

17. FLOOR STANDING TYPE (CONSOLE TYPE) PACKAGED AIR-CONDITIONER (Split system, Air to air) heat pump type

FDFL258HEN-SA 308HEN-SA 308HES-SA

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FDFL-H

17.1 GENERAL INFORMATION

17.1.1 Specific features

- (1) Less refrigerant charge amount due to use of double phase refrigerant flow system. The total refrigerant charge amount has been reduced by more than 50%.
- (2) The indoor outdoor interconnection signal wiring has been done away with. The microcomputer chip is installed in the indoor unit. There is no need for the unit to communicate between the outdoor and indoor units so the unit is more resistant to electromagnetic noise thus the incidence of microcomputer malfunction has been reduced. The compressor in the outdoor unit has its own self protection function, that reacts according to abnomal high pressure and excessive high temperature.
- (3) There are only five power lines between the outdoor and indoor unit. As no signal wire is used there is no need to separate the power line from the signal line. One cab type cable with 6 wires encased in one sheath is enough for conducting the wiring work between the outdoor unit and the indoor unit. This contributes to simpler wiring work in the field.
- (4) All models have service valves protruding from the outdoor unit for faster flare connection work in the field.

(5) Simple design

The unit has a thickness that masures a mere 7.24 inches, making it the thinnest floor standing air-conditioning unit in its class.

(6) Self-diagnosing function

If any of troubles, such as an abnomality with the power supply and disconnection in the thermistor circuit, has occured, such abnormality, etc. are indicated by a blinking signal, displaying the trouble mode in letters on the liquid crystal display of the remote controller. It is also possile to monitor any such abnormality with a checking switch. When plural units are controlled. No. of the unit in trouble is also indicated.

17.1.2 How to read the model name





17.2 SELECTION DATA

17.2.1 Specifications

Model FDFL258HEN-SA

Item FDFL258-A FDC258HEN3A Nominal loading capacity ⁽⁷⁾ W 5700 Nominal loading capacity ⁽⁷⁾ W 11 Phase, 220-240V, 50Hz Cooling input kW 2.04(2,15 Running current (Cooling) A 9.49.4 Power factor (Cooling) A 9.49.4 Power factor (Cooling) A 9.49.4 Power factor (Cooling) A 9.49.5 Running current (Heating) A 9.19.2 Note (Cooling) A 9.19.2 Running current (Heating) A 9.19.2 Note (Cooling) KW 9.19.2 Note (Cooling) A 9.19.2 Note (Cooling) KW 9.19.2 Note (Coling) KW 9.19.2 Note (With N Depth Mm (650 + 80) × 1260 × 184 845 × 880 × 340 Note (With N Depth kg 33 55 Retrigerant equipment kg 1.088.2 1.088.2 Gountity kg Holding charged 1.1 [Pre-charged up to the pip			Model	FDFL258HEN-SA		
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Installation data Refrigerant piping size mm (in) Liquid line: \phi9.52 (3/8") Gas line: \phi15.88 (5/8") Connecting method Flare piping Drain hose (Connectable with VP20) - Insulation for piping Necessary (both Liquid & Gas lines) Accessories Mounting kit. Optional parts -	Sa	fety equipment		Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Abnormal discharge temperature protection.	
Connecting method Flare piping Drain hose (Connectable with VP20) – Insulation for piping Necessary (both Liquid & Gas lines) Accessories Mounting kit. Optional parts –	Installation data m Refrigerant piping size (ii		mm (in)	Liquid line: (\$9.52 (3/8") Gas line: (\$15.88 (5/8")		
Drain hose (Connectable with VP20) – Insulation for piping Necessary (both Liquid & Gas lines) Accessories Mounting kit. Optional parts –	Connecting method			Flare	biping	
Insulation for piping Necessary (both Liquid & Gas lines) Accessories Mounting kit. Optional parts –	I	Drain hose		(Connectable with VP20)	_	
Accessories Mounting kit. Optional parts –	1	insulation for piping		Necessary (both L	iquid & Gas lines)	
Optional parts –	Ac	cessories		Mounti	ng kit.	
	Op	tional parts		-	-	

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

Item	Indoor air t	emperature	Outdoor air	temperature	Standarda
Operation	DB	WB	DB	WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO T1 US D9414
Heating	20°C	-	7°C	6°C	150-11, JIS 08010

(2) This packaged air-conditioner is manufactured and tested in conformity with the following standard. JIS B8616 "UNITARY AIR-CONDITIONERS"

(3) The operation data indicate when the air-conditioner is operated at 220/240V 50Hz.

Model FDFL308HEN-SA

		Model	FDFL308HEN-SA			
Iten	n		FDFL308-A	FDC308HEN3		
Nominal cooling capacity ⁽¹⁾		W	7100			
Nor	minal heating capacity ⁽¹⁾	W	8000			
Pov	wer source		1 Phase, 220	0/240V, 50Hz		
	Cooling input	kW	2.99	/3.19		
(3)	Running current (Cooling)	Α	13.9	/14.4		
late	Power factor (Cooling)	%	98,	/92		
Š	Heating input	kW	2.85/3.01			
atio	Running current (Heating)	A	13.3,	/13.7		
be	Power factor (Heating)	%	97,	/92		
•	Inrush current	A	9	5		
	Noise level	dB(A)	Hi: 45 Lo: 39	52		
Ext ⊦	erior dimensions leight × Width × Depth	mm	(650 + 50) × 1260 × 184	845× 880 × 340		
Net	tweight	kg	33	74		
Ref C	irigerant equipment Compressor type & Q'ty		_	GT-A5534EN41 × 1		
	Motor	kW	-	2.5		
	Starting method		-	Line starting		
H	leat exchanger		Louver fines & inner grooved tubing	Slitted fins & bare tubing		
R	efrigerant control		Capillary tube			
Ref	frigerant		R22			
C	Quantity	kg	Holding charged	1.4 [Pre-charged up to the piping length of 5m]		
Ref	rigerant oil	l	-	1.45 [BARREL FREEZE32SAM]		
Def	rost control		MC controlled de-icer			
Hig	h pressure control		High pressure switch			
Air F	handling equipment fan type & Q'ty		Multiblade centrifugal fan × 4	Propeller fan × 1		
	Motor	W	35 × 2	55×1		
	Starting method		Line starting	Line starting		
A	Air flow (Standard)	CMM	Hi: 16.5 Lo: 11.5	58		
F	resh air intake		Not possible	-		
A	Air filter, Q'ty		Polypropylene net \times 2 (Washable)	-		
Sho	ck & vibration absorber		Rubber sleeve (for fan motor)	Rubber mount (for compressor)		
Elec	ctric heater	W	-	40 (Crank case heater)		
Ope C	eration control Deperation switch		Wired remote control switch (Optional : RCD-H-E)	– (Indoor unit side)		
Room temperature control			Thermostat by electronics	_		
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Abnormal discharge temperature protection.		
Installation data Refrigerant piping size		mm (in)	Liquid line: φ9.52 (3/8″) Gas line: φ15.88 (5/8″)			
Connecting method			Flare	piping		
Drain hose			(Connectable with VP20)	-		
Iı	nsulation for piping		Necessary (both L	iquid & Gas lines)		
Acc	essories		Mount	ing kit.		
Optional parts						

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

Item	Indoor air t	emperature	Outdoor air	Outdoor air temperature		
Operation	DB	WB	DB	WB	Standards	
Cooling	27°C	19°C	35°C	24°C	ISO T1 JIS B8616	
Heating	20°C	-	7°C	6°C	150-11, 515 16010	

(2) This packaged air-conditioner is manufactured and tested in conformity with the following standard. JIS B8616 "UNITARY AIR-CONDITIONERS"

(3) The operation data indicate when the air-conditioner is operated at 220/240V 50Hz.



Model FDFL308HES-SA

Item FDFL308-A FDC308HES3 Nominal heating capacity ¹⁰ W 710 Nominal heating capacity ¹⁰ W 8000 Power source 3 Phase, 380/415V, 50Hz 50Hz Cooling input KW 2.91/2.97 Running current (Cooling) A 5.1/5.5 Hearing input KW 2.53/2.61 Hearing input KW 2.53/2.61 Insub current A 4.64/4.8 Power factor (Floating) % 8.47/6 Insub current A 4.64/4.8 Power factor (Floating) % 8.45/8.60/3.40 Power factor (Floating) M 6.69 + 50/×1.260 × 184 8.45 × 880/3.40 Power factor (Floating) M 6.69 + 50/×1.260 × 184 8.45 × 880/3.40 Note level dB(A) HE: 45 Loc.39 5.2 Exterior dimensions exterior dimensions mm (650 + 50) × 1260 × 184 8.45 × 880/3.40 Net weight Kg G 3.0 74 Refrigerant coutrol Louver fins.8 inter growed tubing			Model	FDFL308HES-SA		
Nominal acoling capacity™ W 7100 Nominal acoling capacity™ W 8000 Power source 3 Phase, 380/415V, 50Hz Coling input LW 2.91/2.97 Running current (Coling) A 5.1/5.5 Power factor (Coling) % 8/7/5 Heating input kW 2.557.61 Running current (Mating) A 4.644.8 Power factor (Heating) % 8/7/5 Insuk current A 4.644.8 Insuk current A 4.644.8 Insuk current A 4.644.8 Net weight B/8 S80 × 340 845 Retrigerant equipment Corpressor type & Cry GTA5534ES41 × 1 Corpressor type & Cry Motor KW - 2.5 Starting method Luover fines & inner grooved tubing Silted fins & bare tubing Retrigerant control Louver fines & inner grooved tubing Silted fins & bare tubing Retrigerant oil & - 1.45 [BARREL FREEZE32SM] Defiost control Motor	Iter	n		FDFL308-A	FDC308HES3	
Nominal heating capacity ⁽¹⁾ W 8000 Power source 3 Phase, 380/415/, 50Hz Coding input I.W 2.91/2.97 Running current (Cooling) A 5.1/5.5 Power factor (Cooling) A 5.1/5.5 Hearing input KW 2.55/2.61 Running current (Heating) A 4.6/4.8 Power factor (Reating) A 4.6/4.8 Power factor (Heating) A 4.6/5.1 Notic Compressort type & Oty - GT-A5534ES41 × 1 Motor KW - 2.5 Starting method - Line starting Refrigerant control KW - 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil ℓ - 1.4 [BARREL FREEZC3SAM] Defrost control Mutitblade	No	minal cooling capacity ⁽¹⁾	W	7100		
Power source Image: source Strates: source Cooling input LW 2.91/2.97 Running current (Cooling) A 3.1/5.5 Power factor (Cooling) % 8.775 Heating input KW 2.952/6.1 Running current (Heating) A 4.6/4.8 Power factor (Heating) % 8.4776 Insusk current A 4.6/4.8 Noise kevel dB(A) Hi: 45 Lo: 39 Exterior dimensions mm (650 + 50) × 1260 × 184 845 × 680 × 340 Net weight Kg 33 74 Retrigerant equipment - 2.5 Starting method - 2.5 Motor kW - 2.5 Starting method - Capillary tube Retrigerant control & - 1.45 [BARREL FREEZE32SAN] Defrost control & - 1.45 [BARREL FREEZE32SAN] Defrost control & - 1.45 [BARREL FREEZE32SAN] Defrost control <t< td=""><td>No</td><td>minal heating capacity⁽¹⁾</td><td>W</td><td colspan="3">8000</td></t<>	No	minal heating capacity ⁽¹⁾	W	8000		
Gooding input kW 2.912.97 Running current (Cooling) A 5.1.5.5 Power factor (Cooling) % 8.77.5 Hearing input kW 2.852.041 Running current (Heating) A 4.6/4.8 Power factor (Heating) % 8.47.6 Invada current (Heating) % 8.47.6 Invada current (Heating) % 8.47.6 Noise Evel dB(A) Hi: 45 Lo: 39 Exterior dimensions mm (650 + 50) × 1260 × 184 845 × 880 × 340 Net weight kg 33 74 Perfigerant equipment Compressor type & Oty - GT.A5534ES41 × 1 Motor kW - 2.5 Starting method - - Line starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant coutrol 0 - 1.45 [BARREL FREEZE32SAM] Defost control 0 - 1.45 [BARREL FREEZE32SAM] Perfore control 0 Mitibilade centrifugal fan × 4 Propeller fan × 1 Motor % 35 × 2 55 × 1 Starting method - 1.45 [BARREL FREEZE32SAM] Defost control Mitibilade cen	Po	wer source		3 Phase, 38	0/415V, 50Hz	
Brunning current (Cooling) A Status Power factor (Cooling) % 87/75 Hearing input KW 2.552.61 Running current (Ileating) A 4.60/4.8 Power factor (Ileating) % 847/5 Innsk current A 45 Noise level dB(A) Hi: 45 L0: 39 52 Exterior dimensions mm (650 + 50) × 1260 × 184 845 × 880 × 340 Net weight Kg 33 74 Refrigerant equipment Compressor type & Q'ty - CTA5534E541 × 1 Motor kW - 2.5 Starting method - Louver fins & incer grooved tubing Stitued fins & bare tubing Refrigerant Edificient equipment - 1.4 [Pre-charged up to the piping length of 5n] Refrigerant Gil 0 - 1.4 [Pre-charged up to the piping length of 5n] Refrigerant Gil 0 - 1.4 [Recharged up to the piping length of 5n] Refrigerant Gil 0 - 1.4 [Recharged up to the piping length of 5n] Refrigerant Gil 0 - 1.4 [Recharged up to the piping le		Cooling input	kW	2.91	/2.97	
Power factor (Cooling) % 8775 Heating input kW 2.55/2.61 Running current (Heating) A 4.66/4.8 Power factor (Heating) % 847/6 Insis current A 45 Noise level (BKA) Hit 45 Lo: 39 52 Exterior dimensions mm (650 + 50) × 1260 × 184 845 × 880 × 340 Net weight kg 33 74 Refrigerant equipment Compressor type & City - GT-A5534ES41 × 1 Moor kW - 2.5 Starting method - Line starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control ℓ - 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil ℓ - 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil ℓ - 1.4 [BARREL FREEZE32SAM] Defrost control Motor MS35 2 55 × 1 High pressure control Line starting Line sta	(3)	Running current (Cooling)	A	5.1	/5.5	
Perform Item (Instructure) Item (Instructure) Item (Instructure) Noise level A 4.644.8 Noise level A 4.5 Noise level A 4.644.8 Noise level A 4.5 Noise level A 4.5 Noise level A 4.644.8 Noise level A 4.652.8 Noise level A 6.650.9 1.6650.4 Net weight Kg 33 74 Refrigerant equipment Compressor type & O'ty - 2.5 Starting method - I.ine starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control I.a Capillary tube Refrigerant oil ℓ - 1.45 [BARREL FREEZE32AM] Defrost control Ith andling equipment Figh pressure control I.as [BarRREL FREEZE32SAM] Defrost con	ata	Power factor (Cooling)	%	87	/75	
Manualize current (Heating) A 4.644.8 Running current (Heating) % 847/6 Invask current A 45 Noise level dB(A) Hi: 45 Lo: 39 52 Exterior dimensions height. Violith × Depth mm (650 + 50) × 1260 × 184 845 × 880 × 340 Net weight kg 33 74 Refrigerant equipment Compressor type & Q'ty	D u d	Heating input	kW	2.55/2.61		
b b Nover factor (Heating)%84/76Insite currentA45Noise leveldB(A)Hi: 45Lo: 3952Exterior dimensions Height × Width × Depthmm(650 + 50) × 1260 × 184845 × 880 × 340Net weightkg3374Refrigerant equipment Compressor type & Q'ty-GTA5534ES41 × 1MoforkW-2.5Starting method-Line startingHeat exchangerLouver fines & inner grooved tubingSlitted fins & bare tubingRefrigerantCapillary tubeRefrigerant0-GuntitykgHolding chargedAt randing equipment control0Defost control0-Refrigerant oil0-At randing equipment Fan type & Q'tyW35 × 2MoforW35 × 255 × 1MotorW35 × 255 × 1MotorW35 × 255 × 1MotorW35 × 255 × 1Starting methodLine startingLine startingAir flow (Standard)CMMHi: 16.558Fresh air intakNot possible-Art flew, Q'tyPolypropylen et × 2 (Washabic)-Starting methodEnter of an motor)Rubber mount (for compressor)Electric heaterW-40 (Crank case heater)Operation switchNot possibleOperation switchNot prossible-Rom temp	atic	Running current (Heating)	A	4.6/4.8		
O Innush current A	per	Power factor (Heating)	%	84	/76	
Noise leveldB(A)Hi: 45Lo: 3952Exterior dimensions Height Vidith × Depthmm(650 + 50) × 1260 × 184845 × 880 × 340Net weightkg3374Refrigerant equipment Compressor type & Q'ty-GT-A5534ES41 × 1MotorkW-2.5Starting method-Line startingHeat exchangerLouver fines & inner grooved tubingSlitted fins & bare tubingRefrigerantCapillary tubeRefrigerantRefrigerant outrol&Capillary tubeRefrigerant outrol ℓ -QuantitykgHolding charged1.4 [Pre-charged up to the piping length of 5m]Refrigerant oil ℓ 0Multiblade centrifugal fan × 4Propeller fan × 1MotorW35 × 255 × 1MotorW35 × 255 × 1MotorW35 × 255 × 1MotorW35 × 255 × 1Starting methodCMMHi: 16.5Lo: 11.5Air flow (Standard)CMMHi: 16.5Lo: 11.5Air flow (Standard)CMMHi: 16.5Lo: 11.5Starting methodCmmonor (for compressor)Electric heaterW-Operation absorberRubber sleeve (for fan motor)Rubber mount (for compressor)Electric heaterW-40 (Crank case heater)Operation switchInternet thermostat for fan motor. Forst protection thermostat.Internal thermotat for fan motor. Abnormal dischar	0	Inrush current	A	4	15	
Exterior dimensions Height × Width × Depth mm (650 + 50) × 1250 × 184 845 × 880 × 340 Net weight kg 33 74 Refrigerant equipment Compressor type & 0'ty GT-A5534ES41 × 1 Motor kW Starting method Heat exchanger Refrigerant control Refrigerant oll Quantity kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oll Defrost control Defrost control Air handling equipment Fan type & Q'ty Mutubilade centrifugal fan × 4 Propeller fan × 1 Starting method Air flave (Standard) CMM H: 16.5 Lo: 11.5 Starting method Air flave, Q'ty Polypropylenen et × 2 (Washable)		Noise level	dB(A)	Hi: 45 Lo: 39	52	
Net weight kg 33 74 Retrigerant equipment Compressor type & Q'ty - GT-A5534ES41 × 1 Motor kW - 2.5 Starting method - Line starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control Capillary tube Refrigerant control Capillary tube Quantity kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil ℓ - 1.45 [BARREL FREEZE32SAM] Defrost control MC controlled de-icer High pressure control MC controlled de-ider High pressure control W 35 × 2 55 × 1 Starting method Line starting Line starting Air handling equipment Fan type & Q'ty W 35 × 2 55 × 1 Starting method CMM Hi: 6.5 Lo: 11.5 58 Air flow (Standard) CMM Hi: 6.5 Lo: 11.5 58 Air flow (Standard) CMM Rubber sleeve (for fan motor) Rubber mount (for compressor)	Ext F	terior dimensions leight $ imes$ Width $ imes$ Depth	mm	(650 + 50) × 1260 × 184	$845 \times 880 \times 340$	
Refrigerant equipment Compressor type & O'ty - GT-A5534ES41 × 1 Motor kW - 2.5 Starting method - Line starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control Capillary tube Refrigerant control Refrigerant Quantity kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil l - 1.45 [BARREL FREEZE32SAM] Defrost control Multiblade centrifugal fan × 4 Propeller fan × 1 Mator W 35 × 2 55 × 1 Mator W 35 × 2 55 × 1 Starting method Line starting Line starting Air handling equipment Fan type & Q'ty W 35 × 2 55 × 1 Motor W 35 × 2 55 × 1 Starting method Line starting Line starting Air fluer, Q'ty Polypropylen ent × 2 (Washable) - Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation switch (Poperation switch - - Operation switch Internal t	Net	t weight	kg	33	74	
Motor kW 2.5 Starting method - Line starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control Capillary tube Refrigerant control kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil ℓ - 1.45 [BARREL FREEZE32SAM] Defrost control ℓ - 1.45 [BARREL FREEZE32SAM] Motor ℓ - 1.45 [BARREL FREEZE32SAM] Defrost control ℓ - 1.45 [BARREL FREEZE32SAM] Motor ℓ - 1.45 [BARREL FREEZE32SAM] Defrost control W - 40 (control High presure switch Air handling equipment Fan type & Q iy W 35 × 2 55 × 1 Starting method Line starting Line starting - Air flow (Standard) CMM Hit 16.5 Lo: 11.5 58 Fresh air intake Not possible - - Air filter, Q'iy Polypropylene ne	Rei	frigerant equipment Compressor type & Q'ty		-	GT-A5534ES41 × 1	
Starting method - Line starting Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control Capillary tube Refrigerant Refrigerant Slitted fins & bare tubing Quantity kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil l - 1.45 [BARREL FREEZE32SAM] Defrost control l MC controlled de-icer High pressure control Multiblade centrifugal fan × 4 Propeller fan × 1 Air handling equipment Fan type & Q ty W 35 × 2 55 × 1 Motor W 35 × 2 55 × 1 Starting method Line starting Line starting Air flow (Standard) CMM H: 16.5 Lo: 11.5 Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation control Wired remote control switch (Option is witch Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Refrigerant piping size Imm Internal thermostat for fan motor. Frost protection thermostat. Gas line: \$15.88 (5/8') Refrigerant piping size		Motor	kW	-	2.5	
Heat exchanger Louver fines & inner grooved tubing Slitted fins & bare tubing Refrigerant control Capillary tube Refrigerant Refrigerant Quantity kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Refrigerant oil l - 1.45 [BARREL FREEZE32SAM] Defrost control ll MC controlled de-icer High pressure control Multiblade centrifugal fan × 4 Propeller fan × 1 Air handling equipment Fan type & Q'ty W 35 × 2 55 × 1 Starting method Line starting Line starting Air flow (Standard) CMM Ht:16.5 Lot *1.5 Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation control Operation switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - - Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Abnormal discharge temperature protection.		Starting method		-	Line starting	
Refrigerant control Capillary tube Refrigerant Refrigerant </td <td>+</td> <td>leat exchanger</td> <td></td> <td>Louver fines & inner grooved tubing</td> <td>Slitted fins & bare tubing</td>	+	leat exchanger		Louver fines & inner grooved tubing	Slitted fins & bare tubing	
Refrigerant kg Holding charged 1.4 [Pre-charged up to the piping length of 5m] Quantity l - 1.45 [BARREL FREEZE32SAM] Defrost control l - 1.45 [BARREL FREEZE32SAM] Defrost control MC controlled de-icer High pressure control High pressure switch Air handling equipment Fan type & Q'ty W 35 × 2 55 × 1 Motor W 35 × 2 55 × 1 Starting method Line starting Line starting Air flow (Standard) CMM Hi: 16.5 Lo: 11.5 58 Fresh air intake Not possible - - Air filter, Q'ty Polypropylene net × 2 (Washable) - Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) - (Indoor unit side) Operation control Wired remote control switch - (Indoor unit side) - (Indoor unit side) Room temperature control Thermostat by electronics - - Short Abnormal discharge temperature protection. Refrigerant piping size Internal thermostat for fan motor. Frost prot	F	Refrigerant control		Capillary tube		
QuantitykgHolding charged1.4 [Pre-charged up to the piping length of 5m]Refrigerant oill-1.45 [BARREL FREEZE32SAM]Defrost controlllMC controlled de-icerHigh pressure controlHigh pressure switchHigh pressure switchAir handling equipment Fan type & Q'tyMultiblade centrifugal fan × 4Propeller fan × 1MotorW35 × 255 × 1Starting methodLine startingLine startingAir flow (Standard)CMMHi: 16.5Lo: 11.5Air fluer, Q'tyPolypropulen ent × 2 (Washable)-Air filter, Q'tyPolypropulen ent × 2 (Washable)-Shock & vibration absorberRubber sleeve (for fan motor)40 (Crank case heater)Operation control Operation switch (Optional : RCD-H-E)Wired remote control switch (Optional : RCD-H-E)- (Indoor unit side)Room temperature controlThermostat for fan motor. Frost protection thermostat.Internal thermostat for fan motor. Abnormal discharge temperature protection.Installation data Refrigerant piping sizemm (in)Liquid line: ϕ 9.52 (3/8")Gas line: ϕ 15.88 (5/8")	Re	frigerant		R22		
Refrigerant oil ℓ - 1.45 [BARREL FREEZE32SAM] Defrost control MC controlled de-icer High pressure control High pressure switch Air handling equipment Fan type & Q'ty Multiblade centrifugal fan × 4 Propeller fan × 1 Motor W 35 × 2 55 × 1 Starting method Line starting Line starting Air flow (Standard) CMM HI: 16.5 Lo: 11.5 58 Fresh air intake Not possible - - Air filter, Q'ty Polypropylene net × 2 (Washable) - - Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation control Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - Stafty equipment Internal thermostat for fan motor. Frost protection thermostat. Abnormal discharge temperature protection. Installation data Refrigerant piping size Internal thermostat. Flare piping Gonnecting method Liquid line: \$9.52 (3/8") Gas line: \$15.88 (5/		Quantity	kg	Holding charged	1.4 [Pre-charged up to the piping length of 5m]	
Defrost control MC controlled de-icer High pressure control High pressure switch Air handling equipment Fan type & Q'ty Multiblade centrifugal fan × 4 Propeller fan × 1 Motor W 35 × 2 55 × 1 Motor W 35 × 2 55 × 1 Starting method Line starting Line starting Air flow (Standard) CMM Hi: 16.5 Lo: 11.5 58 Fresh air intake Not possible - - Air filter, Q'ty Polypropylene net × 2 (Washable) - - Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation control Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - Starty equipment Internal thermostat for fan motor. Frost protection thermostat. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \$9.52 (3/8') Cas line: \$15.88 (5/8'')	Re	frigerant oil	l	-	1.45 [BARREL FREEZE32SAM]	
High pressure control High pressure switch Air handling equipment Fan type & Q'ty Multiblade centrifugal fan × 4 Propeller fan × 1 Motor W 35 × 2 55 × 1 Starting method Line starting Line starting Air flow (Standard) CMM Hi: 16.5 Lo: 11.5 58 Fresh air intake Not possible - - Air filter, Q'ty Polypropylene net × 2 (Washable) - - Shock & vibration absorber W - 40 (Crank case heater) Operation control Operation switch Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: $\phi 9.52$ (3/8") Gas line: $\phi 15.88$ (5/8")	Def	rost control		MC contro	lled de-icer	
Air handling equipment Fan type & Q'tyMultiblade centrifugal fan × 4Propeller fan × 1MotorW35 × 255 × 1Starting methodLine startingLine startingAir flow (Standard)CMMHi: 16.5Lo: 11.558Fresh air intakeNot possibleAir filter, Q'tyPolypropylene net × 2 (Washable)Shock & vibration absorberRubber sleeve (for fan motor)Rubber mount (for compressor)Electric heaterW-40 (Crank case heater)Operation control Operation switchWired remote control switch (Optional : RCD-H-E)-Room temperature controlThermostat by electronics-Safety equipmentInternal thermostat for fan motor. Frost protection thermostat.Internal thermostat for fan motor. Abnormal discharge temperature protection.Installation data Refrigerant piping sizemm (in)Liquid line: φ9.52 (3/8")Gas line: φ15.88 (5/8")	Hig	h pressure control		High pressure switch		
MotorW35 × 255 × 1Starting methodLine startingLine startingAir flow (Standard)CMMHi: 16.5Lo: 11.558Fresh air intakeNot possible-Air filter, Q'tyPolypropylene net × 2 (Washable)-Shock & vibration absorberRubber sleeve (for fan motor)Rubber mount (for compressor)Electric heaterW-40 (Crank case heater)Operation control Operation switchWired remote control switch (Optional : RCD-H-E)- (Indoor unit side)Room temperature controlThermostat by electronics-Safety equipmentInternal thermostat for fan motor. Frost protection thermostat.Internal thermostat for fan motor. Abnormal discharge temperature protection.Installation data Refrigerant piping sizemm (in)Liquid line: \optios 9.52 (3/8")Gas line: \optios 15.88 (5/8")Connecting methodInternal thermostat for fan motor. Flare pipingFlare piping	Air	handling equipment Fan type & Q'ty		Multiblade centrifugal fan × 4	Propeller fan × 1	
Starting methodLine startingLine startingAir flow (Standard)CMMHi: 16.5Lo: 11.558Fresh air intakeNot possible-Air filter, Q'tyPolypropylen net × 2 (Washable)-Shock & vibration absorberRubber sleeve (for fan motor)Rubber mount (for compressor)Electric heaterW-40 (Crank case heater)Operation control Operation switch Operation switch Operation switchWired remote control switch 		Motor	W	35 × 2	55 × 1	
Air flow (Standard)CMMHi: 16.5Lo: 11.558Fresh air intakeNot possible-Air filter, Q'tyPolypropylen ent × 2 (Washable)-Shock & vibration absorberRubber sleeve (for fan motor)Rubber mount (for compressor)Electric heaterW-40 (Crank case heater)Operation control Operation switch Operation switchWired remote control switch (Optional : RCD-H-E)- (Indoor unit side)Room temperature controlThermostat for fan motor. Frost protection thermostat.Internal thermostat for fan motor. Abnormal discharge temperature protection.Installation data Refrigerant piping sizemm (in)Liquid line: \$9.52 (3/8")Gas line: \$15.88 (5/8")		Starting method		Line starting	Line starting	
Fresh air intake Not possible - Air filter, Q'ty Polypropylen ent × 2 (Washable) - Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation control Operation switch Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \op.52 (3/8") Gas line: \op.15.88 (5/8")	4	Air flow (Standard)	СММ	Hi: 16.5 Lo: 11.5	58	
Air filter, Q'ty Polypropylene net × 2 (Washable) - Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W - 40 (Crank case heater) Operation control Operation switch Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \option 5.52 (3/8") Gas line: \option 5.88 (5/8")	F	Fresh air intake		Not possible	-	
Shock & vibration absorber Rubber sleeve (for fan motor) Rubber mount (for compressor) Electric heater W – 40 (Crank case heater) Operation control Operation switch Wired remote control switch (Optional : RCD-H-E) – (Indoor unit side) Room temperature control Thermostat by electronics – Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \option 52 (3/8") Gas line: \option 15.88 (5/8") Connecting method Understated on the state on the st	A	Air filter, Q'ty		Polypropylene net \times 2 (Washable)	-	
Electric heater W - 40 (Crank case heater) Operation control Operation switch Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \option 9.52 (3/8") Gas line: \option 15.88 (5/8") Connecting method Unit option in the protection thermostic in the protection i	Sho	ock & vibration absorber		Rubber sleeve (for fan motor)	Rubber mount (for compressor)	
Operation control Operation switch Wired remote control switch (Optional : RCD-H-E) - (Indoor unit side) Room temperature control Thermostat by electronics - Safety equipment Internal thermostat for fan motor. Frost protection thermostat, Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \phi9.52 (3/8") Gas line: \phi15.88 (5/8") Connecting method Flare piping	Ele	ctric heater	W	-	40 (Crank case heater)	
Room temperature control Thermostat by electronics – Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \overline 9.52 (3/8") Gas line: \overline 15.88 (5/8") Connecting method Flare piping Flare piping	Ор	eration control Deperation switch		Wired remote control switch (Optional : RCD-H-E)	– (Indoor unit side)	
Safety equipment Internal thermostat for fan motor. Frost protection thermostat. Internal thermostat for fan motor. Abnormal discharge temperature protection. Installation data Refrigerant piping size mm (in) Liquid line: \oplice 9.52 (3/8") Gas line: \oplice 15.88 (5/8") Connecting method Flare piping	Room temperature control			Thermostat by electronics	-	
Installation data mm (in) Liquid line: \(\phi\)9.52 (3/8") Gas line: \(\phi\)15.88 (5/8") Connecting method Flare piping	Sat	Safety equipment		Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Abnormal discharge temperature protection.	
Connecting method Flare piping	Ins F	Installation data mr Refrigerant piping size (in		Liquid line:		
	Connecting method			Flare	piping	
Drain hose (Connectable with VP20) –	0	Drain hose		(Connectable with VP20)	-	
Insulation for piping Necessary (both Liquid & Gas lines)	I	nsulation for piping		Necessary (both L	iquid & Gas lines)	
Accessories Mounting kit.	Acc	cessories		Mount	ing kit.	
Optional parts –	Opt	ional parts			-	

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

Item	Indoor air t	emperature	Outdoor air	Stondorda	
Operation	DB	WB	DB	WB	Stanuarus
Cooling	27°C	19°C	35°C	24°C	ISO T1 IIS P8616
Heating	20°C	-	7°C	6°C	150-11, 115 15010

(2) This packaged air-conditioner is manufactured and tested in conformity with the following standard. JIS B8616 "UNITARY AIR-CONDITIONERS"

(3) The operation data indicate when the air-conditioner is operated at 380/415V 50Hz.

17.2.2 Range of usage & limitations

Item	FDFL258 type	FDFL308 type		
Indoor return air temperature (Upper, lower limits)				
Outdoor air temperature (Upper, lower limits)	Keter to the selection chart			
Refrigerant line (one way) length	Max. 30m	Max. 50m		
Vertical height difference between	Max. 20m (Outdoor unit is higher)	Max. 30m (Outdoor unit is higher)		
outdoor unit and indoor unit	Max. 15m (Outdoor unit is lower)	Max. 15m (Outdoor unit is lower)		
Power source voltage	Rating ± 10%			
Voltage at starting	Min. 85% of rating			
Frequency of ON-OFF cycle	Max. 10 times/h			
ON and OFF interval	Max. 3 minutes			



17.2.3 Exterior dimensions

(1) Indoor unit Models FDFL258-A, 308-A Unit: mm 50 1160 50 Holes for wall (Holes for wall mounting bolt) mounting bolt (M10 or M8) 45 184 191 50 195 1200 30 30 Hole for piping & 1260 wiring (rear) Air outlet grille **355** 275 20 298 275 ←A 235 85 61 48 75 25 Liquid piping \$\overline{\phi_9.52 (3/8")}\$ 200 46 Gas piping ¢15.88 (5/8") **VIEW** A 290 Drain hose 57 (VP20) Hole for wiring 94 (\$30) L 17 167 Air inlet grille 50 Space for installation and service 22 Gas piping & Drain hose 85 Liquid piping 1250 more more Holes for anchor bolt (M10 or M8) or ы 000 100 5 1220 (Hole for anchor bolt) .75 50 more 32 600 or more or 97 6 150 52 Hole for piping & wiring (Bottom)

(2) Remote controller (Optional parts)

0.3mm², 3cores (O.D.¢5.6) LCD display UCD display

16

Unit: mm

Remote controller mounting dimensions



- ♦ Usable JIS box, JIS C 8336
 - Switch box for 1 piece (without cover) (use of the

 mark hole as illustrated on the left)
 - Switch box for 2 pieces (use of the ○ mark hole as illustrated on the left) (without cover)
 - (use of the \triangle mark hole as illustrated on the left) (when installing the cover)
 - Note (1) Allowable length of remote controller cable: 600 m

Allowable rang of wire thickness and length

S	tandard Within	0.3 mm ² 0.5 mm ² 0.75 mm ² 1.25 mm ² 2 mm ²	× Within 100 m × Within 200 m × Within 300 m × Within 400 m × Within 600 m
		Z IIIIII	× within 000 m

FDFL-H

(2) Outdoor unit Models FDC258HEN3A, 308HEN3, 308HES3



Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

Installation type Mark	Ι	Π	Ш
Lı	Open	Open	500
L ₂	300	5	Open
L ₃	100	150	100
L4	5	5	5

Notes

- (1) Avoid the location where four sides are entirely surrounded by walls.
- (2) Fix the unit by anchor bolts without fail. Restrict the protrusion length of anchor bolt to 15 mm and under.
- (3) When strong wind blows against the unit, direct the discharge port at a right angle to the wind direction.
- (4) Secure the space of 1 m and over at the top of unit.(5) Make the height of obstruction wall in front of
- discharge port lower than the height of unit.



17.2.4 Exterior appearance

(1) Indoor unit

Models All models



(2) Outdoor unit Models FDC258HEN3A, 308HEN3, 308HES3





17.2.5 Piping system



Models FDFL308HEN-SA, 308HES-SA





Preset point of the protective devices

Parts name	Mark	Equipped unit	All models
Thermistor (for protection over- loading in heating)	Th⊦R	⊩ R Indoor unit	OFF 68°C ON 61°C
Thermistor (for frost prevention)			OFF 2.5°C ON 10°C
Thermistor (for detecting dis- charge pipe temp.)	Tho-D	Outdoor unit	OFF 135°C ON 90°C
Thermistor (for detecting heat exchange temp.)	Tho-R	Outdoor unit	OFF 70°C ON 60°C
High pressure switch (for controlling FM₀)	63H2	Outdoor unit	OFF 2.5MPa (25.5 Kgf/cm ²) ON 2.06MPa (21 kgf/cm ²)



17.2.6 Selection chart

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

Net capacity = Capacity shown on specification × Correction factors as follows.

(1) Coefficient of cooling and heating capacity in relation to temperatures Model FDFL258HEN-SA



Models FDFL308HEN-SA, 308HES-SA





Table of bypass factor

Item		FDFL 258 type	FDFL 308 type
Air flow	Hi	0.030	0.036
	Lo	0.013	0.018

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

Coefficient: 1.00 at High, 0.95 at Low

(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.

Equ	ivalent piping length ⁽¹⁾ m	5	10	15	20	25	30	35	40	45	50	55
Hea	ting	1.0	1.0	1.0	1.0	1.0	0.995	0.995	0.99	0.99	0.985	0.985
ling	FDFL258 type	1.0	0.995	0.99	0.985	0.98	0.975	0.97	_			
00 C00	FDFL308 type	1.0	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.9

Note (1) Equivalent piping length can be obtained by calculating as follows.

258, 308 series $[\phi 15.88(5/8'')]$: Equivalent piping length = Real piping length + $(0.10 \times \text{Number or bends in piping})$ [Equivalent piping length < Limitation length of piping + 5m]

(4) When the outdoor unit is located at a lower height than the indoor unit in cooling operation and when the outdoor unit is located at a higher height than the indoor unit in heating operation, the following values should be subtracted from the values in the above table.

subtracted from the values 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	0.01	0.02	0.03	0.04	0.05	0.06

Piping length limitations

Item	FDFL258 type	FDFL308 type
Max. one way piping length	30m	50m
Max. vertical height difference	Outdoor unit is higher 20m Outdoor unit is lower 15m	Outdoor unit is higher 30m 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 FDFL308HEN-SA with the air flow "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 Net cooling capacity = 7100 1.00 (0.98 - 0.01)1.0 = 6887 w × × FDFL308HEN-SA Air flow Length 15m. Factor by air

Height difference 5 m

temperatures

"High"



17.2.7 Noise level

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

Ambient air tempetature:

Indoor unit 27°C DB, 19°C WB.

Outdoor unit 35°C DB

Indoor unit Measured based on JIS B 8616 Mike position as below



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

(1) Indoor unit

Model FDFL258-A



Model FDFL308-A



(2) Outdoor unit



Models FDC308HEN-S, 308HES-S



Outdoor unit				
Measured on JIS B 8616				
Mike position: at highest noise le	vel			
in position as belo	ow			
Distance from front side	1m			
Height	1m			

FDFL-H

ELECTRICAL DATA 17.3

17.3.1 Electrical wiring Renote controller Model FDFL258HEN-SA Dation CnH2 BK D BK RD OBK -S CnB TuC CNW2 12V Printed circuit board ON SW3 1234 OFF ₩Ð Cn0 Test 20/240A สย ş Black/Red Black/White Blue/White Brown/White Orange/White Red/White Yellow/Green 888 888 888 Color 0 0 CnF Indoor unit Mark BK/RD BK/WH BL/WH BR/WH OR/WH RD/WH Y/GN CEB g 18 D CnF3 Color ЪС ŝI غڅر Black Blue Brown Gray Orange Pink Red White Color mark Mark N9// 뾪鸟쀥읪Sc Už ₽¢\$ \$ \$ \$ \$ \$ \$ \$ \$ BK/WH BR/WH BK CW RD/WH BK/RD BL/WH High pressure switch (for control) Terminal (F) LED-G CnL LED-R (check) BK CWD 2 4-way valve solenoid Internal thermostat for FMi Internal thermostat for FMo Magnetic contactor for CM Transformer (Indoor unit) Transformer (Outdoor unit) 2 Parts name BK CW j CnA2 CnA1 0 ЪR CnE (Checker) ¢<u>oso</u>∕ VU#2 Auxiliary relay Auxiliary relay **Outdoor unit** Vao. Thermistor Thermistor Chermistor Varistor Varistor ЪС bC g RK/KD 0℃ × нм/жя Mark s] 18 ₹ |81 52C) K BK 88 ~ Fuse Fan motor (Indoor unit) Fan motor (Outdoor unit) Surge suppressor Photo coupler Solenoid coil (for control) Switch (Address set) Changeover switch Terminal block (\bigcirc mark) 88 ₩-H⊃ ЯпЭ ₽BK Parts name ss) Compressor motor Connector (□ mark) Current sensor ВK Capacitor for CM Capacitor for FMI Capacitor for FMo Xo5 Crankcase heater HW/NO ŝt HW/90 Power source 1 Phase 220/240V 50Hz OK OK MH BK Meaning of marks BC BK แฟนว нм/аа (A31.5)7 КD BK/MH Mark Printed circuit board HM HM HM HM HM Sq(8 E CM 212 RD N BK/WH 52C ₽Ò A/CM

Indication lamp (Green) Indication lamp (Red)

Thermistor Thermistor

Connector



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Meaning c	of marks		
Mark	Parts name	Mark	Parts name
ပ္ပ	Capacitor for CM	Tho-A	Thermistor
CFI1,2	Capacitor for FMI	Tho-D	Thermistor
CFo	Capacitor for FMo	Tho-R	Thermistor
Я	Crankcase heater	Ē	Transformer (Indoor unit)
CM	Compressor motor	Ō	Transformer (Outdoor unit)
CnA~W	Connector (mark)	Val	Varistor
cT ₁	Current sensor	Vao	Varistor
ш	Fuse	20S	4-way valve solenoid
FM _{11,2}	Fan motor (Indoor unit)	49Fi	Internal thermostat for FMI
FMo	Fan motor (Outdoor unit)	49Fo	Internal thermostat for FM _o
NR	Surge suppressor	52C	Magnetic contactor for CM
PC D	Photo coupler	X1~7	Auxiliary relay
SV1,2	Solenoid coil (for control)	X01~08	Auxiliary relay
SW1	Switch (Address set)	63H ₂	High pressure switch (for control)
SW3	Changeover switch	\bigtriangledown	Terminal (F)
TB	Terminal block (O mark)		Connector
Thi-A	Thermistor	LED-G	Indication lamp (Green)
Thi-R	Thermistor	LED-R	Indication lamp (Red)

Black/Red Black/White Blue/White Brown/White Orange/White Red/White Yellow/Green

BK/RD BK/WH BL/WH BR/WH OR/WH Y/GN

Black Blue Brown Gray Orange Pink Red White

뾪뽁뽅유웄ィ뚕꽃

Color

Mark

Color

Color mark Mark

FDFL-H

Model FDFL308HES-SA



Meaning of marks

Mark	Parts name	Mark	Parts name
CF11,2	Capacitor for FMI	Tho-D	Thermistor
CF ₀₁	Capacitor for FMo	Tho-R	Thermistor
ъ	Crankcase heater	Ē	Transformer (Indoor unit)
CM	Compressor motor	Tro	Transformer (Outdoor unit)
CnA~Z	Connector (mark)	Val	Varistor
CT1,2	Current sensor	Vao	Varistor
LL.	Fuse	20S	4-way valve solenoid
FM _{11,2}	Fan motor (Indoor unit)	49Fi	Internal thermostat for FMI
FM ₀₁	Fan motor (Outdoor unit)	49Fo1	Internal thermostat for FMo
RN	Surge suppressor	52C	Magnetic contactor for CM
ы С	Photo coupler	X1~7	Auxiliary relay
SV1,2	Solenoid coil (for control)	X01~08	Auxiliary relay
SW1	Switch (Address set)	63H ₂	High pressure switch (for control)
SW3	Changeover switch	\bigtriangledown	Terminal (F)
8	Terminal block (O mark)		Connector
Thi-A	Thermistor	LED-G	Indication lamp (Green)
Thi-R	Thermistor	LED-R	Indication lamp (Red)
Tho-A	Thermistor		

÷ 8

Mark	BK/RD	BKWH	BL/WH	BR/WH	OR/WH	RD/WH	Y/GN	
Color	Black/Red	Black/White	Blue/White	Brown/White	Orange/White	Red/White	Yellow/Green	

17.4 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

Same as the cooling/heating equipment for FDT(N) heat pump type. Refer to page 317.

17.5 APPLICATION DATA SAFETY PRECAUTIONS

- Please read these "Safety Precautions" first then accurately execute the installation work.
- Though the precautionary points indicated herein are divided under two headings. <u>AWARNING</u> and <u>ACAUTION</u>, those points which are related to the strong possibility of an installation done in error resulting in death or serious injury are listed in the <u>AWARNING</u> section. However, there is also a possibility of serious consequences in relationship to the points listed in the <u>ACAUTION</u> section as well.
- In either case, important safety related information is indicated, so by all means, properly observe all that is mentioned. • After completing the installation, along with confirming that no abnormalities were seen from the operation tests, please explain operating methods as well as maintenance methods to the user (customer) of this equipment, based on the owner's manual. Moreover, ask the customer to keep this sheet together with the owner's manual.

- This system should be applied to places of office, restaurant, residence and the like. Application to inferior environment such as engineering shop could cause equipment malfunction.
- Please entrust installation to either the company which sold you the equipment or to a professional contractor. Defects from improper installations can be the cause of water leakage, electric shocks and fires.
- Execute the installation accurately, based on following the installation manual. Again, improper installations can result in water leakage, electric shocks and fires.
- When a large air-conditioning system is installed to a small room, it is necessary to have a prior planned countermeasure for the rare case of a refrigerant leakage, to prevent the exceeding of threshold concentration. In regards to preparing this countermeasure, consult with the company from which you perchased the equipment, and make the installation accordingly. In the rare event that a refrigerant leakage and exceeding of threshold concentration does occur, there is the danger of a resultant oxygen deficiency accident.
- For installation, confirm that the installation site can sufficiently support heavy weight. When strength is insufficient, injury can result from a falling of the unit.
- Execute the prescribed installation construction to prepare for earthquakes and the strong winds of typhoons and hurricanes, etc. Improper installations can result in accidents due to a violent falling over of the unit.
- For electrical work, please see that a licensed electrician executes the work while following the safety standards related to electrical equipment, and local regulations as well as the installation instructions, and that only exclusive use circuits are used.

Insufficient power source circuit capacity and defective installment execution can be the cause of electric shocks and fires.

- Accurately connect wiring using the proper cable, and insure that the external force of the cable is not conducted to the terminal connection part, through properly securing it. Improper connection or securing can result in heat generation or fire.
- Take care that wiring does not rise upward, and accurately install the lid/service panel. Its improper installation can also result in heat generation or fire.
- When setting up or moving the location of the air-conditioner, do not mix air etc. or anything other than the designated refrigerant (R22) within the refrigeration cycle.

Rupture and injury caused by abnormal high pressure can result from such mixing.

• Always use accessory parts and authorized parts for installation construction. Using parts not authorized by this company can result in water leakage, electric shock, fire and refrigerant leakage.

- Execute proper grounding. Do not connect the ground wire to a gas pipe, water pipe, lightning rod or a telephone ground wire. Improper placement of ground wires can result in electric shock.
- The installation of an earth leakage breaker is necessary depending on the established location of the unit. Not installing an earth leakage breaker may result in electric shock.
- Do not install the unit where there is a concern about leakage of combustible gas.
 The rare event of leaked gas collecting around the unit could result in an outbreak of fire.
- For the drain pipe, follow the installation manual to insure that it allows proper drainage and thermally
 insulate it to prevent condensation. Inadequate plumbing can result in water leakage and water damage to
 interior items.



NOTICE

All Wiring of this installation must comply with NATIONAL, STATE AND LOCAL REGULATIONS. These instructions do not cover all variations for every kind of installation circumstance. Should further information be desired or should particular problems occur, the matter should be referred to Mitsubishi Heavy Industries, Ltd. through your local distributor.

WARNING -

BE SURE TO READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD CAUSE SERIOUS INJURY OR DEATH, EQUIPMENT MALFUNCTION AND/OR PROPERTY DAMAGE.

17.5.1 Installation of indoor unit

(1) Selection of installation location

(a) A place where good air circulation and delivery can be obtained.

Air reach

r reach	Unit: m
Models	All models
Air reach	5

Conditions

- (1) Fan speed . . . High
- (2) Air flow speed at reach point . . . 0.5 m/sec.

S

600

- A place where a floor or wall has enough strength to mount the unit. (b)
- A place where there is no obstruction to the return air inlet and supply air outlet ports. (c)
- A place where there is no moist air or oil vapor which may harm the heat exchanger. (d)
- A place where the space shown below may be secured. (e) Floor standing installation



- (f) The unit uses a microcomputer as a control device. Therefore avoid installing the unit near the equipment that generates strong electromagnetic noise.

(2) Installation of unit

(a) Floor standing installation

Positions of mounting bracket fixing bolts 1) Drill holes by referring to figures below.



2) Fix the mounting brackets on a wall. The positions of the brackets should be attached so the brackets face inside.



Note (1) The suspension brackets fixing bolts should be mounted to the length as shown in the above figure, the bolts ends will be recessed inside the cap on the unit.



Unit: mm

Install the suspension brackets so that this plane will be level or will have a gentle incline toward the right. (left and right side height difference should be from 0 to 0.1 in.)





(3) Drain piping

The drain piping can be directed to the floor or rear sides as follows.

(a) Connect a drain piping to the drain outlet and fix it by use of tightening band.



- (b) Indoor side drain piping must be thermally insulated.(c) After finishing the drain piping check the drainage
- by pouring some water in the drain pan.





(4) Installation of remote controller (on the main unit)

Attached remote controller may be installed on the main unit as shown below. The work can be done on the spot when the customer asks so or by other reasons.

Refer to the next page when it is installed on the wall.

• Tapping screw (M4 × L12) × 2 pcs. ● Tie band ● Vinyl tape

- (a) Boring of mounting hole on the front panel
 - Remote the front panel and bore the hole of following size. Lace (made of plastics)



(d) Wiring of remote controller cables

- Use the attached cables and connect between the remote controller and the terminals (X-red, Y-white, Z-black) of control box.
- Make sure to give an extra length of about 50 cm to the cables.(Because the front panel may be removed for maintenance.)
- Peel the cable cover as shown below and solder the wires on the terminals. (Unless they are soldered, they may become loose.)



(f) Arrangement of cables

Fasten the excessive length of the cable with the tie bands.



(b) Protection of edge

Make smooth the periphery of the 16 \sim 20 hole with vinyl tape, etc.

(this is indispensable to protect cables.)



(c) Installation of remote controller

Install the lower case with tapping screws (M4 \times L12). Tapping screw (2pcs.)



(e) Installation of front panel

Take out the cables through the insulating section of the drain pan.



(g) Installation of side panel

The work is completed when the side panel is installed.



17.5.2 Installation of outdoor unit

Same as the cooling/heating equipment for FDT(N) heat pump type. Refer to page 338.

17.6 MAINTENANCE DATA

Same as the cooling/heating equipment for FDT(N) heat pump type. Refer to page 348.