Liquid & Gas lines)			
Gala	Refrigerant line (one wa	v) length	m		x.50			
	Vertical height diff. between (<u>,, </u>	m	Max.50 (Outdoor unit is higher)	Max.15 (Outdoor unit is lower)			
	Drain hose	0,0 and 1/0	111	Hose connectable with VP20	Hole size ϕ 20 x 3 pcs.			
Drain			mm	TIOSE COMMECIABLE WITH VEZU	ποιο δίζο φ ζυ X ο μοδ.			
	o, max lift height		mm	_	_			
	nded breaker size		A	-	_			
	ked rotor ampere)		Α		.0			
	cting wires Size x Core no	umber			/ Terminal block (Screw fixing type)			
IP number				IPX0	IP24			
Standard ad				Mounting kit	_			
Option part					sor : LB-KIT2			
Notes (1) Th	he data are measured at the	he following	conditio	ne -	The pipe length is 7.5m			

Notes (1) The data are measured at the following conditions.

The	pipe	lenath	is	7.5m.

Item	Indoor air t	emperature	Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19℃	35°C	24°C	ISO5151-T1
Heating	20)°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 200V 60Hz.
- (6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together. (7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

		-	Model	FDF140V	SAWPVH			
Item				Indoor unit FDF71VH (2 units)	Outdoor unit FDC140VSA-W			
Power sour	rce				/ 50Hz / 380V 60Hz			
	Nominal cooling capacity	(range)	kW	13.6 [5.0(Min	.) - 14.5(Max.)]			
	Nominal heating capacity	(range)	kW	15.5 [4.0(Min	.) - 16.5(Max.)]			
	Power consumption	Cooling	ĺ	4.58				
	Power consumption	Heating	kW	4.49				
	Max power consumption] [10	.20			
	Running current	Cooling		6.7	/ 7.0			
	Harring Carrent	Heating	A	6.6	/ 6.9			
Operation	Inrush current, max curre	nt		5 ,	15			
data	Power factor	Cooling	%		9			
data		Heating	70		9			
	EER	Cooling			05			
	COP	Heating		3.	46			
	Sound power level	Cooling		55	72			
	ecana perior teres	Heating			73			
	Sound pressure level	Cooling	dB(A)	P-Hi: 42 Hi: 39 Me: 35 Lo: 33	56			
	·	Heating			58			
	Silent mode sound pressu	ure level			49 / 45 (Normal / Silent)			
Exterior dim	nensions (Height x Width x	Depth)	mm	1850 × 600 × 329	845×970×370			
				Commercia code de	0, 1,			
Exterior app				Ceramic white	Stucco white			
(Munsell co	,			(N8.0) near equivalent	(4.2Y7.5/1.1) near equivalent			
(RAL color	<u>′</u>			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	47	78			
	or type & Q'ty		1-10/		RMT5126SWP4 x 1 Direct line start			
	or motor (Starting method)		kW					
	oil (Amount, type)		L	— — — — — — — — — — — — — — — — — — —	0.9 (M-MB75)			
	(Type, amount, pre-charge	e length)	kg	,	e amount for the piping of 30m)			
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant control Fan type & Q'ty		-		Centrifugal fan ×1	pansion valve Propeller fan ×1			
	(Starting method)		w	157 < Direct line start >	86 < Direct line start >			
i all motor ((Starting metriod)	Cooling	VV	137 < Direct line start >	75			
Air flow		Heating	m³/min	P-Hi:18 Hi:16 Me:14 Lo:12	73			
Available ex	xternal static pressure	ricating	Pa	0	0			
Outside air			- ι α	Not possible	_			
	uality / Quantity			Plastic net ×1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea			w		20 (Crank case heater)			
	Remote control			(Option) Wired: RC-EX3A.RC-E5	, RCH-E3 Wireless : RCN-KIT4-E2			
Operation	Room temperature control			Thermostat by electronics				
control	Operation display			-	- -			
				Overload protection for fan mo	otor. Frost protection thermostat.			
Safety equi	inments				leak detection			
ou.or, oqu.	,55.n.c				stat for fan motor.			
	Refrigerant piping size	Liquid line			temperature protection. ① ϕ 9.52 (3/8")x0.8 O/U ϕ 9.52 (3/8")			
		Gas line	mm	φ 15.88 (5/8") ②φ 15.88 (5/8")x1.0 (1				
	(O.D.) Connecting method	Guo III IC		Flare piping	Dφ 15.88 (5/8")x1.0 φ 15.88 (5/8") Flare piping			
Installation	Attached length of piping		m	—				
data	Insulation for piping							
	Refrigerant line (one way) length	m		x.50			
	Vertical height diff. between O	<u>, </u>	m	Max.50 (Outdoor unit is higher)	Max.15 (Outdoor unit is lower)			
	Drain hose			Hose connectable with VP20	Hole size φ 20 x 3 pcs.			
Drain pump	o, max lift height		mm	<u> </u>				
	nded breaker size		Α					
	ked rotor ampere)		A	5	.0			
	cting wires Size x Core nu	mber			Terminal block (Screw fixing type)			
IP number	. J 12 2.20 / 20.0 Hu			IPX0	IP24			
Standard ad	ccessories			Mounting kit	_			
Option part					sor : LB-KIT2			
	he data are measured at the	e following	conditio		The pipe length is 7.5m			

Notes (1) The data are measured at the following conditions.

The pipe length is 7.5m.

Item	Indoor air t	emperature	Outdoor air	temperature	Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20	°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
- (6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.

 (7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

			Model	FDF200\	/SAWPVH			
Item				Indoor unit FDF100VH (2 units)	Outdoor unit FDC200VSA-W			
Power sour	ce				V 50Hz / 380V 60Hz			
	Nominal cooling capacity	(range)	kW	20.0 [6.8(Mir	n.) - 22.4(Max.)]			
	Nominal heating capacity	(range)	kW	22.4 [6.6(Min.) - 25.0(Max.)]				
	Dawer concumption	Cooling		6.71				
	Power consumption	Heating	kW	6.06				
	Max power consumption		1 1	12	2.00			
	Din	Cooling		10.7 / 11.2				
	Running current	Heating	Α	9.6	/ 10.0			
	Inrush current, max currer	nt	i i	5	, 19			
Operation	Danier factor	Cooling	0/	(91			
data	Power factor	Heating	%	(92			
	EER	Cooling		2	.98			
	COP	Heating] [3	.69			
	C	Cooling		0.5	72			
	Sound power level	Heating	1 1	65	74			
		Cooling	4D(V)	D.I. 50 II. 54 M. 40 I. 44	58			
	Sound pressure level	Heating	dB(A)	P-Hi:53 Hi:51 Me:49 Lo:44	59			
	Silent mode sound	Cooling	1 1	_	55 / 53 (Normal / Silent)			
	pressure level	Heating] [<u>-</u>	56 / 54 (Normal / Silent)			
	nensions (Height x Width x	Depth)	mm	1850 × 600 × 329	1505×970×370			
Exterior app				Ceramic white	Stucco white			
(Munsell co (RAL color				(N8.0) near equivalent (RAL 7047) near equivalent	(4.2Y7.5/1.1) near equivalent (RAL 7044) near equivalent			
Net weight			kg	49	144			
	or type & Q'ty		Ng		GTC5150SC40MF x 1			
	or motor (Starting method)		kW		Direct line start			
	oil (Amount, type)		L	<u>_</u>	1.55 (M-MB75R)			
	(Type, amount, pre-charge	lenath)	kg	R32 / 3 in outdoor unit (Incl. th	ne amount for the piping of 30m)			
Heat excha		iengin)	Ng	Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant					cpansion valve			
Fan type &				Centrifugal fan ×1	Propeller fan ×2			
Fan motor (Starting method)			W	157 < Direct line start >	86 x 2 < Direct line start >			
T all motor (Starting metriod)	Cooling	V V	107 \ Direct line start >	148			
Air flow		Heating	m³/min	P-Hi: 27 Hi: 26 Me: 23 Lo: 19	134			
Available ex	xternal static pressure	Treating	Pa	0	0			
Outside air	<u> </u>		ıα	Not possible	_			
	uality / Quantity			Plastic net ×1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea			W	——————————————————————————————————————	20 (Crank case heater)			
Licotrio rica	Remote control		**	(Ontion) Wired : BC-EX3A BC-E	5 , RCH-E3 Wireless : RCN-KIT4-E2			
Operation	Room temperature contro	ol .			by electronics			
control	Operation display	-		momostat	_			
	1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -			Overload protection for fan me	otor. Frost protection thermostat.			
Safety equip	pments			Refrigerant	leak detection			
		11			ormal discharge temperature protection.			
	Pofrigoront pining size	Liquid			0.8 ① ϕ 9.52 (3/8")x0.8 or ϕ 12.7 (1/2")x0.8			
	Refrigerant piping size (O.D.)	line	mm	Pipo ② ± 15 88 (5/8")ν	(1.0 ① φ 22.22 (7/8")x1.0 or φ 25.4 (1")x1.0 or			
	(3.5.)	Gas line		I/U ϕ 15.88 (5/8") ϕ 28.58 (1 1/8")x1.0	O/U φ 22.22 (7/8")			
	Connecting method	•		Flare piping	Liquid : Flare piping / Gas : Brazing			
Installation	Attached length of piping		m	<u> </u>				
data	Insulation for piping			Necessary (both	Liquid & Gas lines)			
	Refrigerant line (one way)	length	m		ix.70			
	, , , , ,			Max.50 (Outdoor unit is higher	· & Outdoor temperature ≤ 43°C)			
	Vertical height diff. between O/	/U and I/U	m	Max.30 (Outdoor unit is higher	r & Outdoor temperature > 43°C)			
				<u> </u>	oor unit is lower)			
	Drain hose			Hose connectable with VP20	Hole size ϕ 20 x 3 pcs.			
Drain pump	o, max lift height		mm	_				
	nded breaker size		Α		_			
	ked rotor ampere)		Α	Ę	5.0			
	cting wires Size x Core nu	mber			/ Terminal block (Screw fixing type)			
IP number				IPX0	IP24			
Standard ad	ccessories	-		Mounting kit	Connecting pipe, Edging			
Option parts					sor: LB-KIT2			
	ho data are measured at the	o following			The pine length is 7.5m			

Notes (1) The data are measured at the following conditions

The pipe length is 7.5m.

_	(1) The data are	inoaoaroa at	and removering or	martiono.		The pipe length is 7.5m.
	Item	Indoor air t	emperature	Outdoor air	temperature	Standards
	Operation	DB	WB	DB	WB	Staridards
	Cooling	27°C	19℃	35°C	24°C	ISO5151-T1
	Heating	20)°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
 (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (a) Select the breaker size according to the own hadronal standard.
 (b) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
 (c) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
 (7) Branching pipe set "DIS-WB1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
 (8) Use 1/2H pipes having a 1.0mm or thicker wall for φ 19.05 or larger pipes.

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			Model	EDE250	VSAWPVH		
Item			5401	Indoor unit FDF125VH (2 units)	Outdoor unit FDC250VSA-W		
Power source	ce			3 Phase, 380-415	V 50Hz / 380V 60Hz		
	Nominal cooling capacity	(range)	kW	25.0 [6.8(Min	n.) - 28.0(Max.)]		
	Nominal heating capacity	` 	kW	28.0 [5.7(Min.) - 31.5(Max.)]			
	Power consumption	Cooling		9.54			
		Heating	kW		3.37		
	Max power consumption	TO 11			1.20		
	Running current	Cooling			0 / 15.6		
	Inrush current, max currer	Heating	A		1 / 14.0 . 20		
Operation	mrush current, max currer	Cooling			93		
data	Power factor	Heating	%		91		
	EER	Cooling			2.62		
	COP	Heating			3.35		
		Cooling			73		
	Sound power level	Heating		67	75		
	0	Cooling	dB(A)	D. I.E. CC . I.E. Cd . May 40 . La. 44	58		
	Sound pressure level	Heating	ub(A)	P-Hi: 55 Hi: 51 Me: 49 Lo: 44	62		
	Silent mode sound	Cooling		<u> </u>	56 / 55 (Normal / Silent)		
Francis P	pressure level	Heating		-	59 / 58 (Normal / Silent)		
Exterior dim	nensions (Height x Width x	Depth)	mm	1850 × 600 × 329 Ceramic white	1505×970×370 Stucco white		
(Munsell co				(N8.0)near equivalent	(4.2Y7.5/1.1) near equivalent		
(RAL color				(RÀL 7047) near equivalent	(RAL 7044) near equivalent		
Net weight			kg	49	145		
	r type & Q'ty				GTC5150SC40MF x 1		
	r motor (Starting method)		kW	-	Direct line start		
	oil (Amount, type)		L		1.55 (M-MB75R)		
	(Type, amount, pre-charge	length)	kg	· · · · · · · · · · · · · · · · · · ·	he amount for the piping of 30m)		
Heat exchai				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing		
Refrigerant Fan type &				Centrifugal fan ×1	xpansion valve Propeller fan ×2		
	Starting method)		W	157 < Direct line start >	86 x 2 < Direct line start >		
,	otarting method)	Cooling		157 \ Direct line start >	148		
Air flow		Heating	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	153		
Available ex	ternal static pressure	1	Pa	0	0		
Outside air				Not possible	_		
Air filter, Qu	ality / Quantity			Plastic net ×1 (Washable)	_		
Shock & vib	ration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)		
Electric hea	ter		W	-	20 (Crank case heater)		
Operation	Remote control				5 , RCH-E3 Wireless : RCN-KIT4-E2		
control	ontrol Room temperature control			Thermostat	by electronics		
	Operation display			Overdeed works they for for the	—		
Safety equip	oments				notor. Frost protection thermostat.		
					normal discharge temperature protection		
	D. ()	Liquid		I/U φ 9.52 (3/8") Pipe ②φ 9.52 (3/8")x	0.8 ①φ 12.7 (1/2")x0.8 O/U φ 12.7 (1/2")		
	Refrigerant piping size (O.D.)	line	mm	Ding (2) ± 15 99 (5/9")	$\times 1.0 \bigcirc \phi 22.22 (7/8") \times 1.0 \text{or} \phi 25.4 (1") \times 1.0 \text{or}$		
	(3.5.)	Gas line		I/U φ 15.88 (5/8")	Ο/U φ 22.22 (7/8")		
	Connecting method			Flare piping	Liquid : Flare piping / Gas : Brazing		
Installation	Attached length of piping		m				
data	Insulation for piping				Liquid & Gas lines)		
	Refrigerant line (one way)	length	m		ax.70		
					r & Outdoor temperature ≤ 43°C)		
	Vertical height diff. between O/	U and I/U	m		er & Outdoor temperature > 43°C)		
	Drain hoos				loor unit is lower)		
Drain numa	Drain hose , max lift height		mm	Hose connectable with VP20	Hole size φ 20 x 3 pcs.		
	, max ιιπ neignτ ded breaker size		mm A	-			
	ked rotor ampere)		A				
	ting wires Size x Core nur	mber	_ ^		able) / Terminal block (Screw fixing type)		
IP number	wiroo joizo x ooie ildi			IPX0	IP24		
Standard ac	ccessories			Mounting kit	Connecting pipe, Edging		
Option parts					nsor : LB-KIT2		
	ne data are measured at the	following	conditio		The pipe length is 7.5m.		

Notes (1) The data are measured at the following conditions.

The pipe length is 7.5m.

Item	Indoor air t	emperature	Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20	°C	7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
 (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

- (4) Select the breaker size according to the own national standard.
 (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
 (6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
 (7) Branching pipe set "DIS-WB1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
 (8) Use 1/2H pipes having a 1.0mm or thicker wall for φ 19.05 or larger pipes.

			Model	FDF280V	/SAWPVH			
Item				Indoor unit FDF140VH (2 units)	Outdoor unit FDC280VSA-W			
Power sour	ce			,	/ 50Hz / 380V 60Hz			
	Nominal cooling capacity	<u> </u>	kW	£ \	.) - 31.5(Max.)]			
	Nominal heating capacity	``	kW		.) - 33.5(Max.)]			
	Power consumption	Cooling	kW	10.93 9.47				
	Max power consumption	Heating	KVV					
		Cooling		11.40 16.9 / 17.7				
	Running current	Heating	Α	14.3 / 15.0				
	Inrush current, max curre		1 1	5 , 20				
Operation	Power factor	Cooling	%		94			
data		Heating	/0		96			
	EER	Cooling			47			
	СОР	Heating Cooling		3.	17 75			
	Sound power level	Heating	-	67	77			
		Cooling			61			
	Sound pressure level	Heating	dB(A)	P-Hi:55 Hi:51 Me:49 Lo:44	63			
	Silent mode sound	Cooling]	-	55 / 54 (Normal / Silent)			
	pressure level	Heating		-	56 / 55 (Normal / Silent)			
Exterior din	nensions (Height x Width x	Depth)	mm	1850 × 600 × 329 Ceramic white	1505×970×370 Stucco white			
(Munsell co				(N8.0)near equivalent	(4.2Y7.5/1.1) near equivalent			
(RAL color)			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	155			
	or type & Q'ty			_	GTC5150SC40MF x 1			
	or motor (Starting method)		kW	_	Direct line start			
	oil (Amount, type)		L	— —	1.55 (M-MB75R)			
	(Type, amount, pre-charge	e length)	kg	`	e amount for the piping of 30m)			
Heat excha	<u> </u>			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing			
Refrigerant Fan type &				Centrifugal fan ×1	pansion valve Propeller fan ×2			
	(Starting method)		W	157 < Direct line start >	86 x 2 < Direct line start >			
	(Otal ting metrou)	Cooling			136			
Air flow		Heating	m³/min	P-Hi: 29 Hi: 26 Me: 23 Lo: 19	140			
Available ex	xternal static pressure		Pa	0	0			
Outside air				Not possible	_			
Air filter, Qu	uality / Quantity			Plastic net ×1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)			
Electric hea			W	_	20 (Crank case heater)			
Operation	Remote control			(1)	, RCH-E3 Wireless : RCN-KIT4-E2			
control	Room temperature contro	ol		Thermostat by electronics				
	Operation display			Overload protection for fan me	ntor Frost protection thermostat			
Safety equipments				Overload protection for fan motor. Frost protection thermostat. Refrigerant leak detection				
, ,		1		Internal thermostat for fan motor. Abnormal discharge temperature protection				
	Refrigerant piping size	Liquid line		I/U ϕ 9.52 (3/8") Pipe $@\phi$ 9.52 (3/8")x0.8 $@odernoone{0.05em} @odernoone{0.05em} @od$				
	(O.D.)	Gas line	mm	I/U φ 15.88 (5/8") Pipe ②φ 15.88 (5/8")x	1.0 ① ϕ 22.22 (7/8")x1.0 or ϕ 25.4 (1")x1.0 or			
	Connecting method			ϕ 28.58 (1 1/8")x1.0	U/U φ 22.22 (7/8") Liquid : Flare piping / Gas : Brazing			
	Attached length of piping		m	Fiare piping	— Equid . Fidite piping / Gas . Diazing			
Installation data	Insulation for piping				Liquid & Gas lines)			
Jaia	Refrigerant line (one way) length	m		x.60			
	,			Max.50 (Outdoor unit is higher	& Outdoor temperature ≤ 43°C)			
	Vertical height diff. between O	/U and I/U	m	Max.30 (Outdoor unit is higher	* & Outdoor temperature > 43°C)			
				Max.15 (Outdoor unit is lower)				
	Drain hose			Hose connectable with VP20	Hole size φ 20 x 3 pcs.			
	o, max lift height		mm	-	_			
	ided breaker size		A		_			
	ked rotor ampere)		Α		i/5			
	cting wires Size x Core nu	mper			ble) / Terminal block (Screw fixing type)			
IP number Standard a	ccessories		-	IPX0 Mounting kit	IP24 Connecting pipe, Edging			
Option part					sor : LB-KIT2			
	he data are measured at th	e following	conditio		The pipe length is 7.5m.			
1.0003 (1) 11	Itom Indoor oir to				The pipe length is 7.0m.			

,	(1) The data are	incasarca at	the following of	maitions.		The pipe length is 7.5m.
	Item	Indoor air t	emperature	Outdoor air	temperature	Standards
	Operation	DB	WB	DB	WB	Standards
	Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
	Heating	20)°C	7°C	6°C	ISO5151-H1

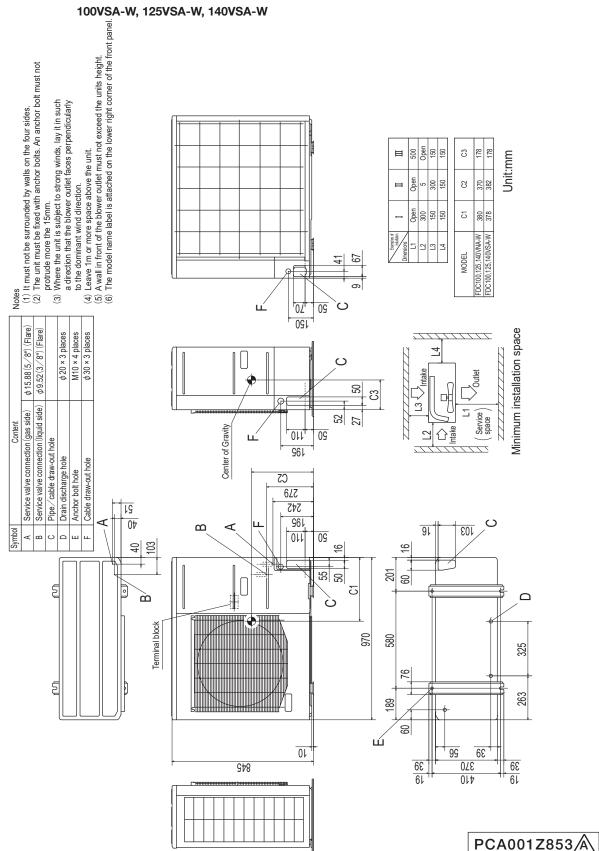
- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
 (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

- (4) Select the breaker size according to the own national standard.
 (5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
 (6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
 (7) Branching pipe set "DIS-WB1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
 (8) Use 1/2H pipes having a 1.0mm or thicker wall for φ 19.05 or larger pipes.

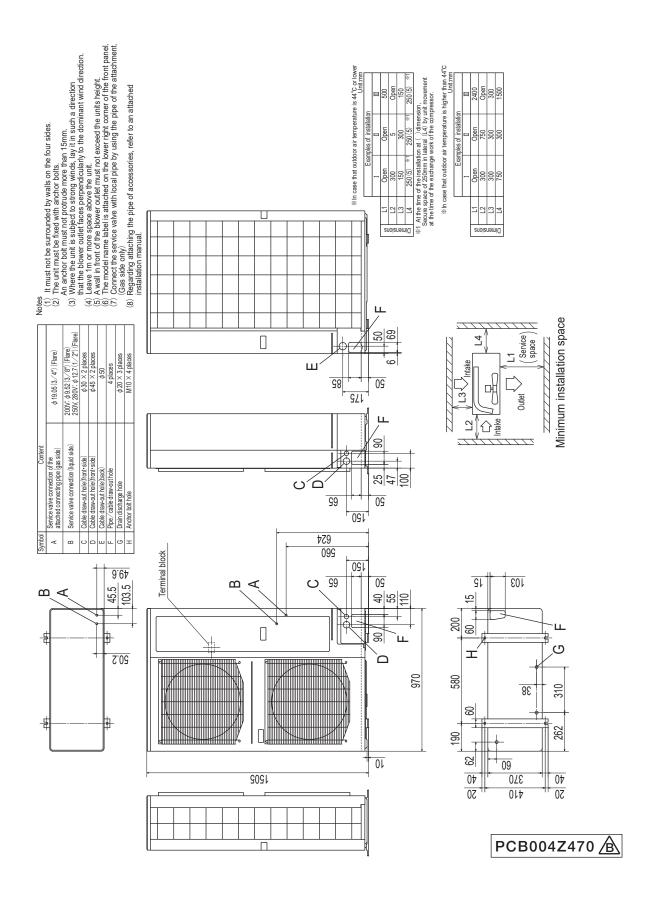
2.2 EXTERIOR DIMENSIONS

(2) Outdoor units

Models FDC100VNA-W, 125VNA-W, 140VNA-W 100VSA-W. 125VSA-W. 140VSA-W



Models FDC200VSA-W, 250VSA-W, 280VSA-W



2.3 ELECTRICAL WIRING

- (2) Outdoor units

Model FDC100VNA-W, 125VNA-W, 140VNA-W

Meaning of marks	marks
Item	Description
ᆼ	Crankcase heater
CM	Compressor motor
CN	Connector
CT1	Current sensor
EEVC	Expansion valve for cooling
EEVH	Expansion valve for heating
ш	Fuse
FM1	Fan motor
IPM	Intelligent power module
LED1	Indication lamp (GREEN)
LED2	Indication lamp (RED)
L1,2	Reactor
PSL	Low pressure sensor
SW1	Switch
SW3,5,7	Local setting switch
TB	Terminal block
THo-A	Temperature sensor (Outdoor air)
THo-D	Temperature sesor (Discharge pipe)
THo-R1,R2	Temperature sensor (Heat exchanger)
THo-S	Temperature sensor (Suction pipe)
20S	Solenoid valve for 4-way valve
52X1	Auxilliary relay
52X3	Auxilliary relay
52X11	Auxilliary relay (for 20S)
52X14	Auxilliary relay (for CH)
52X15	Auxilliary relay
63H1	High pressure switch

Color	Black	Blue	Brown	Green	Orange	Red	White	Yellow	Yellow/Green
Mark	BK	BL	BR	GN	OR	RD	MH	γ	Y/GN

úί	匠	ů.	드	드	=	œ	_	Ś	_	ı	<u>T</u>	₩	Ţ	₩	Š	Æ	Æ	Ā	Ā	Ā	ᄪ	S	ပြ	~		₽	둤	ğ		as l	≥	_ ≩
									7				,R2									marks		Black	Blue	Brown	Green	Orange	Red	White	Yellow	Yellow
EEVH	F	FM1	IPM	LED1	LED2	L1,2	PSL	SW1	SW3,5,7	13	THo-A	THo-D	THo-R1	S-0HT	208	52X1	52X3	52X11	52X14	52X15	63H1	Color n	Mark	BK	BL	BR	BN	OR	RD	MM	>	Y/GN
																						Ū										
																						æ ~							5	_		

Earth wire size (mm)

indoor-outdoor wire size x number

r cable length (m)

Power cable size (mm²)

over current (A)

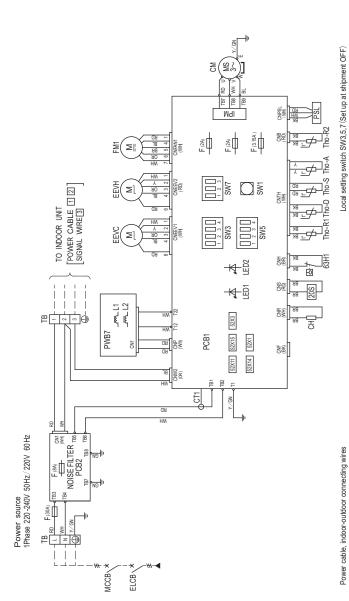
MAX

125

φ1.6

22

5.5



Defrost control change This winder by tunning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point. When this switch is turned ON, the outdoor unit an will run for 30 seconds in every 10 minutes, when outdoor fundoor emperature fals to 3°C or tower and the compressor is not running when the unit is used in a very snowy country, set this switch to ON.	Method of trial operation (Trial operation can be performed by using \$\text{3.4.}\$ (\$\text{Compressor will be in the operation when \$\text{8.4.3.3 is O}\$). (\$\text{Cooling that operation will be performed when \$\text{8.4.3 is O}\$). (\$\text{Cooling that operation will be performed when \$\text{8.0.4.4 is O}\$). (\$\text{Abe sure to turn OFF \$\text{8.4.3.3 after the trial operation is finished.}	High height difference Set this switch to ON when outdoor unit is installed at a position higher than indoor unit by 30m or more.	Defrost control change operation by remote control connected external equipment.	Lower noise silent mode Lower noise silent mode Lower noise silent mode
SW3-1 Def	SW3-3,4 Tria	SW5-2 ope	SW7-2 Det	SW7-3 Lov

to the installation instructions or the construction instructions of the indoor unit.	 Switchgear of circuit breaker capacity which is calculated from MAX, over current should be chosen 	along the regulations in each country.	 The cable specifications are based on the assumption that a metal or plastic conduit is used with no 	more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling	outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation	each country.	
to the installation instri	 Switchgear of circuit bit 	along the regulations in	 The cable specification 	more than three cable:	outside of these condit	in effect in each country.	

The specifications shown in the above table are for units without heaters. For units with heaters, refer

PCA001Z854

Models FDC100VSA-W, 125VSA-W, 140VSA-W

Meaning of marks	marks
Item	Description
ᆼ	Crankcase heater
CM	Compressor motor
CN	Connector
EEVC	Expansion valve for cooling
EEVH	Expansion valve for heating
ч	Fuse
FM1	Fan motor
IPM	Intelligent power module
_	Reactor
LED1	Indication lamp (GREEN)
LED2	Indication lamp (RED)
PSL	Low pressure sensor
SW1	Switch
SW3,5,7	Local setting switch
TB	Terminal block
THo-A	Temperature sensor (Outdoor air)
TH9-D	Temperature sensor (Discharge pipe)
THo-R1,R2	Temperature sensor (Heat exchanger)
THo-S	Temperature sensor (Suction pipe)
20S	Solenoid valve for 4-way valve
52X1	Auxilliary relay
52X2	Auxilliary relay
52X6	Auxiliary relay (for FM1)
52X11	Auxilliary relay (for 20S)
52X14	Auxilliary relay (for CH)
52X15	Auxilliary relay
63H1	High pressure switch

Color Black Blue Brown	Green	Orange	Red	White	Yellow	Yellow/Green
Color marks Mark C BK Black BL Blue BR Brown	BN	OR	RD	MM	Y	Y/GN

		Г	W	128 WH V V W 3 V V V V V V V V V V V V V V V V	
		EEVH M M M M M M M M M		SW7 F P P P P P P P P P P P P P P P P P P	Mary Mary Mary Mary Mary Mary Mary Mary
		EEVC W W W W W W W W W	HMM	1 2 3 4 1 2 3 4 2 3 4 3 3	200 388 400 400 400 400 400 400 400 400 400 4
	7 1789 80 18 18 18 18 18 18 18 18 18 18 18 18 18	HM GR GR GR GR GR GR GR G			5 8
Power source 3Phase 380-415V 50Hz	T B			TB RD	8 A D
Power	Š	OM DIE		TO INDOOR UNIT	SIGNAL WIKE 3

up at shipment OFF)	The defrost operation interval becomes shorter by turning ON this switch.	where outside temperature becomes below the freezing point.	When this switch is turned ON, the outdoor	minutes, when outdoor temperature falls to 3°C or lower and the compressor is not	running when the unit is used in a very snowy country, set this switch to ON.	Method of trial operation	Trial operation can be performed by using SW3-3,4.	②Compressor will be in the operation when SW3-3 is ON.	Cooling trial operation will be performed	when SW3.4 is OFF, and heating trial operation when SW3.4 is ON	(4)Be sure to turn OFF SW3-3 after the trial operation is finished.	Set this switch to ON when outdoor unit is installed at a position higher than indoor	unit by 30m or more.	Set this switch to ON when managing unit	operation by remote control connected external equipment.	Upper limit of compressor speed and fan speed becomes lower in silent mode.
Local setting switch SW3,5,7 (Set up at shipment OFF)	Carried leaves to care	Deliosi control criarige		Snow guard fan control				OM/2 2.4 Trial anarotion	IIIai operation			High height difference	operation control		Defrost control change	Lower noise silent mode
Local setti	CIMO 4	-6440		SW3-2				CWO O A	4,0-0,40			SW5-2	1		SW7-2	SW7-3
		Earth wire size	(EEE)	4	o:		əfer	Ę.		01						

The specifications shown in the above table are for units without heaters. For units with heaters, refer
to the installation instructions or the construction instructions of the indoor unit.
 Switchgear of circuit breaker capacity which is calculated from MAX. over current should be chosen

indoor-outdoor wire size x number

Power cable length (m)

Power cable size (mm²)

MAX over current (A)

Model

Power cable, indoor-outdoor connecting wires

46

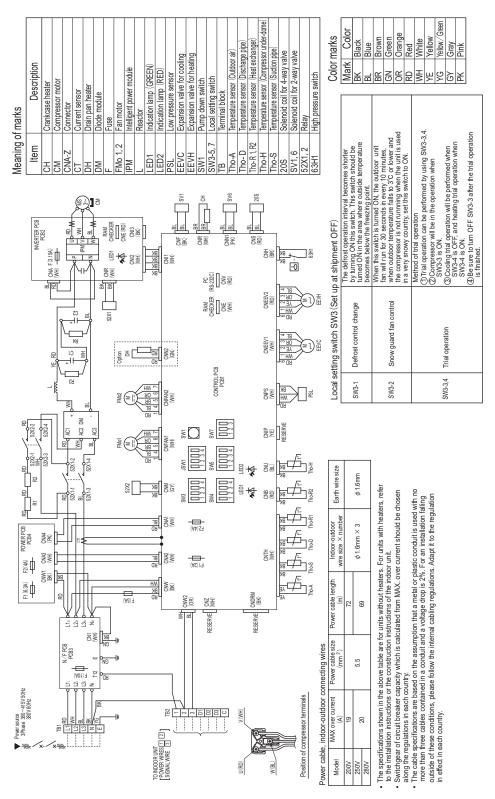
3.5

15

125

PCA001Z855

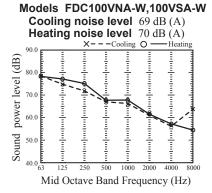
Models FDC200VSA-W, 250VSA-W, 280VSA-W

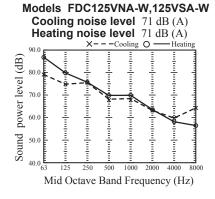


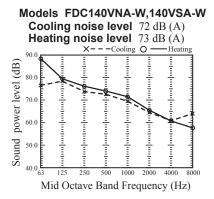
2.4 NOISE LEVEL

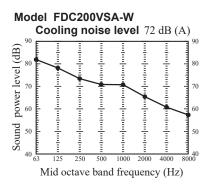
Notes(1) The data are based on the following conditions.

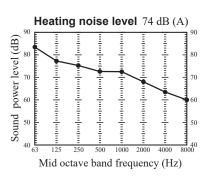
- Ambient air temperature: Indoor unit 27°CWB. Outdoor unit 35°CDB.
- (2) The data in the chart are measured in an anechoic room.
- (3) The noise levels measured in the field are usually higher than the data because of reflection.
- (2) Outdoor units
 - (a) Sound power level (Rated capacity value)

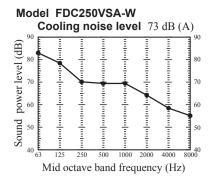


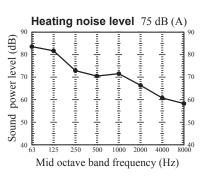


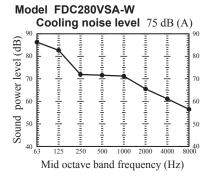


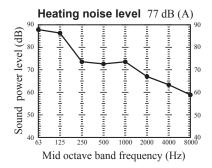










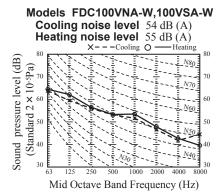


(b) Sound pressure level (Rated capacity value)

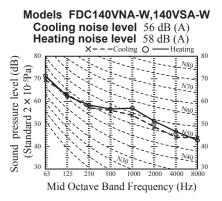
Measured based on JIS B 8616

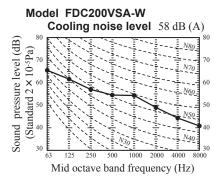
Mike position: at highest noise level in position as mentioned below

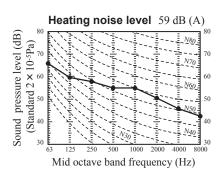
Distance from front side 1m Height 1m

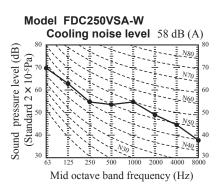


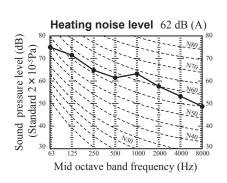
Models FDC125VNA-W,125VSA-W Cooling noise level 54 dB (A) Heating noise level 56 dB (A) N=-Cooling O Heating 80 Red 5-0 1 60 Red 70

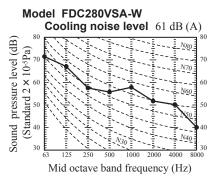


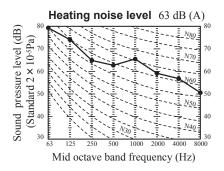












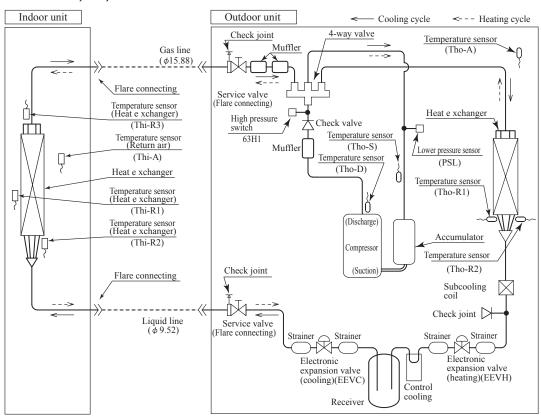
2.5 TEMPERATURE DISTRIBUTION

See page 27 of 1.5 chapter.

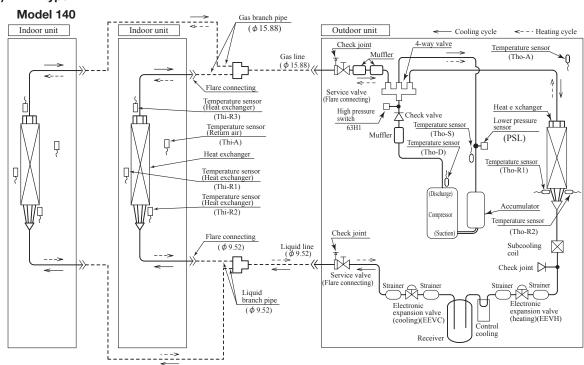
2.6 PIPING SYSTEM

- (1) Models FDC100-140VNA-W, 100-140VSA-W
- (a) Single type

Models 100, 125, 140



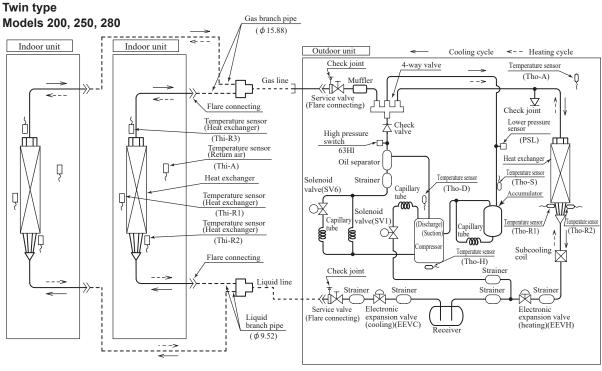
(b) Twin type



Preset point of the protective devices

Parts name	Mark	Equipped unit	100, 125, 140 model
Temperature sensor (for protection over- loading in heating)	Thi-R	Indoor unit	Active 63°C Inactive 56°C
Temperature sensor (for frost prevention)	Thi-R		Active 1.0°C Inactive 10°C
Temperature sensor (for protection high pressure in cooling)	Tho-R	Outdoor unit	Active 65°C Inactive 51°C
Temperature sensor (for detecting dis- charge pipe temperature)	Tho-D	Outdoor unit	Active 115°C Inactive 85°C
High pressure switch (for protection)	63H1	Outdoor unit	Active 4.15MPa Inactive 3.15MPa
Low pressure sensor (for protection)		Outdoor unit	Active 0.079MPa Inactive 0.227MPa

(2) Models FDC200-280VSA-W



•Refrigerant line (one way) pipe size

Model	Gas line	Liquid line
200	In case of ϕ 22.22 : 35m	In case of ϕ 9.52 : 40m (200)
250	In case of ϕ 25.4 or ϕ 28.58 : 70m (200, 250)	In case of ϕ 12.7 : 70m (200, 250)
280	60m (280)	60m (280)

Preset point of the protective devices

Parts name	Mark	Equipped unit	200, 250, 280 model
Temperature sensor (for protection over- loading in heating)	Thi-R	Indoor unit	Active 63°C Inactive 56°C
Temperature sensor (for frost prevention)	Thi-R	Indoor unit	Active 1.0°C Inactive 10°C
Temperature sensor (for protection high pressure in cooling)	Tho-R	Outdoor unit	Active 64°C Inactive 50°C
Temperature sensor (for detecting discharge pipe temperature)	Tho-D	Outdoor unit	Active 135°C Inactive 90°C
High pressure switch (for protection)	63H1	Outdoor unit	Active 4.15MPa Inactive 3.15MPa
Low pressure sensor (for protection)	PSL	Outdoor unit	Active 0.079MPa Inactive 0.227MPa

2.7 RANGE OF USAGE & LIMITATIONS

(1) Models FDC100-140VNA-W, 100-140VSA-W

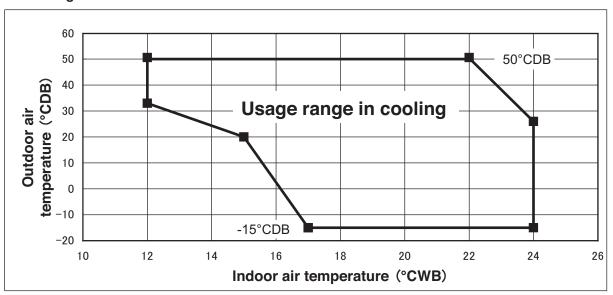
		See next page.
Operating temperature ra	inge	When used below -5°C, install a snow hood (locally procured). Considering to get sufficient heating capacity, the area where the averaged lowest ambiguir temperature in day time during winter is above 0°C, and it has no accumulation of snown that the state of the
Recommendable area to	install	Considering to get sufficient heating capacity, the area where the averaged lowest ambient air temperature in day time during winter is above 0°C, and it has no accumulation of snow.
Installation site		, , , , ,
Temperature and humidity conditions surrounding the indoor unit in the ceiling (Note 2)		Dew point temperature : 23°C or less, relative hummdity : 80% or less
Limitations on unit and pi	ping installation	See page 125.
Compressor	Cycle Time	7 minutes or more (from OFF to OFF) or (from ON to ON)
ON-OFF cycling	Stop Time	3 minutes or more
	Voltage range	Rating ±10%
Power source	Voltage drop at start-up	Min.85% of rating
	Phase-to-phase unbalance	3% or less

Note 1. Do not install the unit in places which:

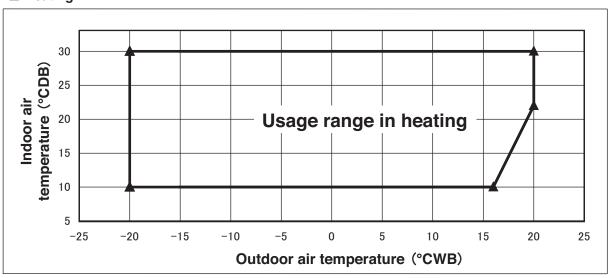
- 1) Flammable gas may leak.
- 2) Carbon fiber, metal particles, powder, etc. are floating.
- 3) Cosmetic or special sprays are used frequently.
- 4) Exposed to oil splashes or steam (e.g. kitchen and machine plant).
- 5) Exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent).
- 6) Exposed to ammonia substance (e.g. organic fertilizer).
- 7) Matters affecting devices, such as sulfuric gas, chlorine gas, acid, alkali, etc. may generate or accumulate.
- 8) Chimney smoke is hanging.
- 9) Sucking the exhaust gas from heat exchanger.
- 10) Adjacent to equipment generating electromagnetic waves or high frequency waves.
- 11) There is light beams that affect the receiving device of indoor unit in case of the wireless specification.
- 12) Snow falls heavily.
- 13) At an elevation of 1000 meters or higher.
- 14) On mobile machine (e.g. vehicle, ship, etc.)
- 15) Splashed with water to indoor unit (e.g. laundry room).
- 16) Indoor units of twin and triple specifications separately in a room with partition.
- Note 2. If ambient temperature and humidity exceed the above conditions, add polyurethane foam insulation (10mm or thicker) on the outer plate of indoor unit.
- Note 3. Both gas and liquid pipes need to be coverd with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.
- Note 4. When snow accumulate, install a snow hood on site.
- Note 5. The indoor unit shall be installed in a room with minimum installation area or more according to the refrigerant charge amount. (for details, refer to installation sheet)

Operating temperature range

■ Cooling



■ Heating



Decline in cooling and heating capacity or operation stop may occur when the outdoor unit is installed in places where natural wind can increase or decrease its design air flow rate.

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"CAUTION" Cooling operation under low outdoor air temperature conditions

PAC models can be operated in cooling mode at low outdoor air temperature condition within above temperature range. However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]

In case of severely low temperature condition

- 1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
- 2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, mount the flex flow adapter (prepared as option part) or like such devices onto the outdoor unit in order to divert the strong wind.

[Reason]

Under the low outdoor air temperature conditions of -5°C or lower, the outdoor fan is controlled at lower or lowest speed by outdoor fan control, but if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop more.

This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

Limitation on unit and piping installation - single, twin.	tion - single,twin.			
	المارية الماري	onoitotimi InnoinnomiO	Marks ap	Marks appearing in the drawing
Descriptions	inodel Tor Gutdoor Units	Ulmensional limitations	Single type	Twin type
One-way pipe length	100V · 125V · 140V	≥ 50m		L+L1+L2
Main pipe length	100V · 125V · 140V	≥ 50m		L
One-way pipe length after the first branching point	100V · 125V · 140V	≥ 30m		L1, L2
Difference of pipe length after the first branching point	oint	≥ 10m		L1-L2 L2-L1
Total pipe length after the second branching point		≥ 15m		
Elevation difference between indoor and outdoor Funits	When the outdoor unit is postitioned higher When the outdoor unit is 100V · 125V · 140V positioned lower	W ≤ 30m (≤50m) * W ≤ 15m	Ξ	Τ
Elevation difference among indoor units	-	≥ 0.5m		۲
Single type Indoor unit Outdoor unit Notes (1) A riser pipe must be part of the main. A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible. (2) In case of the outdoor unit is positioned higher, dimensional limitation change from 30m to 50m by changing SW5-2 of outdoor unit control POB to ON. (* mark)	Twin type H Lt Lt Lt Lt Lt Lt Lt Lt Lt	Indoor unit Indoor	Twin type Model for Branch piping outdoor units set(option) 100V · 125V · 140V DIS-WA1G DIS-WA1G or unit control PCB to ON. (* mark)	

(2) Models FDC200-280VSA-W

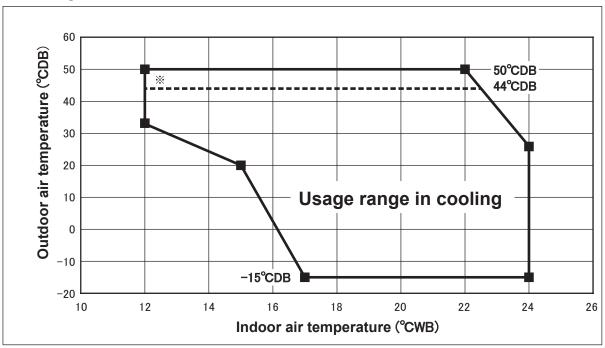
Operating temperature ren	000	See next page.					
Operating temperature ran	ige	When used below -5°C, install a snow hood (Option).					
Recommendable area to in	nstall	Considering to get sufficient heating capacity, the area where the averaged lowest ambient air temperature in day time during winter is above 0°C, and it has no accumulation of snow.					
Installation site		The limitations of installation space are shown in the page for exterior dimensions. Install the indoor unit at least 2.5m higher than the floor surface.					
Temperature and humidity indoor unit in the ceiling (N	conditions surrounding the ote 2)	Dew point temperature : 23°C or less, relative hummdity : 80% or less					
Limitations on unit and piping installation		See pages 128-130.					
Limitation of refrigerant		7.95kg See page 124.					
Compressor	Cycle time	7 minutes or more (from OFF to OFF) or (from ON to ON)					
ON-OFF cycling	Stop time	3 minutes or more					
	Voltage range	Rating ±10%					
Power source	Voltage drop at start-up	Min.85% of rating					
	Phase-to-phase unbalance	3% or less					

Note 1. Do not install the unit in places which:

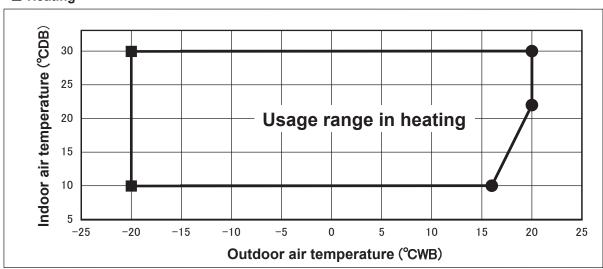
- 1) Flammable gas may leak.
- 2) Carbon fiber, metal particles, powder, etc. are floating.
- 3) Cosmetic or special sprays are used frequently.
- 4) Exposed to oil splashes or steam (e.g. kitchen and machine plant).
- 5) Exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent).
- 6) Exposed to ammonia substance (e.g. organic fertilizer).
- 7) Matters affecting devices, such as sulfuric gas, chlorine gas, acid, alkali, etc. may generate or accumulate.
- 8) Chimney smoke is hanging.
- 9) Sucking the exhaust gas from heat exchanger.
- 10) Adjacent to equipment generating electromagnetic waves or high frequency waves.
- 11) There is light beams that affect the receiving device of indoor unit in case of the wireless specification.
- 12) Snow falls heavily.
- 13) At an elevation of 1000 meters or higher.
- 14) On mobile machine (e.g. vehicle, ship, etc.)
- 15) Splashed with water to indoor unit (e.g. laundry room).
- 16) Indoor units of twin, triple and double-twin specifications separately in a room with partition.
- 17) Location with receiving heat radiation from another heat source.
- Note 2. If ambient temperature and humidity exceed the above conditions, add polyurethane foam insulation (10mm or thicker) on the outer plate of indoor unit.
 - Both gas and liquid pipes need to be coverd with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.
- Note 3. When used below -5°C, install a snow hood on site.
 - Regarding outline of a snow hood, refer to our technical maunal.

Operating temperature range

■ Cooling



■ Heating



Decline in cooling and heating capacity or operation stop may occur when the outdoor unit is installed in places where natural wind can increase or decrease its design air flow rate.

"CAUTION" Cooling operation under low outdoor air temperature conditions

PAC models can be operated in cooling mode at low outdoor air temperature condition within above temperature range. However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]

In case of severely low temperature condition

- 1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
- 2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, mount the flex flow adapter (prepared as optional part) or like such devices onto the outdoor unit in order to divert the strong wind.

[Reason]

Under the low outdoor air temperature conditions of -5°C or lower, the outdoor fan is controlled at lower or lowest speed by outdoor fan control, but if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop more.

This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

*Strict installation restrictions apply when outdoor temperature exceeds 44°C.

For details, refer to chapter 2.9.4(2) Installation of outdoor unit, 1. HAULAGE AND INSTALLATION, 5) Installation space.

Limitation on unit and piping installation - single,twin,triple,W-twin.

- Check the following points against the specification of the indoor unit and the installation site.
 Observe the following restrictions regarding unit installation and use. Improper installation can cause compressor failure or degradation of
- The total liquid piping length of the system is restricted by the equivalent length (Le).
 The equivalent length (Le) is a virtual length corresponding to an equivalent length of liquid piping using a diameter of 12.7mm.

FDC200V

Restricti	on.	Dimensional restrictions		Mari	ks appearing in t	he drawing		
nestricti	UII	Difficusional restrictions	Single	Twin	Triple (A)	Triple(B)(2)	W-twin	
Total equivalent length (Liquid	piping)	≦ 70 m	Le	Le	Le	Le	Le	
One-way pipe length of refrigerant piping	Liquid piping Gas piping	≤ 40m (L: φ 9.52) 40-70m(L: φ 12.7) ≤ 70m	L	L+L1 L+L2	L+L1, L+L2, L+L3	L+L1 ⁽¹⁾	L+La+L1, L+La+L2 L+Lb+L3, L+Lb+L4	
Main pipe length	Liquid piping Gas piping	≦ 70m ≦ 35m (L: φ 22.22) 35–70m (L: φ 25.4 or φ 28.58)	L	L	L	L	L	
One way pipe length from the point to the second branching		≦ 5m	-	-	-	La	-	
One-way pipe length after the	way pipe length after the first branching point		-	L1,L2	L1,L2,L3	L1	La+L1, La+L2 La+L3, La+L4	
	-way pipe length from the first branching point to		-	-	-	La+L2,La+L3	-	
One-way pipe length difference from the first	Twin Type, W-Twin	≦ 10m	-	IL1-L2I	-	-	(L1+La)-(L3+Lb) , (L1+La)-(L4+Lb) , (L2+La)-(L3+Lb) , (L2+La)-(L4+Lb) , L1-L2 , L3-L4	
branching point to the indoor units	Triple Type(A)	≦ 3m	-	-	IL1-L2I,IL2- L3I,IL3-L1I	-	-	
	Triple Type(B)	3m – 10m	-	-	-	L1-(La+L2), L1-(La+L3) ⁽¹⁾	-	
One-way pipe length differend branching point to the indoor of		≦ 10m	-	-	-	IL2-L3I	L1-L2 , L3-L4	
Total pipe length after the sec	ond branching point	≦ 15m	-	-	-	-	L1+L2,L3+L4	
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher When the outdoor unit is positioned lower	≤ 50m ⁽³⁾ ≤ 15m	Н	Н	Н	Н	Н	
Elevation difference between i	ndoor units	≦ 0.5m	-	h	h1,h2,h3	h1,h2,h3	h1,h2,h3,h4,h5,h6	

[Formula to calculate equivalent length (Le)]

In case of new piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52)
In case of existing piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52) + 1.56 × (length of ϕ 15.88)

ACAUTION

• For model 200V, always use ϕ 12.7mm liquid main pipe when one-way piping length exceeds 40m and ϕ 9.52mm if it is 40m or less. If ϕ 9.52mm liquid pipe is used in an installation having one-way pipe longer than 40m, it may cause degradation of performance and/or water drops in the indoor unit.

• Always use φ 25.4mm or φ 28.58mm gas main pipe "L" when the length of "L" exceeds 35m.

If φ 22.22mm gas pipe is used in an installation having one-way pipe longer than 35m, it may cause degradation of performance and/or water drops in the indoor unit.

- (1) Install the indoor units so that L + L1 becomes the longest one-way pipe.
- (2) Connect the indoor unit with the maximum capacity to L1.
- (3) If the outdoor temperature is above 43°C, the dimensional restriction is \leq 30m.

Limitation on unit and piping installation - single,twin,W-twin.

- Check the following points against the specification of the indoor unit and the installation site.
 Observe the following restrictions regarding unit installation and use. Improper installation can cause compressor failure or degradation of
- performance.

 The total liquid piping length of the system is restricted by the equivalent length (Le).
 The equivalent length (Le) is a virtual length corresponding to an equivalent length of liquid piping using a diameter of 12.7mm.

● FDC250/280V

Restrict		Dimensional restrictions		Marks appe	aring in the dra	awing	
Hestrict	ion	Dimensional restrictions	Single	Twin	Triple	W-twin	
Total equivalent length(Liquid	piping)	[250V] ≦ 70m [280V] ≦ 60m	Le	Le		Le	
One-way pipe length of refrig	erant piping	[250V] ≦ 70m [280V] ≦ 60m	L	L+L1 L+L2		L+La+L1, L+La+L2 L+Lb+L3, L+Lb+L4	
	Liquid piping	[250V] ≦ 70m [280V] ≦ 60m					
Main pipe length	Gas piping	≤ 35m (L: φ 22.22) 250V] 35-70m 280V] 35-60m (L: φ 25.4 or φ 28.58)	L	L		L	
One-way pipe length after the first branching point		≦ 30m	-	L1,L2		La+L1, La+L2 La+L3, La+L4	
One-way pipe length differen branching point to the indoor		≦ 10m	-	IL1-L2I	-	(L1+La)-(L3+Lb) , (L1+La)-(L4+Lb) , (L2+La)-(L3+Lb) , (L2+La)-(L4+Lb) , L1-L2 , L3-L4	
One-way pipe length different branching point to the indoor		≦ 10m	-	-		L1-L2 , L3-L4	
Total pipe length after the sec	ond branching point	≦ 15m	-	-		L1+L2,L3+L4	
Elevation difference between	When the outdoor unit is positioned higher	$\leq 50 \text{m}^{(3)}$	Н	н		н	
indoor and outdoor units	When the outdoor unit is positioned lower	≦ 15m	11	11			
Elevation difference between	indoor units	≦ 0.5m	-	h		h1,h2,h3,h4,h5,h6	

[Formula to calculate equivalent length (Le)]

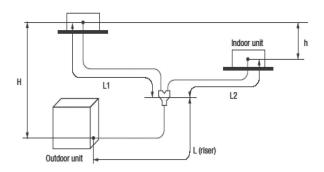
In case of new piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52)
In case of existing piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52) + 1.56 × (length of ϕ 15.88)

ACAUTION

• Always use φ 25.4mm or φ 28.58mm gas main pipe "L" when the length of "L" exceeds 35m. If φ 22.22mm gas pipe is used in an installation having one-way pipe longer than 35m, it may cause degradation of performance and/or water drops in the indoor unit.

(1) If the outdoor temperature is above 43°C, the dimensional restriction is \leqq 30m.

Twin type



Twin type

Model for outdoor units	Branch piping set(Option)
200V · 250V · 280V	DIS-WB1G

(1) A riser pipe must be part of the main.

A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.

Limitation of refrigerant and additional refrigerant charge

(1) Determine if the factory refrigerant charge of the outdoor unit is sufficient to cover the total liquid piping length.

Item Capacity	Factory refrigerant charge (kg)	Liquid piping length covered with factory refrigerant charge (m)
200V	4.3	
250V	5.1	30
280V	5.6	

(2) If the factory charge does not cover the total liquid piping length, an addition of refrigerant is necessary.

Step1 - Calculate the total equivalent length, Le:

[Formula to calculate equivalent length (Le)]

In case of new piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52)
In case of existing piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52) + 1.56 × (length of ϕ 15.88)

Step2 - Determine from the table below the additional refrigerant charge:

Model FDC200 *			Equivalent length (Le)							
Model FDG200	≦30 m	30 <le≦40 m<="" td=""><td>40<le≦50 m<="" td=""><td>0<le≦50 50<le≦60="" 60<le≦70="" m="" m<br="">2.11kg 2.98kg 3.65kg valent length (Le) 0<le≦50 (le)<="" 1.31kg="" 2.18kg="" 2.85kg="" 50<le≦60="" 60<le≦70="" length="" m="" td="" valent=""></le≦50></le≦50></td></le≦50></td></le≦40>	40 <le≦50 m<="" td=""><td>0<le≦50 50<le≦60="" 60<le≦70="" m="" m<br="">2.11kg 2.98kg 3.65kg valent length (Le) 0<le≦50 (le)<="" 1.31kg="" 2.18kg="" 2.85kg="" 50<le≦60="" 60<le≦70="" length="" m="" td="" valent=""></le≦50></le≦50></td></le≦50>	0 <le≦50 50<le≦60="" 60<le≦70="" m="" m<br="">2.11kg 2.98kg 3.65kg valent length (Le) 0<le≦50 (le)<="" 1.31kg="" 2.18kg="" 2.85kg="" 50<le≦60="" 60<le≦70="" length="" m="" td="" valent=""></le≦50></le≦50>						
Additional refrigerant charge (kg)	0kg	0.20kg	2.11kg	2.98kg	3.65kg					
Model FDC250			Equivalent length (Le)							
MIOUEI FDG230	≦30 m	30 <le≦40 m<="" td=""><td>40<le≦50 m<="" td=""><td>50<le≦60 m<="" td=""><td colspan="2">60<le≦70 m<="" td=""></le≦70></td></le≦60></td></le≦50></td></le≦40>	40 <le≦50 m<="" td=""><td>50<le≦60 m<="" td=""><td colspan="2">60<le≦70 m<="" td=""></le≦70></td></le≦60></td></le≦50>	50 <le≦60 m<="" td=""><td colspan="2">60<le≦70 m<="" td=""></le≦70></td></le≦60>	60 <le≦70 m<="" td=""></le≦70>					
Additional refrigerant charge (kg)	0kg	0.44kg	1.31kg	2.18kg	2.85kg					
Model FDC280	Equivalent length (Le)									
MOUEL FDG200	≦30 m	30 <le≦40 m<="" td=""><td>40<le≦50 m<="" td=""><td>50<le≦55 m<="" td=""><td colspan="2">55<le≦60 m<="" td=""></le≦60></td></le≦55></td></le≦50></td></le≦40>	40 <le≦50 m<="" td=""><td>50<le≦55 m<="" td=""><td colspan="2">55<le≦60 m<="" td=""></le≦60></td></le≦55></td></le≦50>	50 <le≦55 m<="" td=""><td colspan="2">55<le≦60 m<="" td=""></le≦60></td></le≦55>	55 <le≦60 m<="" td=""></le≦60>					
Additional refrigerant charge (kg)	0kg	0.44kg	1.31kg	1.96kg	2.35kg					

^{*}For FDC200VSA-W only, even if the total liquid piping length > 30m, there may be cases where additional refrigerant charge is not required.

- It is not necessary to remove or add refrigerant charge even if the total liquid piping length is less than 3 m.
 If an existing pipe system is used, the refrigerant charge will vary according to the liquid pipe size. For further information, see "6. UTILIZATION OF EXISTING PIPING" in chapter 1.10.4 Installation of outdoor unit.

Examples:

FDC250VSA-W - W-twin system with L(ϕ 12.7) = 35 m; La(ϕ 9.52) = Lb(ϕ 9.52) = 5 m; L1(ϕ 9.52) = L2(ϕ 9.52) = L3(ϕ 9.52) = L4(ϕ 9.52) = 3 m Total liquid piping length = 57 m, additional refrigerant charge is necessary Step 1: Le = 35 + 0.52 x (5 + 5 + 3 + 3 + 3 + 3) = 46.44 m Step 2: additional refrigerant charge = 1.31 kg

FDC200VSA-W - Twin system with L(ϕ 9.52) = 30 m; L1(ϕ 9.52) = L2(ϕ 9.52) = 6 m Total liquid piping length = 42 m, additional refrigerant charge might be necessary Step 1: Le = 0 + 0.52 x (30 + 6 + 6) = 21.84 m Step 2: additional refrigerant charge = 0 kg

FDC280VSA-W - Single system with L($\!\phi$ 12.7) = 25 m Total liquid piping length = 25 m, no additional refrigerant charge needed

2.8 SELECTION CHART

Correct the cooling and heating capacity in accordance with the operating conditions. The net cooling and heating capacity can be obtained in the following way.

Net capacity = Capacity shown in the capacity tables (2.8.1) × Correction factors shown in the table (2.8.2) (2.8.3) (2.8.4)

Caution: In case that the cooling operation during low outdoor air temperature below -5°C is expected, install the outdoor unit where it is not influenced by natural wind. Otherwise protection control by low pressure will be activated much more frequently and it will cause insufficient capacity or breakdown of the compressor in worst case.

2.8.1 Capacity tables

(1) Single type

Model FDF100VNAWVH Indoor unit FDF100VH Outdoor unit FDC100VNA-W

Cooling n	node															(kW
Outdoor							Ind	oor air t	emperat	ure						
air	18°	CDB	21°	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°0	CWB	14°(CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°C	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15		İ			İ		11.02	8.20	11.60	8.24	11.92	8.16	12.55	8.51	13.18	10.99
-10					ĺ		10.67	8.06	11.23	8.09	11.53	8.02	12.13	8.36	12.73	10.61
-5					ĺ		10.31	7.92	10.85	7.94	11.35	7.95	12.35	8.44	13.36	11.13
0					8.55	6.89	10.33	7.92	11.22	8.09	11.56	8.03	12.25	8.40	12.93	10.78
5					9.01	7.08	10.41	7.96	11.11	8.05	11.44	7.98	12.09	8.35	12.74	10.62
11					9.41	7.25	10.44	7.97	10.96	7.99	11.36	7.95	12.15	8.37	12.94	10.78
13					9.80	7.42	10.47	7.98	10.81	7.93	11.27	7.92	12.20	8.39	13.13	10.94
15					10.19	7.60	10.50	7.99	10.66	7.87	11.19	7.89	12.26	8.41	13.32	11.11
17					9.83	7.44	10.59	8.03	10.97	7.99	11.40	7.97	12.26	8.41	13.13	10.94
19					10.26	7.62	10.67	8.06	11.27	8.11	11.61	8.04	12.27	8.41	12.94	10.78
21					10.08	7.55	10.56	8.02	11.15	8.06	11.49	8.00	12.15	8.37	12.82	10.68
23					9.90	7.47	10.45	7.97	11.04	8.02	11.37	7.95	12.03	8.33	12.70	10.58
25			9.79	7.88	9.81	7.43	10.40	7.95	10.98	8.00	11.31	7.93	11.97	8.31	12.63	10.53
27			9.62	7.80	9.72	7.39	10.35	7.93	10.92	7.97	11.39	7.96	11.86	8.27		
29			9.42	7.71	9.49	7.29	10.11	7.83	10.69	7.88	11.16	7.88	11.63	8.19		
31			9.21	7.61	9.26	7.19	9.87	7.74	10.46	7.79	10.93	7.79	11.39	8.11		
33	7.82	6.72	8.42	7.24	9.03	7.09	9.64	7.65	10.23	7.71	10.70	7.70	11.16	8.03		
35	7.68	6.65	8.24	7.16	8.80	6.99	9.40	7.55	10.00	7.62	10.46	7.62	10.93	7.95		
37	7.59	6.61	8.11	7.10	8.63	6.92	9.18	7.47	9.72	7.51	10.15	7.50	10.57	7.84		
39	7.50	6.56	7.98	7.04	8.46	6.85	8.95	7.38	9.44	7.41	9.83	7.39	10.22	7.72		
41	7.40	6.52	7.85	6.98	8.29	6.78	8.72	7.29	9.16	7.30	9.51	7.27	9.86	7.60		
43	7.31	6.47	7.72	6.92	8.12	6.71	8.50	7.21	8.88	7.20	9.19	7.16	9.50	7.49		
46	7.17	6.40	7.52	6.84	7.87	6.60	8.16	7.08	8.46	7.05	8.71	6.99	8.97	7.32		
50	5.60	5 49	5.73	5.62	5.90	5.78	6.05	5.93	6 17	6.05	6.28	6 15	6.38	6.26		

Heating	mode	: HC				(kW)
Outdo	or air		Indoor	air temp	erature	
tempe	rature			°CDB		
°CDB	°CWB	16	18	20	22	24
-19.8	-20	6.47	6.40	6.32	6.24	6.16
-17.7	-18	6.52	6.46	6.40	6.30	6.20
-15.7	-16	7.37	7.29	7.20	7.11	7.02
-13.5	-14	7.66	7.57	7.47	7.38	7.30
-11.5	-12	8.23	8.12	8.01	7.93	7.85
-9.5	-10	8.80	8.67	8.54	8.47	8.40
-7.5	-8	9.38	9.23	9.08	9.02	8.95
-5.5	-6	9.56	9.41	9.26	9.20	9.14
-3.0	-4	9.74	9.59	9.45	9.38	9.32
-1.0	-2	9.92	9.77	9.63	9.57	9.50
1.0	0	10.10	9.96	9.81	9.75	9.68
2.0	1	10.19	10.05	9.91	9.84	9.77
3.0	2	10.45	10.31	10.17	10.10	10.03
5.0	4	10.96	10.82	10.68	10.62	10.55
7.0	6	11.48	11.34	11.20	11.13	11.07
9.0	8	11.79	11.65	11.51	11.45	11.39
11.5	10	12.09	11.96	11.82	11.77	11.71
13.5	12	12.72	12.57	12.41	12.35	12.29
15.5	14	13.35	13.18	13.01	12.94	12.88
16.5	16	13.67	13.49	13.31	13.24	13.17

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Model FDF100VSAWVH Indoor unit FDF100VH Outdoor unit FDC100VSA-W

Cooling m	node															(kW)	
Outdoor							Ind	oor air t	emperat	ure							
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB	
temperature	12°0	CWB	14°0	CWB	16°C	CWB	18°C	CWB	19°C	CWB	20°C	CWB	22°0	CWB	24°0	CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
-15							11.02	8.20	11.60	8.24	11.92	8.16	12.55	8.51	13.18	10.99	
-10							10.67	8.06	11.23	8.09	11.53	8.02	12.13	8.36	12.73	10.61	
-5							10.31	7.92	10.85	7.94	11.35	7.95	12.35	8.44	13.36	11.13	
0					8.55	6.89	10.33	7.92	11.22	8.09	11.56	8.03	12.25	8.40	12.93	10.78	
5					9.01	7.08	10.41	7.96	11.11	8.05	11.44	7.98	12.09	8.35	12.74	10.62	
11			9.41 7.25 10.44 7.97 10.96 7.99 11.36 7.95 12.15 8.37 12.94 10.78 9.80 7.42 10.47 7.98 10.81 7.93 11.27 7.92 12.20 8.39 13.13 10.94														
13																10.94	
15					10.19	7.60	10.50	7.99	10.66	7.87	11.19	7.89	12.26	8.41	13.32	11.11	
17					9.83	7.44	10.59	8.03	10.97	7.99	11.40	7.97	12.26	8.41	13.13	10.94	
19					10.26	7.62	10.67	8.06	11.27	8.11	11.61	8.04	12.27	8.41	12.94	10.78	
21					10.08	7.55	10.56	8.02	11.15	8.06	11.49	8.00	12.15	8.37	12.82	10.68	
23					9.90	7.47	10.45	7.97	11.04	8.02	11.37	7.95	12.03	8.33	12.70	10.58	
25			9.79	7.88	9.81	7.43	10.40	7.95	10.98	8.00	11.31	7.93	11.97	8.31	12.63	10.53	
27			9.62	7.80	9.72	7.39	10.35	7.93	10.92	7.97	11.39	7.96	11.86	8.27			
29			9.42	7.71	9.49	7.29	10.11	7.83	10.69	7.88	11.16	7.88	11.63	8.19			
31			9.21	7.61	9.26	7.19	9.87	7.74	10.46	7.79	10.93	7.79	11.39	8.11			
33	7.82	6.72	8.42	7.24	9.03	7.09	9.64	7.65	10.23	7.71	10.70	7.70	11.16	8.03			
35	7.68	6.65	8.24	7.16	8.80	6.99	9.40	7.55	10.00	7.62	10.46	7.62	10.93	7.95			
37	7.59	6.61	8.11	7.10	8.63	6.92	9.18	7.47	9.72	7.51	10.15	7.50	10.57	7.84			
39	7.50	6.56	7.98	7.04	8.46	6.85	8.95	7.38	9.44	7.41	9.83	7.39	10.22	7.72			
41	7.40	6.52	7.85	6.98	8.29	6.78	8.72	7.29	9.16	7.30	9.51	7.27	9.86	7.60			
43	7.31	6.47	7.72	6.92	8.12	6.71	8.50	7.21	8.88	7.20	9.19	7.16	9.50	7.49			
46	7.17	6.40	7.52	6.84	7.87	6.60	8.16	7.08	8.46	7.05	8.71	6.99	8.97	7.32			
50	5.60	5.49	5.73	5.62	5.90	5.78	6.05	5.93	6.17	6.05	6.28	6.15	6.38	6.26			

Heating	g mode	: HC				(kW)
Outdo	oor air		Indoor	air temp	erature	
tempe	erature			°CDB		
°CDB	°CWB	16	18	20	22	24
-19.8	-20	6.47	6.40	6.32	6.24	6.16
-17.7	-18	6.52	6.46	6.40	6.30	6.20
-15.7	-16	7.37	7.29	7.20	7.11	7.02
-13.5	-14	7.66	7.57	7.47	7.38	7.30
-11.5	-12	8.23	8.12	8.01	7.93	7.85
-9.5	-10	8.80	8.67	8.54	8.47	8.40
-7.5	-8	9.38	9.23	9.08	9.02	8.95
-5.5	-6	9.56	9.41	9.26	9.20	9.14
-3.0	-4	9.74	9.59	9.45	9.38	9.32
-1.0	-2	9.92	9.77	9.63	9.57	9.50
1.0	0	10.10	9.96	9.81	9.75	9.68
2.0	1	10.19	10.05	9.91	9.84	9.77
3.0	2	10.45	10.31	10.17	10.10	10.03
5.0	4	10.96	10.82	10.68	10.62	10.55
7.0	6	11.48	11.34	11.20	11.13	11.07
9.0	8	11.79	11.65	11.51	11.45	11.39
11.5	10	12.09	11.96	11.82	11.77	11.71
13.5	12	12.72	12.57	12.41	12.35	12.29
15.5	14	13.35	13.18	13.01	12.94	12.88
16.5	16	13.67	13.49	13.31	13.24	13.17

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency. These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.

Corresponding refrigerant piping length: 7.5m

Level difference of Zero.

(3) Symbols are as follows

TC : Total cooling capacity (kW)

SHC :Sensible heat capacity (kW)

HC :Heating capacity (kW)

Model FDF125VNAWVH Indoor unit FDF125VH Outdoor unit FDC125VNA-W

Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°(CDB	33°0	CDB
emperature	12°0	CWB	14°C	CWB	16°C	CWB	18°C	CWB	19°C	CWB	20°C	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15							13.77	9.64	14.50	9.69	14.89	9.60	15.68	9.94	16.47	13.7
-10							13.34	9.45	14.04	9.50	14.41	9.40	15.16	9.75	15.92	13.2
-5							12.89	9.25	13.56	9.30	14.18	9.31	15.44	9.85	16.69	13.9
0					10.69	8.05	12.92	9.27	14.03	9.49	14.45	9.42	15.31	9.80	16.16	13.4
5					11.27	8.30	13.01	9.31	13.89	9.44	14.30	9.35	15.11	9.73	15.93	13.2
11					11.76	8.52	13.05	9.32	13.70	9.36	14.19	9.31	15.18	9.75	16.17	13.4
13					12.25	8.75	13.09	9.34	13.51	9.28	14.09	9.27	15.25	9.78	16.41	13.6
15					12.74	8.97	13.13	9.36	13.32	9.20	13.99	9.23	15.32	9.80	16.65	13.8
17					12.28	8.76	13.23	9.40	13.71	9.36	14.25	9.33	15.33	9.81	16.41	13.6
19					12.82	9.01	13.34	9.45	14.09	9.52	14.51	9.44	15.34	9.81	16.17	13.4
21					12.60	8.91	13.20	9.39	13.94	9.46	14.36	9.38	15.19	9.76	16.02	13.3
23					12.38	8.80	13.07	9.33	13.80	9.40	14.21	9.32	15.04	9.70	15.87	13.2
25			12.24	9.31	12.26	8.75	13.00	9.30	13.72	9.37	14.14	9.29	14.97	9.67	15.79	13.1
27			12.03	9.21	12.15	8.70	12.93	9.27	13.65	9.34	14.24	9.33	14.83	9.62		
29			11.77	9.08	11.87	8.57	12.64	9.15	13.36	9.22	13.95	9.22	14.53	9.52		
31			11.51	8.95	11.58	8.44	12.34	9.02	13.07	9.10	13.66	9.10	14.24	9.41		
33	9.77	7.90	10.52	8.47	11.29	8.31	12.05	8.90	12.79	8.98	13.37	8.99	13.95	9.31		
35	9.60	7.82	10.30	8.37	11.00	8.18	11.75	8.78	12.50	8.87	13.08	8.88	13.66	9.20		
37	9.49	7.76	10.14	8.29	10.79	8.09	11.47	8.66	12.15	8.73	12.68	8.72	13.21	9.05		
39	9.37	7.70	9.97	8.21	10.58	8.00	11.19	8.55	11.80	8.59	12.28	8.57	12.77	8.89		
41	9.25	7.64	9.81	8.13	10.36	7.90	10.91	8.43	11.45	8.45	11.89	8.42	12.32	8.74		
43	9.14	7.58	9.64	8.06	10.15	7.81	10.62	8.32	11.10	8.32	11.49	8.27	11.88	8.59		
46	8.96	7.49	9.40	7.94	9.83	7.67	10.20	8.15	10.57	8.12	10.89	8.06	11.21	8.37		
50	7.00	6.55	7.16	6.94	7.37	6.66	7.57	7.16	7.72	7.08	7.85	7.00	7.98	7.35		

Heating	mode	: HC				(kW)
Outdo	or air		Indoor	air temp	erature	
tempe	erature			°CDB		
°CDB	°CWB	16	18	20	22	24
-19.8	-20	7.60	7.51	7.42	7.33	7.24
-17.7	-18	7.80	7.73	7.66	7.54	7.42
-15.7	-16	8.66	8.56	8.46	8.36	8.25
-13.5	-14	8.95	8.84	8.73	8.63	8.53
-11.5	-12	9.52	9.39	9.26	9.17	9.08
-9.5	-10	10.10	9.95	9.80	9.72	9.64
-7.5	-8	10.67	10.50	10.34	10.26	10.19
-5.5	-6	11.13	10.96	10.79	10.72	10.64
-3.0	-4	11.59	11.42	11.25	11.17	11.09
-1.0	-2	12.05	11.87	11.70	11.62	11.54
1.0	0	12.50	12.33	12.16	12.07	11.99
2.0	1	12.73	12.56	12.38	12.30	12.22
3.0	2	13.06	12.88	12.71	12.62	12.54
5.0	4	13.70	13.53	13.35	13.27	13.19
7.0	6	14.35	14.18	14.00	13.92	13.84
9.0	8	14.73	14.56	14.39	14.31	14.24
11.5	10	15.11	14.94	14.78	14.71	14.64
13.5	12	15.90	15.71	15.52	15.44	15.37
15.5	14	16.69	16.48	16.26	16.18	16.09
16.5	16	17.09	16.86	16.63	16.54	16.46

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Model FDF125VSAWVH Indoor unit FDF125VH Outdoor unit FDC125VSA-W

(kW) Heating mode : HC Cooling mode

Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°C	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					i		13.77	9.64	14.50	9.69	14.89	9.60	15.68	9.94	16.47	13.73
-10							13.34	9.45	14.04	9.50	14.41	9.40	15.16	9.75	15.92	13.27
-5							12.89	9.25	13.56	9.30	14.18	9.31	15.44	9.85	16.69	13.92
0					10.69	8.05	12.92	9.27	14.03	9.49	14.45	9.42	15.31	9.80	16.16	13.47
5					11.27	8.30	13.01	9.31	13.89	9.44	14.30	9.35	15.11	9.73	15.93	13.28
11					11.76	8.52	13.05	9.32	13.70	9.36	14.19	9.31	15.18	9.75	16.17	13.48
13					12.25	8.75	13.09	9.34	13.51	9.28	14.09	9.27	15.25	9.78	16.41	13.68
15					12.74	8.97	13.13	9.36	13.32	9.20	13.99	9.23	15.32	9.80	16.65	13.88
17					12.28	8.76	13.23	9.40	13.71	9.36	14.25	9.33	15.33	9.81	16.41	13.68
19					12.82	9.01	13.34	9.45	14.09	9.52	14.51	9.44	15.34	9.81	16.17	13.48
21					12.60	8.91	13.20	9.39	13.94	9.46	14.36	9.38	15.19	9.76	16.02	13.35
23					12.38	8.80	13.07	9.33	13.80	9.40	14.21	9.32	15.04	9.70	15.87	13.23
25			12.24	9.31	12.26	8.75	13.00	9.30	13.72	9.37	14.14	9.29	14.97	9.67	15.79	13.17
27			12.03	9.21	12.15	8.70	12.93	9.27	13.65	9.34	14.24	9.33	14.83	9.62		
29			11.77	9.08	11.87	8.57	12.64	9.15	13.36	9.22	13.95	9.22	14.53	9.52		
31			11.51	8.95	11.58	8.44	12.34	9.02	13.07	9.10	13.66	9.10	14.24	9.41		
33	9.77	7.90	10.52	8.47	11.29	8.31	12.05	8.90	12.79	8.98	13.37	8.99	13.95	9.31		
35	9.60	7.82	10.30	8.37	11.00	8.18	11.75	8.78	12.50	8.87	13.08	8.88	13.66	9.20		
37	9.49	7.76	10.14	8.29	10.79	8.09	11.47	8.66	12.15	8.73	12.68	8.72	13.21	9.05		
39	9.37	7.70	9.97	8.21	10.58	8.00	11.19	8.55	11.80	8.59	12.28	8.57	12.77	8.89		
41	9.25	7.64	9.81	8.13	10.36	7.90	10.91	8.43	11.45	8.45	11.89	8.42	12.32	8.74		
43	9.14	7.58	9.64	8.06	10.15	7.81	10.62	8.32	11.10	8.32	11.49	8.27	11.88	8.59		
46	8.96	7.49	9.40	7.94	9.83	7.67	10.20	8.15	10.57	8.12	10.89	8.06	11.21	8.37		
50	7.00	6.55	7.16	6.94	7.37	6.66	7.57	7.16	7.72	7.08	7.85	7.00	7.98	7.35		

Heating	mode	: HC				(kW
Outdo	or air		Indoor	air temp	erature	
tempe	rature			°CDB		
°CDB	°CWB	16	18	20	22	24
-19.8	-20	7.60	7.51	7.42	7.33	7.24
-17.7	-18	7.80	7.73	7.66	7.54	7.42
-15.7	-16	8.66	8.56	8.46	8.36	8.25
-13.5	-14	8.95	8.84	8.73	8.63	8.53
-11.5	-12	9.52	9.39	9.26	9.17	9.08
-9.5	-10	10.10	9.95	9.80	9.72	9.64
-7.5	-8	10.67	10.50	10.34	10.26	10.19
-5.5	-6	11.13	10.96	10.79	10.72	10.64
-3.0	-4	11.59	11.42	11.25	11.17	11.09
-1.0	-2	12.05	11.87	11.70	11.62	11.54
1.0	0	12.50	12.33	12.16	12.07	11.99
2.0	1	12.73	12.56	12.38	12.30	12.22
3.0	2	13.06	12.88	12.71	12.62	12.54
5.0	4	13.70	13.53	13.35	13.27	13.19
7.0	6	14.35	14.18	14.00	13.92	13.84
9.0	8	14.73	14.56	14.39	14.31	14.24
11.5	10	15.11	14.94	14.78	14.71	14.64
13.5	12	15.90	15.71	15.52	15.44	15.37
15.5	14	16.69	16.48	16.26	16.18	16.09
16.5	16	17.09	16.86	16.63	16.54	16.46

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.

These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions. Corresponding refrigerant piping length :7.5m

Level difference of Zero.

(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW) HC :Heating capacity (kW)

Model FDF140VNAWVH Indoor unit FDF125VH Outdoor unit FDC125VNA-W

Cooling n	noue															(kW
Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°C	CWB	14°C	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					i		14.99	10.18	15.78	10.25	16.21	10.14	17.06	10.47	17.92	14.94
-10					i		14.51	9.96	15.27	10.02	15.68	9.92	16.50	10.25	17.32	14.43
-5							14.03	9.75	14.75	9.80	15.43	9.82	16.80	10.36	18.16	15.14
0					11.63	8.46	14.05	9.76	15.26	10.02	15.73	9.94	16.65	10.31	17.58	14.65
5					12.26	8.75	14.16	9.81	15.11	9.95	15.56	9.87	16.44	10.23	17.33	14.45
11					12.79	9.00	14.20	9.82	14.91	9.87	15.44	9.82	16.52	10.26	17.59	14.67
13					13.33	9.25	14.24	9.84	14.70	9.78	15.33	9.78	16.59	10.29	17.86	14.88
15					13.86	9.51	14.29	9.86	14.50	9.69	15.22	9.73	16.67	10.31	18.12	15.10
17					13.37	9.27	14.40	9.91	14.91	9.87	15.50	9.85	16.68	10.32	17.86	14.88
19					13.95	9.55	14.51	9.96	15.33	10.05	15.78	9.96	16.69	10.32	17.59	14.67
21					13.71	9.43	14.36	9.90	15.17	9.98	15.62	9.90	16.53	10.26	17.43	14.53
23					13.47	9.32	14.22	9.83	15.01	9.91	15.46	9.83	16.36	10.20	17.27	14.39
25			13.32	9.86	13.34	9.26	14.15	9.80	14.93	9.88	15.38	9.80	16.28	10.17	17.18	14.32
27			13.09	9.75	13.22	9.20	14.07	9.77	14.85	9.84	15.49	9.84	16.13	10.11		
29			12.81	9.60	12.91	9.05	13.75	9.63	14.54	9.71	15.18	9.71	15.81	9.99		
31			12.53	9.46	12.60	8.91	13.43	9.49	14.23	9.58	14.86	9.58	15.50	9.87		
33	10.63	8.34	11.45	8.92	12.28	8.76	13.11	9.35	13.91	9.45	14.55	9.45	15.18	9.75		
35	10.45	8.25	11.21	8.80	11.97	8.62	12.79	9.21	13.60	9.32	14.23	9.33	14.86	9.64		
37	10.32	8.18	11.03	8.72	11.74	8.51	12.48	9.08	13.22	9.16	13.80	9.16	14.38	9.46		
39	10.20	8.12	10.85	8.63	11.51	8.41	12.17	8.95	12.84	9.00	13.36	8.99	13.89	9.29		
41	10.07	8.05	10.67	8.54	11.28	8.30	11.87	8.82	12.45	8.85	12.93	8.82	13.41	9.12		
43	9.94	7.99	10.49	8.46	11.04	8.20	11.56	8.70	12.07	8.70	12.50	8.65	12.92	8.95	,	
46	9.75	7.89	10.22	8.33	10.70	8.05	11.10	8.51	11.50	8.47	11.85	8.41	12.20	8.70	Ì	
50	7.61	6.84	7.79	7.22	8.02	6.92	8.23	7.40	8.40	7.32	8.54	7.23	8.68	7.57		

ı	Heating	mode	de : HC									
	Outdo	or air		Indoor	air temp	erature						
	tempe	rature			°CDB							
	°CDB	°CWB	16	18	20	22	24					
	-19.8	-20	8.07	7.97	7.88	7.78	7.68					
	-17.7	-18	8.20	8.13	8.05	7.93	7.80					
	-15.7	-16	9.19	9.09	8.98	8.87	8.76					
	-13.5	-14	9.52	9.40	9.29	9.18	9.07					
	-11.5	-12	10.18	10.04	9.90	9.81	9.71					
	-9.5	-10	10.84	10.68	10.52	10.43	10.35					
	-7.5	-8	11.50	11.32	11.14	11.06	10.98					
	-5.5	-6	12.08	11.89	11.71	11.63	11.55					
	-3.0	-4	12.65	12.47	12.28	12.20	12.11					
	-1.0	-2	13.23	13.04	12.85	12.77	12.68					
	1.0	0	13.81	13.62	13.42	13.33	13.24					
	2.0	1	14.10	13.90	13.71	13.62	13.53					
	3.0	2	14.46	14.26	14.07	13.98	13.89					
	5.0	4	15.17	14.98	14.78	14.69	14.60					
	7.0	6	15.89	15.69	15.50	15.41	15.32					
	9.0	8	16.31	16.12	15.93	15.85	15.77					
	11.5	10	16.73	16.55	16.36	16.28	16.21					
	13.5	12	17.61	17.39	17.18	17.10	17.01					
	15.5	14	18.48	18.24	18.00	17.91	17.82					
	16.5	16	18.92	18.67	18.41	18.32	18.22					

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Model FDF140VSAWVH Indoor unit FDF140VH Outdoor unit FDC140VSA-W

(kW) Heating mode : HC Cooling mode (kW)

Outdoor		Indoor air temperature														
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°C	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°C	CWB	22°0	CWB	24°C	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15					i		14.99	10.18	15.78	10.25	16.21	10.14	17.06	10.47	17.92	14.94
-10					İ		14.51	9.96	15.27	10.02	15.68	9.92	16.50	10.25	17.32	14.43
-5					ĺ		14.03	9.75	14.75	9.80	15.43	9.82	16.80	10.36	18.16	15.14
0					11.63	8.46	14.05	9.76	15.26	10.02	15.73	9.94	16.65	10.31	17.58	14.65
5					12.26	8.75	14.16	9.81	15.11	9.95	15.56	9.87	16.44	10.23	17.33	14.45
11					12.79	9.00	14.20	9.82	14.91	9.87	15.44	9.82	16.52	10.26	17.59	14.67
13					13.33	9.25	14.24	9.84	14.70	9.78	15.33	9.78	16.59	10.29	17.86	14.88
15					13.86	9.51	14.29	9.86	14.50	9.69	15.22	9.73	16.67	10.31	18.12	15.10
17					13.37	9.27	14.40	9.91	14.91	9.87	15.50	9.85	16.68	10.32	17.86	14.88
19					13.95	9.55	14.51	9.96	15.33	10.05	15.78	9.96	16.69	10.32	17.59	14.67
21					13.71	9.43	14.36	9.90	15.17	9.98	15.62	9.90	16.53	10.26	17.43	14.53
23					13.47	9.32	14.22	9.83	15.01	9.91	15.46	9.83	16.36	10.20	17.27	14.39
25			13.32	9.86	13.34	9.26	14.15	9.80	14.93	9.88	15.38	9.80	16.28	10.17	17.18	14.32
27			13.09	9.75	13.22	9.20	14.07	9.77	14.85	9.84	15.49	9.84	16.13	10.11		
29			12.81	9.60	12.91	9.05	13.75	9.63	14.54	9.71	15.18	9.71	15.81	9.99		
31			12.53	9.46	12.60	8.91	13.43	9.49	14.23	9.58	14.86	9.58	15.50	9.87		
33	10.63	8.34	11.45	8.92	12.28	8.76	13.11	9.35	13.91	9.45	14.55	9.45	15.18	9.75		
35	10.45	8.25	11.21	8.80	11.97	8.62	12.79	9.21	13.60	9.32	14.23	9.33	14.86	9.64		
37	10.32	8.18	11.03	8.72	11.74	8.51	12.48	9.08	13.22	9.16	13.80	9.16	14.38	9.46		
39	10.20	8.12	10.85	8.63	11.51	8.41	12.17	8.95	12.84	9.00	13.36	8.99	13.89	9.29		
41	10.07	8.05	10.67	8.54	11.28	8.30	11.87	8.82	12.45	8.85	12.93	8.82	13.41	9.12		
43	9.94	7.99	10.49	8.46	11.04	8.20	11.56	8.70	12.07	8.70	12.50	8.65	12.92	8.95		
46	9.75	7.89	10.22	8.33	10.70	8.05	11.10	8.51	11.50	8.47	11.85	8.41	12.20	8.70		
50	7.61	6.84	7.79	7.22	8.02	6.92	8.23	7.40	8.40	7.32	8.54	7.23	8.68	7.57		

-17.7 -18 8.20 8.13 8.05 7.93 7.80 -15.7 -16 9.19 9.09 8.98 8.87 8.76 -13.5 -14 9.52 9.40 9.29 9.18 9.77 -11.5 -12 10.18 10.04 9.90 9.81 9.77 -15.5 -10 10.84 10.68 10.52 10.43 10.36 -7.5 -8 11.50 11.32 11.14 11.06 10.98 -5.5 -6 12.08 11.89 11.71 11.63 11.53 -3.0 -4 12.65 12.47 12.28 12.20 12.11 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.86 5.0 4 15.17 14.98 14.78	Heating	mode	: HC				(kW
**CDB **CWB 16	Outdo	or air		Indoor	air temp	erature	
1-9.8	tempe	rature			°CDB		
-17.7 -18 8.20 8.13 8.05 7.93 7.80 -15.7 -16 9.19 9.09 8.98 8.87 8.76 -13.5 -14 9.52 9.40 9.29 9.18 9.07 -11.5 -12 10.18 10.04 9.90 9.81 9.71 -9.5 -10 10.84 10.68 10.52 10.43 10.35 -7.5 -8 11.50 11.32 11.14 11.06 10.98 -5.5 -6 12.08 11.89 11.71 11.63 11.55 -3.0 -4 12.65 12.47 12.28 12.20 12.11 -1.0 -2 13.23 13.04 12.85 12.77 12.66 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.85 5.0 4 15.17 14.98 14.78 14.69 14.67 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.22 11.35 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	°CDB	°CWB	16	18	20	22	24
-15.7 -16 9.19 9.09 8.98 8.87 8.76 -13.5 -14 9.52 9.40 9.29 9.18 9.07 -11.5 -12 10.18 10.04 9.90 9.81 9.71 -9.5 -10 10.84 10.68 10.52 10.43 10.36 -7.5 -8 11.50 11.32 11.14 11.06 10.98 -5.5 -6 12.08 11.89 11.71 11.63 11.52 -3.0 -4 12.65 12.47 12.28 12.20 12.11 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.86 5.0 4 15.17 14.98 14.78 14.69 14.51 14.98 14.78 14.69 14.51 15.91 15.50	-19.8	-20	8.07	7.97	7.88	7.78	7.68
-13.5 -14 9.52 9.40 9.29 9.18 9.07 -11.5 -12 10.18 10.04 9.90 9.81 9.71 -9.5 -10 10.84 10.68 10.52 10.43 10.32 -7.5 -8 11.50 11.32 11.14 11.06 10.93 -5.5 -6 12.08 11.89 11.71 11.63 11.55 -3.0 -4 12.65 12.47 12.28 12.20 12.11 -1.0 -2 13.23 13.04 12.85 12.77 12.68 1.0 0 13.81 13.62 13.42 13.33 13.22 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.86 5.0 4 15.17 14.98 14.78 14.69 14.66 7.0 6 15.89 15.69 15.50	-17.7	-18	8.20	8.13	8.05	7.93	7.80
-11.5 -12 10.18 10.04 9.90 9.81 9.71 -9.5 -10 10.84 10.68 10.52 10.43 10.38 -7.5 -8 11.50 11.32 11.14 11.06 10.98 -5.5 -6 12.08 11.89 11.71 11.63 11.52 -3.0 -4 12.65 12.47 12.28 12.20 12.11 -1.0 -2 13.23 13.04 12.85 12.77 12.68 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.82 3.0 2 14.46 14.26 14.07 13.98 13.85 5.0 4 15.17 14.98 14.78 14.69 14.53 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 <td>-15.7</td> <td>-16</td> <td>9.19</td> <td>9.09</td> <td>8.98</td> <td>8.87</td> <td>8.76</td>	-15.7	-16	9.19	9.09	8.98	8.87	8.76
-9.5 -10 10.84 10.68 10.52 10.43 10.38 -7.5 -8 11.50 11.32 11.14 11.06 10.98 -5.5 -6 12.08 11.89 11.71 11.63 11.55 -3.0 -4 12.65 12.47 12.28 12.20 12.11 -1.0 -2 13.23 13.04 12.85 12.77 12.66 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.52 3.0 2 14.46 14.26 14.07 13.98 13.85 5.0 4 15.14 14.98 14.78 14.69 14.53 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 15.5 14 18.48 18.24 18.00 <td>-13.5</td> <td>-14</td> <td>9.52</td> <td>9.40</td> <td>9.29</td> <td>9.18</td> <td>9.07</td>	-13.5	-14	9.52	9.40	9.29	9.18	9.07
-7.5 -8 11.50 11.32 11.14 11.06 10.98 -5.5 -6 12.08 11.89 11.71 11.63 11.55 -3.0 -4 12.65 12.47 12.28 12.20 12.11 1.0 -2 13.23 13.04 12.85 12.77 12.66 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.52 3.0 2 14.46 14.26 14.07 13.98 13.89 13.89 5.0 4 15.17 14.98 14.78 14.69 14.06 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.22 15.5 14 18.48 18.24	-11.5	-12	10.18	10.04	9.90	9.81	9.71
-5.5 -6 12.08 11.89 11.71 11.63 11.55 -3.0 -4 12.65 12.47 12.28 12.20 12.11 -1.0 -2 13.23 13.04 12.85 12.77 12.65 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.85 5.0 4 15.17 14.98 14.78 14.69 14.66 7.0 6 15.89 15.69 15.50 15.41 15.39 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 16.28 16.21 16.59 15.41 17.01 17.50 17.01 15.55 14 18.48 18.24 18.00 17.91 <t< td=""><td>-9.5</td><td>-10</td><td>10.84</td><td>10.68</td><td>10.52</td><td>10.43</td><td>10.35</td></t<>	-9.5	-10	10.84	10.68	10.52	10.43	10.35
-3.0 -4 12.65 12.47 12.28 12.20 12.11 -1.0 -2 13.23 13.04 12.85 12.77 12.68 1.0 0 13.81 13.62 13.42 13.33 13.22 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.86 5.0 4 15.17 14.98 14.78 14.69 14.60 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	-7.5	-8	11.50	11.32	11.14	11.06	10.98
-1.0 -2 13.23 13.04 12.85 12.77 12.68 1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.52 3.0 2 14.46 14.26 14.07 13.98 13.88 5.0 4 15.17 14.98 14.78 14.69 14.60 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	-5.5	-6	12.08	11.89	11.71	11.63	11.55
1.0 0 13.81 13.62 13.42 13.33 13.24 2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.85 5.0 4 15.17 14.98 14.78 14.69 14.61 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.22 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	-3.0	-4	12.65	12.47	12.28	12.20	12.11
2.0 1 14.10 13.90 13.71 13.62 13.53 3.0 2 14.46 14.26 14.07 13.98 13.86 5.0 4 15.17 14.98 14.78 14.69 14.60 14.60 7.0 6 15.89 15.69 15.50 15.41 15.3 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	-1.0	-2	13.23	13.04	12.85	12.77	12.68
3.0 2 14.46 14.26 14.07 13.98 13.88 5.0 4 15.17 14.98 14.78 14.69 14.60 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	1.0	0	13.81	13.62	13.42	13.33	13.24
5.0 4 15.17 14.98 14.78 14.69 14.60 7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	2.0	1	14.10	13.90	13.71	13.62	13.53
7.0 6 15.89 15.69 15.50 15.41 15.32 9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.52 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	3.0	2	14.46	14.26	14.07	13.98	13.89
9.0 8 16.31 16.12 15.93 15.85 15.77 11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	5.0	4	15.17	14.98	14.78	14.69	14.60
11.5 10 16.73 16.55 16.36 16.28 16.21 13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	7.0	6	15.89	15.69	15.50	15.41	15.32
13.5 12 17.61 17.39 17.18 17.10 17.01 15.5 14 18.48 18.24 18.00 17.91 17.82	9.0	8	16.31	16.12	15.93	15.85	15.77
15.5 14 18.48 18.24 18.00 17.91 17.82	11.5	10	16.73	16.55	16.36	16.28	16.21
	13.5	12	17.61	17.39	17.18	17.10	17.01
16.5 16 18.92 18.67 18.41 18.32 18.22	15.5	14	18.48	18.24	18.00	17.91	17.82
	16.5	16	18.92	18.67	18.41	18.32	18.22

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Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously.

In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.

These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.

Corresponding refrigerant piping length :7.5m

Level difference of Zero.
(3) Symbols are as follows

TC :Total cooling capacity (kW)

SHC :Sensible heat capacity (kW)

HC :Heating capacity (kW)

(2) Twin type

Cooling mode

Model FDF140VNAWPVH Indoor unit FDF71VH (2 units) Outdoor unit FDC140VNA-W

Outling II	iloue															(KVV)
Outdoor							Ind	oor air t	emperat	ure						
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-15	i		i				14.99	10.93	15.78	10.97	16.21	10.86	17.06	11.30	17.92	14.94
-10	i		i				14.51	10.74	15.27	10.78	15.68	10.66	16.50	11.11	17.32	14.43
-5	ĺ		İ				14.03	10.54	14.75	10.57	15.43	10.57	16.80	11.21	18.16	15.14
0	ĺ		i –		11.63	9.18	14.05	10.55	15.26	10.77	15.73	10.68	16.65	11.16	17.58	14.65
5	ĺ –		i		12.26	9.45	14.16	10.60	15.11	10.71	15.56	10.61	16.44	11.09	17.33	14.45
11					12.79	9.67	14.20	10.61	14.91	10.63	15.44	10.57	16.52	11.11	17.59	14.67
13					13.33	9.90	14.24	10.63	14.70	10.55	15.33	10.53	16.59	11.14	17.86	14.88
15					13.86	10.14	14.29	10.65	14.50	10.48	15.22	10.49	16.67	11.16	18.12	15.10
17	l .				13.37	9.92	14.40	10.69	14.91	10.64	15.50	10.59	16.68	11.17	17.86	14.88
19					13.95	10.17	14.51	10.74	15.33	10.80	15.78	10.70	16.69	11.17	17.59	14.67
21					13.71	10.07	14.36	10.68	15.17	10.74	15.62	10.64	16.53	11.12	17.43	14.53
23					13.47	9.96	14.22	10.62	15.01	10.67	15.46	10.58	16.36	11.06	17.27	14.39
25			13.32	10.53	13.34	9.91	14.15	10.59	14.93	10.64	15.38	10.55	16.28	11.03	17.18	14.32
27			13.09	10.43	13.22	9.86	14.07	10.56	14.85	10.61	15.49	10.59	16.13	10.98		
29			12.81	10.29	12.91	9.72	13.75	10.43	14.54	10.49	15.18	10.47	15.81	10.87		
31			12.53	10.16	12.60	9.59	13.43	10.31	14.23	10.37	14.86	10.36	15.50	10.77		
33	10.63	8.98	11.45	9.67	12.28	9.46	13.11	10.18	13.91	10.25	14.55	10.24	15.18	10.66		
35	10.45	8.89	11.21	9.56	11.97	9.32	12.79	10.06	13.60	10.14	14.23	10.13	14.86	10.56		
37	10.32	8.83	11.03	9.48	11.74	9.23	12.48	9.94	13.22	9.99	13.80	9.97	14.38	10.40		
39	10.20	8.77	10.85	9.40	11.51	9.13	12.17	9.82	12.84	9.85	13.36	9.82	13.89	10.24		
41	10.07	8.71	10.67	9.32	11.28	9.04	11.87	9.70	12.45	9.71	12.93	9.67	13.41	10.09		
43	9.94	8.65	10.49	9.24	11.04	8.94	11.56	9.59	12.07	9.57	12.50	9.52	12.92	9.94		
46	9.75	8.56	10.22	9.12	10.70	8.80	11.10	9.42	11.50	9.37	11.85	9.29	12.20	9.71		
50	7.61	7.46	7.79	7.64	8.02	7.75	8.23	8.07	8.40	8.23	8.54	8.21	8.68	8.51		

I	Heating	mode	: HC				(kW)
	Outdo	or air		Indoor	air temp	erature	
	tempe	rature			°CDB		
	°CDB	°CWB	16	18	20	22	24
	-19.8	-20	8.07	7.97	7.88	7.78	7.68
	-17.7	-18	8.20	8.13	8.05	7.93	7.80
	-15.7	-16	9.19	9.09	8.98	8.87	8.76
	-13.5	-14	9.52	9.40	9.29	9.18	9.07
	-11.5	-12	10.18	10.04	9.90	9.81	9.71
	-9.5	-10	10.84	10.68	10.52	10.43	10.35
	-7.5	-8	11.50	11.32	11.14	11.06	10.98
	-5.5	-6	12.08	11.89	11.71	11.63	11.55
	-3.0	-4	12.65	12.47	12.28	12.20	12.11
	-1.0	-2	13.23	13.04	12.85	12.77	12.68
	1.0	0	13.81	13.62	13.42	13.33	13.24
	2.0	1	14.10	13.90	13.71	13.62	13.53
	3.0	2	14.46	14.26	14.07	13.98	13.89
	5.0	4	15.17	14.98	14.78	14.69	14.60
	7.0	6	15.89	15.69	15.50	15.41	15.32
	9.0	8	16.31	16.12	15.93	15.85	15.77
	11.5	10	16.73	16.55	16.36	16.28	16.21
	13.5 12 17.61		17.61	17.39	17.18	17.10	17.01
	15.5 14 18.		18.48	18.24	18.00	17.91	17.82
	16.5	16	18.92	18.67	18.41	18.32	18.22

(kW)

(kW)

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Model FDF140VSAWPVH Indoor unit FDF71VH (2 units) Outdoor unit FDC140VSA-W

Indoor air temperature Outdoor 18°CDB 21°CDB 23°CDB 26°CDB 27°CDB 28°CDB 31°CDB 33°CDB emperatu 12°CWB 14°CWB 16°CWB 18°CWB 19°CWB 20°CWB 22°CWB 24°CWB °CDB TC TC SHC SHC TC SHC TC SHC TC SHC TC SHC SHC TC 14.99 10.93 17.06 11.30 -15 15.78 10.97 16.21 10.86 17.92 14.94 -10 14.51 10.74 15.27 10.78 15.68 10.66 16.50 11.11 17.32 14.43 14.03 10.54 14.75 10.57 15.43 10.57 16.80 11.21 18.16 15.14 0 11.63 9.18 14.05 10.55 15.26 10.77 15.73 10.68 16.65 11.16 17.58 14.65 12.26 9.45 14.16 10.60 15.11 10.71 15.56 10.61 16.44 11.09 17.33 14.45 11 12.79 9.67 14.20 10.61 14.91 10.63 15.44 10.57 16.52 11.11 17.59 14.67 13 13.33 9.90 14.24 10.63 14.70 10.55 15.33 10.53 16.59 11.14 17.86 14.88 15 13.86 10.14 14.29 10.65 14.50 10.48 16.67 11.16 13 37 9 92 14 40 10 69 14 91 10 64 15.50 10.59 16 68 11 17 17 86 14 88 19 13.95 10.17 14.51 10.74 15.33 10.80 15.78 10.70 16.69 11.17 17.59 14.67 21 13.71 10.07 14.36 10.68 15.17 10.74 15.62 10.64 16.53 11.12 17.43 14.53 13.47 9.96 14.22 10.62 15.01 10.67 15.46 10.58 16.36 11.06 17.27 14.39 25 27 13.32 10.53 13.34 9.91 14.15 | 10.59 | 14.93 | 10.64 | 15.38 | 10.55 16.28 | 11.03 | 17.18 | 14.32 13.09 10.43 13.22 9.86 14.07 10.56 14.85 10.61 15.49 10.59 16.13 10.98 29 31 12.81 10.29 12.91 9.72 13.75 10.43 14.54 10.49 15.18 10.47 15.81 10.87 12.53 10.16 12.60 9.59 13.43 | 10.31 | 14.23 | 10.37 | 14.86 | 10.36 15.50 10.77 33 11.45 9.67 12.28 9.46 13.11 10.18 13.91 10.25 14.55 10.24 15.18 10.66 10.63 8.98 10.45 8.89 11.97 9.32 12.79 10.06 13.60 10.14 14.23 10.13 14.86 10.56 37 10.32 8.83 11.03 9.48 11.74 9.23 12.48 9.94 13.22 9.99 13.80 9.97 14.38 10.40 39 10.85 9.40 11.51 9.13 12.17 9.82 12.84 9.85 13.36 9.82 13.89 10.24 10.20 8.77 41 10.07 8.71 10.67 9.32 11.28 9.04 11.87 9.70 12.45 9.71 12.93 9.67 43 9.94 8.65 10.49 9.24 11.04 8.94 11.56 9.59 12.07 9.57 12.50 9.52 12.92 9.94 9.75 8.56 10.22 9.12 10.70 8.80 11.10 9.42 11.50 9.37 46 11.85 9.29 12.20 9.71
 7.61
 7.46
 7.79
 7.64
 8.02
 7.75
 8.23
 8.07
 8.40
 8.23
 8.54
 8.21

Hea	Heating mode : HC (kW) Outdoor air Indoor air temperature												
	Outdo	or air		Indoor	air temp	erature							
te	empe	rature			°CDB								
°C	DB	°CWB	16	18	20	22	24						
-1	9.8	-20	8.07	7.97	7.88	7.78	7.68						
-1	7.7	-18	8.20	8.13	8.05	7.93	7.80						
-1	5.7	-16	9.19	9.09	8.98	8.87	8.76						
-1	3.5	-14	9.52	9.40	9.29	9.18	9.07						
-1	1.5	-12	10.18	10.04	9.90	9.81	9.71						
—	9.5	-10	10.84	10.68	10.52	10.43	10.35						
\Box	7.5	-8	11.50	11.32	11.14	11.06	10.98						
-4	5.5	-6	12.08	11.89	11.71	11.63	11.55						
-3	3.0	-4	12.65	12.47	12.28	12.20	12.11						
-	1.0	-2	13.23	13.04	12.85	12.77	12.68						
	1.0	0	13.81	13.62	13.42	13.33	13.24						
	2.0	1	14.10	13.90	13.71	13.62	13.53						
3	3.0	2	14.46	14.26	14.07	13.98	13.89						
. 5	5.0	4	15.17	14.98	14.78	14.69	14.60						
7	7.0	6	15.89	15.69	15.50	15.41	15.32						
9	9.0	8	16.31	16.12	15.93	15.85	15.77						
1	1.5	10	16.73	16.55	16.36	16.28	16.21						
1	3.5	12	17.61	17.39	17.18	17.10	17.01						
1	5.5	14	18.48	18.24	18.00	17.91	17.82						
1	6.5	16	18.92	18.67	18.41	18.32	18.22						

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Depending on the system control, there may be ranges where the operation is not conducted continuously. In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency. These data show the case where the operation frequency of a compressor is fixed.

- (2) Capacities are based on the following conditions Corresponding refrigerant piping length :7.5m
- Level difference of Zero.
 (3) Symbols are as follows
 - TC :Total cooling capacity (kW) SHC :Sensible heat capacity (kW) HC :Heating capacity (kW)

Model FDF200VSAWPVH Indoor unit FDF100VH (2 units) Outdoor unit FDC200VSA-W

Cooling n	node															(kW)	Heatin	g mode	: HC				(kW)
Outdoor							Ind	oor air t	empera	ture							Outo	oor air		Indoor	air temp	erature	
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°	CDB	31°0	CDB	33°(CDB	temp	erature			°CDB		
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°0	CWB	°CDB	°CWB	16	18	20	22	24
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	-19.8	-20	8.95	8.85	8.76	8.65	8.55
11					20.38	15.19	21.53	16.20	22.10	16.05	22.81	15.94	24.23	16.72	25.65	16.40	-17.7	-18	9.67	9.56	9.46	9.34	9.23
13					20.48	15.23	21.65	16.25	22.24	16.10	22.93	15.98	24.31	16.74	25.68	16.41	-15.7	-16	10.38	10.27	10.16	10.04	9.92
15					20.57	15.28	21.78	16.30	22.38	16.16	23.05	16.03	24.38	16.77	25.72	16.42	-13.5	-14	11.10	10.98	10.86	10.73	10.60
17					20.59	15.28	21.86	16.34	22.50	16.20	23.15	16.06	24.45	16.79	25.76	16.43	-11.5	-12	11.93	11.80	11.67	11.54	11.40
19					20.67	15.32	21.94	16.37	22.61	16.25	23.25	16.10	24.52	16.82	25.80	16.45	-9.5	-10	12.75	12.61	12.48	12.34	12.20
21					20.35	15.18	21.58	16.22	22.22	16.10	22.86	15.96	24.13	16.68	25.40	16.32	-7.5	-8	13.57	13.43	13.29	13.14	13.00
23					20.04	15.04	21.22	16.07	21.84	15.94	22.47	15.81	23.74	16.55	25.01	16.20	-5.5	-6	13.78	13.64	13.51	13.37	13.24
25			18.76	15.38	19.88	14.97	21.04	16.00	21.64	15.87	22.28	15.74	23.54	16.48	24.81	16.14	-3.0	-4	13.99	13.86	13.73	13.60	13.47
27			18.61	15.31	19.72	14.90	20.86	15.93	21.45	15.79	22.37	15.77	23.30	16.40			-1.0	-2	14.20	14.08	13.95	13.83	13.71
29			18.31	15.17	19.39	14.76	20.51	15.79	21.09	15.65	22.03	15.64	22.97	16.29			1.0	0	14.41	14.29	14.18	14.06	13.94
31			18.01	15.03	19.07	14.62	20.16	15.65	20.72	15.51	21.69	15.52	22.65	16.18			2.0	1	14.51	14.40	14.29	14.17	14.06
33	16.68	13.95	17.45	14.77	18.74	14.47	19.81	15.51	20.36	15.37	21.35	15.39	22.33	16.07			3.0	2	16.19	16.05	15.91	15.79	15.67
35	16.56	13.89	17.23	14.67	18.41	14.33	19.46	15.37	20.00	15.24	21.00	15.27	22.01	15.96			5.0	4	19.54	19.35	19.15	19.02	18.89
37	16.34	13.78	16.98	14.55	18.04	14.18	19.00	15.19	19.54	15.06	20.50	15.08	21.46	15.78			7.0	6	22.89	22.64	22.40	22.25	22.11
39	16.12	13.67	16.73	14.43	17.67	14.02	18.54	15.01	19.09	14.89	20.00	14.90	20.92	15.60			9.0	8	23.99	23.78	23.58	23.42	23.25
41	15.90	13.56	16.47	14.32	17.29	13.86	18.08	14.83	18.63	14.72	19.50	14.72	20.37	15.42			11.5	10	25.09	24.92	24.75	24.58	24.40
43	15.68	13.46	16.22	14.20	16.92	13.70	17.62	14.65	18.17	14.55	19.00	14.54	19.83	15.24			13.5	12	25.95	25.79	25.63	25.45	25.27
46	15.34	13.29	15.84	14.03	16.36	13.47	16.93	14.39	17.49	14.30	18.25	14.28	19.01	14.98			15.5	14	26.82	26.66	26.50	26.32	26.14
50	11.84	11.60	12.40	12.15	13.04	12.13	13.34	13.06	13.56	12.91	13.77	12.75	13.98	13.43			16.5	16	27.25	27.10	26.94	26.76	26.57

PGA000Z846

Model FDF250VSAWPVH Indoor unit FDF125VH (2 units) Outdoor unit FDC250VSA-W

(kW) Heating mode : HC Cooling mode

Outdoor							Ind	oor air t	empera	ture						
air	18°0	CDB	21°	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°0	CDB	33°0	CDB
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°0	CWB
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11	ĺ				25.67	18.03	27.17	19.11	27.92	18.93	28.75	18.77	30.42	19.53	32.08	19.09
13					25.70	18.05	27.20	19.12	27.95	18.94	28.78	18.78	30.45	19.54	32.11	19.1
15					25.72	18.06	27.23	19.13	27.98	18.96	28.81	18.80	30.48	19.55	32.15	19.1
17					25.73	18.06	27.32	19.17	28.11	19.01	28.94	18.85	30.56	19.58	32.20	19.13
19					25.84	18.12	27.43	19.22	28.26	19.07	29.06	18.90	30.66	19.61	32.25	19.1
21					25.45	17.93	26.98	19.02	27.78	18.87	28.57	18.70	30.17	19.43	31.75	18.9
23					25.05	17.75	26.53	18.83	27.29	18.67	28.08	18.50	29.68	19.25	31.26	18.8
25			23.45	18.11	24.85	17.66	26.30	18.73	27.05	18.57	27.84	18.41	29.43	19.16	31.01	18.7
27			23.26	18.02	24.66	17.56	26.08	18.64	26.81	18.47	27.97	18.46	29.13	19.05		
29			22.89	17.83	24.24	17.37	25.64	18.45	26.35	18.28	27.54	18.29	28.72	18.91		
31			22.51	17.65	23.83	17.19	25.20	18.26	25.91	18.10	27.11	18.12	28.31	18.76		
33	20.84	16.47	21.81	17.31	23.43	17.00	24.76	18.08	25.46	17.92	26.69	17.96	27.92	18.62		
35	20.70	16.39	21.54	17.18	23.02	16.82	24.32	17.89	25.00	17.74	26.26	17.79	27.51	18.48		
37	20.43	16.25	21.27	17.05	22.69	16.67	23.90	17.72	24.54	17.55	25.69	17.57	26.83	18.24		
39	20.32	16.20	21.18	17.00	22.55	16.61	23.67	17.62	24.27	17.45	25.31	17.43	26.35	18.07		
41	20.93	16.51	21.43	17.12	22.36	16.53	23.38	17.50	23.94	17.31	24.88	17.26	25.80	17.88		
43	19.81	15.94	20.68	16.77	21.93	16.33	22.83	17.28	23.34	17.08	24.16	16.99	24.96	17.59		
46	17.88	14.96	18.45	15.72	19.05	15.09	19.72	16.04	20.36	15.94	21.26	15.92	22.15	16.65		
50	11 78	11 55	12 33	12 09	12 97	12 62	13 27	13.01	13 48	13 21	13 69	13 34	13 91	13 63		

_	Heating	mode	: HC				(kW)
1	Outdo	or air		Indoor	air temp	erature	
1	tempe	rature			°CDB		
1	°CDB	°CWB	16	18	20	22	24
1	-19.8	-20	11.35	11.22	11.10	10.97	10.84
1	-17.7	-18	12.14	12.00	11.87	11.73	11.59
1	-15.7	-16	12.92	12.78	12.64	12.49	12.35
l	-13.5	-14	13.71	13.55	13.41	13.25	13.10
1	-11.5	-12	14.39	14.24	14.08	13.93	13.77
1	-9.5	-10	15.09	14.92	14.77	14.60	14.45
1	-7.5	-8	15.77	15.61	15.44	15.28	15.12
1	-5.5	-6	16.05	15.89	15.73	15.58	15.42
1	-3.0	-4	16.32	16.17	16.02	15.87	15.72
l	-1.0	-2	16.59	16.46	16.31	16.17	16.02
1	1.0	0	16.87	16.74	16.60	16.46	16.32
1	2.0	1	17.01	16.87	16.74	16.60	16.47
1	3.0	2	19.33	19.16	19.00	18.85	18.71
1	5.0	4	23.97	23.74	23.50	23.33	23.17
1	7.0	6	28.61	28.30	28.00	27.81	27.64
1	9.0	8	29.99	29.73	29.47	29.27	29.07
]	11.5	10	31.36	31.15	30.95	30.73	30.50
	13.5	12	32.44	32.24	32.03	31.82	31.59
	15.5	14	33.52	33.33	33.13	32.91	32.68
	16.5	16	34.07	33.87	33.67	33.44	33.22

Notes(1) These data show average status.

Corresponding refrigerant piping length :7.5m Level difference of Zero.

(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)
HC :Heating capacity (kW)

PGA000Z846 Depending on the system control, there may be ranges where the operation is not conducted continuously. In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency. These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.

Model FDF280VSAWPVH Indoor unit FDF140VH (2 units) Outdoor unit FDC280VSA-W

Cooling n	node															(kW)	Hea	ing mo	ode :	HC				(kW)
Outdoor							Ind	oor air t	emperat	ure							C	utdoor a	air		Indoor	air temp	erature	
air	18°0	CDB	21°0	CDB	23°0	CDB	26°0	CDB	27°0	CDB	28°0	CDB	31°(CDB	33°(CDB	te	nperatu	ıre			°CDB		
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°0	CWB	°C	DB °C	WB	16	18	20	22	24
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	-1	.8 -2	20	13.25	13.10	12.96	12.81	12.66
11	i				27.72	19.01	29.34	20.07	30.15	19.88	31.05	19.71	32.85	20.44	34.65	19.98	-1	'.7 -1	18	13.73	13.57	13.43	13.27	13.12
13	i				27.75	19.03	29.37	20.08	30.18	19.89	31.08	19.72	32.88	20.45	34.68	19.99	-1	.7 -1	16	14.21	14.05	13.90	13.74	13.58
15					27.78	19.04	29.41	20.10	30.22	19.91	31.12	19.74	32.92	20.47	34.72	20.00	-1	.5 -1	14	14.69	14.52	14.37	14.20	14.03
17					27.79	19.04	29.51	20.14	30.36	19.97	31.25	19.80	33.01	20.50	34.77	20.02	-1	.5 -1	12	15.42	15.26	15.09	14.92	14.76
19					27.91	19.10	29.62	20.19	30.52	20.04	31.39	19.85	33.11	20.54	34.83	20.04	-6	.5 -1	10	16.17	15.99	15.82	15.64	15.48
21					27.48	18.90	29.14	19.98	30.00	19.82	30.86	19.63	32.58	20.34	34.29	19.85	-7	.5 -	-8	16.90	16.72	16.54	16.37	16.20
23					27.06	18.69	28.65	19.76	29.48	19.59	30.33	19.41	32.05	20.14	33.76	19.67	-5	.5 -	-6	17.20	17.02	16.86	16.69	16.52
25			25.32	19.06	26.84	18.59	28.41	19.65	29.22	19.48	30.07	19.31	31.78	20.03	33.49	19.57	-3	.0 -	4	17.49	17.32	17.17	17.00	16.84
27			25.12	18.95	26.63	18.49	28.17	19.54	28.96	19.37	30.21	19.36	31.46	19.91			1	.0 -	2	17.78	17.63	17.48	17.32	17.17
29			24.72	18.75	26.18	18.27	27.69	19.33	28.46	19.16	29.75	19.17	31.02	19.75			1		0	18.08	17.93	17.79	17.63	17.49
31			24.31	18.54	25.74	18.07	27.21	19.13	27.98	18.96	29.28	18.99	30.58	19.59			2		1	18.22	18.08	17.93	17.79	17.64
33	22.51	17.35	23.56	18.17	25.30	17.86	26.74	18.92	27.50	18.75	28.82	18.80	30.15	19.43			3			20.71	20.53	20.36	20.20	20.04
35	22.35	17.26	23.27	18.02	24.86	17.66	26.27	18.72	27.00	18.55	28.36	18.62	29.71	19.27			5	0 4	4	25.68	25.43	25.18	25.00	24.82
37	22.06	17.11	22.97	17.88	24.50	17.49	25.81	18.52	26.51	18.35	27.74	18.37	28.98	19.00			7	0 6	6	30.66	30.32	30.00	29.80	29.61
39	21.95	17.05	22.87	17.83	24.36	17.43	25.56	18.41	26.21	18.23	27.34	18.21	28.46	18.81			9	0 8	8	32.13	31.86	31.58	31.36	31.14
41	22.60	17.39	23.14	17.96	24.15	17.33	25.25	18.28	25.85	18.08	26.87	18.02	27.87	18.60			11	.5 1	10	33.60	33.38	33.16	32.92	32.68
43	21.40	16.76	22.33	17.56	23.68	17.12	24.66	18.04	25.21	17.82	26.09	17.72	26.96	18.28			13		\rightarrow	34.76	34.54	34.32	34.09	33.84
46	19.31	15.68	19.92	16.41	20.58	15.74	21.30	16.66	21.99	16.56	22.96	16.54	23.92	17.24			15		4	35.91	35.71	35.50	35.26	35.01
50	12.72	12.47	13.32	13.05	14.01	13.03	14.33	14.03	14.56	13.86	14.78	13.70	15.02	14.42			16	.5 1	6	36.50	36.29	36.08	35.83	35.59

Notes(1) These data show average status.

s(1) I nese data show average status.
 Depending on the system control, there may be ranges where the operation is not conducted continuously.
 In the heating mode in which the outside air temperature is 0°CDB or less, the compressor operates at maximum frequency.
 These data show the case where the operation frequency of a compressor is fixed.
 (2) Capacities are based on the following conditions.

Corresponding refrigerant piping length :7.5m Level difference of Zero.

(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)
HC :Heating capacity (kW)

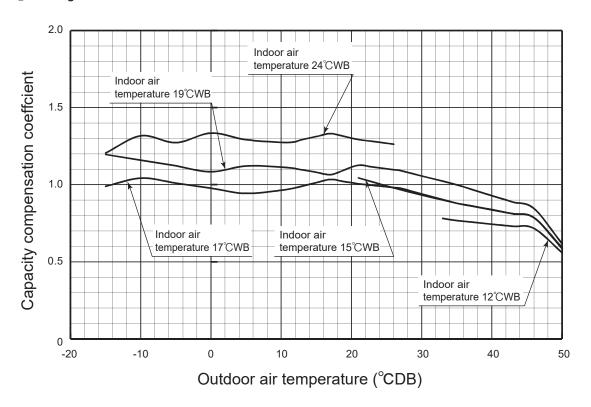
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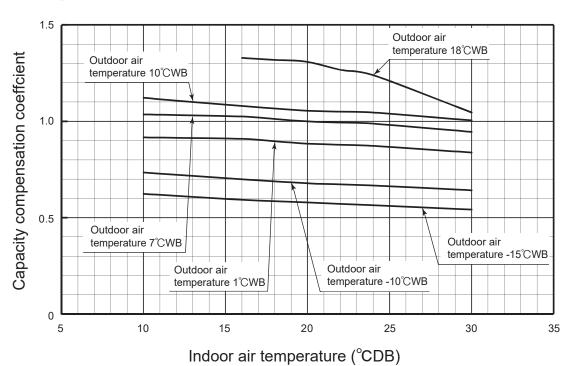
[References data]

The following figures show capacity variation against outdoor and indoor temperature. Capacity compensation coefficient shows the ratio of maximum capacity at any temperature to nominal capacity.

${\rm (I)}\, \textbf{Models FDC100, 125, 140VNA-W, 100, 125, 140VSA-W}$

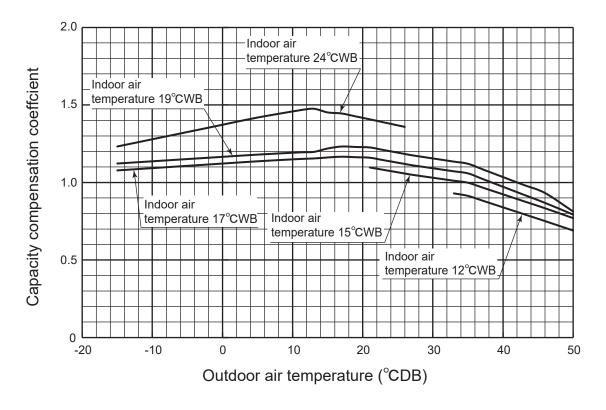
1 Cooling

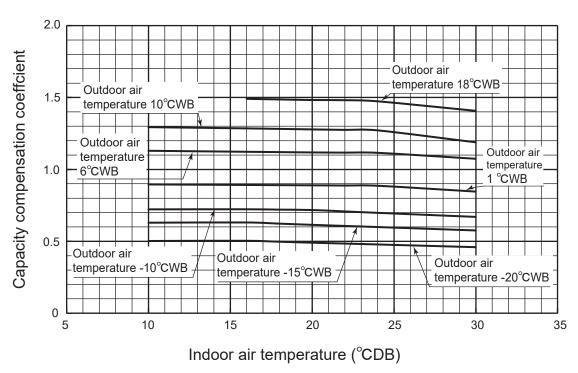




(II) Models FDC200VSA-W

1 Cooling

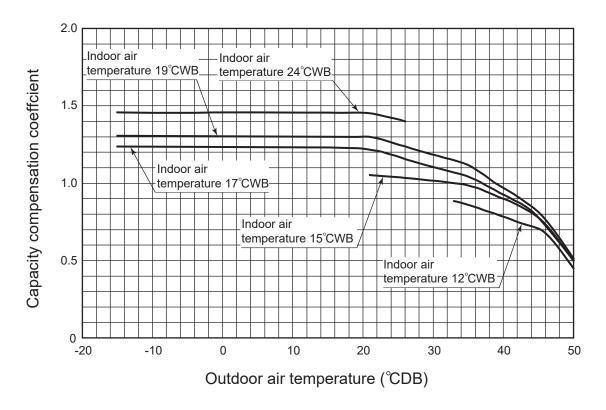


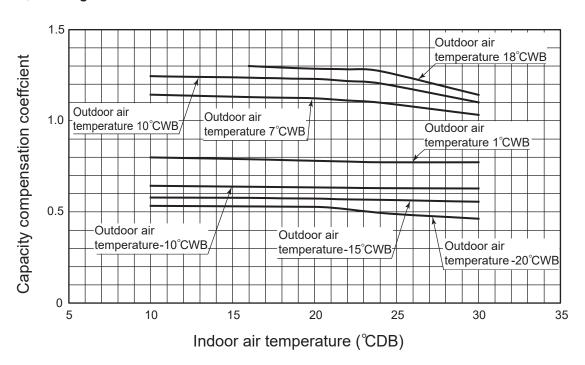


Note (1) These data show the case where the operation frequency of a compressor is maximum.

(III) Model FDC250VSA-W

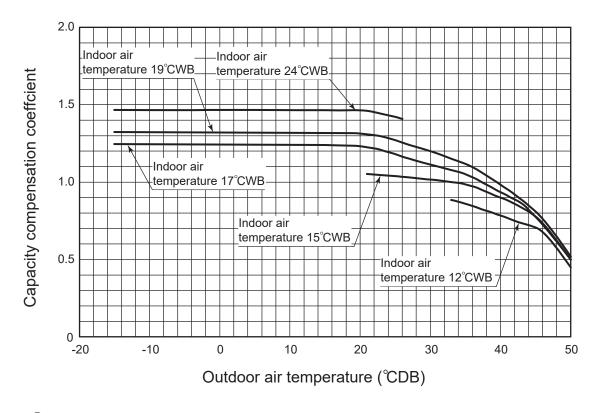
1 Cooling

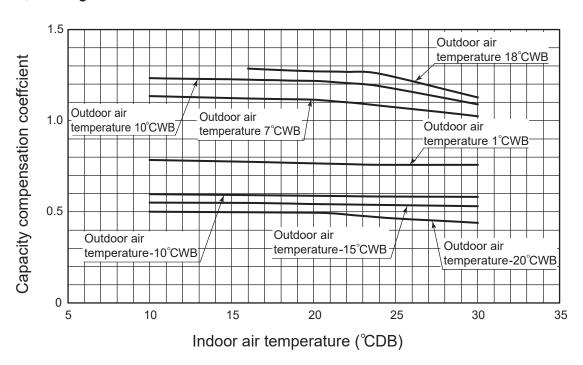




(IV) Models FDC280VSA-W

1 Cooling





2.8.2 Correction of cooling and heating capacity in relation to air flow rate control (Fan speed)

Fan speed	P-Hi or Hi	Me	Lo
Coefficient	1.00	0.97	0.95

2.8.3 Correction of cooling and heating capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling and heating capacity in relation to the one way equivalent piping length between the indoor and outdoor units.

Models 100 - 140

Equivale	nt piping length ⁽¹⁾ (n	n)	7.5	10	15	20	25	30	35	40	45	50	55
Heating			1	1	1	1	1	0.998	0.998	0.993	0.993	0.988	0.988
	100 model		1	0.991	0.978	0.964	0.951	0.937	0.924	0.910	0.897	0.883	0.870
	125 model	ϕ 15.88	1	0.986	0.968	0.950	0.932	0.914	0.896	0.878	0.860	0.842	0.824
Cooling	140 model		1	0.985	0.966	0.946	0.927	0.907	0.888	0.868	0.849	0.829	0.810
Cooming	100 model		1.016	1.013	1.007	1.002	0.996	0.991	0.985	0.980	0.974	0.969	0.963
	125 model	φ 19.05	1.022	1.018	1.009	1.001	0.992	0.984	0.975	0.967	0.958	0.950	0.941
	140 model		1.026	1.021	1.011	1.002	0.992	0.983	0.973	0.964	0.954	0.945	0.935

Models FDC200, 250, 280

Equivale	et piping length (1)	(m)	7.5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	Heating		1	0.998	0.995	0.991	0.988	0.984	0.981	0.977	0.974	0.970	0.967	0.963	0.960	0.956	0.953
	200model		1	0.997	0.991	0.984	0.978	0.971	0.965	-	-	-	-	-	-	-	-
	250model	ϕ 22.22	1	0.995	0.985	0.975	0.965	0.954	0.944	-	-	-	-	-	-	-	-
	280model		1	0.993	0.979	0.966	0.952	0.937	0.923	-	-	-	-	-	-	-	-
	200model		-	-	-	-	-	-	0.988	0.984	0.981	0.977	0.974	0.970	0.967	0.963	0.960
Cooling	250model	ϕ 25.4	-	-	-	-	-	-	0.978	0.972	0.966	0.960	0.953	0.947	0.941	0.935	0.929
	280model		-	-	-	-	-	-	0.968	0.960	0.951	0.943	0.932	0.925	0.916	-	-
	200model		-	-	-	-	-	-	0.999	0.997	0.995	0.993	0.991	0.989	0.987	0.985	0.983
	250model	ϕ 28.58	-	-	-	-	-	-	0.997	0.994	0.990	0.987	0.983	0.980	0.976	0.973	0.969
	280model		-	-	-	-	-	-	0.995	0.991	0.985	0.981	0.975	0.971	0.965	-	-

Note (1) Calculate the equivalent length using the following formula.

However, install the piping so that the piping length is within +5 m of the limit length (actual length) for the respective types.

 \bullet Equivalent Length =Actual Length + (Equivalent bend length x number of bends in the piping.) Equivalent length per bend.

Gas pipe diameter (mm)	φ 12.7	φ 15.88	φ 19.05	φ 22.22	φ 25.4	φ 28.58
Equivalent bend length	0.20	0.25	0.30	0.35	0.40	0.45

2.8.4 Height difference between the indoor unit and outdoor unit

When the outdoor unit is located below indoor units in cooling mode, or when the outdoor unit is located above indoor units in heating mode, the correction coefficient mentioned in the below table should be subtracted from the value in the above table.

Height difference between the indoor unit and outdoor unit in the vertical height difference	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
Adjustment coefficient	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90

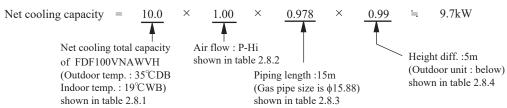
Piping length limitations

ltem Model	FDC100, 125, 140	FDC200, 250	FDC280
Max. one way piping length	50m	70m	60m
Max. vertical height difference	Outdoor unit is higher 50m Outdoor unit is lower 15m	Outdoor unit is higher 30m (C	Outdoor air temperature ≤43°C) Outdoor air temperature >43°C) t is lower 15m

Note (1) Values in the table indicate the one way piping length between the indoor and outdoor units.

How to obtain the cooling and heating capacity

Example : The net cooling capacity of the model FDF100VNAWVH with the air flow "P-High", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0° C and outdoor dry-bulb temperature 35° C is



2.9 APPLICATION DATA

2.9.1 Installation of indoor unit See page 42. 2.9.2 Electric wiring work installation See page 46.

2.9.3 Installation of wired remote control (Option parts) See page 54.

2.9.4 Installation of outdoor unit

(1) Models FDC100-140VNA-W, 100-140VSA-W

This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 42.

When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces

PSC012D120B/F\

SAFETY PRECAUTIONS

- We recommend you to read this "SAFETY PRECAUTIONS" carefully before the installation work in order to gain full advantage of the functions of the unit and to avoid malfunction due to mishandling.

 The precautions described below are divided into ★WARNING and ★CAUTION. The matters with possibilities leading to serious consequences such as death or serious personal injury due to erroneous handling are listed in the ★WARNING and the matters with possibilities leading to personal injury or damage of the unit due to erroneous handling including probability leading to serious consequences in some cases are listed in ★CAUTION. These are very important precautions for safety. Be sure to observe all of them without fail.
- The meaning of "Marks" used here are as shown below Never do it under any circumstance.
- For 3 phase power source outdoor unit, EN61000-3-2 is not applicable if consent by the utility company or nortification to the utility company is given before usage 3 phase power source unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a house-hold
- appliance it could cause electromagnetic interference.

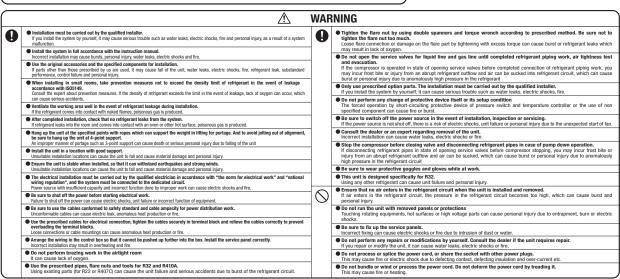
 Se and 6 HP units of single phase power source are equipment complying with IEC 61000-3-12.

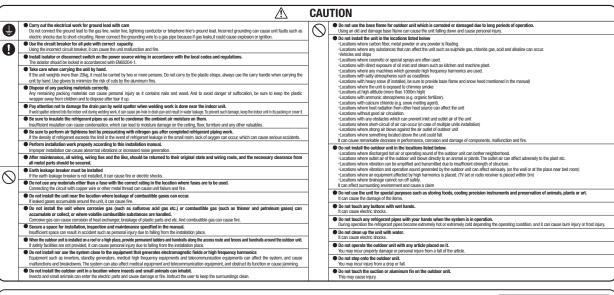
 Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user

Inverter driven split PAC 100, 125, 140 VNA-W 100, 125, 140 VSA-W Designed for R32 refrigerant

(Check before installation work)

- Model name and power source
- Refrigerant piping lengthPiping, wiring and miscellaneous small parts
- Indoor unit installation manual





Notabilia as a unit designed for R32

- Do not use any refrigerant other than R32. R32 will rise to pressure about 1.6 times higher than that of a conventional refrigerant (R22 or R407C).
 A Sylinder containing R32 has a light blue indication mark on the top.
 A unit designed for R32 has adopted a different size indoor unit service valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nur's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedicate
- R32 tools listed in the table on the right before installing or servicing this unit.

 All indoor units must be models designed exclusively for R32. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

_		
		Dedicated R32 and R410A tools
	a)	Gauge manifold
	b)	Charge hose
	c)	Electronic scale for refrigerant charging
	d)	Torque wrench
	e)	Flare tool
	f)	Protrusion control copper pipe gauge
	g)	Vacuum pump adapter
	h)	Gas leak detector

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

ACAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position.

1) Delivery 1) Delivery Deliver the unit as close as possible to the installation site before removing it from the packaging.

When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes lifting it. 3) Selection of installation location for the outdoor unit

Selection or installation location for the outdoor unit

server to select a suitable installation place in consideration of following conditions.

A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.

A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.

A place where the unit is not exposed to oil splashes.

A place where the unit is not exposed to oil splashes.

A place where the unit will not be affected by heat radiation from other heat source.

A place where the unit will not be affected by heat radiation from other heat source.

A place where the unit can be kept away 5m or more from 1V set and/or radio receiver in order to soid any radio or 1V interference.

A place where the unit can be kept away 5m or more from 1V set and/or radio receiver in order to soid any radio or 1V interference.

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A place where the unit can be kept away 5m or more from 1V set and/or radio receiver in order to soid any radio or 1V interference.

A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (including ammonia), which can harm the unit, will not be generated and not remain.

place where chemical substances like sulfuric gas, chloric gas, acid and alkali (including ammonia), which ce it, will not be generated and not remain. Space where strong wind will not blow against the outlet air blow of the unit. In oil ristall the unit in places which exposed to sea treeze (e.g. coastal area) or calcium chloride (e.g. snow me posed to ammonia substance (e.g. organic fertilizer).

4) Caution about selection of installation location

(1) If the unit is installed in the area where the snow will accumulate, for The bottom plate of unit and intake, outlet may be blocked by snow.

Install the unit on the base so that the bottom is higher than snow cover surface.





Since drain water generated by defrost control may freeze, following measures are required.

Don't execute drain pining work by using a drain elbow and drain grommets (optional parts), [Fefer to DRAIN PIPMG WORK.]

Peccommend setting Defrost Control (SW-3-1) and Snow Quard Fan Control (SW-3-2). Refer to Setting SW-3-1, SW-3-2.]

Attach heater on a base plate on site, if there is possibility to freeze drain water.

In case that the product has a corrective drainage system, the drainage paths should have suitable measure against freezing but be sure not to melt the material of drainage paths with heat.

2) If the unit can be affected by strong wind, following measures are required.

Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

1.Install the outlet air blow side of the unit to face a wall of building, or and the control of wind.

Strong wall of building, or and the control of wind.

Strong wall of building, or and the control of wind.

Went described.

Wind direction



2) Portage

• The right hand side of the unit as viewed from the front (diffuser side) is heavier. carrying the right hand side must take heed of this fact. A person carrying the left must hold with his right hand the handle provided on the front panel of the unit and vhand the proper column section.



5) Installation space

-) ITISIZITIATUOIT SPACE

 Walls surrounding the unit in the four sides are not acceptable.
 There must be a 1-meter or larger space in the above.

 Where a danger of short-circuiting exists, install guide louvers.

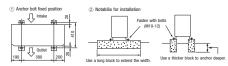
 When a home or than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.

 Where pilling srow can bury the outdoor unit, provide proper snow guards.

 A barrier wall placed in front of the exhaust diffuser must not be higher than the unit.



6) Installation



- In installing the unit, fix the unit's legs with bolts specified on the left.

 The profusion of an anchor bolt on the front side must be kept within 15mm.

 Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.

 Refer to the left illustrations for information regarding concrete foundations.

 Install the unit in a level area. (With a gradient of 5mm or less.)

 Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

7) To run the unit for a cooling operation, when the outdoor temperature is -5°C or lower.

< Single type >

< Triple type A >

< Triple type B >

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

Check the following points in light of the indoor unit specifications and the installation site.
 Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degri

Resitrictions	One-way pipe length difference from the first branching point to the indoor uni				< 3m	≥ 3m
RESIDEBUIS	Model for outdoor units	Dimensional restrictions	Single type	Twin type	Triple type A	Triple type B
One-way pipe length of refrigerant piping	100VNA,125VNA,100VSA,125VSA	≤ 50m		Lal fal 2	1411412413	1411412413
one-way pipe length of reingerant piping	140VNA, 140VSA	≥ sum	L	L+L1+L2	L+L1+L2+L3	L+L1+L2+L3
	100VNA,125VNA,100VSA,125VSA				-	-
Main pipe length	140VNA, 140VSA	≦ 50m	-	L	L	L
One-way pipe length between the first branching point from to the second branching point	140VNA, 140VSA	≤ 5m	-	-	-	La
One-way pipe length after the first branching point	All Models		_	L1.L2	-	-
Une-way pipe length after the first branching point	140VNA, 140VSA	≤ 30m		L1,L2	L1, L2, L3	L1 (t)
One-way pipe length from the first branching point to indoor units through the second branching point	140WA, 140VSA	≤ 27m	-	-	-	La+L2, La+L3 (1)
One-way pipe length difference from the first branching	All Models	≤ 10m			-	_
one-way pipe length difference from the first branching point to the indoor unit	140VNA. 140VSA	≤ 3m	- 1	IL1-L2I	L1-L2 , L2-L3 , L3-L1	
point of the moon talls	14UWA, 14USA	≤ 10m			_	L1-(La+L2),L1-(La+L3) (1)
One way pipe length difference from the second branching point to the indoor unit	140WA, 140VSA	≤ 10m	-	-	-	L2-L3
Flevation difference between indoor and outdoor units	When the outdoor unit is positioned higher,	≤ 50m (a)	н	н	н	н
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned lower,	≤ 15m	1 "	н	"	"
Flevation difference between indoor units		≤ 0.5m	-	h	h1 h2 h3	h1 h2 h3

The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size. For more information, see "6. UTILIZATION OF EXSTING PPING."

With the trips pipe connection, the way of use a different when the difference or one-way pipe length after the first branching point is 3m to 10m. For details, refer to the above table and right figure.

Notes (1) Install the inform units to that L+ L1 becomes the longest one-way pipe.

Keep the pipe length difference between L1 and (1 a + L2) or (1 a + L3) within 10m.

(2) When the condoor unit is installed at a postion inject from the indoor units to stalled at a postion inject from the indoor units to stalled at a postion inject from the indoor unit by 30m or more, set SMS-2 on the control PCB to 0N. **△CAUTION**

2) Determination of nine size

	ii oi pipo oizo						
Determine refrigerant	pipe size pursuant to the following	guidelines bas	sed on the indi	oor unit specif	ications.		
		Mode	100V	Model	125V	Mod	del 140V
		Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
		φ15.88	φ9.52	φ15.88	φ9.52	φ15.88	ф9.52
0	utdoor unit connected	Flare	Flare	Flare	Plare	Flare	Flare
Refrige	erant piping (Main pipe L)	φ15.88	ф9.52	φ15.88	ф9.52	φ15.88	ф9.52
- the constant of the first term	Indoor unit connected	φ15.88	φ9.52	φ15.88	ф9.52	ф15.88	ф9.52
n the case of a single type	Capacity of indoor unit	Mod	el 100V	Mod	el 125V	Mod	del 140V
	Branching pipe set	DIS-WA1G		DIS-WA1G		DIS-WA1G	
	Refrigerant piping (branch pipe L1,L2)	φ12.7	φ9.52	φ12.7	φ9.52	ф15.88	ф9.52
n the case of a twin type	Indoor unit connected	φ12.7	φ6.35	φ12.7	φ6.35	φ15.88	ф9.52
	Capacity of indoor unit	Model 50V×2		Model (30V×2	Model	71V×2
	Branching pipe set						-TA1G
	Refrigerant piping (branch pipe L1,L2,L3)]				φ12.7	φ9.52
n the case of a triple type A	Indoor unit connected	_		_		φ12.7	φ6.35
	Capacity of indoor unit	1				Model 50Vx3	
	Branching pipe set					DIS-	-WA1G
	Refrigerant piping (branch pipe La)	1				φ15.88	ф9.52
	Refrigerant piping (branch pipe L1)	1				φ12.7	ф9.52
the case of a triple type B Branching pipe set (After branch pipe La)		1	-	-		DIS-	-WA1G
	Refrigerant piping (branch pipe L2,L3)	1		I		φ12.7	φ9.52
	Indoor unit connected	1				φ12.7	ф6.35
	Conscibuted independent						el SONAS

About brazing

Primary side Secondary Station valve 0.5MPa ndary so. MPa Hand

3) Refrigerant pipe wall thickness and material

Brazing must be performed under a nitrogen gas flow.

out nitrogen gas, a large quantity of foreign matters (oxidized film) are ted, causing a critical failure from capillary tube or expansion valve clogging.

• Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

• This unit uses R32. Always use 1/2H pipes having a 1.0mm or thicker wall for φ19.05 or larger pipes, because 0-type pipes do not meet the pressure resistance requirement.

gas 6.35 9.52 12.7 15.88 22.22 25.4 28.58 0.8 0.8 0.8 1.0 1.0 1.0 1.0 Minimum pipe wall thickness [mm] Pipe material* O-type pipe O-type pipe O-type pipe O-type pipe 1/2H-type pipe 1/2

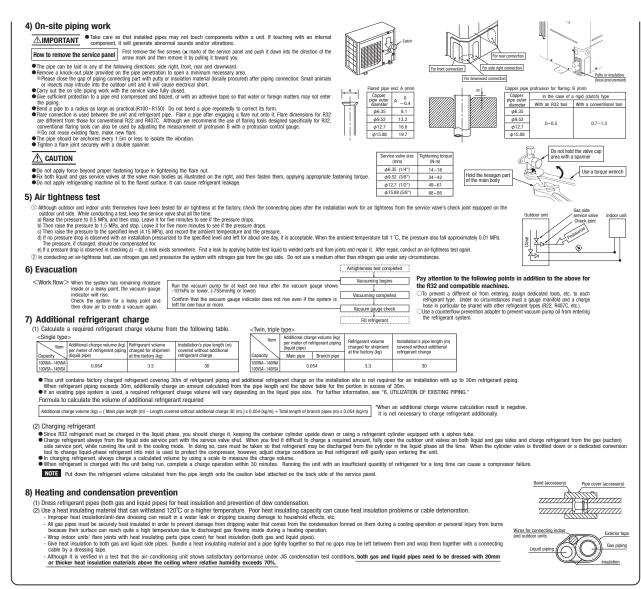
NOTE

Select pipes having a wall thickness larger than the specified minimum pipe thickness

I



Only use nitrogen gas (Nz) Brazing



3. DRAIN PIPING WORK

•Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a probled where the "Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caukling material.

-Condensed water may flow out from vicinity of service valve or connected pipes.

-Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside

use a drain elbow and drain grommets. (There is a risk of drain water treezing inside and blocking the drain.) •Do not use drain elbow and grommet made of plastic for drain piping when base heater for outdoor unit is used. Plastic grommet and elbow will be damaged and burnt in worst case.
 Prepare another drain tray made of metallic material for collecting drain when base heater is used.



 When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or concrete blocks. Then, please secure space for the drain elbow and the drain hose.



4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

Do not turn on the power source until the electrical work is completeted.

Do not use a condensive capacitor for power factor improvement under any circumstances. (It dose not improve power factor, while it can cause an adnormal own excident.)

For power source cables, use conduits.

For power source cables, use conduits.

Do not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.

Faster cables so that may not booth the piping, etc.

When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)

Always use a three-one cable for an indoor-outdor connecting cable. Never use a shield cable.

Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.

In cabling, stant cables securely with cable clamps so that no external force may work on terminal connections. stallation work must be performed by an electrical installation service provider qualified by a power provider of the country, stallation work must be executed according to the technical standards and other regulations applicable to electric in the country. Electrical installation work must be percented by an electrical installations and other regulations applicable to electrical installations in the country. Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country. *On not use any subject expension 80/45 [IG 31].

- ordinary tough nubber sheathed cord code designation 60/245 [EC 53].

- ordinary tough nubber sheathed cord code designation 60/245 [EC 53].

- fall twin times cord code designation 60/27 [EC 41]:

Do not use anything lighter than polychloroprene sheathed flexible cord (code designation 60/245 [EC 57] for supply cords of parts of appliances for outdoor use.

- foround the unit. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire. If improper grounded, an electric shock or malfanction may result.

- Agrounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.

- The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accident such as an electric shock or a fire. *X Earth leakage breaker (Harmonic resistant type)
Switchgear or circuit breaker Power source, and ground terminal block Earth leakage breaker (Harmonic resistant type)

H-cores cable

Shield cable

Switchgear or circuit breaker Signal line terminal block Grounding terminal

Do not connect to the grounding wire from and unit, but install a dedicated wire up to the ground wire from the distribution board. Itchgear v. c.. Main fuse specification Part No 100VNA-140VNA 1 2/N 3 ± 1 2/N 3 ± Wiring guide 1 2/N 3 ± 1 2/N 3 ± Indoor unit -43 ХY Х Ү Wiring diagram

Olt is attached on the back side of the se Power cable, indoor-outdoor connecting wires MA THE X Y Remote control X Y Remote control Always perform grounding system installation work with the power cord unplugged.
 Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation. Outgoing cable direction Models 100VNA -140VNA As like the refrigerant pipe, it can be let out in any of the following directions: side right, front, rear and downward.

Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
100VNA-140VNA	Single phase 3 wires 220-240V 50Hz 220V 60Hz	5.5	24	22	φ1.6mm	ф1.6mm x 3
100VSA-140VSA	3 phase 4 wires 380-415V 50Hz	3.5	15	46	ψ1.umm	· · · · · · · · · · · · · · · · · · ·

The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.

. capacity which is calculated from MAX. over current should be chosen along the regulations in each country

	3		ction with the duct t	ype indoor unit.						
r		Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number		
		100VNA,125VNA	Single phase 3 wires 220-240V 50Hz	5.5	26	20				
		140VNA	220V 60Hz	0.5	27	20	φ1.6mm	φ1.6mm x 3		
		100VS,125VSA	3 phase 4 wires 380-415V 50Hz	3.5	17	40	7	, , , ,		
		440004	380-415V 50HZ	3.3	40	0.0	1			

(a) Power source cable: Use the cable which is conformed with 60245 ECS7. When selecting the power source cable length, make sure that voltage drop is less than 2%. If the wrie length tips Is longer, increase the wire diameter.
(b) indoor-undoor one-one-cling wires: Use the wries which is conformed with 60245 ECS7.

5. TEST RUN

- WARNING

 Before test run, make sure that the service valves are open.

 Before test run, turn ON power source for 6 hours in order to warm up the compressor.

 Without this operation, refigerant may accumulate in the compressor and earth leakage breaker may be activated.

 In case of the first operation after turning on power supply, even if the unit does not move for 30 minutes, it is not a

Treakdown:

After power is turned off, wait 3 minutes or more before power source is turned ON again.

After power is turned off, wait 3 minutes or more before power source is turned ON again.

Removing the service panel will expose high-voltage live parts and high-temperature parts, which are quite dangerous. Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

- When you operate switches (SW3, SW5) for on-site setting, be careful not to touch a live part.
 Tou cannot check discharge pressure from the liquid service valve charge port.
 The 4-way valve (205) is energized during a heating operation.
 When power source is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off. If this procedure is not observed in burning on power again, "Communication error between outdoor and indoor unit" may occur.

1) Test run method

- (1) A test run can be initiated from an outdoor unit by using SW3-3 and SW3-4 for on-site SW3-3 SW3-4 or on-site SW3-4 or on-site S
- Setting.

 (2) Switching SW3-3 to ON will start the compressor.

 (3) The unit will start a cooling operation, when SW3-4 is OFF, or a heating operation, when SW3-4 is ON.

 OFF —

 (4) Do not fall to switch SW3-3 to OFF when a test run is completed.

2) Checking the state of the unit in operation

Use check joints provided on the piping before and after the four-way valve installed inside the unit for checking discharge pressure and suction pressure. As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or heating operation has been selected.

	Check joint of the pipe	Charge port of the gas service valve		
Cooling operation	Discharge pressure (High pressure)	Suction pressure (Low pressure)		
Heating operation	Suction pressure (Low pressure)	Discharge pressure (High pressure)		

Normal or after the test operation

ON OFF

3) Setting SW3-1, SW3-2, SW5-2, SW7-3, on-site

(1) Defrost control switching (SW3-1)

- When this switch is turned 0N, the unit will run in the defrost mode more frequently.

- Set this switch is turned 0N, the unit will run in the defrost mode more frequently.

- Set this switch to NN, when installed in a region where outdoor temperature falls below zero during the season the unit is run for a heating operation.

(2) Snow guard fan control (SW3-2)

- When this switch is turned 0N, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3°C or lower and the compressor is not running.

4) Failure diagnosis in a test run

Error indicated on the	Printed circuit board LED	(The cycles of 5 seconds)	Failure event	Action		
remote control unit	Red LED	Green LED	i dildi 6 everit	ACION		
E34	Blinking once	Blinking continuously	Open phase	Check power cables for loose contact or disconnection		
E40	Blinking once	Blinking continuously	63H1 actuation or operation with service valves shut (occurs mainly during a heating operation)	Check whether the service valves are open.		
E49	Blinking once	Blinking continuously	Low pressure error or operation with service valves shut (occurs mainly during a cooling operation)	If an error has been canceled when 3 minutes have elapsed since a compressor stop, you can restart the unit by		
E57	Blinking once	Blinking continuously	Short of refrigerant error or operation with service valves shut (occurs mainly during a cooling operation)	effecting Check Reset from the remote control unit.		

If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

5) The state of the electronic expansion valve.

The following table illustrates the steady states of the electronic expansion valve

	When power is turned on	When the unit con	nes to a normal stop	When the unit comes to an abnormal stop		
	when power is turned on	During a cooling operation	During a heating operation	During a cooling operation	During a heating operation	
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position	
Valve for a heating operation	Full open position	Full open position	Complete shut position	Full open position	Full open position	

6) Heed the following on the first operation after turning on the circuit breaker.

This outdoor unit may start in the standby mode (walting for a compressor startup), which can continue up to 30 minutes, to prevent the oil level in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure.

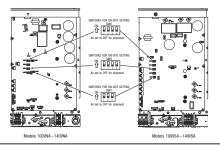
A failure to observe these instructions can result in a compressor breakdown

Items to check before a test run

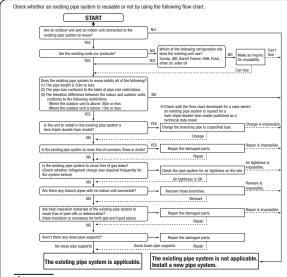
• When you leave the outdoor unit with power supplied to it, be sure to close the panel. Item Noused in the Item Check item

Test run procedure Always carry out a test run and check the following in order as listed.

1000	un procedure	
Turn	The contents of operation	Check
1	Open the gas side service valve fully.	
2	Open the liquid side service valve fully.	
3	Close the panel.	
4	Where a remote control unit is used for unit setup on the installation site, follow instructions for unit setup on the installation site with a remote control unit.	
(5)	SW3-3 ON / SW3-4 OFF: the unit will start a cooling operation.	
	SW3-3 ON / SW3-4 ON: the unit will start a heating operation.	
6	When the unit starts operation, press the wind direction button provided on the remote control unit to check its operation.	
7	Place your hand before the indoor unit's diffuser to check whether cold (warm) winds come out in a cooling (heating) operation.	
8	Make sure that a red LED is not blinking.	
9	When you complete the test run, do not forget to turn SW3-3 to the OFF position.	
(0)	Where options are used, check their operation according to the respective instruction manuals.	



6. UTILIZATION OF EXISTING PIPING



MARNING <Where the existing unit can be run for a cooling operation.>

- Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))

 (1) Run the unit for 30 minutes for a cooling operation.

 (2) Stop the indoor fara and run the unit for 3 minutes for a cooling operation (returning liquid)

 (3) Close the liquid side service valve of the outdoor unit and pump down (refigerant recovery)

 (4) Blow with intripone gas. St if discolored refigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.

 For the flare nut, do not use the old one, but use the one supplied with the outdoor unit.

 Processe a flare to the dimensions specified for R32.
- Process a liate to the dimensions speciated for 13.2.

 Turn on-stres setting switch SW5-1 to the ON position. (Where the gas pipe size is \$\phi\$19.05)

 Where the existing unit cannot be run for a cooling operation.>

 Wash the pipe system or install a new pipe system.

 If you choose to wash the pipe system, contact our distributor in the area.

- <Table of pipe size restrictions>
- ©:Standard pipe size ○:Applicable △:Restricted to shorter pipe length limits ×:Not applicable

	charging amount or reingerant per 1111	0.00	4Kg/III		Kg/III
Pipe size	Liquid pipe	φ9.52	φ9.52	φ12.7	φ12.7
ripe size	Gas pipe	φ15.88	φ19.05	φ15.88	φ19.05
	Usability	0	○※1	Δ	△※1
100V	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15
	Usability	0	○※1	Δ	△※1
125V	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15
	Usability	0	○#1	Δ	△※1
140V	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15

<Pipe system after the branching pipe>

			Aft	er 1st bra	anch #4	After	2nd bra	inch
Addition	nal charging amount of r	efrigerant per 1m		0.054kg/m	1		0.054kg/m	
Pipe size	Liquid pipe		ф9.52			φ9.52		
ripe size	Gas	pipe	φ12.7	φ15.88	φ19.05 · β 1	φ12.7	ф15.88	φ19.05% 1
Model	Combination type	Combination of capacity						
100V	Twin	50+50	0	0	×	-	-	_
125V	Twin	60+60	0	0	×	-	-	- 1
	Twin	71+71	×	0	0	-	-	- 1
140V	Triple A	50+50+50	0	0	×	-	-	-
ı	Triple P	50.50.50	~	C) W.E	Own	- 75		

- Triple B 50+50+50 X | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0+50 | 0

- <The model types of existing units of which branching pipes are reusable.>
- Models later than Type 8.

 FD C * * * 8 □ □ □

 FD C P * * * 8 □ □ □

Formula to calculate additional charge volume

Additional charge volume (kg) = (Main pipe length (m) – Length covered without additional charge shown in the table (m)) ×

Additional charge volume per meter of pipe shown in the table (kg/m) +

Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (kg/m)

If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged. Example) When an 140V (single installation) is installed in a 20m long existing pipe system (liquid φ12.7, gas φ19.05), the capacity of refrigerant to charge additionally should be (20m-15m) x 0.118/m = 0.55 kg.

(2) Models FDC200VSA-W, 250VSA-W, 280VSA-W

PSC012D154B ⚠

Inverter driven split PAC FDC200VSA-W, FDC250VSA-W, FDC280VSA-W Designed for R32 refrigerant

 This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 42.
 When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces

SAFETY PRECAUTIONS

- We recommend you to read this "SAFETY PRECAUTIONS" carefully before the installation work in order to gain full advantage of the functions of the unit and to avoid malfunction due to mishandling.
- avoin mainincuon due to mismanding.

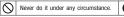
 The precations described below are divided into

 WARNING and

 CAUTION. The matters with possibilities leading to serious consequences such as death or serious personal injury due to erroneous handling are listed in the

 WARNING and the matters with possibilities leading to personal injury or damage of the unit due to erroneous handling including probability leading to serious consequences in some cases are listed in

 CAUTION. These are very important precautions for safety. Be sure to observe all of them without fail.
- The meaning of "Marks" used here are as shown below.





- For 3 phase power source outdoor unit_EN61000-3-2 is not applicable if consent by the utility company or nortification to the utility company is given before usage.

 3 phase power source unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a house-hold appliance it could cause electromagnetic interference.

 Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance

methods of this equipment to the user according to the owner's manual.

• Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.

Check before installation work

[Accessory] Edging Accessory pipe piece ID23 ID22.22 P-11 ID22.22 sory pipe B

- Model name and power supply
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

WARNING Æ Installation must be carried out by the qualified installer. If you restall the system by yourself, it may cause serious brushes are water leaks, electric shocks, fire and personal injury, as a result of a system maffunction. Incorrect restallation may cause bursts, personal injury, water leaks, electric shocks and fire. We then the original accessories and the specified components for installations. If parts other than those prescribed by us are used, it may cause fail of the unit, water leaks, electric shocks, fire, refrigerant leak, substandard performance, count failure and prescribed by us are used. It may cause fail of the unit, water leaks, electric shocks, fire, refrigerant leak, substandard performance, count failure and prescribed prior in the performance, count failure and prescribed prior in the performance, count failure and prescribed prior in the performance, countries the performance, countries the performance countries that the performance countries that the performance countries the performance countries that the perfor Tighten the flare nut by using double spanners and torque wrench according to prescribed method. Be sure not to tighten the flare nut too much. Lose flare connection or damage on the flare part by tightening with excess torque can cause burst or refrigerant leaks which 0 y result in lack of oxygen. not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation. If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, you may incur frost bite or injury from an attropy refrigerant outflow and air can be sucked into refrigerant circuit, which can cause busts or personal injury due to anomalously high pressure in the refrigerant Only use prescribed optional parts. The installation must be carried out by the qualified installer. If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire. Do not perform any change of protective device itself or its setup condition The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cuse free to bust. performance, control failure and presonal injury. When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage accordance with ISOS149. Consult the eyert about prevention measures. If the density of refrigerant exceeds the limit in the event of leakage, lack of oxygen can occur, which Ventilate the working area well in the event of refrigerant leakage during installation. If the refrigerant comes into contact with naked flames, poisonous gas is produced. In case of R32, the refrigerant could be ignited because of its flammability. Be sure to switch off the power supply in the event of installation, inspection or servicing. If the power supply is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan. After completed installation, check that no refrigerant lesks from the system. I refigerant lesks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced. Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid joilting out of alignm be sure to hang up the unit at 4-point support. An improper manner of portage such a 35-point support can cause death or serious personal injury due to falling of the unit ler or an expert regarding removal of the unit. tion can cause water leaks, electric shocks or fire **RICOTIECT insulations call cuttors were reader product and control of the contr Install the unit in a location with good support. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. Be sure to wear protective goggles and gloves while at work. This unit is designed specifically for R32. Using any other refrigerant can cause unit failure and personal inju The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. Power supply with installicat circuits and electrical regulations are required to the control of the contr Ensure that no air enters in the refrigerant circuit when the unit is installed and removed. If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury. Power supply with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire, Be sure to shut of the power before satirting electrical work. Failure to shut of the power before satirting electrical work. Failure to shut of the power can cause electric inclose, unit failure or incorrect function of equipment. Be sure to use the cables conformed to sately standard and cables ampacity for power distribution work. Unconformable cables can cause electric leak, anomalous heat production or fire. Use the prescribed cables or exclusive discribed calculated anomalous figure the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks. Loose connections or cable monitoring can cause anomalous heat production or fire. Arrange the writing in the control box so that it cannot be pushed up further into the box. Install the service panel correctly, functions only receil in revertibeling and fire. Do not run the unit with removed panels or protections Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shoots. Be sure to fix up the service panels. Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water. Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair. If you repair or modify the unit, it can cause water leaks, electric shocks or fire. Do not process or splice the power cord, or shart the socket with other power plugs. This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc. Do not bundle or wind or process the power cord. Do not deform the power cord by treading it. This may cause fire or heating. Do not perform brazing work in the airtight room Use the prescribed pipes, flare nuts and tools for R32. Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.

CAUTION Æ Carry out the electrical work for ground lead with care Do not connect the ground lead to the gas line, where the line, lightning conductor or telephone line's ground lead, boorned grounding can cause electric shocks due to shart-exturality, lever connect the grounding with a gas pipe because if gas tested, could cause explosion or spritton. Use the chround breader had a pible with connect capacity. When the chronic breader had a pible with connect capacity. In the chronic breader had a pible with connect capacity. The solidar include the decidenced switch on the prover supply winking in accordance with the local codes and regulations. The local leader in decidenced switch capacity with grounding the local codes and regulations. Do not install the unit in the locations listed below -locations where carbon fiber, metal powder or any powder is floating. -locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur -lehicles and ships • unit faults such as "Vehicles and stips" - Locations where comertic or special sprays are often used. - Locations with cross comertic or special sprays are often used. - Locations with direct exposure of oil mist and steam such as Mistern and machine plant. - Locations with saily atmospheres such as coastifiers - Locations with saily atmospheres such as coastifiers - Locations with saily atmospheres such as coastifiers - Locations with wheat you've if installed, be use to provide base flame and snow hood mentioned in the man - Locations where the unit is exposed to chimney and 0 Penal landator or disconnect selection on the power supply winting in accordance were were recommended and the landation of the RMSOG-1. The color strictly disconnect selection of the RMSOG-1. The color strictly one of the 2004 is must be carried by the or more persons. Do not carry by the plastic straps, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fire. Dispose of any packing materials conceredly. Any remaining packing materials conceredly. Any remaining packing materials conceredly. Any remaining packing materials conceredly. Any semaining packing materials conceredly. Physical strains on the damage the drain pan by weld spatter when welding work is done near the indoor unit. Provide pather enter the three days and repeting work or cause pin-three in dain pan and releast in water leading in Systemat and damage, keep the indoor unit in by packing or over it, weld spatter when the releast or disconnection can cause contended in horisotrate damage to the selling days or the contended in the releast of enterprised principles or the selling days contended on the contended and provided in the selling days contended to the selling days contended any other valuables. Be sent to perform air fightness test by pressurating with introgen gas after completed refrigerant piping work. Profession because the refrigerant pipes or the selling days after completed or the selling floor, turnibure and any other valuables. Perform situations work properly according to this intellation manual. Part manual properties are sellent to the selling days and the selling floor, but of large and contended are can sell selling the sell - Locations at high altitude (more than 1000m high) - Locations with amount cambephines (a. organic fertilizer), - Locations with active microbines (e.g. on more million appendix - Locations with active microbines (e.g. nown mellion appendix - Locations with one of the control of the contr In cast user remanuse occurses in performance, comision and damage of components, malfunction and fire. © non existal the volution with it the locations island below. Locations where discharged let did no operating sound of the outdoor unit can better neighborhood. Locations where where the contractions where the contractions where where the contractions where wherein can be amplified and transmitted due to insufficient strength of structure. Locations where wherein and operation sound enterated by the outdoor unit can affect seriously, for the wall or at the place near bed room; Locations where an equipment affected by high harmonics is placed. (IV set or radio receiver is placed within 5m) Locations where an equipment affected by high harmonics is placed. (IV set or radio receiver is placed within 5m) Improper installation can cause althormal vibrations or increased nose generation. Fear this leadage betweether must be installed, it can cause fine or electric shocks. 9 In on the same particular with a stope with the connect rating in the location where fuses are to be used. Connecting the circuit with copper wire or other metal thread can cause unit failure and fine. 9 In on the staff the unit mare the location where leakage or combustible gases can occur. If leaded gases accumulate around the unit, it can cause fine. \bigcirc Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art. It can cause the damage of the items. I leaded gase securibate sound be mut, it can cause the "I leaded gase securibate sound be mut," can cause the "I leaded gase securibate sound be mut," can cause the "I leaded gase securibate sound be mut," can cause the "I leaded gase securibate sound be mut," can cause the "I leaded gase securibate gas sound as sufficiency and the sound securibate gas can cause from a cause forms of the charget, treated as the state of the state of the state of the charget, treated gas of the state of the st Do not touch any buttons with wet hands It can cause electric shocks Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury. Do not clean up the unit with water Lost cause elected shocks Do not operate the outdoor unit with any article placed on it. You may incur property damage or personal injure from a fall of the article Do not step onto the outdoor unit. You may incur injury from a drop or fall. Do not touch the suction or aluminum fin on the outdoor unit. This may cause injury.

Notabilia as a unit designed for R32

- Do not use any refrigerant other than R32. R32 will rise to pressure about 1.6 times higher than that of a conventional refrigerant.
 A cylinder containing R32 has a light blue indication mark on the top.
 A unit designed for R32 has adopted a different size indoor unit operation valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedicated R32 tools listed in the table on the right before installing or servicing this unit.

 All indoor units must be models designed exclusively for R32. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

	Dedicated R32 tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

⚠ CAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.

1) Delivery

unit as close as possible to the installation site before removing it from the packaging When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes lifting it.

3) Selection of installation location for the outdoor unit

-) Selection of installation location for the outdoor unit

 Be sure to select a suitable installation place in consideration of flotwing conditions.

 A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.

 A place where it can be tree from possibility of bothering neighbors due to noise or exhaust air from the unit.

 A place where it can be tree from danger of flammable gas leskage.

 A place where it can be tree from danger of flammable gas leskage.

 A place where it can be tree from danger of flammable gas leskage.

 A place where the unit will not be affected by heat radiation from other heat source.

 A place where the unit will not be affected by the tradiation from other heat source.

 A place where the unit will not be affected by the other of the developer of the other objects of the o

4) Caution about selection of installation location

(1) If the unit is installed in the area where the snow will accumulate, following measures are required. The bottom plate of unit and intake, outlet may be blocked by snow.









- Since drain water generated by defrost control may freeze, following measures are required.

 Don't execute drain piping work by using a drain elbow and drain grommets (optional parts), [REFER TO DRAIN PIPING WORK.]

 Pearonment setting plerisd control (SW-31) and Sono Guard Fan Control (SW-32-), [Refer to Setting SW3-1, SW3-2.]

 Attach heater on a base plate on site, if there is possibility to freeze drain water.

 In case that the product has a corrective drainage system, the drainage paths should have suitable measure against freezing but be sure not to melt the material of drainage paths with heat.
- (2) If the unit can be affected by strong wind, following measures are required. Strong wind can cause damage of fan (fan notor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.







2) Portage

●The right hand side of the unit as viewed from the front (diffuser side) is heavier. carrying the right hand side must take heed of this fact. A person carrying the left must hold with his right hand the handle provided on the front panel of the unit and wi hand the corner column section.

5) Installation space

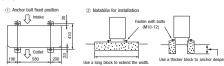
- Walls surrounding the unit in the four sides are not acceptable.
 There must be a 1-meter or larger space in the above.
 Where a danger of short-circuiting exists, install guide flowers.
 When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
 When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
 Where piling snow can bury the outdoor unit, provide proper snow guards.
 A barrier wall placed in front of the exhaust diffuser must not be higher than the unit.

In case that outdoor temperature is 44°C or lower Example insta



% If unit is installed in L4 space with ()'s condition, secure space of 250mm in lateral (L4) by unit movement at the time of exchange work of compressor.

6) Installation



- In installing the unit, fix the unit's legs with bolts specified on the left.
 The protrusion of an anchor bolt on the front side must be kept within 15 mm.
 Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
 Refer to the left illustrations for information regarding concrete foundations.
 Install the unit in a level area. (With a gardlent of 5 mm or less.)
- Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

7) To run the unit for a cooling operation, when the outdoor temperature is -5°C or lower.

When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site.
 So that strong wind will not blow against the outdoor heat exchanger directly. Regarding outline of a snow hood, refer to our technical manual.

< Single type >

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

- Ocheck the following points against the specification of the indoor unit and the installation site.

 Observe the following points against the specification of the indoor unit and the installation can cause compressor failure or degradation of performance.

 The total found pipping length of the system is restricted by the equivalent length (e).

 The equivalent length (e) is a virtual length corresponding to an equivalent length of liquid piping using a diameter of 12.7mm.

Restricti		Dimensional restrictions		Mar	ks appearing in t	the drawing	
			Single	Twin	Triple (A)	Triple(B)(2)	W-twin
Total equivalent length (Liquid	piping)	≤ 70 m	Le	Le	Le	Le	Le
	Liquid piping	≦ 40m (L: φ 9.52) 40−70m(L: φ 12.7)					
One-way pipe length of refrigerant piping	Gas piping	≤ 70m	L	L+L1 L+L2	L+L1, L+L2, L+L3	L+L1 (1)	L+La+L1, L+La+L2 L+Lb+L3, L+Lb+L4
	Liquid piping	≤ 70m					
Main pipe length		≤ 35m (L: φ 22.22)	l L	lll	L	L	L
	Gas piping	35-70m (L : φ 25.4 or φ 28.58)			_	-	
One way pipe length from the first branching point to the second branching point		≤ 5m	-	-	-	La	-
One-way pipe length after the		≤ 30m	-	L1,L2	L1,L2,L3	L1	La+L1, La+L2 La+L3, La+L4
One-way pipe length from the indoor units through the secon	e first branching point to nd branching point	≤ 27m	-	-	-	La+L2,La+L3	-
One-way pipe length	Twin Type, W-Twin	≤ 10m	-	IL1-L2I	-	-	(L1+La)-(L3+Lb)(, (L1+La)-(L4+Lb)(, (L2+La)-(L3+Lb)(, (L2+La)-(L4+Lb)(,
difference from the first branching point to the indoor units							IL1-L2I, IL3-L4I
	Triple Type(A)	≤ 3m	-	-	IL1-L2I,IL2- L3I,L3-L1I	-	-
	Triple Type(B)	3m ~ 10m	-	-	-	L1-(La+L2), L1-(La+L3)(1)	-
One-way pipe length differen	ce from the second	- 10-				0.0.101	

	Liquid piping	≤ 70m ≤ 35m (L ; d 22.22)					
Main pipe length	Gas piping	35-70m (L : φ 25.4 or φ 28.58)	L	L	L	L	L
One way pipe length from the point to the second branching	first branching point	≤ 5m	-	-	-	La	-
One-way pipe length after the		≤ 30m	-	L1,L2	L1,L2,L3	L1	La+L1, La+L2 La+L3, La+L4
One-way pipe length from the indoor units through the secon	first branching point to nd branching point	≤ 27m	-	-	-	La+L2,La+L3	-
One-way pipe length difference from the first	Twin Type, W-Twin	≤ 10m	-	IL1-L2I	-	-	(L1+La)-(L3+Lb)((L1+La)-(L4+Lb)((L2+La)-(L3+Lb)((L2+La)-(L4+Lb)(L1-L2), L3-L4
branching point to the indoor units	Triple Type(A)	≤ 3m	-	-	IL1-L2I,IL2- L3I,IL3-L1I	-	-
	Triple Type(B)	3m ~ 10m	-	-	-	L1-(La+L2), L1-(La+L3)(1)	-
One-way pipe length differen branching point to the indoor		≤ 10m	-	-	-	IL2-L3I	IL1-L2UL3-L4I
Total pipe length after the sec	ond branching point	≤ 15m	-	-	-	-	L1+L2,L3+L4
Elevation difference between	When the outdoor unit is positioned higher	≤ 50m (3)	н	н	н	н	н
indoor and outdoor units	When the outdoor unit is positioned lower	≤ 15m	"				
Elevation difference between	ndoor units	≤ 0.5m	-	h	h1.h2.h3	h1.h2.h3	h1.h2.h3.h4.h5.h6

<u>ΛCAUTION</u> 40m and f φ9.52r

- 40n and c9.52mm if it is 40m or less. If 9.52mm legal pies used in an installation having one-way pipe longer than 40m, it may cause departation of performance and/or water drops in the indoor unit. Always use d.25.4mm or d.24.58mm gas man pipe 1". Verher that length of 1"." exceeds 35m. or d.22.22mm gas pipe is used in an installation having one-way pipe longer than 35m, it may cause departation of performance and/or water drops in the lindoor unit.

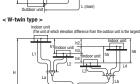
Restrict	Dimensional restrictions	Marks appearing in the drawing				
		umensional restrictions	Single	Twin	Triple	W-twin
Total equivalent length(Liquid	piping)	[250V] ≦ 70m [280V] ≦ 60m	Le	Le		Le
One-way pipe length of refrig	erant piping	[250V] ≤ 70m [280V] ≤ 60m	L	L+L1 L+L2		L+La+L1, L+La+L L+Lb+L3, L+Lb+L
	Liquid piping	[250V] ≦ 70m [280V] ≦ 60m				
Main pipe length	Gas piping	≤ 35m (L ; φ 22.22) [250V] 35-70m [280V] 35-60m (L : φ 25.4 or φ 28.58)	L	L		L
One-way pipe length after the first branching point One-way pipe length difference from the first branching point to the indoor units		≤ 30m	-	L1,L2		La+L1, La+L2 La+L3, La+L4
		≤ 10m	-	IL1-L2	-	I(L1+La)-(L3+Lb)(I(L1+La)-(L4+Lb) I(L2+La)-(L3+Lb)(I(L2+La)-(L4+Lb)(IL1-L2), IL3-L4(
One-way pipe length different branching point to the indoor	e from the second unit	≤ 10m	-	-		IL1-L2IJL3-L4I
Total pipe length after the sec	ond branching point	≦ 15m	-	-		L1+L2,L3+L4
Elevation difference between indoor and outdoor units is positioned higher when the outdoor units when the outdoor unit is positioned lower		$\leq 50m^{(3)}$	н	н		н
		≤ 15m	rl	- 1		
Elevation difference between	indoor units	≤ 0.5m	-	h		h1.h2.h3.h4.h5.h6

Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52) + 1.56 × (length of ϕ 15.88

Notes: (1) Install the indoor units so that L + L1 becomes the longest one-way pipe. (2) Connect the indoor unit with the maximum capacity to L1. (3) If the outdoor temperature is above 43°C, the dimensional restriction is ≦ 30m

< Triple type A >





2) Determination of pipe size

the following guidelines based on the indoor unit specifications.

		Model	200V		Model 2	50V, 280V		
		Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	
0.11	or unit connected	ф22.22	φ9.52	ф22.22	ф12.7	ф22.22	φ12.7	
Outo	or unit connected	Brazing	Flare	Brazing	Flare	Brazing	Flare	
Refrigerant p	piping (main pipe L)	φ22.22 or φ25.4 or φ28.58	φ9.52 or φ12.7	φ22.22 or φ25.4 or φ28.58	ф12.7	φ22.22 or φ25.4 or φ28.58	φ12.7	
In the case of a single type	Indoor unit connected	φ25.4	φ12.7	φ25.4 φ12.7				
	Capacity of indoor unit	Model		Model 25				
	Branching pipe set	DIS-	WB1G	DIS-	WB1G			
In the case of a twin type	Refrigerant piping (branch pipe L1,L2)	φ15.88	φ9.52	φ15.88	φ9.52] .		
iii tiie case oi a twiii type	Indoor unit connected	φ15.88	φ9.52	φ15.88	φ9.52			
Capacity of indoor unit		Model 1	100V×2	Model 125V	×2,140V×2	1		
	Branching pipe set	DIS-TB1G						
n the case of a triple type A	Refrigerant piping (branch pipe L1,L2,L3)	φ15.88	φ9.52					
in the case of a triple type A	Indoor unit connected	φ15.88	φ9.52				-	
	Capacity of indoor unit	Model 71V×3						
	Branching pipe set	DIS-WB1G		DIS-WB1G		DIS-WB1G		
	Refrigerant piping (branch pipe La,L1)	φ15.88	φ9.52	φ15.88	φ9.52	φ15.88	ф9.52	
In the case of a triple type B	Branching pipe set		WA1G	DIS-WA1G		DIS-WA1G		
in the case of a tiple type o	Refrigerant piping (branch pipe L2,L3)	φ15.88	φ9.52	φ12.7	φ9.52	φ15.88	φ9.52	
	Indoor unit connected	φ15.88	φ9.52	φ12.7	φ6.35	φ15.88	ф9.52	
	Capacity of indoor unit		71V×3		+ Model 125V		1100V, 71V×2+ 140V	
	Branching pipe set	DIS-	WB1G	DIS-I	WB1G	DIS-WB1G		
	Refrigerant piping (branch pipe La,Lb)	φ15.88	φ9.52	φ15.88	φ9.52	ф15.88	ф9.52	
In the case of a W-twin type	Branching pipe set		WA1G	DIS-W	11G × 2	DIS-WA1G×2		
	Refrigerant piping (branch pipe L1,L2,L3,L4)	φ12.7	φ9.52	φ12.7	φ9.52	φ15.88	ф9.52	
	Indoor unit connected	φ12.7	φ9.52	φ12.7	φ6.35	φ15.88	ф9.52	
	Capacity of indoor unit	Mode	50V×4	Model 60%	1×4, 71V×4	Model	71V×4	

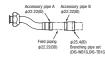
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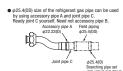
del 601 models is convected as an indoor unit, always use a q-9.50 liquid pipe for the branch (exanching pipe — indoor unit) and a ditterent close with the indoor unit q-6.55 cm the legal pipe sides.

onnection with a branching pipe, a refrigerant distribution disorder may occur, causing one of the indoor units to fall short of the rated capacity, the few man, A bearding pipe est studied to exided hostocally at part as code to an indoor unit a possible.

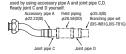
. manual supplied with your branching pipe set.

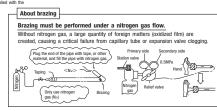
3) How to use pipe reducer.





used by using accessory pipe A and joint pipe C,D.
Ready joint C and D yourself.
Accessory pipe A Field pinion.





4) Refrigerant pipe wall thickness and material

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

 This unit uses R32. Always use 1/2H pipes having a 1.0mm or thicker wall for φ19.05 or larger pipes, because 0-type pipes do not meet the pressure resistance requirement.

Pipe diameter [mm]	6.35	9.52	12.7	15.88	22.22	25.4	28.58
Minimum pipe wall thickness [mm]	0.8	0.8	0.8	1.0	1.0	1.0	1.0
Pipe material*	0-type pipe	0-type pipe	0-type pipe	0-type pipe	1/2H-type pipe	1/2H-type pipe	1/2H-type pipe
*Phosphorus deoxidized seamless copper pipe C1220T, JIS H 3300							

A _0.4

14-18 34-42

φ6.35 φ9.52

For side right connection nection

> φ9.52 φ12.7

φ15.88

For dov

With an R32 tool With a conventional tool

Hold the hexagon part of the main body

5) On-site piping work

entire the piping.

The properties of the piping and the piping an

control gauge.

*Do not reuse existing flare, make new flare.

The pipe should be anchored every 1.5m or less to isolate the vibration
Tighten a flare joint securely with a double spanner.

Do not apply force beyond proper fastening torque in tightening the flare nut. Fix tools liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque Ob not apply reingerating machine oil to the flared surface. It can cause refrigerant leokage. φ12.7 (1/2") φ15.88 (5/8") φ19.05 (3/4") 100-130

6) Air tightness test

(a) Altrught rottor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the service valve's check joint equipped on the outdoor all false the pressure to 1.5 MPa, and then stop, Leave it for five minutes to see if the pressure drops. b) Then raise the pressure to 1.5 MPa, and then stop, Leave it for five minutes to see if the pressure drops. c) then raise the pressure to 1.5 MPa, and stop, Leave it for five minutes to see if the pressure drops. c) then raise the pressure to 1.5 MPa, and stop, Leave it for five more minutes to see if the pressure drops. c) then raise the pressure to 1.5 MPa, and stop, Leave it for five more minutes to see if the pressure drops. c) then raise the pressure to 1.5 MPa, and stop, Leave it for five more minutes to see if the pressure drops. c) then raise the pressure to 1.5 MPa, and stop, Leave it for five more minutes to see if the pressure drops. d) then raise the pressure to 1.5 MPa, and stop, Leave it for the minutes the pressure. e) the pressure to 1.5 MPa, and stop, Leave it for the minutes the pressure. e) the pressure also fall approximately 0.01 MPa. The pressure, e) If a pressure drop is observed in checking e) and a -0, a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair, conduct an ai-lightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances. Presquize \odot Airtighteness test completed

Use a torque wrench

Do not hold the valve cap area with a spanner.

8) Additional refrigerant charge

<Work flow> When the system has remaining moisture isside or a leaky point, the vacuum gauge show. In the vacuum gauge show a clack with each of the control of the system for a leaky point and then draw are to create a vacuum gain.
Euro the vacuum pump for at least one hour after the vacuum gauge show. In the vacuum gauge indicator does not rise even if the system is left for one hour or more.



Pay attention to the following points in addition to the above for the R32 and compatible machines.

On prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, R410A atc.)

etc.).
Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.

,				
(1) Determine if the	ne factory refrigerant charge of	of the outdoor unit is sufficien	t to cover the total liquid piping length.
	Item Capacity	Factory refrigerant charge (kg)	Liquid piping length covered with factory refrigerant charge (m)	
	200V	4.3		
	250V	5.1	30	
	28NV	5.6		

(2) If the factory charge does not cover the total liquid piping length, an addition of refrigerant is necessary.

Step1 - Calculate the total equivalent length, Le:

[Formula to calculate equivalent length (Le)]

In case of new piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52)
In case of existing piping	Le = (length of ϕ 12.7) + 0.52 × (length of ϕ 9.52) + 1.56 × (length of ϕ 15.88)

Step2 - Determine from the table below the additional refrigerant charge: Equivalent length (Le) 30 < Le ≤ 40 m 40 < Le ≤ 50 m Model FDC200 * ≦30 m 50<Le≦60 m 60<Le≦70 m Additional refrigerant charge (kg) Model FDC250 ≦30 m 30<Le≦40 m 50<Le≦60 m 60<Le≦70 m Additional refrigerant charge (kg) | Equivalent reging (Lg) | S | S | D | N | S | C | Le S | D | N | S | C | Le S | D | N | S | C | Le S | D | N | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | S | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | C | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S | D | Le S |

Charge refrigerant always from the liquid side service port with the service valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid-phase refrigerant it in gasty upon entiring the unit.

In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.

When refrigerant is charged with the unit being run, complete a charge operation within 30 minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

NOTE Put down the refrigerant volume calculated from the pipe length onto the label attached on the back side of the service panel.

9) Heating and condensation prevention

(1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.

(2) Use a heat insulating material that can withstand 120°C or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.

- Improper heat insulation-leve dressing can result in a water leak or dripping causing damage to household effects, etc.

- All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.

- Wrap indoor units' flare points with heat insulation gas for heat insulation tooth gas and liquid sign sand highed sign pipes. Surface is heat insulation gas are liquid sign sand highed sign pipes. Surface is heat insulation gas are liquid significant gas and liquid significant gas a

cable by a dressing tape.

Both gas and liquid pipes need to be dressed with 20 mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.

Wires for connecting indo Gas piping

Band (acces

3. DRAIN PIPING WORK

(3) Charging refrigerant

• Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a

Execute drain piping by using a urani error are used in problems, sophical parts, where water drained from the outdoor unit is a problem.
 Water may drip where there is a larger amount of drain water. Seal around the drain above and drain grommets with putly or adequate cauking material, above and drain grommets with putly or adequate cauking material.
 Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and hockrism the drain).

inside and blocking the drain.)

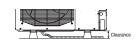
• Do not use drain elbow and grommet made of plastic for drain piping when base heater for outdoor unit is used. Plastic grommet and elbow will be damaged and

Heater for Graduate and the Social Advantage of the So



When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or

blocks. ase secure space for the drain elbow and the drain hose.



4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

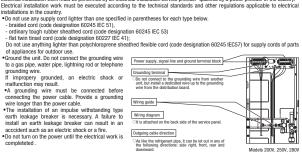
Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country. Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical

mailunction may result.

A grounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.

The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accordent such as an electric shock or a fire.

Do not turn on the power until the electrical work is completeled.



Do not use a condensive capacitor for power factor improvement under any circumstances. (It dose not improve power factor, while it can cause an abnormal overheat accident)

For power supply cables, use condults.

For power supply cables, use condults.

For not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.

Fasten cables so that may not both the piping, etc.

When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector, coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)

Always use a three-core cable for an indoor-outdoor connecting wire.

Connect a grounding wire from indoor - outdoor connecting wire.

Farth leakage treaker (Hermitoric resident) upon the connecting wire.

Farth leakage treaker (Hermitoric resident) upon the cables and the cover and the cover and the cover and the cover and the cover and the cover and the cover and the cover and the cover attachment can result in malfunctioning or a failure or outdoor connecting wire.

Farth leakage treaker (Hermitoric resident) upon the cover and t

In cabling, fasten cables securely with cable clamps so that no external force may

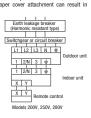
work on terminal connections.

Grounding terminals are provided in the control box.

Power cable, indoor-outdoor connecting wires

Always perform grounding system installation work with the power cord unplugged.

Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.



Model	Power supply	Power cable size (mm²)	MAX. over current (A)	Power cable length (m)	Earth wire size	Indoor-outdoor wire size × number		
200V	3 phase 4 wire		19	72				
250V	380-415V 50Hz	5.5	20	69	φ1.6mm	φ1.6mm	φ1.6mm × 3	
280V	380V 60Hz		20	69				
*In case of FDU indoor unit combination.								
Model	Power supply	Power cable size (mm²)	MAX. over current (A)	Power cable length (m)	Earth wire size	Indoor-outdoor wire size × number		

A III Case of Poolii Indoor unit combination.								
Model	Power supply	Power cable size (mm²)	MAX. over current (A)	Power cable length (m)	Earth wire size	Indoor-outdoor wire size × number		
200V	3 phase 4 wire		19	72				
250V	380-415V 50Hz	5.5	20	69	φ1.6mm	φ1.6mm × 3		
280V	380V 60Hz		22	62				

5. COMMISSIONING

/ WARNING

- Before conduct a test run, make sure that the service valves are opened.
 Turn on power 6 hours prior to a test run to energize the crank case heater.
 In case of the first operation after turning on power, even if the until does not move for 30 minutes, it is not a breakdown.
 Always give a 3-minute or longer interval before you start the unit again whenever it is stopped.
 Removing the service panel will expose high-voltage live parts and high-temperature parts, which are quite dangerous. Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

CAUTION

When you perate switches (SW3, SW5) for on-site setting, be careful not to touch a live part.

Output of the 4-way value (205) is energized during a heating operation.

When power supply is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off. If this procedure is not observed in turning on power again, "Communication error between outdoor and indoor unit" may occur.

(1) A test run can be initiated from an outdoor unit by using SW3-3 and SW3-4 for on-site setting.
(2) Switching SW3-3 to ON will start the compressor.
(3) The unit will start a cooling operation, when SW3-4 is ON.
(4) Do not fail to switch SW3-3 to OFF when a test run is completed. 1) Test run method

2) Checking the state of the unit in operation

Use check joints provided on the piping before and after the four-way valve installed inside the outdoor unit for checking discharge pressure and suction pressure. As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or heating operation has been selected.

	Check joint of the pipe	Charge port of the gas service valve
Cooling operation	Discharge pressure (High pressure)	Suction pressure (Low pressure)
Heating operation	Suction pressure (Low pressure)	Discharge pressure (High pressure)

3) Setting SW3-1, SW3-2, on-site

(1) Defrost control switching (SW3-1)

When this switch is turned ON, the unit will run in the defrost mode more frequently.

Set this switch to ON, when installed in a region where outdoor temperature falls below zero during the season the unit is run for a heating operation.

operation.
(2) Snow guard fan control (SW3-2)

-When this switch is turned on, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3°C or lower and the compressor is not running.

-When the unit is used in a very snowy country, set this switch to ON.

4) Failure diagnosis in a test run

	-			
Error indicated on the	Printed circuit board LED	(The cycles of 5 seconds)	Failure event	Action
remote control unit	Red LED	Green LED	railule event	ACIOII
E40	Blinking once	Blinking continuously	63H1 actuation or operation with service valves shut (occurs mainly during a heating operation)	Check whether the service valves are open. If an error has been canceled when 3 minutes have elapser
E40	Disking once	Disking continuously	Low pressure error or operation with service valves shut	since a compressor stop, you can restart the unit by

(occurs mainly during a cooling operation) • If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

5) The state of the electronic expansion valve

			nes to a normal stop	When the unit come	s to an abnormal stop
	When power is turned on	During a cooling operation	During a heating operation	During a cooling operation	During a heating operation
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position
Valve for a heating operation	Full open position	Full open position	Complete shut position	Full open position	Full open position

6) Heed the following on the first operation after turning on the circuit breaker.

-This outdoor unit may start in the standby mode (waiting for a compressor startup), which can continue up to 30 minutes, to prevent the oil ling in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure. At the first operation of heating mode after turning on the circuit breaker, the outdoor unit may start in cooling mode a while to prevent from liquid refrigerant back to compressor. If that is the case, do not suspect a unit failure.

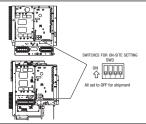
A failure to observe these instructions can result in a compressor breakdown.

Items to check before a test run

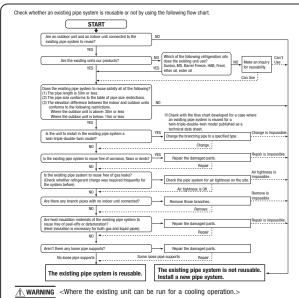
• When you leave the outdoor unit with power supplied to it, be sure to close the panel. Check item Item Indoor unit Is mood on...
Where a face

Test run procedure Always carry out a test run and check the following in order as listed. The contents of operation

<200V, 250V, 280V>



6. UTILIZATION OF EXISTING PIPING



- Carry out the following steps with the excising unit (in the order of (1), (2), (3) and (4))

 (1) Run the unit for 30 minutes for a cooling operation.

 (2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)

 (3) Close the liquid side service valve of the outdoor unit and pump down (refrigerant recovery)

 (4) Blow with nitrogen gas. ** If disclored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.

 For the fare nut, do not use the old one, but use the one supplied with the outdoor unit.

 - Process a flare to the dimensions specified for R32. \bullet Turn on-site setting switch SW5-1 to the ON position. (Where the gas pipe size is ϕ 19.05)

<Where the existing unit cannot be run for a cooling operation.>

Wash the pipe system or install a new pipe system.

● If you choose to wash the pipe system, contact our distributor in the area.

Table of pipe size restrictions
Applicable pipe size combination is restricted by the following table.
Pipe length is limited according to the total refrigerant charge amount.
For additional charging amount of refrigerant, refer to 2.8) Additional refrigerant charge.

Standard pipe size "Justice"
-Restricted to shorter pipe length limits ×:Not usable

Pipe size	Liquid pipe	φ9.52	φ9.52	φ9.52	φ12.7	φ12.7	φ 12.7	φ 15.88	φ 15.88	φ 15.88
ripe size	Gas pipe	φ22.22	φ 25.4	ф 28.58	φ 22.22	φ25.4	φ 28.58	φ22.22	8 φ15.88 2 φ25.4 Δ	φ 28.58
200V		0	○※2	○※2		0	0	Δ	Δ	×
250V 280V	Usability	×	×	×	0	0	0	Δ	Φ	Δ

<Pipe system after the branching pipe>

	After 1st branch #3				anch #3	After 2nd branch			
Pipe size	Liqui		φ9.52		ф9.52				
Pipe size	Gas	pipe	φ12.7	φ15.88	φ19.05 ^{®1}	φ12.7	φ15.88	φ19.05 ⁻⁶⁶ 1	
Model	Combination type	Combination of capacity							
	Twin	100+100	×	- 0	0	-	-	-	
200V	Triple A	71+71+71	×	0	0	-	-	-	
	Triple B	71+71+71	×	0	○ ※4	×	- 0	0	
	Double twin	50+50+50+50	×	0	0	0	0	×	
	Twin	125+125, 140+140	×	- 0	0	-	-	-	
250V	Triple A	_	-	-	-	-	-	-	
280V	Triple B	60+60+125, 71+71+140	×	0	○ 39.4	0	×	×	
20UV	Triple B	71+71+100	×	0	○ 884	×	- 0	×	
	Double twin	60+60+60+60, 71+71+71+71	×	0	0	0	0	×	

- Because of the infliction persons residence, turns the DP seath SNSF privated him to evidence with both of the 100 position for e 1905 × 11.0. (in the case of a him-fright-clubb-him model, this also agains to the case where e 19.05 × 11.0 sused in a pipe system after the first branching point.) However, you need not turn the DP switch SNSF. to the 400 position for 12.05 × 11.0 sused in a pipe system after the first branching point.) However, you need not turn the DP switch SNSF. to the 400 position (1.128 pipes per pipes having 1 zo thick reals are used.) **
 *28 When the main pipe length exceeds 40m, a significant capacity drop may be experienced due to pressure loss in the liquid pipe system. Use

 •1.77 for the pipe size after branch should be equal or smaller than main pipe size.

 •2.87 piping size first first branch is found it should be 49.52 citudity (4 15.58 (Sas).

 •4.89 combinations of pipe sizes not listed in the table or marked with X in the table are not usable.

- <The model types of existing units of which branching pipes are reusable.> Models later than Type 8.
 •FDC ** * * 8 □ □ □ •FDCP ** * 8 □ □ □

The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R32.

● * * * are numbers representing horsepower. □ □ □ is an alphanumeric letter.

Formula to calculate additional charge volume
Refer to "2. REFRIGERANT PIPING WORK". "8) Additional refrie

2.9.5 Method for connecting the accessory pipe Models FDC200VSA-W, 250VSA-W, 280VSA-W

PSC012D028H ▲

- Be sure to use the accessory pipe to connect the service valve on the gas side with the field pipe.
- Be sure to use the straight pipe (Procured at the field) shown in the table 1 applicable to the model of outdoor unit.
- When tightening the flare, connect the pipe securely by pressing the flared face of pipe against the service valve.
- When brazing between the pipe in place and the attached pipe, confirm that no excessive force is applied to the flare joint. Otherwise gas could leak from the flare joint.
- Connect the attached pipe according to the following steps (1) (5).
- 1 Referring to Table 2 and Table 3, prepare the straight pipe and the elbow in the field, which are used in the construction examples (A) (D) applicable to the connecting direction.
- ② Firstly, use the accessory pipe to assemble the connecting pipe assembly <u>outside the outdoor unit.</u>

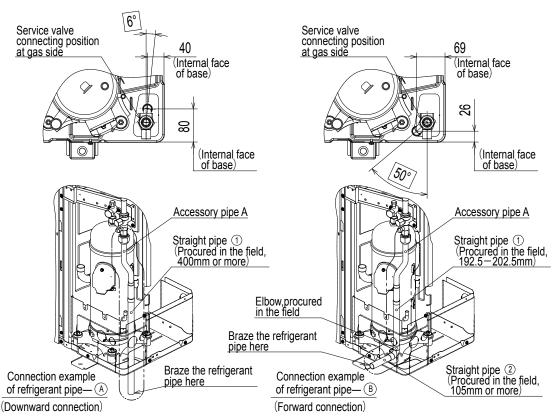
 (As shown in the figure of connecting examples (A) (D).)
- 3 After assembling the connecting pipe, connect it to the service valve on the gas side inside the outdoor unit. Tighten the flare nut with appropriate torque.

Proper torque					
φ 19.05	100-130N·m				

- 4 After connection of the connecting pipe assembly to the service valve on the gas side, braze the connecting pipe assembly and the field pipe.
- (5) When connecting pipe contacts wiring, attach heat insulating material to the pipe in order to prevent from contacting of the pipe and wiring. (If the wiring is rubbed with the pipe and the cover of wiring is teared, there is a risk of a short circuit or an electtric shock.)

[Connection example \bigcirc — \bigcirc applicable to the connecting direction.]

The piping angle shown below is an example in case of 15mm of heat insulating material. Adjust an angle, according to the thickness of heat insulating material. Pass the connecting pipe in a hole after angle adjustment.



About brazing

Be sure to braze while supplying nitrogen gas.
If no nitrogen gas is supplied, a large amount of impurity (oxidized film) will be generated, which may clog the capillary tube and the expansion valve, resulting in fatal malfunction.

Table 1 Pipe specification

		Refrigerant line (one way) length(m)	
	200V	$\leq 35 \text{ (m)} \ \phi \ 22.22 \ \text{x t1.0}$	
Single type	250V	$\leq 70 \text{ (m)} \ \phi 25.4 \text{ x t} 1.0 \text{ or } \phi 28.58 \text{ x t} 1.0$	
Olligic type	280V	$\leq 35 \text{ (m)} \ \phi \ 22.22 \ \text{x t} 1.0$	
	28UV	$\leq 60 \text{ (m)} \ \phi \ 25.4 \times t1.0 \text{ or } \phi \ 28.58 \times t1.0$	

■ Be sure to use pipes of 1/2H material, and wall thickness above 1mm. (Pressure resistance of O-type pipe is not enough.)

Table 2 Parts used for the connecting pipe assembly

No.	Name	Quantity	Remark		
1	Accessory pipe A	1	Accessory		
2	Straight pipe 1	1	Procured at the field		
3	Straight pipe ②	1 or 0	Procured at the field (Not required for downward direction)		
4	Elbow	1 or 0	Procured at the field (Not required for downward direction)		

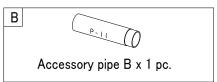
Table 3 Length and specification of straight pipe (Procured in the field)

	(A) Downward	® Forward	© Rightward	[®] Backward
Straight pipe 1	400mm or more	192.5 — 202.5mm	192.5 — 202.5mm	210mm
Straight pipe 2	_	105mm or more	155mm or more	370mm or more

Accessory pipe A x 1 pc.

Heat insulating material is attached

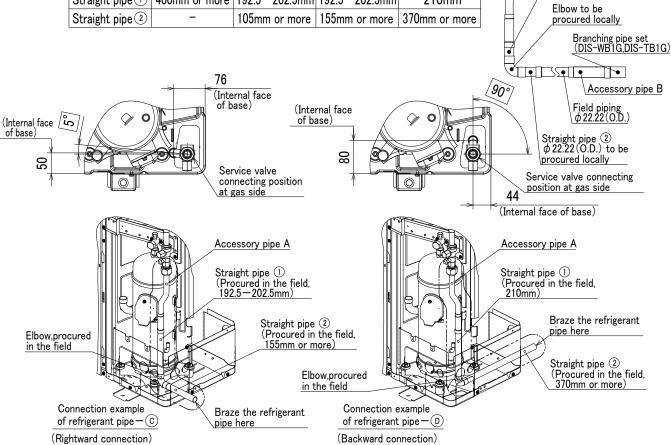
Heat insulating material is attached to the accessory pipe with band. When installing the heat insulating material, cut the band and retrieve it.



 Branching pipe set can be used by using the accessory pipe B.
 When φ 22.22 (O.D.) size of the indoor unit gas pipe is used, the accessory pipe B is unnecessary.

Accessory pipe A

Straight pipe \bigcirc ϕ 22.22 (O.D.) to be procured locally



2.9.6 Instructions for branching pipe set (DIS-WA1G, WB1G, TA1G, TB1G)

2.9.7 Safety precautions in handling air-conditioners with glammable refrigerant
See page 78.

See page 81.

2.10 TECHNICAL INFORMATION

Model FDF100VNAWVH

				Hee a contract of the contract				
Information to identify the model(s) t			0:	If function includes heating: Indicate the heating season the				
Indoor unit model name	FDF100VH			information relates to. Indicated values s				
Outdoor unit model name	FDC100VI	W-AV		heating season at a time. Include at leas	st the heating se	ason 'Average'.		
				_				
Function(indicate if present)				Average(mandatory)	Yes			
cooling	Yes			Warmer(if designated)	No			
heating	Yes			Colder(if designated)	No			
3	1							
Item	symbol	value	unit	Item	svmbol	value class		
Design load	Symbol	value	unit	Seasonal efficiency and energy efficience		value class		
	Ddooigno	10.0	kW		•	E 76 A+		
cooling	Pdesignc			cooling	SEER	5.76 A+		
heating / Average	Pdesignh	8.50	kW	heating / Average	SCOP/A	4.00 A+		
heating / Warmer	Pdesignh	-	kW	heating / Warmer	SCOP/W			
heating / Colder	Pdesignh	-	kW	heating / Colder	SCOP/C			
						unit		
Declared capacity at outdoor temper	rature Tdesignh			Back up heating capacity at outdoor tem	perature Tdesig	ınh		
heating / Average (-10°C)	Pdh	8.50	kW	heating / Average (-10°C)	elbu	0 kW		
	Pdh		kW	heating / Warmer (2°C)				
heating / Warmer (2°C)		-		()	elbu			
heating / Colder (-22°C)	Pdh	-	kW	heating / Colder (-22°C)	elbu	- kW		
				1				
Declared capacity for cooling, at ind	oor temperature 27(19)℃ and		Declared energy efficiency ratio, at indo	or temperature 2	27(19)℃ and		
outdoor temperature Tj				outdoor temperature Tj				
Tj=35℃	Pdc	10.0	kW	Tj=35℃	EERd	3.25 -		
Tj=30°C	Pdc	7.37	kW	Tj=30°C	EERd	4.75 -		
Tj=25°C	Pdc		kW	Tj=25°C	EERd	6.85 -		
Tj=20°C	Pdc		kW	Tj=20°C	EERd	10.2		
-, =	, 40	V.20		1 [-,				
Declared capacity for heating / Aver	ane season at indo	nr.		Declared coefficient of performance / Av	/erage coscon	at indoor		
	-	J1		1 1	-	at ii luuul		
temperature 20°C and outdoor temp			1.347	temperature 20°C and outdoor temperat		0.70		
Tj=-7°C	Pdh		kW	Tj=-7°C	COPd	2.70 -		
Tj=2°C	Pdh		kW	Tj=2°C	COPd	3.99 -		
Tj=7°C	Pdh	2.93	kW	Tj=7°C	COPd	5.00 -		
Tj=12°C	Pdh	2.90	kW	Tj=12°C	COPd	6.00 -		
Tj=bivalent temperature	Pdh	8.50	kW	Tj=bivalent temperature	COPd	2.45 -		
Tj=operating limit	Pdh		kW	Tj=operating limit	COPd	2.20 -		
ry operating intin		0.00		in operating time	00.4			
Declared capacity for heating / Warr	mar assass at indee	\r		Declared coefficient of performance / W	armar access	at indoor		
		,,				it ilidool		
temperature 20°C and outdoor temp			1347	temperature 20°C and outdoor temperat				
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd			
Tj=7°C	Pdh		kW	Tj=7°C	COPd			
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd			
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd			
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd			
				•				
Declared capacity for heating / Cold	er season, at indoor			Declared coefficient of performance / Co	older season, at	indoor		
temperature 20°C and outdoor temp				temperature 20°C and outdoor temperat				
Tj=-7°C	Pdh	- 1	kW	Tj=-7°C	COPd			
								
Tj=2°C	Pdh		kW	Tj=2°C	COPd			
Tj=7°C	Pdh		kW	Tj=7°C	COPd			
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd			
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd			
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd			
Tj=-15°C	Pdh	-	kW	Tj=-15°C	COPd			
						·		
Bivalent temperature				Operating limit temperature				
heating / Average	Tbiv	-10	°C	heating / Average	Tol	- 20 °C		
heating / Warmer	Tbiv	-10	°C	heating / Warmer	Tol	- <u>20</u> °C		
		H	0-	I II				
heating / Colder	Tbiv		°C	heating / Colder	Tol	<u> 10</u>		
Overline interest of the				Occuliant internal office				
Cycling interval capacity	-		134/	Cycling interval efficiency				
for cooling	Pcycc	-	kW	for cooling	EERcyc			
for heating	Pcych	-	kW	for heating	COPcyc			
				1 -				
Degradation coefficient			i	Degradation coefficient				
cooling	Cdc	0.25	-	heating	Cdh	0.25 -		
				1				
Electric power input in power modes	other than 'active m	node'		Annual electricity consumption				
off mode	Poff		W	cooling	Qce	608 kWh/a		
standby mode	Psb		W	heating / Average	Qhe	2973 kWh/a		
thermostat-off mode	Pto(cooling)		W	heating / Warmer	Qhe	- kWh/a		
	Pto(heating)	76	W	heating / varner	Qhe	- kWh/a		
crankcase heater mode	Pto(neating) Pck	5	W	indusing / doluct	QI IC	- Kvvii/a		
orannoase neater mode	FUN	3	* *	1				
Canacity control/indicate and afti	o ontion=\			Other items				
Capacity control(indicate one of three	e opuons)			Other items	1	GE JD(A)		
1				Sound power level(indoor)	Lwa	65 dB(A)		
1				Sound power level(outdoor)	Lwa	69 dB(A)		
fixed	No			Global warming potential	GWP	675 kgCO2eq.		
staged	No			Rated air flow(indoor)	-	1620 m ³ /h		
variable	Yes			Rated air flow(outdoor)	-	4500 m ³ /h		
	1							
Contact details for obtaining M	litsubishi Heavy Indu	stries Air-Co	onditioning	Europe, Ltd.				
				ddlesex,UB11 1ET, United Kingdom				
	HIAE SERVICES B.			, Jimoa i iii gaani				
			Δ 1101 CN	A Amsterdam, Netherlands				
i l	P.O.Box 23393 110	UNN WILLISTE	ruanı, Netr	IGHAHU3				

Model FDF100VSAWVH

Information to identify the model(s) to			If function includes heating: Indicate the	•	
Indoor unit model name	FDF100VH		information relates to. Indicated values	should relate to o	one
Outdoor unit model name	FDC100VS	SA-W	heating season at a time. Include at lea	st the heating sea	ason 'Average'.
Function(indicate if present)			Average(mandatory)	Yes	
cooling	Yes		Warmer(if designated)	No	
heating	Yes		Colder(if designated)	No	
neating	162		Colder(ii designated)	NO	
14	and a		14	according to	l dans
Item	symbol	value unit	Item	symbol	value class
Design load			Seasonal efficiency and energy efficien		
cooling	Pdesignc	10.0 kW	cooling	SEER	5.76 A+
heating / Average	Pdesignh	8.50 kW	heating / Average	SCOP/A	4.00 A+
heating / Warmer	Pdesignh	- kW	heating / Warmer	SCOP/W	
heating / Colder	Pdesignh	- kW	heating / Colder	SCOP/C	
5 · ·		l			unit
Declared capacity at outdoor temper	ature Tdesignh		Back up heating capacity at outdoor ten	nnoraturo Tdecia	
		0.50			
heating / Average (-10°C)	Pdh	8.50 kW	heating / Average (-10°C)	elbu	0 kW
heating / Warmer (2°C)	Pdh	- kW	heating / Warmer (2°C)	elbu	- kW
heating / Colder (-22°C)	Pdh	- kW	heating / Colder (-22°C)	elbu	- kW
Declared capacity for cooling, at indo	or temperature 27(19)℃ and	Declared energy efficiency ratio, at indo	or temperature 2	27(19)°C and
outdoor temperature Tj			outdoor temperature Tj		
Tj=35°C	Pdc	10.0 kW	Tj=35°C	EERd	3.25 -
Tj=30°C	Pdc	7.37 kW	Tj=30°C	EERd	4.75 -
Tj=25°C	Pdc	4.72 kW	Tj=25°C	EERd	6.85 -
Tj=20°C	Pdc	3.20 kW	Tj=20°C	EERd	10.2
1, 200	i uc	0.20 NVV	1 1 200	LLIN	10.2
Designed conseils for booking 1.5			Declared coefficient of months and the		st indoor
Declared capacity for heating / Avera		וו	Declared coefficient of performance / A		at IIIQOOI
temperature 20°C and outdoor temperature			temperature 20°C and outdoor tempera		
Tj=-7°C	Pdh	7.53 kW	Tj=-7°C	COPd	2.70 -
Tj=2°C	Pdh	4.59 kW	Tj=2°C	COPd	3.99 -
Tj=7°C	Pdh	2.93 kW	Tj=7°C	COPd	5.00 -
Tj=12°C	Pdh	2.90 kW	Ti=12°C	COPd	6.00 -
Tj=bivalent temperature	Pdh	8.50 kW	Tj=bivalent temperature	COPd	2.45 -
Ti=operating limit	Pdh	6.30 kW	Tj=operating limit	COPd	2.20 -
Tj-operating limit	i dii	0.00	I j-operating limit	001 0	2.20
Declared capacity for heating / Warn	or accord at inde	ar .	Declared coefficient of performance / W	larmar access o	t indoor
temperature 20°C and outdoor 20°C and outdoor 20°C and 00°C		'1	temperature 20°C and outdoor tempera		it ilidool
		LAM			
Tj=2°C	Pdh	- kW	Tj=2°C	COPd	
Tj=7°C	Pdh	- kW	Tj=7°C	COPd	
Tj=12°C	Pdh	- kW	Tj=12°C	COPd	
Tj=bivalent temperature	Pdh	- kW	Tj=bivalent temperature	COPd	
Tj=operating limit	Pdh	- kW	Tj=operating limit	COPd	
Declared capacity for heating / Colde	r season, at indoor		Declared coefficient of performance / C	older season, at	indoor
temperature 20°C and outdoor temperature			temperature 20°C and outdoor tempera		
Tj=-7°C	Pdh	- kW	Ti=-7°C	COPd	
			117		
Tj=2°C	Pdh	- kW	Tj=2°C	COPd	<u> </u>
Tj=7°C	Pdh	- kW	Tj=7°C	COPd	
Tj=12°C	Pdh	- kW	Tj=12°C	COPd	
Tj=bivalent temperature	Pdh	- kW	Tj=bivalent temperature	COPd	
Tj=operating limit	Pdh	- kW	Tj=operating limit	COPd	
Tj=-15°C	Pdh	- kW	Tj=-15℃	COPd	
Bivalent temperature			Operating limit temperature		
heating / Average	Tbiv	-10 °C	heating / Average	Tol	-20 °C
heating / Warmer	Tbiv	- ℃	heating / Warmer	Tol	- °C
heating / Colder	Tbiv	-	heating / Colder	Tol	- °c
			1 (
Cycling interval capacity			Cycling interval efficiency		
for cooling	Pcycc	- kW	for cooling	EERcyc	
for heating	Pcych	- kW	for heating	COPcyc	-
	i Gyon	IVAA	p.s. nodding	331 byo	1 F
Degradation coefficient			Degradation coefficient		
cooling	Cdc	0.25 -	heating	Cdh	0.25 -
- Coming	Ouc	0.20 -	modalig	Guii	0.20 -
Electric power input in power modes	other than lasting =	node'	Annual electricity consumption		
	otner than active in		cooling	000	608 kWh/a
off mode			1 1 3	Qce	
standby mode	Psb	7 W	heating / Average	Qhe	2973 kWh/a
thermostat-off mode	Pto(cooling)	64 W	heating / Warmer	Qhe	- kWh/a
	Pto(heating)	76 W	heating / colder	Qhe	- kWh/a
crankcase heater mode	Pck	5 W			
			1.		
Capacity control(indicate one of three	e options)		Other items		
			Sound power level(indoor)	Lwa	65 dB(A)
			Sound power level(outdoor)	Lwa	69 dB(A)
fixed	No		Global warming potential	GWP	675 kgCO2eq.
staged	No		Rated air flow(indoor)		1620 m³/h
variable	Yes		Rated air flow(indoor)	-	4500 m³/h
Variable	169		race all llow(outdoor)		-7000 III /II
Contact details for obtaining Mi	tsuhishi Heavy Indu	stries Air-Conditioning	Furone Ltd		
			ddlesex,UB11 1ET, United Kingdom		
	HIAE SERVICES B.		autoon, ob 11 121, office Milydolli		
			M Amsterdam, Netherlands		
) DW Amsterdam, Netl			
	.U.DUA 23383 1 1 U	ייס ע איס ל rv Amoleiuain, Neli	IUI III III III		

Model FDF125VNAWVH

Model(s): FDC125VNA	-W / FDF125VH						
Outdoor side heat exchanger of air-	conditioner :	air					
Indoor side heat exchanger of air-co	onditioner :	air					
Type: vapour compression							
if applicable : electric moto	r						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space	•		
3 1 7	Prated,c	12.5	kW	cooling energy	η s,c	211.2	%
				efficiency			
Declared cooling capacity for part lo	ad at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization	efficiency /	
Tj and indoor 27°C/19°C(dry/wet bul	_	auxiliary energy factor for part load at given outdoor temperatures Tj					
	,			, , ,	, ,		,
Tj=+35°C	Pdc	12.5	kW	Tj=+35°C	EERd or		
			-	1,7 100 0	GUEc,bin / AEFc,bin	269.0	%
Tj=+30°C	Pdc	9.20	kW	Tj=+30°C	EERd or		
			-	1,7 100 0	GUEc,bin / AEFc,bin	415.0	%
Tj=+25°C	Pdc	5.89	kW	Tj=+25°C	EERd or		
			'	1]-125 0		613.0	%
Tj=+20°C	Pdc	3.20	kW	Tj=+20°C	GUEc,bin / AEFc,bin EERd or		
			·	113-+20 C		1020.0	%
Degradation			1 l		GUEc,bin / AEFc,bin		
coefficient for	Cdc	0.25					
air conditioners**	Cdc		-				
all conditioners			·				
Power consumption in other than 'ac	ctive mode						
Off mode	P _{OFF}	0.010	kW	Crankcase heate	er mode P _{CK}	0.005	kW
Thermostat-off mode	P _{TO}		kW		P _{SB}		kW
memostat-on mode	ТО	0.064],,,	Standby mode	I SB	0.010	KVV
Other items							1
Capacity control		veriable	1	For air-to-air air		4500	m³/h
Capacity control		variable]	air flow-rate,outd	loor measured		
			ı				
Sound power level,	L_WA	71.0	dB				
outdoor			J				
			1 I				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
			,				
GWP of the		675	kg CO _{2eq.}				
refrigerant			(100years)				
	litsubishi heavy indus						
** If Cdc is not determined by meas	urement then the def	fault degrac	dation coeffic	ient air conditioner	s shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-s	pilt air conditioners,t	he test resu	ult and perfor	mance data be ob	tained on the basis of the perform	nance	
of the outdoor unit, with a combinati	on of indoor unit(s) r	ecommend	led by the ma	nufacturer or impo	orter.		

Information to identify the model(s) to which t	he informatio	n relates :		FDC125VN	IA-W / FDF125VH				
Outdoor side heat exchanger of heat pump :		air							
Indoor side heat exchanger of heat pump :		air							
Indication if the heater is equipped with a sup	plementary h	eater:		١	10				
if applicable : electric motor									
Parameters shall be declared for the average	heating seas	son , paramete	ers for the	warmer and	colder heating seasor	ns are optional.			
Item	Symbol	Value U	Jnit		Item	Symbol		Value	Unit
Rated heating capacity					Seasonal space				
	Prated,h	14.0	kW		heating energy	η s,h		155.5	%
					efficiency				
Declared heating capacity for part load at ind	oor temperati	ure 20°C			Declared coefficient o	f performance or gas utiliza	tion efficie	ncy /	
and outdoor temperature Tj					auxiliary energy factor	for part load at given outdo	or temper	atures Tj	
							_		
T _j =-7°C	Pdh	8.69 k	W		T _j =-7°C	COPd or		251.0	%
						GUEh,bin / AEFh,bin	-		
T _j =+2°C	Pdh	5.30 k	W		T _j =+2°C	COPd or		394.0	%
L					L	GUEh,bin / AEFh,bin	-		
T _j =+7°C	Pdh	3.39 k	(W		T _j =+7°C	COPd or		510.0	%
		0.00				GUEh,bin / AEFh,bin	-		
T _j =+12°C	Pdh	2.90 k	W		T _j =+12°C	COPd or		610.0	%
T	Dalls	9.80 k			T -bil- :	GUEh,bin / AEFh,bin	-		
T _{biv} =bivalent temperature	Pdh	9.00 k	(W		T _{biv} =bivalent temperature	COPd or		250.0	%
T - concretion limit	Dalla	7.40 k	.\^/			GUEh,bin / AEFh,bin	-		
T _{OL} =operation limit	Pdh	7.40 K	W		T _{OL} =operation limit	COPd or		220.0	%
	D. II		147			GUEh,bin / AEFh,bin	-		
For air-to-water heat pumps : T _i =-15°C	Pdh	K	W		For air-to-water heat pumps:T _i =-15°C	COPd or GUEh,bin / AEFh,bin		-	%
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)	COLII,BIIT / ALI II,BIIT	L		J
(11 10[<-20 0)					(11 101 < -20 0)				
Bivalent temperature	T _{biv}	-10.0 °	С		For water-to-air heat		Γ		
- Straight tomporatary	· DIV		-		pumps:Operation limit	t		-	°C
Degradation					T _{ol} temperature				
coefficient	C_{dh}	0.25							
heat pumps**	- un								
				Ī					
Power consumption in modes other than 'acti	ve mode'				Supplementary heater	r			1.347
i i					back-up heating capa		elbu	-	kW
Off mode	P _{OFF}	0.010 k	W				_		
Thermostat-off mode	P_{TO}	0.079 k	W		Type of energy input		P _{SB}	0.010	kW
Crankcase heater mode	P _{CK}	0.005 k	W		Standby mode		, SB	0.010	KVV
Other items							-		
					For air-to-air heat pun	nps:		4380	m³/h
Capacity control		variable			air flow-rate,outdoor n	neasured			,
							-		
Sound power level,	L_{WA}	71.0 c	iΒ		For water-/brine-to-air	heat pumps :			
outdoor measured					Rated brine or water f	iow-rate,		-	m ³ /h
					outdoor side heat excl	hanger	L		
Emissions of nitrogen	NOx		ng/kWh						
oxides(if applicable)	***		uel input						
			GCV						
				1					
OMB (II			00						
GWP of the			g CO₂eq. 100years)						
refrigerant)`	,						
Contact details Mitsubish	heavering	tripe thormal	evetomo ! "	I	1				
** If Cdh is not determined by measurement t		tries thermal s ult degradation			oners shall be 0.25				
	40.40	g accioi		_ 31 rail					
*** from 26 September 2018	nditionara #	toot recult	nd norfor	anno data L	a abtained on the h:-	of the performance			
Where information relates to multi-spilt air co of the outdoor unit, with a combination of indo						or the periorniance			
or the Suldoor unit, with a combination of fluc	or unit(s) iec	omnended by	y u io IIIaIII	andoturer OF	mporter.				
<u> </u>									

Model FDF125VSAWVH

Model(s): FDC125VS	SA-W / FDF125VH									
Outdoor side heat exchanger of a	ir-conditioner :	air								
Indoor side heat exchanger of air-	conditioner :	air								
Type : vapour compression										
if applicable : electric mo	tor									
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated cooling capacity				Seasonal space						
	Prated,c	12.5	kW	cooling energy	η s,c	211.2	%			
				efficiency						
Declared cooling capacity for part	load at given outdoor	temperatur	es	Declared energy efficiency ratio or gas utilization efficiency /						
Tj and indoor 27°C/19°C(dry/wet b	oulb)			auxiliary energy factor for part load at given outdoor temperatures Tj						
	ı		,							
Tj=+35℃	Pdc	12.5	kW	Tj=+35°C	EERd or	269.0	%			
			,		GUEc,bin / AEFc,bin					
Tj=+30°C	Pdc	9.20	kW	Tj=+30°C	EERd or	415.0	%			
			,		GUEc,bin / AEFc,bin					
Tj=+25°C	Pdc	5.89	kW	Tj=+25°C	EERd or	613.0	%			
	1		,		GUEc,bin / AEFc,bin					
Tj=+20°C	Pdc	3.20	kW	Tj=+20°C	EERd or	1020.0	%			
			,		GUEc,bin / AEFc,bin					
Degradation										
coefficient for	Cdc	0.25	-							
air conditioners**										
Power consumption in other than	'active mode'									
	_		,							
Off mode	P _{OFF}	0.010	kW	Crankcase heater		0.005	kW			
Thermostat-off mode	P _{TO}	0.064	kW	Standby mode	P_{SB}	0.010	kW			
Other items										
Canacity control			1	For air-to-air air c		4500	m ³ /h			
Capacity control		variable]	air flow-rate,outdo	oor measured					
			1							
Sound power level,	L_WA	71.0	dB							
outdoor]							
			1							
If engine driven:	NOx	-	mg/kWh							
Emissions of nitrogen	***	-	fuel input							
oxides			GCV							
GWP of the	1		lsa CC							
		675	kg CO _{2eq.} (100years)							
refrigerant]							
Contact details	Mitaubiahi baasa is daa	trion than-	al avotama '	I TD						
Contact details ** If Cdc is not determined by mea	Mitsubishi heavy indus asurement then the def				s shall be 0,25.					
		asgrat	55011101	55	,					
*** from 26 September 2018	i oniit air oo-diti "	no tost	ult andf	manaa dat- b	ained on the bestf-t f	anas				
Where information relates to multi						iaiice				
of the outdoor unit, with a combina	auon ot indoor unit(s) r	ecommend	ed by the ma	nutacturer or impor	rter.					

Information to identify the model(s) to which t	he informatio	n relates :		FDC125VS	SA-W / FDF125VH			
Outdoor side heat exchanger of heat pump :		air						
Indoor side heat exchanger of heat pump :		air						
Indication if the heater is equipped with a sup	plementary h			١	lo .			
if applicable : electric motor								
Parameters shall be declared for the average	heating seas	son , parame	ters for the	warmer and	l colder heating season	ns are optional.		
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated heating capacity	- Cy11.150.	Value	01		Seasonal space	5,111201	Value	
ration realing supusity	Prated,h	14.0	kW		heating energy	η s,h	155.5	%
					efficiency			
Declared heating capacity for part load at ind	oor temperati	ire 20°C				f performance or gas utilization effi	riency /	
and outdoor temperature Tj	oor tomporati					r for part load at given outdoor temp		
and outdoor temperature 1					duxiliary chergy lactor	To partious at given outdoor temp	ocialaico ij	
T _i =-7°C	Pdh	8.69	kW		T _i =-7°C	COPd or		1
	i dii		I		١١٦-٠٠٥		251.0	%
T _j =+2°C	Pdh	5.30	kW		T _i =+2°C	GUEh,bin / AEFh,bin COPd or		1
1,-120	i dii		KVV		1,-120		394.0	%
T _j =+7°C	Pdh	3.39	kW		T _i =+7°C	GUEh,bin / AEFh,bin COPd or		1
ا ا	i dii	0.00	KVV		1,-170		510.0	%
T _i =+12°C	Pdh	2.90	kW		T _i =+12°C	GUEh,bin / AEFh,bin COPd or		ł
1 _j -+12 C	Pull	2.30	KVV		1 _j -+12 C		610.0	%
	D.II	9.80	l			GUEh,bin / AEFh,bin		ł
T _{biv} =bivalent temperature	Pdh	3.00	kW		T _{biv} =bivalent temperature	COPd or	250.0	%
L		7.40	l			GUEh,bin / AEFh,bin		ł
T _{OL} =operation limit	Pdh	7.40	kW		T _{OL} =operation limit	COPd or	220.0	%
			l			GUEh,bin / AEFh,bin		ł
For air-to-water heat pumps :	Pdh	-	kW		For air-to-water heat	COPd or	-	%
T _j =-15°C					pumps:T _j =-15°C	GUEh,bin / AEFh,bin		J
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)			
			ı					1
Bivalent temperature	T_{biv}	-10.0	°C		For water-to-air heat			
			1		pumps:Operation limit	t	-	°C
Degradation					T _{ol} temperature]
coefficient	C_{dh}	0.25	-					
heat pumps**								
				1				
								,
Power consumption in modes other than 'acti	ve mode'				Supplementary heater	r elbu	_	kW
					back-up heating capac			
Off mode	P _{OFF}	0.010	kW					-
Thermostat-off mode	P _{TO}	0.079	kW		Type of energy input	P _{SB}	0.010	kW
Crankcase heater mode	P _{CK}	0.005	kW		Standby mode	. 28	0.010	
]				
Other items								
			-		For air-to-air heat pum	nps:	4380	m³/h
Capacity control		variable			air flow-rate,outdoor n	neasured	4000]''' /''
			•					
Sound power level,	L _{WA}	71.0	dB		For water-/brine-to-air	heat pumps :		
outdoor measured	LWA	71.0	uБ		Rated brine or water f	iow-rate,	-	m³/h
			•'		outdoor side heat excl	hanger		
Emissions of nitrogen			mg/kWh					•
oxides(if applicable)	NOx ***		fuel input					
,			GCV					
				1				
GWP of the			kg CO _{2eq.}					
		675	(100years))				
refrigerant			ı					
Contact details Mitsubish	i heavy indus	tripe thormal	eveteme !	TD	!			
** If Cdh is not determined by measurement t					oners shall be 0.25			
	are delete			55114111	20 0,20.			
*** from 26 September 2018						* *		
Where information relates to multi-spilt air co						s of the performance		
of the outdoor unit, with a combination of indo	oor unit(s) rec	ommended l	by the man	utacturer or i	mporter.			

Model FDF140VNAWVH

Model(s): FDC140VN	A-W / FDF140VH						
Outdoor side heat exchanger of air	-conditioner :	air					
Indoor side heat exchanger of air-o	conditioner :	air					
Type: vapour compression							
if applicable : electric mot	or						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space	,		
5 1 7	Prated,c	13.6	kW	cooling energy	η s,c	205.1	%
				efficiency			
Declared cooling capacity for part	oad at given outdoor	temperature	es	Declared energy	efficiency ratio or gas utilization effici	encv /	
Tj and indoor 27°C/19°C(dry/wet bu	_	topo.ata.		1	factor for part load at given outdoor te	-	ï
Try and maddi 27 dy to d(dry/wor be	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			duxiliary chorgy	actor for part load at given outdoor to	inporataree i	J
Tj=+35°C	Pdc	13.6	kW	Tj=+35°C	EERd or]
•			J	1]-+35 C		254.0	%
Tj=+30°C	Pdc	10.0	kW	T:- : 20°0	GUEc,bin / AEFc,bin		
1, 100 0	1 40	10.0]	Tj=+30°C	EERd or	393.0	%
Tj=+25°C	Pdc	6.44	kW		GUEc,bin / AEFc,bin		
1,-1250	ruc	0.44] _V vv	Tj=+25°C	EERd or	596.0	%
T' : 00°0	D .	0.00	1		GUEc,bin / AEFc,bin		
Tj=+20°C	Pdc	3.20	kW	Tj=+20°C	EERd or	1005.0	%
			1		GUEc,bin / AEFc,bin		
Degradation							
coefficient for	Cdc	0.25	-				
air conditioners**							
Power consumption in other than 'a	active mode'						
Off mode	P _{OFF}	0.010	kW	Crankcase heate	er mode P _{CK}	0.005	kW
Thermostat-off mode	P _{TO}	0.064	kW	Standby mode	P_{SB}	0.010	kW
Other items							_
			_	For air-to-air air	conditioner:	4500	m ³ /h
Capacity control		variable		air flow-rate,outd	loor measured	4300	111 /11
							-
Sound power level,		70.0	-ID				
outdoor	L_{WA}	72.0	dB				
			1				
If engine driven:			mg/kWh				
_	NOx	_	-				
Emissions of nitrogen	***		fuel input				
oxides			GCV				
0.1415 611			1				
GWP of the		675	kg CO _{2eq.} (100years)				
refrigerant			(100youro)				
	Mitsubishi heavy indu						
** If Cdc is not determined by mea	surement then the def	tault degrad	lation coeffic	ent air conditioner	s shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-	spilt air conditioners,t	he test resu	ılt and perfor	mance data be ob	tained on the basis of the performance	Э	
of the outdoor unit, with a combina	tion of indoor unit(s) r	ecommend	ed by the ma	nufacturer or impo	orter.		

Information to identify the model(s) to which	the information	n relates ·		EDO4::::	IA M//EDE440: ":				
	the miornation			FDC140VN	NA-W / FDF140VH				
Outdoor side heat exchanger of heat pump :		air							
Indoor side heat exchanger of heat pump :		air			No .				
Indication if the heater is equipped with a su	ppiementary n	eater:		ı,	NO .				
if applicable : electric motor Parameters shall be declared for the average	a baating assa	on noromo	toro for the	ormor on	l colder beating econor	as are entianal			
				warmer and					
Item	Symbol	Value	Unit		Item Seasonal space	Symbol		Value	Unit
Rated heating capacity	Prated,h	15.5	kW			n a b	.	156.6	%
	i iateu,ii	13.5	KVV		heating energy efficiency	η s,h		150.0	70
					<u> </u>			_	
Declared heating capacity for part load at in	door temperati	ure 20°C				of performance or gas utiliza			
and outdoor temperature Tj					auxiliary energy factor	r for part load at given outd	oor temperatu	ıres IJ	
T = 7°C	Pdh	9.00	kW		T = 7°C	COD4			1
T _j =-7°C	Pull	0.00	KVV		T _j =-7°C	COPd or	1	248.0	%
T-12°C	Pdh	5.60	kW		T=12°C	GUEh,bin / AEFh,bin	<u> </u>		
T _j =+2°C	Pan	3.00	KVV		T _j =+2°C	COPd or	:	396.5	%
T - 17°0	Dalle	3.70	1-14/		T - + 7°0	GUEh,bin / AEFh,bin	-		-
T _j =+7°C	Pdh	3.70	kW		T _j =+7°C	COPd or		520.7	%
T = 140°0	Pdh	2.90	1-14/		T - : 40°0	GUEh,bin / AEFh,bin	-		-
T _j =+12°C	Pan	2.90	kW		T _j =+12°C	COPd or	(616.2	%
T =bixalant tar====-ti-=-	Dalls	10.5	LAM		T =biv-1	GUEh,bin / AEFh,bin	\vdash		1
T _{biv} =bivalent temperature	Pdh	10.0	kW		T _{biv} =bivalent temperature	COPd or	:	245.2	%
T concretion limit	Dalls	7.05	LAM		·	GUEh,bin / AEFh,bin	\vdash		1
T _{OL} =operation limit	Pdh	7.95	kW		T _{OL} =operation limit	COPd or	:	216.0	%
						GUEh,bin / AEFh,bin	-		+
For air-to-water heat pumps :	Pdh		kW		For air-to-water heat	COPd or		-	%
T _j =-15°C					pumps:T _j =-15°C	GUEh,bin / AEFh,bin	L		J
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)				
5: 1	_	-10.0	90		For water-to-air heat				1
Bivalent temperature	T _{biv}	-10.0	°C		pumps:Operation limit	•			°C
Degradation					T _{ol} temperature	ı		-	
Degradation coefficient		0.25			1 _{ol} temperature				1
heat pumps**	C_{dh}	0.23	-						
lifeat pumps									
				1					
Device and a street of the str					0	_			1
Power consumption in modes other than 'ac	ive mode				Supplementary heater		elbu	-	kW
Off mode	Poff	0.010	kW		back-up heating capa	city			J
Thermostat-off mode	P _{TO}		kW		Time of operational				1
Crankcase heater mode	P _{CK}		kW		Type of energy input		P _{SB} (0.010	kW
	OK .				Standby mode				1
Other items				-					
Other items					For air-to-air heat pun	nne:	Г		1
Capacity control		variable						4380	m³/h
Capacity Control					air flow-rate,outdoor n	neasureu			J
Cound names lavel					Forwater /bring to air	r haat numna .			1
Sound power level, outdoor measured	L_{WA}	73.0	dB		For water-/brine-to-air Rated brine or water f			_	m ³ /h
outdoor measured					outdoor side heat exc				,
Emissions of nitrogen			mg/kWh		outdoor side fleat exc	ilanger	<u> </u>		1
oxides(if applicable)	NOx ***		fuel input						
oxides(ii applicable)	***		GCV						
		<u> </u>	OOV						
GWP of the			kg CO _{2eq.}						
refrigerant		675	(100years)						
- Surgerun									
Contact details Mitsubis	hi heavy indust	tries thermal	systems.I	TD.	•				
** If Cdh is not determined by measurement					oners shall be 0,25.				
*** from 26 September 2018		-							
Where information relates to multi-spilt air c	anditioners the	test recult o	nd nerform	ance data h	e obtained on the book	s of the performance			
of the outdoor unit, with a combination of inc						o o. the performance			
5. 2.5 Galagor and, with a combination of file	551 GIII(6) 160	o.mnemaeu L	, uio illalli	uoturei Ul	portor.				

Model FDF140VSAWVH

Model(s): FDC140VS	SA-W / FDF140VH						
Outdoor side heat exchanger of a	ir-conditioner :	air					
Indoor side heat exchanger of air-	-conditioner :	air					
Type : vapour compression							
if applicable : electric mo	tor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space			
	Prated,c	13.6	kW	cooling energy	η s,c	205.1	%
				efficiency			
Declared cooling capacity for part	load at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization	efficiency /	
Tj and indoor 27°C/19°C(dry/wet b	oulb)			auxiliary energy fa	actor for part load at given outdo	oor temperatures T	j
Tj=+35°C	Pdc	13.6	kW	Tj=+35°C	EERd or		
]	,	GUEc,bin / AEFc,bin	254.0	%
Tj=+30°C	Pdc	10.0	kW	Tj=+30°C	EERd or		0.4
			-	,	GUEc,bin / AEFc,bin	393.0	%
Tj=+25°C	Pdc	6.44	kW	Tj=+25°C	EERd or	500.0	0/
			-	'	GUEc,bin / AEFc,bin	596.0	%
Tj=+20°C	Pdc	3.20	kW	Tj=+20°C	EERd or	4005.0	0/
			-		GUEc,bin / AEFc,bin	1005.0	%
Degradation]				
coefficient for	Cdc	0.25	-				
air conditioners**							
		•					
Power consumption in other than	'active mode'						
			_				_
Off mode	P_{OFF}	0.010	kW	Crankcase heate	r mode P _{CK}	0.005	kW
Thermostat-off mode	P_{TO}	0.064	kW	Standby mode	P_SB	0.010	kW
Other items							Ī
			,	For air-to-air air c	onditioner:	4500	m ³ /h
Capacity control		variable	_	air flow-rate,outdo	oor measured		
			,				
Sound power level,	L_WA	72.0	dB				
outdoor			J				
			,				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
			۱ ا				
GWP of the		675	kg CO _{2eq.} (100years)				
refrigerant			(100years)				
Contact details	Mitsubishi heavy indus	stripe than	nal sveteme !	TD.			
** If Cdc is not determined by mea					s shall be 0,25.		
*** from 26 September 2018		-					
Where information relates to mult	i-spilt air conditioners t	he test res	ult and perfor	mance data he ohte	ained on the basis of the perform	mance	
of the outdoor unit, with a combina							
o. 110 outdoor unit, with a combine	aon or mooor unit(s) in		.cu by the fild	aiaotaroi oi iiripoi			

Information to identify the model(s) to which t	he informatior	relates :		FDC140VS	SA-W / FDF140VH				
Outdoor side heat exchanger of heat pump :		air		1 0014000	, (() D 140 ()				
Indoor side heat exchanger of heat pump :		air							
Indication if the heater is equipped with a sup	plementary he			1	lo				
if applicable : electric motor									
Parameters shall be declared for the average	heating seas	on , parame	ters for the	warmer and	colder heating seasor	ns are optional.			
Item	Symbol	Value	Unit		Item	Symbol	١	/alue	Unit
Rated heating capacity					Seasonal space				
	Prated,h	15.5	kW		heating energy	η s,h	1	56.6	%
					efficiency				
Declared heating capacity for part load at ind	oor temperatu	ıre 20°C			Declared coefficient o	f performance or gas utiliza	ition efficiency	//	
and outdoor temperature Tj					auxiliary energy factor	r for part load at given outdo	oor temperatu	res Tj	
	1		ı				_		,
T _j =-7°C	Pdh	9.00	kW		T _j =-7°C	COPd or	2	248.0	%
		5.00	l			GUEh,bin / AEFh,bin	_		
T _j =+2°C	Pdh	5.60	kW		T _j =+2°C	COPd or	3	396.5	%
		0.70	l			GUEh,bin / AEFh,bin			
T _j =+7°C	Pdh	3.70	kW		T _j =+7°C	COPd or		520.7	%
T = 142°C	Pdh	2.90	14/0/		T = 142°C	GUEh,bin / AEFh,bin			-
T _j =+12°C	Full	2.00	kW		T _j =+12°C	COPd or	6	316.2	%
T _{biv} =bivalent temperature	Pdh	10.5	kW		T _{biv} =bivalent	GUEh,bin / AEFh,bin COPd or	-		
. DIV SIVAION COMPONIACIO	i sili				temperature		2	245.2	%
T _{OL} =operation limit	Pdh	7.95	kW		T _{OL} =operation limit	GUEh,bin / AEFh,bin COPd or			
52 1		· · · · · · · · · · · · · · · · · · ·	1		SE	GUEh.bin / AEFh.bin	2	216.0	%
For air-to-water heat pumps :	Pdh	-	kW		For air-to-water heat	COPd or			
T _j =-15°C			1		pumps:T _i =-15°C	GUEh,bin / AEFh,bin		-	%
(if T _{OL} <-20°C)					(if T _{OL} <-20°C)				
									_
Bivalent temperature	T_{biv}	-10.0	°C		For water-to-air heat				
					pumps:Operation limit	t		-	°C
Degradation					T _{ol} temperature]
coefficient	C_{dh}	0.25	-						
heat pumps**									
				<u> </u>					
									1
Power consumption in modes other than 'acti	ve mode'				Supplementary heater		elbu	-	kW
Off mode	Poff	0.010	kW		back-up heating capa	city			J
Thermostat-off mode	P _{TO}		kW						1
Crankcase heater mode	P _{CK}		kW		Type of energy input		P _{SB} (0.010	kW
	Cit		ļ		Standby mode				1
Other items									
					For air-to-air heat pun	nps:			1,
Capacity control		variable			air flow-rate,outdoor n			4380	m³/h
	'				,				•
Sound power level,	1	72.0	dB		For water-/brine-to-air	heat pumps :			
outdoor measured	L_{WA}	73.0	шБ		Rated brine or water f			-	m³/h
		· <u></u>			outdoor side heat exc	hanger]
Emissions of nitrogen	NOx		mg/kWh						
oxides(if applicable)	***	-	fuel input						
			GCV						
				-					
COMP. CII	1								
GWP of the		675	kg CO₂eq. (100years)						
refrigerant	ļ		1,00,0013)						
Contact details Mitsubish	i heavy indust	ries thormal	eveteme ! "	I	1				
** If Cdh is not determined by measurement					oners shall be 0.25.				
*** from 26 September 2018									
Where information relates to multi-spilt air co	nditioners the	test result s	and perform	ance data h	e obtained on the basis	s of the performance			
of the outdoor unit, with a combination of inde						po			
,	(-).30		,						

Model FDF140VNAWPVH

Model(s): FDC140VN	NA-W / FDF71VH (x2 u	nits)					
Outdoor side heat exchanger of a	ir-conditioner :	air					
Indoor side heat exchanger of air-	-conditioner :	air					
Type: vapour compression							
if applicable : electric mo	otor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space			
	Prated,c	13.6	kW	cooling energy	η s,c	286.2	%
				efficiency			
Declared cooling capacity for part	t load at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization efficiency	ciency /	
Tj and indoor 27°C/19°C(dry/wet b	-			1	factor for part load at given outdoor t	-	ï
, ,	,				p g g		,
Tj=+35°C	Pdc	13.6	kW	Tj=+35°C	EERd or]
			_	1, 1000	GUEc,bin / AEFc,bin	305.0	%
Tj=+30°C	Pdc	10.0	kW	Tj=+30°C	EERd or		
			_	1, 1000	GUEc,bin / AEFc,bin	491.0	%
Tj=+25°C	Pdc	6.44	kW	Tj=+25°C	EERd or		
			.	1]-1250	GUEc,bin / AEFc,bin	820.0	%
Tj=+20°C	Pdc	3.40	kW	Ti-+20°C			
,]	Tj=+20°C	EERd or	1740.0	%
Dd-4:			ا ر		GUEc,bin / AEFc,bin		J
Degradation	0.1	0.25					
coefficient for	Cdc	0.20	-				
air conditioners**			J				
Power consumption in other than	'active mode'						
O# d -	D	0.040	ا ا	0	d- D	0.005	1
Off mode	P _{OFF}	0.010	kW	Crankcase heate		0.005	kW
Thermostat-off mode	P _{TO}	0.000	kW	Standby mode	P_{SB}	0.010	kW
Other items							1
0			1	For air-to-air air o	conditioner:	4500	m³/h
Capacity control		variable]	air flow-rate,outd	loor measured		
			1				
Sound power level,	L_WA	72.0	dB				
outdoor			_				
			۱ ا				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
			,				
GWP of the		675	kg CO _{2eq.}				
refrigerant			(100years)				
	1						
Contact details	Mitsubishi heavy indus		-				
** If Cdc is not determined by mea	asurement then the def	ault degrad	dation coeffic	ent air conditioner	s shall be 0,25.		
*** from 26 September 2018							
Where information relates to mult	ti-spilt air conditioners,t	he test resu	ult and perfor	mance data be ob	tained on the basis of the performan	ce	
of the outdoor unit, with a combin	ation of indoor unit(s) re	ecommend	led by the ma	nufacturer or impo	orter.		

Information to identify the model(s) to which the	ne information	relates :	FDC140VI	NA-W / FDF71VH (x2 ur	nits)		
Outdoor side heat exchanger of heat pump :		air					
Indoor side heat exchanger of heat pump :		air					
Indication if the heater is equipped with a supp	olementary h	eater:	1	No			
if applicable : electric motor							
Parameters shall be declared for the average	heating seas	on , parameters for the	warmer and	d colder heating season	s are optional.		
Item	Symbol	Value Unit		Item	Symbol	Valu	ie Unit
Rated heating capacity				Seasonal space			
	Prated,h	15.5 kW		heating energy	η s,h	196.	1 %
			1	efficiency			
Declared heating capacity for part load at inde	or temperatu	ire 20°C		Declared coefficient of	f performance or gas utilizat	tion efficiency /	
and outdoor temperature Tj				auxiliary energy factor	for part load at given outdo	oor temperatures	Tj
T _j =-7°C	Pdh	9.30 kW		T _j =-7°C	COPd or	307.	0 %
					GUEh,bin / AEFh,bin		_
T _j =+2°C	Pdh	5.67 kW		T _j =+2°C	COPd or	476.	0 %
					GUEh,bin / AEFh,bin		
T _j =+7°C	Pdh	3.67 kW		T _j =+7°C	COPd or	674.	0 %
					GUEh,bin / AEFh,bin		
T _j =+12°C	Pdh	2.86 kW		T _j =+12°C	COPd or	907.	0 %
		40.5			GUEh,bin / AEFh,bin		_
T _{biv} =bivalent temperature	Pdh	10.5 kW		T _{biv} =bivalent temperature	COPd or	265.	0 %
		7.00			GUEh,bin / AEFh,bin		_
T _{OL} =operation limit	Pdh	7.90 kW		T _{OL} =operation limit	COPd or	220.	0 %
					GUEh,bin / AEFh,bin		_
For air-to-water heat pumps :	Pdh	- kW		For air-to-water heat	COPd or	-	%
T _j =-15°C				pumps:T _j =-15°C	GUEh,bin / AEFh,bin		
(if T _{OL} <-20°C)				(if T _{OL} <-20°C)			
Bivelent temperature	_	-10.0 °C		For water-to-air heat			
Bivalent temperature	T _{biv}	-10.0		pumps:Operation limit		_	°C
Degradation				T _{ol} temperature			ľ
coefficient	C_{dh}	0.25		. 0,			
heat pumps**	Odh						
			1				
Power consumption in modes other than 'activ	re mode'			Supplementary heater			
Fower consumption in modes other than activ	e mode			back-up heating capac		elbu -	kW
Off mode	P _{OFF}	0.010 kW		back-up fleating capac	orty.		
Thermostat-off mode	P _{TO}	0.010 kW		Type of energy input			
Crankcase heater mode	P _{CK}	0.005 kW		Standby mode		P _{SB} 0.01	0 kW
				Standay mode			
Other items			1				
				For air-to-air heat pum	ips:	420	3,,
Capacity control		variable		air flow-rate,outdoor m	neasured	438	0 m³/h
		<u> </u>					
Sound power level,	1	73.0 dB		For water-/brine-to-air	heat pumps :		
outdoor measured	L_{WA}	/3.0 UB		Rated brine or water fi		-	m³/h
				outdoor side heat exch	nanger		
Emissions of nitrogen		mg/kWh					
oxides(if applicable)	NOx ***	fuel input					
		GCV					
GWP of the		675 kg CO _{2eq} .					
refrigerant		(100years)	1				
				1			
			<u> </u>	ļ			
		ries thermal systems,L					
** If Cdh is not determined by measurement th	en the defau	It degradation coefficie	nt air condit	ioners shall be 0,25.			
*** from 26 September 2018							
Where information relates to multi-spilt air cor	nditioners,the	test result and perform	ance data b	e obtained on the basis	of the performance		
of the outdoor unit, with a combination of indo	or unit(s) reco	ommended by the man	ufacturer or	importer.			

Model FDF140VSAWPVH

Model(s): FDC140VSA-W / I	FDF71VH (x2 u	nits)					
Outdoor side heat exchanger of air-condi	itioner:	air					
Indoor side heat exchanger of air-condition	oner:	air					
Type: vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space			
3 1 7	Prated,c	13.6	kW	cooling energy	η s,c	286.2	%
				efficiency			
Declared cooling capacity for part load at	aiven outdoor	temperature	es	Declared energy e	efficiency ratio or gas utilization efficier	ncv /	
Tj and indoor 27°C/19°C(dry/wet bulb)	. 3			1	actor for part load at given outdoor tem	-	i
.,					F 9		,
Tj=+35°C	Pdc	13.6	kW	Tj=+35°C	EERd or		
			1	., 100 0	GUEc,bin / AEFc,bin	305.0	%
Tj=+30°C	Pdc	10.0	kW	Tj=+30°C	EERd or		
			1	1,7 100 0	GUEc,bin / AEFc,bin	491.0	%
Tj=+25°C	Pdc	6.44	kW	Tj=+25°C	EERd or		
			J	17-125 0		820.0	%
Tj=+20°C	Pdc	3.40	kW	Tj=+20°C	GUEc,bin / AEFc,bin EERd or		
			J	1]=+20 C		1740.0	%
Degradation			1		GUEc,bin / AEFc,bin		
Degradation coefficient for	Cdc	0.25					
air conditioners**	Cuc		-				
all conditioners			J				
Power consumption in other than 'active	mode'						
Off mode	P _{OFF}	0.010	kW	Crankcase heater	mode P _{CK}	0.005	kW
Thermostat-off mode	P _{TO}	-	kW		P _{SB}		kW
memostat-on mode	ТО	0.000]^vv	Standby mode	r SB	0.010	KVV
Other items							
Capacity control		verieble	1	For air-to-air air co		4500	m³/h
Capacity Control		variable]	air flow-rate,outdo	oor measured		
			1				
Sound power level,	L_WA	72.0	dB				
outdoor]				
			1				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
			1				
GWP of the		675	kg CO _{2eq.} (100years)				
refrigerant			(100years)				
	ishi heavy indus						
** If Cdc is not determined by measurement	ent then the def	fault degrad	lation coeffic	ent air conditioners	shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-spilt a	ir conditioners,t	he test resu	ult and perfor	mance data be obta	ained on the basis of the performance		
of the outdoor unit, with a combination of	indoor unit(s) r	ecommend	ed by the ma	nufacturer or impor	ter.		

Information to identify the model(s) to which the	ne information	n relates :	FDC140VS	SA-W / FDF71VH (x2 ui	nits)		
Outdoor side heat exchanger of heat pump :		air					
Indoor side heat exchanger of heat pump :		air					
Indication if the heater is equipped with a sup	olementary h	eater:	1	lo			
if applicable : electric motor							
Parameters shall be declared for the average	heating seas	on , parameters for the	warmer and	l colder heating season	s are optional.		
Item	Symbol	Value Unit		Item	Symbol	Value	Unit
Rated heating capacity				Seasonal space			
	Prated,h	15.5 kW		heating energy	η s,h	196.1	%
			4	efficiency			
Declared heating capacity for part load at inde	oor temperatu	ıre 20°C		Declared coefficient of	f performance or gas utilization e	efficiency /	
and outdoor temperature Tj				auxiliary energy factor	for part load at given outdoor te	mperatures Tj	
		0.00					
T _j =-7°C	Pdh	9.30 kW		T _j =-7°C	COPd or	307.0	%
		5.67			GUEh,bin / AEFh,bin		
T _j =+2°C	Pdh	5.67 kW		T _j =+2°C	COPd or	476.0	%
		2.07			GUEh,bin / AEFh,bin		
T _j =+7°C	Pdh	3.67 kW		T _j =+7°C	COPd or	674.0	%
T . 10°0	D. II	2.06		T . 1000	GUEh,bin / AEFh,bin		
T _j =+12°C	Pdh	2.86 kW		T _j =+12°C	COPd or	907.0	%
T whivelent town	Dall-	10.5 kW		T =bix=!+	GUEh,bin / AEFh,bin	-	
T _{biv} =bivalent temperature	Pdh	10.5 kW		T _{biv} =bivalent temperature	COPd or	265.0	%
	D. II	7.90 kW		· ·	GUEh,bin / AEFh,bin		
T _{OL} =operation limit	Pdh	7.90 kW		T _{OL} =operation limit	COPd or	220.0	%
					GUEh,bin / AEFh,bin		
For air-to-water heat pumps :	Pdh	- kW		For air-to-water heat	COPd or	-	%
T _j =-15°C				pumps:T _j =-15°C	GUEh,bin / AEFh,bin		J.
(if T _{OL} <-20°C)				(if T _{OL} <-20°C)			
Bivalent temperature	T _{biv}	-10.0 °C		For water-to-air heat			
bivalent temperature	1 biv			pumps:Operation limit	+	_	°C
Degradation				T _{ol} temperature	•		
coefficient	C_{dh}	0.25					1
heat pumps**	Odh						
			1				
Power consumption in modes other than 'activ	re mode!			Supplementary heater			
l ower consumption in modes other than activ	e mode				eibi		kW
Off mode	Poff	0.010 kW		back-up heating capac	ыц		
Thermostat-off mode	P _{TO}	0.010 kW		Type of energy input			
Crankcase heater mode	P _{CK}	0.005 kW		Standby mode	P _{SE}	0.010	kW
				Claridady mode			'
Other items			1				
				For air-to-air heat pum	nos:	4000	3
Capacity control		variable		air flow-rate,outdoor n	neasured	4380	m³/h
		<u> </u>		,			'
Sound power level,		70.0		For water-/brine-to-air	heat pumps :		
outdoor measured	L_{WA}	73.0 dB		Rated brine or water fi		-	m³/h
			1	outdoor side heat exch			
Emissions of nitrogen		mg/kWh					
oxides(if applicable)	NOx ***	- fuel input					
		GCV					
			J				
	_						
GWP of the		675 kg CO _{2eq.}					
refrigerant		(100years)	1				
			1				
]			
		tries thermal systems,L					
** If Cdh is not determined by measurement th	nen the defau	It degradation coefficier	nt air conditi	oners shall be 0,25.			
*** from 26 September 2018							
Where information relates to multi-spilt air cor	nditioners,the	test result and perform	ance data b	e obtained on the basis	of the performance		
of the outdoor unit, with a combination of indo	or unit(s) rec	ommended by the manu	ufacturer or i	importer.			

Model FDF200VSAWPVH

Model(s): FDC200VS/	A-W / FDF100VH (x2	units)					
Outdoor side heat exchanger of air	r-conditioner :	air					
Indoor side heat exchanger of air-o	conditioner :	air					
Type: vapour compression							
if applicable : electric mot	or						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity				Seasonal space			
	Prated,c	20.0	kW	cooling energy	η s,c	246.0	%
				efficiency			
Declared cooling capacity for part I	load at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization e	fficiency /	
Tj and indoor 27°C/19°C(dry/wet bu	ılb)			auxiliary energy	factor for part load at given outdoo	r temperatures T	ij
T. 0502			٦				1
Tj=+35°C	Pdc	20.0	kW	Tj=+35°C	EERd or	320.0	%
T:00°0	D .	44.7	ا ،		GUEc,bin / AEFc,bin		
Tj=+30°C	Pdc	14.7	kW	Tj=+30°C	EERd or	498.0	%
T:- : 05°0	D4-		1		GUEc,bin / AEFc,bin		
Tj=+25°C	Pdc	9.4	kW	Tj=+25°C	EERd or	737.0	%
T: 00°0	D4-		7,,,,,		GUEc,bin / AEFc,bin		
Tj=+20°C	Pdc	6.8	kW	Tj=+20°C	EERd or	992.0	%
			ו ו		GUEc,bin / AEFc,bin		
Degradation		0.05					
coefficient for	Cdc	0.25	-				
air conditioners**]				
Power consumption in other than 'a	active mode'						
Off mode	P _{OFF}	0.008	kW	Crankcase heate	er mode P _{CK}	0.012	kW
Thermostat-off mode	P _{TO}	0.008	kW	Standby mode	P _{SB}		kW
memostat-on mode	т то	0.024] _{vv}	Standby mode	r SB	0.008	NVV
Other items							,
			_	For air-to-air air	conditioner:	8880	m ³ /h
Capacity control		variable		air flow-rate,outd	door measured] <i>/</i>
			ו				
Sound power level,	L_{WA}	72.0	dB				
outdoor			_				
			ا ر				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
GWP of the		675	kg CO₂eq.				
refrigerant		675	(100years)				
			_				
	Mitsubishi heavy indu						
** If Cdc is not determined by mea	surement then the de	ault degrad	dation coeffic	ent air conditioner	s shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi-	spilt air conditioners,t	he test resu	ult and perfor	mance data be ob	tained on the basis of the performa	ance	
of the outdoor unit, with a combina	tion of indoor unit(s) r	ecommend	led by the ma	nufacturer or impo	orter.		

Information to identify the model(s) to which the	ne information	relates :	FDC200VS	SA-W / FDF100VH (x2 u	units)			
Outdoor side heat exchanger of heat pump :		air		•	•			
Indoor side heat exchanger of heat pump :		air						
Indication if the heater is equipped with a supp	olementary h	eater:	1	No				
if applicable : electric motor								
Parameters shall be declared for the average	heating seas	on , parameters for the	warmer and	d colder heating season	s are optional.			
Item	Symbol	Value Unit		Item	Symbol	١	/alue	Unit
Rated heating capacity				Seasonal space				
	Prated,h	22.4 kW		heating energy	η s,h	1	86.0	%
				efficiency				
Declared heating capacity for part load at indo	or temperatu	ire 20°C		Declared coefficient of	f performance or gas utilizat	tion efficiency	//	
and outdoor temperature Tj				auxiliary energy factor	for part load at given outdo	or temperatu	res Tj	
T _j =-7°C	Pdh	11.1 kW		T _j =-7°C	COPd or	3	30.0	%
		-			GUEh,bin / AEFh,bin			
T _j =+2°C	Pdh	6.8 kW		T _j =+2°C	COPd or	5	0.80	%
					GUEh,bin / AEFh,bin			
T _j =+7°C	Pdh	6.6 kW		T _j =+7°C	COPd or	5	50.0	%
					GUEh,bin / AEFh,bin			
T _j =+12°C	Pdh	6.9 kW		T _j =+12°C	COPd or	6	86.0	%
					GUEh,bin / AEFh,bin			
T _{biv} =bivalent temperature	Pdh	12.5 kW		T _{biv} =bivalent	COPd or	3	800.0	%
				temperature	GUEh,bin / AEFh,bin	_		
T _{OL} =operation limit	Pdh	12.5 kW		T _{OL} =operation limit	COPd or	3	800.0	%
		1			GUEh,bin / AEFh,bin	_		
For air-to-water heat pumps :	Pdh	- kW		For air-to-water heat	COPd or		-	%
T _j =-15°C				pumps:T _j =-15°C	GUEh,bin / AEFh,bin			
(if T _{OL} <-20°C)				(if T _{OL} <-20°C)				
						_		ı
Bivalent temperature	T _{biv}	-10.0 °C		For water-to-air heat				
				pumps:Operation limit			-	°C
Degradation				T _{ol} temperature				ļ
coefficient	C_{dh}	0.25						
heat pumps**								
			-					
								1
Power consumption in modes other than 'activ	e mode'			Supplementary heater		elbu	-	kW
O# d -	В	0.000		back-up heating capac	city			ļ
Off mode Thermostat-off mode	P _{OFF}	0.008 kW 0.032 kW						Ī
Crankcase heater mode	P _{TO} P _{CK}	0.032 kW		Type of energy input		P _{SB} 0	800.0	kW
Crankcase neater mode	' CK	0.012 KVV		Standby mode				ļ.
OIL II			ł					
Other items				F				
0it		variable		For air-to-air heat pum	•		8040	m³/h
Capacity control		variable		air flow-rate,outdoor m	neasured			ļ.
Sound power level,	L_{WA}	74.0 dB		For water-/brine-to-air			_	m ³ /h
outdoor measured				Rated brine or water fi				/
Emissions of nitrogen		mg/kWh		outdoor side heat exch	iai iyoi			l
Emissions of nitrogen oxides(if applicable)	NOx	fuel input						
oxides(ii applicable)	***	GCV						
		GCV						
			1					
GWP of the		kg CO _{2eq.}						
refrigerant		675 (100years)						
remgerant				1				
				1				
Contact details Mitsubishi	heavy indust	ries thermal systems,L	TD.					
** If Cdh is not determined by measurement the				ioners shall be 0,25.				
*** from 26 September 2018		=						
Where information relates to multi-spilt air cor	nditioners the	test result and norfa-	ance data h	e obtained on the basis	of the performance			
of the outdoor unit, with a combination of indo					or the performance			
5. 2.5 Suddor and, with a combination of fluor	o. um.(o) 160	onded by the infallt	dottar6i Ul					

Model FDF250VSAWPVH

Model(s): FDC250VS	A-W / FDF125VH (x2	units)					
Outdoor side heat exchanger of ai	r-conditioner :	air					
Indoor side heat exchanger of air-	conditioner :	air					
Type: vapour compression							
if applicable : electric mot	tor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	•			Seasonal space	,		
3 1 7	Prated,c	24.0	kW	cooling energy	η s,c	228.1	%
				efficiency			
Declared cooling capacity for part	load at given outdoor	temperatur	es	Declared energy	efficiency ratio or gas utilization effici	encv /	
Tj and indoor 27°C/19°C(dry/wet b	_			1	factor for part load at given outdoor te	-	ī
	,			, 3,	, ,	•	,
Tj=+35°C	Pdc	24.0	kW	Tj=+35°C	EERd or]_
			-	1,7 100 0	GUEc,bin / AEFc,bin	262.0	%
Tj=+30°C	Pdc	17.8	kW	Tj=+30°C	EERd or		1
			_	1, 1000	GUEc,bin / AEFc,bin	485.0	%
Tj=+25°C	Pdc	11.5	kW	Tj=+25°C	EERd or		1
,			·	1]-+25 C		645.0	%
Tj=+20°C	Pdc	7.1	kW	Ti-+20°C	GUEc,bin / AEFc,bin		1
,]	Tj=+20°C	EERd or	985.0	%
D d-#			ا ر		GUEc,bin / AEFc,bin		J
Degradation	0.1	0.25					
coefficient for	Cdc	0.20	-				
air conditioners**		<u> </u>	J				
Power consumption in other than '	'active mode'						
0#	В	0.000	ا ا	0	d- D	0.040	1
Off mode	P _{OFF}	0.009	kW	Crankcase heate		0.012	kW
Thermostat-off mode	P _{TO}	0.027	kW	Standby mode	P_{SB}	0.009	kW
Other items							1
0			1	For air-to-air air o	conditioner:	8880	m³/h
Capacity control		variable]	air flow-rate,outd	loor measured]
			1				
Sound power level,	L_WA	73.0	dB				
outdoor			_				
			۱ ا				
If engine driven:	NOx		mg/kWh				
Emissions of nitrogen	***	-	fuel input				
oxides			GCV				
			,				
GWP of the		675	kg CO _{2eq.}				
refrigerant			(100years)				
,	Mitsubishi heavy indus						
** If Cdc is not determined by mea	surement then the def	fault degrad	dation coeffic	ent air conditioner	s shall be 0,25.		
*** from 26 September 2018							
Where information relates to multi	-spilt air conditioners,t	he test resu	ult and perfor	mance data be ob	tained on the basis of the performanc	е	
of the outdoor unit, with a combina	ation of indoor unit(s) re	ecommend	led by the ma	nufacturer or impo	orter.		

Information to identify the model(s) to which t	he information	n relates :	FDC250V	SA-W / FDF125VH (x2 i	units)		
Outdoor side heat exchanger of heat pump :		air		,	,		
Indoor side heat exchanger of heat pump :		air					
Indication if the heater is equipped with a sup	plementary h	neater:		No			
if applicable : electric motor							
Parameters shall be declared for the average	heating sea	son , parameters for the	e warmer an	d colder heating season	s are optional.		
Item	Symbol	Value Unit	_	Item	Symbol	Value	Unit
Rated heating capacity				Seasonal space			
	Prated,h	28.0 kW		heating energy	η s,h	167.0	%
				efficiency			
Declared heating capacity for part load at ind	oor temperat	ure 20°C		Declared coefficient of	f performance or gas utilization effic	ciency /	
and outdoor temperature Tj				auxiliary energy factor	for part load at given outdoor temp	eratures Tj	
							-
T _j =-7°C	Pdh	12.6 kW		T _j =-7°C	COPd or	305.0	%
					GUEh,bin / AEFh,bin		_
T _j =+2°C	Pdh	7.6 kW		T _j =+2°C	COPd or	410.0	%
					GUEh,bin / AEFh,bin		_
T _j =+7°C	Pdh	5.6 kW		T _j =+7°C	COPd or	546.0	%
					GUEh,bin / AEFh,bin		1
T _j =+12°C	Pdh	6.2 kW		T _j =+12°C	COPd or	676.0	%
					GUEh,bin / AEFh,bin		_
T _{biv} =bivalent temperature	Pdh	14.2 kW		T _{biv} =bivalent temperature	COPd or	275.0	%
					GUEh,bin / AEFh,bin		_
T _{OL} =operation limit	Pdh	15.1 kW		T _{OL} =operation limit	COPd or	200.0	%
					GUEh,bin / AEFh,bin		1
For air-to-water heat pumps :	Pdh	- kW		For air-to-water heat	COPd or	-	%
T _j =-15°C				pumps:T _j =-15°C	GUEh,bin / AEFh,bin]
(if T _{OL} <-20°C)				(if T _{OL} <-20°C)			
Bi	_	-10.0 °C		For water-to-air heat			1
Bivalent temperature	T _{biv}	-10.0 °C		pumps:Operation limit	•		°C
Degradation				T _{ol} temperature	1	-	
coefficient	0	0.25		1 % temperature			1
heat pumps**	C _{dh}	0.20					
linear painipo							
			1				
Power consumption in modes other than 'acti	ve mode'			Supplementary heater			1
Power consumption in modes offer than acti	ve mode			back-up heating capac	eibu	-	kW
Off mode	Poff	0.008 kW		back-up neating capac	ыц		1
Thermostat-off mode	P _{TO}	0.035 kW		Type of energy input	_		
Crankcase heater mode	P _{CK}	0.012 kW		Standby mode	P_{SB}	0.008	kW
				otamaby mode		1	_
Other items			7				
				For air-to-air heat pum	nps:	0480	3,,
Capacity control		variable		air flow-rate,outdoor m	neasured	9180	m³/h
							-
Sound power level,	1	75.0 dB		For water-/brine-to-air	heat pumps :		
outdoor measured	L_{WA}	75.0 QB		Rated brine or water fi		-	m³/h
				outdoor side heat exch	hanger		
Emissions of nitrogen	NO	mg/kWh					
oxides(if applicable)	NOx ***	- fuel input					
		GCV					
GWP of the		675 kg CO _{2eq}					
refrigerant		(100years	;)				
1							
		tries thermal systems,L					
** If Cdh is not determined by measurement t	hen the defa	ult degradation coefficie	ent air condi	tioners shall be 0,25.			
*** from 26 September 2018							
Where information relates to multi-spilt air co	nditioners,the	e test result and perforn	nance data l	be obtained on the basis	s of the performance		
of the outdoor unit, with a combination of indo	oor unit(s) red	commended by the man	nufacturer or	importer.			

Model FDF280VSAWPVH

Model(s): FDC280VSA-W / FDF140VH (x2 units)									
Outdoor side heat exchanger of air-conditioner : air									
Indoor side heat exchanger of air-condition	ner:	air							
Type: vapour compression									
if applicable : electric motor									
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit		
Rated cooling capacity				Seasonal space	•				
3 1 7	Prated,c	27.0	kW	cooling energy	η s,c	213.1	%		
				efficiency					
Declared cooling capacity for part load at	niven outdoor	temperature	es	Declared energy ef	ficiency ratio or gas utilization efficien	icv /			
Tj and indoor 27°C/19°C(dry/wet bulb)	,			1	tor for part load at given outdoor tem	•	ï		
,				, , , , , , , , , , , , , , , , , , , ,			,		
Tj=+35°C	Pdc	27.0	kW	Tj=+35°C	EERd or]		
			,	1,7 100 0	GUEc,bin / AEFc,bin	247.0	%		
Tj=+30°C	Pdc	20.0	kW	Tj=+30°C	EERd or				
			,	1,7 100 0	GUEc,bin / AEFc,bin	444.0	%		
Tj=+25°C	Pdc	12.8	kW	Tj=+25°C	EERd or				
			J	17-125 0	GUEc,bin / AEFc,bin	584.0	%		
Tj=+20°C	Pdc	7.3	kW	Tj=+20°C	EERd or				
			J	17-+20 C		972.0	%		
Degradation			1		GUEc,bin / AEFc,bin		J		
coefficient for	Cdc	0.25							
air conditioners**	Cuc		-						
all conditioners			l l						
Power consumption in other than 'active n	iode'								
Off mode	P _{OFF}	0.009	kW	Crankcase heater r	mode P _{CK}	0.012	kW		
Thermostat-off mode	P _{TO}		kW		P _{SB}		kW		
Thermostat-on mode	' то	0.032	IVVV	Standby mode	r SB	0.009	KVV		
Other items)		
Capacity control		veriable	1	For air-to-air air cor		8160	m³/h		
Сараску солног		variable	l l	air flow-rate,outdoo	r measured		J		
			1						
Sound power level,	L_WA	75.0	dB						
outdoor			J						
			1						
If engine driven:	NOx		mg/kWh						
Emissions of nitrogen	***	-	fuel input						
oxides			GCV						
			1						
GWP of the		675	kg CO _{2eq.} (100years)						
refrigerant			(Tooyears)						
	hi heavy indu								
** If Cdc is not determined by measureme	nt then the de	fault degrad	lation coeffic	ent air conditioners s	shall be 0,25.				
*** from 26 September 2018									
Where information relates to multi-spilt air	conditioners,	the test resu	ılt and perfor	mance data be obtair	ned on the basis of the performance				
of the outdoor unit, with a combination of i	ndoor unit(s) i	recommend	ed by the ma	nufacturer or importe	er.				

Information to identify the model(s) to which the	ne information	n relates :	FDC280VS	SA-W / FDF140VH (x2	units)					
Outdoor side heat exchanger of heat pump: air										
Indoor side heat exchanger of heat pump :		air								
Indication if the heater is equipped with a sup	plementary h	eater:	1	10						
if applicable : electric motor										
Parameters shall be declared for the average	heating seas	on , parameters for the	warmer and	l colder heating season	ns are optional.					
Item	Symbol	Value Unit		Item	Symbol	Value	Unit			
Rated heating capacity				Seasonal space						
	Prated,h	30.0 kW		heating energy	η s,h	162.2	%			
				efficiency						
Declared heating capacity for part load at inde	oor temperatu	ıre 20°C		Declared coefficient o	f performance or gas utilization effi	ciency /				
and outdoor temperature Tj				auxiliary energy factor	r for part load at given outdoor tem	peratures Tj				
							,			
T _j =-7°C	Pdh	15.7 kW		T _j =-7°C	COPd or	270.0	%			
					GUEh,bin / AEFh,bin					
T _j =+2°C	Pdh	9.5 kW		T _j =+2°C	COPd or	416.0	%			
					GUEh,bin / AEFh,bin					
$T_j = +7^{\circ}C$	Pdh	6.2 kW		T _j =+7°C	COPd or	501.0	%			
					GUEh,bin / AEFh,bin					
T _j =+12°C	Pdh	7.0 kW		T _j =+12°C	COPd or	673.0	%			
					GUEh,bin / AEFh,bin					
T _{biv} =bivalent temperature	Pdh	17.8 kW		T _{biv} =bivalent temperature	COPd or	235.0	%			
				· ·	GUEh,bin / AEFh,bin					
T _{OL} =operation limit	Pdh	17.8 kW		T _{OL} =operation limit	COPd or	235.0	%			
					GUEh,bin / AEFh,bin					
For air-to-water heat pumps :	Pdh	- kW		For air-to-water heat	COPd or	-	%			
T _j =-15°C				pumps:T _j =-15°C	GUEh,bin / AEFh,bin		J			
(if T _{OL} <-20°C)				(if T _{OL} <-20°C)						
	_	400					1			
Bivalent temperature	T _{biv}	-10.0 °C		For water-to-air heat			°C			
De soudeffer				pumps:Operation limit	·	-	C			
Degradation		0.25		T _{ol} temperature]			
coefficient	C_{dh}	0.25								
heat pumps**										
			1							
L							1			
Power consumption in modes other than 'activ	/e mode'			Supplementary heater	eibu	-	kW			
Off mode	P _{OFF}	0.008 kW		back-up heating capa	city		J			
Thermostat-off mode	P _{TO}	0.035 kW		L			1			
Crankcase heater mode	P _{CK}	0.012 kW		Type of energy input	P_{SB}	0.008	kW			
Oranicase neater mode	· CK	0.012		Standby mode			1			
Other items			┪							
Other items				For air-to-air heat pum	ana.		1			
Capacity control		variable		· '		8400	m³/h			
Capacity Control				air flow-rate,outdoor n	neasureu		,			
Sound power level,				For water /brine to air	hoot numno :		1			
outdoor measured	L_{WA}	77.0 dB		For water-/brine-to-air Rated brine or water f		_	m ³ /h			
outdoor modsured				outdoor side heat excl						
Emissions of nitrogen		mg/kWh		l side float exci	J-:					
oxides(if applicable)	NOx	- fuel input								
(GCV								
			1							
GWP of the		kg CO _{2eq.}								
refrigerant		675 (100years)								
_										
Contact details Mitsubishi	heavy indust	tries thermal systems,L	TD.	· ————						
** If Cdh is not determined by measurement to				oners shall be 0,25.						
*** from 26 September 2018										
Where information relates to multi-spilt air co	nditioners,the	test result and perform	ance data b	e obtained on the basis	s of the performance					
of the outdoor unit, with a combination of indo										
		•								

Models FDF71VH, 100VH, 125VH, 140VH

Model(s): FDF71VH										
ltem	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Cooling capacity (sensible)	$P_{rated,c}$	5.1	kW	Total electric power input	P _{elec}	0.050	kW			
Cooling capacity (latent)	P _{rated,c}	2.0	kW	Sound power level (per speed setting,if applicable)	L _{WA}	55.0	dB			
Heating capacity	$P_{\text{rated,h}}$	8.0	kW							
Contact details	Mitsubishi heavy industries thermal systems,LTD.									

Model(s): FDF100VH									
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit		
Cooling capacity (sensible)	$P_{rated,c}$	7.2	kW	Total electric power input	P _{elec}	0.160	kW		
Cooling capacity (latent)	P _{rated,c}	2.8	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB		
Heating capacity	$P_{\text{rated,h}}$	11.2	kW						
Contact details	Mitsubishi heavy industries thermal systems,LTD.								

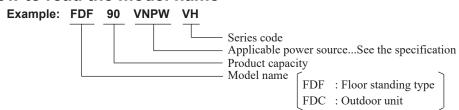
Model(s): FDF125VH										
ltem	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Cooling capacity (sensible)	$P_{\text{rated,c}}$	8.5	kW	Total electric power input	P _{elec}	0.210	kW			
Cooling capacity (latent)	P _{rated,c}	4.0	kW	Sound power level (per speed setting,if applicable)	L _{WA}	67.0	dB			
Heating capacity	$P_{rated,h}$	14.0	kW							
Contact details	Mitsubishi heavy industries thermal systems,LTD.									

Model(s): FDF140VH								
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Cooling capacity (sensible)	$P_{rated,c}$	9.4	kW	Total electric power input	P _{elec}	0.210	kW	
Cooling capacity (latent)	P _{rated,c}	4.6	kW	Sound power level (per speed setting,if applicable)	L _{WA}	67.0	dB	
Heating capacity	P _{rated,h}	16.0	kW					
Contact details	Mitsubishi heavy industries thermal systems,LTD.							

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■ How to read the model name



3.1 SPECIFICATIONS

			Model			FDF71V	NPWVH					
Item					Indoor unit	FDF71VH	Outdoor unit	FDC71VNP-W				
Power source	ce						50Hz / 220V 60Hz					
	Nominal cooling capac	ity (range)	kW			L () - 7.3 (Max.)]					
	Nominal heating capac	, , , , , , , , , , , , , , , , , , , 	kW) - 7.3 (Max.)]					
	Power consumption	Cooling			2.51							
	<u>'</u>	Heating	kW		2.02							
	Max power consumption				3.58							
	Running current	Cooling			11.1/11.6							
		Heating	Α			9.1/						
Operation	Inrush current, max current		—				15.8					
data	Power factor	Cooling Heating	%		98 97							
	EER	Cooling			97 2.82							
	COP	Heating					52 51					
	001	Cooling				0.	51					
	Sound power level	Heating			5	5	6	67				
		Cooling	dB(A)									
	Sound pressure level	Heating	ab(/t)	P-l	Hi: 42 Hi: 39	Me:35 Lo:33	5	54				
	Silent mode sound pres							19				
Exterior dim	nensions (Height × Width		mm		1850 × 60	00 × 329		(+71) × 290				
Exterior app					Cerami			o white				
	Munsell color)				(N8.0) near			near equivalent				
(RAL color)	,				(RAL 7047) ne		,	ear equivalent				
Net weight			kg		4:		. ,	15				
	or type & Q'ty							Twin rotary type) × 1				
	mpressor motor (Starting method)		kW		_	-		ine start				
Refrigerant	oil (Amount, type)	,	L		_	_	0.45 (DIAMONE	FREEZE MB75)				
	(Type, amount, pre-chair	rge length)	kg		R32 1.3	in outdoor unit (Incl. the	e amount for the piping	of 11m)				
Heat exchar		<u> </u>	i J	Lo		r grooved tubing		er grooved tubing				
Refrigerant control						<u> </u>	pansion valve	<u> </u>				
Fan type & Q'ty					Centrifuga	al fan × 1	Propelle	er fan × 1				
	(Starting method)		W		157 < Direct			t line start >				
Air flow	-	Cooling Heating	m³/min	P-I	Hi:18 Hi:16	Me:14 Lo:12	4	12				
Available ex	kternal static pressure		Pa		0)		_				
Outside air					Not po	ssible		_				
Air filter, Qu	ality / Quantity				Plastic net ×		_					
Shock & vib	oration absorber				Rubber sleeve	(for fan motor)	Rubber sleeve (for far	n motor & compressor)				
Electric hea	iter	,	W		_	-	,	_ ' '				
0	Remote control				(Option) Wi	red: RC-EX3A, RC-E5,	RCH-E3 Wireless : RC	N-KIT4-E2				
Operation	Room temperature con	trol				Thermostat b	y electronics					
control	Operation display					-	=					
Safety equip	pments			F	Frost protection	pressor overheat prote , Serial signal error prot d protection (High press Refrigerant I	ection, Indoor fan moto	r error protection,				
	Refrigerant piping size	Liquid line	mm		Ι/U φ9	0.52 (3/8") Pipe φ 6.35	$(1/4^{"}) \times 0.8 O/U \phi 6.35$	5 (1/4")				
	(O.D.)	Gas line	IIIIII			φ 15.88 (5/8") φ 12.7 (1	/2") × 0.8 φ 12.7 (1/2")				
	Connecting method				Flare p	piping	Flare	piping				
Installation	Attached length of pipir	ng	m		_	-		_				
data	Insulation for piping					Necessary (both L	iquid & Gas lines)					
	Refrigerant line (one w	ay) length	m			Max	c.26					
	Vertical height diff. between	O/U and I/U	m			(Outdoor unit is higher)	Max.20 (Outdoor unit	is lower)				
	Drain hose				Hose connecta	able with VP20	Hole size q	20 × 5 pcs.				
Drain pump, max lift height			mm		_	-		_				
Recommen	Α											
L.R.A. (Locked rotor ampere)							.0					
Interconnec	cting wires Size × Core	number			1.5 mm $^2 \times 4$ co	res (Including earth cab	le) / Terminal block (Sci	rew fixing type)				
IP number					IΡ〉	(0	IF	X4				
Standard ac	Standard accessories				Mounting kit Drain elbow, Drain hole grommet							
Option parts	Option parts				Motion sensor : LB-KIT2							
Notes (1) Th	ne data are measured at	the following	condition	ons.			The pipe length is 7.5m.	·				
	Item Indoor air t	emperature	Ou	ıtdoor air	temperature	Stan	dards					
	ration DB	WB		DB	WB							
	Cooling 27°C	19℃		35°C	24°C	ISO51						
, I H	leating 20)°C	1	7°C	6°C	ISO51	E1 L1					

(2) This air-conditioner is manufactured and tested in conformity with the ISO.

Heating

7°C

6°C

ISO5151-H1

⁽³⁾ Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

(4) Select the breaker size according to the own national standard.

⁽⁵⁾ The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	FDF90VNPWVH				
Item				Indoor unit FDF100VH	Outdoor unit FDC90VNP-W			
Power sour	ce				/ 50Hz / 220V 60Hz			
	Nominal cooling capacit	v (range)	kW	<u> </u>	.) - 9.5 (Max.)]			
	Nominal heating capacit	, , ,	kW		.) - 9.5 (Max.)]			
		Cooling		- '	50			
	Power consumption	Heating	kW	2.	24			
	Max power consumption	ı i		4.	46			
	Cooling			11.1	/ 11.6			
	Running current	Heating	Α	9.9 /	10.4			
	Inrush current, max curr			5 .	19			
Operation	tion Cooling			g	98			
data	Power factor Heating		%		98			
	EER Cooling			3.	60			
	COP	Heating			02			
		Cooling			67			
	Sound power level	Heating		65	66			
		Cooling			55			
	Sound pressure level	Heating	dB(A)	P-Hi:53 Hi:51 Me:49 Lo:44	53			
	Silent mode sound	Cooling			52			
	pressure level	Heating		_	50			
Exterior dim	nensions (Height × Width		mm	1850 × 600 × 329	750 × 880 (+88) × 340			
Exterior app		x Boptily		Ceramic white	Stucco white			
(Munsell co				(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent			
(RAL color)	101)			(RAL 7047) near equivalent	(RAL 7044) near equivalent			
Net weight			kg	49	57			
	Compressor type & Q'ty		Ng	——————————————————————————————————————	RMT5118SWP1 (Twin rotary type) × 1			
	Compressor motor (Starting method)		kW	<u>_</u>	Direct line start			
Refrigerant oil (Amount, type)			L		0.675 (DIAMOND FREEZE MB75)			
Refrigerant (Type, amount, pre-charge length)			kg	P32 1 7 in outdoor unit (Incl. th	e amount for the piping of 10m)			
	Heat exchanger				M shape fin & inner grooved tubing			
				Louver fin & inner grooved tubing	pansion valve			
3	Refrigerant control			Centrifugal fan × 1	Propeller fan × 1			
	Fan type & Q'ty Fan motor (Starting method)		W	157 < Direct line start >	86 < Direct line start >			
T all motor (Starting method)	Cooling			59			
Air flow		Heating	m³/min	P-Hi:27 Hi:26 Me:23 Lo:19	55			
Available ov	ternal static pressure	ricating	Pa	0	_			
Outside air			ıα	Not possible	_			
	ality / Quantity			Plastic net × 1 (Washable)	_			
	oration absorber			Rubber sleeve (for fan motor)	Pubbar alagua (for fan mater 2 compressor)			
Electric hea			W	hubber sleeve (for fair filotor)	Rubber sleeve (for fan motor & compressor)			
Liectric riea	Remote control		VV	(Option) Wired : BC EV3A BC E5	, RCH-E3 Wireless : RCN-KIT4-E2			
Operation	Room temperature control	rol			by electronics			
control		101		memostat t	by electronics			
	Operation display			Compressor averbeat prote	ection, Overcurrent protection,			
Safety equi	pments			Frost protection, Serial signal error prot Heating overload protection (High pres	section, overleast protection, lection, Indoor fan motor error protection, sure control), Cooling overload protection leak detection			
	Refrigerant piping size	Liquid line	mm -		(1/4") × 0.8 O/U φ 6.35 (1/4")			
	(O.D.)	Gas line		φ 15.88 (5/8") φ 15.88 (
	Connecting method			Flare piping	Flare piping			
Installation	Attached length of pipin	g	m	_	_			
data	110			Necessary (both I	Liquid & Gas lines)			
	Refrigerant line (one way) length		m		x.25			
Vertical height diff. between O/U and I/U		m	<u> </u>	Max.20 (Outdoor unit is lower)				
Drain hose				Hose connectable with VP20	Hole size φ20 × 4 pcs.			
Drain pump, max lift height			mm	_	_			
Recommended breaker size			A A	-				
	L.R.A. (Locked rotor ampere)			5	.0			
Interconnec	Interconnecting wires Size × Core number			1.5mm ² × 4 cores (Including earth cab	ole) / Terminal block (Screw fixing type)			
IP number				IPX0	IPX4			
Standard ad	ccessories			Mounting kit	Drain elbow, Drain hole grommet			
Option part	S				sor : LB-KIT2			
	o data are measured at t	L - £-11	a a m diti a		The pine length is 7 Fm			

Notes (1) The data are measured at the following conditions.

The pipe length is 7.5m.

Item	Indoor air t	emperature	Outdoor air	temperature	Standards
Operation	DB	WB	DB WB		Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

			Model	EDE100\	/NPWVH					
Item			Wodel	Indoor unit FDF100VH	Outdoor unit FDC100VNP-W					
Power source	ce				/ 50Hz / 220V 60Hz					
	Nominal cooling capacity	(range)	kW	10.0 [2.1 (Min	.) - 10.2 (Max.)]					
	Nominal heating capacity	(range)	kW		.) - 10.4 (Max.)]					
	Power consumption	Cooling		3.39						
		Heating	kW		71					
	Max power consumption	10 "			46					
	Running current	Cooling		15.0 / 15.7						
	Heating		A		/ 12.6					
Operation	Inrush current, max current				19 8					
l .	Power factor	Cooling Heating	% -							
data	EER	Cooling		98 2.95						
	COP	Heating			69					
		Cooling			68					
	Sound power level	Heating		65	67					
		Cooling			56					
	Sound pressure level	Heating	dB(A)	P-Hi:53 Hi:51 Me:49 Lo:44	54					
	Silent mode sound	Cooling			52					
	pressure level	Heating		_	50					
Exterior dim	nensions (Height × Width ×	Depth)	mm	1850 × 600 × 329	750 × 880 (+88) × 340					
Exterior app				Ceramic white	Stucco white					
(Munsell col	lor)			(N8.0) near equivalent	(4.2Y7.5 / 1.1) near equivalent					
(RAL color)				(RAL 7047) near equivalent	(RAL 7044) near equivalent					
Net weight			kg	49	57					
	Compressor type & Q'ty			-	RMT5118SWP1 (Twin rotary type) × 1					
Compressor motor (Starting method)			kW	_	Direct line start					
Refrigerant oil (Amount, type)			L		0.675 (DIAMOND FREEZE MB75)					
Refrigerant (Type, amount, pre-charge length)			kg	,	e amount for the piping of 10m)					
Heat exchanger Refrigerant control			Louver fin & inner grooved tubing	M shape fin & inner grooved tubing						
Fan type &				Centrifugal fan × 1	pansion valve Propeller fan × 1					
	Starting method)		W	157 < Direct line start >	86 < Direct line start >					
,	otarting method)	Cooling			63					
Air flow		Heating	m³/min	P-Hi: 27 Hi: 26 Me: 23 Lo: 19	55					
Available ex	ternal static pressure	1	Pa	0	_					
Outside air				Not possible	_					
Air filter, Qu	ality / Quantity			Plastic net × 1 (Washable)	_					
Shock & vib	ration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)					
Electric hea	ter		W	_	_					
Operation	Remote control			(Option) Wired: RC-EX3A, RC-E5,	RCH-E3 Wireless : RCN-KIT4-E2					
control	Room temperature contro	ol		Thermostat b	by electronics					
	Operation display			<u> </u>	= '					
Safety equip	oments			Frost protection, Serial signal error prot Heating overload protection (High press	ction, Overcurrent protection, ection, Indoor fan motor error protection, sure control), Cooling overload protection eak detection					
	Refrigerant piping size (O.D.)	Liquid line Gas line	mm		(1/4") × 0.8 O/U φ 6.35 (1/4") 5/8") × 0.8 φ 15.88 (5/8")					
	Connecting method	Gas IIIIe	+	φ 13.86 (3/6) φ 13.86 (3/6)	Flare piping					
Installation	Attached length of piping		m	Flare pipilig —	Flare piping					
data	Insulation for piping									
	Refrigerant line (one way) length	m		x.25					
	Vertical height diff. between O		m		Max.20 (Outdoor unit is lower)					
Drain hose				Hose connectable with VP20	Hole size ϕ 20 × 4 pcs.					
Drain pump, max lift height			mm	-	_ :					
Recommended breaker size			Α	<u> </u>	_					
	L.R.A. (Locked rotor ampere)			5	.0					
	Interconnecting wires Size x Core number			<u> </u>	le) / Terminal block (Screw fixing type)					
IP number				IPX0	IPX4					
Standard ac				Mounting kit	Drain elbow, Drain hole grommet					
Option parts	S no data are measured at th				for: LB-KIT2					
NIOTO (1) Th		- 4 - 11			the a residual terminate to 7 Final					

Notes (1) The data are measured at the following conditions.

The pipe length is 7.5m.

Item	Indoor air t	Indoor air temperature		temperature	Standards
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C		7°C	6°C	ISO5151-H1

- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

Unit:mm

3.2 EXTERIOR DIMENSIONS

- (2) Outdoor units Model FDC71VNP-W

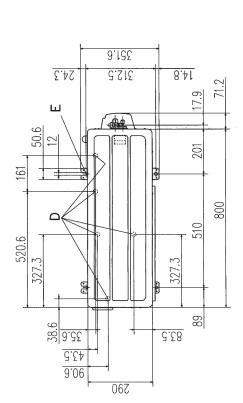
Notes
(1) It must not be surraunded by walls on the faur sides
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15 mm.
(3) Where the unit is subject to strong winds, loy it in such a direction that the blower autlet faces perpendicularly

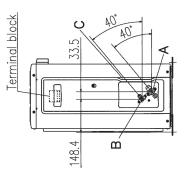
to the dominant wind direction.

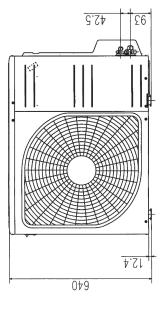
(4) Leave fin or more space done the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right comer of the front panel.

Minimum installation space

	Ν	180	Ope	80	Ope
	Ш	280	Open	80	250
	II	280	75	80	Open
	- 1	Open	100	100	250
	Examples of installation Dimensions	11	L2	L3	L4

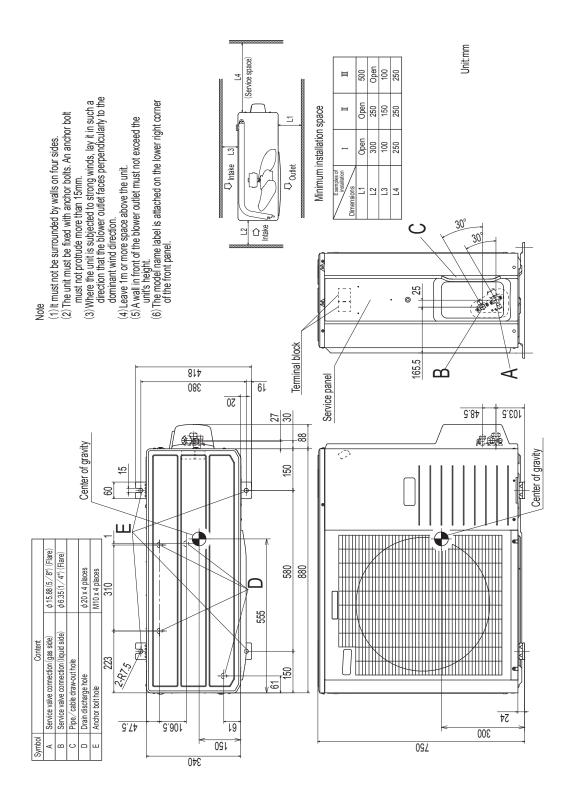






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Models FDC90VNP-W, 100VNP-W





(3) Remote control (Option parts)See page 15.

3.3 ELECTRICAL WIRING

- (2) Outdoor units **Model FDC71VNP-W**

IdrKS
Description
Compressor motor
Connector
Electric expansion valve (coil)
Fan motor
Reactor
Heat exchanger temperature sensor (outdoor unit)
Outdoor air temperature sensor
Discharge pipe temperature sensor
Solenoid coil for 4-way valve

FMo

Ŧ TH3 王

	Color	BLACK	BROWN	ORANGE	D	WHITE	YELLOW	YELL OW ZGREEN
COIOI IIIDIKS	Mark	BK BL	BR BR	OR OR	RD RED	WH W	YE YE	At At

Meaning of marks

Item

(MH) 14 L 250V CNEEV (WH) PAM ¥ ₩ ¥ (BL) T12 CNTH (BK) <u>~</u> ~Æ ≣ T11 (BL) PCB ASSY PCB | (RD) CN20S (BK) € ME (MH) Z D Power source 1 Phase 220/230/240V 50HZ/220V 60HZ TERMINAL BLOCK 2 TERMINAL BLOCK 1 1 3 3 4 POWER CABLE SIGNAL WIRE TO INDOOR UNIT

Indoot-outdoor wire size x number Power cable length (m) Power cable size (mm²) Power cable, indoor-outdoor connecting wires MAX running current (A) Model

Earth wire size

(mm₅)

5.

1.5mm² x 4

 $\frac{\circ}{2}$

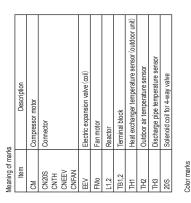
2.0

5.8

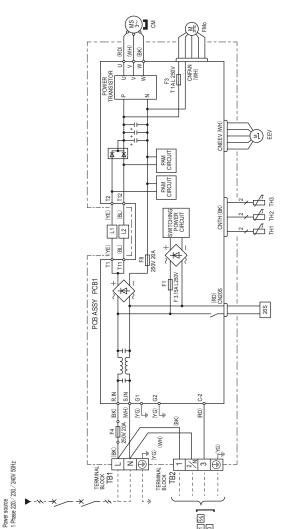
7

The specifications shown in the above table are for units without heaters. For units with heaters, refer
to the installation instructions or the construction instructions of the indoor unit.
Switchiger of Circlib treader capacity which is calculated from MAX. over current should be chosen
along the regulations in each country.
The cable specifications are based on the assumption that a metal or plastic conduit is used with no
more than three cobles contained in a conduit and a voltage drop is 2%. For an installation falling
outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation
in effect in each country.

Models FDC90VNP-W, 100VNP-W



Color	Black	Blue	Red	White	Yellow	Yellow Green
Mark	¥	BL	RD	WH	Æ	УG



Earth wire size (mm²)	1.5
Indoor—outdoor wire size X number	1.5mm ² × 4
Power cable length (m)	4-
Power cable size (mm ²)	2.5
MAX running current (A)	19
Model	90, 100

Power cable, indoor-outdoor connecting wires

- The specifications shown in the above table are for units without heaters. For units with heaters, refer
 to the installation instructions or the construction instructions of the indoor unit.
 Switchgear of circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
 The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these containors, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

POWER CABLE 1 24 SIGNAL WIRE 3 TO INDOOR UNIT

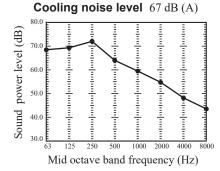
3.4 NOISE LEVEL

Notes(1) The data are based on the following conditions.

Ambient air temperature: Indoor unit 27°CWB. Outdoor unit 35°CDB.

- (2) The data in the chart are measured in an anechoic room.
- (3) The noise levels measured in the field are usually higher than the data because of reflection.
- (2) Outdoor units
 - (a) Sound power level

Model FDC71VNP-W

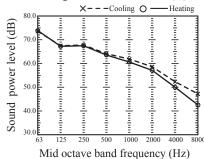


Heating noise level 67 dB (A) Sound power level (dB) 60.0

Mid octave band frequency (Hz)

Model FDC90VNP-W

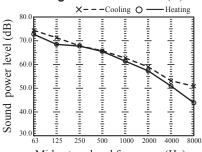
Cooling noise level 67 dB (A) Heating noise level 66 dB (A)



Model FDC100VNP-W

50.0

Cooling noise level 68 dB (A)Heating noise level 67 dB (A)



Mid octave band frequency (Hz)

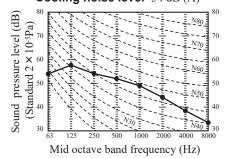
(b) Sound pressure level

Measured based on ISO-T1, JIS B 8616

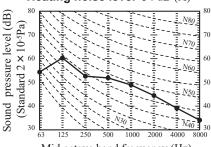
Mike position: at highest noise level in position as mentined below

Distance from front side 1m Height

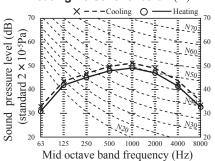
Model FDC71VNP-W Cooling noise level 54 dB (A)



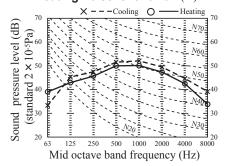
Heating noise level 54 dB (A)



Model FDC90VNP-W Cooling noise level 55 dB (A) Heating noise level 53 dB (A)



Model FDC100VNP-W Cooling noise level 56 dB (A) Heating noise level 54 dB (A)

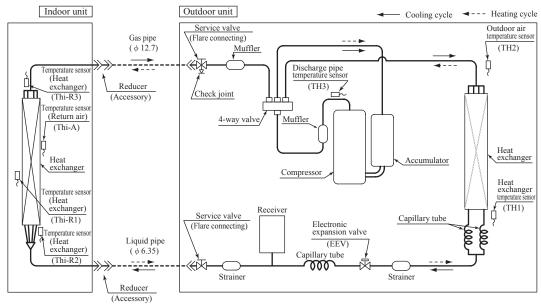


3.5 TEMPERATURE DISTRIBUTION

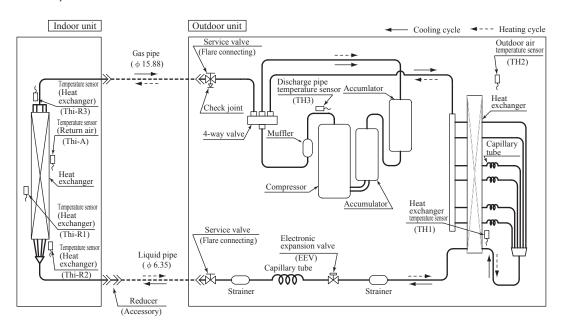
See page 27 of 1.5 chapter.

3.6 PIPING SYSTEM

Model 71



Models 90,100



Preset point of the protective devices

Parts name	Mark	Equipped unit	71 model	90,100 model	
Temperature sensor (for protection overloading in heating)	Thi-R1 or	Indoor unit	Active 63°C, Inactive 56°C		
Temperature sensor (for frost prevention)	Thi-R2	maoor unit	Active 1.0℃,	Inactive 10°C	
Temperature sensor (for protection high pressure in cooling)	TH1	Outdoor unit	Active 62°C Inactive 45-50°C	Active 60°C Inactive 50°C	
Temperature sensor (for detecting discharge pipe temperature)	тнз		Active 115℃,	Inactive 95℃	

3.7 RANGE OF USAGE & LIMITATIONS

		See next page.
Operating temperature rar	nge	When used below -5°C, install a snow hood (prepared on site).
Recommendable area to in	nstall	Considering to get sufficient heating capacity, the area where the averaged lowest ambient air temperature in day time during winter is above 0°C, and it has no accumulation of snow.
Installation site		The limitations of installation space are shown in the page for exterior dimensions. Install the indoor unit at least 2.5m higher than the floor surface.
Temperature and humidity indoor unit (Note 2)	conditions surrounding the	Dew point temperature : 23°C or less, relative hummdity : 80% or less
Limitations on unit and pip	ing installation	See page 188.
Compressor	Cycle Time	13 minutes or more (from OFF to OFF) or (from ON to ON)
ON-OFF cycling	Stop Time	3 minutes or more
	Voltage range	Rating ±10%
Power source	Voltage drop at start-up	Min.85% of rating
	Phase-to-phase unbalance	3% or less

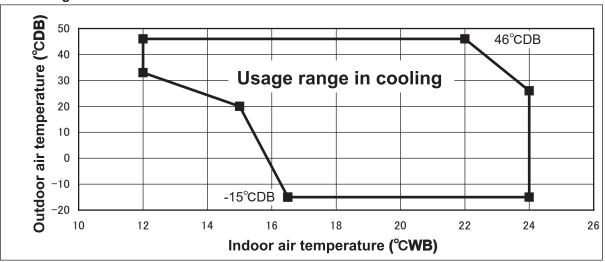
Note 1. Do not install the unit in places which:

- 1) Flammable gas may leak.
- 2) Carbon fiber, metal particles, powder, etc. are floating.
- 3) Cosmetic or special sprays are used frequently.
- 4) Exposed to oil splashes or steam (e.g. kitchen and machine plant).
- 5) Exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent).
- 6) Exposed to ammonia substance (e.g. organic fertilizer).
- 7) Matters affecting devices, such as sulfuric gas, chlorine gas, acid, alkali, etc. may generate or accumulate.
- 8) Chimney smoke is hanging.
- 9) Sucking the exhaust gas from heat exchanger.
- 10) Adjacent to equipment generating electromagnetic waves or high frequency waves.
- 11) There is light beams that affect the receiving device of indoor unit in case of the wireless specification.
- 12) Snow falls heavily.
- 13) At an elevation of 1000 meters or higher.
- 14) On mobile machine (e.g. vehicle, ship, etc.)
- 15) Splashed with water to indoor unit (e.g. laundry room).
- Note 2. If ambient temperature and humidity exceed the above conditions, add polyurethane foam insulation on the outer plate (10mm or thicker) of indoor unit.

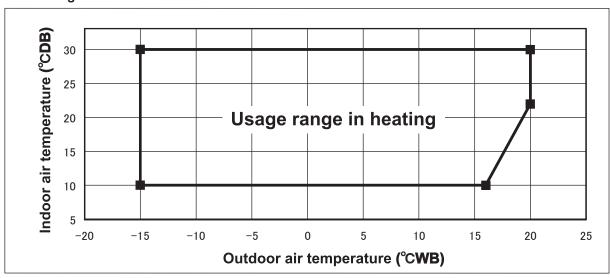
Note 3. Both gas and liquid pipes need to be coverd with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.

Operating temperature range





Heating



Decline in cooling and heating capacity or operation stop may occur when the outdoor unit is installed in places where natural wind can increase or decrease its design air flow rate.

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"CAUTION" Cooling operation under low outdoor air temperature conditions

PAC models can be operated in cooling mode at low outdoor air temperature condition within above temperature range. However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]

In case of severely low temperature condition

- 1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
- 2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, mount the flex flow adapter (prepared as optional part) or like such devices onto the outdoor unit in order to divert the strong wind.

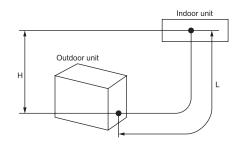
[Reason]

Under the low outdoor air temperature conditions of -5°C or lower, the outdoor fan is controlled at lower or lowest speed by outdoor fan control, but if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop more.

This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

Limitation on unit and p	Limitation on unit and piping installation											
Descriptions		Model for outdoor unit	Dimensional limitations	Marks appearing in the drawing								
One-way pipe length		FDC71VNP-W	≦ 26m									
One-way pipe length		FDC90, 100VNP-W	≦ 25m	L								
Elevation difference between	When the outdoor unit is positioned higher	FDC71-100VNP-W	≦ 20m	н								
indoor and outdoor unit	When the outdoor unit is positioned lower	1 DC/ 1- 100 VINF-VV	≦ 20m	П								

Note FDC71–100VNP-W can be used for only single type.



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3.8 SELECTION CHART

Correct the cooling and heating capacity in accordance with the operating conditions. The net cooling and heating capacity can be obtained in the following way.

Net capacity = Capacity shown in the capacity tables (3.8.1) × Correction factors shown in the table (3.8.2) (3.8.3) (3.8.4)

Caution: In case that the cooling operation during low outdoor air temperature below -5°C is expected, install the outdoor unit where it is not influenced by natural wind. Otherwise protection control by low pressure will be activated much more frequently and it will cause insufficient capacity or breakdown of the compressor in worst case.

3.8.1 Capacity tables

Model FDF71VNPWVH Indoor unit FDF71VH Outdoor unit FDC71VNP-W

Cooling n	node															(kW)	Heati
Outdoor	Indoor air temperature													Out			
air	18°	CDB	21°	CDB	23°	CDB	26°	CDB	27°	CDB	28°	CDB	31°0	CDB	33°	CDB	tem
temperature	12°0	CWB	14°(CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°0	CWB	24°(CWB	°CD
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	-14.
11	İ				5.91	4.63	6.25	4.97	6.42	4.93	6.60	4.88	6.95	5.12	7.30	5.01	-13.
13					5.86	4.61	6.20	4.95	6.37	4.91	6.56	4.87	6.94	5.12	7.31	5.01	-11.
15	Ī				5.81	4.59	6.15	4.93	6.32	4.89	6.52	4.85	6.92	5.11	7.32	5.01	-9.5
17					5.75	4.56	6.09	4.91	6.27	4.87	6.48	4.84	6.90	5.11	7.33	5.02	-7.5
19	ĺ				5.79	4.58	6.14	4.93	6.31	4.89	6.52	4.85	6.92	5.11	7.33	5.02	-5.5
21					6.00	4.67	6.18	4.95	6.36	4.90	6.55	4.86	6.94	5.12	7.34	5.02	-3.0
23					6.29	4.79	6.55	5.09	6.74	5.05	6.93	5.00	7.31	5.24	7.70	5.12	-1.0
25			6.33	5.11	6.59	4.92	6.92	5.23	7.11	5.18	7.30	5.13	7.68	5.36	8.06	5.23	1.0
27			6.50	5.19	6.89	5.05	7.29	5.38	7.49	5.33	7.70	5.28	8.11	5.51			2.0
29			6.42	5.15	6.80	5.01	7.19	5.34	7.40	5.30	7.60	5.24	8.01	5.47			3.0
31			6.33	5.11	6.71	4.97	7.10	5.31	7.30	5.26	7.50	5.20	7.90	5.43			5.0
33	5.90	4.78	6.30	5.10	6.62	4.93	7.00	5.27	7.20	5.22	7.40	5.17	7.79	5.40			7.0
35	5.80	4.73	6.17	5.04	6.53	4.89	6.91	5.23	7.10	5.18	7.29	5.13	7.68	5.36			9.0
37	5.52	4.59	5.88	4.90	6.22	4.76	6.58	5.10	6.77	5.06	6.97	5.01	7.35	5.25			11.5
39	5.25	4.46	5.59	4.77	5.92	4.63	6.26	4.98	6.45	4.94	6.64	4.89	7.01	5.14			13.5
41	4.98	4.33	5.30	4.64	5.61	4.51	5.94	4.85	6.12	4.82	6.31	4.78	6.68	5.04			15.5
43	4.70	4.20	5.01	4.52	5.30	4.38	5.62	4.73	5.80	4.70	5.98	4.67	6.34	4.93			16.5

-	Heating	mode	: HC				(kW)				
	Outdo	or air		Indoor	air temp	erature					
П	tempe	rature	°CDB								
	°CDB	°CWB	16	18	20	22	24				
	-14.5	-15	3.93	3.88	3.83	3.78	3.74				
	-13.5	-14	4.07	4.02	3.98	3.93	3.88				
	-11.5	-12	4.36	4.31	4.27	4.22	4.17				
П	-9.5	-10	4.65	4.61	4.56	4.51	4.46				
П	-7.5	-8	4.94	4.90	4.85	4.80	4.75				
П	-5.5	-6	5.25	5.20	5.14	5.09	5.03				
П	-3.0	-4	5.55	5.50	5.44	5.38	5.32				
П	-1.0	-2	5.85	5.80	5.74	5.67	5.61				
Ш	1.0	0	6.16	6.10	6.03	5.97	5.90				
П	2.0	1	6.31	6.25	6.18	6.11	6.04				
П	3.0	2	6.47	6.42	6.36	6.30	6.23				
П	5.0	4	6.80	6.77	6.73	6.66	6.59				
П	7.0	6	7.12	7.11	7.10	7.03	6.96				
П	9.0	8	7.49	7.48	7.47	7.41	7.36				
П	11.5	10	7.85	7.84	7.83	7.80	7.76				
	13.5	12	7.29	7.29	7.28	7.26	7.23				
П	15.5	14	6.73	6.73	6.74	6.72	6.71				
	16.5	16	6.17	6.18	6.19	6.19	6.18				

PGA000Z846

Model FDF90VNPWVH Indoor unit FDF100VH Outdoor unit FDC90VNP-W

Cooling mode Indoor air temperature Outdoor 21°CDB 18°CDB 23°CDB 26°CDB 27°CDB 28°CDB 31°CDB 33°CDB emperatu 12°CWB 14°CWB 16°CWB 18°CWB 19°CWB 20°CWB 22°CWB 24°CWB °CDB TC SHC TC SHC TC SHC TC SHC TC SHC TC SHC TC SHC TC SHC 8.51 6.97 9.11 7.44 9.42 7.40 7.34 7.73 10.82 7.58 11 9.70 10.26 13 7.43 7.40 7.73 8.42 6.94 9.09 9.42 9.70 10.26 10.82 15 7.42 9.43 7.40 7.35 7.59 8.32 6.90 9.06 9.71 10.27 7.74 10.83 17 9.04 7.41 9.44 7.41 7.74 7.59 8.23 6.86 9.72 7.35 10.27 10.83 19 8.36 6.91 9.05 7.42 9.39 7.39 9.67 7.33 10.22 7.72 21 8.76 7.08 7.42 9.34 7.70 9.06 9.61 10.16 23 8.75 7.08 9.12 7.44 9.40 7.39 9.67 7.33 10.21 7.72 10.75 7.56 7.47 7.41 7.73 10.79 7.58 25 8.38 7.22 8.74 7.07 9.19 9.46 9.73 7.35 10.26 27 8.21 7.15 8.73 7.07 9.25 7.50 9.52 7.44 7.37 10.33 7.76 9.79 7.12 7.39 29 7.45 7.71 8.15 8.62 7.02 9.13 9.39 9.66 10.19 31 8.09 7.09 8.52 6.98 9.00 7.40 9.26 7.34 9.52 7.28 10.05 7.67 33 7.54 6.58 7.07 8.41 6.93 8.87 7.35 9.13 7.29 9.91 7.62 8.05 9.39 7.23 7.40 7.89 8.74 9.00 7.24 7.19 7.57 35 6.52 7.00 8.31 6.89 7.30 9.26 9.77 8.65 7.12 39 6.82 6.24 7.29 6.74 7.68 6.63 8.07 7.04 8.29 6.99 8.52 6.93 8.97 7.32 41 6.54 6.11 6.99 6.60 7.37 6.51 7.73 6.92 7.94 6.86 8.15 6.80 8.56 7.19 7.05 6.38 7.40 7.59 6.74 6.68 43 6.25 5.97 6.69 6.47 6.79 7.78 8.16 7.07

-	Heating	mode	: HC				(kW)				
	Outdo	or air		Indoor air temperature							
	tempe	rature		°CDB							
	°CDB	°CWB	16	18	20	22	24				
	-14.5	-15	4.92	4.85	4.78	4.72	4.65				
	-13.5	-14	5.11	5.04	4.97	4.90	4.84				
	-11.5	-12	5.48	5.41	5.35	5.28	5.21				
	-9.5	-10	5.86	5.79	5.72	5.65	5.58				
	-7.5	-8	6.23	6.16	6.09	6.02	5.94				
	-5.5	-6	6.64	6.57	6.49	6.41	6.33				
	-3.0	-4	7.05	6.97	6.89	6.80	6.72				
	-1.0	-2	7.45	7.37	7.29	7.20	7.10				
	1.0	0	7.86	7.77	7.68	7.59	7.49				
	2.0	1	8.06	7.97	7.88	7.78	7.68				
	3.0	2	8.26	8.18	8.11	8.01	7.91				
	5.0	4	8.64	8.60	8.55	8.46	8.37				
	7.0	6	9.03	9.02	9.00	8.91	8.82				
	9.0	8	9.50	9.46	9.41	9.37	9.32				
	11.5	10	9.97	9.90	9.82	9.82	9.82				
	13.5	12	10.39	10.38	10.36	10.35	10.35				
	15.5	14	10.82	10.86	10.89	10.88	10.87				
	16.5	16	11.24	11.34	11.43	11.41	11.39				

(kW)

Notes(1) These data show average status

Depending on the system control, there may be ranges where the operation is not conducted continuously.

6.89 6.61

7.06 6.55

6.58 6.19

These data show the case where the operation frequency of a compressor is fixed. (2) Capacities are based on the following conditions.

Corresponding refrigerant piping length: 7.5m Level difference of Zero.

(3) Symbols are as follows TC :Total cooling capacity (kW) SHC :Sensible heat capacity (kW) HC :Heating capacity (kW) PGA000Z846

(kW)

Outdoor unit FDC100VNP-W Model FDF100VNPWVH Indoor unit FDF100VH

Cooling n	node															(kW)	Heatin	g mode	: HC
Outdoor							Ind	oor air t	emperat	ure							Outo	oor air	
air	18°	CDB	21°0	CDB	23°0	CDB	26°0	DDB	27°0	CDB	28°0	CDB	31°0	CDB	33°(CDB	temp	erature	
temperature	12°0	CWB	14°0	CWB	16°0	CWB	18°0	CWB	19°0	CWB	20°0	CWB	22°C	CWB	24°0	CWB	°CDB	°CWB	16
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	-14.5	-15	5.46
11					9.12	7.23	9.67	7.66	9.94	7.60	10.23	7.53	10.82	7.92	11.41	7.76	-13.5	-14	5.68
13					9.40	7.35	9.76	7.70	9.94	7.60	10.24	7.54	10.82	7.92	11.41	7.76	-11.5	-12	6.10
15					9.67	7.47	9.85	7.73	9.95	7.60	10.24	7.54	10.83	7.92	11.41	7.76	-9.5	-10	6.52
17					9.94	7.59	9.95	7.77	9.95	7.60	10.24	7.54	10.83	7.92	11.41	7.76	-7.5	-8	6.95
19					9.66	7.47	9.82	7.72	9.89	7.58	10.18	7.52	10.76	7.90	11.33	7.74	-5.5	-6	7.39
21					9.42	7.36	9.68	7.66	9.83	7.55	10.12	7.49	10.69	7.88	11.26	7.72	-3.0	-4	7.84
23					9.51	7.40	9.88	7.74	10.07	7.64	10.37	7.58	10.97	7.97	11.56	7.81	-1.0	-2	8.29
25			9.15	7.58	9.60	7.44	10.07	7.82	10.32	7.74	10.63	7.68	11.25	8.06	11.87	7.90	1.0	0	8.74
27			9.12	7.57	9.69	7.48	10.26	7.90	10.56	7.83	10.86	7.76	11.45	8.13			2.0	1	8.96
29			9.00	7.51	9.55	7.42	10.13	7.84	10.42	7.78	10.71	7.71	11.30	8.08			3.0	2	9.18
31			8.87	7.45	9.42	7.36	9.99	7.79	10.28	7.73	10.57	7.66	11.15	8.03			5.0	4	9.60
33	8.24	6.93	8.82	7.43	9.29	7.31	9.85	7.73	10.14	7.67	10.43	7.61	11.00	7.98			7.0	6	10.03
35	8.04	6.83	8.61	7.33	9.16	7.25	9.72	7.68	10.00	7.62	10.28	7.55	10.85	7.93			9.0	8	10.51
37	7.62	6.62	8.15	7.12	8.67	7.04	9.20	7.48	9.48	7.42	9.75	7.36	10.30	7.75			11.5	10	10.99
39	7.19	6.41	7.70	6.92	8.19	6.84	8.69	7.28	8.96	7.23	9.22	7.17	9.75	7.57			13.5	12	11.24
41	6.77	6.22	7.24	6.71	7.70	6.64	8.18	7.08	8.44	7.04	8.69	6.99	9.20	7.39			15.5	14	11.50
43	6.34	6.01	6.79	6.52	7.22	6.45	7.67	6.89	7.91	6.85	8.16	6.80	8.66	7.22			16.5	16	11.75
46	5.71	5.60	6.11	5.99	6.49	6.16	6.90	6.61	7.13	6.57	7.37	6.54	7.83	6.97					

	. :		,					*****
1		Outdo	or air		Indoor	air temp	erature	
1	Ш	tempe	rature			°CDB		
		°CDB	°CWB	16	18	20	22	24
1	П	-14.5	-15	5.46	5.40	5.33	5.26	5.18
1	П	-13.5	-14	5.68	5.61	5.54	5.47	5.39
1	П	-11.5	-12	6.10	6.03	5.96	5.88	5.81
1	П	-9.5	-10	6.52	6.45	6.38	6.30	6.22
1	Ш	-7.5	-8	6.95	6.87	6.79	6.71	6.63
	Ш	-5.5	-6	7.39	7.32	7.25	7.16	7.07
1	П	-3.0	-4	7.84	7.77	7.70	7.61	7.51
1	Ш	-1.0	-2	8.29	8.22	8.15	8.05	7.95
1		1.0	0	8.74	8.67	8.60	8.50	8.39
	Ш	2.0	1	8.96	8.90	8.83	8.72	8.61
1	Ш	3.0	2	9.18	9.12	9.06	8.96	8.86
1	Ш	5.0	4	9.60	9.57	9.53	9.44	9.35
	Ш	7.0	6	10.03	10.01	10.00	9.92	9.85
1	Ш	9.0	8	10.51	10.51	10.51	10.46	10.41
	Ш	11.5	10	10.99	11.00	11.02	10.99	10.97
1		13.5	12	11.24	11.28	11.31	11.29	11.27
	Ш	15.5	14	11.50	11.55	11.60	11.58	11.56
		16.5	16	11.75	11.82	11.89	11.87	11.85

Notes(1) These data show average status.

Depending on the system control, there may be ranges where the operation is not conducted continuously. These data show the case where the operation frequency of a compressor is fixed.

These data show the case where the operation fre
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length: 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC: Total cooling capacity (kW)
SHC: Sensible heat capacity (kW)
HC: Heating capacity (kW)

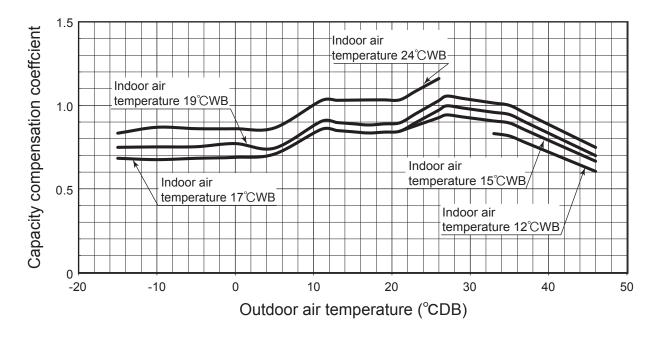
PGA000Z846

[References data]

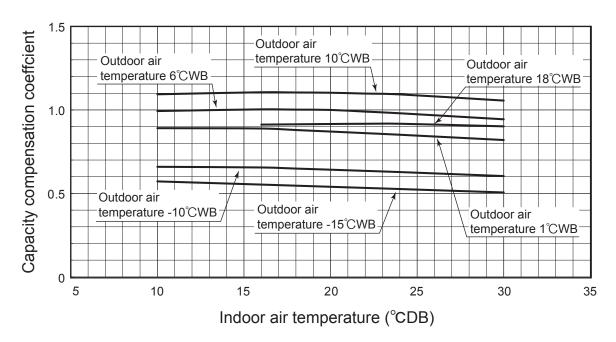
The following figures show capacity variation against outdoor and indoor temperature. Capacity compensation coefficient shows the ratio of maximum capacity at any temperature to nominal capacity.

(I) Model FDC71VNP-W

1 Cooling

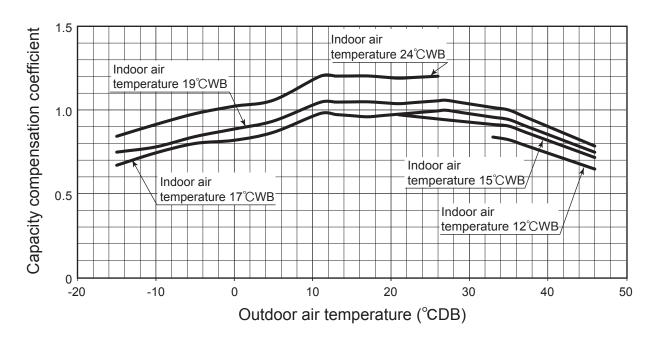


2 Heating

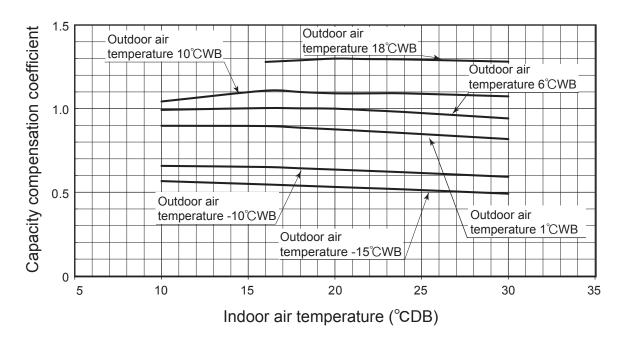


(II) Model FDC90VNP-W

1 Cooling

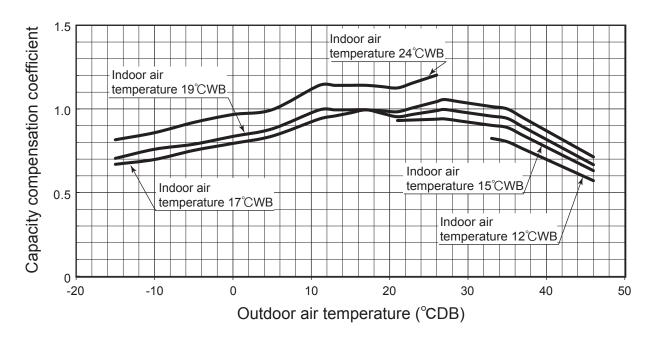


2 Heating

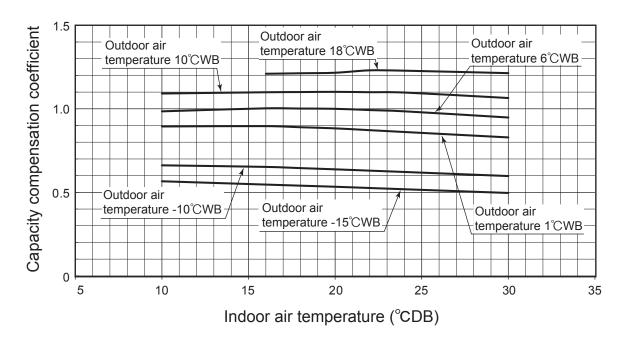


(Ⅲ) Model FDC100VNP-W

1 Cooling



2 Heating



3.8.2 Correction of cooling and heating capacity in relation to air flow rate control (Fan speed)

Fan speed		P-Hi	Hi	Me	Lo
Coefficient	Cooling	1.00	0.95	0.93	0.90
Coemicient	Heating	1.00	0.97	0.96	0.94

3.8.3 Correction of cooling and heating capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling and heating capacity in relation to the one way equivalent piping length between the indoor and outdoor units.

Equivalent piping length (m)	7.5	10	15	20	25	30
Cooling	1	0.99	0.97	0.96	0.94	0.92
Heating	1	1	1	1	1	1

3.8.4 Height difference between the indoor unit and outdoor unit

When the outdoor unit is located below indoor units in cooling mode, or when the outdoor unit is located above indoor units in heating mode, the correction coefficient mentioned in the below table should be subtracted from the value in the above table.

Height difference between the indoor unit and outdoor unit in the vertical height difference	5m	10m	15m	20m
Adjustment coefficient	0.99	0.98	0.97	0.96

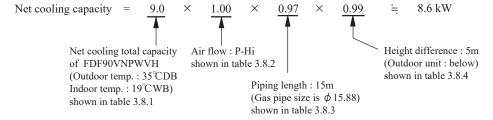
Piping length limitations

Model	FDC71VNP-W	FDC90, 100VNP-W	
Max. one way piping length	26m	25m	
Max. vertical height difference	Outdoor unit is higher 20m Outdoor unit is lower 20m		

Note (1) Values in the table indicate the one way piping length between the indoor and outdoor units.

How to obtain the cooling and heating capacity

Example: The net cooling capacity of the model FDF90VNPWVH with the air flow "P-Hi", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0°C and outdoor dry-bulb temperature 35°C is



3.9 APPLICATION DATA

- 3.9.1 Installation of indoor unit See page 42. 3.9.2 Electric wiring work installation See page 46. 3.9.3 Installation of wired remote control (Option parts) See page 54.
- 3.9.4 Installation of outdoor unit
 - (1) Model FDC71VNP-W

PSC012D133C A

Inverter driven split PAC 71VNP Designed for R32 refrigerant

- This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 42.
 When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation source voltage and etc.) and installation spaces. n (piping length, height differences between indoor and outdoor units, p

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and strictly follow it during the installation work in order Keep the installation manual together with owner's manual at a place where any user can read at any time
- **IE-IY PHECAUTIONS" carefully first of all and strictly follow it during the installation work in order

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- Interprecautionary items mentioned below are distinguished into two levels, [A_WARNING] and [A_CAUTION].
 AWARNING: Wrong installation would cause serious consequences such as injuries or death.
 A_CAUTION]. Wrong installation might cause serious consequences depending on circumstances.
 Both mentions the important items to protect your health and safety os strictly follow them by any means.
 Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

Never do it under any circumstances. Always do it according to the instruction.



. Installation must be carried out by the qualified installer.

- Installer, it was use canned out by the quantited installer. If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system maffunction. Do not carry out the installation and maintenance work exempt by the quillified installer. Install the system in full accordance with the installation manual.
- Incorrect installation may cause bursts, personal injury, water leaks, electric
- Be sure to use only for household and residence. led in inferior environment such as machine shop and etc..
- If mis appliance is installed in interior environment such as machine shop and e it can cause mailunction.

 When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISOS149).

 If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious acciduse the original accessories and the specified components for installation.

If parts other than those prescribed by us are used, It may cause water leaks, electric shocks, fire and personal injury.

- in pairs order than more presonal injury.

 Install the unit in a location with good support.

 Unsuitable installation locations can cause the unit to fall and cause material
- damage and personal injury. Ensure the unit is stable when installed, so that it can withstand
- earthquakes and strong winds.
 Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury
- ate the working area well in the event of refrigerant leakage during
- installation.

 If the refrigerant comes into contact with naked flames, poisonous gas is produ

 Use the prescribed pipes, flare nuts and tools for R32.

 Using existing parts (for R22 or R4070) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.

 Tighten the flare nut by torque wrench with specified method.

 If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period. sonous gas is produced.

Do not open the service valves for liquid line and gas line until

⚠ WARNING

- completed refrigerant piping work, air tightness test and evacuation.

 If the compressor is operated in state of opening service valves before complete connection of refrigerant piping work, air can be sucked into refrigerant circuit, which can cause bust or personal injury due to anomalously high pressure in the contraction of the co nt. ctrical installation must be carried out by the qualified electriciar
- in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. Power source with insufficient capacity and incorrect function done by imprope work can cause electric shocks and fire. **Be sure to shut off the power source before starting electrical work.**Failure to shut off the power source can cause electric shocks, unit failure or incorrect function of poulement.
- Be sure to use the cables conformed to safety standard and cable ampacity for power source distribution work.
- empactry for power source distribution work.

 Unconformable cables can cause electric leak, anomalous heat production or This appliance must be connected to main power source by means of a circuit breaker or switch (fuse:20A) with a contact separation of at leas Arrange the wring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly. [procyc] installation may result in consultant or production and production of the control of th
- turther into the box. Install the service panel correctly.

 Incorrect installation may result in workending and the cultivaries.

 Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal block and connections or cable mountings can cause anomalous heat production or fire.
- Be sure to fix up the service panels.

 Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water. Be sure to switch off the power source in the event of installation,

Inspection or servicing.

If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.

Stop the compressor before removing the pipe after shutting the service valve on pump down work.

service valve on pump down work.

If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.

- Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it.
 This may cause fire or heating.
- Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks. **⚠** CAUTION

- Only use prescribed option parts. The installation must be carried out
- by the qualified installer.

 If you install the system by yourself, it can cause serious trouble such as water aks, electric shocks, fire
- Be sure to wear protective goggles and gloves while at work. Earth leakage breaker must be installed.
- If the earth leakage breaker is not installed, it can cause electric shocks.

 After completed installation, check that no refrigerant leaks from the
- If refrigerant leaks into the room and comes into contact with an oven or other hot

- If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.

 Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid joilting out of alignment, be sure to hang up the unit at 4 points support.

 An improper manner of portage such as 3-point support can cause death or serious personal injury due to falling of the unit.

 Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation. If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, you may incur frost bite or injury from an abrupt refrigerant and air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalously high pressure in the refrigerant.

 Consult the dealer or an expert regarding removal of the unit. Incorrect installation can cause water leaks, electric shocks or fire.

 Do not perform brazing work in the airtight room.
- . Do not perform brazing work in the airtight room.
- This unit is designed specifically for R32.
- Using any other refrigerant can cause unit failure and personal injury.

- 0
- Ensure that no air enters in the refrigerant circuit when the unit is
- installed and removed.

 If air enters in the refrigerant circuit, the pressure in the refrigerant circuit
- becomes too high, which can cause burst and personal injury.

 Do not processing, splice the power cord, or share a socket with other power plugs.

 This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.
- Do not perform any change of protective device itself or its setup condition uiting protective device of pressure switch and Do not run the unit with removed panels or protections.
 - Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair.

If you repair or modify the unit, it can cause water leaks, electric shocks or fire.



• Carry out the electrical work for ground lead with care.

e, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.



Use the circuit breaker for all pole correct capacity. Circuit breaker

- Should be the one that disconnect all poles under over current.

 Using the incorrect circuit breaker, it can cause the unit malfunction and fine Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.

 The isolator should be locked in OFF state in accordance with EN60204-1.

 After maintenance, all wiring, wiring ties and the like, should be returned
- to their original state and wiring route, and the necessary clearance from all metal parts should be secured.

 Secure a space for installation, inspection and maintenance specified in
- ine manual. Insufficient space can result in accident such as personal injury due to falling
- from the installation place.
- Take care when carrying the unit by hand.
 If the unit weights more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum firs. Dispose of any packing materials correctly.
- Any remaining packing materials can cause personal injury. To avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to
- dispose after tear it up.

 Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them. Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.

- Be sure to perform air tightness test by pressurizing with nitrogen gas be sure to perform air ugitness test by pressurizing with nitrogen gas after completed refrigerant piping work.

 If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.

0

Farth leakage breaker must be installed.

- If the earth leakage breaker is not installed, it can cause fire or electric shocks. **Do not install the unit in the locations listed below.**
- Locations where carbon fiber, metal powder or any powder is floating.
- . Locations where any substances that can affect the unit such as sulphide gas chloride gas, acid and alkaline can occur. Vehicles and ships.
- · Locations where cosmetic or special sprays are often used
- . Locations with direct exposure of oil mist and steam such as kitchen and
- machine plant.

 Locations where any machines which generate high frequency harmonic fre
- . Locations with salty atmospheres such as coastlines Locations with heavy snow (If installed, be sure to provide base frame and snow hood mentioned in the manual).
- Locations where the unit is exposed to chimney smoke. . Locations at high altitude (more than 1000m high).
- Locations at high animote (note an in obourning).
 Locations with ammonic atmospheres. (e.g. organic fertilizer)
 Locations with calcium chloride (e.g. snow melting agent).
 Locations where heat radiation from other heat source can affect the unit.
- · Locations without good air circulation. I ocations with any obstacles which can prevent inlet and outlet air of the unit.
- Locations where short-circuit of air can occur (in case of multiple units)
- Locations where strong air blows against the air outlet of outdoor unit.
- Locations where something located above the unit could fall.

 It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.

- Do not install the outdoor unit in the locations listed below re discharged hot air or operating sound of the outdoor unit can
- Locations where outlet air of the outdoor unit blows directly to an animal or
- plants. The outlet air can affect adversely to the plant etc.

 Locations where vibration can be amplified and transmitted due to insufficient
- ons where vibration and operation sound generated by the outdoor unit Locations where vibration and operation sound generated by the outdoor unit
 can affect seriously (on the wall or at the place near bed room).
 Locations where an equipment affected by high harmonics is placed (IV set or
 radio receiver is placed within 5m).
 Locations where drainage cannot run off safely.
 Locations where drainage cannot run off safely.
 Tit can affect surrounding environment and cause a claim.
 Do not install the unit near the location where leakage of combustible reases can occur.

- gases can occur.

 If leaked gases accumulate around the unit, it can cause fire.

- I leaked gases accumulate around the unit, it can cause fire.

 Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as timer and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled. Corrosive gas can cause fire.

 Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics. Equipment such as inverters, standby generators, medical high frequency equipments and elecommunication equipments and aftect the system, and cause malfunctions and breaddowns. The system can also affect the dispersion and elecommunication or equipment and telecommunication or equipment and selecommunication or equipment and instructions and start of the system control or cause jammen.

 Secure a space for installation, inspection and maintenance specified in the manual.
- Insufficient space can result in accident such as personal injury due to falling from the installation place.

- Do not install the outdoor unit in a location where insects and small animals can inhabit.
- cts and small animals can enter the electric parts and cause damage or fire
- Instruct the user to keep the surroundings clean.

 Do not use the base frame for outdoor unit which is corroded or damaged due to long periods of operation.

 Using an old and damage base frame can cause the unit falling down and cause
- Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used. Connecting the circuit with copper wire or other metal thread can cause unit allure and fire.
- Do not touch any buttons with wet hands
- Do not touch any refrigerant pipes with your hands when the system is in
- operation.

 During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.

 Do not bunch the suction or aluminum fin on the outdoor unit.

 This may cause injury.

- This may cause injury.

 Do not put anything on the outdoor unit and operating unit.

 This may cause damage the objects or injury due to falling to the object.

 Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.

 Do not clean up the unit with water.

 Do not step onto the outdoor unit.

 When the outdoor unit is installed on a roof or a high place, provide permanent ladders and handrails along the access route and fences handrails around the outdoor unit.

Notabilia as a unit designed for R32

- Do not use any refrigerant other than R32. R32 will rise to pressure about 1.6 times higher than that of a conventional refrigerant (R22 or
- R407C). A cylinder containing R32 has a lightblue indication mark on the top.
 A unit designed for R32 has adopted a different size indoor unit service valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake.
 The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure.
 Accordingly, you are required to arrange dedicated R32 tools listed in the table on the next page before installing or servicing this unit.
 All indoor units must be models designed exclusively for R32. Check connectable indoor unit models in a catalog, etc. (A wrong in door unit, if connected into the system, will impair proper system operation)

	Dedicated R32 tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector

Check before installation work

- Model name and power source
 Refrigerant piping length
 Piping, wiring and miscellaneou
 Indoor unit installation manual

Accessories for outdoor unit				
1	Grommet (Heat pump type only)	4		
2	Drain elbow (Heat pump type only)	1		
3	Reducer set	1		
4	Reducer set	1		

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

▲ CAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.

1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.
- When you have to unpack the unit for a compelling reason before you haul it to the installation point, hoist the unit with nylon slings or ropes and protection pads so that you may not damage the unit.

2) Portage

• The right hand side of the unit as viewed from the front (diffuser side) is heavier A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.

3) Selection of installation location for the outdoor unit

- Be sure to select a suitable installation place in consideration of following conditions
- O A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance

- O A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.

 A place where it can be free from possibility of bothering neighbors due to noise or exhaust air from the unit.

 A place where the unit is not exposed to oil splashes.

 A place where it can be free from danger of flammable gas leakage.

 A place where drain water can be disposed without any trouble.

 A place where the unit will not be affected by heat radiation from other heat source.

 A place where snow will not accumulate.

 A place where snow will not accumulate.

 A place where the unit can be kept away 5m or more from TV set and/or radio receiver in order to avoid any radio or TV interference.

 A place where good air circulation can be secured, and enough service space can be secured for maintenance and service of the unit safely.

 A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

- O A place where the unit will not be anecuse by electromagnetic waves and/or might-narmonic waves generated by other equipment.

 A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (includingammonia), which can harm the unit, will not be generated and not remain.

 If a operation is conducted when the outdoor air temperature is -5°C lower, the outdoor unit should be installed at a place where it is not influenced by natural wind.

 A place where strong wind will not blow against the outlet air blow of the unit.
- Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

4) Caution about selection of installation location

- (1) If the unit is installed in the area where the snow will accumulate, following measures are required.

 The bottom plate of unit and intake, outlet may be blocked by snow.
- Install the unit on the base so that the bottom is higher than snow cover surface, and draining water is secured.







Since drain water generated by defrost control may freeze, following measures are required
Obon't execute drain piping work by using a drain elbow and drain grommets (accessories).
[Refer to DRAIN PIPING WORK.]

 Attached heater on a base plate on site, if there is possibility to freeze drain water In case that the product has a corrective drainage system, the drainage paths should have suitable threatment against freezing but be sure not to melt the material of drainage paths with heat. (2) If the unit can be affected by strong wind, following measures are required. Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

1.Install the outlet air blow side of the unit to face a wall of building, or provide a fence or a windbreak screen. 2 Install the outlet air blow side of the unit in a position perpendicular to the direction of wind. 3. The unit should be installed on the stable and level foundation. the stable and level foundation of the foundation is not level, the down the unit with wires.



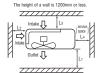




5) Installation space

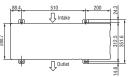
- | Installation space | Walls surrounding the unit in the four sides are not acceptable.
 | There must be a 1-meter or larger space in the above.
 | When more than one unit are installed side by side, provide a 250mm or wider interval between them as a service space. In order to facilitate servicing of controls, please provide a sufficient space between units so that their top plates can be removed easily.
 | Where a danger of short-circuiting exists, install guide louvers.
 | When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
 | Where palings now can bury the outdoor unit, provide proper snow guards.
 | A barrier wall placed in front of the exhaust diffuser must not be higher than the unit.

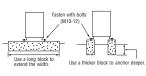
				(mm)
Size Example installation	I	II	Ш	IV
L1	Open	280	280	180
L2	100	75	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open



6) Installation

Anchor holt fixed position





Notabilia for installation

- In installing the unit, fix the unit's legs with bolts specified on the above.
 The protrusion of an anchor bolt on the front side must be kept within 15mm.
 Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
 Refer to the above illustrations for information regarding concrete foundations.
 Install the unit in a level area. (With a gradient of 5mm or less.)
 Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

7) To run the unit for a cooling operation. when the outdoor temperature is -5°C or lower.

When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site.
 So that strong wind will not blow against the outdoor heat exchanger directly.

2. REFRIGERANT PIPING WORK

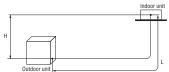
1) Restrictions on unit installation and use

Check the following points in light of the indoor unit specifications and the installation site.
 Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.

						-
	Restrictions			Dimensional restrictions	Marks appearing in the dra	awing on the right
ſ	Indoor unit FDT, FDE, FDU, FDUM, SRK FDF Main		Main pipe length	30m or less	L	
l				26m or less	L	
	Elevation difference between	When the outdoor unit is posit	tioned higher	20m or less	Н	
1	indoor and outdoor units	When the outdoor unit is positioned lower		20m or less	Н	

↑ CAUTION The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below.

Where an existing ripe custom is utilized different accordance in the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size For more information, please see "5. UTILIZATION OF EXISTING PIPING."



2) Determination of pipe size

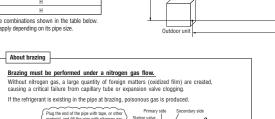
Determine refrigerant pipe size pursuant to the following guidelines based on the index unit annual factions.

indoor unit specifications.					
		Gas pipe	Liquid pipe		
Outdoor unit connected		φ12.7 Flare	φ6.35 Flare		
Refrigerant piping (branch pipeL)		φ12.7	φ6.35		
Indoor unit connected	FDT, FDE, FDU, FDUM, FDF	ф15.88	φ9.52		
macor ann communica	SRK	φ15.88	φ6.35		

3) Refrigerant pipe wall thickness and material

Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

NOTE Select pipes having a wall thickness larger than the specified minimum pipe thickness



Terrigerant is existing in the pipe at brazing, poisonous gas is produced.
Piling the end of the pipe with tipe, or other material, and fill the pipe with nitrogen gas. Station valve Day use nitrogen gas (No.) Brazing Relief valve Brazing

Pipe diameter [mm]	φ6.35	φ12.7	
Minimum pipe wall thickness [mm]	0.8	0.8	
Pipe material*	O-type pipe	O-type pipe	

Phosphorus deoxidized seamless copper pipe ICS 23.040.15, ICS 77.150.30



IMPORTANT Take care so that installed pipes may not touch components within a unit. If touching with an internal component, it will generate abnormal sounds and/or vibrations.

[Except SRK] Regarding the change in the size of liquid/gas pipe;
 Use the reducer at indoor unit side. Reducer set is available in the outdoor unit as accessory.

• [SRK] Regarding the change in the size of gas pipe;

Use the reducer at indoor unit side. Reducer set is available in the outdoor unit as accessory.

How to remove the side cover Please remove the screw of a side cover and remove to the front.

Carry out the on site piping work with the service valve fully closed.

Give sufficient protection to a pipe end (compressed and blazed, or with an adhesive tape) so that water or foreign matters may not enter the piping.

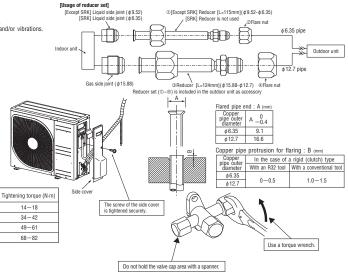
Bend a pipe to a radius as large as practical (R100-R150) Do not bend a pipe repeatedly to correct

 Beno a pipe to a ratious as large as practical, the state of the a protrusion control gauge

*Do not reuse existing flare, make new flare.
 The pipe should be anchored every 1.5m or less to isolate the vibration.

⚠ CAUTION

- Do not apply force beyond proper fastening torque in tightening the
- Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque.
 Do not apply refrigerating machine oil to the flared surface. It can cause refrigerant leakage.



5) Air tightness test

6) Evacuation

① Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the

Service valve size (mm)

φ 6.35

φ 9.52

φ 15.88

<Work flow> Airtighteness test completed

Allfolding folding did mission states better better to an a unjunies at six leaves the control of the control o

Run the vacuum pump for at least one hour after the vacuum gauge shows -101kPa or lower. (-755mmHg or lower)

Confirm that the vacuum gauge indicator does not rise even if the system is left for one hour or more.

of into pressure drop is observed with an installation pressure to the specimen ever all of the resource of the specimen ever all of the resource of the specimen ever all

(2) In conducting an air-tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances

Pressurize \$\du* • Gauge Manifold (Designed speci ø ø Charge hose (Designed spe Service valve Vacuum pump adapter (Anti-reverse flow type) (Designed specifically for R32) **©**

Outdoor unit

gauge check Fill refrigerant

ing begins

Pay attention to the following points in addition to the above for the R32 and compatible machines. To prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).

Ollse a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system

7) Additional refrigerant charge

When the system has remaining moisture inside or a leaky point, the vacuum gauge indicator will rise. Check the system for a leaky point and then draw air to create a vacuum again.

(1) Calculate a required refrigerant charge volume from the following table.

	Indoor unit	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe \$\phi 6.35)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
	FDT, FDE FDU, FDUM, SRK	0.02	1.3	15
Ì	FDF	0.02	1.3	11

- ●This unit contains factory charged refrigerant covering 15m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 15m refrigerant piping.

 When refrigerant piping exceeds 15m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 15m.

 If an existing pipe system is used, a required refrigerant charge volume will vary depending on the liquid pipe size. For further information, please see "5. UTILIZATION OF EXISTING PIPING."
- For an installation measuring 15m or shorter in pipe length, please charge the refrigerant volume charged for shipment at the factory, when you recharge refrigerant after servicing etc.

Formula to calculate the volume of additional refrigerant required

When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.

Additional charge volume (kg) = { Main length (m) - Factory charged volume} x 0.02 (kg/m)

8) Heating and condensation prevention

- (1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.

 Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.

 (2) Use a heat insulating material that can withstand 120°C or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.

 - intercioration.

 All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.

 Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).

 Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.
 - Both gas and liquid pipes need to be dressed with 20mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.

(2) Charging refrigerant

Service valve size

ø6.35 (1/4")

φ12.7 (1/2")

Service valve cap tightening torque (N·m)

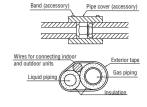
20-30

25 - 35

Securely tighten the service valve cap and the check joint blind nut after adjustment

- (2) Charging refrigerant with the charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
 •Charge refrigerant always from the liquid side service port with the service valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid-phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gasify upon entering the unit.
 •In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume. When refrigerant is charged with the unit being run, complete a charge operation within 30 minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

NOTE. Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the back side of the service panel.



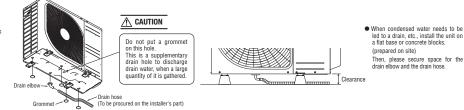
prepared on site)

Then, please secure space for the drain elbow and the drain hose.

Check joint blind nut tightening torque (N-m)

3. DRAIN PIPING WORK

- Execute drain piping by using a drain elbow and drain grommets supplied separately as accessories, where water drained from the outdoor unit is a problem.
- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caulking material.
- Condensed water may flow out from vicinity of service valve or connected pipes.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)



4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

Power source cable

Earth leakage breaker (Harmonic resistant type)

± N L 1 2/N 3 ± 1 2/N 3 ±

XY X Y Re

ear or circuit breaker

Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country.

- Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country.

 Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.

 Do not use any supply cord lighter than one specified in parentheses for each type below.

 Indicate the provider of code designation 60245 IEC 51).

 Indicate the provider of code designation 60245 IEC 53).

 Indicate the provider of code designation 60227 IEC 41);

 Use polychloroprene sheathed flexible cord (code designation 60245 IEC 53) for supply cords of parts of appliances for outdoor use.

 Ground the unit Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire.

 If impropery grounded, an electric shock or malfunction may result.

 A grounding wire must be connected before connecting the power source cable. Provide a grounding wire longer than the power cable.

 The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accident such as an electric shock or a fire.

 Do not turn on the power source until the electrical work is completed.

 Do not turn on the power source until the electrical work is completed.

 Do not turn on the power source cables, use conduits.

 For power source cables, use conduits.

 Ob not the proper source cables, use conduits.

 For power source cables, use conduits, and the sound of the proper control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.

 Fasten cables so that may not touch the piping, etc.

 When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in m

Olt holds cables in place and protect the terminal connection from external force.

This clamp is for the cable in the outside diameter 9–15mm.

Please be sure to carry out D-type (type III) grounding work.

ulameter 9–15mm. Please adjust it when not suitable

Power source terminal block Cable clamp

Grounding terminal

<u> CAUTION</u>

In case of faulty wiring connection, the indoor unit stops, and then the run lamp turns on and the timer lamp blinks

Use cables for interconnection wiring to avoid loosening of the wires. CENELEC code for cables Required field cables.

- H05RNR4G1.5 (Example) or 245IEC57 H Harmonized cable type
- 300/500 volts
- Natural-and/or synth. rubber wire insulation

- Natural-and/or synth. rubber wire insulation Polychiloroprene rubber conductors insulation Stranded core Number of conductors One conductor of the cable is the earth conductor (yellow/green) Section of copper wire (mm²)

Main fuse specification

	Specification	Part No.
le, indoor-outdoor connecting wires	250V 20A	SSA564A136A
 Always perform gro 	unding system installation wo	ork with the power cord uni



 Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.

 Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.

 In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.

 Grounding terminals are provided in the control box. Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.

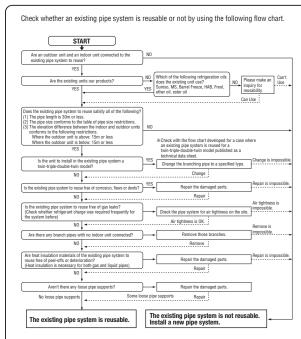
		Switchgea	r or circuit breaker	Power souce	Interconnecting and
Phase	Earth leakage breaker	Switch breaker	Over current protector rated capacity	(minimum)	grounding wires (minimum)
Single-phase	20A,30mA, 0.1sec or less	30A	20A	2.0 mm ²	1.5mm×4

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to
 the installation instructions or the construction instructions of the indoor unit.
 Switchjear or circuit breaker capacity which is calculated from MAX. over current should be chosen along the

- regulations in each country.

 The cable specifications are absed on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

5. UTILIZATION OF EXISTING PIPING



<Table of pipe size restrictions>

©:Standard pipe size ○:Usable △:Restricted to shorter pipe length limits

Addi	Additional charge volume per meter of pipe			0.025kg/m	0.06	cg/m
Indoor unit	Pipe size	Liquid pipe	φ6.35	φ6.35	φ9.52	φ9.52
	Pipe size Gas pipe		φ12.7	φ15.88	φ12.7	φ15.88
	FDT, FDE Usability FDT, FDE Maximum one-way pipe length		0	0		Δ
FDU, FDUM, SRK			30	24	10	10
FDU, FDUIVI, SNK	Length covered without additional charge		15	12	5	5
	Usability		0	0		
FDF	1	Maximum one-way pipe length		20	8	8
	Length	covered without additional charge	11	8	3	3

- Please consult with our distributor in the area, if you need to recover refrigerant and charge it again.
 Any combinations of nine sizes not listed in the table are not usable.

Formula to calculate additional charge volume

Additional charge volume (kg) = {Main pipe length (m) - Length covered without additional charge shown in the table (m)) × Additional charge volume per meter of pipe shown in the table (kg/m)

If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged. **Example)** When FDT is installed in a 10m long existing pipe system (liquid ϕ 9.52, gas ϕ 12.7), the quantity of refrigerant to charge additionally should be $(10m-5m) \times 0.06 kg/m = 0.3 kg$.

Carry out the following steps with the excising unit (in the order of (1), (2), (3) and (4))

- (1) Run the unit for 30 minutes for a cooling operation.

 (2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid) (3) Close the liquid side service valve of the outdoor unit and pump down (refrigerant recovery) (4) Blow with nitrogen gas.

 If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.

 For the flare nut, do not use the old one, but use the one supplied with the outdoor unit. Process a flare to the dimensions specified for R32.

<Where the existing unit cannot be run for a cooling operation.>

- Wash the pipe system or install a new pipe system.

 If you choose to wash the pipe system, please contact our distributor in the area

INSTALLATION TEST CHECK POINTS Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly Explain to the customer how to use the unit and how to take care of the unit following the instruction manual. After installation The pipe joints for indoor and outdoor pipes have been insulated Power cables and connecting wires are securely fixed to the terminal block The reverse flow check cap is attached. The power source voltage is correct as the rating. The drain hose is fixed securely. The cover of the pipe cover (A) faces downward to prevent rain from entering Service valve is fully open Gaps are properly sealed between the pipe covers (A) (B) and the wall surface / pipes. No gas leaks from the joints of the service valve and joint. The screw of the side cover is tightened securely.

PSC012D137F A

Inverter driven split PAC 90, 100VNP Designed for R32 refrigerant

This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 42.

• When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces.

SAFETY PRECAUTIONS

- · Read the "SAFETY PRECAUTIONS" carefully first of all and strictly follow it during the installation work in order
- to protect yourself.

 The precautionary items mentioned below are distinguished into two levels,

 MARNING: Wong installation would cause serious consequences such as injuries or death,
 CAUTION: Wrong installation might cause serious consequences depending on circumstances.

 Both mentions the important items to protect your health and safety so strictly follow them by any means.

Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's

- . Keep the installation manual together with owner's manual at a place where any user can read at any time. Keep the installation manual togetner with owners manual at a piace where any user can read at any tim Moreover if necessary, ask to hand them to a new user.
 For installing qualified personnel, take precautions in respect to themselves by using suitable protective clothing, groves, etc., and then perform the installation works.
 Please pay attention not to fall down the tools, etc. when installing the unit at the high position.
 If unusual noise can be heard during operation, consult the dealer.

The meanings of "Marks" used here are shown as follow



Never do it under any circumstances. Always do it according to the instruction.

0

. Installation must be carried out by the qualified installer.

Installation must be carried out by the qualified installer. If you install the system by yourself, it may cause serious trouble such as water leak electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except by the qualified installer. Install the system in full accordance with the installation manual. Incorrect installation may cause bursts, personal injury, water leaks, electric checker and fire. ious trouble such as water leaks

(2) Model FDC90VNP-W. 100VNP-W

- Be sure to use only for household and residence
- Be sure to use only for household and residence. If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction. When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149). If the density of refrigerant exceeds the limit, please consult the dealer and install the verifiation system, otherwise lack of oxygen can occur, which can cause serious accident. Use the original accessories and the specified components for installation.

installation.

If parts other than those prescribed by us are used, It may cause water leaks,

electric shocks, fire and personal injury.

Install the unit in a location with good support.

Unsuitable installation locations can cause the unit to fall and cause material

damage and personal injury.

Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds.
Unsuitable installation locations can cause the unit to fall and cause material

damage and personal injury. Ventilate the working area well in the event of refrigerant leakage during

installation. If the refrigerant comes into contact with naked flames, poisonous gas is produced.

Using existing parts (for R22 or R407c) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.

Tighten the flare nut by torque wrench with specified method.

If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.

⚠ WARNING

- Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation.

 If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, you may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked into refrigerant circuit, which cause burst or personal injury does not anomalously high pressure in the refrigerant.

 The electrical installation must be carried out by the qualified electrical in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.

 After completed installation, check that no refrigerant leaks from the system. If refrigerant leaks into the room and comes into contact with an oven or other surface, poisonous gas is produced.

 Hang up the unit at the specified points with ropes which can support weight in illing for portage. And to avoid joilting out of alignment, be significant.
- Be sure to use the cables conformed to safety standard and cable ampacity for power source distribution work es can cause electric leak, anomalous heat production or fire.
- Unconformable cables can cause electric leak, anomalous heat production or finis appliance must be connected to main power source by means of a circuit breaker or switch (fuse:20A) with a contact separation of at least 4 rarnage the wirring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly, noorrect installation may result in overheating and fire.

 Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.
- Loose connections or cable mountings can cause anomalous heat production or fire. Be sure to fix up the service panels.
- se vice patiers. se electric shocks or fire due to intrusion of dust or water. Be sure to switch off the power source in the event of installation.

Be sure to switch off the power source in inspection or servicing.

If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.

Stop the compressor before removing the pipe after shutting the service valve on pump down work.

If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.

system.

If refrigerant leaks into the room and comes into contact with an oven or other hospitation poisonous has is nonduced.

surface, poisonous gas is produced. Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid jolting out of alignment, be sure to hang up the unit at 4-point support.

An improper manner of portage such as 3-point support can cause death or

- serious personal injury due to falling of the unit.

 Consult the dealer or an expert regarding removal of the unit.
- Incorrect installation can cause water leaks, electric sho **Do not perform brazing work in the airtight room.**
- It can cause lack of oxygen.

 This unit is designed specifically for R32.
- Using any other refrigerant can cause unit failure and personal injury

. Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.

If air enters in the refrigerant circuit, the pressure in the refrigerant circuit

in all enters in the temperant circum, the pressure in the temperant circum, becomes too high, which can cause burst and personal injury.

Do not processing, splice the power cord, or share a socket with other power plugs. This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.

. Do not bundling, winding or processing for the power cord. Or, do not

Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it.
 This may cause fire or heating.
 Do not run the unit with removed panels or protections.
 Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.

 Do not perform any change of protective device itself or its setup condition. The forced operation by short-circuiting protective device of pressure switch an temperature control or the use of non specified component can cause fire or but

Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair.

If you repair or modify the unit, it can cause water leaks, electric shocks or fire.



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⚠ CAUTION



Use the circuit breaker for all pole correct capacity. Circuit breaker should be the one that disconnect all poles under over current. Using the incorrect circuit breaker, it can cause the unit malfunction and fire.
 Install isolator or disconnect switch on the power source wiring in

• Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.
The isolator should be locked in OFF state in accordance with ENG0204-1.
• After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.
• Secure a space for installation, inspection and maintenance specified in the manual.
Insufficient space can result in accident such as personal injury due to falling from the installation place.

Take care when carrying the unit by hand.
If the unit weights more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fins.

by hand, Use glowes to minimize the risk of cuts by the aluminum fins.

• Dispose of any packing materials correctly.

Any remaining packing materials can cause personal injury. To avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to dispose after tear it up.

• Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them.

Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.

Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.

If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.

 Earth leakage breaker must be installed

If the earth leakage breaker is not installed, it can cause fire or electric shocks If the earth leakage breaker is not installed, it can cause fine **Do not install the unit in the locations listed below.**

- Locations where carbon fiber, metal powder or any powder is floating.
 Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.
- Vehicles and shins.
- · Locations with direct exposure of oil mist and steam such as kitchen and
- · Locations where any machines which generate high frequency harmonics are
- · Locations with salty atmospheres such as coastlines. Locations with heavy snow (If installed, be sure to provide base frame and snow
- hood mentioned in the manual).
- Locations where the unit is exposed to chimney smoke
- Locations at high altitude (more than 1000m high).
- Locations with ammonic atmospheres. (e.g. organic fertilizer)
- Locations with calcium chloride (e.g. snow melting agent).
 Locations where heat radiation from other heat source can
 Locations without good air circulation. e can affect the unit
- Locations with any obstacles which can prevent inlet and outlet air of the unit.
- Locations where short-circuit of air can occur (in case of multiple ur Locations where strong air blows against the air outlet of outdoor unit.
- Locations where something located above the unit could fall.

 It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.

- Do not install the outdoor unit in the locations listed below.
 Locations where discharged hot air or operating sound of the outdoor unit can
- Cocations where discharged not an or operating sound or me outdoor unit can bother neighborhood.
 Cocations where outlet air of the outdoor unit blows directly to an animal or plants. The outlet air can affect adversely to the plant etc.
 Cocations where vibration can be amplified and transmitted due to insufficient
- strength of structure. Locations where vibration and operation sound generated by the outdoor unit
- can affect seriously (on the wall or at the place near bed room).
- Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 5m).
- Locations where drainage cannot run off safely,
 It can affect surrounding environment and cause a claim.

 Do not install the unit near the location where leakage of combustible
- Up not install the unit near the location where leakage of combustible gases can occur.

 If leaked gases accumulate around the unit, it can cause fire.

 Do not install the unit where corrosive gas (such as suffurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.

Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire. Do not install nor use the system close to the equipment that generates

Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics. Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause mafunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.

Secure a space for installation, inspection and maintenance specified in the manual.

Insufficient space can result in accident such as personal injury due to falling from the installation place

Do not install the outdoor unit in a location where insects and small

animals can inhabit.
Insects and small animals can enter the electric parts and cause damage or fire.
Instruct the user to keep the surroundings clean.
Do not use the base frame for outdoor unit which is corroded or damaged

due to long periods of operation.
Using an old and damage base frame can cause the unit falling down and cause

personal injury. Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.

Connecting the circuit with copper wire or other metal thread can cause unit

Do not touch any buttons with wet hands
 It can course clostric checks

n cause electric shocks. not touch any refrigerant pipes with your hands when the system is in During operation the refrigerant pipes become extremely hot or extremely cold

depending the operating condition, and it can cause burn injury or frost injury.

Do not touch the suction or aluminum fin on the outdoor unit.

Do not put anything on the outdoor unit and operating unit.

 • Do not put anything on the outdoor unit and operating unit. This may cause damage the objects or injury due to falling to the object.
 • Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.
 • Do not dean up the unit with water.
 • Do not step onto the outdoor unit.
 • When the outdoor unit is installed on a roof or a high place, provide permanent ladders and handrails along the access route and fences handrails around the outfloor unit. handrails around the outdoor unit.

Notabilia as a unit designed for R32

- Do not use any refrigerant other than R32. R32 will rise to pressure about 1.6 times higher than that of a conventional refrigerant (R22 or
- R407C).
 A cylinder containing R32 has a lightblue indication mark on the top.
 A unit designed for R32 has adopted a different size indoor unit service valve charge port and a different size check joint p rovided in the unit to prevent the charging of a wrong refrigerant by mistake.
 The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure.
 Accordingly, you are required to arrange dedicated R32 tools listed in the table on the next page before installing or servicing this unit.
 All indoor units must be models designed exclusively for R32. Check connectable indoor unit models in a catalog, etc. (A wrong in door unit, if connected into the system, will impair proper system operation)

	Dedicated R32 tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector

Check before installation work

- Model name and power source
 Refrigerant piping length
 Piping, wiring and miscellaneou
 Indoor unit installation manual llaneous small parts

	Accessories for outdoor unit	Q'ty
1	Grommet (Heat pump type only)	2
2	Drain elbow (Heat pump type only)	1
3	Reducer set	1

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

⚠CAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.

1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.

 When you have to unpack the unit for a compelling reason before you haul it to the
- installation point, hoist the unit with nylon slings or ropes and protection pads so that you may not damage the unit.



The right hand side of the unit as viewed from the front (diffuser side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.



3) Selection of installation location for the outdoor unit

Be sure to select a suitable installation place in consideration of following conditions O A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance

- O A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.

 A place where it can be free from possibility of bothering neighbors due to noise or exhaust air from the unit.

 A place where the unit is not exposed to oil splashes.

 A place where it can be free from danger of flammable gas leakage.

 A place where drain water can be disposed without any trouble.

 A place where the unit will not be affected by heat radiation from other heat source.

 A place where snow will not accumulate.

 A place where snow will not accumulate.

 A place where the unit can be kept away 5m or more from TV set and/or radio receiver in order to avoid any radio or TV interference.

 A place where good air circulation can be secured, and enough service space can be secured for maintenance and service of the unit safely.

 A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.

- O A place where the unit will not be affected by electromagnetic waves and/or nign-narmonic waves generated by other equipment.

 O A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (includingammonia), which can harm the unit, will not be generated and not remain.

 If a operation is conducted when the outdoor air temperature is -5°C lower, the outdoor unit should be installed at a place where it is not influenced by natural wind.

 O A place where strong wind will not blow against the outlet air blow of the unit.

 Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

4) Caution about selection of installation location

- (1) If the unit is installed in the area where the snow will accumulate, following measures are required. The bottom plate of unit and intake, outlet may be blocked by snow.
- Install the unit on the base so that the bottom is higher than snow cover surface, and draining water is secured.



2 Provide a snow hood to the outdoor unit on site





3 Install the unit under eav or provide the roof on s

Since drain water generated by defrost control may freeze Don't execute drain piping work by using a drain elbow and drain grommets (accessories)
[Refer to DRAIN PIPING WORK.]

- Attached heater on a base plate on site, if there is possibility to freeze drain water.

 In case that the product has a corrective drainage system, the drainage paths should have suitable threatment against freezing but be sure not to melt the material of drainage paths with heat.

- (2) If the unit can be affected by strong wind, following measures are required. Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.
- 1.Install the outlet air blow side of the unit to face a wall of building, or provide a fence or a windbreak screen.

 2.Install the outlet air blow side of the unit in a position perpendicular to the direction of wind.
- the stable and level foundation.
 If the foundation is not level,
 the down the unit with wires.

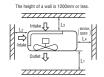




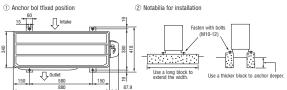
5) Installation space

- Walls surrounding the unit in the four sides are not acceptable.
 There must be a 1-meter or larger space in the above.
 When more than one unit are installed side by side, provide a 250mm or wider interval between them as a service space. In order to facilitate servicing of controls, please provide a sufficient space between units so that their top plates can be removed easily.
- Where a danger of short-circuiting exists, install guide louvers
- When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur
 Where polling snow can bury the outdoor unit, provide proper snow guards.

			(mm)
Size Example installation	I	II	III
L1	Open	Open	500
L2	300	250	Open
L3	100	150	100
L4	250	250	250



6) Installation



- In installing the unit, fix the unit's legs with bolts specified on the above.
 The protrusion of an anohor bolt on the front side must be kept within 15mm.
 Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
 Refer to the above illustrations for information reparding concrete foundations.
 Install the unit in a level area. (With a gradient of 5mm or less.)
 Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

To run the unit for a cooling operation. when the outdoor temperature is -5°C or lower.

When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site So that strong wind will not blow against the outdoor heat exchanger directly.

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

Check the following points in light of the indoor unit specifications and the installation site.
 Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.

Restricti	ons		Dimensional restrictions	Marks appearing in the drawing on the right
Indoor unit	FDT, FDE, FDU, FDUM, SRK	Main pipe length	30m or less	L
	FDF	Main pipe lengin	25m or less	L
Elevation difference between	When the outdoor unit is pos	itioned higher	20m or less	Н
indoor and outdoor units	indoor and outdoor units When the outdoor unit is posit		20m or less	Н

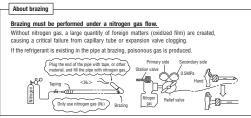
• The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below **△** CAUTION Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size For more information, please see "5. UTILIZATION OF EXISTING PIPING."

2) Determination of pipe size

• Determine refrigerant pipe size pursuant to the following guidelines based on the indoor unit specifications

	Gas pipe	Liquid pipe
Outdoor unit connected	φ15.88 Flare	φ6.35 Flare
Refrigerant piping (branch pipeL)	ф15.88	φ6.35
Indoor unit connected	φ15.88	φ9.52

When pipe is brazing.



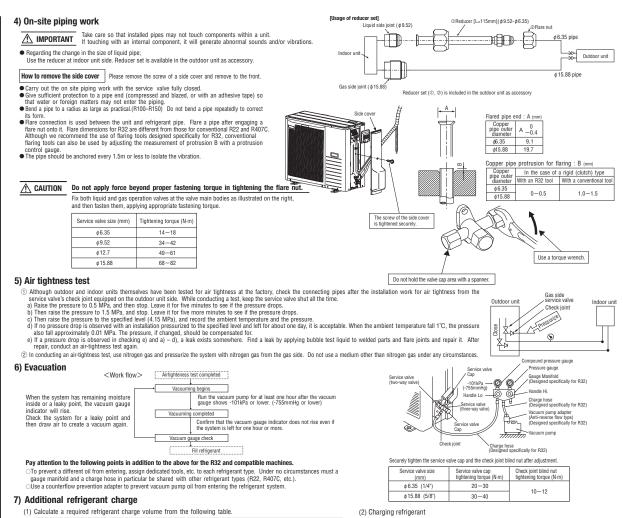
3) Refrigerant pipe wall thickness and material

• Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

NOTE Select pipes having a wall thickness larger than the specified minimum pipe thickness.

Pipe diameter [mm]	φ 6.35	φ15.88
Minimum pipe wall thickness [mm]	0.8	1.0
Pipe material*	O-type pipe	O-type pipe

^{*}Phosphorus deoxidized seamless copper pipe ICS 23.040.15, ICS 77.150.30



,					
	Indoor unit	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe ϕ 6.35)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge	
	FDT, FDE FDU, FDUM, SRK	0.020	1.7	15	
	FDF	0.020	1.7	10	

- This unit contains factory charged refrigerant covering 15m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 15m refrigerant piping.

 When refrigerant piping exceeds 15m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 15m.

 If an existing pipe system is used, a required refrigerant charge volume will vary depending on the liquid pipe size. For further intomation, please see "5. UTILIZATION OF EXISTING PIPING."

 For an installation measuring 15m or shorter in pipe length, please charge the refrigerant volume charged for shipment at the factory, when you recharge refrigerant after servicing etc.

 Formula to calculate the volume of additional refrigerant required

Additional charge volume (kg) = { Main length (m) - Factory charged volume} x 0.020 (kg/m)

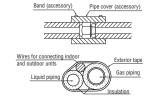
*When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.

8) Heating and condensation prevention

- (1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.
- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc. (2) Use a heat insulating material that can withstand 120°C or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable
- leterioration.
 All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.
 Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid side pipes).
 Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.

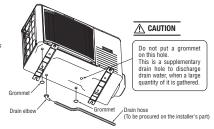
 Both gas and liquid pipes need to be dressed with 20mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.

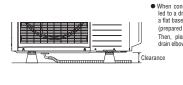
- (2) Charging refrigerant was charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
 •When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas societion sides service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase at the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid-phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gasity upon entering the unit.
 •In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.
 •When refrigerant is charged with the unit being run, complete a charge operation within 30 minutes.
 •Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.
- NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on he back side of the service panel



3. DRAIN PIPING WORK

- Execute drain piping by using a drain elbow and drain grommets supplied separately as accessories, where water drained from the outdoor unit is a problem.
- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caulking material.
- Condensed water may flow out from vicinity of service valve or connected pipes.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)





· When condensed water needs to be led to a drain, etc., install the unit on a flat base or concrete blocks. (prepared on site) Then, please secure space for the

drain elbow and the drain hose

4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country.

Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.

• Do not use any supply cord lighter than one specified in parentheses for each type below.

• braided cord (code designation 60245 IEC 51)

• ordinary tough rubber sheathed cord (code designation 60245 IEC 53)

• flat twin tinsel cord (code designation 60227 IEC 41);

Use polychloroprene sheathed flexible cord (code designation 60245 IEC 57) for supply cords of parts of appliances for outdoor use.

• Ground the unit to not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire.

If impropery grounded, an electric shock or malfunction may result.

• A grounding wire must be connected before connecting the power source cable. Provide a grounding wire longer than the power cable.

• The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accident such as an electric shock or a fire.

• Do not turn on the power source until the electrical work is completed.

• Do not turn on the power source until the electrical work is completed.

• Do not turn on the power source cables, use conduits.

• On ond lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.

• Fasten cables so that may not touch the piping, etc.

• When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)

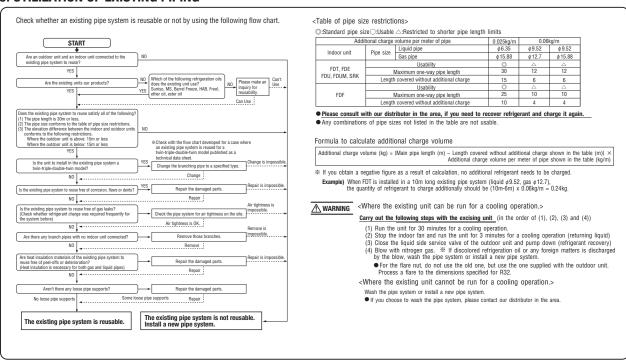
• Always us Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country. In case of faulty wiring connection, the indoor unit stops, and then the run lamp turns on and the timer lamp blinks ${\sf I}$ Use cables for interconnection wiring to avoid loosening of the wires. CENELEC code for cables Required field cables. H05RNR4G1.5 (Example) or 245IEC57 H Harmonized cable type 05 300/500 volts 300/500 volts

Natural-and/or synth. rubber wire insulation
Polychloroprene rubber conductors insulation
Stranded core
Number of conductors
One conductor of the cable is the earth conductor
(yellow/green)
Section of copper wire (mm²) Main fuse specification Part No Power source cable, indoor-outdoor connecting wires 250V 20A SSA564A136A Always perform grounding system installation work with the power cord unplugged
 Connect a pair bearing a common terminal number with an indoor-outdoor connecting. Analys perior in grounding system installation with with net power control unprugged.
 Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
 In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
 Grounding terminals are provided in the control box. Earth leakage breaker (Harmonic resistant type) witchgear or circuit breaker Power source terminal block _____ CAUTION Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation. Cable clamp Olt holds cables in place and protect the terminal connection from external force.

This clamp is for the cable in the outside diameter 9–15mm. ± N L Switchgear or circuit breaker 1 2/N 3 ± Phase Earth leakage breaker Switch breaker 1 2/N 3 ± Please adjust it when not suitable Cable clamp XY 20A,30mA Single-phase 30A 20A 2.5 mm 1.5mm×4 Olt holds cables in place and protect the terminal connection from external force. XY The specifications shown in the above table are for units without heaters. For units with heaters, refer to
the installation instructions or the construction instructions of the indoor unit.
 Switchjear or circuit breaker capacity which is calculated from MAX. over current should be chosen along the Grounding terminal Please be sure to carry out D-type (type III) grounding work. regulations in each country.

The cable specifications are absed on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

5. UTILIZATION OF EXISTING PIPING



INSTALLATION TEST CHECK POINTS	
Check the following points again after completion of the installation, and before turning or Explain to the customer how to use the unit and how to take care of the unit following th	
After installation	
Power cables and connecting wires are securely fixed to the terminal block.	The pipe joints for indoor and outdoor pipes have been insulated.
The power source voltage is correct as the rating.	The reverse flow check cap is attached.
The drain hose is fixed securely.	The cover of the pipe cover (A) faces downward to prevent rain from entering.
Service valve is fully open.	Gaps are properly sealed between the pipe covers (A) (B) and the wall surface / pipes.
No gas leaks from the joints of the service valve and joint.	The screw of the side cover is tightened securely.

3.9.5 Safety precautions in handling air-conditioners with flammable refrigerant ... See page 81.

3.10 TECHNICAL INFORMATION

Model FDF71VNPWVH

Indoor unit model name	ich the informati	on relates	to:	If function includes heating: Indicate the	heating season	the	
	FDF71VH	<u> </u>	10.	information relates to. Indicated values s			
Outdoor unit model name	FDC71VNF	-W		heating season at a time. Include at leas	st the heating se	ason 'Aver	age'.
				1			
Function(indicate if present)	V			Average(mandatory)	Yes		
cooling heating	Yes Yes			Warmer(if designated) Colder(if designated)	No No		
iodaily	162			Coldet(ii designated)	NU		
ltem	symbol	value	unit	Item	symbol	value	class
Design load				Seasonal efficiency and energy efficience			
cooling	Pdesignc	7.10	kW	cooling	SEER	5.85	A+
neating / Average	Pdesignh	5.70	kW	heating / Average	SCOP/A	3.91	Α
heating / Warmer	Pdesignh	•	kW	heating / Warmer	SCOP/W	-	-
heating / Colder	Pdesignh	-	kW	heating / Colder	SCOP/C	-	
Declared capacity of outdoor towns	o Tdosignh			Rack up heating consoits at autiliar to	noratura Tdae!	nh	unit
Declared capacity at outdoor temperature neating / Average (-10°C)	e I designh Pdh	5.70	kW	Back up heating capacity at outdoor tem heating / Average (-10°C)	ıperature I desiç elbu	gnh 0	kW
neating / Average (-10 C)	Pdh	- 5.70	kW	heating / Average (-10 C)	elbu	-	kW
neating / Colder (-22°C)	Pdh	-	kW	heating / Colder (-22°C)	elbu	-	kW
Declared capacity for cooling, at indoor to	emperature 27(1	9)°C and		Declared energy efficiency ratio, at indo	or temperature	27(19)℃ aı	nd
outdoor temperature Tj			٦	outdoor temperature Tj			=
Γj=35°C	Pdc	7.10	kW	Tj=35°C	EERd	2.82	
Tj=30°C	Pdc	5.06	kW	Tj=30°C	EERd	4.50	վ⁻
Γj=25°C Γj=20°C	Pdc Pdc	3.31 1.46	kW kW	Tj=25°C Tj=20°C	EERd EERd	6.65 12.3	∃ [
ŋ−20 O	FUC	1.40	LVAA	[1]-20 C	CERU	12.3	Γ
Declared capacity for heating / Average s	season, at indoo	r		Declared coefficient of performance / Av	erage season	at indoor	
emperature 20°C and outdoor temperatu		-		temperature 20°C and outdoor temperat			
Γj=-7°C	Pdh [5.30	kW	Tj=-7°C	COPd	2.72]-
rj=2°C	Pdh	3.07	kW	Tj=2°C	COPd	3.74]-
τj=7°C	Pdh	1.97	kW	Tj=7°C	COPd	5.00]-
rj=12°C	Pdh	1.07	kW	Tj=12°C	COPd	6.00]-
Γj=bivalent temperature	Pdh	5.70	kW	Tj=bivalent temperature	COPd	2.30	-
Гj=operating limit	Pdh	5.12	kW	Tj=operating limit	COPd	2.20	-
Designed consent of the consent of t				Destand as affect to the control of		4 1 1	
Declared capacity for heating / Warmer s		ř		Declared coefficient of performance / W		at indoor	
emperature 20℃ and outdoor temperatu Γj=2℃	ıre I j Pdh		lkW	temperature 20°C and outdoor temperat	ure Ij COPd		٦.
Γ]=2 C Γj=7°C	Pdh		kW		COPd	-	-[
Γj=7 C Γj=12°C	Pdh		kW		COPd	<u> </u>	-[
Γj=bivalent temperature	Pdh		-lk₩	Tj=12 C	COPd	<u> </u>	- _
[j=blvalent temperature	Pdh		kW	Tj=operating limit	COPd	<u> </u>	
Γj=-7°C Γj=2°C Γj=12°C Γj=12°C Γj=bivalent temperature Γj=operating limit	Pdh Pdh Pdh Pdh Pdh Pdh	- - - - -	kW kW kW kW kW	Tj=-7°C Tj=2°C Tj=7°C Tj=12°C Tj=bivalent temperature Tj=operating limit	COPd COPd COPd COPd COPd COPd	- - - -	
Γj=-15°C	Pdh	-	kW	Tj=-15°C	COD4	Г]-
					COPd	-	
				On another than '	COPa	-	
	This T	40	 7∘c	Operating limit temperature			¬∽
neating / Average	Tbiv Tbiv	-10	ိုင	heating / Average	Tol	-15	ာင္
neating / Average neating / Warmer	Tbiv	-10 -	°C	heating / Average heating / Warmer			°C
neating / Average neating / Warmer		-10 - -	_	heating / Average	Tol Tol	-15	
neating / Average neating / Warmer neating / Colder Cycling interval capacity	Tbiv Tbiv	-10 - -	ိုင် င်	heating / Average heating / Warmer heating / Colder	Tol Tol Tol	-15	°C
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling	Tbiv Tbiv Pcycc	-	c c kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling	Tol Tol Tol EERcyc	-15	°C
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling	Tbiv Tbiv	-	ိုင် င်	heating / Average heating / Warmer heating / Colder	Tol Tol Tol	-15 - -	°C
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating	Tbiv Tbiv Pcycc	-	c c kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating	Tol Tol Tol EERcyc	-15	°C
peating / Average leating / Warmer leating / Colder Cycling interval capacity or cooling or heating Degradation coefficient	Tbiv Tbiv Pcycc Pcych	-	c c kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient	Tol Tol Tol EERcyc COPcyc	-15 - - -	°C
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient	Tbiv Tbiv Pcycc	-	c c kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating	Tol Tol Tol EERcyc	-15	°C
Bivalent temperature neating / Average neating / Warmer neating / Colder Cycling interval capacity for cooling for heating Degradation coefficient cooling	Tbiv Tbiv Peyce Peych Cdc		c c kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient	Tol Tol Tol EERcyc COPcyc	-15 - - -	°C
neating / Average neating / Warmer neating / Colder Cycling interval capacity for cooling for heating Degradation coefficient cooling Electric power input in power modes other	Tbiv Tbiv Peyce Peych Cdc		c c kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating	Tol Tol Tol EERcyc COPcyc	-15 - - -	c c - - - -
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes othe off mode standby mode	Tbiv Tbiv Pcycc Pcych Cdc er than 'active m Poff Psb	- - - 0.25 ode' 10	kw kw kw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average	Tol Tol Tol EERcyc COPcyc Cdh	-15	c c - - - - - - kWh/a kWh/a
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes othe off mode standby mode	Peyce Pcych Cdc er than 'active m Poff Psb Pto(cooling)	- - - 0.25 ode' 10 10 23	kw kw lw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Warmer	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe	-15 0.25 425 2039	c c c c c c c c c c c c c c c c c c c
peating / Average peating / Warmer peating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes other fif mode thermostat-off mode	Pcycc Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating)	- - - 0.25 ode' 10 10 23 30	kw kw 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average	Tol Tol Tol EERcyc COPcyc Cdh	-15 - - - - 0.25	c c c c c c c c c c c c c c c c c c c
peating / Average peating / Warmer peating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes other fif mode thermostat-off mode	Peyce Pcych Cdc er than 'active m Poff Psb Pto(cooling)	- - - 0.25 ode' 10 10 23	kw kw lw	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Warmer	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe	-15 0.25 425 2039	c c c c c c c c c c c c c c c c c c c
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neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes othe off mode standby mode hermostat-off mode crankcase heater mode	Tbiv Tbiv Pcycc Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating) Pck	- - - 0.25 ode' 10 10 23 30	kw kw 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Warmer heating / colder	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe	-15 0.25 	c c - - - - - - kWh/a kWh/a
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes othe off mode standby mode hermostat-off mode crankcase heater mode Capacity control(indicate one of three opt	Tbiv Tbiv Pcycc Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating) Pck	- - - 0.25 ode' 10 10 23 30	kw kw 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Warmer heating / colder Other items Sound power level(indoor)	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe	-15 0.25 	c c c c c c c c c c c c c c c c c c c
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes othe off mode standby mode hermostat-off mode crankcase heater mode Capacity control(indicate one of three opt	Poyce Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating) Pck tions)	- - - 0.25 ode' 10 10 23 30	kw kw 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Average heating / Colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor)	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes othe off mode standby mode hermostat-off mode crankcase heater mode Capacity control(indicate one of three opti	Tbiv Tbiv Pcycc Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating) Pck ttions)	- - - 0.25 ode' 10 10 23 30	kw kw 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Warmer heating / colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/akWh/adB(A)dB(A)kgCO2
neating / Average neating / Warmer neating / Colder Cycling interval capacity for cooling for heating Degradation coefficient cooling Electric power input in power modes other off mode standby mode thermostat-off mode Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated Capacity control(indicate one of three opticated)	Peycc Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating) Pck tions) No No Yes		kW kW W W W W	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Average heating / Colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor)	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a
neating / Average neating / Warmer neating / Colder Cycling interval capacity for cooling for heating Degradation coefficient cooling Electric power input in power modes othe standby mode hermostat-off mode crankcase heater mode Capacity control(indicate one of three opt ixed staged variable Contact details for obtaining Mitsub	Tbiv Tbiv Tbiv Pcycc Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pto(heating) Pck ttions) No No Yes		kW kW 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Average heating / Colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor)	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a
neating / Average neating / Warmer neating / Colder Cycling interval capacity for cooling or heating Degradation coefficient cooling Electric power input in power modes other off mode standby mode thermostat-off mode Capacity control(indicate one of three opticate) Capacity control(indicate one of three opticate) Contact details for obtaining more information Mitsub 5 The	Poyce Pcych Cdc er than 'active m Poff Psb Pto(cooling) Pck tions) No No Yes oishi Heavy Induse e Square, Stock		kW kW 	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Average heating / Colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor)	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a
neating / Average neating / Warmer neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes other off mode standby mode hermostat-off mode Capacity control(indicate one of three opticated dataged variable Contact details for obtaining more information Mitsub 5 Th MHIAE	Peyce Peych Cdc er than 'active m Poff Psb Pto(cooling) Pck tions) No No Yes Sishi Heavy Indus e Square, Stock E SERVICES B.V.		kW kW	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Average heating / Colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor) Europe, Ltd. ddlesex,UB11 1ET, United Kingdom	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/akWh/akWh/akWh/akWh/akWh/akWh/a
neating / Average neating / Warmer neating / Colder Cycling interval capacity or cooling or heating Degradation coefficient cooling Electric power input in power modes other off mode standby mode hermostat-off mode Capacity control(indicate one of three opticated staged rariable Contact details for obtaining more information Mitsub 5 Th MHIAE Herik	Peyce Peych Cdc er than 'active m Poff Psb Pto(cooling) Pck tions) No No Yes Sishi Heavy Indus e Square, Stock E SERVICES B.V.		kW kW	heating / Average heating / Warmer heating / Colder Cycling interval efficiency for cooling for heating Degradation coefficient heating Annual electricity consumption cooling heating / Average heating / Average heating / Colder Other items Sound power level(indoor) Sound power level(outdoor) Global warming potential Rated air flow(indoor) Rated air flow(outdoor) Europe, Ltd. ddlesex,UB11 1ET, United Kingdom M Amsterdam, Netherlands	Tol Tol Tol EERcyc COPcyc Cdh Qce Qhe Qhe Qhe Lwa Lwa	-15 	kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a kWh/a

Model FDF90VNPWVH

Information to identify the model(s)	to which the informat	tion relates	to:	If function includes heating: Indicate	the heating season	the	
Indoor unit model name	FDF100VH		10.	information relates to. Indicated value			
Outdoor unit model name	FDC90VN	P-W		heating season at a time. Include at			age'.
				<u> </u>			
Function(indicate if present)	Yes			Average(mandatory)	Yes No		
cooling heating	Yes			Warmer(if designated) Colder(if designated)	No		
neating	100			Coldor(ii designated)	110		
Item	symbol	value	unit	Item	symbol	value	class
Design load			_	Seasonal efficiency and energy efficiency	ciency class		
cooling	Pdesignc	9.00	kW	cooling	SEER	5.91	A+
heating / Average	Pdesignh	6.00	kW	heating / Average	SCOP/A	4.24	A+
heating / Warmer heating / Colder	Pdesignh Pdesignh	-	kW kW	heating / Warmer heating / Colder	SCOP/W SCOP/C	-	-
rieating / Colder	ruesigiiii		KVV	rieating / Colder	3007/0		unit
Declared capacity at outdoor temperature	erature Tdesignh			Back up heating capacity at outdoor	r temperature Tdesig	ınh	unit
heating / Average (-10°C)	Pdh	6.00	kW	heating / Average (-10°C)	elbu	0	kW
heating / Warmer (2°C)	Pdh	-	kW	heating / Warmer (2°C)	elbu	-	kW
heating / Colder (-22°C)	Pdh	-	kW	heating / Colder (-22°C)	elbu	-	kW
Declared capacity for cooling, at in	door temperature 27(19)℃ and		Declared energy efficiency ratio, at	indoor temperature 2	₹7(19)°C aı	nd
outdoor temperature Tj	Dda	0.00	LAM	outdoor temperature Tj	CCD4	2.00	_
Tj=35°C Tj=30°C	Pdc Pdc	9.00 6.64	kW kW	Tj=35°C Tj=30°C	EERd EERd	3.60 4.60	- ⁻
Tj=25°C	Pdc	4.25	kW	Tj=25°C	EERd	6.50	-[
Tj=20°C	Pdc	2.42	kW	Tj=20°C	EERd	11.2	վ.
Declared capacity for heating / Ave		or		Declared coefficient of performance		at indoor	
temperature 20°C and outdoor tem			٦	temperature 20°C and outdoor temp			_
Tj=-7°C	Pdh	5.33	kW	Tj=-7°C	COPd	3.30	_ -
Tj=2°C	Pdh	3.25	kW	Tj=2°C	COPd	4.14	վ-
Tj=7°C	Pdh	2.12	kW	Tj=7°C	COPd	5.20	_ -
Tj=12°C	Pdh Pdh	1.75 6.00	kW kW	Tj=12°C	COPd COPd	5.40 3.10	- ⁻
Tj=bivalent temperature Tj=operating limit	Pdh	5.35	⊢kW	Tj=bivalent temperature Ti=operating limit	COPd	2.40	-[
1)-operating limit	Full	3.33	IVAA	rj-operating limit	СОР	2.40	
Declared capacity for heating / Wa	rmer season, at indoo	or		Declared coefficient of performance	/ Warmer season, a	t indoor	
temperature 20°C and outdoor tem				temperature 20°C and outdoor temp			
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd	-]-
Tj=7°C	Pdh	-	kW	Tj=7°C	COPd	-	
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd	-	_ -
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd	-	_ -
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd	-	<u> </u>
Declared capacity for heating / Col	der season, at indoor			Declared coefficient of performance	/ Colder season, at	indoor	
temperature 20°C and outdoor tem				temperature 20°C and outdoor temp		IIIdooi	
Tj=-7°C	Pdh	-	kW	Tj=-7°C	COPd	-	٦.
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd	-	վ.
Tj=7°C	Pdh	-	kW	Tj=7°C	COPd	-	7-
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd	-]-
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd	-	_ -
Tj=operating limit	Pdh	-	kW	Tj=operating limit	COPd	-	_ -
Tj=-15°C	Pdh	-	kW	Tj=-15℃	COPd		<u> </u> -
Bivalent temperature				Operating limit temperature			
heating / Average	Tbiv	-10	°C	heating / Average	Tol	-15	°C
heating / Warmer	Tbiv	-	°C	heating / Warmer	Tol	-	
heating / Colder	Tbiv	-	°C	heating / Colder	Tol	-	℃
Cycling interval capacity				Cycling interval efficiency			
for cooling	Pcycc	-	kW	for cooling	EERcyc	-	
for heating	Pcych	<u> </u>	kW	for heating	COPcyc	-	<u> 1- </u>
Daniel deliana a sefficient				D 1-4: #:-:			
Degradation coefficient cooling	Cdc	0.25	7	Degradation coefficient heating	Cdh	0.25	7
Cooling	Ouc	0.20	_F	licating	Odii	0.20	
Electric power input in power mode	es other than 'active n	node'		Annual electricity consumption			
off mode	Poff	7	W	cooling	Qce	535	kWh/a
standby mode	Psb	7	W	heating / Average	Qhe	1981	kWh/a
thermostat-off mode	Pto(cooling)	62	W	heating / Warmer	Qhe	-	kWh/a
	Pto(heating)	68	W	heating / colder	Qhe	-	kWh/a
crankcase heater mode	Pck	0	W	_			
Consoity control/in dis-t	roo onticas)			Other items			
Capacity control(indicate one of the	ee opuons)			Other items Sound power level(indoor)	Lwa	65	dB(A)
				Sound power level(indoor)	Lwa Lwa	67	dB(A)
fixed	No			Global warming potential	GWP	675	kgCO2eq
staged	No			Rated air flow(indoor)	-	1620	m ³ /h
variable	Yes			Rated air flow(outdoor)	-	3540	m ³ /h
							· · ·
_	Mitsubishi Heavy Indu						
more information			Uxbridge, M	iddlesex,UB11 1ET, United Kingdom			
"	MHIAE SERVICES B.		nΔ 1101 C	M Amsterdam, Netherlands			
	P.O.Box 23393 110						
L	O.DON 20000 110	~ P** \UIII3	aurii, NC				

Model FDF100VNPWVH

Information to identify the model(s) to			to:	If function includes heating: Indicate			
Indoor unit model name FDF100VH			information relates to. Indicated values should relate to one				
Outdoor unit model name	FDC100VI	NP-W		heating season at a time. Include at I	east the heating sea	ason 'Aver	age'.
Function(indicate if present)				1 Average (mandatory)	Voc		
cooling			Average(mandatory) Warmer(if designated)	No	Yes		
heating	Yes			Colder(if designated)	No		
				ociaci (ii accigiiatea)	1		
Item	symbol	value	unit	Item	symbol	value	class
Design load	•			Seasonal efficiency and energy effici	iency class		
cooling	Pdesignc	10.0	kW	cooling	SEER	5.43	Α
heating / Average	Pdesignh	6.40	kW	heating / Average	SCOP/A	3.94	Α
heating / Warmer	Pdesignh	-	kW	heating / Warmer	SCOP/W	-	-
heating / Colder	Pdesignh	-	kW	heating / Colder	SCOP/C	-	-
				1			unit
Declared capacity at outdoor temper			٦	Back up heating capacity at outdoor			٦
heating / Average (-10°C)	Pdh	6.40	kW	heating / Average (-10°C)	elbu	0	kW
heating / Warmer (2°C)	Pdh	-	kW	heating / Warmer (2°C)	elbu	-	kW
heating / Colder (-22°C)	Pdh	-	kW	heating / Colder (-22°C)	elbu	-	kW
Declared capacity for cooling, at inde	por temperature 27/	10\°C and		Declared energy efficiency ratio, at ir	adoor temperature 2	7/10\°C ar	nd
outdoor temperature Tj	bor temperature 27	19) Canu		outdoor temperature Tj	idoor terriperature 2	.7 (19) C ai	iu
Tj=35°C	Pdc	10.0	kW	Tj=35°C	EERd	2.95	٦.
Tj=30°C	Pdc	7.37	kW	Tj=30°C	EERd	4.31	┪.
Tj=25°C	Pdc	4.71	kW	Tj=25°C	EERd	5.80	┪.
Tj=20°C	Pdc	2.33	kW	Tj=20°C	EERd	10.5	1 -
			1				
Declared capacity for heating / Avera	age season, at indoo	or		Declared coefficient of performance	/ Average season, a	at indoor	
temperature 20°C and outdoor temperature			_	temperature 20°C and outdoor temperature			_
Tj=-7°C	Pdh	5.67	kW	Tj=-7°C	COPd	3.00	
Tj=2°C	Pdh	3.45	kW	Tj=2°C	COPd	4.00]-
Tj=7°C	Pdh	2.21	kW	Tj=7°C	COPd	4.78	-
Tj=12°C	Pdh	2.93	kW	Tj=12°C	COPd	4.50	
Tj=bivalent temperature	Pdh	6.40	kW	Tj=bivalent temperature	COPd	3.00	
Tj=operating limit	Pdh	5.05	kW	Tj=operating limit	COPd	2.50	-
				1 (
Declared capacity for heating / Warn		or		Declared coefficient of performance		t indoor	
temperature 20°C and outdoor temperature	•		٦	temperature 20°C and outdoor tempe			_
Tj=2°C	Pdh	-	kW	Tj=2°C	COPd	-	- -
Tj=7°C	Pdh	-	kW	Tj=7°C	COPd	-	
Tj=12°C	Pdh	-	kW	Tj=12°C	COPd	-	
Tj=bivalent temperature	Pdh	-	kW	Tj=bivalent temperature	COPd	-	- 1⁻
Tj=operating limit	Pdh	_	kW	Tj=operating limit	COPd	-	<u> -</u>
Declared conscitution beating / Cold				Declared coefficient of newformance	/ Caldar assault at	indon	
Declared capacity for heating / Colde				Declared coefficient of performance temperature 20°C and outdoor 20°C and 00°C		indoor	
temperature 20°C and outdoor temperature 7°C	Pdh	_	kW	Tj=-7°C	COPd		7
Tj=2°C	Pdh	-	kW		COPd	-	-{⁻
Tj=7°C	Pdh	-	kW		COPd	-	-{⁻
Tj=12°C	Pdh		kW	Tj=12°C	COPd		-[
Tj=bivalent temperature	Pdh		kW	Tj=bivalent temperature	COPd	_	┪.
Tj=operating limit	Pdh		kW	Tj=operating limit	COPd	_	┪.
Tj=-15°C	Pdh	_	kW	Tj=-15°C	COPd	-	┪.
.,		l	1	.,	00. 4	1	1
Bivalent temperature				Operating limit temperature			
heating / Average	Tbiv	-10	°C	heating / Average	Tol	-15	℃
heating / Warmer	Tbiv	-	°C	heating / Warmer	Tol	-	°C
heating / Colder	Tbiv	-	°C	heating / Colder	Tol	-	°C
						•	
Cycling interval capacity			_	Cycling interval efficiency			_
for cooling	Pcycc		kW	for cooling	EERcyc		
for heating	Pcych	-	kW	for heating	COPcyc	-]-
Degradation coefficient				Degradation coefficient			_
cooling	Cdc	0.25	-	heating	Cdh	0.25	-
				1			
Electric power input in power modes			7	Annual electricity consumption	-		7
off mode	Poff	7	W	cooling	Qce	645	kWh/a
standby mode	Psb	7	W	heating / Average	Qhe	2274	kWh/a
thermostat-off mode	Pto(cooling)	62	W	heating / Warmer	Qhe	-	kWh/a
anankasaa haatan mada	Pto(heating)	67		heating / colder	Qhe	•	kWh/a
crankcase heater mode	Pck	0	W	J			
Canacity control/indicate and of three	o ontiona)			Other items			
Capacity control(indicate one of thre	c opuons)			Sound power level(indoor)	Lwa	65	dB(A)
				Sound power level(indoor)	Lwa	68	dB(A)
fixed	No			Global warming potential	GWP	675	kgCO2eq.
staged	No			Rated air flow(indoor)	-	1620	m ³ /h
variable	Yes			Rated air flow(outdoor)	-	3780	m ³ /h
	160			[, 3.30	1 ///
Contact details for obtaining Mi	itsubishi Heavy Indu	stries Air-C	Conditioning	Europe, Ltd.			
				ddlesex,UB11 1ET, United Kingdom			
				dulesex,ODTTTLT, Officed Killudofff			
	HIAE SERVICES B.		SABITUGO, IVII	dulesex,OBTTTET, Officed Kingdoff			
l l	HIAE SERVICES B.	V.		M Amsterdam, Netherlands			
	HIAE SERVICES B.	V. s, Luna Are	nA, 1101 CI	M Amsterdam, Netherlands			

4. OPTION PARTS

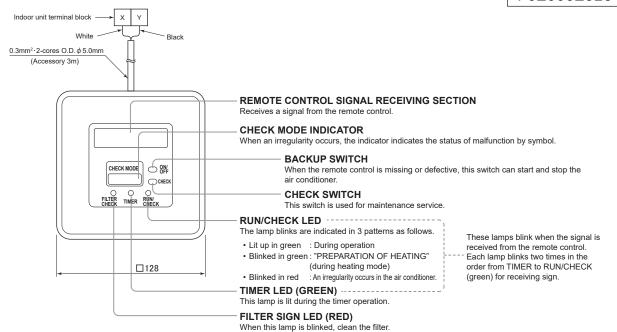
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4.1 WIRELESS KIT (RCN-KIT4-E2)

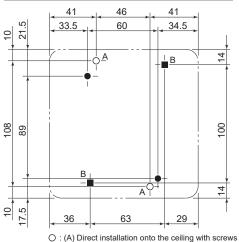
(1) Specification

PJZ000Z323



Dimensions of ceiling or wall opening

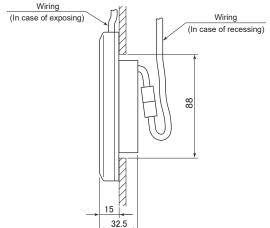
Dimensions of the receiver installation



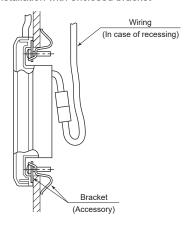
(A) Direct installation onto the ceiling with screw
 (B) Installation with enclosed bracket

Installation of the receiver The following two methods can be used to install the receiver onto a ceiling or a wall. Select a method according to the installation position.

(A) Direct installation onto the ceiling with screws



(B) Installation with enclosed bracket



Installation precautions

Do not install it on the following placesin order to avoid malfunction.

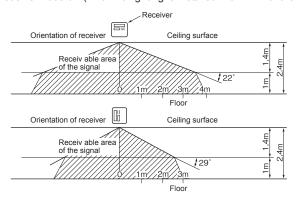
- (1) Places exposed to direct sunlight
- (2) Places near heat devices
- (3) High humidity places
- (4) Hot surface or cold surface enough to generate condensation
- (5) Places exposed to oil mist or steam directly
- (6) Uneven surface
- (7) Places affected by the direct airflow of the AC unit
- (8) Places where the receiver is influenced by the flourescent lamp (especially inverter type) or sunlight
- (9) Places where the receiver is affected by infrared rays of any other communication devices
- (10) Places where some pbject may obstruct the communication with the remote control

Adapted to RoHS directive

Wireless remote control operable area

When installed on ceiling

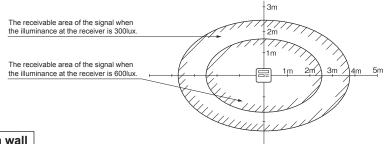
1. Standard reachable area of the signa [Condition] Illuminance at the receiver: **300lux** (when no lighting is installed within 1m of the receiver in an ordinary office.)



2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view.

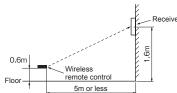
[Condition] Correlation between the reachable area of the signal and illuminance at the receiver when the wireless remote control is operated at 1m high under the condition of ceiling height of 2.4m.

When the illuminance becomes double, the area is narrowed down to two third.



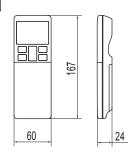
When installed on wall

[Condition] Illuminance at the receiver: 800lux

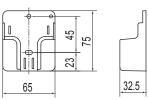




Remote control



Remote control holder



Note (1) Two LR03 AAA dry cell batteries for remote control are enclosed.

Safety precautions

•Please read this manual carefully before starting installation work to install the unit properly. Every one of the followings is important information to be observed strictly.

MARNING Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.

<u>^</u>CAUTION Failure to follow these instructions properly may cause injury or property damage. It could have serious consequences depending on the circumstances.

•The following pictograms are used in the text.

 \bigcirc

Never do.



Always follow the instructions given.

•Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

MARNING



• Consult your dealer or a professional contractor to install the unit.

Improper installation made on your own may cause electric shocks, fire or dropping of the unit.



• Installation work should be performed properly according to this installation manual. Improper installation work may result in electric shocks, fire or break-down.



• Be sure to use accessories and specified parts for installation work.

Use of unspecified parts may result in drop, fire or electric shocks.



• Install the unit properly to a place with sufficient strength to hold the weight. If the place is not strong enough, the unit may drop and cause injury.



• Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit. Power source with insufficient and improper work can cause electric shock and fire.



• Shut OFF the main power source before starting electrical work.

Otherwise, it could result in electric shocks, break-down or malfunction.



• Do not modify the unit.

It could cause electric shocks, fire, or break-down.



• Be sure to turn OFF the power circuit breaker before repairing/inspecting the unit.

Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.



• Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.

If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of significant deterioration of its performance or corrosion.



• Do not install the unit where water vapor is generated excessively or condensation occurs. It could cause electric shocks, fire, or break-down.



• Do not use the unit in a place where it gets wet, such as laundry room. It could cause electric shocks, fire, or break-down.



• Do not operate the unit with wet hands. It could cause electric shocks.

⚠ WARNING



Do not wash the unit with water.

It could cause electric shocks, fire, or break-down.



• Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.

Improper connections or fixing could cause heat generation, fire, etc.



 When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.

It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc. The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.



• Do not leave the remote control with its PCB case removed.

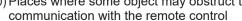
If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

⚠CAUTION

- Do not install the wireless kit at the following places in order to avoid malfunction. It could cause break-down or deformation of remote control.
 - (1) Places exposed to direct sunlight
 - (2) Places near heat devices

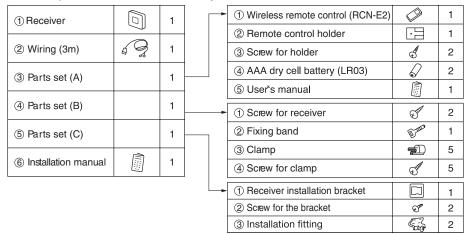
 - (3) High humidity places
 - (4) Hot surface or cold surface enough to generate condensation
- (9) Places where the receiver is affected by infrared rays of any other communication devices
- (5) Places exposed to oil mist or steam directly (10) Places where some object may obstruct the
- (6) Uneven surface
- (7) Places affected by the direct air flow of the AC unit

(8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight



1 Accessories

Please make sure that you have all of the following accessories.



2 Preparation before installation

Setting on site

PCB on the receiver has the following switches to set the function. Default setting is shown with mark.

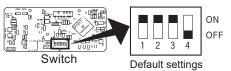
SW1	Prevents interference during plural setting	ON : Normal	OFF : Customized
SW2	Receiver master/ slave setting	ON : Master	OFF : Slave
SW3			
SW4	Auto restart	ON : Valid	OFF : Invalid

② Preparation before installation (continued)

To change setting

- Remove one screws located on the under of the receiver and detach the board.
- 2. Change the setting by the switch on PCB.





3. When SW1 is turned to OFF position, change the wireless remote control setting.

For the method of changing the setting, refer to Setting to avoid mixed communication of Wireless remote control.

*The receivable area of the signal refer to (5) Receiver

Master/Slave setting when using plural remote controls

Up to two receiver or wired remote control can be installed in one indoor unit group.

When two receiver or wired remote control are used, it is necessary to change switch on the PCB to set it as slave.

③ How to install the receiver

The following two methods can be used to install the receiver onto a ceiling or a wall. Select a method according to the installation position.

<Installation position>

- (A) Direct installation onto the ceiling with wood screws.
- (B) Installation with accessory's bracket

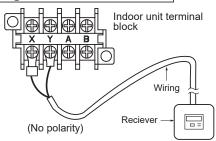
(1) Drilling of the ceiling (ceiling opening)

Drill the receiver installation holes with the dimensions shown right at the ceiling position where wires can be connected.



(A) Direct installation onto the ceiling with wood screws.	88mm(H)×101mm(W)		
(B) Installation with enclosed bracket	108mm(H)×108mm(W)		

(2) Wiring connection of receiver



! Caution

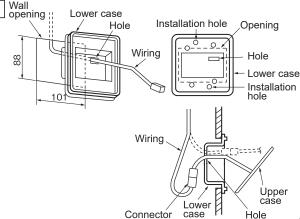
Do not connect the wiring to the power source of the terminal block. If it is connected, printed board will be damaged.

(3) Installation of the receiver

Remove the screw on the side of the receiver and sprit it into the upper case and lower case. Install the receiver with one of the two installation methods (A) to (C) shown below.

(A) Direct installation onto the ceiling with screws

- Use this installation method when the ceiling is wooden, and there is no problem for strength in installing directly with wood screws.
- ① Put through the wiring from the back side to the hole of the lower case.
- ② Fit the lower case into the ceiling opening. Make sure that the clearance between the convex part of the back of the lower case and the ceiling opening must be as equal as possible on both sides.
- ③ Using the two installation holes shown right, fix the lower case onto the ceiling with the enclosed wood screws. (The other four holes are not used.)
- 4 Connect the wiring with the wiring from the upper case by the connector.

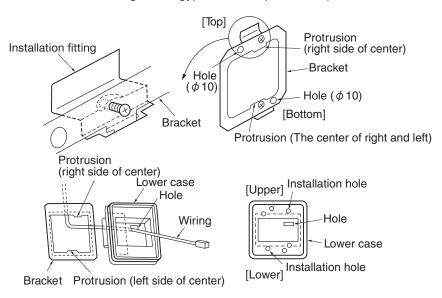


③ How to install the receiver(continued)

- 5 Take out the connector to the backside from the hole of the lower case putting through the wiring at 1.
- (6) Fit the upper case and the lower case, and tighten the screws.

(B) Installation with enclosed bracket

Use this method when installaing onto a gypsum board (7 to 18mm), etc.

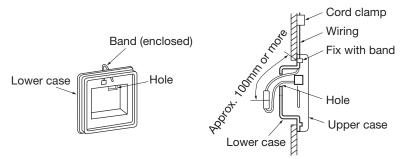


- ① Catch the two protrusion of the enclosed bracket onto the fitting as shown above, and temporarily fix with the screws. (The bracket has an Upper/Lower and front/back orientation. Confirm the Upper/Lower protrusion positions and the positional relation of the ϕ 10 holes on the bracket and the installation hole on the lower case with the above drawing.)
- ② Insert the end of the installation fitting into the back of the ceiling from the opening, and tighten the screws to fix the bracket onto the ceiling.
- ③ Pass the wiring from the rear side through the hole on the lower case.
- 4 Fit the lower case onto the bracket, and fix the lower case to the bracket using the two installation holes shown above. (The other four holes are not used.)
- ⑤ Follow step ① to ⑥ for (A) to complete the installation.

③ How to install the receiver (continued)

(C) Exposed installation

Use the following procedure when installing the case with the wiring exposed.



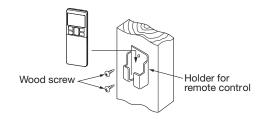
- ① Cut off the thin section on the side of the upper case with a pair of nippers or a knife, and remove the burrs with a file, etc. (The wiring is passed through this section.)
- ② Pass the enclosed band through the wiring outlet hole on the lower case.
- ③ Use on of the light detection adaptor installation methods (A) or (B) explained in section 3, and fix the lower case onto the wall. Do not pass the wiring through the hole on the lower case.
- 4 Fix the wiring using the band while leaving the wiring length from the band fixing section to the end of the wiring connector at 100mm or more.
- (5) Connect the wiring with the wiring protruding front the upper case using a connector.
- (6) Pass the connected connector and the excess wiring through the hole on the lower case.
- Tit the upper case onto the lower case, and tighten the screws.
- 8 Adequately fix the wiring with the enclesed cord clamp.

(4) Wireless remote control

Installation tips for the remote control holder

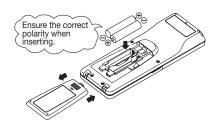
Fix the remote control holder using the screws supplied with this product.

- * Precautions for installing the holder
- Adjust the position so that it is upright.
- Ensure that the screw heads are not protruding.
- Do not attach the holder on plaster wall.



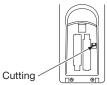
How to insert batteries

- 1. Detach the back lid.
- 2. Insert the batteries. (two AAA batteries)
- 3. Reattach the back lid.



Setting to avoid mixed communication

- 1. Detach the back lid, and remove the batteries.
- 2. Cut off the switching wire in the battery compartment using nippers.
- 3. Insert the batteries, and attach the back lid.



(4) Wireless remote control (continued)

Changing the wireless remote control setting

How to change the Auto Run setting

The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).

When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.

To disable the Auto Run mode, press the ACL switch while holding down the MODE button, or insert batteries while holding down the MODE button.

* Note: Once the batteries are removed, the setting is reset to the factory default. When the batteries are removed, repeat the steps described above.

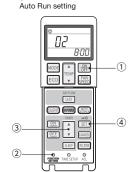
Indoor function settings

- 1. How to set indoor functions
 - 1 Press the ON/OFF button to stop the unit.
 - 2 Press the desired one of the buttons shown below while holding down the FUNCTION SETTING switch.
 - ③ Use the selection buttons, ▲ and ▼, to change the setting.
 - 4 Press the SET button.

The buzzer on the wireless remote control signal receiver beeps twice, and the LED lamp flashes four times at two-second intervals.

2. Setting details

The following functions can be set.



SIENT (IVVIE) (#

					33
Button	Number indicator	Function setting	Button	Number indicator	Function setting
	00	Fan speed setting : Standard		00	Cooling fan residual-period running : Disable
FAN SPEED	01	Fan speed setting : Setting 1 *	ON TIMER	01	Cooling fan residual-period running: 0.5 hours
	02	Fan speed setting : Setting 2 *	ON TIMER	02	Cooling fan residual-period running : 2 hours
	00	Room heating temperature adjustment : Disable		03	Cooling fan residual-period running : 6 hours
MODE	01	Room heating temperature adjustment : +1°C		00	Heating fan residual-period running : Disable
WODE	02	Room heating temperature adjustment : +2°C	OFF TIMER	01	Heating fan residual-period running: 0.5 hours
	03	Room heating temperature adjustment : +3°C	OFFINER	02	Heating fan residual-period running : 2 hours
	00	Filter sign display : OFF	03		Heating fan residual-period running : 6 hours
	01	Filter sign display : 180 hours	NICHT	00	Remote control signal receiver LED : Brightness High
FILTER	02	Filter sign display : 600 hours	NIGHT SETBACK	01	Remote control signal receiver LED : Brightness Low
FILIER	03	Filter sign display : 1000 hours	02		Remote control signal receiver LED : OFF
	04	Filter sign display : Operation stop after 1000 hours have elapsed	* Refer to service manual.		
U/D	00	Anti draft setting : Disable			
(Up/Down) 01		Anti draft setting : Enable			
SILENT	00	Infrared sensor setting (Motion sensor setting) : Disable			
SILENI	01	Infrared sensor setting (Motion sensor setting) : Enable			
	00	Infrared sensor control (Motion sensor control) : Disable			
	01	Infrared sensor control (Motion sensor control) : Power control only			
HI POWER	02	Infrared sensor control (Motion sensor control) :			

5 Receiver

1 Control plural indoor units with one remote control

Auto OFF only

Power control and Auto OFF

Infrared sensor control (Motion sensor control):

Up to 16 indoor units can be connected.

02

03

- 1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
- 2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

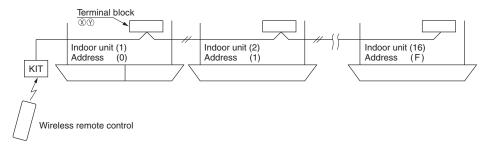
Restrictions on the thickness and length of wire (Maximun total extension 600m.)

Standard Within $0.3 \text{ mm}^2 \times 100 \text{m}$ Within $0.5 \text{ mm}^2 \times 200 \text{m}$ Within 0.75mm² × 300m Within $1.25 \text{mm}^2 \times 400 \text{m}$ Within 2.0 mm² × 600m

(5) Receiver (continued)

For the shop series

For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

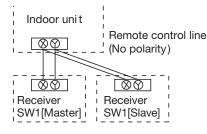


For the building air-conditioner and gas heat pump series

Set the indoor unit and outdoor unit numbers by manually specifying the addresses. Use the rotary switches SW1 and SW2 provided on the indoor unit PCB (printed circuit board) to set the indoor unit numbers so that they are not duplicated.

Master/Slave setting when using plural remote control

Up to two receivers can be installed in one indoor unit group.

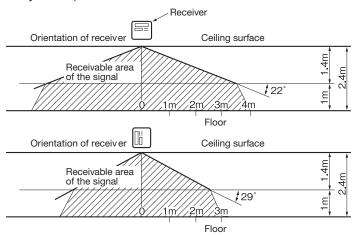


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

When installed on ceiling

1. Standard reachable area of the signa

[Condition] Illuminance at the receiver: **300lux** (when no lighting is installed within 1m of the receiver in an ordinary office.)

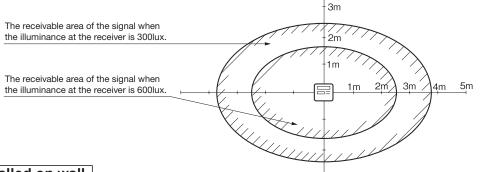


2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view.

[Condition] Correlation between the reachable area of the signal and illuminance at the receiver when the

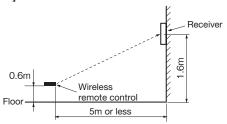
wireless remote control is operated at 1m high under the condition of ceiling height of 2.4m.
When the illuminance becomes double, the area is narrowed down to two third.

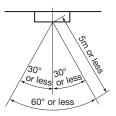
(5) Receiver (continued)



When installed on wall

[Condition] Illuminance at the receiver: 800lux.

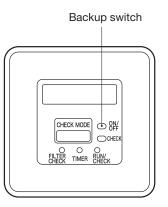




Backup switch

A backup switch is provided on the receiver section of the panel surface. When operation from the wireless remote control is not possible (due to flat batteries, a mislaid unit, a unit failure), you can use it as an emergency means. You should operate this switch manually.

- If pressed while the air-conditioner is in a halt, it will cause the air-conditioner to start operation in the automatic mode (in the case of cooling only, in the cooling mode). Wind speed: Hi fan, Temperature setting: 23°C, Louver: horizontal
- If pressed while the air-conditioner is in operation, it will stop the airconditioner.



Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with the wireless remote control, while the backup switch on the receiver is depressed.
- If the backup switch on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check wiring by consulting with inspection guides.

How to read the 6-digit display

A 6-digit indicator (7-segment indicator) is provided on the receiver section.

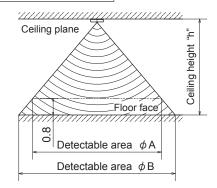
- 1. An indication will be displayed for one hour after power on.
- 2. An indication appears for 3.5 seconds when a "Stop" command is sent from the wireless remote control unit while the air-conditioner is not running.
- 3. An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
- 4. When there are no error records to indicate, addresses are displayed for all of the connected units.
- 5. When there are some error records remaining, the error records are displayed.
- 6. Error records can be cleared by transmitting a "Stop" command from the wireless remote control unit, while the backup switch is depressed.

4.2 MOTION SENSOR KIT (LB-KIT2)

(1) Specification

PJZ000Z341 External dimensions 17 -Case of wiring out to the side face, cut thin wall part 74 37 37 20 5 Case of wiring out to the back 33 hold) 80 57 ϕ 15 (Ciling hole) Wiring pass hole (Ensure installation space) Switch box 2

Detectable area



High of the ceiling h[m]	2.7	3.5	4.0
Detectable area ϕ A[m]	4.5	6.4	7.6
Detectable area ϕ B[m]	6.4	8.3	9.5

Lockscrew of cover

(1) The recommended height, is lower than 4m for motion sensor. When the installation height is higher, motion detection accuracy might be reduced.

Unit:mm

- (2) Connenction wiring (prepare on site) for signal wiring is 0.2mm² × 3 cores wire or more (Red, White, Black) and maximum total extension 8m.
- (3) Motion sensor kit can be installed on the wall, but recommend installing is the ceiling plane.
- (4) In the case of wall installation, the detectable area is 5m in front and about 100° left and right.
- (5) Refer to the installation sheet for details.

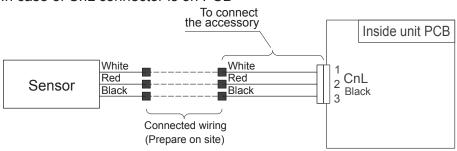
Installation precautions

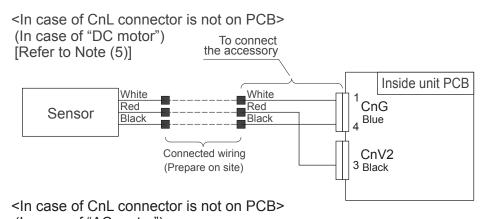
Do not install the motion sensor kit at the following places in order to avoid malfunction.

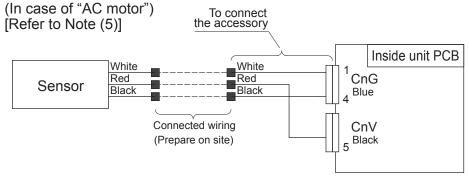
- (1) Places exposed to direct sunlight
- (2) Places near heat devices
- (3) High humidity places
- (4) Hot surface or cold surface enough to generate condensation
- (5) Places exposed to oil mist or steam directly
- (6) Uneven surface
- (7) Places affected by the direct air flow of the AC unit
- (8) Places where the motion sensor is influenced by the fluorescent lamp (especially inverter type) or sunlight
- (9) Places where the motion sensor is affected by infrared rays of any other communication devices
- (10) Place that the motion sensor have a shock
- (11) Place with the strong radio wave or static electricity
- (12) Place that motion sensor lens become tainted or have damaged. Dusty place
- (13) Do not run in parallel with strong voltage lines such as power source wiring

Wiring connection

<In case of CnL connector is on PCB>







(2) Installation manual

PJZ012D134

⚠ WARNING

 Connect the wiring to the PCB in the control box on the indoor unit and hold the wiring securely so as not to apply unexpected stress on the PCB. Loose connection or hold will cause abnormal heat generation or fire.



Make sure the power source is turned off when electric wiring work. Otherwise, electric shock, malfunction and improper running may occur.



A CAUTION

- Do not install the motion sensor kit at the following places in order to avoid malfunction.
- (1) Places exposed to direct sunlight
- (2) Places near heat devices
- (3) High humidity places
- (4) Hot surface or cold surface enough to generate condensation
- Indoor unit
- (7) Places where the motion sensor is influenced by the fluorescent lamp or sunlight
- (8) Places where the motion sensor is affected by infrared rays of any other communication devices
- (9) Places where some object may obstruct the motion sensor
- (5) Places exposed to oil mist or steam directly (10) Place that the motion sensor have a shock
- (6) Places affected by the direct air flow of the (11) Place with the strong radio wave or Static electricity
 - (12) Place that motion sensor lens become tainted or have damaged. Dusty place
 - (13) Place where it runs in parallel with strong voltage lines such as power source wiring
- Do not leave the motion sensor without the cover. In case the cover needs to be detached, protect the motion sensor with a packaging or bag in order to keep it away from water and dust.



Attention

- This manual describes how to install the motion sensor kit.
- Instruct the customer how to operate it correctly referring to the instruction manual.
- · For the installation method of the air-conditioner itself, refer to the installation manual enclosed in the package.

1 Accessories

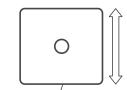
Please make sure that all components are in the package.

Motion sensor	Wiring <1>	Wiring <2>	Wiring <3>	2 screws	Manual
0	In case of CnL connector on the indoor unit PCB (FDT/FDK/FDTC)	In the case of CnV2 connector on the indoor unit PCB	In the case of CnV connector on the indoor unit PCB (FDTQ/FDFL/FDFU)	ONON	

Ø Please prepare a relay wiring for connecting the motion sensor and indoor unit on site. (0.2mm² or thicker, triplex (red, white and black) cable for communication, with the maximum length of 8m.)

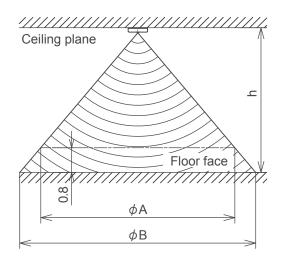
2 Installing the motion sensor

- The recommended height is lower than 4000mm for motion sensor. When the installation height is higher, motion detection accuracy might be reduced.
- Sensor will detect the object with a different temperature from the surrounding.
- Motion sensor is more sensitive to motions in the direction of \subseteq mark.
- Sensor may not detect small children or infants with little motion.
- · Although motion sensor can be installed on a wall, it is recommended to install it on the ceiling plane.
- If the sensor is installed on the wall, the sensing distance in the front direction is about 5m, covering the angle of about 100 degrees.



Side of screws for fixing the case

The detectable area



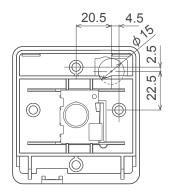
Height of the ceiling	h (m)	2.7	3.5	4.0
Detectable area	ϕ A (m)	4.5	6.4	7.6
Detectable area	φ B (m)	6.4	8.3	9.5

Installing the motion sensor

There are the following 3 methods to install the motion sensor on the ceiling plane or wall surface (hereinafter called "ceiling plane"). Select the method according to the installation position.

<How to install>

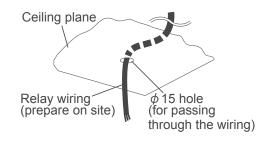
- (A) Direct installation by screws to the ceiling plane with the wiring in the ceiling space.
- (B) Direct installation by screws to the ceiling plane with the wiring in the room.
- (C) Installation with switch box (prepare at the site)

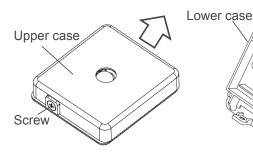


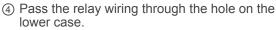
Positional relation for pulling out relay wiring hole and installing holes.

Option (A)

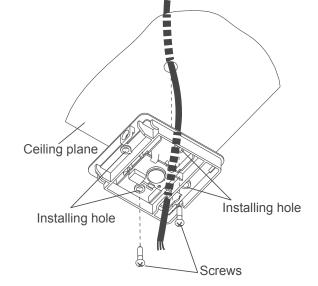
- ►Select this method if the ceiling plane has sufficient strength to install the motion sensor directly with screws.
- ① Prepare a relay wiring on site and lay out the wiring in advance.
- ② Remove the screw at the side of the motion sensor and slide the upper case in the direction of the arrow.
- 3 Pull the wiring of the motion sensor as below.

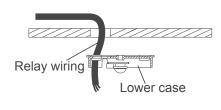






⑤ When fixing the lower case to the ceiling plane, tighten it in 2 locations of the installing holes (4 locations) with the attached screws.





(6) Using a crimping terminal, etc., connect the same color to the relay wiring (prepare on site) and the wiring of motion sensor.



- Place the connecting part inside of the ceiling space.
- Seal the wiring hole on the lower case with putty.
- Taking care not to pinch the wirings, slip the upper case into the lower case, and tighten the screws.

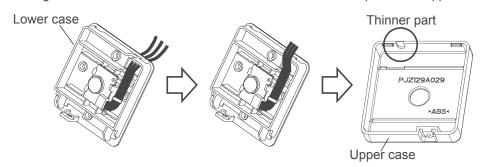


Caution:

In order to prevent tracking, be sure to perform construction so as not to clog up the connecting part with dust, etc.

Option (B)

- ► Select this method if the ceiling plane has sufficient strength to install the motion sensor directly with screws.
- ① Remove the screw at the side of the motion sensor and slide the upper case in the direction of the arrow. (The same as ② of Option (A))
- ② Pull the wiring of the motion sensor toward the side. Cut off the thinner part of the upper case.



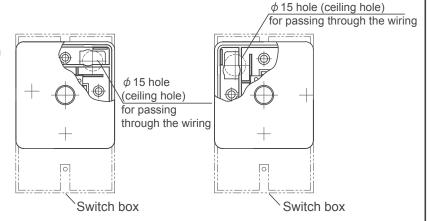
- ③ When fixing the lower case to the ceiling plane, tighten it in 2 locations of the installing holes (4 locations) with the attached screws. (The same as ⑤ of Option (A))
- 4 Using a crimping terminal, etc., connect the same color to the relay wiring (prepare on site) and the wiring of motion sensor.
 - (The same as ⑥ of Option (A))
- (5) Taking care not to pinch the wirings, slip the upper case into the lower case, and tighten the screws.
 - (The same as (9) of Option (A))
- (6) Seal the cut part at Step (2) with putty.



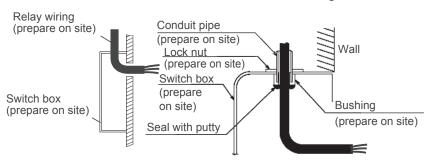
Option (C)

 Set up the switch box and relay wiring (prepare on site) in advance.

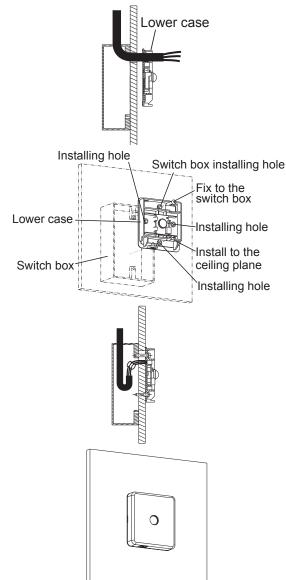
Seal the relay wiring inlet with putty.



Positional relation for the switch box and installing holes



- ② Remove the screw at the side of the motion sensor and slide the upper case in the direction of the arrow. (The same as ② of Option (A))
- ③ Pull the wiring of the motion sensor. (The same as ③ of Option (A))
- (4) Pass the relay wiring through the hole on the lower case from switch box.
- ⑤ Fix the lower case to switch box using the installing hole (1 place).
- ⑥ Connect the same color to the relay wiring (prepare on site) and the wiring of motion sensor. (The same as ⑥ of Option (A))
- Place the connecting part between switch box and the hole of the lower case through passed the wiring at step 4.
- Taking care not to pinch the wirings, slip the upper case into the lower case, and tighten the screws. (The same as (9) of Option (A))



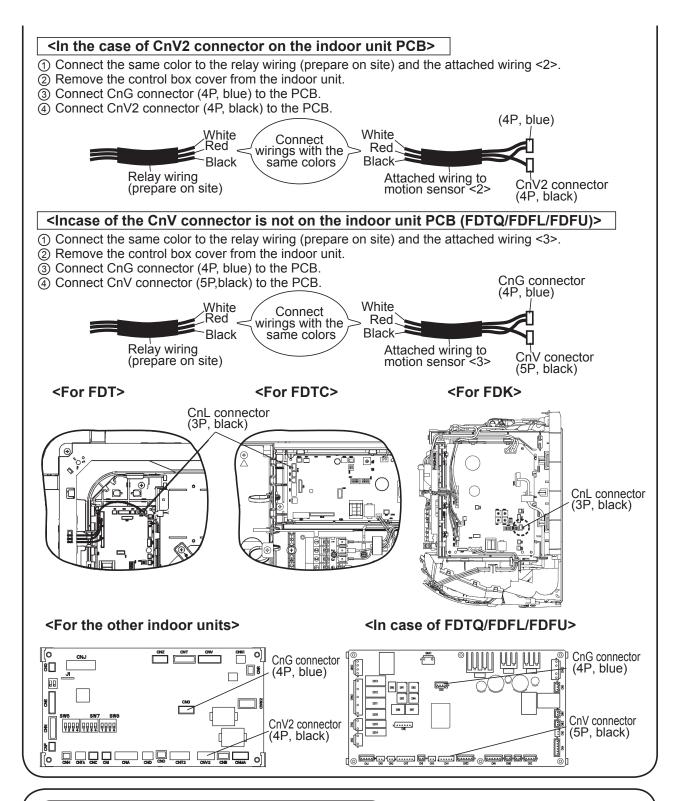
Wiring connection in the control box of indoor unit

CAUTION: Attached wirings to the motion sensor vary depending on the model of the indoor unit. Make sure your model before installing.

<In case of the CnL connector is on the indoor unit PCB (FDT/FDK/FDTC)>

- ① Connect the same color to the relay wiring (prepare on site) and the attached wiring <1>.
- 2 Remove the control box cover from the indoor unit.
- 3 Connect CnL connector (3P, black) to the PCB.





3 Setting the motion sensor

The motion sensor will not function if it is only installed.

Set the function of the motion sensor by the wired or wireless remote control.

Refer to the manual instruction of each remote control for the setting procedure.

Note: It is not possible to set by the following remote control models or older.

Wired:RC-EX1A, RC-E5, RCH-E3

Wireless: RCN-E1R

(3) User's manual PJZ012A164

SAFETY PRECAUTIONS

⚠ WARNING

If a child, person with disease or other persons needed for assist uses this product, people around the person should take sufficient care.



A halt of the air-conditioner due to abnormal situation or motion sensor's control may cause a feeling of sickness or accident.

ATTENTION

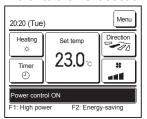
- The sensor may not detect a person near the border of detection range.
- Installation near an object with a different temperature from the surrounding may cause a false detection of human.
- Due to correction of temperature setting, some people may feel chilly.

This product uses infrared sensor to detect person's activity level to support control of air-conditioner. Please set the control you like from the remote control.

Indoor unit control	Detective situation	Description of control	Display of eco touch remote control
① Power control	Activity level is large	Lower the indoor temperature setting for comfort.	Power control ON
Tower control	Activity level is small	Raise the indoor temperature setting for energy-saving.	Power control ON
② Auto-off	No one is detected for 1 hour.	Stop operation and stand by	In auto-off mode
2 Auto-on	No one is detected for 12 hours.	Stop operation	-
1 + 2	Any combination of the above	Any of the above	Any of the above
All disabled (default setting)	-	Standard control	-

If the sensor is disconnected or defective, the control will be set as if it no detects (or less) activity level.

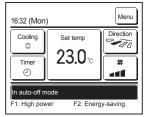
Refer to the next section for setting method.



• When power control is enabled

The amount of human motion is detected by a motion sensor to adjust the Set temp.

During power control, "Power control ON" will be displayed on the message display.

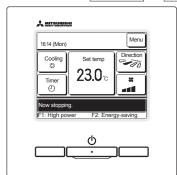


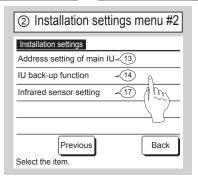
- When auto-off is enabled
 - The unit will enter the "Operation wait" state when an hour has elapsed since the last time a human presence was detected and will be in "Complete stop" state after another 12 hours.
- "Operation wait"...The unit stops but will resume operation when human presence is detected. When the unit is in "Complete stop", "In auto-off mode" will be displayed on the message display.
- "Complete stop"...When auto-off is enabled, the unit stops. The unit will not resume operation even when human presence is detected.

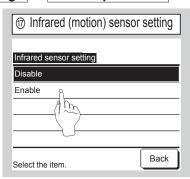
 The message "In auto-off mode" will disappear from the message display, and the operation lamp will turn off.

Control setting (from eco touch remote control)

Refer to the installation manual for eco touch remote control to activate the infrared sensor (motion sensor).
 TOP screen Menu ⇒ Service setting ⇒ Installation settings ⇒ Service password

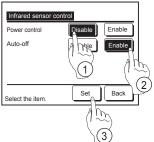






- Refer to the installation manual for eco touch remote control to set control mode.
- Infrared sensor (motion sensor) control (for IUs with motion sensors)

 Presence of humans and the amount of motion are detected by a motion sensor to perform various controls.
- When the R/C is set as the sub R/C, the infrared sensor (motion sensor) control cannot be set.



Tap the Menu button on the TOP screen and select Energy-saving setting
⇒ Infrared sensor control or Motion sensor control.

The Infrared sensor control screen and contents of the current settings are displayed.

- 1) Enable/disable power control.
- ② Enable/disable auto-off.
- 3 After you set each item, tap the Set button. The display returns to the Energy-saving setting menu screen.

Control setting (from wireless remote control)

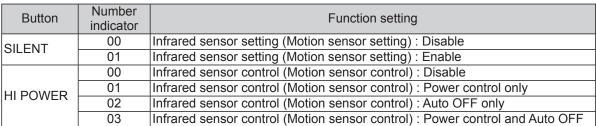
Refer to the installation manual for wireless remote control to enable motion sensor in Indoor function settings

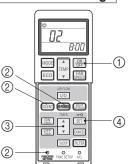
Indoor function settings

- 1. How to set indoor functions
 - ① Press the ON/OFF button to stop the unit.
 - ② Press the desired one of the buttons shown item 2. while holding down the FUNCTION SETTING switch.
 - ③ Use the selection buttons, ▲ and ▼, to change the setting.
 - ④ Press the SET button.

The buzzer on the remote control signal receiver beeps twice, and the LED lamp flashes four times at two-second intervals.





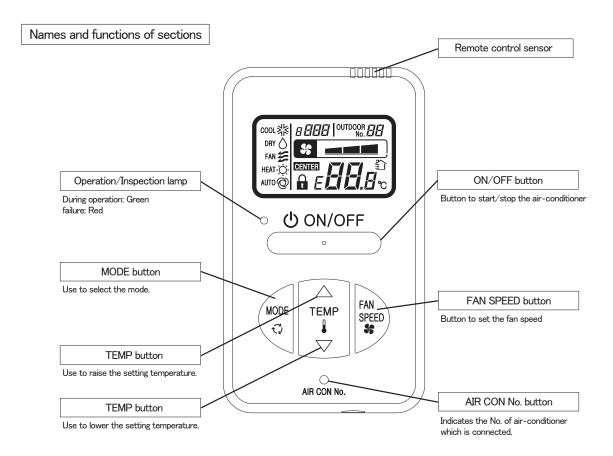


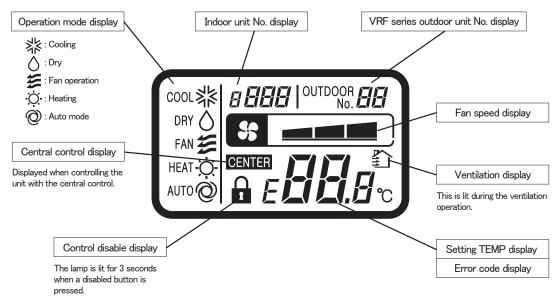
4.3 SIMPLE WIRED REMOTE CONTROL (RCH-E3)

Note:

Following functions of FDU indoor unit series are not able to be set with this simple wired remote control (RCH-E3).

1. 4-fan speed setting (P-Hi/Hi/Me/Lo) → 3-fan speed setting (Hi/Me/Lo)





Installation of remote control

Do not install the remote control at the following places in order to avoid malfunction.

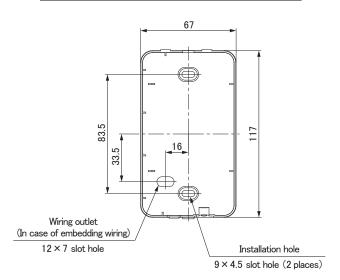
- (1) Places exposed to direct sunlight
- (4) Hot surface or cold surface enough to generate condensation
- (2) Places near heat devices
- (5) Places exposed to oil mist or steam directly

(3) High humidity places

(6) Uneven surface

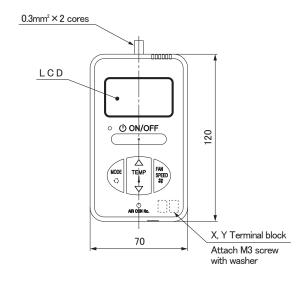
PJZ000Z272

Remote control installation dimensions

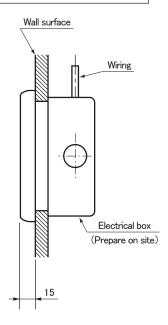


Note: Installation screw for remote control M4 screw (2 pieces)

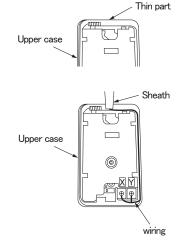
In case of exposing wiring



In case of embedding wiring

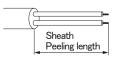


The remote control wiring can be extracted from the upper center. After the thin part in the upper side of the remote control upper case is scraped with a nipper or knife, remove burr with a file.



The peeling length of each wiring is as follows:

X wiring : 160mm Y wiring : 150mm



Unit:mm

Wiring specifications

- (1) Wiring of remote control should use $0.3 \text{mm}^2 \times 2$ cores wires or cables. (on–site configuration)
- (2) Maximum prolongation of remote control wiring is 600m.

If the prolongation is over 100m, change to the size below.

But, the wiring in the remote control case should be 0.3mm^2 (recommended) to 0.5mm^2 .

Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

Length	Wiring thickness	
100 to 200m	0.5mm² × 2 cores	
Under 300m	0.75mm ² × 2 cores	
Under 400m	1.25mm² × 2 cores	
Under 600m	2.0mm ² × 2 cores	

Adapted to **RoHS** directive

Simple Remote Control Installation Manual

PJZ012D069 A

Read together with indoor unit's installation manual.

<u>∧</u>WARNING

• Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.



Make sure the power source is turned off when electric wiring work. Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

Do not install the remote control at the following places in order to avoid malfunction.

- (1) Places exposed to direct sunlight
- (4) Hot surface or cold surface enough to generate condensation
- (2) Places near heat devices (3) High humidity places
- (5) Places exposed to oil mist or steam directly
- (6) Uneven surface



Do not leave the remote control without the upper case.

In case the upper cace needs to be detached, protect the remote control with a packaging box or bag in order to keep it away from water and dust.

Accessories	Remote control, wood screw (ϕ 3.5 \times 16) 2 pieces
Prepare on site	Remote control cord (2 cores) (Refer to [2. Installation and wiring of remote control])
	[In case of embedding cord] Electrical box, M4 screw (2 pieces)
	[In case of exposing cord] Cord clamp (if needed)

1. Installation procedure

In case of embedding cord

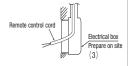
(1) Make certain to remove the screw on the bottom surface of the remote control



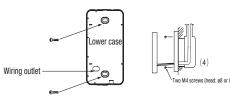
(2) Remove the upper case of the remote control. Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it, and the case is



(3) Pre-bury the electrical box and remote control cord.



(4) Prepare two M4 screws (recommended length: 12 - 16mm), and install the lower case to the electrical box. Do not use a screw whose screw head is larger than the height of the wall around the screw hole.



- (5) Connect the remote control cord to the terminal block. Connect the terminals (X and Y) of the remote control and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)
- (6) Mount the upper case for restoring to its former state so as not to crimp the remote control cord, and secure with the removed screw.

In case of exposing cord

Make certain to remove a screw on the bottom surface of the



(2) Remove the upper case of the remote control. Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it and the case is removed.

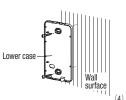


(3) The remote control cord can be extracted from the

After the thin part in the upper side of the remote control upper case is scraped with a nipper or knife, remove burr with a file.



(4) The lower case of the remote control is mounted to a flat wall with two accessory wood screws.



(5) Connect the remote control cord to the terminal block Connect the terminals (X and Y) of the remote control and the terminals (X and Y) of the indoor unit. (No polarity of X and

The wiring route is as shown in the right.



The wiring in the remote control case should be 0.3 mm² (recommended) to 0.5 mm² at maximum.

Further, peel off the sheath.

The peeling length of each wiring is as follows:

X wiring: 160mm Y wiring: 150mm



- (6) Mount the upper case for restoring to its former state so as not to crimp the remote control cord, and secure with the removed screw.
- In the case of exposing installation, secure the remote control cord to the wall surface with a cord clamp so as not to loosen the remote control cord

2. Installation and wiring of remote control

- (1) Wiring of remote control should use 0.3mm² × 2 cores wires or cables. (on-site configuration)
- (2) Maximum prolongation of remote control wiring is 600 m.

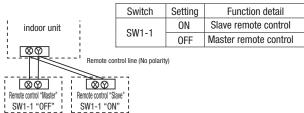
If the prolongation is over 100m, change to the size below.

But, the wiring in the remote control case should be 0.3mm² (recommended) to 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

100 - 200m······0.5mm² × 2 cores Under 300m·············0.75mm² × 2 cores Under 400m······1.25mm² × 2 cores

3. Master/ slave setting when more than one remote control are used

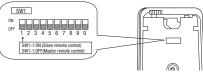
Up to two remote controls can be connected to one unit (or one group) of indoor unit.



(2) Set the switch SW1-1 of the slave remote control is "Slave" (ON). The factory default is set as "Master" (OFF). (Note) • The remote control temperature sensor enabled setting can be set only to the master remote control.

• Install the master remote control at the position to detect room temperature.

• The air-conditioner operation follows the last operation of the remote control in case of the master / slave setting.

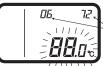


4. The indication when power source is supplied

At the time of turning the power source on, after the light is on for the first 2 seconds, the display becomes as shown below.

The number displayed on the upper side of LCD in the remote control is the software number,

and this is not an error code.



Software number

(The number in the left is one example. Another number may be shown.)

- (2) Then, "88.0 °C" blinks on the remote control until the communication between the remote control and the indoor unit is established.
- In the case of connecting one remote control with one unit (or one group) of indoor unit, make certain to set the master remote control (factory default). If the slave remote control is set, a communication cannot be established.
- If a state where the communication between the remote control and the indoor unit cannot be established continues about for 30 minutes, "E" is displayed. Confirm the wiring of the indoor unit and the outdoor unit and master/slave setting of the remote control.



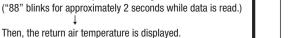
5. Confirmation method for return air temperature

Return air temperature can be confirmed by the remote control operation.

Press AIR CON No. button for over 5 seconds.

"88" blinks on the temperature setting indicator.

("88" blinks for approximately 2 seconds while data is read.)



(Example) return air temperature: "27 °C" (blinking) (Note) For the return air temperature, in the normal case, the return air temperature of the indoor unit is displayed; however, in the case that the remote control temperature sensor is effective, detected temperature by the remote control temperature sensor is displayed.

Press () ON/OFF button. Fnd.

[In the case that the remote temperature sensor is ineffective and plural indoor units are connected to one remote control]

(1) Press AIR CON No. button for over 5 seconds. indoor unit No. indicator: "U 000" (blinking) (Among the connected indoor units, the lowest number is displayed.)



(2) Press TEMP△ or TEMP▽ button. Select the indoor unit No.

Press MODE button.

Dectder the indoor unit No.

(Example) indoor unit No. indicator: "U 000"

"88" blinks on the temperature setting indicator. (blinking for approximately 2 to 10 seconds while data is read) Then, the return air temperature is displayed. When AIR CON No. is pressed, return to the indoor unit selection display (example, "U 000").

Press ON/OFF button. End.

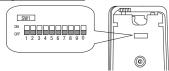
6. Function setting

Each function of the remote control and the indoor unit is automatically set to the initial setting, which is the standard use, on the occasion of connecting the remote control with the indoor unit. In the case of the standard use, the setting change is unnecessary. However, if you whould like to change the initial setting " O ", change the setting for only the item of the function number. Record the setting contents and stored them.

(1) Function setting item by switch on PCB

Switch No.	Setting	Setting detail	Initial setting
SW1-1	ON	Slave remote control	
3W1-1	0FF	Master remote control	0
SW1-2	ON	Remote control temperature sensor enabled	
3W1-2	0FF	Remote control temperature sensor disabled	0
SW1-3	ON	"MODE" button prohibited	
3W1-3	0FF	"MODE" button enabled	0
SW1-4 ON		"ON/OFF" button prohibited	
3W1-4	0FF	"ON/OFF" button enabled	0

Switch No.	Setting	Setting detail	Initial setting
SW1-5 ON		"TEMP" button prohibited	
3W1-0	0FF	"TEMP" button enabled	0
ON ON		"FAN SPEED" button prohibited	※ Note 1
SW1-6	0FF	"FAN SPEED" button enabled	፠ Note 1
SW1-7	ON	Auto restart function enabled	
3W1-7	0FF	Auto restart function disabled	0
SW1-8, 9, 0	ON	Not used	
	0FF	Not used	



- As for the slave remote control, function setting is impossible other than SW1-1.
- . In the indoor unit with only one fan speed, "FAN SPEED" button cannot

(2) Function setting item by button operation

Classification	Function No.	Function	Setting No.	Setting	Initial setting	Remarks
			01	Fan speed: three steps	※ Note 1	The fan speed is three steps, * = = = - * = - * .
	01	Indoor unit fan speed	02	Fan speed: two steps (Hi-Lo)	※ Note 1	The fan speed is two steps, * • • • • • • • •
	01	illuool ullit lall speeu	03	Fan speed: two steps (Hi-Me)		The fan speed is two steps, ** • • • • • • • • • • • • • • • • • •
			04	Fan: one step	※ Note 1	The fan speed is fixed to one step.
03			01	Remote control temperature sensor: no offset	0	
			02	Remote control temperature sensor: +3.0 °C		At the time of cooling, in the case of remote control temperature sensor enabled, offset temperature at +3.0°C.
		Remote control	03	Remote control temperature sensor: +2.0 °C		At the time of cooling, in the case of remote control temperature sensor enabled, offset temperature at +2.0°C.
	03	thermistor at the time	04	Remote control temperature sensor: +1.0 °C		At the time of cooling, in the case of remote control temperature sensor enabled, offset temperature at +1.0°C.
		of cooling	05	Remote control temperature sensor: -1.0 °C		At the time of cooling, in the case of remote control temperature sensor enabled, offset temperature at -1.0°C.
			06	Remote control temperature sensor: -2.0 °C		At the time of cooling, in the case of remote control temperature sensor enabled, offset temperature at -2.0°C.
Remote			07	Remote control temperature sensor: -3.0 °C		At the time of cooling, in the case of remote control temperature sensor enabled, offsett temperature at -3.0°C.
control			01	Remote control temperature sensor: no offset	0	
function			02	Remote control temperature sensor: +3.0 °C		At the time of heating, in the case of remote control temperature sensor enabled, offset temperature at +3.0°C.
		Remote control	03	Remote control temperature sensor: +2.0 °C		At the time of heating, in the case of remote control temperature sensor enabled, offset temperature at +2.0°C.
	04	thermistor at the time	04	Remote control temperature sensor: +1.0 °C		At the time of heating, in the case of remote control temperature sensor enabled, offset temperature at +1.0°C.
		of heating	05	Remote control temperature sensor: -1.0 °C		At the time of heating, in the case of remote control temperature sensor enabled, offset temperature at -1.0°C.
			06	Remote control temperature sensor: -2.0 °C		At the time of heating, in the case of remote control temperature sensor enabled, offset temperature at -2.0°C.
			07	Remote control temperature sensor: -3.0 °C		At the time of heating, in the case of remote control temperature sensor enabled, offset temperature at -3.0°C.
			01	No ventilator connection	0	
05	05	Ventilation setting	02	Ventilator links air-conditioner		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, connecting it to CND of the indoor printed circuit board), the operation of ventilation device is linked with the operation of indoor unit.
	00	"Auto" operation	01	"Auto" operation enabled	※ Note 1	
	06	6 setting	02	"Auto" operation disabled	※ Note 1	"Auto" operation disabled
07	07	Operation permission/	01	Disabled	0	
	07	prohibition	02	Enabled		Operation permission/prohibition control is enabled.
		External input	01	Level input	0	
	08		02	Pulse input		
		Fan speed setting	01	Standard	※ Note 2	
	09		02	High speed 1	※ Note 2	
			03	High speed 2	* Note 2	
			01	No remaining operation	0	After cooling stopped, no fan remaining operation
	40	Fan remaining	02	0.5 hours		After cooling stopped, fan remaining operation for 0.5 hours
	10	operation at the time of cooling	03	1 hour		After cooling stopped, fan remaining operation for 1 hour
		or cooling	04	6 hours		After cooling stopped, fan remaining operation for 6 hours
			01	No remaining operation	0	After heating stopped or after heating thermostat OFF, no fan remaining operation
		Fan remaining	02	0.5 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 0.5 hours
	11	operation at the time of heating	03	2 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 2 hours
Indoor unit		or riedling	04	6 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 6 hours
function			01	No offset	0	
TUTICUOTI		Setting temperature	02	Setting temperature offset + 3.0 °C		The setting temperature at the time of heating is offset by +3.0 °C.
	12	offset at the time of heating	03	Setting temperature offset + 2.0 °C		The setting temperature at the time of heating is offset by +2.0 °C.
		neating	04	Setting temperature offset + 1.0 °C		The setting temperature at the time of heating is offset by +1.0 °C.
			01	Low fan speed	* Note 1	At the time of heating thermostat OFF, operate with low fan speed.
			02	Setting fan speed		At the time of heating thermostat OFF, operate with the setting fan speed.
	13	Heating fan controller	03	Intermittent operation	* Note 1	At the time of heatingr thermostat OFF, intermittently operate.
			04	Fan off		At the time of heating thermostat OFF, a fan will be stopped. When the remote control thermistor is enabled, automatically set to "Fan off". Do not set at the time of the indoor unit temperature sensi
			01	No offset	0	
			02	Return air temperature offset +2.0 °C		Offset the return air temperature of the indoor unit by +2.0 °C.
			03	Return air temperature offset +1.5 °C		Offset the return air temperature of the indoor unit by +1.5 °C.
	14	Return air temperature	04	Return air temperature offset +1.0 °C		Offset the return air temperature of the indoor unit by +1.0 °C.
	14	offset -	05	Return air temperature offset -1.0 °C		Offset the return air temperature of the indoor unit by -1.0 °C.
			06	Return air temperature offset -1.5 °C		Offset the return air temperature of the indoor unit by -1.5 °C.

Note 1: The symbol " *" in the initial setting varies depending upon the indoor unit and the outdoor unit to be connected, and this is

automatically determined as follows:						
Swith No. Function No.			Product model			
	"FAN SPFFD"	"FAN SPEED" button prohibited	Product model whose indoor fan speed is only one step			
SW1-6	button	"FAN SPEED" button enabled	Product model whose indoor fan speed is two steps or three steps			
		Fan speed: three steps	Product model whose indoor unit fan speed is three steps			
Remote control function 01	Indoor unit fan speed	Fan speed: two steps (Hi-Lo)	Product model whose indoor unit fan speed is two steps			
hemote control function of		Fan speed: two steps (Hi-Me)				
		Fan: one step	Product model whose indoor unit fan speed is only one step			
Remote control function 06	"Auto" operation	"Auto" operation enabled	Product model where "Auto" mode is selectable			
nemote control function of	setting	"Auto" operation disabled	Product model without "Auto" mode			
Indoor unit function 13	Heating fan	Low fan speed	Product model except FDUS			
IIIuuuu uiik luliciioii 13	control	Intermittent operation	FDUS			

Note 2: Fan speed of "High speed" setting

Fon annual natting	Indoor unit fan speed setting					
Fan speed setting	30 mm m - 30 mm - 30 m	50 mm m - 50 m	50 mm m - 50 mm			
Standard	Hi — Mid — Lo	Hi — Lo	Hi — Mid			
High speed 1 · 2	UHi — Hi — Mid	UHi — Mid	UHi — Hi			
The state of the s						

Initial setting of some indoor unit is "High speed"

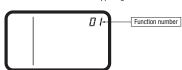
Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.

But only master indoor unit is received the setting change of indoor unit function "07 Operation permission/ prohibition" and "08 External input".

7. How to set functions by button operation

(1) Stop air-conditioner, and simultaneously press AIR CON No. and C MODE buttons at the same time for over three seconds.

The function number "01" blinks in the upper right.



- (2) Press $\boxed{\text{TEMP}} \triangle$ or $\boxed{\text{TEMP}} \bigcirc$ button. Select the function number.
- (3) Press MODE button. Decide the function number.

(4) [In the case of selecting the remote control function (01-06)]

① The current setting number of the selected function number blinks

Function number: "01" (lighting) Setting number: "01" (blinking)



- ② Press TEMP or TEMP Select the setting number.
- ③ Press **₹ MODE** button.

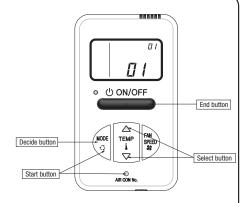
The setting is completed.

Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted. (Example)

Function number: "01" (lighting for 3 to 20 seconds) Setting number: "01" (lighting for 3 to 20 seconds)



Then, the screen goes back to the function number blinking indication (1), if the setting is sequentially conducted, continue with the same procedures. If the setting is finished, proceed to (5) .



[In the case of selecting the indoor unit function (07-14)]

① "88" blinks on the temperature setting indicators.

(blinking for approximately 2 to 10 seconds while data are read)

After that, the current setting number of the selected function number blinks. (Example)

Function number: "07" (lighting) Setting number: "01" (blinking)



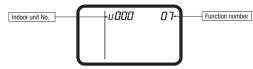
Proceed to (2).

[Note]

a. In the case of connecting one remote control to plural indoor units, the display will be as follows:

Indoor unit No. display: "U 000" (blinking)

(Display the lowest number among the connected indoor units.)



b. Press $\boxed{\text{TEMP} \triangle}$ or $\boxed{\text{TEMP} \nabla}$ button.

Select the indoor unit No. to be set.

If "U ALL" is selected, the same setting can be set to all units.

c. Press MODE button.

Decide the indoor unit No.

"88" blinks on the temperature setting indicators. (blinking for 2 to 10 seconds while data is read)

When AIR CON No. button is pressed, go back to the indoor unit selection display (for example, "U 000" blinking).

 $\begin{tabular}{ll} \hline 2 \\ \hline \end{tabular} \begin{tabular}{ll} \hline TEMP \triangle \\ \hline \end{tabular} \begin{tabular}{ll} \hline \end{tabular} \begin{tab$

Select the setting number

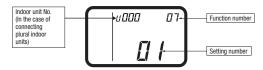
3 Press MODE button

The setting is completed.

Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted.

(Example)

Indoor unit No.: "U 000" (lighting for 3 to 20 seconds) Function number: "07" (lighting for 3 to 20 seconds) Setting number: "01" (lighting for 3 to 20 seconds)



Then, the screen goes back to the function number blinking indication (1), if the setting is sequentially conducted, continue with the same procedures. If the setting is finished, proceed to (5).

(5) Press ON/OFF button. The setting is completed.

• Even if 🖰 ON/OFF button is pressed during setting, the setting is ended. However, any details where the setting has not been completed will be ineffective.

· The setting contents are stored in the control, and even if the power failure occur, this will not be lost.

[Confirmation method for current setting]

According to the operation, the "setting number" displayed first after selecting "function number" and pressing TMODE button is the currently set content. (However, in the case of selecting "U ALL" (all units), the setting number of the lowest number among the indoor units is displayed.)

4.4 BASE HEATER KIT (CW-H-E1)

PCZ012D007A

Model Name: CW-H-E1

↑ WARNING

- Follow the instruction and installation manual for outdoor unit when installing the heater.
- This heater must be installed by authorized personnel.
- Turn off the power source when the kit is installed.
- Failure to follow the above will result in serious accident like electrical shock or fire.

AREAS TO BE APPLIED

This kit is to be used in an area where the lowest temperature drops below zero.

⚠Caution: In case the heater is not applied on the unit which is installed in an area mentioned above, it may be regarded as installation failure and warranty may not be given.

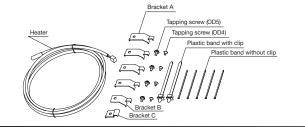
CAUTION

- Follow the law or regulation of the country where it is installed.
- Do not alter the heater.
- Lay down the heater so that the edge of the sheet metal does not damage the heater.
- Bending radius must be bigger than 25mm.
- Do not use the heater near flammable substances.
- Be sure to check the electrical insulation before use.
- Be sure to check the drain is not trapped by the heater
- Do not leave refrigerant oil on the base.

Components

Heater : 1 pc.
 Bracket A : 4 pcs.
 Bracket B : 1 pcs.
 Bracket C : 1 pcs.
 Tapping screw (OD5) : 4 pcs.

Tapping screw (OD5) : 4 pcs.
Tapping screw (OD4) : 4 pcs.
Plastic band with clip : 2 pcs.
Plastic band : 5 pcs.

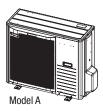


Applicable model

This heater kit is applicable for 3 different models.

<Model A>

Single fan with plastic fan guard model



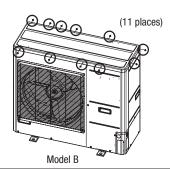


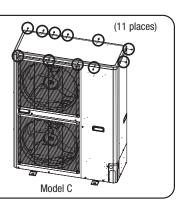
<Model C> Double fan model

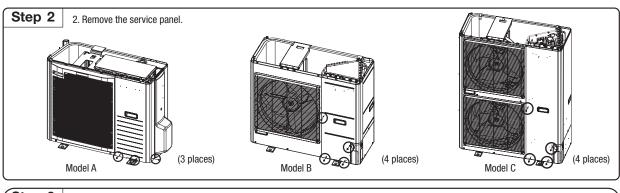


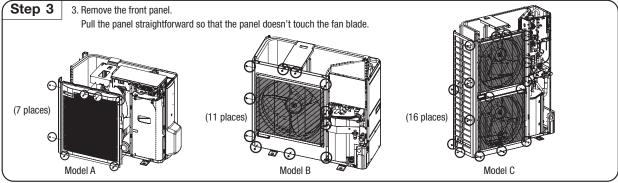
Installation procedure

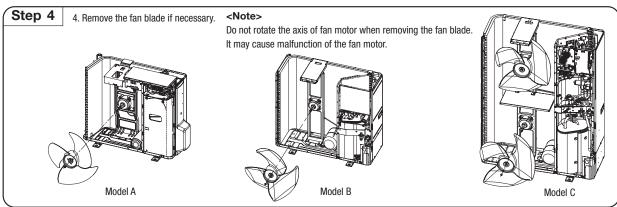
1. Remove the top panel of the outdoor unit. (6 places) Model A

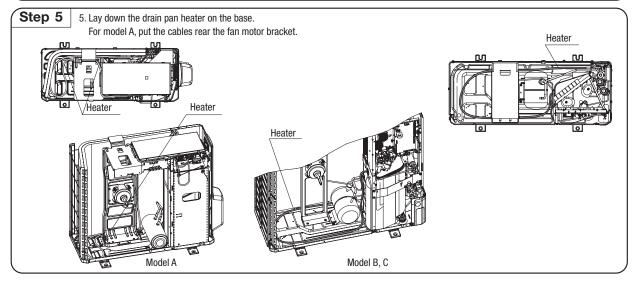




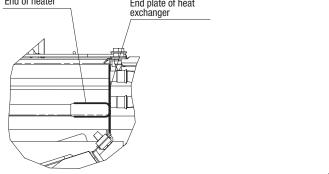






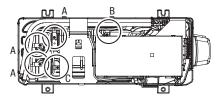


Step 6 6. Put the heater underneath the heat exchanger and align the end of heater with the end plate of heat exchanger. End of heater End plate of heat exchanger

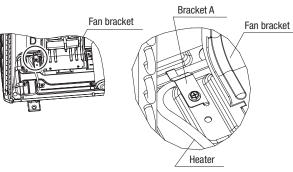


Step 7

7. Fix the heater with brackets.

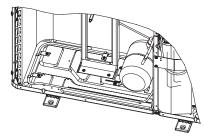


For model A, use 3 pcs of bracket A, 1pc of bracket B and C. Fix bracket A and C with the attached screw (OD4), and fix bracket B with the removed screw which is fastened at the same place.



For model B and C, fix bracket A with the attached screw (OD5).

This bracket is for model B only



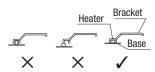
Model A Detail view D Model B, C

<Note for model A>

- 1) Put the end of heating part just after the bracket ${\bf C}.$
- 2) Fix the incoming and out going cable with one bracket A on the left of fan bracket as figure shows.

<Note>

 Fix the heater so that the bracket doesn't pinch the heater as figure shows.



2) Place the heater so as to touch the base completely.

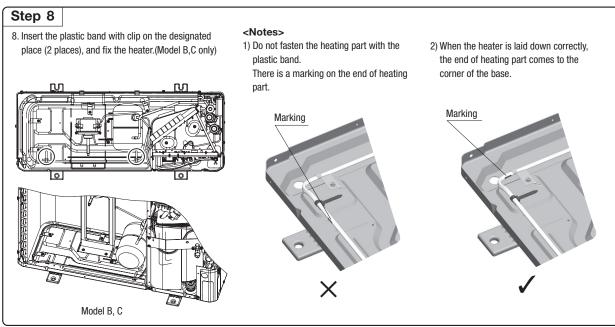
3) In bending position, twist the heater to make it easier to be

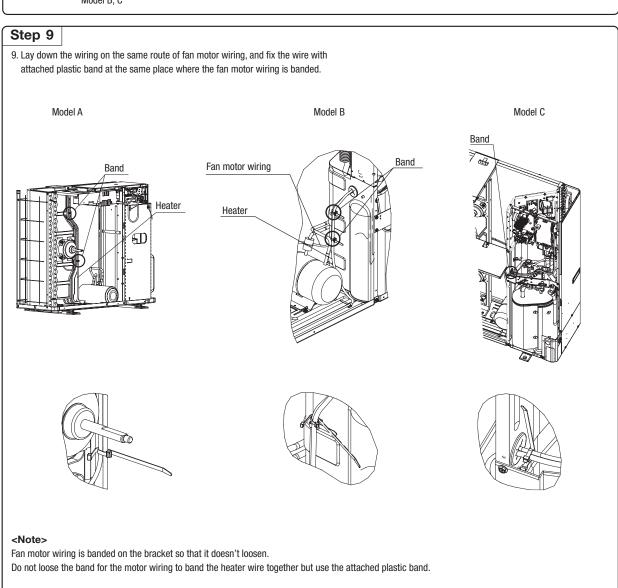


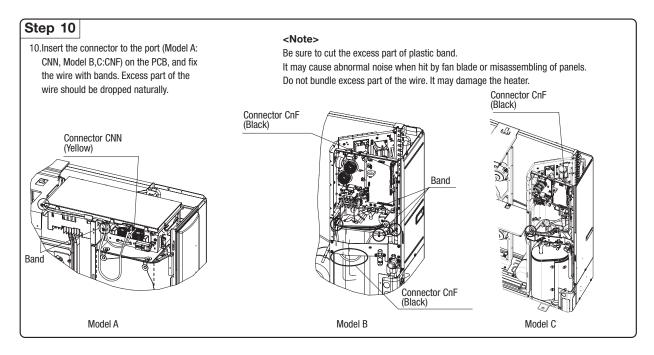
 In bending position, twist the heater to make it easier to bend, and get back to be able to fix it with bracket.

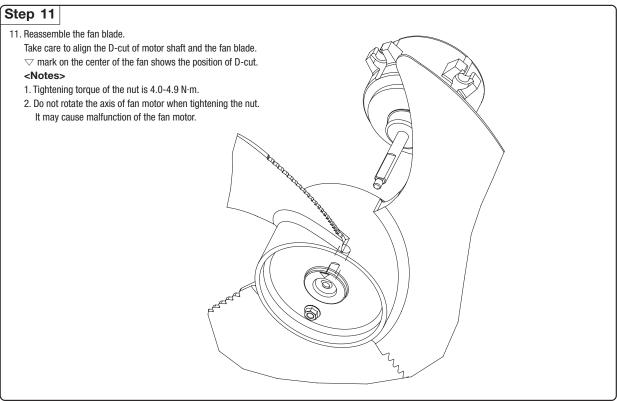


 Be careful not to be injured by aluminum fin when fixing the heater with screw.



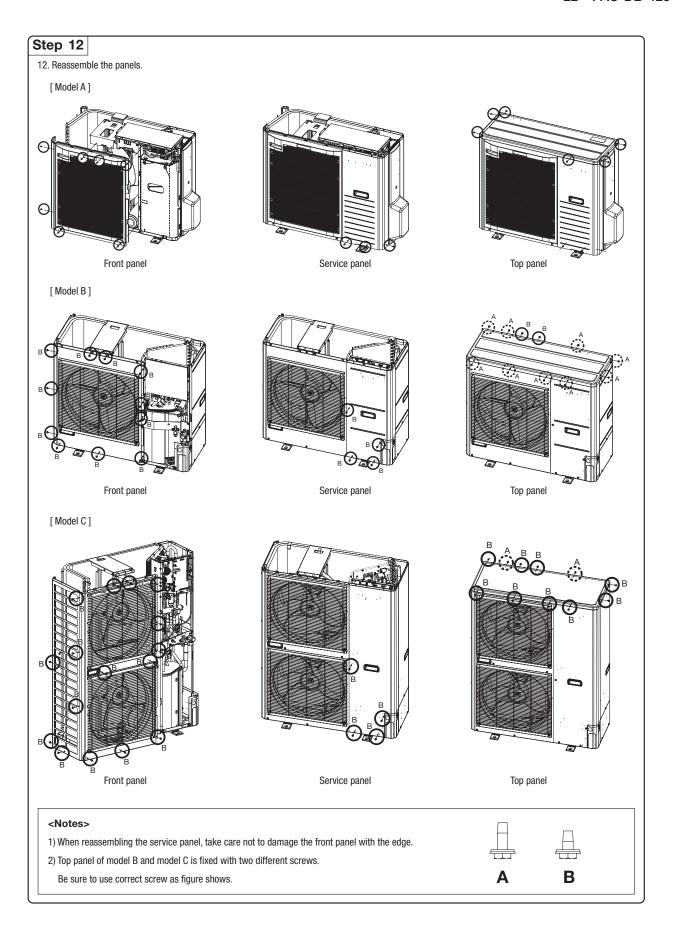






<Notes>

- This heater should have bending radius of at least 25mm including non-heating part. Do not bundle the excess part of the wire. It may cause
 disconnection of the heater or insufficient capacity.
- Be sure to prevent the heater from touching any refrigerant piping.
 Especially, pay close attention not to make it touch with pipes which are close to the wiring route such as suction pipe, check valve and check joint.



4.5 SUPERLINK E BOARD (SC-ADNA-E)

PJZ012D029K /k

- Read and understand the instructions completely before starting installation.
- Refer to the instructions for both indoor and outdoor units.

Safety precautions

- Carefully read "Safety precautions" first. Follow the instructions for installation.
- Precautions are grouped into "Warning 🕰 " and "Caution 🖈". The "Warning 🛧 " group includes items that may lead to serious injury or death if not observed. The items included
- in the "Caution A" group also may lead to serious results under certain conditions. Both groups are crucial for safety installation. Read and understand them carefully.

 After installation, conduct the test operation of the device to check for any abnormalities. Describe how to operate the device to the customer following the installation instruction manual. Instruct the customer to keep this installation instruction for future reference.

.♠Warning

- This device should be installed by the dealer where you purchase the device or a licensed professional shop. If the device is incorrectly installed by the
- customer, it may result in electric shock or fire.

 Install the device carefully following the installation instruction. If the device is incorrectly installed, it may result in electric shock or fire.
- Use the accessory parts and specified parts for installation. If any parts that do not match the specifications are used, it may result in electric shock or fire.
- A person with the electrical service certification should conduct the service based on the "Technical standards for electrical facilities", "Electrical Wiring Code", and the installation instruction. If the work is done incorrectly, it may result in electric shock or fire
- Wiring should be securely connected using the specified types of wire. No external force on the wire should be applied to any terminals. If a secure connection is not achieved, it may result in electric shock or fire.

1 Application

Indoor-to-outdoor three core communication specification type 3 (since

Accessories

SL E board	Metal box	Metal cover	Screw for ground
	[8]	•	M4×8 2 pieces
Pan head screws	Locking supports	Binding band	Grommet
M4×8 2 pieces	To secure the print board and the metal box Made of nylon 4 pieces	68	

3 Function

Allowing the central control SL1N-E, SL2NA-E, and SL4-AE/BE to control and monitor the commercial air-conditioner unit.

Control switching

Settings can be changed by the DIP switch SW3 on the SL E board as in the

Switch	Symbol	Switch	Remarks	
SW3	1	ON	Master	
		OFF (default)	Slave	
	2	ON	Fixed previous protocol	
		OFF (default)	Automatic adjustment of Superlink protocol	
	3	ON	Indicates the forced operation stop when abnormality has occurred.	
		OFF (default)	Indicates the status of running/stop as it is, when abnormality has occurred.	
	4	ON	The hundredth address activated "1"	
		OFF (default)	The hundredth address activated "0"	

∴Caution

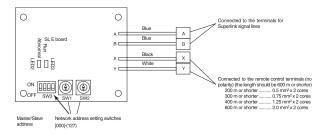
- Provide ground connection.
- The ground line should never be connected to the gas supply piping, the water supply piping, the lightning conductor rod, nor the telephone ground. If the grounding is improper, it may result in electric shock.
- Do not install the device in the following locations.
 - 1.Where there is mist/spray of oil or steam such as kitchens. 2.Where there is corrosive gases such as sulfurous acid gas.

 - 3. Where there is a device generating electromagnetic waves These may interfere with the control system resulting in the device becoming
 - 4. Where flammable volatile materials such as paint thinner and gasoline may exist or where they are handled. This may cause a fire

5 Connection outline

Note for setting the address

- Set the address between 00 and 47 for the previous Superlink connection and between 000 and 127 for the new Superlink connection. (*1)
- Do not set the address overlapping with those of the other devices in the network. (The default is 000)



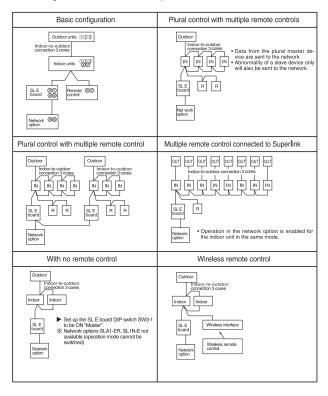
(*1) Whether the actual link is either the new Superlink or the previous Superlink depends on the models of the connected outdoor and indoor units. Consult the agent or the dealer.

Signal line specification

Communication method	Previous Superlink	New Superlink
Line type	MVVS	MVVS
Line diameter	0.75 - 1.25mm ²	0.75/1.25mm ²
Signal line (total length)	up to 1000m	up to 1500/1000m (*2)
Signal line (maximum length)	up to 1000m	up to 1000m

- (*2) Up to 1500 m for 0.75 mm^2 , and up to 1000 m for 1.25 mm^2 . Do not use 2.0 mm². It may cause an error.
- (*3) Connect grounding on both ends of the shielding wire. For the grounding method, refer to the section "6 Installation".

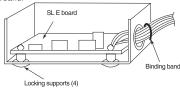
- Set the Superlink network address with SW1 (tens place), SW2 (ones place), and SW3 (hundreds place).
- (2) Set the SL E board SW3-1 to be ON (Master) when using this without any remote control (no wired remote controller nor wireless remote control).
- (3) Set up the plural master/slave device using the DIP switches on the indoor unit board.
- (4) Set up the remote control master/slave device using the slide switch on the remote control board.
- (5) Set up "0" to "F" using the address rotary switch on the indoor unit board when controlling the indoor unit with the multiple remote control.



6 Installation

- 1. When using the metal box (mounted on the indoor unit / mounted on the back of the remote control):
 - (1) Mount the SL E board in the metal box using the locking supports.
 - (2) Wiring should go through the provided grommet since then through the wiring to the hole on the Metal box.

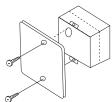
Secure the grommet after inserting the grommet into the Metal box as shown in below figure, then tie the wiring at the outlet of the unit using a binding band.



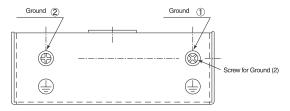
▲ When installed outside the indoor unit, put the metal cover on.



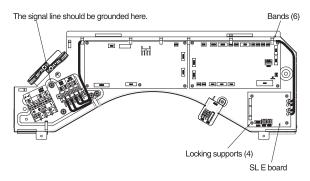
▲ When installed on the back of the remote control, mount it directly on the remote control bottom case.



Connect grounding. Connect grounding for the power line to Ground ①, and grounding for the signal line to Ground ② or to the Ground on the indoor unit control box.



- 2. When connecting to the indoor unit control box (ceiling-concealed type and FDT type only):
 - (1) Mount the SL E board in the control box using the locking supports.
 - (2) Remove 6 bands from the box and put the wiring through the bands to be secured.



Electrical shock hazard make sure to turn the power off for servicing. Be cautious so that no abnormal force should be applied to the wiring. Do not let the SL E board hung by the wiring. Do not damage the board with a screwdriver.

The board is sensitive to static electricity. Release the static electricity of your body before servicing.

(You can do this by touching the control board which is grounded).

Location of installation

Install the device at the location where there are no electromagnetic waves nor where there is water and dust. The specified temperature range of the device is 0 to 40°C. Install the device at the location where the ambient temperature stays within the range. If it exceeds the specification, make sure to provide solution such as installing a cooling fan. When used outside of the range, it may cause abnormal operation.

7 Indicator display

Check the LED 3 (green) and LED 2 (red) on the SL E board for flashing.

SL E board LEDs			Display on the
Red	Green	Inspection mode	integrated network control device
Off	Flashing	Normal communication	
Off	Off	Disconnection in the remote control communication line (X or Y) Short-circuit in the remote control communication line (between X and Y) Faulty indoor unit remote control power Faulty remote control communication circuit Faulty CPU on SL E board	No corresponding unit number
One flash	Flashing	Disconnection in the Superlink signal line (A or B) Short-circuit in the Superlink signal line (between A and B) Faulty Superlink signal circuit	
Two flashes	Flashing	Faulty address setting for the SL E board (Set up the address for previous SL E board : more than 48 new SL E board : more than 128)	
Three flashes	Flashing	SL E board parent not set up when used without a remote control Faulty remote control communication circuit	E1
Four flashes	Flashing	Address overlapping for the SL E board and the Superlink network connected indoor unit	E2
Off	Flashing	Number of connected devices exceeds the specification for the multiple indoor unit control	E10

INVERTER PACKAGED AIR-CONDITIONERS



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