9. CEILING RECESSED TYPE PACKAGED AIR-CONDITIONER

(Split system, Air cooled Cooling only type)

Refrigerant R22 use models

FDT208CEN-SA
258CEN-SA
308CEN-A
308CES-A
408CES-A
508CES-A

Alternative refrigerant R407C use models

FDTNP208CEN-S
258CEN-S
308CEN-S
308CES-S
408CES-S
508CES-S

CONTENTS

9.1 GENERAL INFORMATION

9.1.1 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 abnormal high pressure and excessive high temperature.

(3) There are only four 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 tyre cable with 4 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 air supply ports have auto swing louvers. The indoor fan motor has two speeds of high and low.

(5) All models have service valves protruding from the outdoor unit for faster flare connection work in the field.

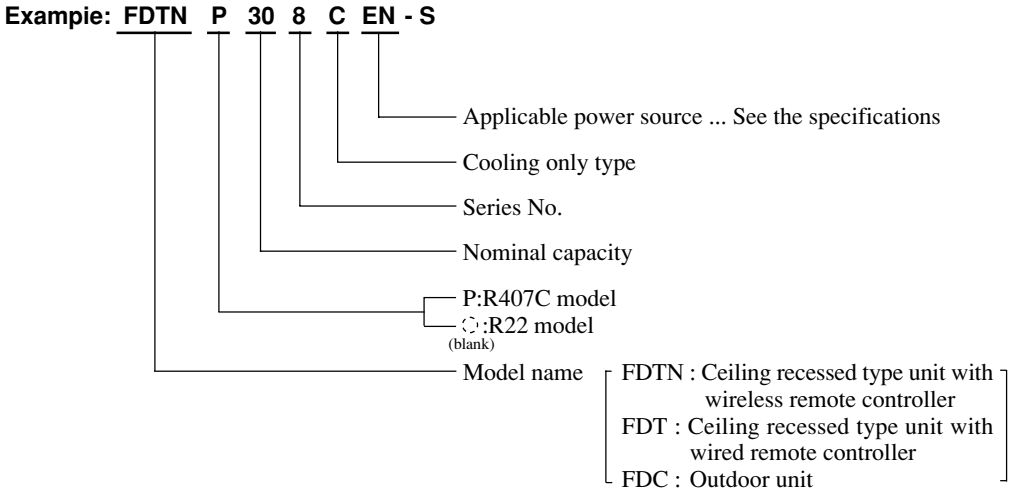
(6) Low sound level

Operating noise has been remarkably reduced due to adoption of the crescent turbo fan which cuts off wind-blowing noise and also console type of cabinet which is highly effective to protect vibration.

(7) 700mm high drain head

Adoption of drain pump with high drain head and high capacity (600cc/min) has made it possible to have maximum 700 mm(form below ceiling drain head.[In case 700mm drain head is required, set it up close to the unit. It is impossible to do piping on down slope.]

9.1.2 How to read the model name



9.2 SELECTION DATA

9.2.1 Specifications

(1) Refrigerant R22 use models

(a) Wired remote controller type

Model FDT208CEN-SA

Item		Model	FDT208CEN-SA	
			FDT208-A	FDC208CEN3
Nominal cooling capacity(1)		W	**5000**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	1.78/1.87	
	Running current (Cooling)	A	8.3/8.1	
	Power factor (Cooling)	%	97/96	
	Inrush current (L.R.A)	A	44	
	Noise level(4)	dB(A)	Hi:38 Lo:33	52
Exterior dimensions Height × Width × Depth		**mm**	**Unit 215 × 700 × 700 Panel 26 × 800 × 800**	**690 × 880 × 290**
Net weight		**kg**	**23 (Unit:18 Panel:5)**	**49**
Refrigerant equipment Compressor type & Q'ty			–	**RM5523GNE4 × 1**
Motor		kW	–	**1.7**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			Capillary tube	Capillary tube
Refrigerant			**R22**	
Quantity		**kg**	**Holding charged**	**0.9 [Pre-charged up to the piping length of 0m]**
Refrigerant oil		ℓ	–	**0.7 (BARREL FREEZE 32 SAM)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor		W	**30 × 1**	**55 × 1**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:14 Lo:10**	**56**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Crank case heater)
Operation control Operation switch			Wired remote control switch (Optional:RCD-C-S-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. Thermostat for discharge temperature.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ6.35 (1/4″) Gas line: ϕ15.88 (5/8″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDT258CEN-SA

Item		Model	FDT258CEN-SA	
			FDT258-A	FDC258CEN3
Nominal cooling capacity(1)		W	**5700**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	2.05/2.16	
	Running current (Cooling)	A	9.4/9.4	
	Power factor (Cooling)	%	99/96	
	Inrush current (L.R.A)	A	51	
	Noise level(4)	dB(A)	Hi:39 Lo:35	52
Exterior dimensions Height × Width × Depth		**mm**	**Unit 260 × 840 × 840 Panel 30 × 950 × 950**	**845 × 880 × 340**
Net weight		**kg**	**30 (Unit:24 Panel:6)**	**55**
Refrigerant equipment Compressor type & Q'ty			–	**RM5526GNE4 × 1**
Motor		kW	–	**1.9**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R22**	
Quantity		**kg**	**Holding charged**	**1.05 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**0.7 (BARREL FREEZE 32 SAM)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor		W	**25 × 1**	**55 × 1**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:16 Lo:11**	**56**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Cank case heater)
Operation control Operation switch			Wired remote control switch (Optional:RCD-C-S-E)	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment(4)			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermostat for discharge temperature.
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 VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDT308CEN-A

Item				Model	FDT308CEN-A	
					FDT308-A	FDC306CEN3
Nominal cooling capacity(1)			ISO-T1	W	**7100**	
			ISO-T3		**5700**	
Power source					**1 Phase, 220/240V, 50Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	3.07/3.11	
		Running current (Cooling)		A	15.6/16.3	
		Power factor (Cooling)		%	89/79	
	ISO-T3	Cooling input		kW	3.26/3.30	
		Running current (Cooling)		A	16.6/17.3	
		Power factor (Cooling)		%	89/79	
	Inrush current (L.R.A)			A	89	
	Noise level(4)			dB(A)	Hi:41 Lo:35	56
Exterior dimensions Height × Width × Depth				**mm**	**Unit 260 × 840 × 840 Panel 30 × 950 × 950**	**844 × 950 × 340**
Net weight				**kg**	**30 (Unit:24 Panel:6)**	**67**
Refrigerant equipment Compressor type & Q'ty					–	**RC5532ENE1 × 1**
Motor				kW	–	**2.24**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.3 [Pre-charged up to the piping length of 5m]**
Refrigerant oil				ℓ	–	**1.63 (SUNISO 3GS)**
High pressure control					High pressure regulator valve	
Air handling equipment Fan type & Q'ty					Turbo fan × 1	Propeller fan × 1
Motor				W	**30 × 1**	**60 × 1**
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:17 Lo:12**	**54**
Fresh air intake					Available	–
Air filter, Q'ty					Long life filter × 1 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wired remote control switch (Optional:RCD-C-S-E)	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
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 VP25)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit.	
Optional parts					Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616
	29°C	19°C	46°C	24°C	ISO-T3, SASO

(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.

(4) Indicates the value at mild mode.

Model FDT308CES-A

Item				Model	FDT308CES-A	
					FDT308-A	FDC306CES3
Nominal cooling capacity(1)			ISO-T1	W	7100/7700	
			ISO-T3		5700/6000	
Power source					3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz	
Operation data(3)	ISO-T1	Cooling input		kW	2.83/2.84/3.35	
		Running current (Cooling)		A	5.3/5.3/6.0	
		Power factor (Cooling)		%	81/75/85	
	ISO-T3	Cooling input		kW	3.02/3.03/3.58	
		Running current (Cooling)		A	5.7/5.7/6.5	
		Power factor (Cooling)		%	80/74/84	
	Inrush current (L.R.A)			A	43	
	Noise level(4)			dB(A)	Hi:41 Lo:35	59
Exterior dimensions Height × Width × Depth				mm	Unit 260 × 840 × 840 Panel 30 × 950 × 950	844 × 950 × 340
Net weight				kg	30 (Unit:24 Panel:6)	67
Refrigerant equipment Compressor type & Q'ty					–	RC5538ESE1 × 1
Motor				kW	–	2.24
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					R22	
Quantity				kg	Holding charged	1.3 [Pre-charged up to the piping length of 5m]
Refrigerant oil				ℓ	–	1.63 (SUNISO 3GS)
High pressure control					High pressure regulator valve	
Air handling equipment Fan type & Q'ty					Turbo fan × 1	Propeller fan × 1
Motor				W	30 × 1	60 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				CMM	Hi:17 Lo:12	54/56
Fresh air intake					Available	–
Air filter, Q'ty					Long life filter × 1 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wired remote control switch (Optional:RCD-C-S-E)	- (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
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 VP25)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit.	
Optional parts					Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616
	29°C	19°C	46°C	24°C	ISO-T3, SASO

(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 and 380V 60Hz respectively.

(4) Indicates the value at mild mode.

Model FDT408CES-A

Item				Model	FDT408CES-A	
					FDT408-A	FDC406CES3
Nominal cooling capacity(1)			ISO-T1	W	**10200/11300**	
			ISO-T3		**8900/9900**	
Power source					**3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	3.78/3.78/4.65	
		Running current (Cooling)		A	7.5/7.5/8.8	
		Power factor (Cooling)		%	77/70/80	
	ISO-T3	Cooling input		kW	4.12/4.12/5.15	
		Running current (Cooling)		A	8.1/8.1/9.5	
		Power factor (Cooling)		%	77/71/82	
	Inrush current (L.R.A)			A	45	
	Noise level(4)			dB(A)	Hi:48 Lo:40	57
Exterior dimensions Height × Width × Depth				**mm**	**Unit 320 × 840 × 840 Panel 30 × 950 × 950**	**1250 × 950 × 340**
Net weight				**kg**	**34 (Unit:28 Panel:6)**	**80**
Refrigerant equipment Compressor type & Q'ty					–	**RC5547ESE1 × 1**
Motor				kW	–	**2.61**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.55 [Pre-charged up to the piping length of 5m]**
Refrigerant oil				ℓ	–	**1.63 (SUNISO 3GS)**
High pressure control					High pressure regulator valve	
Air handling equipment Fan type & Q'ty					Turbo fan × 1	Propeller fan × 2
Motor				W	**80 × 1**	**60 × 2**
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:26 Lo:19**	**100/110**
Fresh air intake					Available	–
Air filter, Q'ty					Long life filter × 1 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wired remote control switch (Optional:RCD-C-S-E)	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
Installation data Refrigerant piping size				**mm (in)**	**Liquid line: ϕ9.52 (3/8″) Gas line: ϕ19.05 (3/4″)**	
Connecting method					**Flare piping**	
Drain hose					(Connectable with VP25)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit.	
Optional parts					Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616
	29°C	19°C	46°C	24°C	ISO-T3, SASO

(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 and 380V 60Hz respectively.

(4) Indicates the value at mild mode.

Model FDT508CES-A

Item			Model	FDT508CES-A	
				FDT508-A	FDC506CES3
Nominal cooling capacity(1)		ISO-T1	W	**12500/14000**	
		ISO-T3		**10600/11900**	
Power source				**3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input	kW	4.87/4.87/5.83	
		Running current (Cooling)	A	10.0/10.0/11.0	
		Power factor (Cooling)	%	74/68/81	
	ISO-T3	Cooling input	kW	5.42/5.42/6.43	
		Running current (Cooling)	A	11.3/11.3/12.0	
		Power factor (Cooling)	%	73/67/81	
	Inrush current (L.R.A)		A	68	
	Noise level(4)		dB(A)	Hi:49 Lo:43	59
Exterior dimensions Height × Width × Depth			**mm**	**Unit 320 × 840 × 840 Panel 30 × 950 × 950**	**1250 × 950 × 340**
Net weight			**kg**	**36 (Unit:30 Panel:6)**	**85**
Refrigerant equipment Compressor type & Q'ty				–	**RC5563ESE2 × 1**
Motor			kW	–	**3.73**
Starting method				–	Line starting
Heat exchanger				Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control				–	Capillary tube
Refrigerant				**R22**	
Quantity			**kg**	**Holding charged**	**1.85 [Pre-charged up to the piping length of 5m]**
Refrigerant oil			ℓ	–	**2.07 (SUNISO 3GS)**
High pressure control				High pressure regulator valve	
Air handling equipment Fan type & Q'ty				Turbo fan × 1	Propeller fan × 2
Motor			W	**130 × 1**	**60 × 2**
Starting method				Line starting	Line starting
Air flow (Standard)			**CMM**	**Hi:28 Lo:20**	**100/110**
Fresh air intake				Available	–
Air filter, Q'ty				Long life filter × 1 (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-C-S-E)	– (Indoor unit side)
Room temperature control				Thermostat by electronics	–
Safety equipment				Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
Installation data Refrigerant piping size			**mm (in)**	**Liquid line: ϕ9.52 (3/8″) Gas line: ϕ19.05 (3/4″)**	
Connecting method				**Flare piping**	
Drain hose				(Connectable with VP25)	–
Insulation for piping				Necessary (both Liquid & Gas lines)	
Accessories				Mounting kit.	
Optional parts				Decorative Panel	

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

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616
	29°C	19°C	46°C	24°C	ISO-T3, SASO

(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 and 380V 60Hz respectively.

(4) Indicates the value at mild mode.

(2) Alternative refrigerant R407C use models

(a) Wireless remote controller type

Model FDTNP208CEN-S

Item		Model	FDTNP208CEN-S	
			FDTN208C	FDCP208CEN3
Nominal cooling capacity(1)		W	**5000**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	2.05/2.11	
	Running current (Cooling)	A	9.5/9.6	
	Power factor (Cooling)	%	98/92	
	Inrush current (L.R.A)	A	55	
	Noise level(4)	dB(A)	Hi:38 Lo:33	52
Exterior dimensions Height × Width × Depth		**mm**	**Unit 215 × 700 × 700 Panel 26 × 800 × 800**	**690 × 880 × 290**
Net weight		**kg**	**23 (Unit:18 Panel:5)**	**49**
Refrigerant equipment Compressor type & Q'ty			–	**RM5523HNE5 × 1**
Motor		kW	–	**1.7**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R407C**	
Quantity		**kg**	**Holding charged**	**0.87 [Pre-charged up to the piping length of 0m]**
Refrigerant oil		ℓ	–	**0.7 (MA32)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor		W	**30 × 1**	**55 × 1**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:14 Lo:10**	**56**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ6.35 (1/4″) Gas line: ϕ15.88 (5/8″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDTNP258CEN-S

Item		Model	FDTNP258CEN-S	
			FDTN258C	FDCP258CEN3
Nominal cooling capacity(1)		W	**5700**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	2.36/2.55	
	Running current (Cooling)	A	11.3/12.4	
	Power factor (Cooling)	%	95/86	
	Inrush current (L.R.A)	A	63	
	Noise level(4)	dB(A)	Hi:39 Lo:35	52
Exterior dimensions Height × Width × Depth		**mm**	**Unit 260 × 840 × 840 Panel 30 × 950 × 950**	**845 × 880 × 340**
Net weight		**kg**	**30 (Unit:24 Panel:6)**	**55**
Refrigerant equipment Compressor type & Q'ty			–	**RM5526HNE5 × 1**
Motor		kW	–	**1.9**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R407C**	
Quantity		**kg**	**Holding charged**	**1.07 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**0.7 (MA32)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor		W	**25 × 1**	**55 × 1**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:16 Lo:11**	**56**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment(4)			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for 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 VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDTNP308CEN-S

Item		Model	FDTNP308CEN-S	
			FDTN308C	FDCP308CEN3
Nominal cooling capacity(1)		W	**7100**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	3.21/3.36	
	Running current (Cooling)	A	14.9/15.3	
	Power factor (Cooling)	%	98/92	
	Inrush current (L.R.A)	A	95	
	Noise level(4)	dB(A)	Hi:41 Lo:35	52
Exterior dimensions Height × Width × Depth		**mm**	**Unit 260 × 840 × 840 Panel 30 × 950 × 950**	**845 × 880 × 340**
Net weight		**kg**	**30 (Unit:24 Panel:6)**	**73**
Refrigerant equipment Compressor type & Q'ty			–	**GT-A5534HN41 × 1**
	Motor	kW	–	**2.5**
	Starting method		–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R407C**	
Quantity		**kg**	**Holding charged**	**1.63 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**1.45 (MA32)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
	Motor	W	**30 × 1**	**55 × 1**
	Starting method		Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:17 Lo:12**	**58**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	33 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for 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 VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDTNP308CES-S

Item		Model	FDTNP308CES-S	
			FDTN308C	FDCP308CES3
Nominal cooling capacity(1)		W	**7100**	
Power source			**3 Phase, 380/415V, 50Hz**	
Operation data(3)	Cooling input	kW	3.13/3.28	
	Running current (Cooling)	A	5.5/5.8	
	Power factor (Cooling)	%	86/79	
	Inrush current (L.R.A)	A	43	
	Noise level(4)	dB(A)	Hi:41 Lo:35	52
Exterior dimensions Height × Width × Depth		**mm**	**Unit 260 × 840 × 840 Panel 30 × 950 × 950**	**845 × 880 × 340**
Net weight		**kg**	**30 (Unit:24 Panel:6)**	**73**
Refrigerant equipment Compressor type & Q'ty			–	**GT-A5534HS41 × 1**
Motor		kW	–	**2.5**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R407C**	
Quantity		**kg**	**Holding charged**	**1.63 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**1.45 (MA32)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor		W	**30 × 1**	**55 × 1**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:17 Lo:12**	**58**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	33 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for 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 VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDTNP408CES-S

Item		Model	FDTNP408CES-S	
			FDTN408C	FDCP408CES3
Nominal cooling capacity(1)		W	**10000**	
Power source			**3 Phase, 380/415V, 50Hz**	
Operation data(3)	Cooling input	kW	4.55/4.67	
	Running current (Cooling)	A	8.0/8.4	
	Power factor (Cooling)	%	86/77	
	Inrush current (L.R.A)	A	53	
	Noise level(4)	dB(A)	Hi:48 Lo:40	54
Exterior dimensions Height × Width × Depth		**mm**	**Unit 320 × 840 × 840 Panel 30 × 950 × 950**	**1050 × 920 × 340**
Net weight		**kg**	**30 (Unit:24 Panel:6)**	**96**
Refrigerant equipment Compressor type & Q'ty			–	**GU-A5550HS41 × 1**
Motor		kW	–	**2.8**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R407C**	
Quantity		**kg**	**Holding charged**	**2.12 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**1.6 (MA32)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 2
Motor		W	**80 × 1**	**40 × 2**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:26 Lo:19**	**70**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	40 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ9.52 (3/8″) Gas line: ϕ19.05 (3/4″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

Model FDTNP508CES-S

Item		Model	FDTNP508CES-S	
			FDTN508C	FDCP508CES3
Nominal cooling capacity(1)		W	**12500**	
Power source			**3 Phase, 380/415V, 50Hz**	
Operation data(3)	Cooling input	kW	5.41/5.48	
	Running current (Cooling)	A	9.7/10.0	
	Power factor (Cooling)	%	85/76	
	Inrush current (L.R.A)	A	74	
	Noise level(4)	dB(A)	Hi:49 Lo:43	55
Exterior dimensions Height × Width × Depth		**mm**	**Unit 320 × 840 × 840 Panel 30 × 950 × 950**	**1250 × 920 × 340**
Net weight		**kg**	**30 (Unit:24 Panel:6)**	**105**
Refrigerant equipment Compressor type & Q'ty			–	**GU-A5560HS41 × 1**
Motor		kW	–	**3.75**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			–	Capillary tube
Refrigerant			**R407C**	
Quantity		**kg**	**Holding charged**	**2.58 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**1.6 (MA32)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Turbo fan × 1	Propeller fan × 2
Motor		W	**130 × 1**	**65 × 2**
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:28 Lo:20**	**110**
Fresh air intake			Available	–
Air filter, Q'ty			Long life filter × 1 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	40 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ9.52 (3/8″) Gas line: ϕ19.05 (3/4″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP25)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			Decorative Panel	

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS B8616

(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.

(4) Indicates the value at mild mode.

9.2.2 Range of usage & limitations

Models FDT208, 258 (FDC208, 258 type), FDTNP208~508 (FDCP208~508 type)

Item \ Models	FDT208, 258 (FDC208, 258 type) FDTNP208, 258 (FDC208, 258 type)	FDTNP308~508 (FDC308~508 type)
Indoor return air temperature (Upper, lower limits)	Refer to the selection chart	
Outdoor air temperature (Upper, lower limits)		
Indoor unit atmosphere (behind ceiling) temperature and humidity	Dew point temperature: 28˚C or less, relative humidity: 80% or less	
Refrigerant line (one way) length	Max. 30m	Max. 50m
Vertical height difference between outdoor unit and indoor unit	Max. 20m (Outdoor unit is higher) Max. 15m (Outdoor unit is lower)	Max. 30m (Outdoor unit is higher) 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	

Models FDT308~508 (FDC306~506 type)

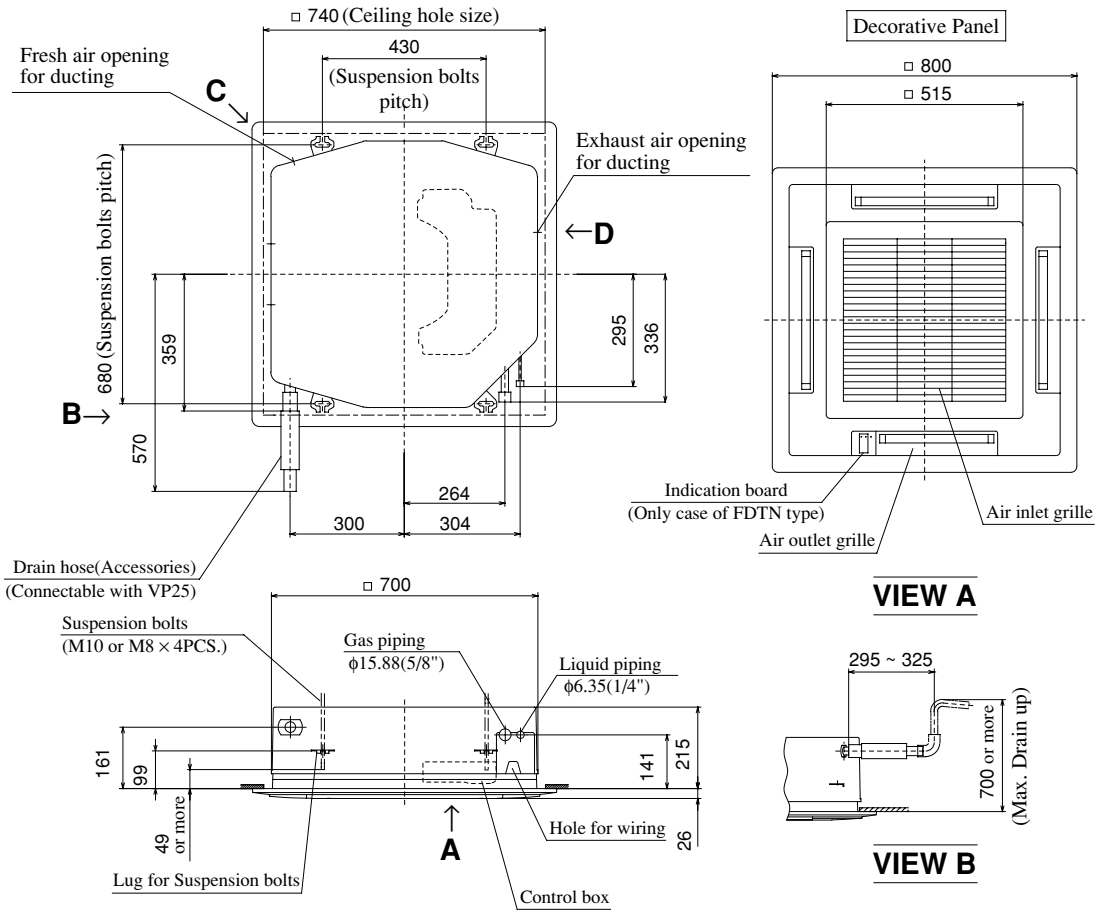
Item \ Models	FDT308~508 (FDC306~506 type)
Indoor return air temperature (Upper, lower limits)	Refer to the selection chart
Outdoor return air temperature (Upper, lower limits)	
Indoor unit atmosphere (behind ceiling) temperature and humidity	Dew point temperature: 28˚C or less, relative humidity: 80% or less
Refrigerant line (one way) length	Max. 30m
Vertical height difference between outdoor unit and indoor unit	Max. 15m
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

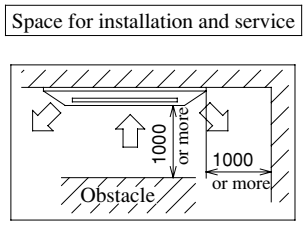
9.2.3 Exterior dimensions

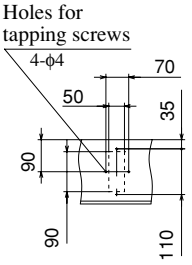
(1) Indoor unit

Models FDTN208C
FDT208-A

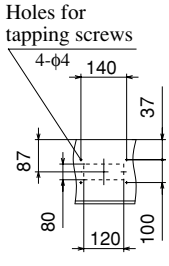
Unit : mm







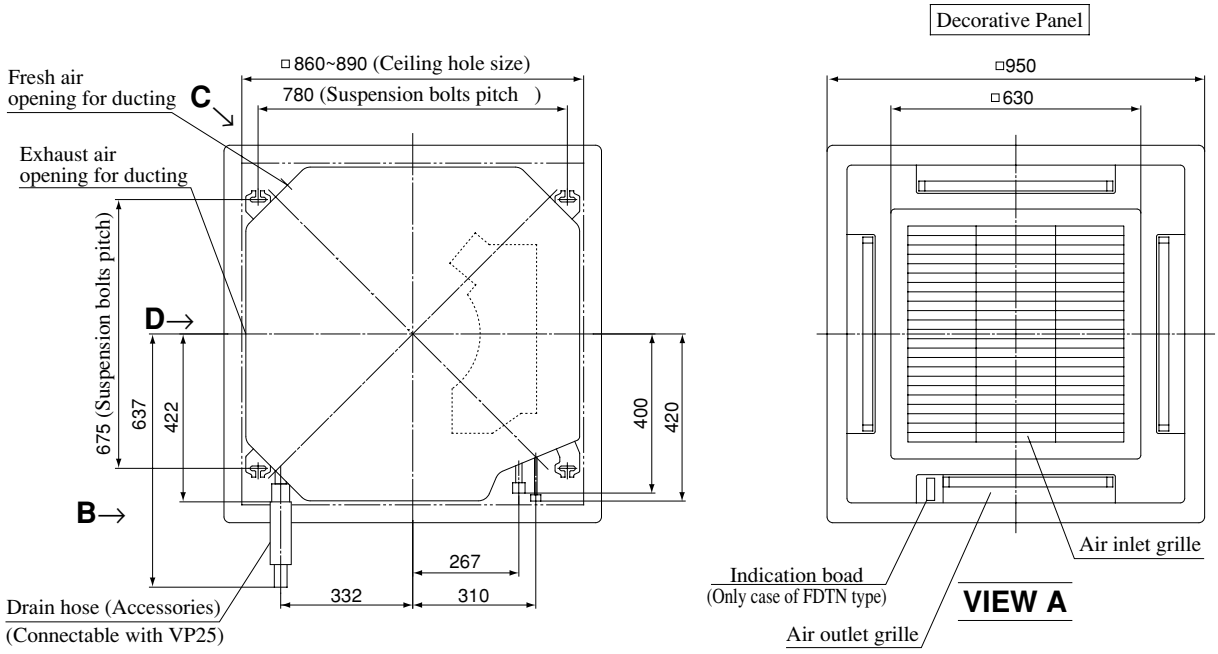
VIEW C

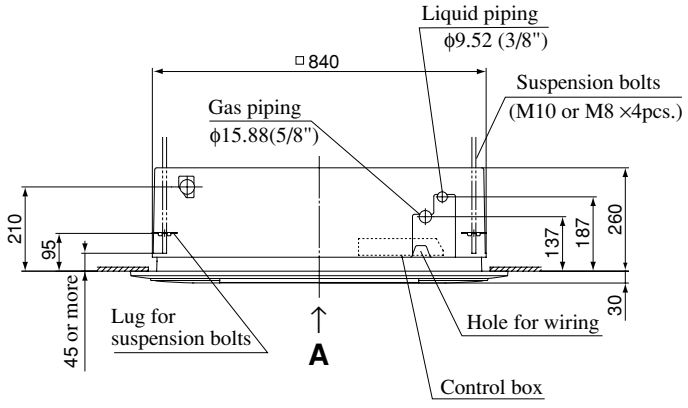


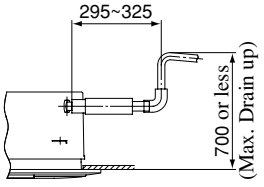
VIEW D

Models FDTN258C, 308C
FDT258-A, 308-A

Unit : mm

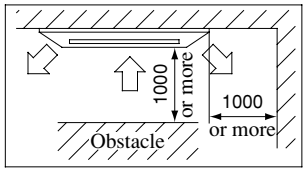


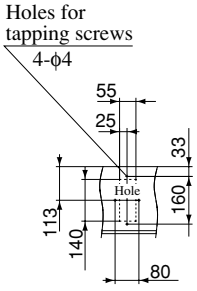




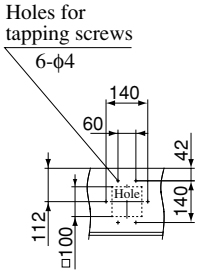
VIEW B

Space for installation and service





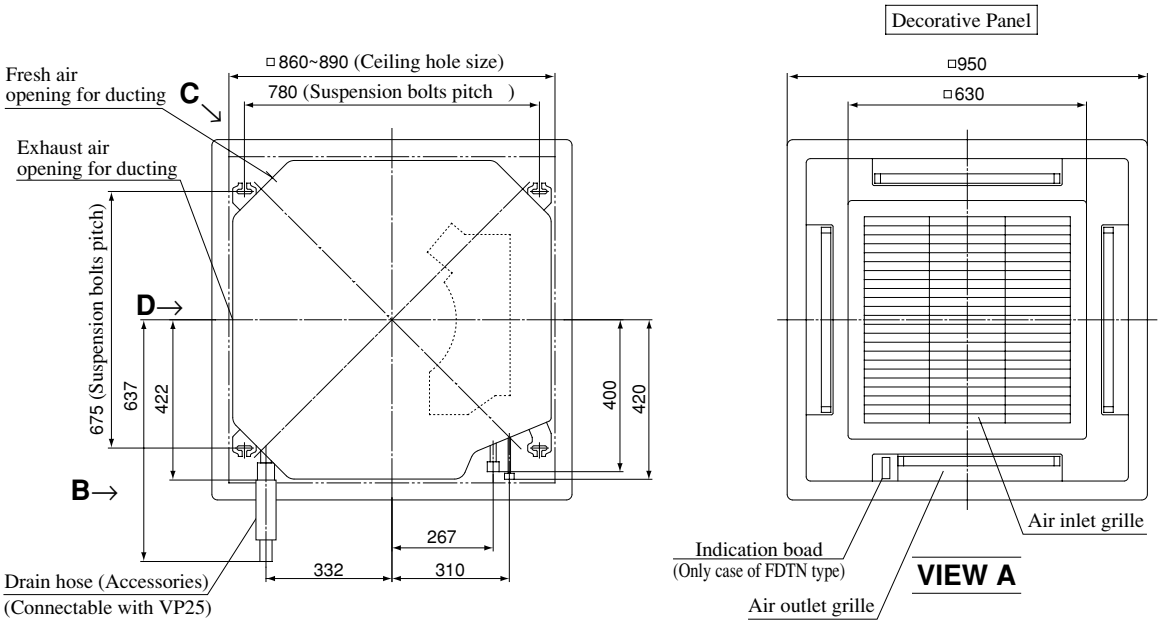
VIEW C

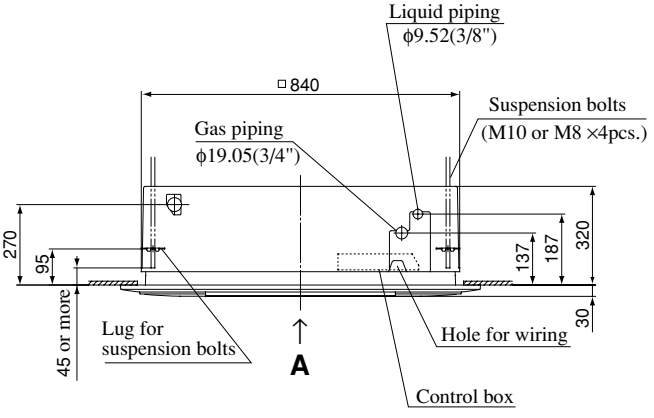


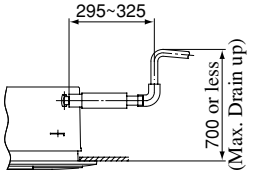
VIEW D

Models FDTN408C, 508C
FDT408-A, 508-A

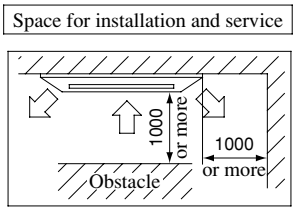
Unit : mm

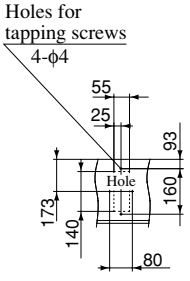




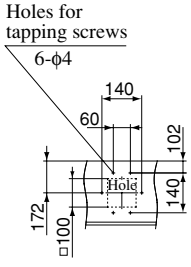


VIEW B





VIEW C

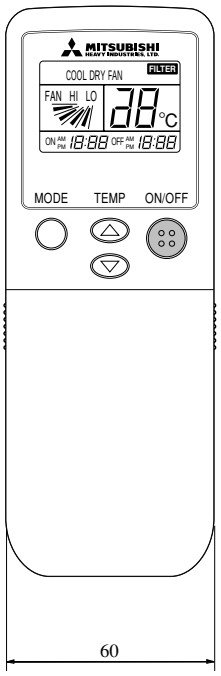


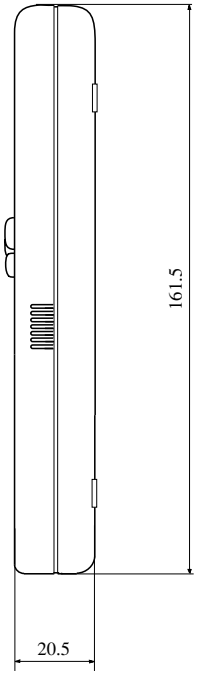
VIEW D

(2) Remote controller

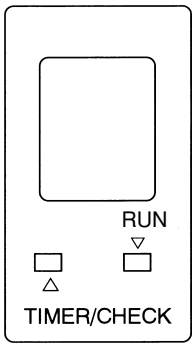
(a) Wireless remote controller

Unit: mm



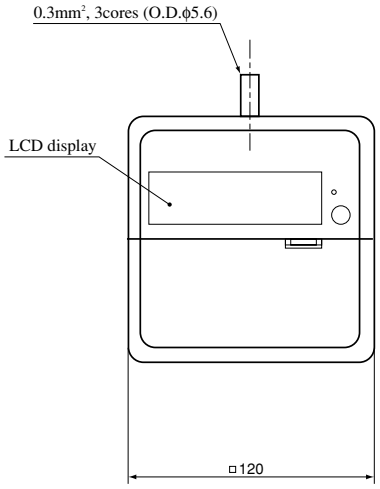


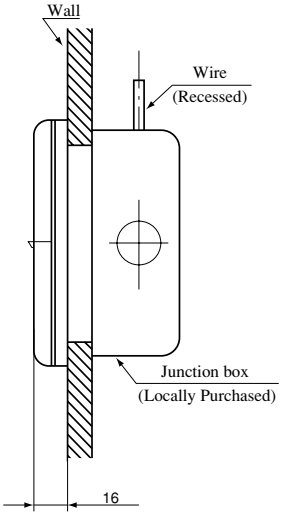
Indication board of indoor unit

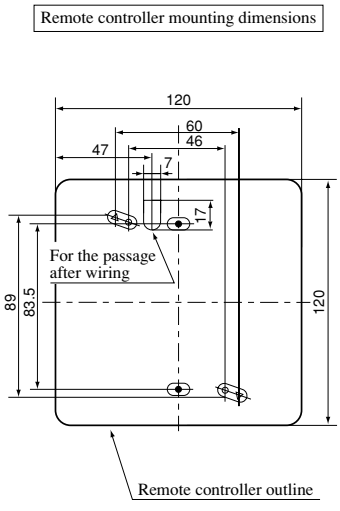


Unit: mm

(b) Wired remote controller(Optional parts)







♦ 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 △ mark hole as illustrated on the left)
  (when installing the cover)

Note (1) Allowable length of remote controller cable: 600 m

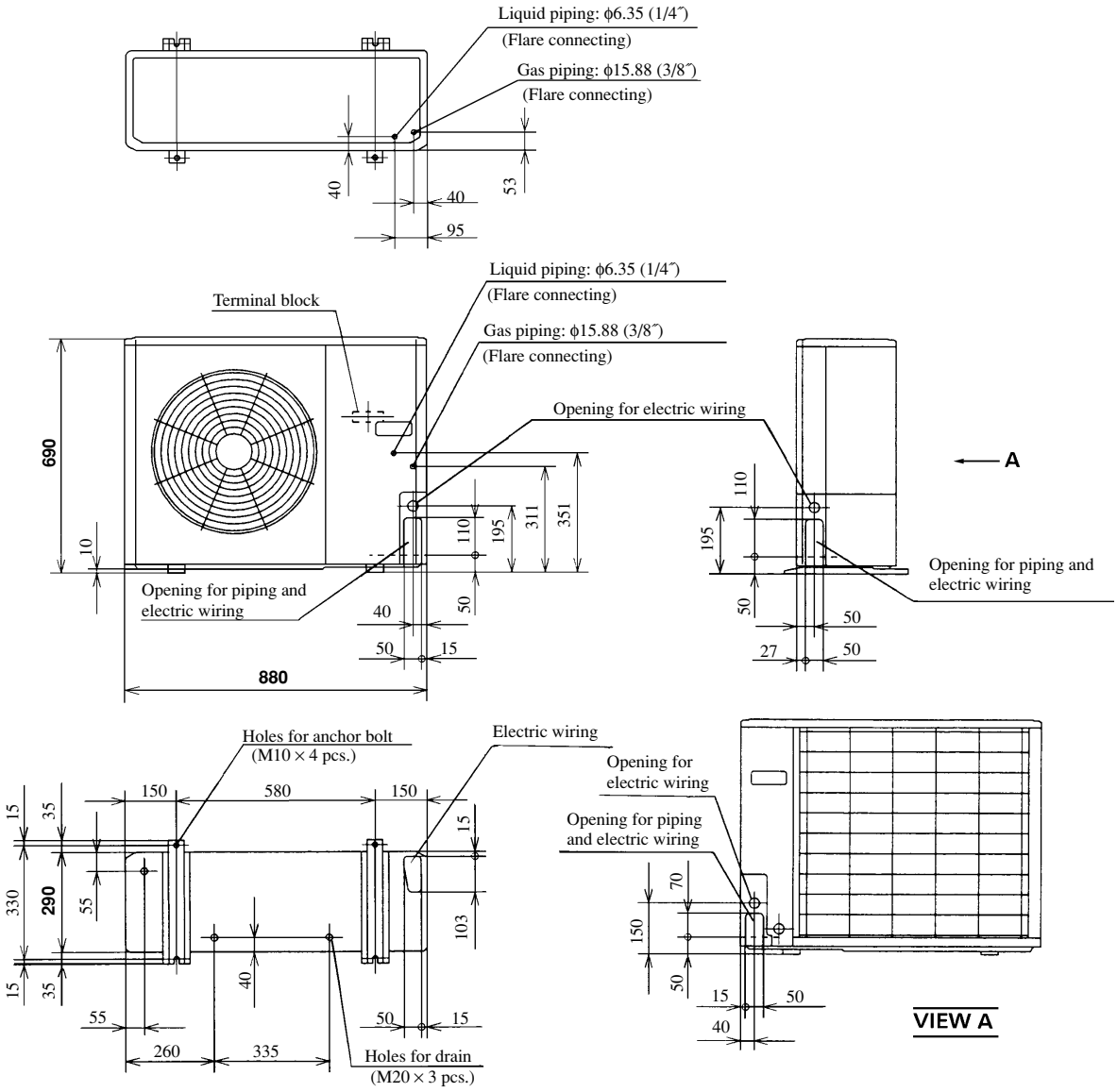
Allowable rang of wire thickness and length

Standard Within	0.3 mm²	× Within 100 m
	0.5 mm²	× Within 200 m
	0.75 mm²	× Within 300 m
	1.25 mm²	× Within 400 m
	2 mm²	× Within 600 m

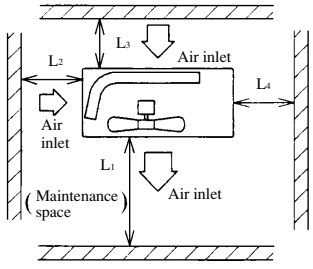
(3) Outdoor unit

Models FDC208CEN3, FDCP208CEN3

Unit: mm



Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

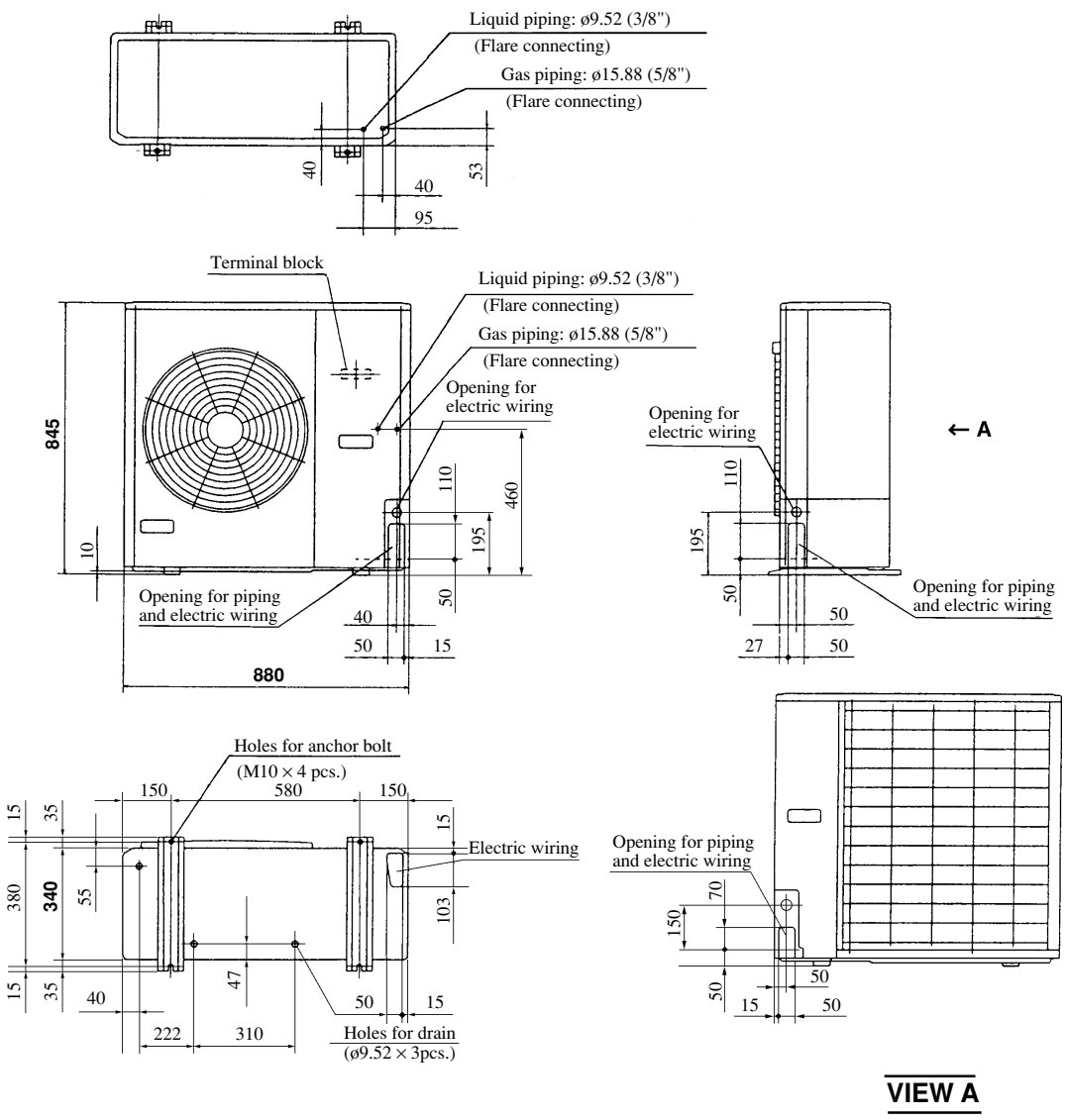
Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	5	Open
L_3	100	150	100
L_4	5	5	5

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.

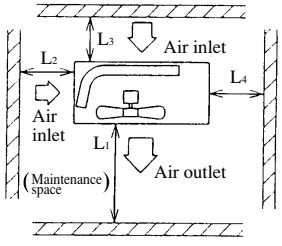
Models FDC258CEN3, FDCP258CEN3, 308CEN3, 308CES3

Unit: mm



VIEW A

Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

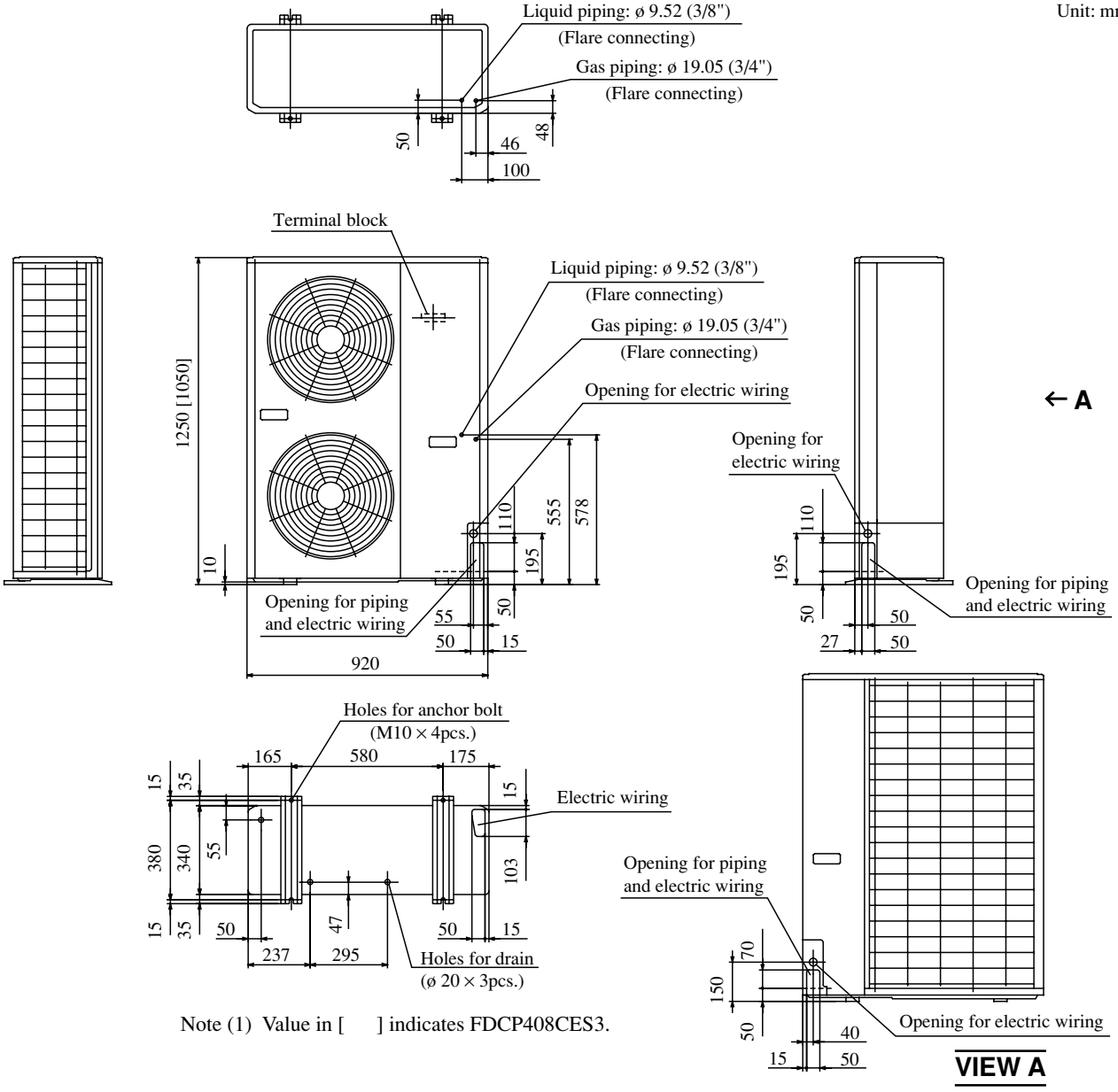
Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	5	Open
L_3	100	150	100
L_4	5	5	5

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.

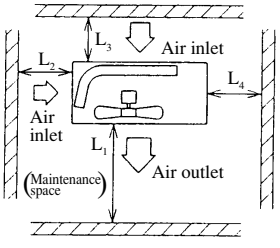
Models FDCP408CES3, 508CES3

Unit: mm



Note (1) Value in [ ] indicates FDCP408CES3.

Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

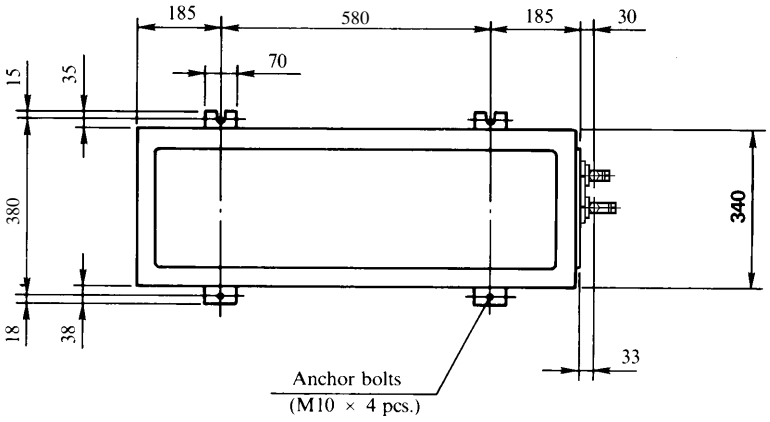
Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	5	Open
L_3	150	300	150
L_4	5	5	5

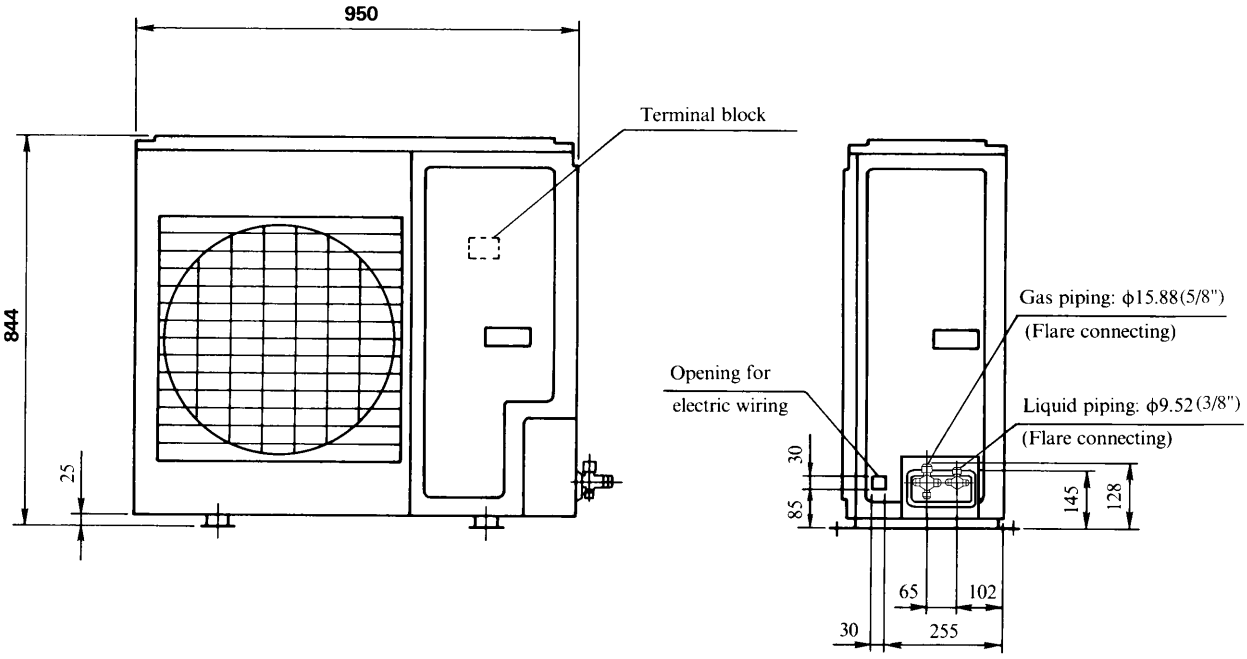
Notes

(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.

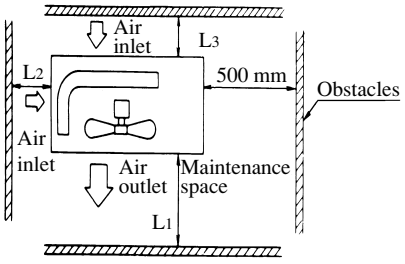
Models FDC306CEN3, 306CES3

Unit: mm





Required space for maintenance and air flow



Minimum allowable space to the obstacles

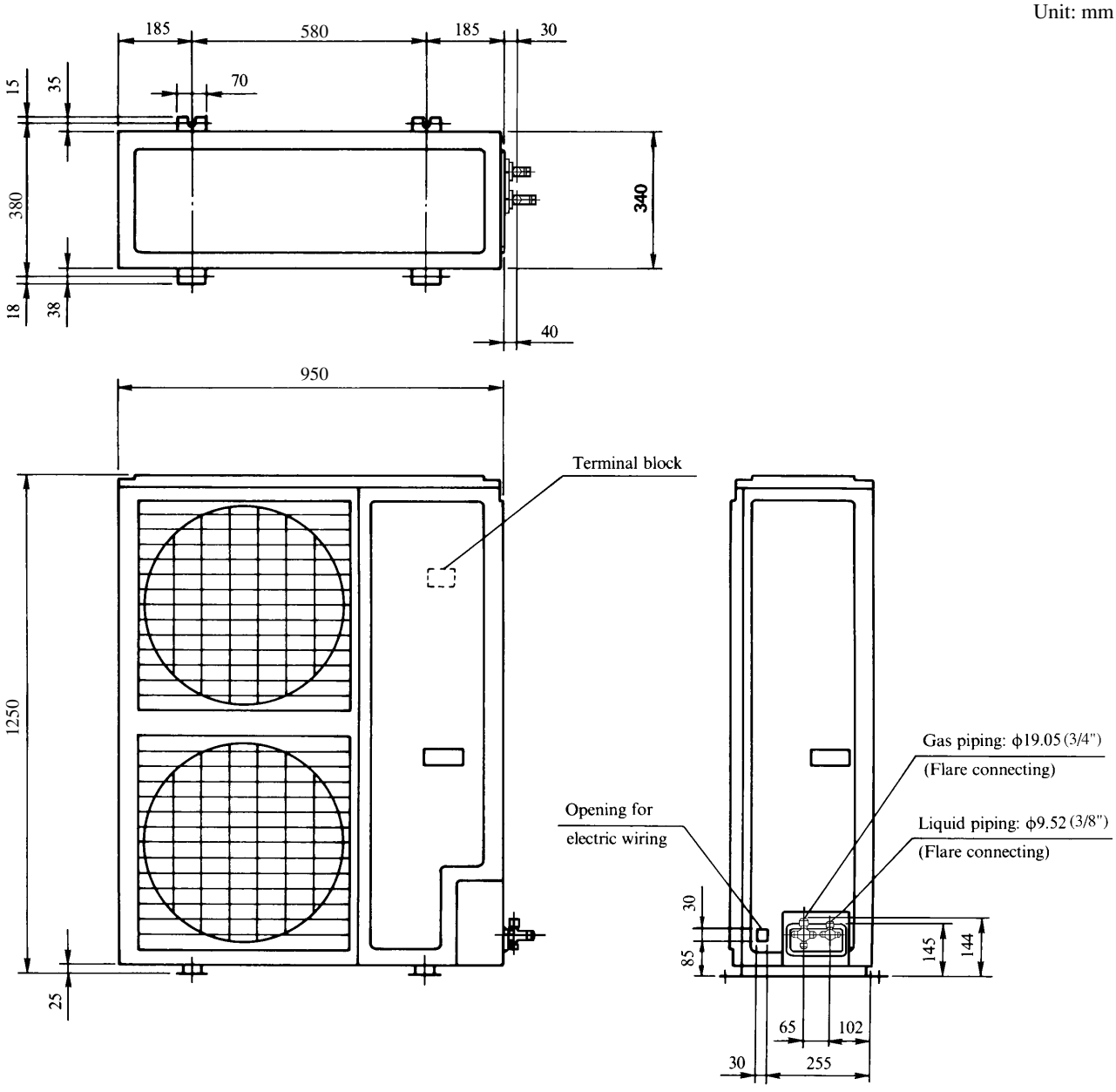
Unit:mm

Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	0	Open
L_3	100	150	100

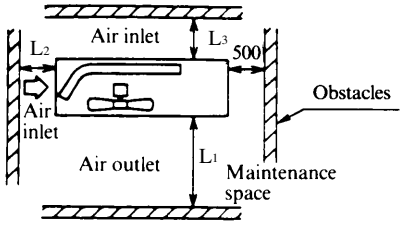
Notes
(1) Fix the unit with anchor bolts.
(2) Strong wind must not be directed to the air outlet.
(3) Free space over the unit must be larger than 1 m.
(4) The unit should not be surrounded by obstructions in all direction. At least one direction around the unit must be free.

Models FDC406CES3, 506CES3

Unit: mm



Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

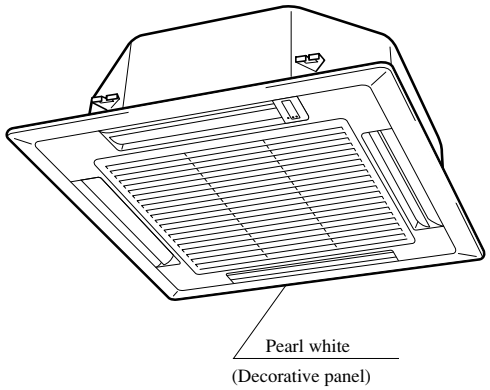
Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	0	Open
L_3	150	300	150

Notes
(1) Fix the unit with anchor bolts.
(2) Strong wind must not be directed to the air outlet.
(3) Free space over the unit must be larger than 1 m.
(4) The unit should not be surrounded by obstructions in all direction. At least one direction around the unit must be free.

9.2.4 Exterior appearance

(1) Indoor unit

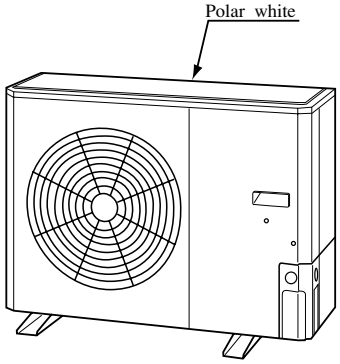
Models All models



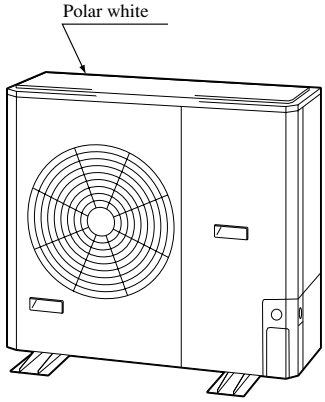
Type \ Item		Panel model	Remarks
For wireless remote controller	FDTN208C	TN-PSC-22W-E	Without swing
	FDTN258C~508C	TN-PSC-32W-E	
For wired remote controller	FDT208-A	T-PSA-22W-E	
	FDT258-A~508-A	T-PSA-32W-E	

(2) Outdoor unit

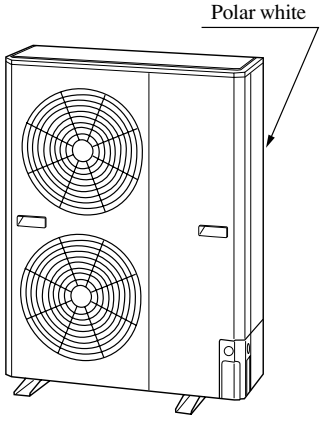
Models FDC208CEN3, FDCP208CEN3



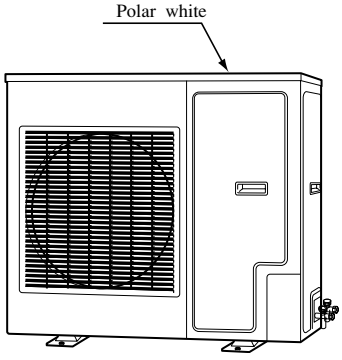
Models FDC258CEN3
FDCP258CEN3, 308CEN3, 308CES3



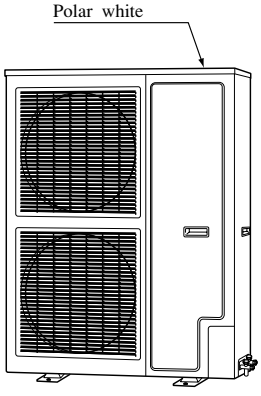
Models FDCP408CES3, 508CES3



Models FDC306CEN3, 306CES3

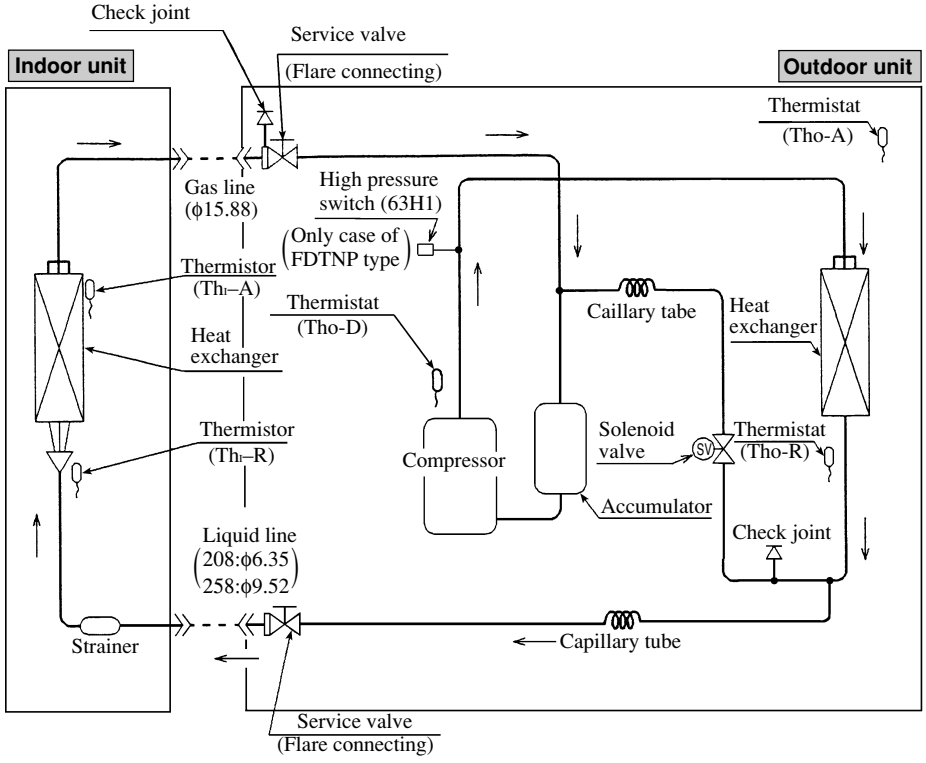


Models FDC406CES3, 506CES3

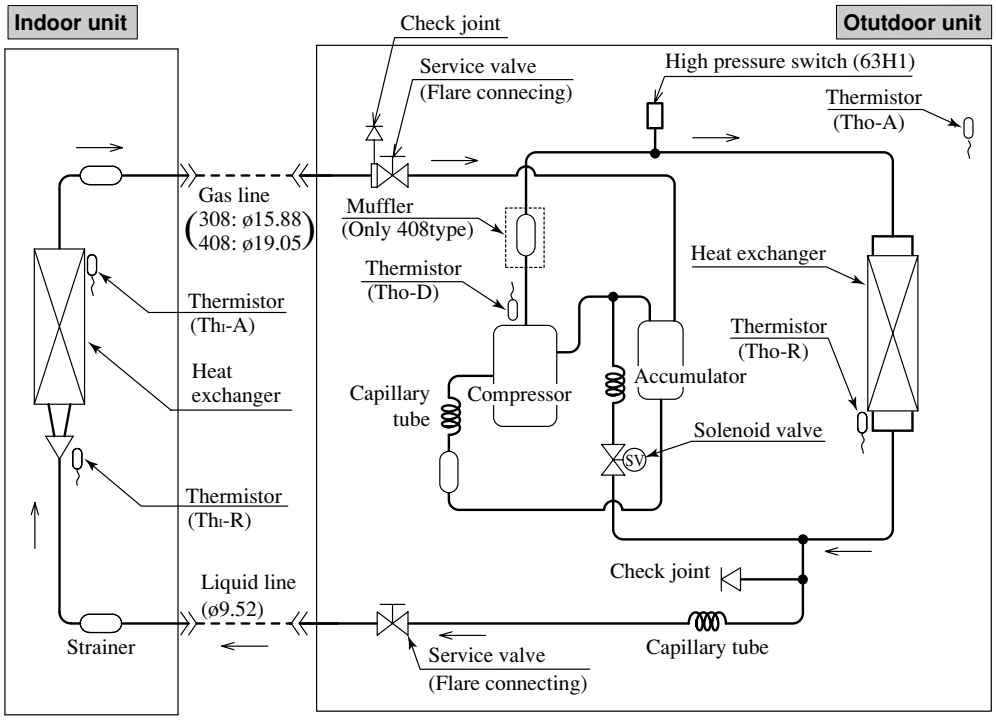


9.2.5 Piping system

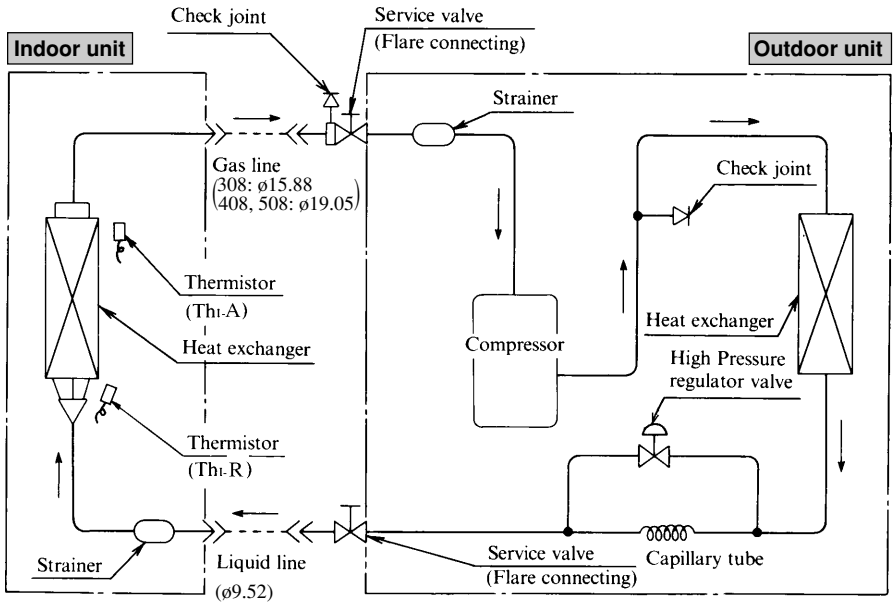
Models FDT208CEN-SA, 258CEN-SA
FDTNP208CEN-S, 258CEN-S



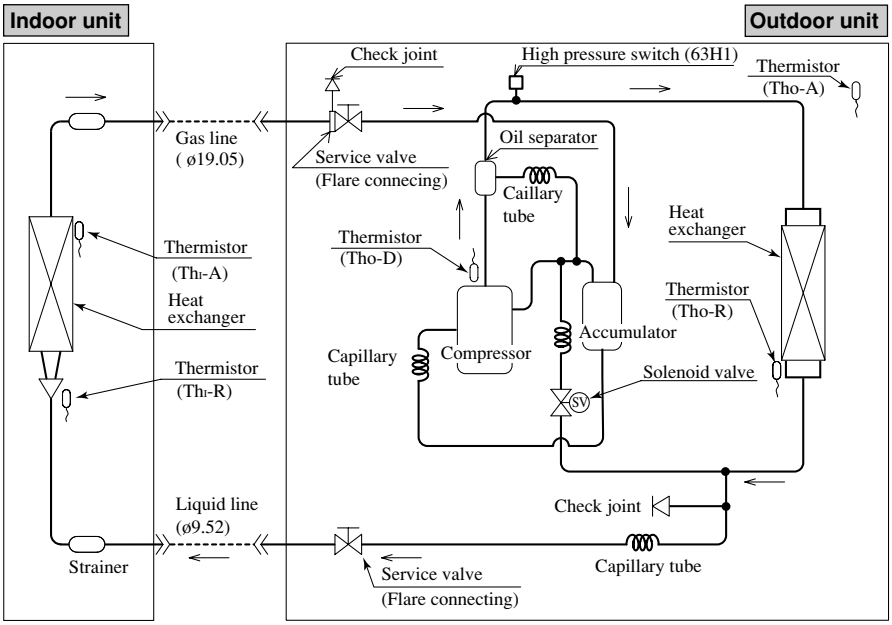
Models FDTNP308CEN-S, 308CES-S, 408CES-S



Models FDT308CEN-A, 308CES-A, 408CES-A, 508CES-A



Model FDTNP508CES-S



Preset point of the protective devices

Parts name	Mark	Equipped unit	FDT208, 258	FDT308~508 type	FDTNP208~508 type
Thermistor (for frost prevention)	**Thi-R**	Indoor unit	OFF 2.5°C ON 10°C		
Thermistor (for detecting discharge pipe temp.)	**Tho-D**	Outdoor unit	OFF 135°C ON 90°C	–	OFF 135°C ON 90°C
Thermistor (for detecting heat exchanger temp.)	**Tho-R**	Outdoor unit	OFF 70°C ON 60°C	–	OFF 70°C ON 60°C
High pressure switch (for protection)	**63Hi**	Outdoor unit	–		OFF 3.24MPa (33 Kgf/cm^2) ON 2.65MPa (27 kgf/cm^2)

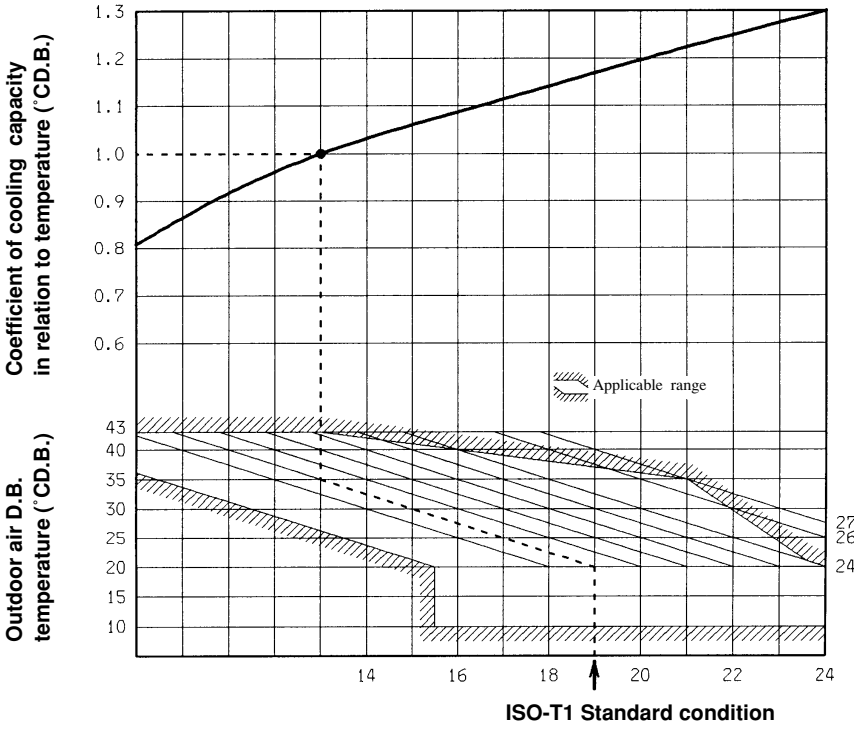
9.2.6 Selection chart

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

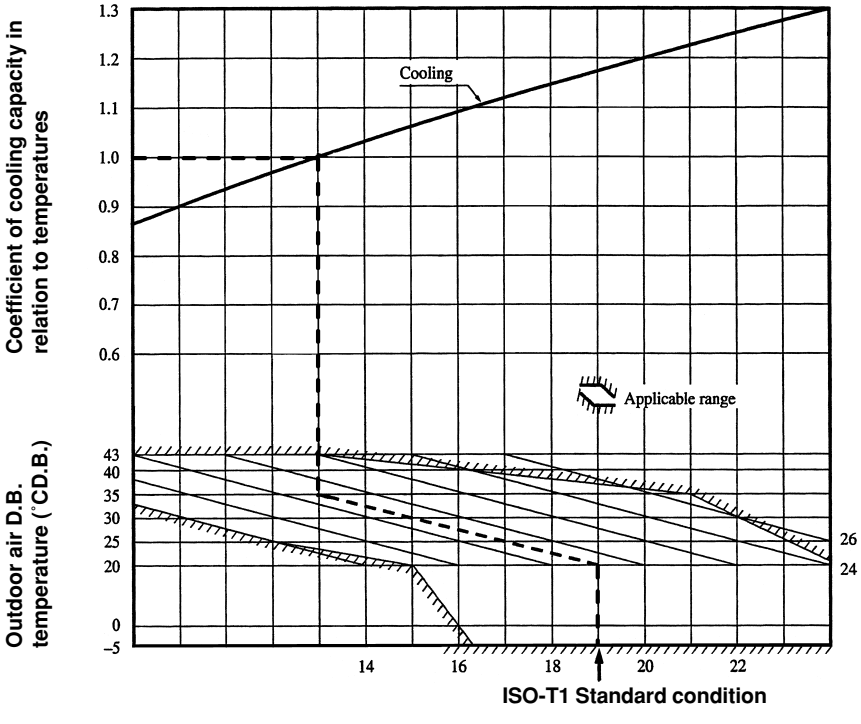
Net capacity = Capacity shown on specification × Correction factors as follows.

(1) Coefficient of cooling capacity in relation to temperatures

(a) Only case of ISO-T1 models (FDT208~508, FDTNP208, 258 type)



(b) Only case of ISO-T1 models (FDTNP308~508 type)



(b) Only case of ISO-T3 and SASO models

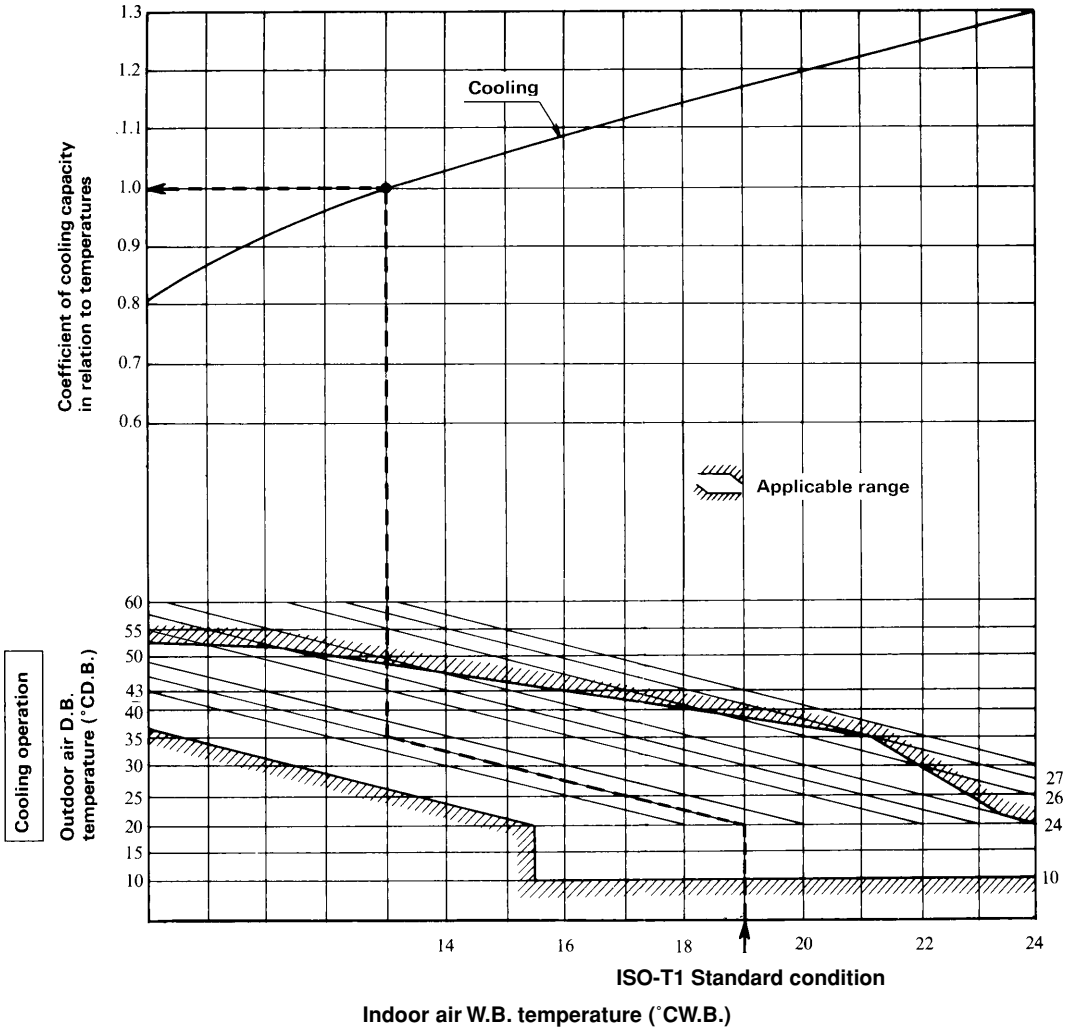


Table of bypass factor

Item \ Model		208 type	258 type	308 type	408 type	508 type
Air flow	Hi	0.112	0.050	0.065	0.076	0.025
	Lo	0.073	0.030	0.030	0.050	0.013

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

Coefficient: 1.00 at High, 0.95 at Low

(3) Correction of cooling capacity in relation to one way length of refrigerant piping

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

50/60Hz

	Equivalent piping length(1) m	5	10	15	20	25	30	35	40	45	50	55
Cooling	FDTNP, FDT208 type	1.0	0.995	0.995	0.99	0.985	0.985	0.98	—	—	—	—
	FDTNP, FDT258 type	1.0	0.995	0.99	0.985	0.98	0.975	0.97	—	—	—	—
	FDTNP308 type	1.0	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.9
	FDTNP408 type	1.0	0.995	0.985	0.98	0.97	0.965	0.955	0.95	0.94	0.935	0.925
	FDTNP508 type	1.0	0.99	0.975	0.965	0.95	0.94	0.925	0.915	0.9	0.89	0.875
	FDT308 type	1.0	0.99	0.98 /0.975	0.97 /0.965	0.96 /0.95	0.95 /0.94	0.94 /0.925	—	—	—	—
	FDT408 type	1.0	0.995 /0.99	0.985 /0.98	0.98 /0.97	0.97 /0.96	0.965 /0.95	0.955 /0.94	—	—	—	—
	FDT508 type	1.0	0.99 /0.985	0.975 /0.97	0.965 /0.955	0.95 /0.94	0.94 /0.925	0.925 /0.91	—	—	—	—

Note (1) Equivalent piping length can be obtained by calculating as follows.
208, 258, 308 series [ϕ15.88(5/8″)]: Equivalent piping length = Real piping length + (0.10 × Number or bends in piping)
408, 508, series [ϕ19.05(3/4″)]: Equivalent piping length = Real piping length + (0.15 × Number of 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, the following values should be 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
Adjustment coefficient	0.01	0.02	0.03

Piping length limitations

Item \ Modei	FDT208, 258 FDTNP208, 258 type	FDT308~508 type	FDTNP308~508 type
Max.one way piping length	30m		50m
Max.vertical height difference	20m(Outdoor unit is higher) 15m(Outdoor unit is lower)	15m	30m(Outdoor unit is higher) 15m(Outdoor unit is lower)

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

How to obtain the cooling capacity

Example : The net cooling capacity of the model FDT308CEN-A 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

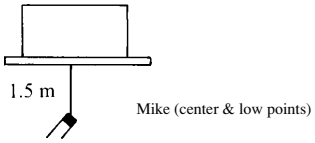
Net cooling capacity = 7100 × 1.00 × (0.98 - 0.01) × 1.0 = **6887 w**

- 7100 : FDT308CEN-A
- 1.00 : Air flow "High"
- (0.98 - 0.01) : Length 15m. Height difference 5 m
- 1.0 : Factor by air temperatures

9.2.7 Noise level

Notes (1) The data are based on the following conditions.
Ambient air temperature:
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



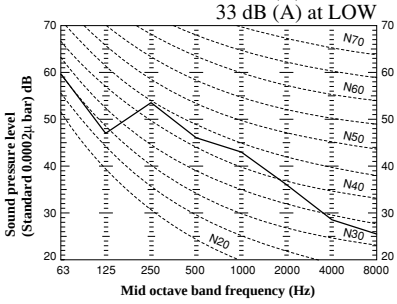
Outdoor unit
Measured based on JIS B 8616
Mike position: at highest noise level in position as below
Distance from front side 1 m
Height 1 m

(2) The data in the chart are measured in an unechonic room.

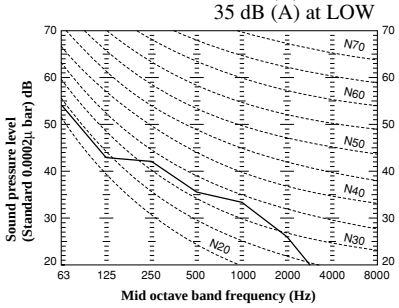
(3) The noise levels measured in the field are usually higher than the data because of reflection.

(1) Indoor unit

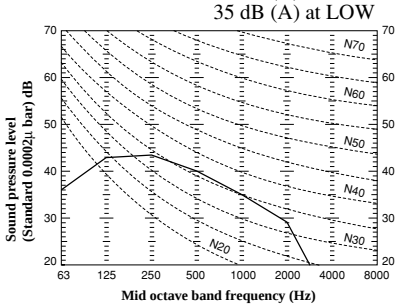
Models FDTN208C
FDT208-A
Noise level 38 dB (A) at HIGH
33 dB (A) at LOW



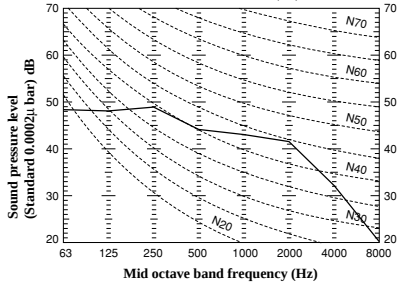
Models FDTN258C
FDT258-A
Noise level 39 dB (A) at HIGH
35 dB (A) at LOW



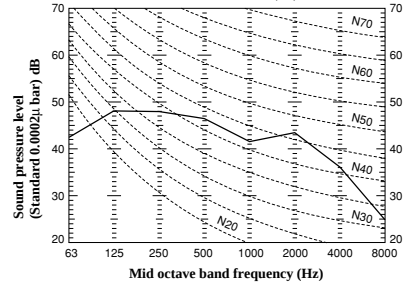
Models FDTN308C
FDT308-A
Noise level 41 dB (A) at HIGH
35 dB (A) at LOW



Models FDTN408C
FDT408-A
Noise level 48 dB (A) at HIGH
40 dB (A) at LOW

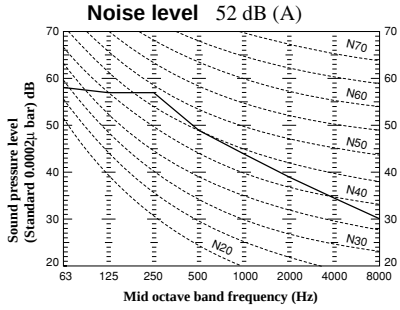


Models FDTN508C
FDT508-A
Noise level 49 dB (A) at HIGH
43 dB (A) at LOW

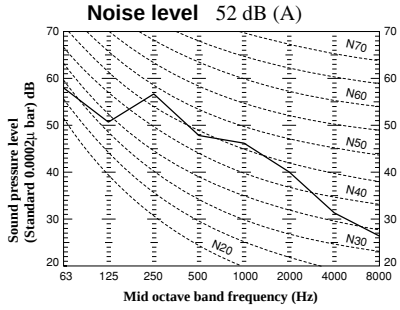


(2) Outdoor unit

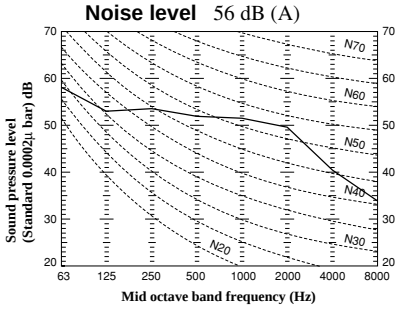
Model FDC208CEN3
Noise level 52 dB (A)



Model FDC258CEN3
Noise level 52 dB (A)

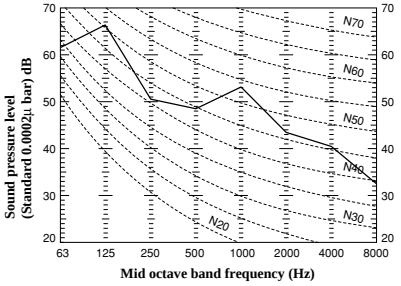


Model FDC306CEN3
Noise level 56 dB (A)



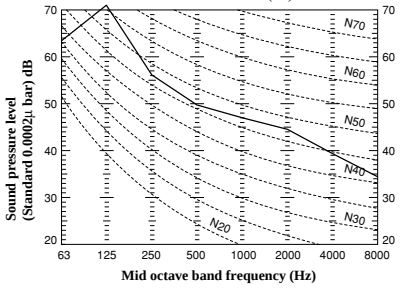
Model FDC306CES3

Noise level 59 dB (A)



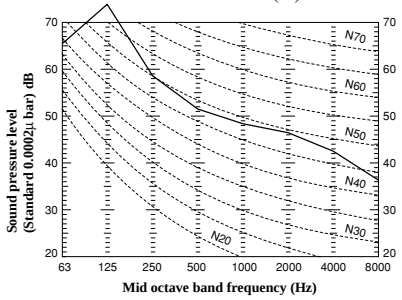
Model FDC406CES3

Noise level 57dB (A)



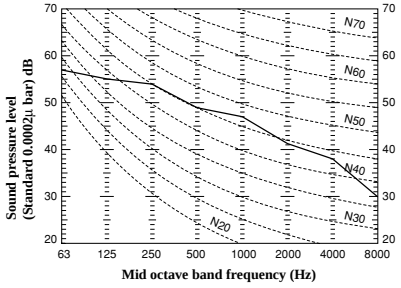
Model FDC506CES3

Noise level 59 dB (A)



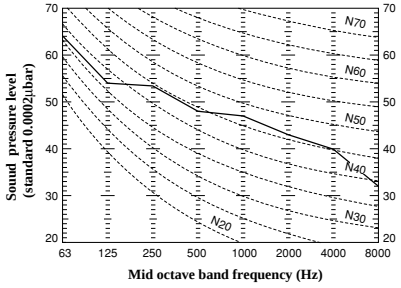
Model FDCP208CEN3

Noise level 52dB (A)



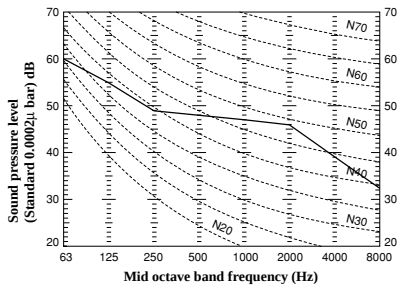
Model FDCP258CEN3

Noise level 52dB (A)



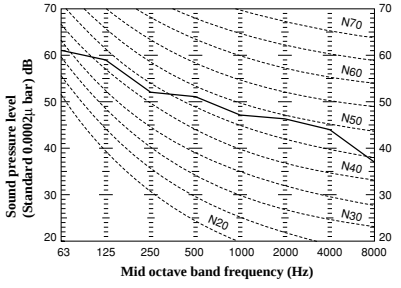
Models FDCP308CEN3, 308CES3

Noise level 52dB (A)



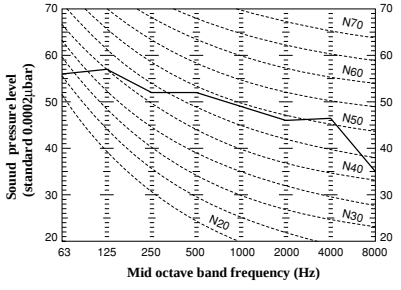
Model FDCP408CES3

Noise level 54dB (A)



Model FDCP508CES3

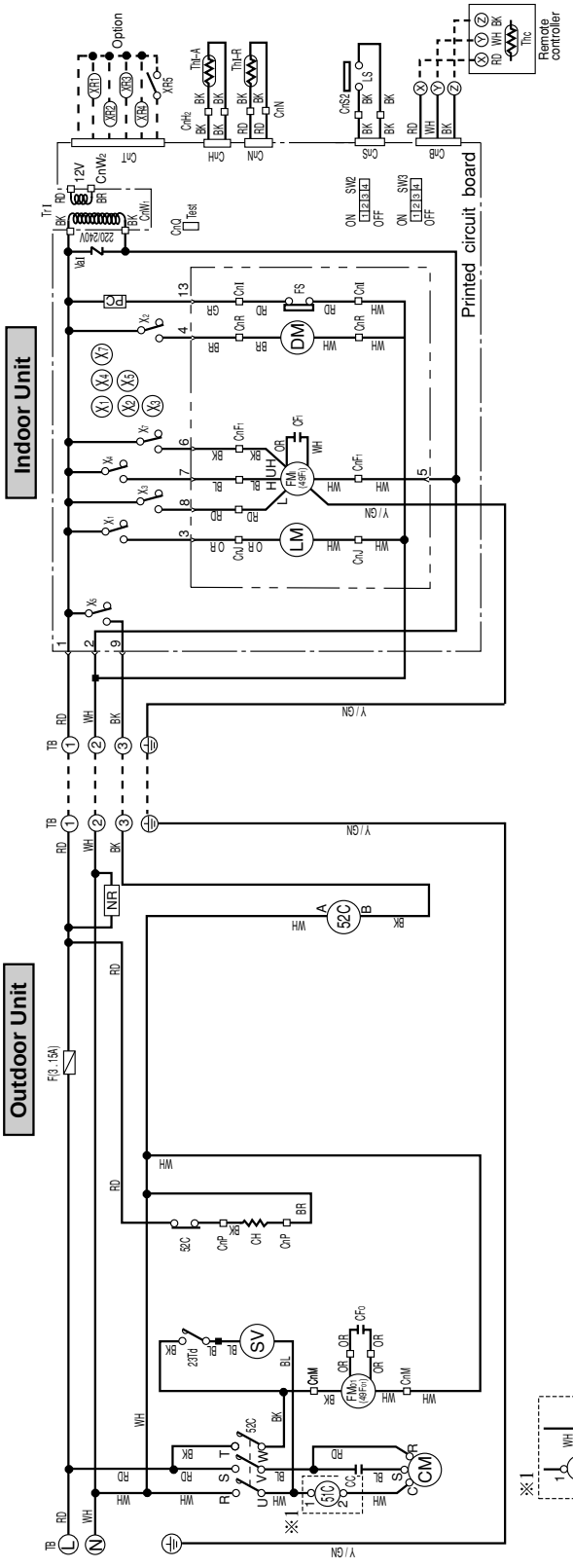
Noise level 55dB (A)



9.3 ELECTRICAL DATA

9.3.1 Electrical wiring

Models FDT208CEN-SA, 258CEN-SA



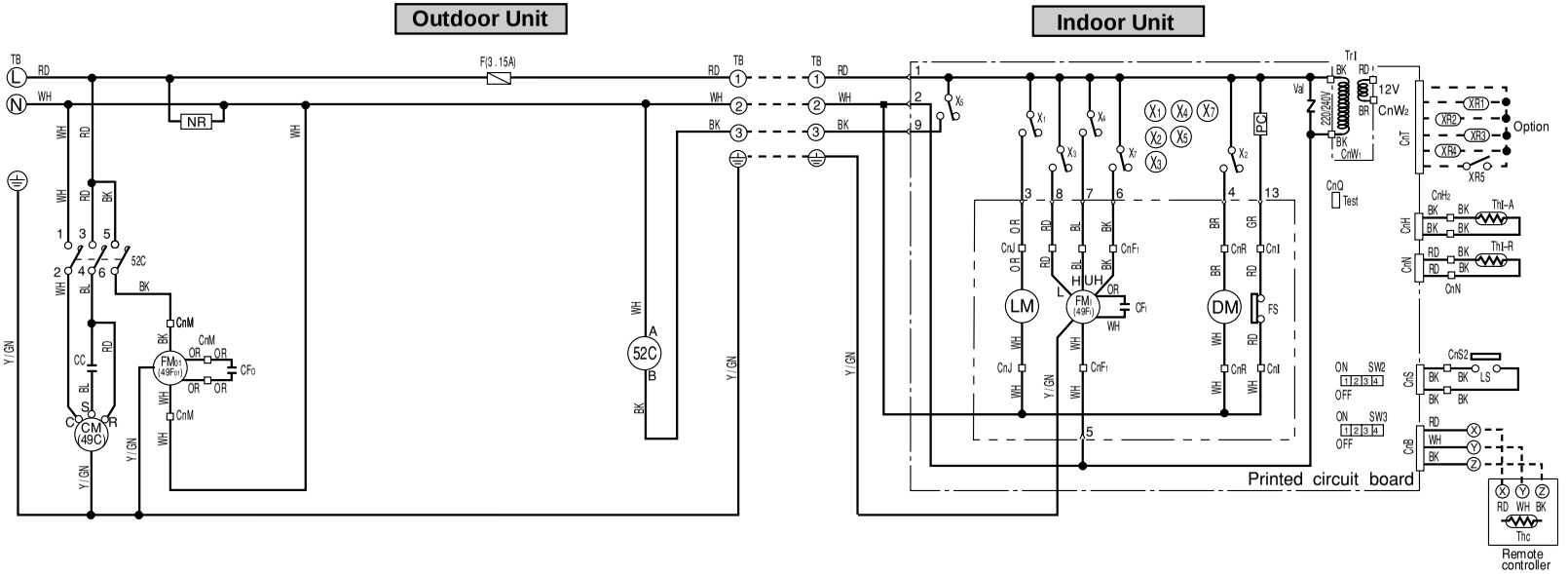
Color mark

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

Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**SW2, 3**	Changeover switch
CFi	Capacitor for FMi	**TB**	Terminal block (○mark)
CFo	Capacitor for FMo	**Thc**	Thermistor
CH	Crankcase heater	**Thi-A**	Thermistor
CM	Compressor motor	**Thi-R**	Thermistor
CnA ~ W	Connector	**Trl**	Transformer
DM	Drain motor	**Val**	Varistor
F	Fuse	**23Td**	Thermostat
FMi	Fan motor (Indoor unit)	**49Fo**	Internal thermostat for FMo
FMo	Fan motor (Outdoor unit)	**49Fi**	Internal thermostat for FMi
FS	Float switch	**51C**	Overcurrent relay for CM
LM	Louver motor	**52C**	Magnetic contactor for CM
LS	Limit switch	**X1~7**	Auxiliary relay
NR	Surge suppressor	**▽**	Terminal (F)
PC	Photo coupler	**■**	Connector
SV	Solenoid coil (for control)		

Power source
1 Phase 220/240V 50Hz



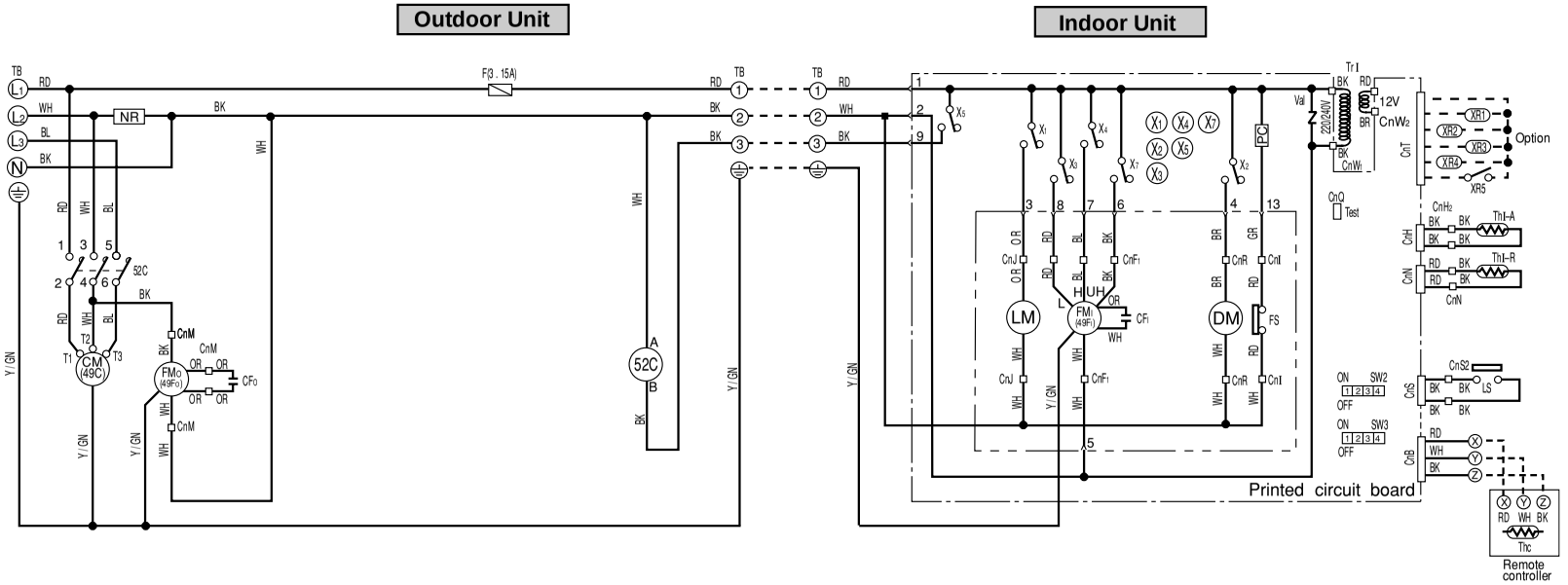
Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**SW2, 3**	Changeover switch
CFI	Capacitor for FMI	**TB**	Terminal block (○ mark)
CFo	Capacitor for FMo	**Thc**	Thermistor
CM	Compressor motor	**ThI-A**	Thermistor
CnA ~ W	Connector	**ThI-R**	Thermistor
DM	Drain motor	**TrI**	Transformer
F	Fuse	**Val**	Varistor
FMI	Fan motor (Indoor unit)	**49C**	Internal thermostat for CM
FMo	Fan motor (Outdoor unit)	**49Fo**	Internal thermostat for FMo
FS	Float switch	**49FI**	Internal thermostat for FMI
LM	Louver motor	**52C**	Magnetic contactor for CM
LS	Limit switch	**X1~7**	Auxiliary relay
NR	Surge suppressor	◁	Terminal (F)
PC	Photo coupler	■	Connector

Color mark

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

Power Source
3 Phase 380/415V 50Hz-380V 60Hz



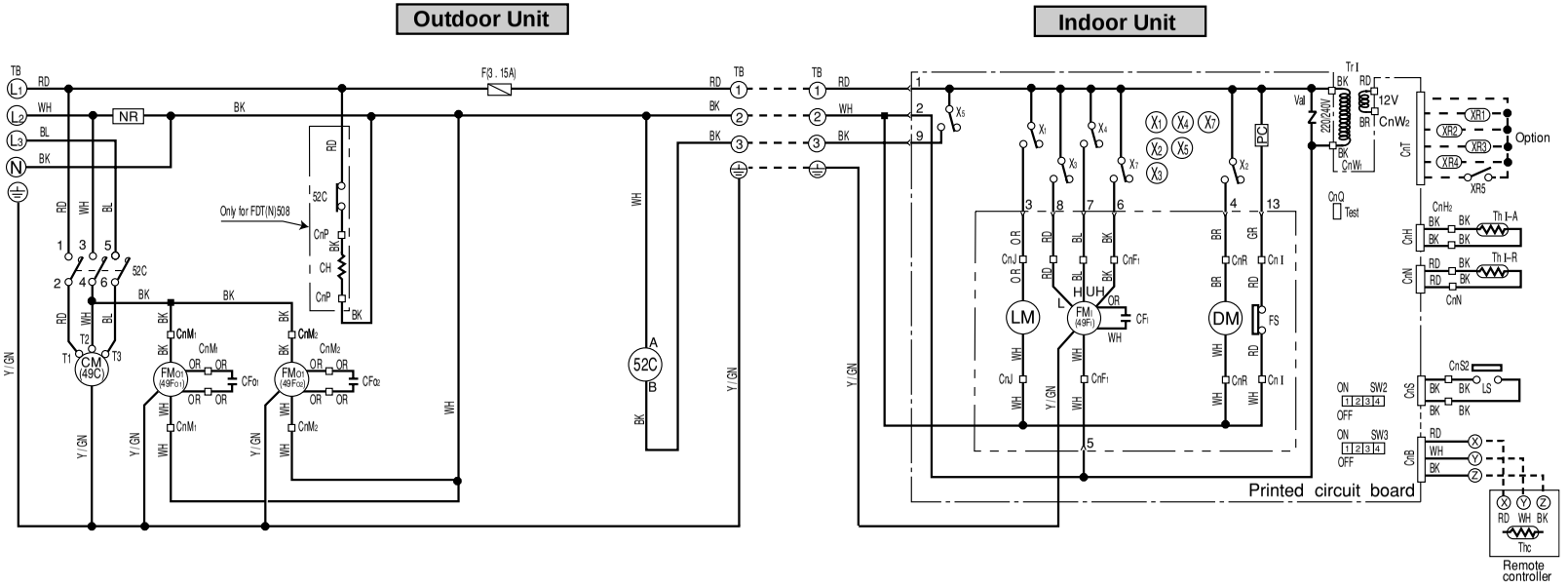
Meaning of marks

Mark	Parts name	Mark	Parts name
CFI	Capacitor for FMI	**SW2, 3**	Changeover switch
CFO	Capacitor for FMO	**THC**	Thermistor
CM	Compressor motor	**THI-A**	Thermistor
CnA ~ W	Connector	**THI-R**	Thermistor
DM	Drain motor	**TrI**	Transformer
F	Fuse	**VaI**	Varistor
FMI	Fan motor (Indoor unit)	**49C**	Internal thermostat for CM
FMO	Fan motor (Outdoor unit)	**49FO**	Internal thermostat for FMO
FS	Float switch	**49FI**	Internal thermostat for FMI
LM	Louver motor	**52C**	Magnetic contactor for CM
LS	Limit switch	**X1~7**	Auxiliary relay
NR	Surge suppressor	◁	Terminal (F)
PC	Photo coupler	■	Connector
TB	Terminal block (○mark)		

Color mark

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

Power Source
3 Phase 380/415V 50Hz-380V 60Hz



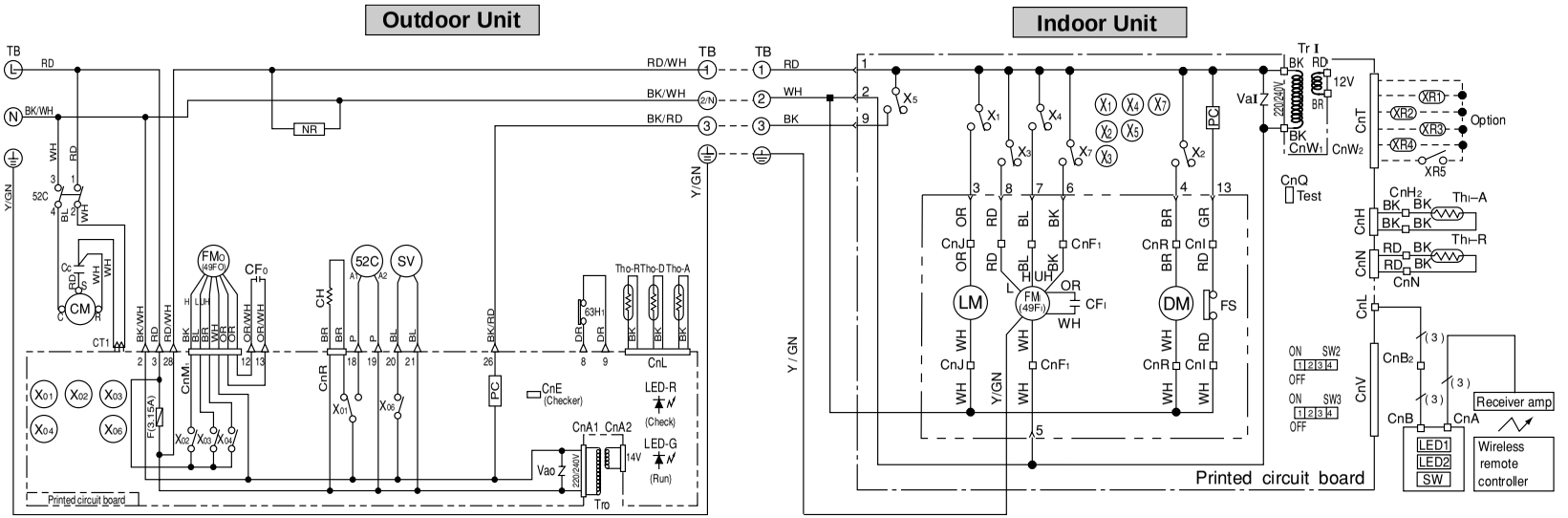
Meaning of marks

Mark	Parts name	Mark	Parts name
CFI	Capacitor for FMI	TB	Terminal block (○ mark)
CFO1,2	Capacitor for FMO	SW2, 3	Changeover switch
CH	Crankcase heater	Thc	Thermistor
CM	Compressor motor	THI-A	Thermistor
CnA ~ W	Connector	THI-R	Thermistor
DM	Drain motor	TrI	Transformer
F	Fuse	Val	Varistor
FMI	Fan motor (Indoor unit)	49C	Internal thermostat for CM
FMO1,2	Fan motor (Outdoor unit)	49FO1,2	Internal thermostat for FMO
FS	Float switch	49FI	Internal thermostat for FMI
LM	Louver motor	52C	Magnetic contactor for CM
LS	Limit switch	X1~7	Auxiliary relay
NR	Surge suppressor	◁	Terminal (F)
PC	Photo coupler	■	Connector

Color mark

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

Power Source
1 Phase 220/240V 50Hz



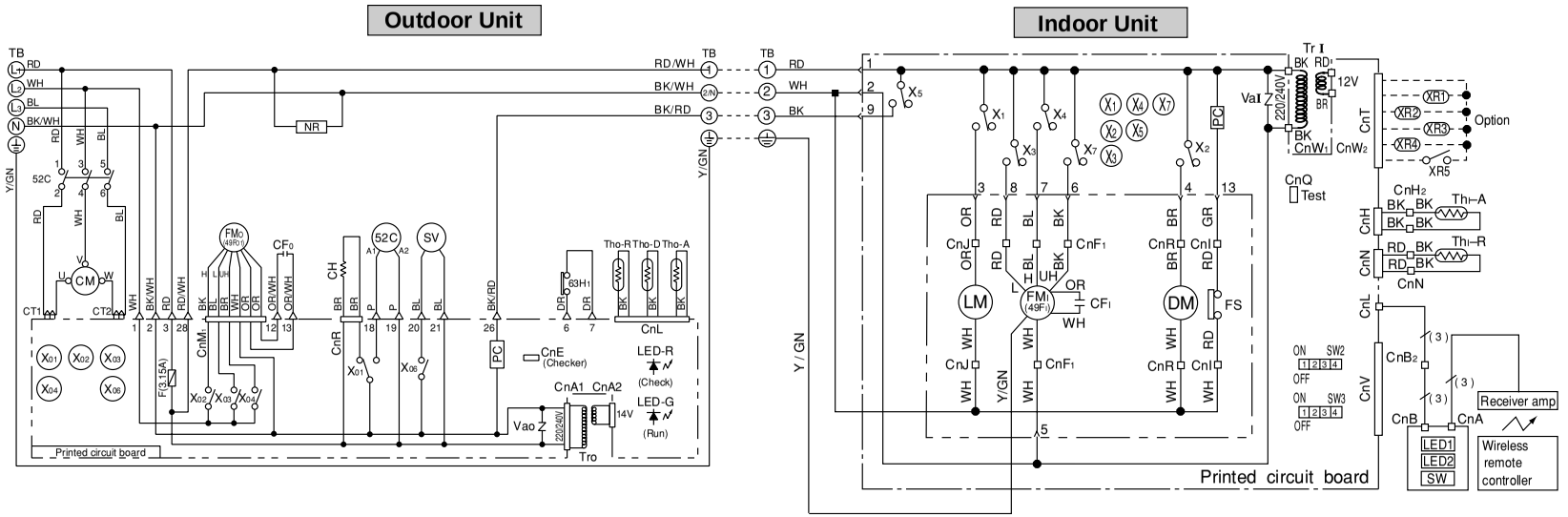
Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**SV**	Solenoid coil (for control)
CFI	Capacitor for FMI	**SW**	Back up switch (ON/OFF)
CFo	Capacitor for FMo	**SW2, 3**	Changeover switch
CH	Crankcase heater	**TB**	Terminal block (○mark)
CM	Compressor motor	**ThI-A**	Thermistor
CnA ~ W	Connector	**ThI-R**	Thermistor
DM	Drain motor	**Tho-A**	Thermistor
F	Fuse	**Tho-D**	Thermistor
FMI	Fan motor (Indoor unit)	**Tho-R**	Thermistor
FMo	Fan motor (Outdoor unit)	**TrI, Tro**	Transformer
FS	Float switch	**VaI, Vao**	Varistor
LED1	Indication lamp (Green - Run)	**63H1**	High pressure switch (for protection)
LED2	Indication lamp (Yellow - Timer/Check)	**49Fo**	Internal thermostat for FMo
LED-G	Indication lamp (Green)	**49FI**	Internal thermostat for FMI
LED-R	Indication lamp (Red)	**CT1**	Current sensor
LM	Louver motor	**52C**	Magnetic contactor for CM
LS	Limit switch	**X1~7, X01~06**	Auxiliary relay
NR	Surge suppressor	◁	Terminal (F)
PC	Photo coupler	■	Connector

Color mark

Mark	Color	Mark	Color
BK	Black	**BK/RD**	Black/Red
BL	Blue	**BK/WH**	Black/White
BR	Brown	**OR/WH**	Orange/White
GR	Gray	**RD/WH**	Red/White
OR	Orange	**Y/GN**	Yellow/Green
P	Pink		
RD	Red		
WH	White		
Y	Yellow		

Power Source
3 Phase 380/415V 50Hz



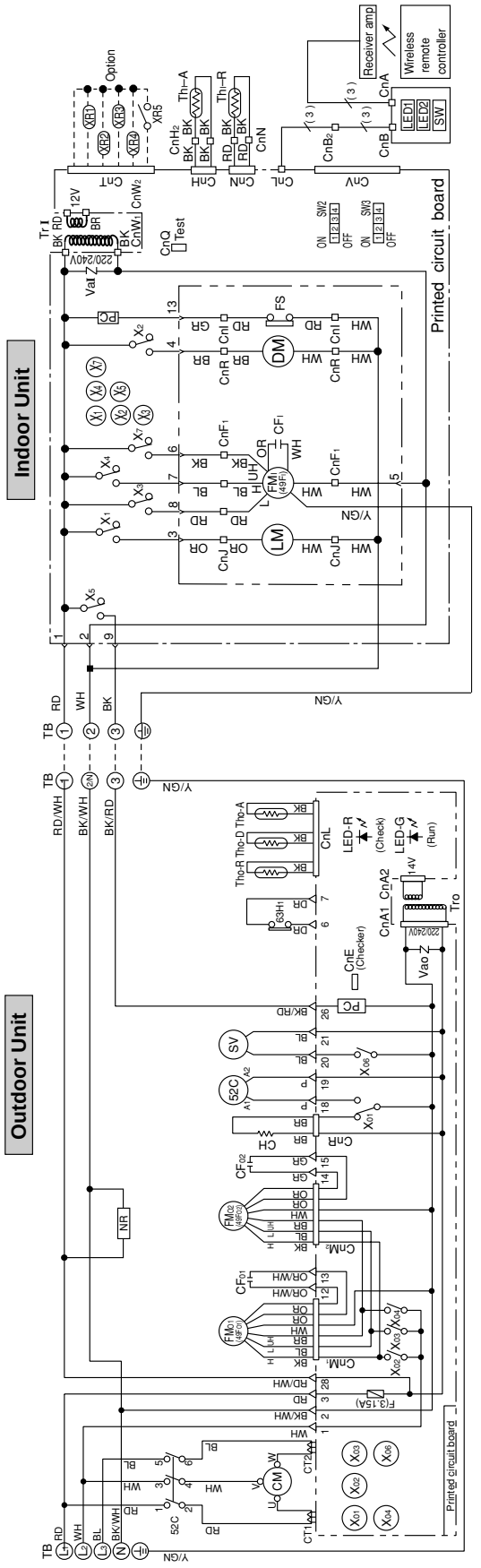
Meaning of marks

Mark	Parts name	Mark	Parts name
CFI	Capacitor for FMI	**SW**	Back up switch (ON/OFF)
CFO	Capacitor for FMO	**SW2, 3**	Changeover switch
CH	Crankcase heater	**TB**	Terminal block (○mark)
CM	Compressor motor	**THI-A**	Thermistor
CnA ~ W	Connector	**THI-R**	Thermistor
DM	Drain motor	**Tho-A**	Thermistor
F	Fuse	**Tho-D**	Thermistor
FMI	Fan motor (Indoor unit)	**Tho-R**	Thermistor
FMO	Fan motor (Outdoor unit)	**Trl, Tro**	Transformer
FS	Float switch	**Val, Vao**	Varistor
LED1	Indication lamp (Green - Run)	**63H1**	High pressure switch (for protection)
LED2	Indication lamp (Yellow - Timer/Check)	**49FO**	Internal thermostat for FMO
LED-G	Indication lamp (Green)	**49FI**	Internal thermostat for FMI
LED-R	Indication lamp (Red)	**CT1,2**	Current sensor
LM	Louver motor	**52C**	Magnetic contactor for CM
LS	Limit switch	**X1~7, X01~06**	Auxiliary relay
NR	Surge suppressor	◁	Terminal (F)
PC	Photo coupler	■	Connector
SV	Solenoid coil (for control)		

Color mark

Mark	Color	Mark	Color
BK	Black	**BK/RD**	Black/Red
BL	Blue	**BK/WH**	Black/White
BR	Brown	**OR/WH**	Orange/White
GR	Gray	**RD/WH**	Red/White
OR	Orange	**Y/GN**	Yellow/Green
P	Pink		
RD	Red		
WH	White		
Y	Yellow		

Models FDTNP408CES-S, 508CES-S



Color mark

Mark	Color	Mark	Color
BK	Black	BK/RD	Black/Red
BL	Blue	BK/WH	Black/White
BR	Brown	OR/WH	Orange/White
GR	Gray	RD/WH	Red/White
OR	Orange	Y/GN	Yellow/Green
P	Pink		
RD	Red		
WH	White		
Y	Yellow		

Meaning of marks

Mark	Parts name	Mark	Parts name
CFi	Capacitor for FMi	SW	Back up switch (ON/OFF)
CFo1, 2	Capacitor for FMo	SW2, 3	Changeover switch
CH	Crankcase heater	TB	Terminal block (○mark)
CM	Compressor motor	Th-A	Thermistor
CnA ~ W	Connector	Th-R	Thermistor
DM	Drain motor	Tho-D	Thermistor
F	Fuse	Tho-R	Thermistor
FMi	Fan motor (Indoor unit)	Tri, Tro	Transformer
FMo1, 2	Fan motor (Outdoor unit)	Vai, Vao	Varistor
FS	Float switch	63H1	High pressure switch (for protection)
LED1	Indication lamp (Green - Run)	49Fo1,2	Internal thermostat for FMo
LED2	Indication lamp (Yellow - Timer/Check)	49Fi	Internal thermostat for FMi
LED-G	Indication lamp (Green)	CT1,2	Current sensor
LED-R	Indication lamp (Red)	52C	Magnetic contactor for CM
LM	Louver motor	X1-7, X01-06	Auxiliary relay
LS	Limit switch	▽	Terminal (F)
NR	Surge suppressor	■	Connector
PC	Photo coupler		
SV	Solenoid coil (for control)		

9.4 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

Except for function relating to heating, same at the unit for FDT(N) heat pump type. See page 317.

9.5 APPLICATION DATA

The application data for the cooling only models are similar to those for the heat pump models. (See page 332.)

9.6 MAINTENANCE DATA

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

MEMO