

**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**

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## 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 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.

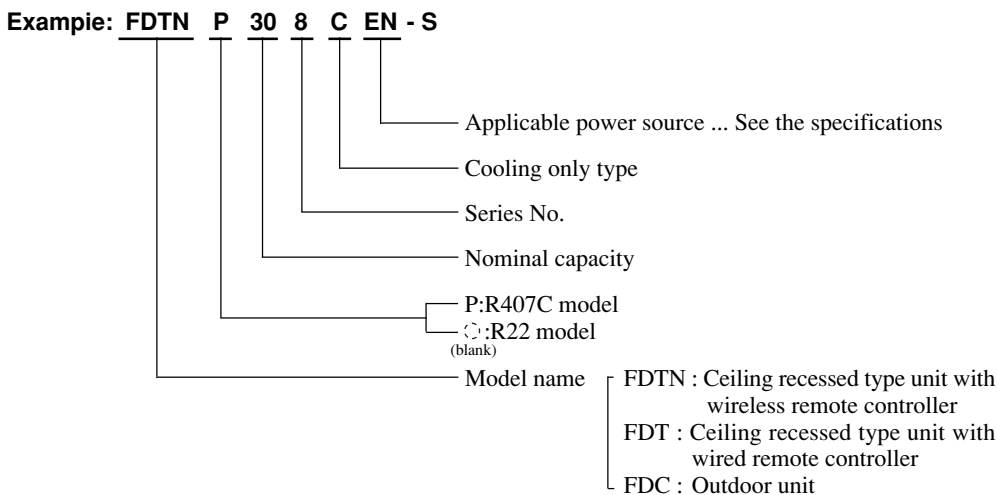
**(6) Low sound level**

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 (from 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
<b>Nominal cooling capacity<sup>(1)</sup></b>		W	<b>5000</b>	
<b>Power source</b>			<b>1 Phase, 220/240V, 50Hz</b>	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:38 Lo:33	52
<b>Exterior dimensions</b>				
<b>Height × Width × Depth</b>		mm	<b>Unit 215 × 700 × 700</b> <b>Panel 26 × 800 × 800</b>	<b>690 × 880 × 290</b>
<b>Net weight</b>		kg	<b>23 (Unit:18 Panel:5)</b>	<b>49</b>
<b>Refrigerant equipment</b>				
<b>Compressor type &amp; Q'ty</b>			–	<b>RM5523GNE4 × 1</b>
Motor	kW		–	<b>1.7</b>
Starting method			–	Line starting
<b>Heat exchanger</b>			Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control			Capillary tube	Capillary tube
<b>Refrigerant</b>			<b>R22</b>	
<b>Quantity</b>	kg		<b>Holding charged</b>	<b>0.9 [Pre-charged up to the piping length of 0m]</b>
<b>Refrigerant oil</b>	ℓ		–	<b>0.7 (BARREL FREEZE 32 SAM)</b>
High pressure control				–
<b>Air handling equipment</b>				
Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor	W		<b>30 × 1</b>	<b>55 × 1</b>
Starting method			Line starting	Line starting
<b>Air flow (Standard)</b>		<b>CMM</b>	<b>Hi:14 Lo:10</b>	<b>56</b>
<b>Fresh air intake</b>			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)
<b>Operation control</b>			Wired remote control switch (Optional:RCD-C-S-E)	– (Indoor unit side)
Operation switch				
Room temperature control			Thermostat by electronics	–
<b>Safety equipment</b>			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermostat for discharge temperature.
<b>Installation data</b>		<b>mm</b>	<b>Liquid line: φ6.35 (1/4") Gas line: φ15.88 (5/8")</b>	
<b>Refrigerant piping size</b>		<b>(in)</b>		
<b>Connecting method</b>			<b>Flare piping</b>	
<b>Drain hose</b>			(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	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
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
<b>Nominal cooling capacity<sup>(1)</sup></b>		W	5700	
<b>Power source</b>			1 Phase, 220/240V, 50Hz	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:39 Lo:35	52
<b>Exterior dimensions</b>		mm	Unit 260 × 840 × 840	
<b>Height × Width × Depth</b>			Panel 30 × 950 × 950	
<b>Net weight</b>		kg	30 (Unit:24 Panel:6)	
<b>Refrigerant equipment</b>			-	
<b>Compressor type &amp; Q'ty</b>			RM5526GNE4 × 1	
Motor		kW	1.9	
Starting method			Line starting	
<b>Heat exchanger</b>			Louver fins & inner grooved tubing	
Refrigerant control			Slitted fins & bare tubing	
<b>Refrigerant</b>			R22	
<b>Quantity</b>		kg	1.05 [Pre-charged up to the piping length of 5m]	
<b>Refrigerant oil</b>		ℓ	0.7 (BARREL FREEZE 32 SAM)	
High pressure control			-	
<b>Air handling equipment</b>			-	
Fan type & Q'ty			Turbo fan × 1	
Motor		W	Propeller fan × 1	
Starting method			25 × 1	
<b>Air flow (Standard)</b>		CMM	Line starting	
<b>Fresh air intake</b>			Hi:16 Lo:11	
Air filter, Q'ty			56	
Shock & vibration absorber			Available	
Electric heater		W	Long life filter × 1 (washable)	
<b>Operation control</b>			Rubber sleeve (for fan motor)	
Operation switch			Rubber mount (for compressor)	
Room temperature control			20 (Cank case heater)	
<b>Safety equipment<sup>(4)</sup></b>			-	
Internal thermostat for fan motor.			Wired remote control switch (Optional:RCD-C-S-E)	
Frost protection thermostat.			- (Indoor unit side)	
<b>Installation data</b>		mm	Thermostat by electronics	
<b>Refrigerant piping size</b>		(in)	-	
<b>Connecting method</b>			Internal thermostat for fan motor. Thermostat for discharge temperature.	
<b>Drain hose</b>			Liquid line: φ9.52 (3/8") Gas line: φ15.88 (5/8")	
Insulation for piping			Flare piping	
Accessories			(Connectable with VP25)	
Optional parts			Necessary (both Liquid & Gas lines)	
			Mounting kit.	
			Decorative Panel	

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

Operation	Item	Indoor air temperature		Outdoor air temperature		Standards
		DB	WB	DB	WB	
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	
<b>Nominal cooling capacity<sup>(1)</sup></b>		ISO-T1	W	<b>7100</b>		
		ISO-T3		<b>5700</b>		
<b>Power source</b>		<b>1 Phase, 220/240V, 50Hz</b>				
<b>Operation data<sup>(3)</sup></b>	<b>ISO-T1</b>	Cooling input	kW	3.07/3.11		
		Running current (Cooling)	A	15.6/16.3		
		Power factor (Cooling)	%	89/79		
	<b>ISO-T3</b>	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 <sup>(4)</sup>	dB(A)	Hi:41 Lo:35	56	
	<b>Exterior dimensions</b>					
<b>Height × Width × Depth</b>		<b>mm</b>	<b>Unit 260 × 840 × 840</b> <b>Panel 30 × 950 × 950</b>	<b>844 × 950 × 340</b>		
<b>Net weight</b>		<b>kg</b>	<b>30 (Unit:24 Panel:6)</b>	<b>67</b>		
<b>Refrigerant equipment</b>						
<b>Compressor type &amp; Q'ty</b>			–	<b>RC5532ENE1 × 1</b>		
Motor		kW	–	<b>2.24</b>		
Starting method			–	Line starting		
<b>Heat exchanger</b>			Louver fins & inner grooved tubing	Slitted fines & bare tubing		
Refrigerant control			–	Capillary tube		
<b>Refrigerant</b>				<b>R22</b>		
<b>Quantity</b>		<b>kg</b>	<b>Holding charged</b>	<b>1.3 [Pre-charged up to the piping length of 5m]</b>		
<b>Refrigerant oil</b>		<b>ℓ</b>	–	<b>1.63 (SUNISO 3GS)</b>		
High pressure control				High pressure regulator valve		
<b>Air handling equipment</b>						
Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1		
Motor		W	<b>30 × 1</b>	<b>60 × 1</b>		
Starting method			Line starting	Line starting		
<b>Air flow (Standard)</b>		<b>CMM</b>	<b>Hi:17 Lo:12</b>	<b>54</b>		
<b>Fresh air intake</b>			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	–	–		
<b>Operation control</b>						
Operation switch			Wired remote control switch (Optional:RCD-C-S-E)	– (Indoor unit side)		
Room temperature control			Thermostat by electronics	–		
<b>Safety equipment</b>						
			Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.		
<b>Installation data</b>		<b>mm</b>				
<b>Refrigerant piping size</b>		<b>(in)</b>	<b>Liquid line: φ9.52 (3/8") Gas line: φ15.88 (5/8")</b>			
<b>Connecting method</b>			<b>Flare piping</b>			
<b>Drain hose</b>			(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.

Operation	Item	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 220/240V 50Hz.
- (4) Indicates the value at mild mode.

**Model FDT308CES-A**

Item		Model		FDT308CES-A	
				FDT308-A	FDC306CES3
<b>Nominal cooling capacity<sup>(1)</sup></b>	ISO-T1	W	7100/7700		
	ISO-T3		5700/6000		
<b>Power source</b>		3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz			
<b>Operation data<sup>(2)</sup></b>	<b>ISO-T1</b>	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
	<b>ISO-T3</b>	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 <sup>(4)</sup>		dB(A)		Hi:41 Lo:35 59
<b>Exterior dimensions</b>		mm		Unit 260 × 840 × 840 Panel 30 × 950 × 950	844 × 950 × 340
<b>Height × Width × Depth</b>		mm			
<b>Net weight</b>		kg		30 (Unit:24 Panel:6)	67
<b>Refrigerant equipment</b>				-	RC5538ESE1 × 1
<b>Compressor type &amp; Q'ty</b>				-	2.24
Motor		kW		-	Line starting
Starting method				-	Slitted fines & bare tubing
<b>Heat exchanger</b>				Louver fins & inner grooved tubing	Capillary tube
Refrigerant control				-	
<b>Refrigerant</b>				R22	
<b>Quantity</b>		kg		<b>Holding charged</b>	1.3 [Pre-charged up to the piping length of 5m]
<b>Refrigerant oil</b>		ℓ		-	1.63 (SUNISO 3GS)
High pressure control				High pressure regulator valve	
<b>Air handling equipment</b>				Turbo fan × 1	Propeller fan × 1
Fan type & Q'ty					
Motor		W		30 × 1	60 × 1
Starting method				Line starting	Line starting
<b>Air flow (Standard)</b>		CMM		Hi:17 Lo:12	54/56
<b>Fresh air intake</b>				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		-	-
<b>Operation control</b>				Wired remote control switch (Optional:RCD-C-S-E)	- (Indoor unit side)
Operation switch					
Room temperature control				Thermostat by electronics	-
<b>Safety equipment</b>				Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
<b>Installation data</b>		mm		Liquid line: φ9.52 (3/8") Gas line: φ15.88 (5/8")	
<b>Refrigerant piping size</b>		(in)			
<b>Connecting method</b>				Flare piping	
<b>Drain hose</b>				(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.

Operation	Item	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.

**Model FDT408CES-A**

Item		Model	FDT408CES-A		
			FDT408-A	FDC406CES3	
<b>Nominal cooling capacity<sup>(1)</sup></b>	ISO-T1	W	<b>10200/11300</b>		
	ISO-T3		<b>8900/9900</b>		
<b>Power source</b>			<b>3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz</b>		
<b>Operation data<sup>(2)</sup></b>	<b>ISO-T1</b>	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	
	<b>ISO-T3</b>	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 <sup>(4)</sup>	dB(A)	Hi:48 Lo:40	57
<b>Exterior dimensions</b>					
<b>Height × Width × Depth</b>		<b>mm</b>	<b>Unit 320 × 840 × 840</b> <b>Panel 30 × 950 × 950</b>	<b>1250 × 950 × 340</b>	
<b>Net weight</b>		<b>kg</b>	<b>34 (Unit:28 Panel:6)</b>	<b>80</b>	
<b>Refrigerant equipment</b>					
<b>Compressor type &amp; Q'ty</b>			<b>RC5547ESE1 × 1</b>		
	Motor	kW	-		
	Starting method		-		
<b>Heat exchanger</b>			Louver fins & inner grooved tubing		
	Refrigerant control		-		
<b>Refrigerant</b>			<b>R22</b>		
	<b>Quantity</b>	<b>kg</b>	<b>Holding charged</b>	<b>1.55 [Pre-charged up to the piping length of 5m]</b>	
	<b>Refrigerant oil</b>	<b>ℓ</b>	-	<b>1.63 (SUNISO 3GS)</b>	
	High pressure control		High pressure regulator valve		
<b>Air handling equipment</b>					
	Fan type & Q'ty		Turbo fan × 1 Propeller fan × 2		
	Motor	W	<b>80 × 1</b> <b>60 × 2</b>		
	Starting method		Line starting		
	<b>Air flow (Standard)</b>	<b>CMM</b>	<b>Hi:26 Lo:19</b>	<b>100/110</b>	
	<b>Fresh air intake</b>		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	- -		
<b>Operation control</b>			Wired remote control switch		
	Operation switch		(Optional:RCD-C-S-E) - (Indoor unit side)		
	Room temperature control		Thermostat by electronics -		
<b>Safety equipment</b>			Internal thermostat for fan motor. Frost protection thermostat. Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.		
<b>Installation data</b>		<b>mm</b>	<b>Liquid line: φ9.52 (3/8") Gas line: φ19.05 (3/4")</b>		
<b>Refrigerant piping size</b>		<b>(in)</b>			
<b>Connecting method</b>			<b>Flare piping</b>		
	<b>Drain hose</b>		(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.

Operation	Item	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.



**Model FDT508CES-A**

Item		Model	FDT508CES-A	
			FDT508-A	FDC506CES3
<b>Nominal cooling capacity<sup>(1)</sup></b>	ISO-T1	W	<b>12500/14000</b>	
	ISO-T3		<b>10600/11900</b>	
<b>Power source</b>		<b>3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz</b>		
<b>Operation data<sup>(3)</sup></b>	<b>ISO-T1</b>	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	
	<b>ISO-T3</b>	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 <sup>(4)</sup>	dB(A) Hi:49 Lo:43 59	
<b>Exterior dimensions</b>				
<b>Height × Width × Depth</b>		<b>mm</b>	<b>Unit 320 × 840 × 840</b> <b>Panel 30 × 950 × 950</b>	<b>1250 × 950 × 340</b>
<b>Net weight</b>		<b>kg</b>	<b>36 (Unit:30 Panel:6)</b>	<b>85</b>
<b>Refrigerant equipment</b>				
<b>Compressor type &amp; Q'ty</b>		-		
Motor		kW	-	<b>3.73</b>
Starting method		-		
<b>Heat exchanger</b>		Louver fins & inner grooved tubing		
Refrigerant control		-		
<b>Refrigerant</b>		<b>R22</b>		
<b>Quantity</b>		<b>kg</b>	<b>Holding charged</b>	<b>1.85 [Pre-charged up to the piping length of 5m]</b>
<b>Refrigerant oil</b>		<b>ℓ</b>	-	<b>2.07 (SUNISO 3GS)</b>
High pressure control		High pressure regulator valve		
<b>Air handling equipment</b>				
Fan type & Q'ty		Turbo fan × 1 Propeller fan × 2		
Motor		W	<b>130 × 1</b>	<b>60 × 2</b>
Starting method		Line starting		
<b>Air flow (Standard)</b>		<b>CMM</b>	<b>Hi:28 Lo:20</b>	<b>100/110</b>
<b>Fresh air intake</b>		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)
<b>Operation control</b>				
Operation switch		Wired remote control switch (Optional:RCD-C-S-E) - (Indoor unit side)		
Room temperature control		Thermostat by electronics -		
<b>Safety equipment</b>				
		Internal thermostat for fan motor. Frost protection thermostat. Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.		
<b>Installation data</b>				
<b>Refrigerant piping size</b>		<b>mm (in)</b>	<b>Liquid line: φ9.52 (3/8") Gas line: φ19.05 (3/4")</b>	
<b>Connecting method</b>		<b>Flare piping</b>		
<b>Drain hose</b>		(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.

Operation	Item	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
<b>Nominal cooling capacity<sup>(1)</sup></b>	W	5000	
<b>Power source</b>		1 Phase, 220/240V, 50Hz	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:38 Lo:33
<b>Exterior dimensions</b>			
<b>Height × Width × Depth</b>	mm	<b>Unit 215 × 700 × 700 Panel 26 × 800 × 800</b>	<b>690 × 880 × 290</b>
<b>Net weight</b>	kg	<b>23 (Unit:18 Panel:5)</b>	<b>49</b>
<b>Refrigerant equipment</b>			
<b>Compressor type &amp; Q'ty</b>		-	<b>RM5523HNE5 × 1</b>
Motor	kW	-	<b>1.7</b>
Starting method		-	Line starting
<b>Heat exchanger</b>		Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control		-	Capillary tube
<b>Refrigerant</b>		<b>R407C</b>	
<b>Quantity</b>	kg	<b>Holding charged</b>	<b>0.87 [Pre-charged up to the piping length of 0m]</b>
<b>Refrigerant oil</b>	ℓ	-	<b>0.7 (MA32)</b>
High pressure control			-
<b>Air handling equipment</b>			
Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor	W	<b>30 × 1</b>	<b>55 × 1</b>
Starting method		Line starting	Line starting
<b>Air flow (Standard)</b>	CMM	<b>Hi:14 Lo:10</b>	<b>56</b>
<b>Fresh air intake</b>		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)
<b>Operation control</b>			
Operation switch		Wireless remote control switch	- (Indoor unit side)
Room temperature control		Thermostat by electronics	-
<b>Safety equipment</b>			
		Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
<b>Installation data</b>	mm	<b>Liquid line: φ6.35 (1/4") Gas line: φ15.88 (5/8")</b>	
<b>Refrigerant piping size</b>	(in)		
<b>Connecting method</b>		<b>Flare piping</b>	
<b>Drain hose</b>		(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	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Operation					
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
<b>Nominal cooling capacity<sup>(1)</sup></b>	W	5700	
<b>Power source</b>		1 Phase, 220/240V, 50Hz	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:39 Lo:35
<b>Exterior dimensions</b>	mm		
<b>Height × Width × Depth</b>		Unit 260 × 840 × 840 Panel 30 × 950 × 950	845 × 880 × 340
<b>Net weight</b>	kg	30 (Unit:24 Panel:6)	55
<b>Refrigerant equipment</b>			
<b>Compressor type &amp; Q'ty</b>		-	RM5526HNE5 × 1
Motor	kW	-	1.9
Starting method		-	Line starting
<b>Heat exchanger</b>		Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control		-	Capillary tube
<b>Refrigerant</b>		R407C	
<b>Quantity</b>	kg	<b>Holding charged</b>	1.07 [Pre-charged up to the piping length of 5m]
<b>Refrigerant oil</b>	ℓ	-	0.7 (MA32)
High pressure control			-
<b>Air handling equipment</b>			
Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor	W	25 × 1	55 × 1
Starting method		Line starting	Line starting
<b>Air flow (Standard)</b>	CMM	<b>Hi:16 Lo:11</b>	<b>56</b>
<b>Fresh air intake</b>		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)
<b>Operation control</b>			
Operation switch		Wireless remote control switch	- (Indoor unit side)
Room temperature control		Thermostat by electronics	-
<b>Safety equipment<sup>(4)</sup></b>			
		Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
<b>Installation data</b>	mm		
<b>Refrigerant piping size</b>	(in)	Liquid line: φ9.52 (3/8") Gas line: φ15.88 (5/8")	
<b>Connecting method</b>		Flare piping	
<b>Drain hose</b>		(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	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Operation					
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
<b>Nominal cooling capacity<sup>(1)</sup></b>	W	7100	
<b>Power source</b>		1 Phase, 220/240V, 50Hz	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:41 Lo:35
<b>Exterior dimensions</b>	mm	Unit 260 × 840 × 840 Panel 30 × 950 × 950	845 × 880 × 340
<b>Net weight</b>	kg	30 (Unit:24 Panel:6)	73
<b>Refrigerant equipment</b>			
<b>Compressor type &amp; Q'ty</b>		-	GT-A5534HN41 × 1
Motor	kW	-	2.5
Starting method		-	Line starting
<b>Heat exchanger</b>		Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control		-	Capillary tube
<b>Refrigerant</b>		R407C	
<b>Quantity</b>	kg	<b>Holding charged</b>	1.63 [Pre-charged up to the piping length of 5m]
<b>Refrigerant oil</b>	ℓ	-	1.45 (MA32)
High pressure control			-
<b>Air handling equipment</b>			
Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor	W	30 × 1	55 × 1
Starting method		Line starting	Line starting
<b>Air flow (Standard)</b>	<b>CMM</b>	<b>Hi:17 Lo:12</b>	<b>58</b>
<b>Fresh air intake</b>		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)
<b>Operation control</b>			
Operation switch		Wireless remote control switch	- (Indoor unit side)
Room temperature control		Thermostat by electronics	-
<b>Safety equipment</b>			
		Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
<b>Installation data</b>	mm	<b>Liquid line: φ9.52 (3/8") Gas line: φ15.88 (5/8")</b>	
<b>Refrigerant piping size</b>	(in)		
<b>Connecting method</b>		<b>Flare piping</b>	
<b>Drain hose</b>		(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	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Operation					
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
<b>Nominal cooling capacity<sup>(1)</sup></b>		W	7100	
<b>Power source</b>			3 Phase, 380/415V, 50Hz	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:41 Lo:35	52
<b>Exterior dimensions</b>		mm		
<b>Height × Width × Depth</b>			Unit 260 × 840 × 840 Panel 30 × 950 × 950	845 × 880 × 340
<b>Net weight</b>		kg	30 (Unit:24 Panel:6) 73	
<b>Refrigerant equipment</b>				
<b>Compressor type &amp; Q'ty</b>			-	GT-A5534HS41 × 1
Motor		kW	-	2.5
Starting method			-	Line starting
<b>Heat exchanger</b>			Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control			-	Capillary tube
<b>Refrigerant</b>			R407C	
<b>Quantity</b>		kg	<b>Holding charged</b>	1.63 [Pre-charged up to the piping length of 5m]
<b>Refrigerant oil</b>		ℓ	-	1.45 (MA32)
High pressure control			-	
<b>Air handling equipment</b>				
Fan type & Q'ty			Turbo fan × 1	Propeller fan × 1
Motor		W	30 × 1	55 × 1
Starting method			Line starting	Line starting
<b>Air flow (Standard)</b>		<b>CMM</b>	<b>Hi:17 Lo:12</b>	<b>58</b>
<b>Fresh air intake</b>			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)
<b>Operation control</b>				
Operation switch			Wireless remote control switch	- (Indoor unit side)
Room temperature control			Thermostat by electronics	-
<b>Safety equipment</b>				
			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
<b>Installation data</b>		mm		
<b>Refrigerant piping size</b>		(in)	Liquid line: φ9.52 (3/8") Gas line: φ15.88 (5/8")	
<b>Connecting method</b>			Flare piping	
<b>Drain hose</b>			(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.

Operation	Item	Indoor air temperature		Outdoor air temperature		Standards
		DB	WB	DB	WB	
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
<b>Nominal cooling capacity<sup>(1)</sup></b>	W	<b>10000</b>	
<b>Power source</b>		<b>3 Phase, 380/415V, 50Hz</b>	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:48 Lo:40
<b>Exterior dimensions</b>			
<b>Height × Width × Depth</b>	mm	<b>Unit 320 × 840 × 840 Panel 30 × 950 × 950</b>	<b>1050 × 920 × 340</b>
<b>Net weight</b>	kg	<b>30 (Unit:24 Panel:6)</b>	<b>96</b>
<b>Refrigerant equipment</b>			
<b>Compressor type &amp; Q'ty</b>		–	<b>GU-A5550HS41 × 1</b>
Motor	kW	–	<b>2.8</b>
Starting method		–	Line starting
<b>Heat exchanger</b>		Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control		–	Capillary tube
<b>Refrigerant</b>		<b>R407C</b>	
<b>Quantity</b>	kg	<b>Holding charged</b>	<b>2.12 [Pre-charged up to the piping length of 5m]</b>
<b>Refrigerant oil</b>	ℓ	–	<b>1.6 (MA32)</b>
High pressure control		–	–
<b>Air handling equipment</b>			
Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor	W	<b>80 × 1</b>	<b>40 × 2</b>
Starting method		Line starting	Line starting
<b>Air flow (Standard)</b>	<b>CMM</b>	<b>Hi:26 Lo:19</b>	<b>70</b>
<b>Fresh air intake</b>		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)
<b>Operation control</b>			
Operation switch		Wireless remote control switch	– (Indoor unit side)
Room temperature control		Thermostat by electronics	–
<b>Safety equipment</b>			
		Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
<b>Installation data</b>			
<b>Refrigerant piping size</b>	mm (in)	<b>Liquid line: φ9.52 (3/8") Gas line: φ19.05 (3/4")</b>	
<b>Connecting method</b>		<b>Flare piping</b>	
<b>Drain hose</b>		(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	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Operation					
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
<b>Nominal cooling capacity<sup>(1)</sup></b>		W	<b>12500</b>	
<b>Power source</b>			<b>3 Phase, 380/415V, 50Hz</b>	
<b>Operation data<sup>(3)</sup></b>	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 <sup>(4)</sup>	dB(A)	Hi:49 Lo:43	55
<b>Exterior dimensions</b>		mm		
<b>Height × Width × Depth</b>			<b>Unit 320 × 840 × 840</b>	<b>1250 × 920 × 340</b>
<b>Net weight</b>		kg	<b>30 (Unit:24 Panel:6)</b>	
<b>Refrigerant equipment</b>				
<b>Compressor type &amp; Q'ty</b>			-	<b>GU-A5560HS41 × 1</b>
Motor		kW	-	<b>3.75</b>
Starting method			-	Line starting
<b>Heat exchanger</b>			Louver fins & inner grooved tubing	Slitted fins & bare tubing
Refrigerant control			-	Capillary tube
<b>Refrigerant</b>			<b>R407C</b>	
<b>Quantity</b>		kg	<b>Holding charged</b>	<b>2.58 [Pre-charged up to the piping length of 5m]</b>
<b>Refrigerant oil</b>		ℓ	-	<b>1.6 (MA32)</b>
High pressure control			-	
<b>Air handling equipment</b>				
Fan type & Q'ty			Turbo fan × 1	Propeller fan × 2
Motor		W	<b>130 × 1</b>	<b>65 × 2</b>
Starting method			Line starting	Line starting
<b>Air flow (Standard)</b>		<b>CMM</b>	<b>Hi:28 Lo:20</b>	<b>110</b>
<b>Fresh air intake</b>			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)
<b>Operation control</b>				
Operation switch			Wireless remote control switch	- (Indoor unit side)
Room temperature control			Thermostat by electronics	-
<b>Safety equipment</b>				
			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermistor for discharge temperature. High pressure switch for protection.
<b>Installation data</b>		mm		
<b>Refrigerant piping size</b>		(in)	<b>Liquid line: φ9.52 (3/8") Gas line: φ19.05 (3/4")</b>	
<b>Connecting method</b>			<b>Flare piping</b>	
<b>Drain hose</b>			(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.

Operation	Item	Indoor air temperature		Outdoor air temperature		Standards
		DB	WB	DB	WB	
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)

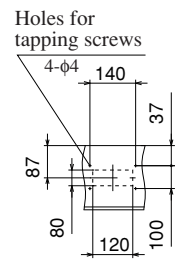
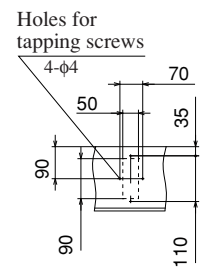
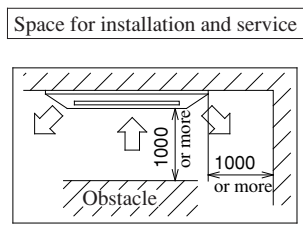
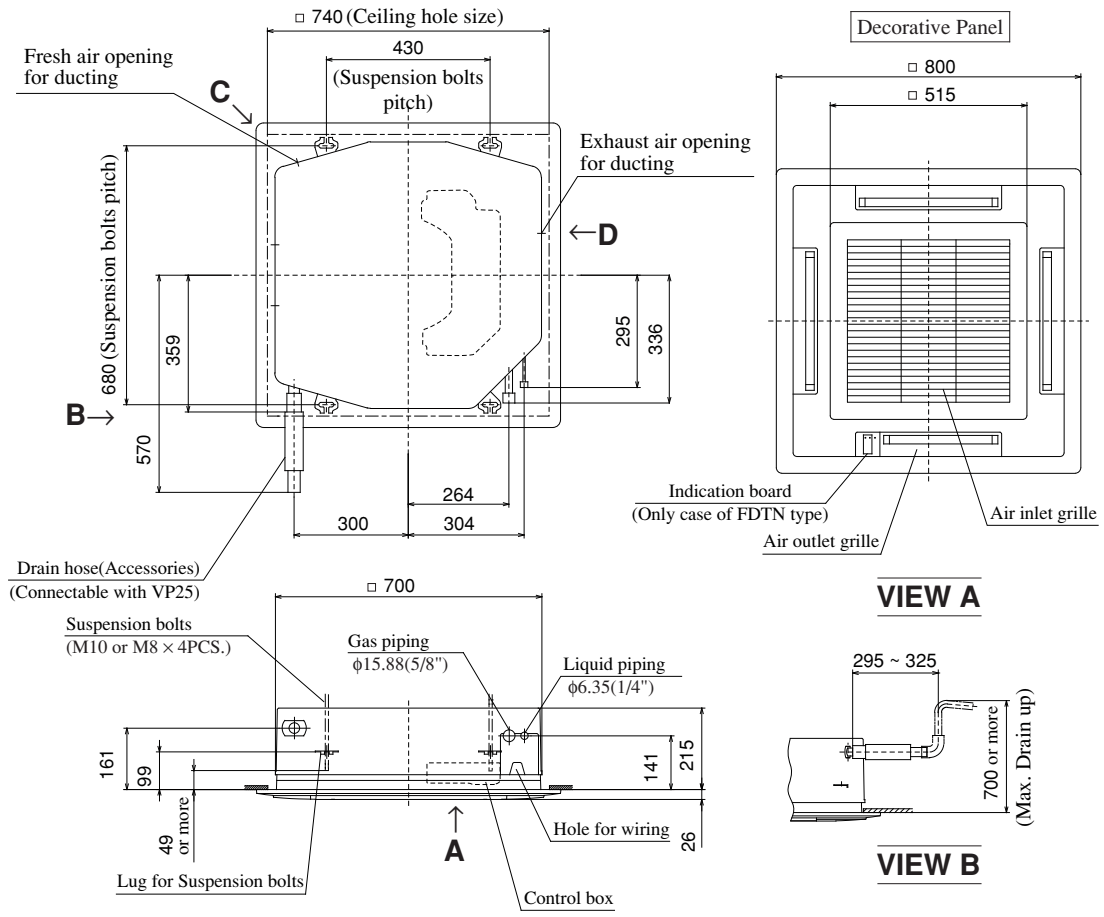
Item	Models	FDT308~508 (FDC306~506 type)
Indoor return air temperature (Upper, lower limits)		Refer to the selection chart
Outdoor return air temperature (Upper, lower limits)		
Indoor unit atmosphere (behind ceiling) temperature and humidity		Dew point temperature: 28°C or less, relative humidity: 80% 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



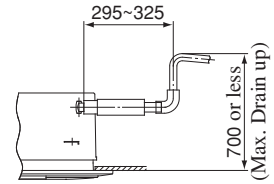
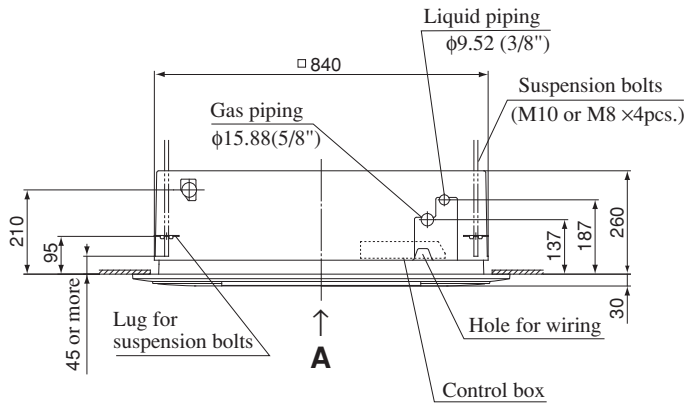
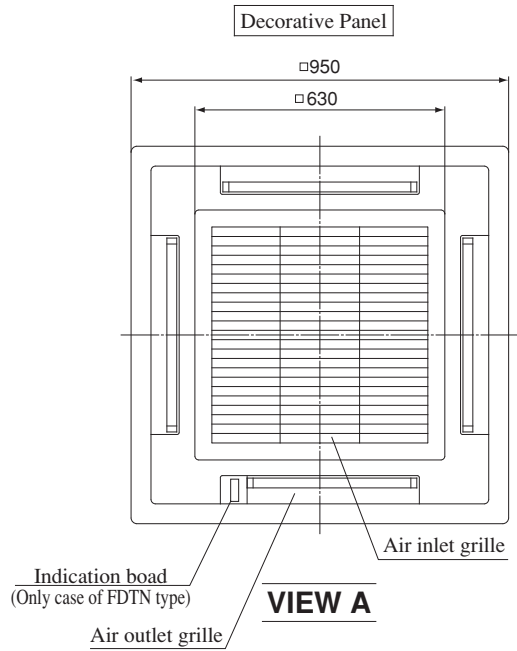
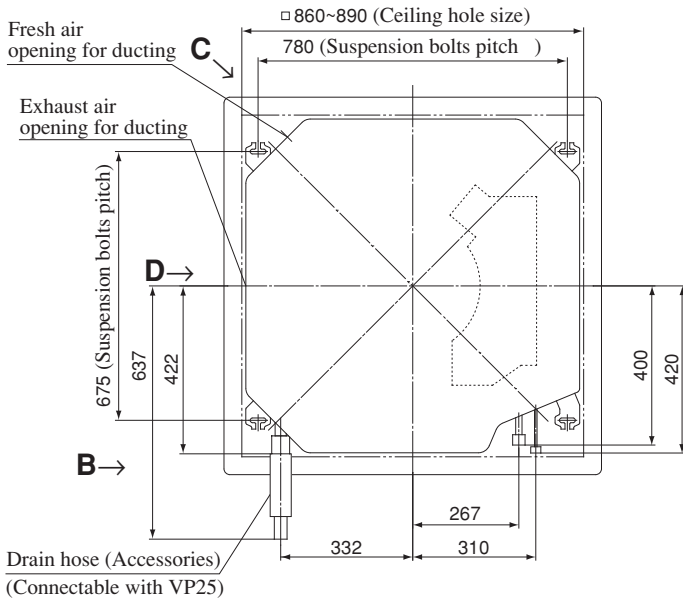
**VIEW C**

**VIEW D**

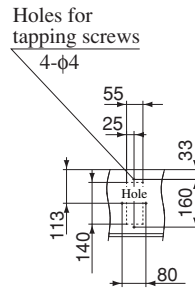
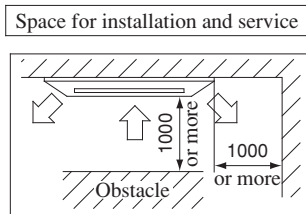
# FDT(N)-C

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

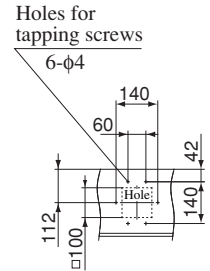
Unit : mm



**VIEW B**



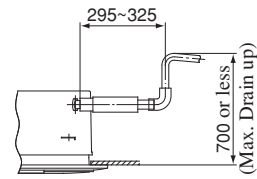
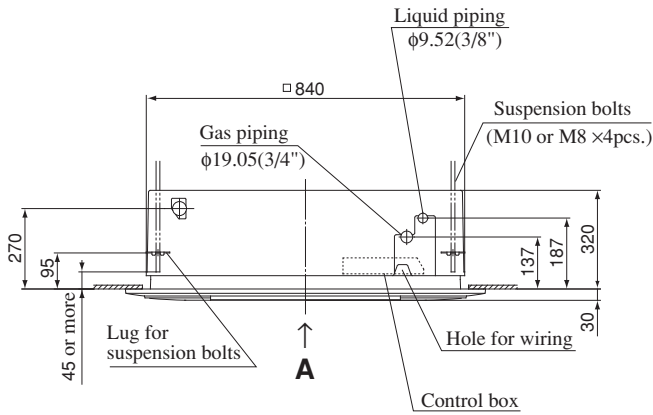
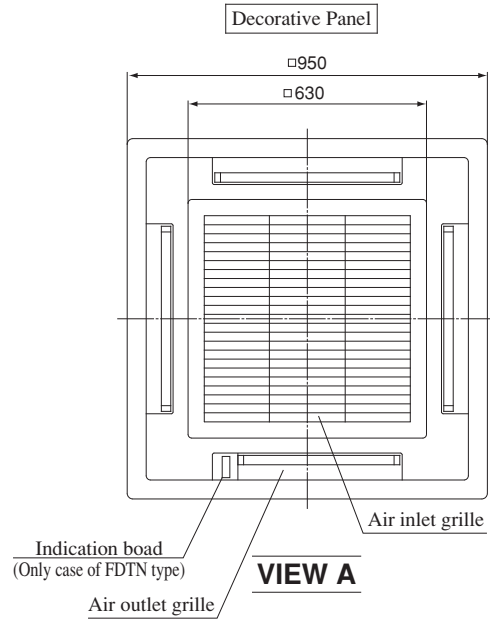
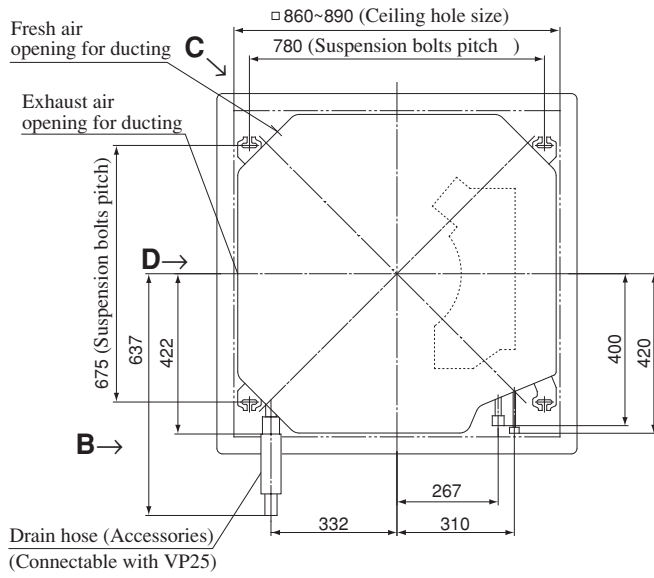
**VIEW C**



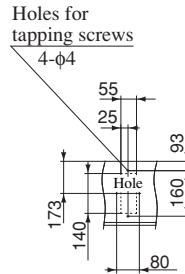
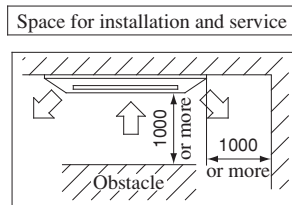
**VIEW D**

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

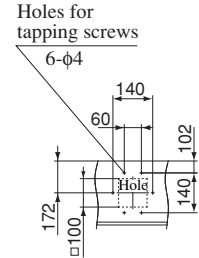
Unit : mm



**VIEW B**



**VIEW C**

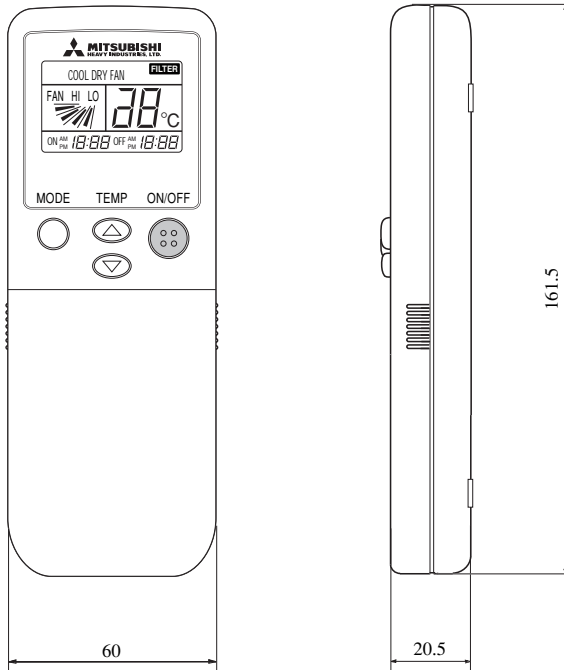


**VIEW D**

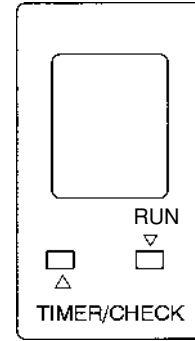
**(2) Remote controller**

**(a) Wireless remote controller**

Unit: mm

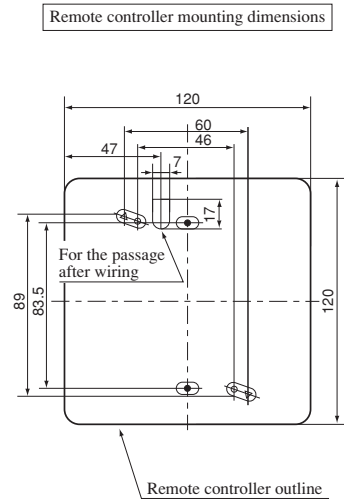
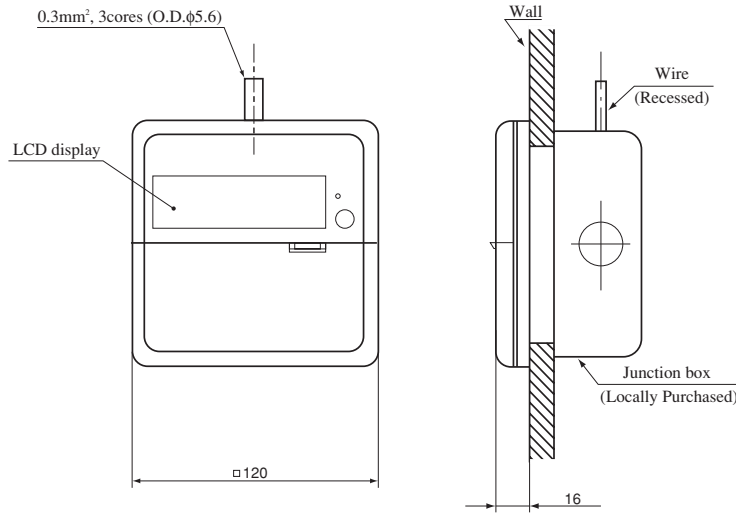


**Indication board of indoor unit**



**(b) Wired remote controller(Optional parts)**

Unit: mm



- ◆ 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

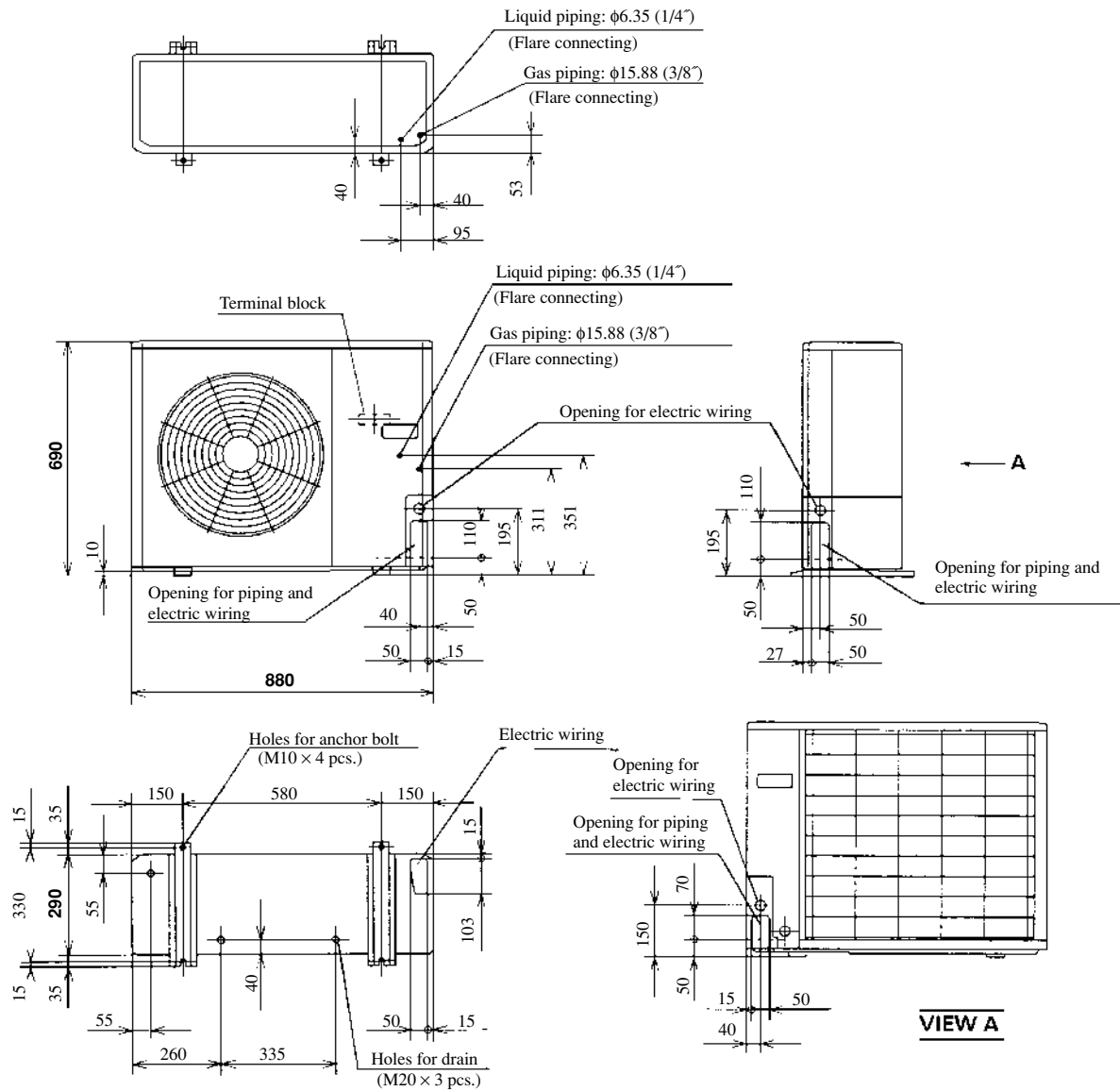
**Allowable rang of wire thickness and length**

Standard	Within 0.3 mm <sup>2</sup>	× Within 100 m
	0.5 mm <sup>2</sup>	× Within 200 m
	0.75 mm <sup>2</sup>	× Within 300 m
	1.25 mm <sup>2</sup>	× Within 400 m
	2 mm <sup>2</sup>	× Within 600 m

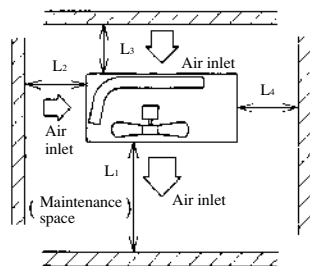
(3) Outdoor unit

Models FDC208CEN3, FDCP208CEN3

Unit: mm



Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

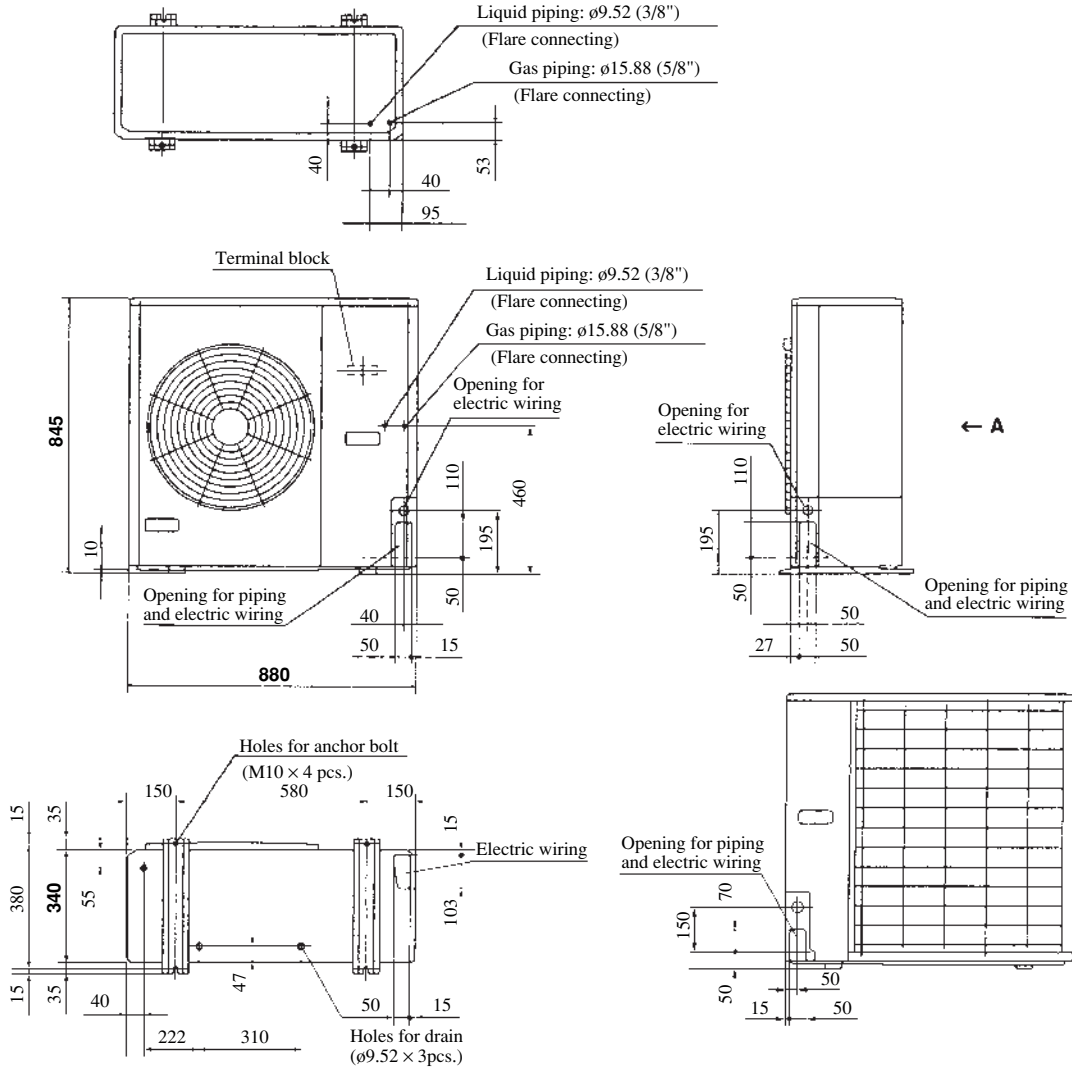
Mark	Installation type	Unit:mm		
		I	II	III
L1	Open	Open	Open	500
L2	300	5	Open	Open
L3	100	150	100	100
L4	5	5	5	5

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.

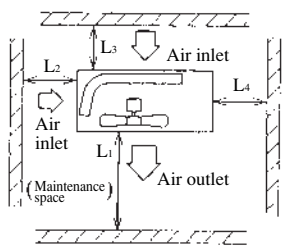
**Models FDC258CEN3, FDCP258CEN3, 308CEN3, 308CES3**

Unit: mm



**VIEW A**

**Required space for maintenance and air flow**



**Minimum allowable space to the obstacles**

Unit:mm

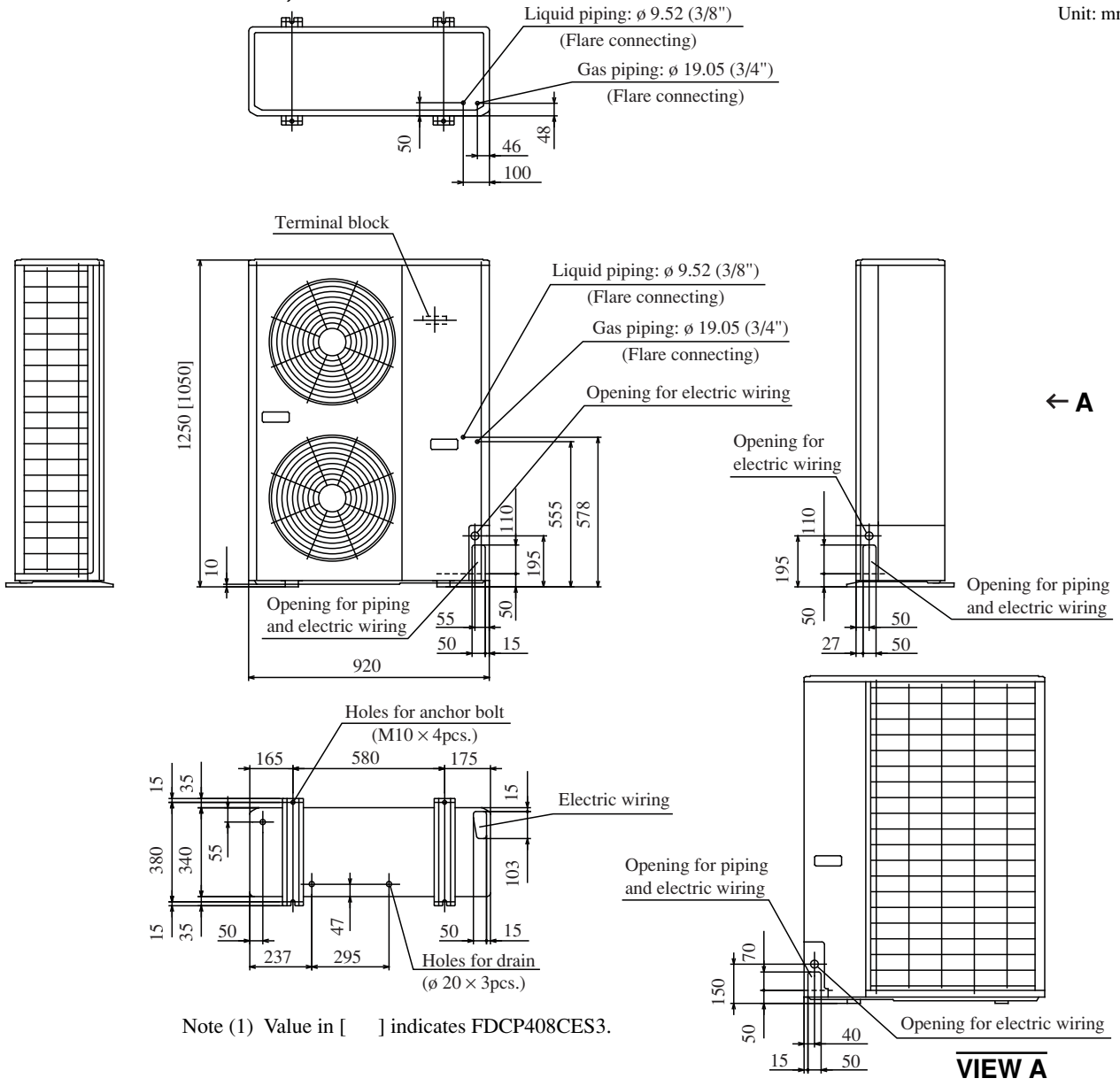
Mark	Installation type	Installation type		
		I	II	III
L1	Open	Open	Open	500
L2	300	5	Open	Open
L3	100	150	100	100
L4	5	5	5	5

**Notes**

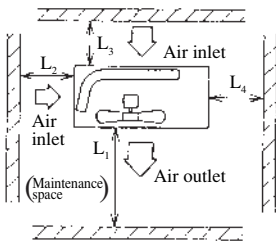
- (1) Avoid the location where four sides are entirely surrounded by walls.
- (2) Fix the unit by anchor bolts without fail. Restrict the protrusion length of anchor bolt to 15 mm and under.
- (3) When strong wind blows against the unit, direct the discharge port at a right angle to the wind direction.
- (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



Required space for maintenance and air flow



Minimum allowable space to the obstacles

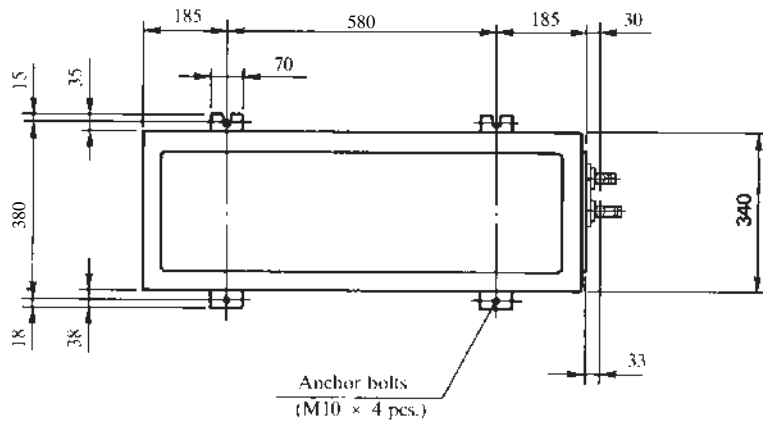
Unit:mm

Installation type	Unit:mm		
	I	II	III
Mark			
L <sub>1</sub>	Open	Open	500
L <sub>2</sub>	300	5	Open
L <sub>3</sub>	150	300	150
L <sub>4</sub>	5	5	5

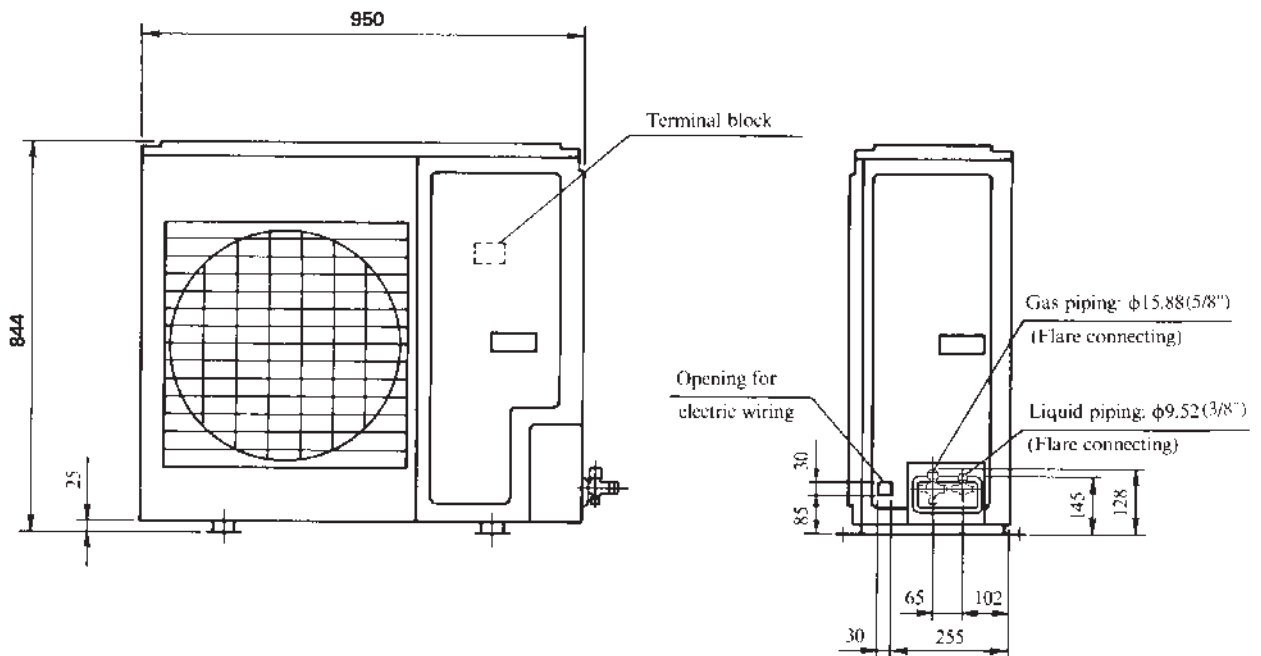
Notes

- (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.

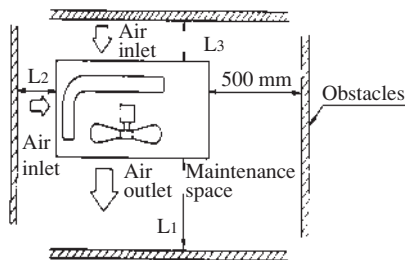
**Models FDC306CEN3, 306CES3**



Unit: mm



**Required space for maintenance and air flow**



**Minimum allowable space to the obstacles**

Unit:mm

Mark	Installation type	Unit:mm		
		I	II	III
L <sub>1</sub>	Open	Open	Open	500
L <sub>2</sub>	300	0	Open	Open
L <sub>3</sub>	100	150	100	100

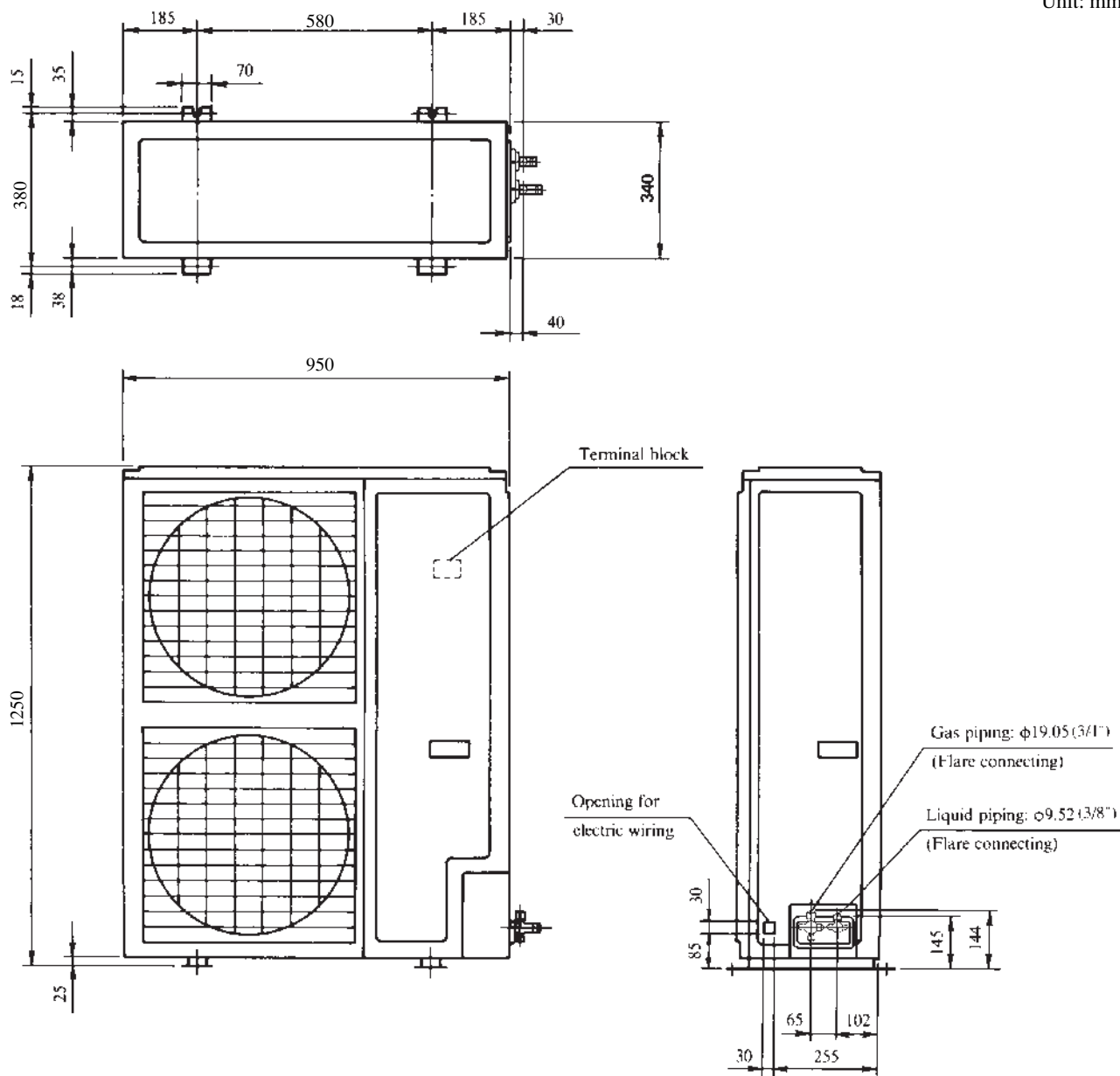
**Notes**

- (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.

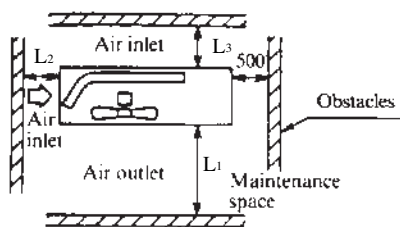


**Models FDC406CES3, 506CES3**

Unit: mm



**Required space for maintenance and air flow**



**Minimum allowable space to the obstacles**

Unit:mm

Mark	Installation type	Unit:mm		
		I	II	III
L1	Open	Open	Open	500
L2	300	0	Open	Open
L3	150	300	150	150

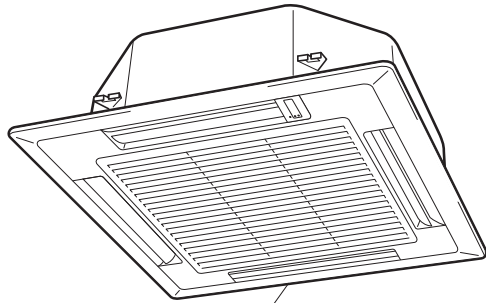
**Notes**

- (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

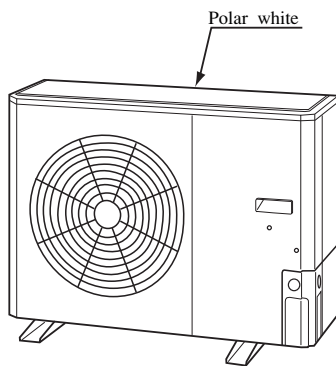


Pearl white  
(Decorative panel)

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	

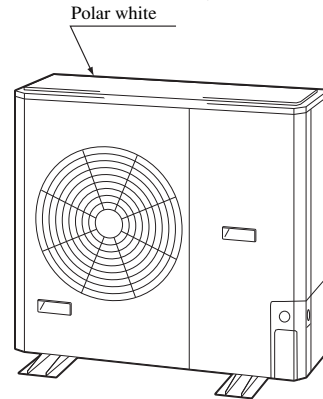
### (2) Outdoor unit

Models FDC208CEN3, FDCP208CEN3



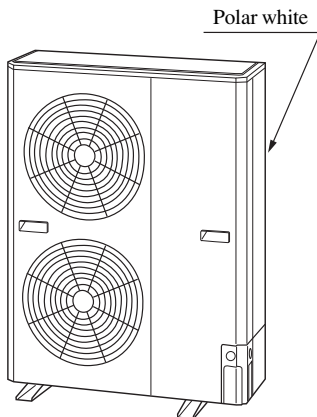
Polar white

Models FDC258CEN3  
FDCP258CEN3, 308CEN3, 308CES3



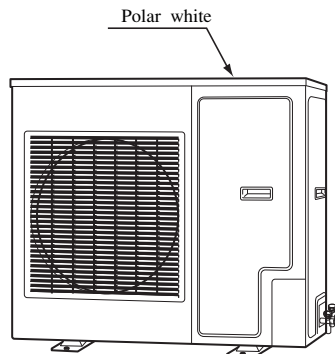
Polar white

Models FDCP408CES3, 508CES3



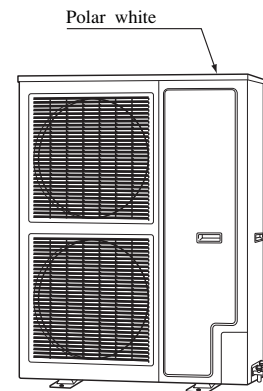
Polar white

Models FDC306CEN3, 306CES3



Polar white

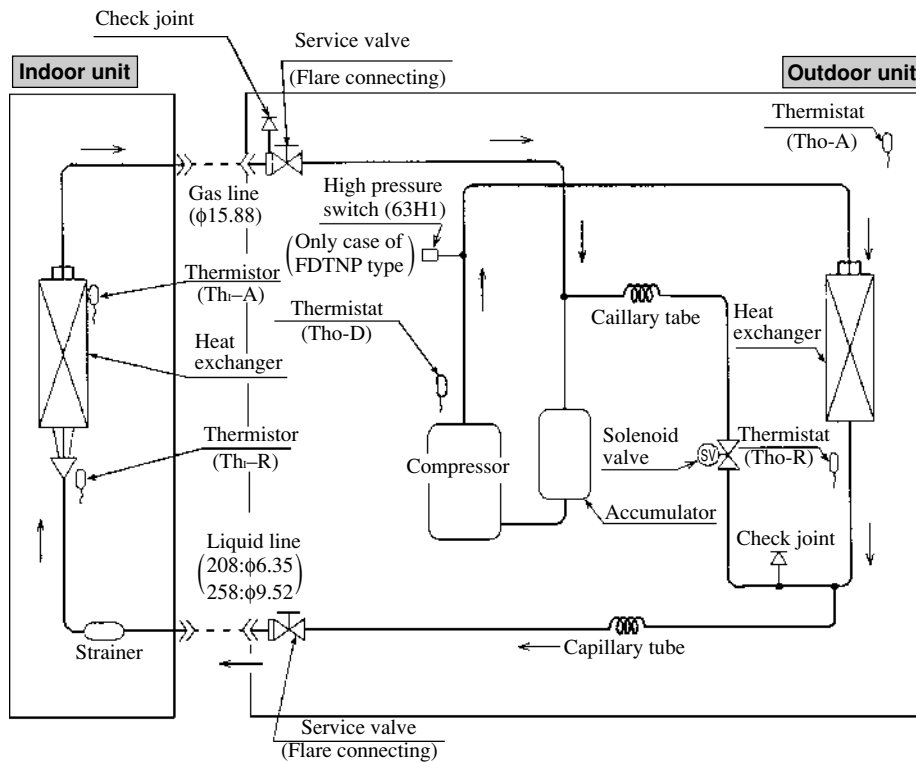
Models FDC406CES3, 506CES3



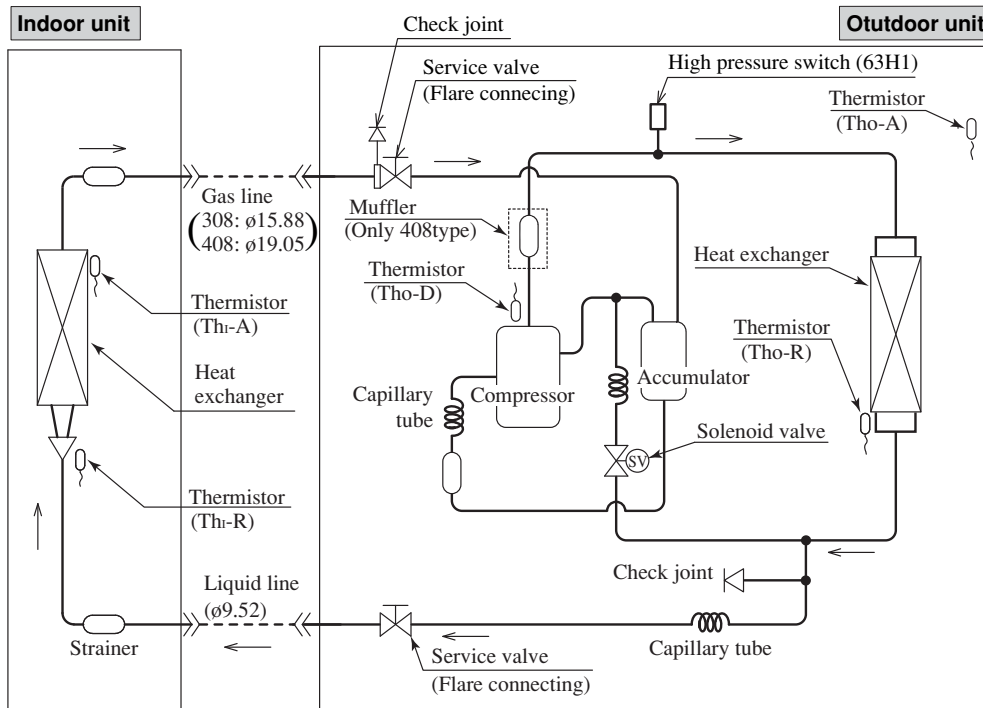
Polar white

### 9.2.5 Piping system

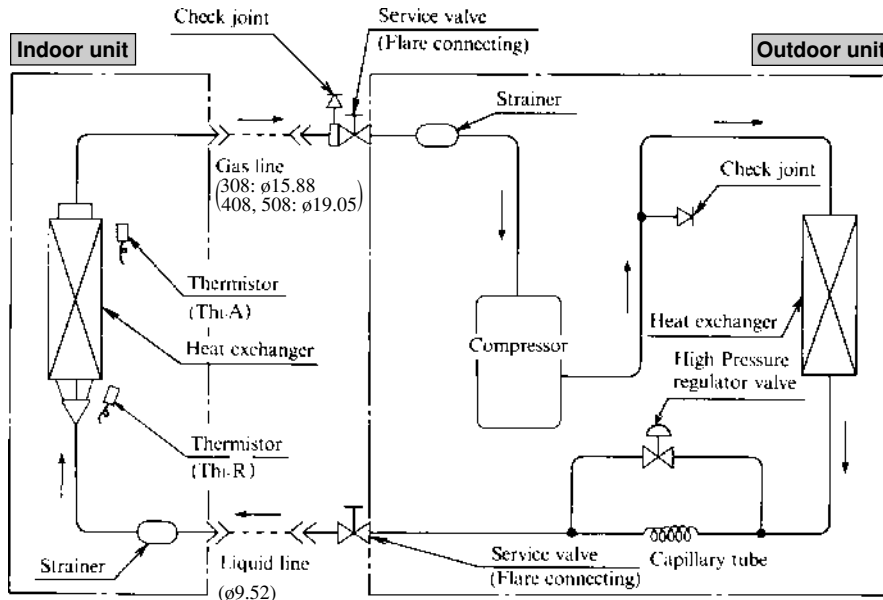
Models FDT208CEN-SA, 258CEN-SA  
FDTNP208CEN-S, 258CEN-S



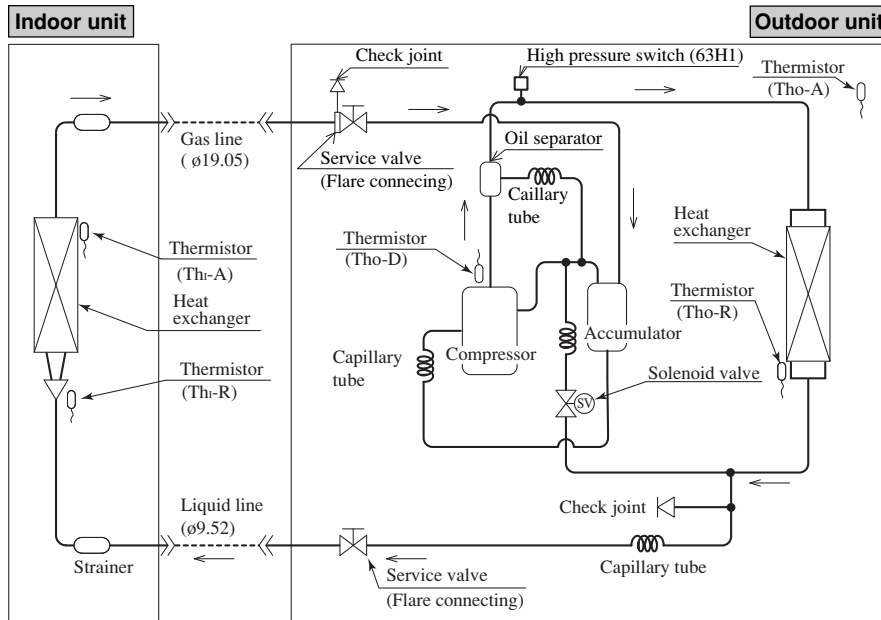
Models FDTNP308CEN-S, 308CES-S, 408CES-S



## 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)	Th-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 <sup>2</sup> ) ON 2.65MPa (27 kgf/cm <sup>2</sup> )

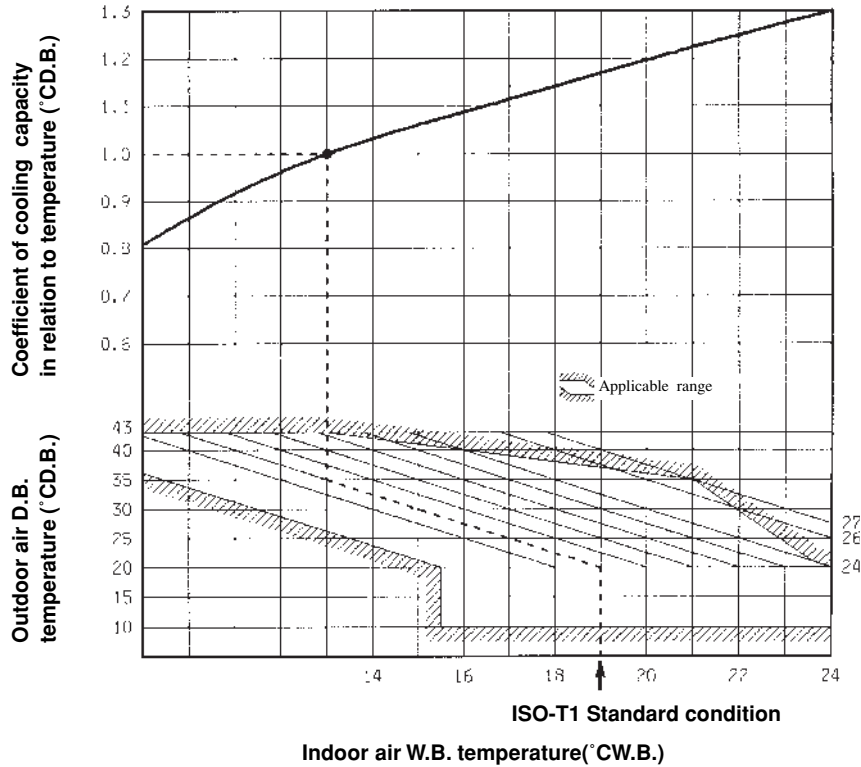
### 9.2.6 Selection chart

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

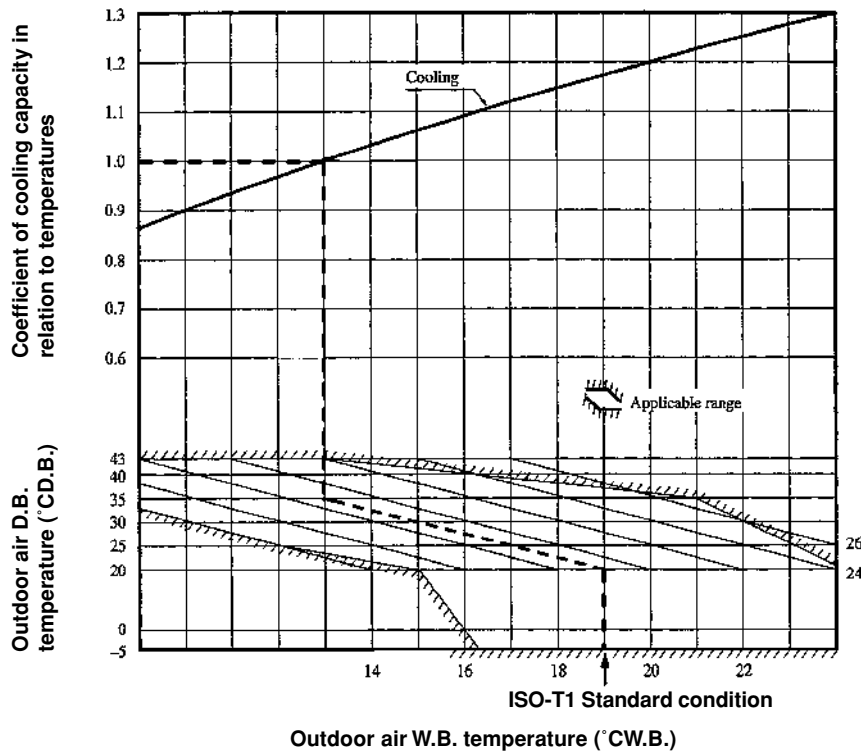
**Net capacity = Capacity shown on specification × Correction factors as follows.**

**(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

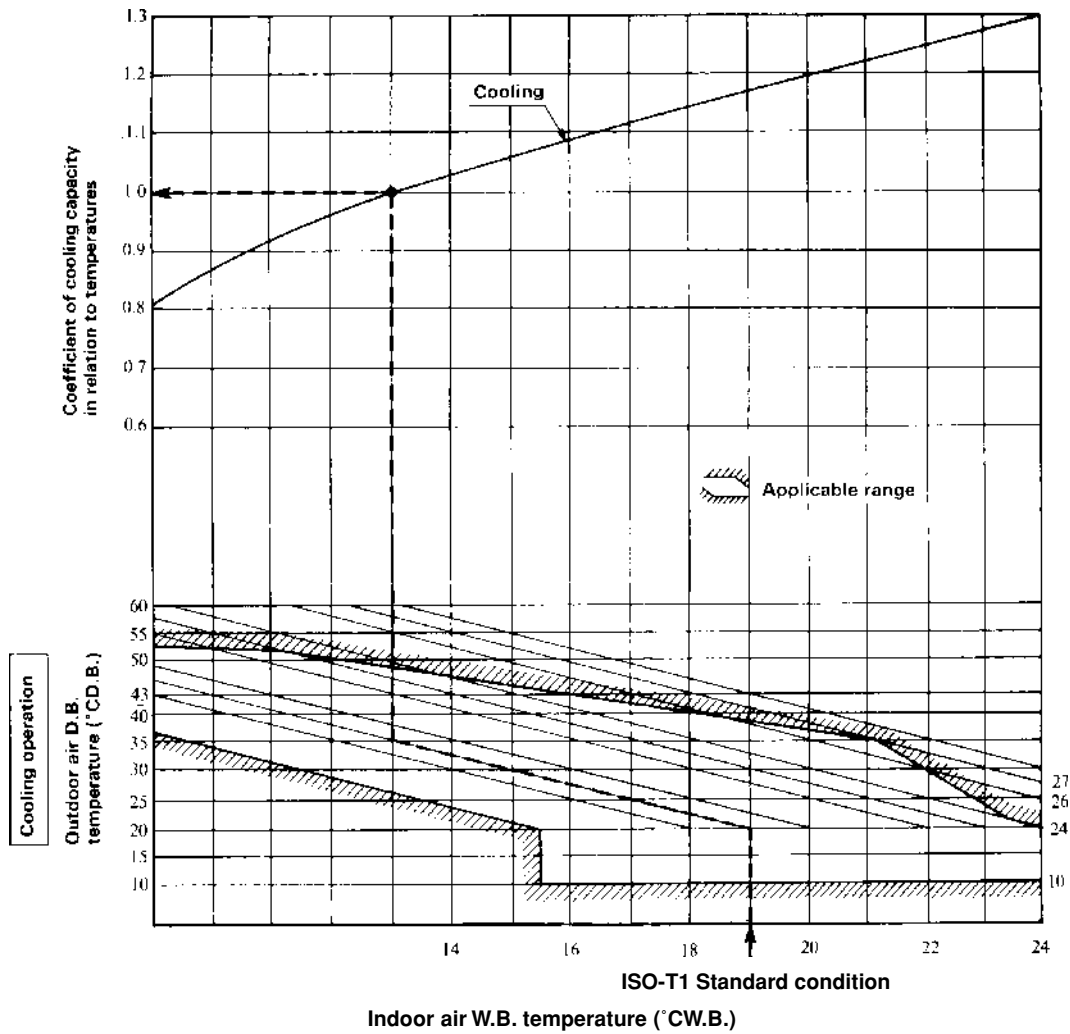


Table of bypass factor

Item	Model	208 type	258 type	308 type	408 type	508 type
	Air flow	Hi	0.112	0.050	0.065	0.076
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 <sup>(1)</sup> m		5	10	15	20	25	30	35	40	45	50	55
<b>Cooling</b>	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	Model	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

$$\text{Net cooling capacity} = \underset{\substack{\uparrow \\ \text{FDT308CEN-A}}}{7100} \times \underset{\substack{\uparrow \\ \text{Air flow} \\ \text{"High"}}}{1.00} \times \underset{\substack{\uparrow \\ \text{Length 15m.} \\ \text{Height difference 5 m}}}{(0.98 - 0.01)} \times \underset{\substack{\uparrow \\ \text{Factor by air} \\ \text{temperatures}}}{1.0} = \mathbf{6887 \text{ w}}$$

## 9.2.7 Noise level

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

Ambient air temperature:

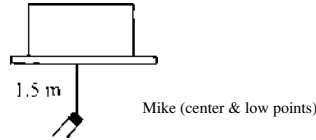
Indoor unit 27°C DB, 19°C WB.

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

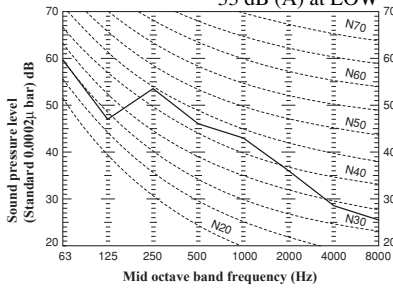
(2) The data in the chart are measured in an anechoic room.

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

### (1) Indoor unit

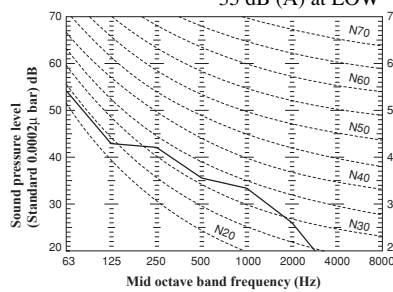
Models **FDTN208C**  
**FDT208-A**

Noise level 38 dB (A) at HIGH  
33 dB (A) at LOW



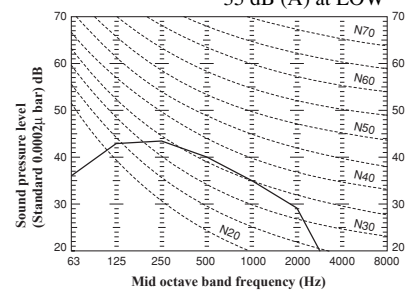
Models **FDTN258C**  
**FDT258-A**

Noise level 39 dB (A) at HIGH  
35 dB (A) at LOW



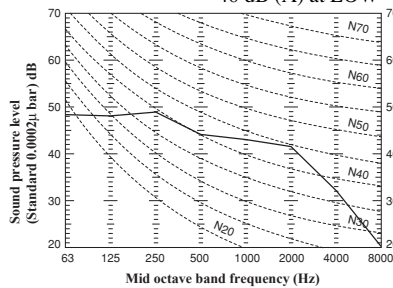
Models **FDTN308C**  
**FDT308-A**

Noise level 41 dB (A) at HIGH  
35 dB (A) at LOW



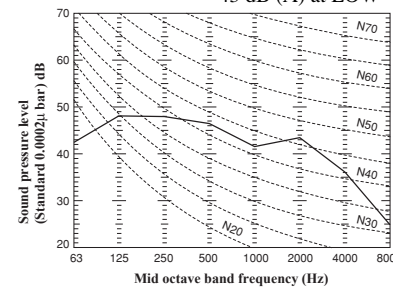
Models **FDTN408C**  
**FDT408-A**

Noise level 48 dB (A) at HIGH  
40 dB (A) at LOW



Models **FDTN508C**  
**FDT508-A**

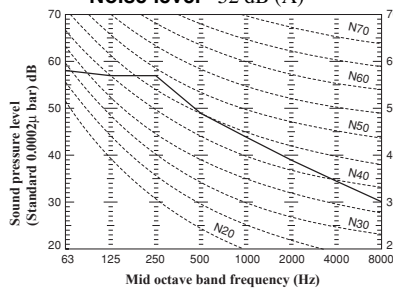
Noise level 49 dB (A) at HIGH  
43 dB (A) at LOW



### (2) Outdoor unit

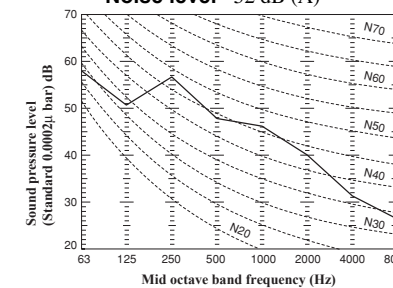
Model **FDC208CEN3**

Noise level 52 dB (A)



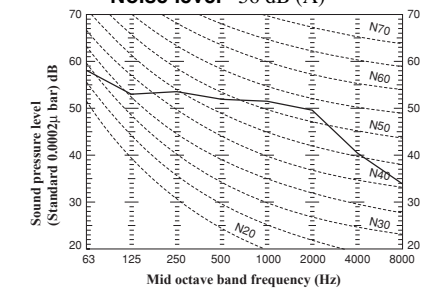
Model **FDC258CEN3**

Noise level 52 dB (A)



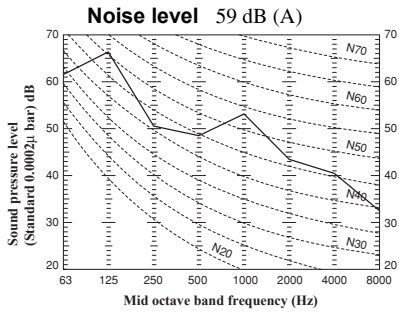
Model **FDC306CEN3**

Noise level 56 dB (A)

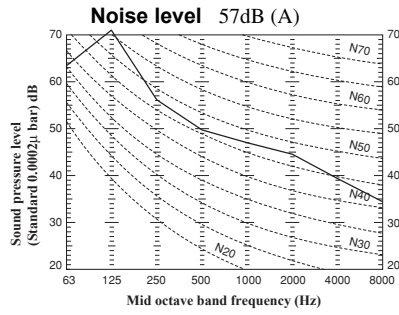




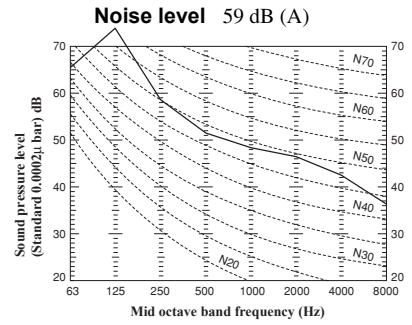
**Model FDC306CES3**



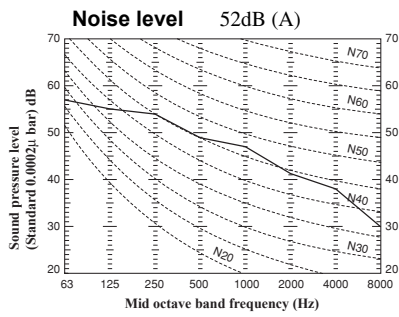
**Model FDC406CES3**



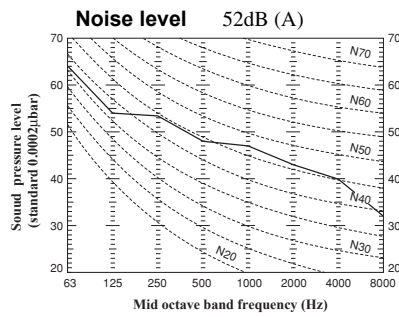
**Model FDC506CES3**



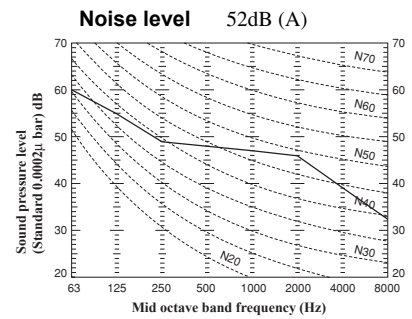
**Model FDCP208CEN3**



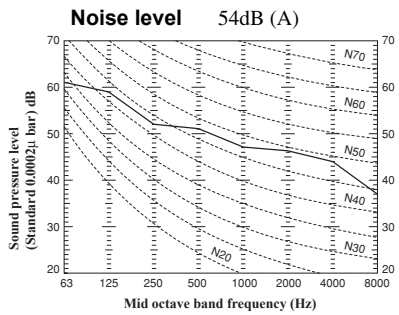
**Model FDCP258CEN3**



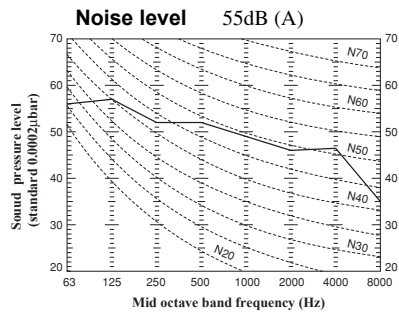
**Models FDCP308CEN3, 308CES3**



**Model FDCP408CES3**



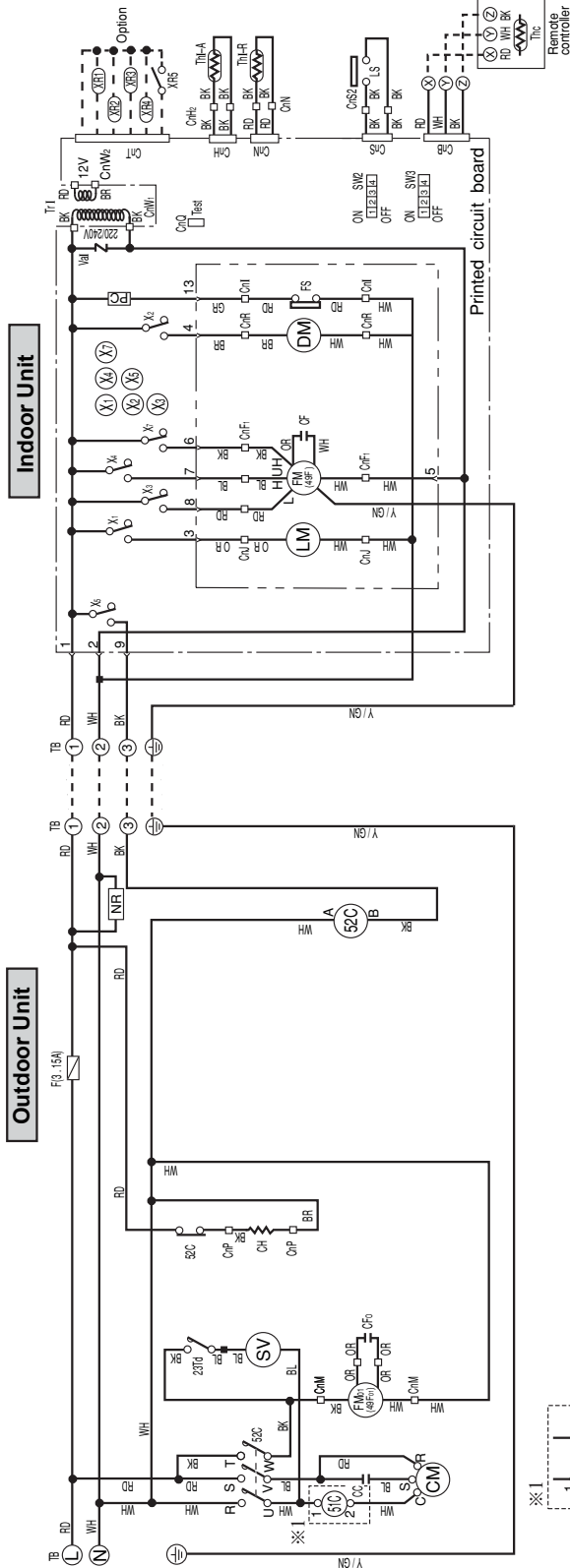
**Model FDCP508CES3**



# 9.3 ELECTRICAL DATA

## 9.3.1 Electrical wiring

Models FDT208CEN-SA, 258CEN-SA



Color mark

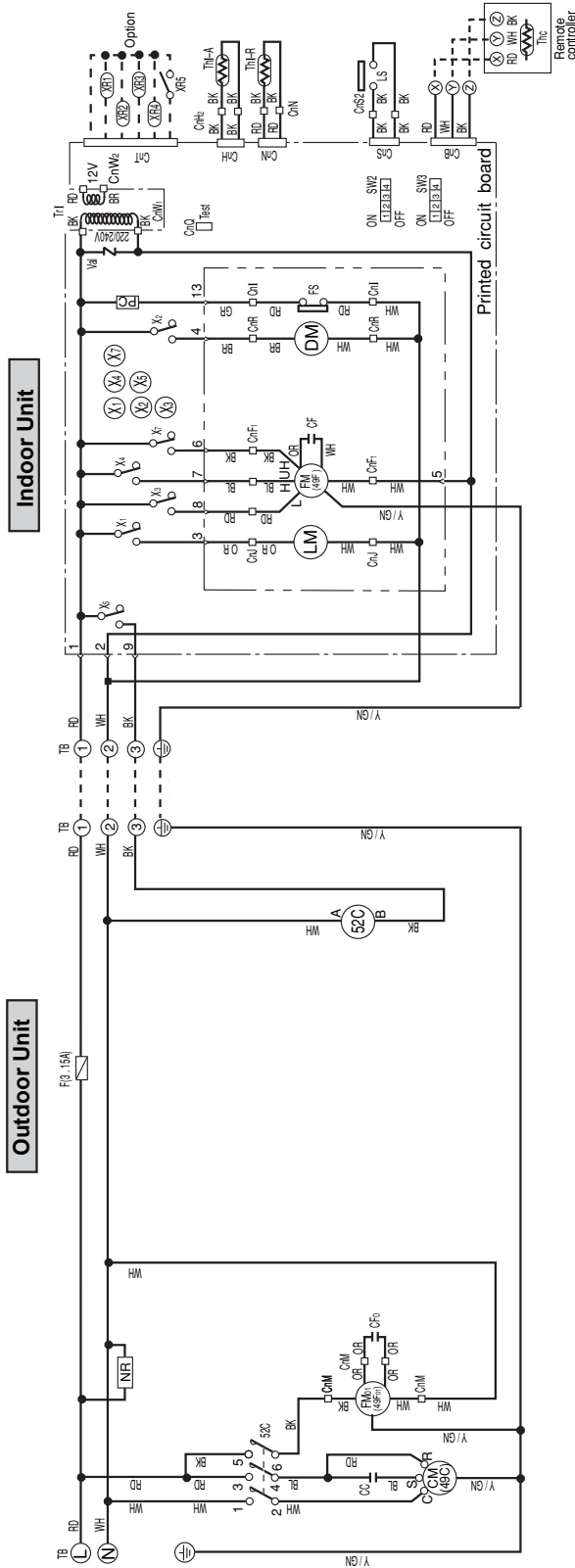
Mark	Color
BK	Black
BL	Blue
BR	Brown
GR	Gray
OR	Orange
RD	Red
WH	White
Y/GN	Yellow/Green

Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	SW2, 3	Changeover switch
CF1	Capacitor for FMi	TB	Terminal block (C 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	Valve
F	Fuse	23Td	Thermostat
FMi	Fan motor (Indoor unit)	49Fo	Internal thermostat for FMo
FMo	Fan motor (Outdoor unit)	51C	Internal thermostat for FMi
FS	Float switch	52C	Overcurrent relay for CM
LM	Louver motor	X1~7	Magnetic contactor for CM
LS	Limit switch	▲	Auxiliary relay
NR	Surge suppressor	■	Terminal (F)
PC	Photo coupler		Connector
SV	Solenoid coil (for control)		

Model FDT308CEN-A

Power source  
1 Phase 220/240V 50Hz



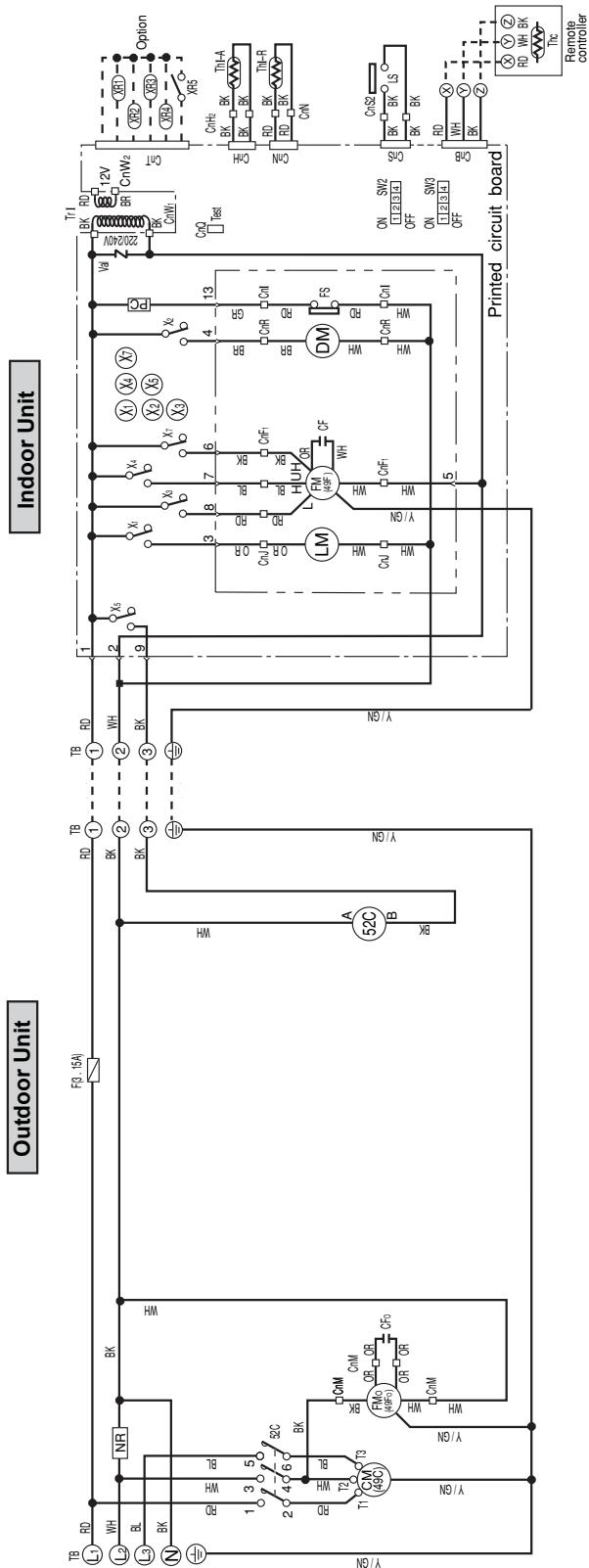
Meaning of marks

Mark	Parts name	Mark	Parts name
CC	Capacitor for CM	SW2, 3	Changeover switch
CFi	Capacitor for FMi	TB	Terminal block (O mark)
CFo	Capacitor for FMo	Thc	Thermistor
CM	Compressor motor	Thi-A	Thermistor
CnA ~ W	Connector	Thi-R	Thermistor
DM	Drain motor	Tr	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/GR	Yellow/Green

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



**Meaning of marks**

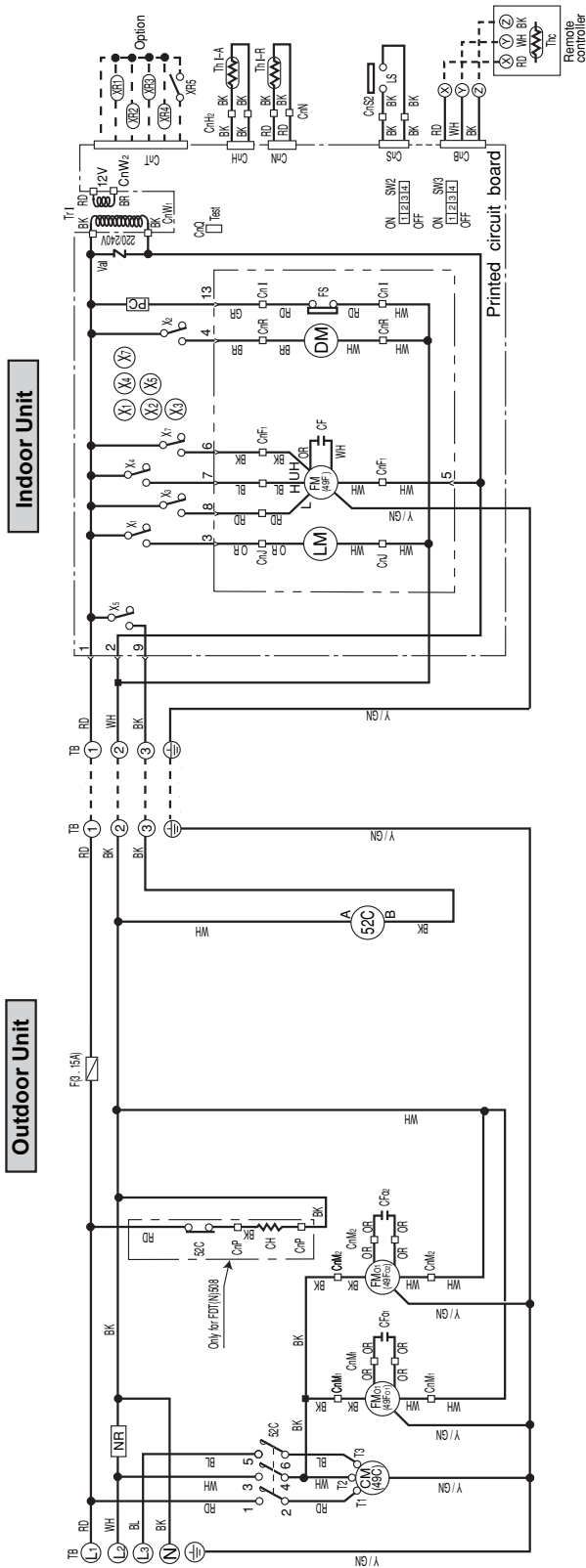
Mark	Parts name	Mark	Parts name
CFi	Capacitor for FMi	SW2, 3	Changeover switch
CFO	Capacitor for FMO	Thc	Thermistor
CM	Compressor motor	Thi-A	Thermistor
CnA ~ W	Connector	Thi-R	Thermistor
DM	Drain motor	Tr	Transformer
F	Fuse	Val	Varistor
FMi	Fan motor (Indoor unit)	49C	Internal thermostat for CM
FMO	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
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

Models FDT408CES-A, 508CES-A

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



Meaning of marks

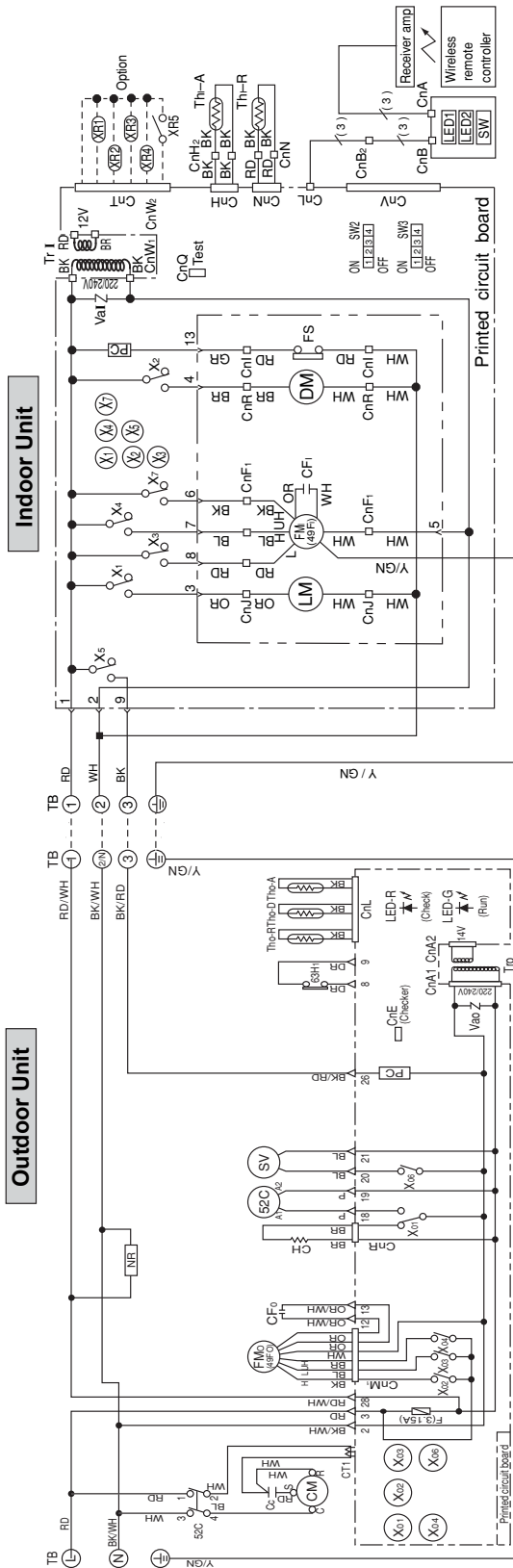
Mark	Parts name	Mark	Parts name
CF1	Capacitor for FMI	TB	Terminal block (Omark)
CFo1,2	Capacitor for FMo	SW2, 3	Changeover switch
CH	Crankcase heater	Thc	Thermostat
CM	Compressor motor	Thi-A	Thermostat
CM ~ W	Compressor motor	Thi-R	Thermostat
DM	Drain motor	Tr1	Transformer
F	Fuse	Va1	Varistor
FMI	Fan motor (Indoor unit)	49C	Internal thermostat for CM
FMIo1,2	Fan motor (Outdoor unit)	49Fo1,2	Internal thermostat for FMo
FS	Float switch	49F1	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

Models FDTNP208CEN-S, 258CEN-S, 308CEN-S

Power Source  
1 Phase 220/240V 50HZ



Meaning of marks

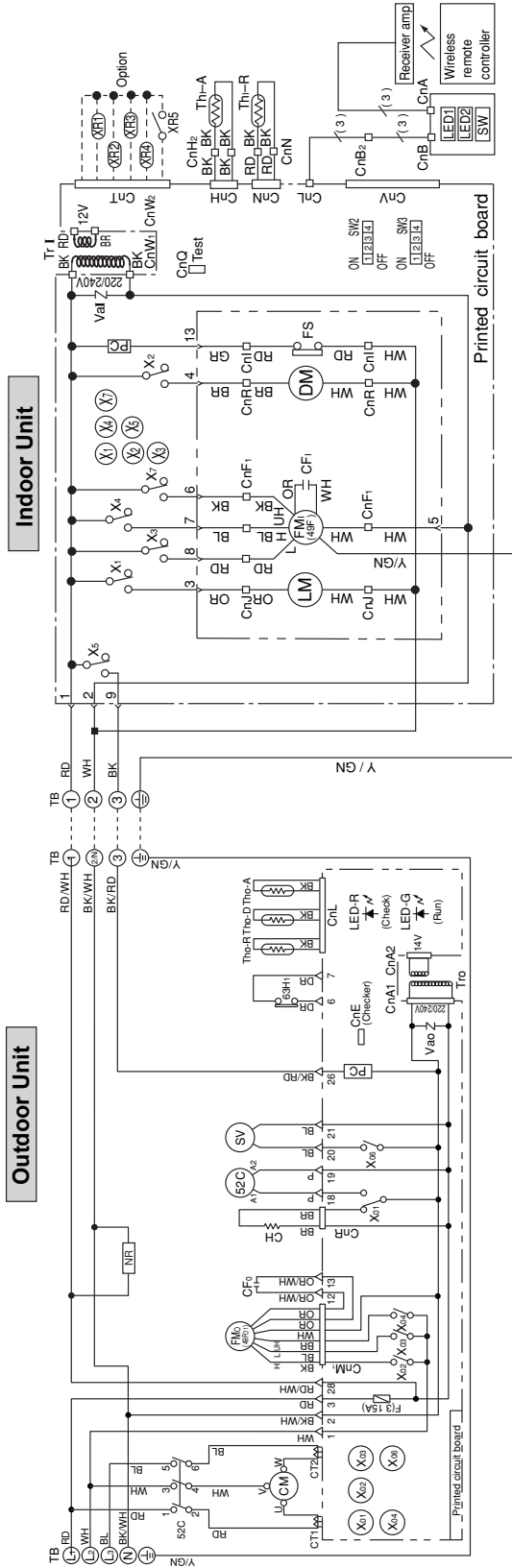
Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	SV	Solenoid coil (for control)
Cf1	Capacitor for FMi	SW	Back up switch (ON/OFF)
Cf2	Capacitor for FMo	SW2, 3	Changeover switch
Ch	Crankcase heater	TB	Terminal block (O mark)
Cm	Compressor motor	Th-A	Thermistor
CnA ~ W	Connector	Th-R	Thermistor
DM	Drain motor	Tho-A	Thermistor
F	Fan motor (Indoor unit)	Tho-D	Thermistor
FMi	Fan motor (Outdoor 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		

Model FDTNP308CES-S

Power Source  
3 Phase 380/415V 50Hz



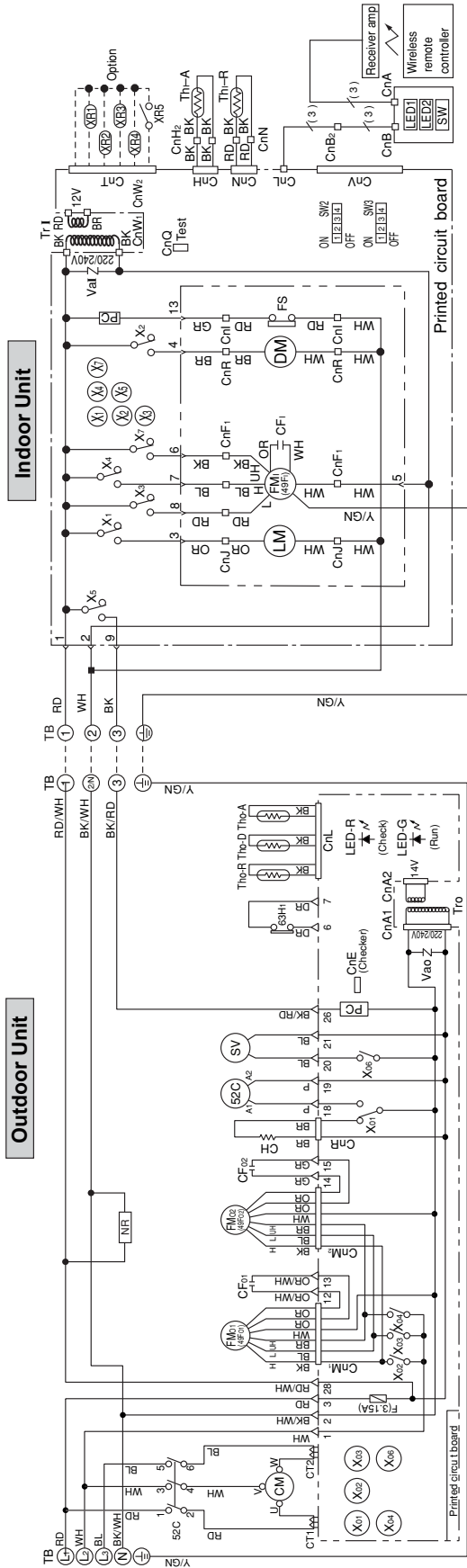
Meaning of marks

Mark	Parts name	Mark	Parts name
CF1	Capacitor for FMI	SW	Back up switch (ON/OFF)
CF2	Capacitor for FMO	SW2, 3	Changeover switch
CH	Crankcase heater	TB	Terminal block (Omark)
CM	Compressor motor	Th-A	Thermistor
CnA ~ W	Connector	Th-R	Thermistor
DM	Drain motor	Tho-A	Thermistor
F	Fuse	Tho-R	Thermistor
FMI	Fan motor (Indoor unit)	Tr1, Tro	Transformer
FMO	Fan motor (Outdoor unit)	Val, Vao	Valvistor
FS	Float switch		High pressure switch (for protection)
LED1	Indication lamp (Green - Run)		Internal thermostat for FMO
LED2	Indication lamp (Yellow - Timer/Check)		Internal thermostat for FMI
LED-G	Indication lamp (Green)		Current sensor
LED-R	Indication lamp (Red)		Magnetic contactor for CM
LM	Louver motor		Auxiliary relay
LS	Limit switch		Terminal (F)
NR	Surge suppressor		Connector
PC	Photo coupler		
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		

**Power Source**  
**3 Phase 380/415V 50HZ**



**Meaning of marks**

Mark	Parts name	Mark	Parts name
CF1	Capacitor for FMI	SW	Back up switch (ON/OFF)
CF01,2	Capacitor for FMO	SW2, 3	Changeover switch
CH	Crankcase heater	TB	Terminal block (Omark)
CM	Compressor motor	Th-A	Thermistor
CnA ~ W	Connector	Th-R	Thermistor
DM	Drain motor	Tho-A	Thermistor
F	Fuse	Tho-D	Thermistor
FMI	Fan motor (Indoor unit)	Trl, Tro	Transformer
FM01,2	Fan motor (Outdoor unit)	Vai, Vao	Varistor
FS	Float switch		High pressure switch (for protection)
LED1	Indication lamp (Green - Run)		Internal thermostat for FMO
LED2	Indication lamp (Yellow - Timer/Check)		Internal thermostat for FMI
LED-G	Indication lamp (Green)		Current sensor
LED-R	Indication lamp (Red)		Magnetic contactor for CM
LM	Louver motor		Auxiliary relay
LS	Limit switch		Terminal (F)
NR	Surge suppressor		Connector
PC	Photo coupler		
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		



## **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.