10. CEILING MOUNTED DUCT TYPE PACKAGED AIR-CONDITIONER

(Split system, Air cooled)
Cooling only type

FDUR308CEN-A
308CES-A
408CES-A
508CES-A

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10.1 GENERAL INFORMATION

10.1.1 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%.

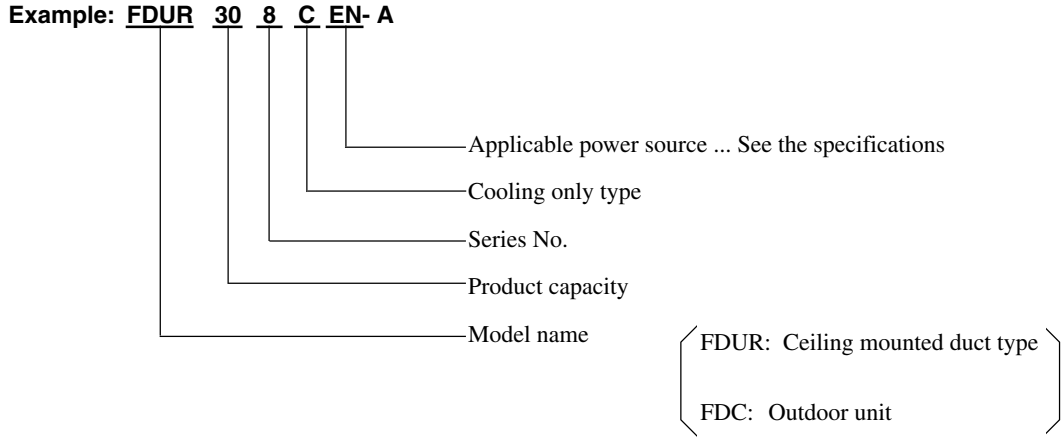
(2) The indoor outdoor interconnection signal wiring has been done away with. The microcomputer chip is installed in the indoor unit. There is no need for the unit to communicate between the outdoor and indoor units so the unit is more resistant to electromagnetic noise thus the incidence of microcomputer 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 five power lines between the outdoor and indoor unit, As no signal wire is used there is no need to separate the power line from the signal line. One cabtyre 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 models have service valves protruding from the outdoor unit for faster flare connection work in the field.

(5) The position of the suction port can be changed.
The suction from the lower inlet is available by replacing the duct connecting section (at the side face) and the lower plate. (They are changed on site.)

10.1.2 How to read the model name



10.2 SELECTION DATA

10.2.1 Specifications

Model FDUR308CEN-A

Item				Model	FDUR308CEN-A	
					FDUR308-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	3.40/3.55	
		Running current (Cooling)		A	17.5/18.3	
		Power factor (Cooling)		%	88/81	
	ISO-T3	Cooling input		kW	3.60/3.80	
		Running current (Cooling)		A	19.0/19.8	
		Power factor (Cooling)		%	86/80	
	Inrush current (L.R.A)			A	89	
	Noise level			dB(A)	**Hi:41 Lo:37**	**56**
Exterior dimensions Height × Width × Depth				mm	**295 × 850 × 650**	**844 × 950 × 340**
Net weight				kg	**40**	**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 fins & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					**R22**	
Quantity				kg	–	**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					Multiblade centrifugal fan × 2	Propeller fan × 1
Motor				W	**230 × 1**	**60 × 1**
Starting method					Line starting	Line starting
Air flow (Standard)				CMM	**Hi:25 Lo:20**	**54**
Available static pressure				Pa	**Standard: 50, Max 130**	–
Fresh air intake					–	–
Air filter, Q'ty					Polypropylene net ×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-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. Drain hose	
Optional parts					Suction grille	–

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
Cooling	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.
ISO-T1 "UNITARY AIR-CONDITIONERS"

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

Model FDUR308CES-A

Item				Model	FDUR308CES-A	
					FDUR308-A	FDC306CES3
Nominal cooling capacity(1)			ISO-T1	W	**7100/7700**	
			ISO-T3		**5700/6000**	
Power source					**3 Phase, 380-415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	3.20/3.30/3.80	
		Running current (Cooling)		A	6.6/6.7/7.8	
		Power factor (Cooling)		%	74/69/74	
	ISO-T3	Cooling input		kW	3.40/3.50/4.05	
		Running current (Cooling)		A	7.1/7.2/8.3	
		Power factor (Cooling)		%	73/68/74	
	Inrush current (L.R.A)			A	43	
	Noise level			dB(A)	**Hi:41 Lo:37**	56
Exterior dimensions Height × Width × Depth				mm	**295 × 850 × 650**	**844 × 950 × 340**
Net weight				kg	**40**	**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 fins & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					**R22**	
Quantity				kg	–	**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					Multiblade centrifugal fan × 2	Propeller fan × 1
Motor				W	**230 × 1**	**60 × 1**
Starting method					Line starting	Line starting
Air flow (Standard)				CMM	**Hi:25 Lo:20**	**54/56**
Available static pressure				Pa	**Standard: 50, Max 130**	–
Fresh air intake					–	–
Air filter, Q'ty					Polypropylene net ×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-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				mm		
Refrigerant piping size				(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. Drain hose	
Optional parts					Suction grille	–

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
Cooling	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.
ISO-T1 "UNITARY AIR-CONDITIONERS"

(3) The operation data indicate when the air-conditioner is operated at 380V 50Hz/415V 50Hz/380V 60Hz.

Model FDUR408CES-A

Item				Model	FDUR408CES-A	
					FDUR408-A	FDC406CES3
Nominal cooling capacity(1)			ISO-T1	W	**10200/11300**	
			ISO-T3		**8900/9900**	
Power source					**3 Phase, 380-415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	3.96/4.00/4.88	
		Running current (Cooling)		A	8.3/8.5/9.5	
		Power factor (Cooling)		%	72/65/78	
	ISO-T3	Cooling input		kW	4.52/4.60/5.48	
		Running current (Cooling)		A	9.0/9.2/10.3	
		Power factor (Cooling)		%	76/70/81	
	Inrush current (L.R.A)			A	45	
	Noise level			dB(A)	Hi:44 Lo:40	57
Exterior dimensions Height × Width × Depth				mm	**350 × 1370 × 650**	**1250 × 950 × 340**
Net weight				kg	**63**	**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 fins & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					**R22**	
Quantity				kg	–	**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					Multiblade centrifugal fan × 2	Propeller fan × 2
Motor				W	**280 × 1**	**60 × 2**
Starting method					Line starting	Line starting
Air flow (Standard)				CMM	**Hi:34 Lo:27**	**100/110**
Available static pressure				Pa	**Standard: 50, Max130**	–
Fresh air intake					–	–
Air filter, Q'ty					Polypropylene net ×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-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. Drain hose	
Optional parts					Suction grille	–

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
Cooling	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.
ISO-T1 "UNITARY AIR-CONDITIONERS"

(3) The operation data indicate when the air-conditioner is operated at 380V 50Hz/415V 50Hz/380V 60Hz.

Model FDUR508CES-A

Item				Model	FDUR508CES-A	
					FDUR508-A	FDC506CES3
Nominal cooling capacity(1)			ISO-T1	W	**12500/14000**	
			ISO-T3		**10600/11900**	
Power source					**3 Phase, 380-415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	5.58/5.80/6.70	
		Running current (Cooling)		A	11.5/12.2/12.8	
		Power factor (Cooling)		%	74/66/80	
	ISO-T3	Cooling input		kW	6.18/6.40/7.40	
		Running current (Cooling)		A	12.8/13.5/13.8	
		Power factor (Cooling)		%	73/66/81	
	Inrush current (L.R.A)			A	68	
	Noise level			dB(A)	Hi:45 Lo:41	59
Exterior dimensions Height × Width × Depth				mm	**350 × 1370 × 650**	**1250 × 950 × 340**
Net weight				kg	**65**	**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 fins & bare tubing
Refrigerant control					–	Capillary tube
Refrigerant					**R22**	
Quantity				kg	–	**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					Multiblade centrifugal fan × 2	Propeller fan × 2
Motor				W	**460 × 1**	**60 × 2**
Starting method					Line starting	Line starting
Air flow (Standard)				CMM	**Hi:42 Lo:33.5**	**100/110**
Available static pressure				Pa	**Standard: 50, Max 130**	–
Fresh air intake					–	–
Air filter, Q'ty					Polypropylene net ×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-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				mm		
Refrigerant piping size				(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. Drain hose	
Optional parts					Suction grille	–

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
Cooling	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.
ISO-T1 "UNITARY AIR-CONDITIONERS"

(3) The operation data indicate when the air-conditioner is operated at 380V 50Hz/415V 50Hz/380V 60Hz.

10.2.2 Range of usage & limitations

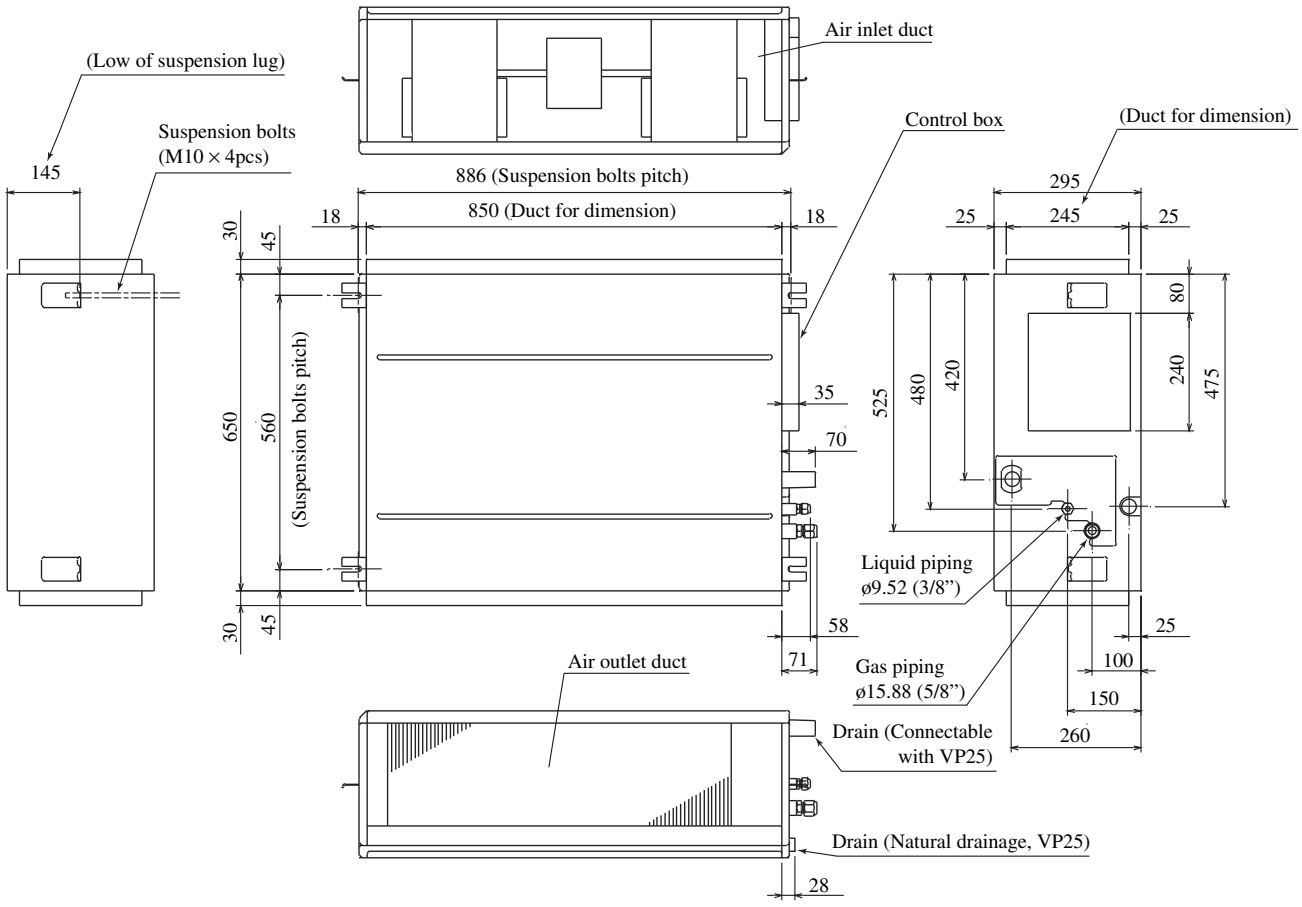
Item \ Models	All models
Indoor return air temperature (Upper, lower limits)	Refer to the selection chart
Outdoor return air temperature (Upper, lower limits)	
Indoor unit atmosphere (behind ceiling) temperature and humidity	Dew point temperature: 28˚C or less, relative humidity: 80% or less
Refrigerant 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

10.2.3 Exterior dimensions

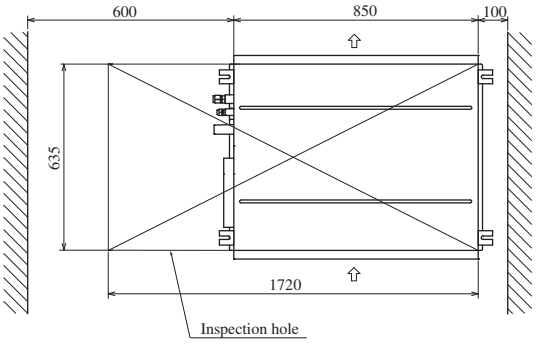
(1) Indoor unit

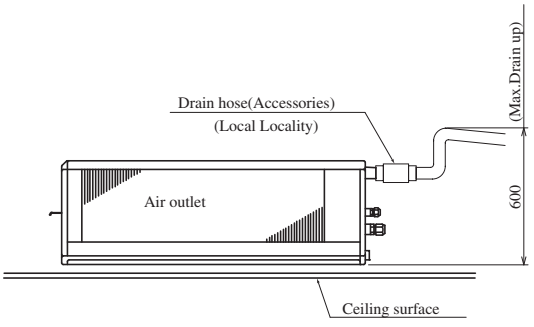
Model FDUR308-A

Unit : mm



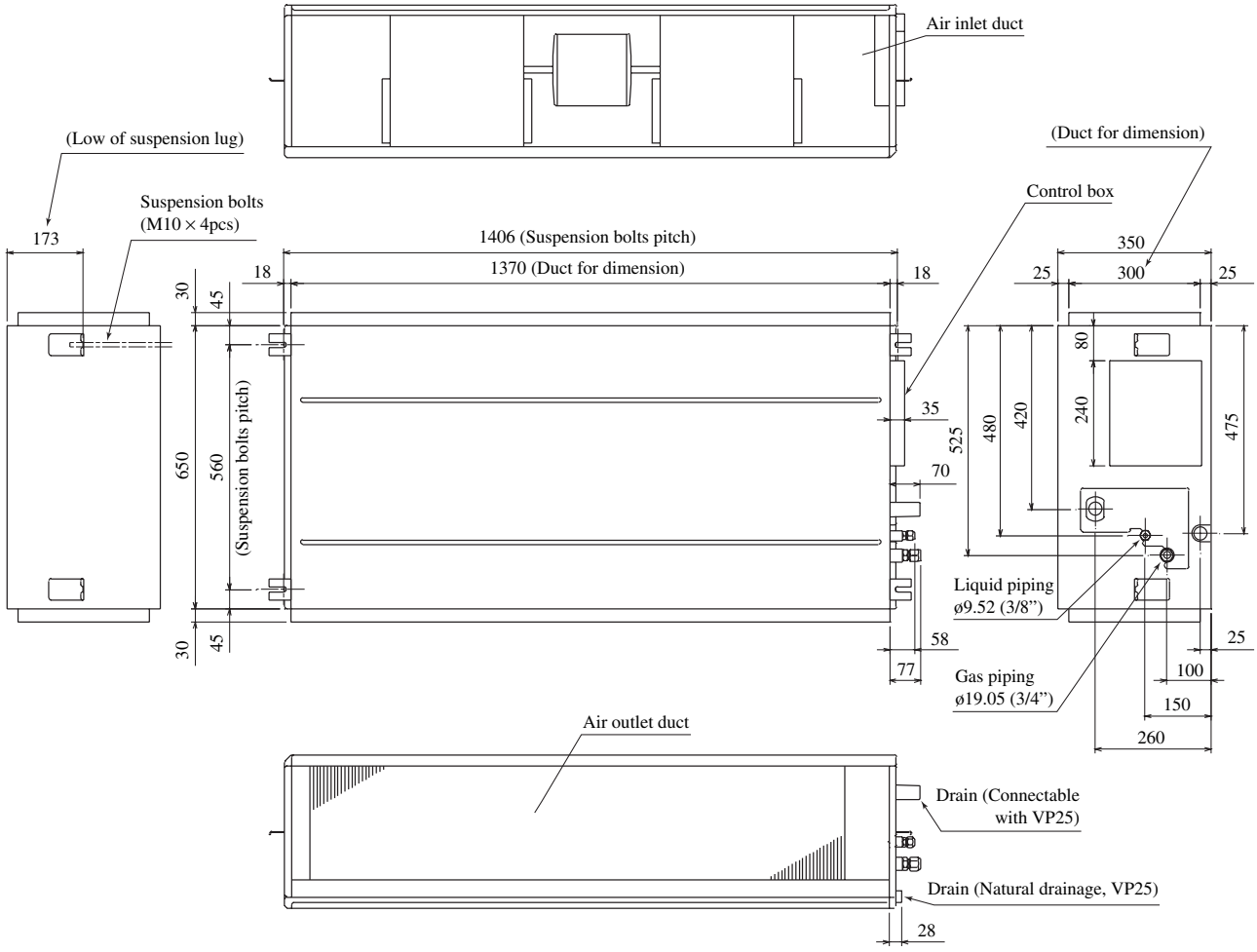
Space for installation and service



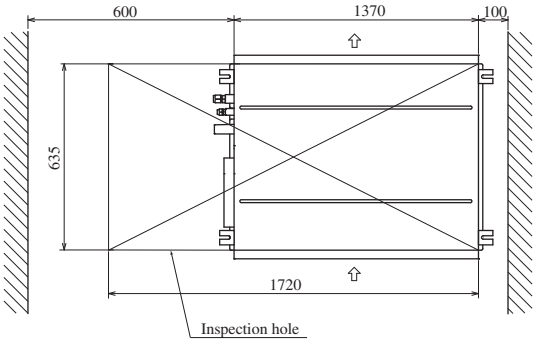


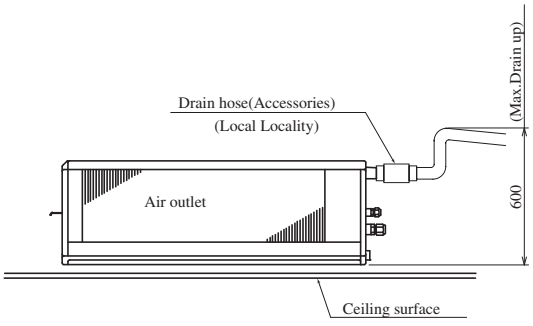
Models FDUR408-A, 508-A

Unit : mm

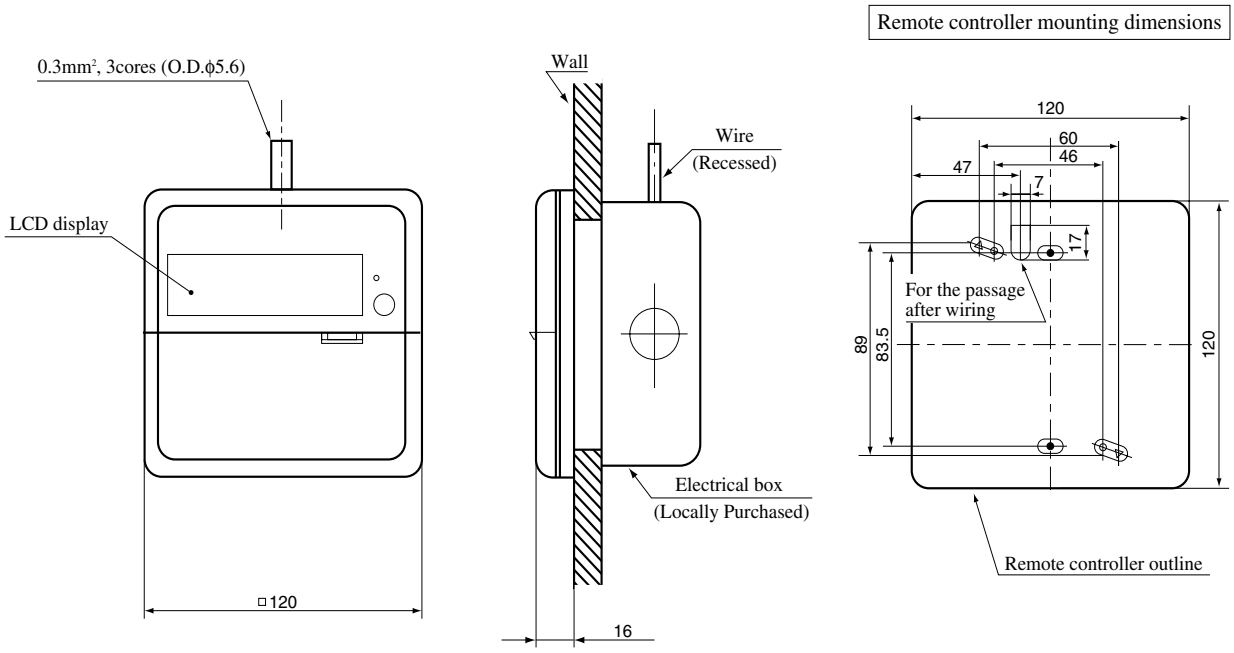


Space for installation and service





(2) Remote controller



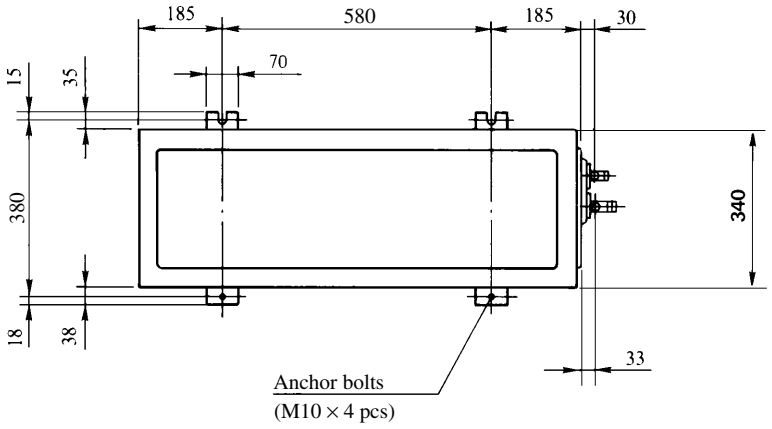
Allowable rang of wire thickness and length

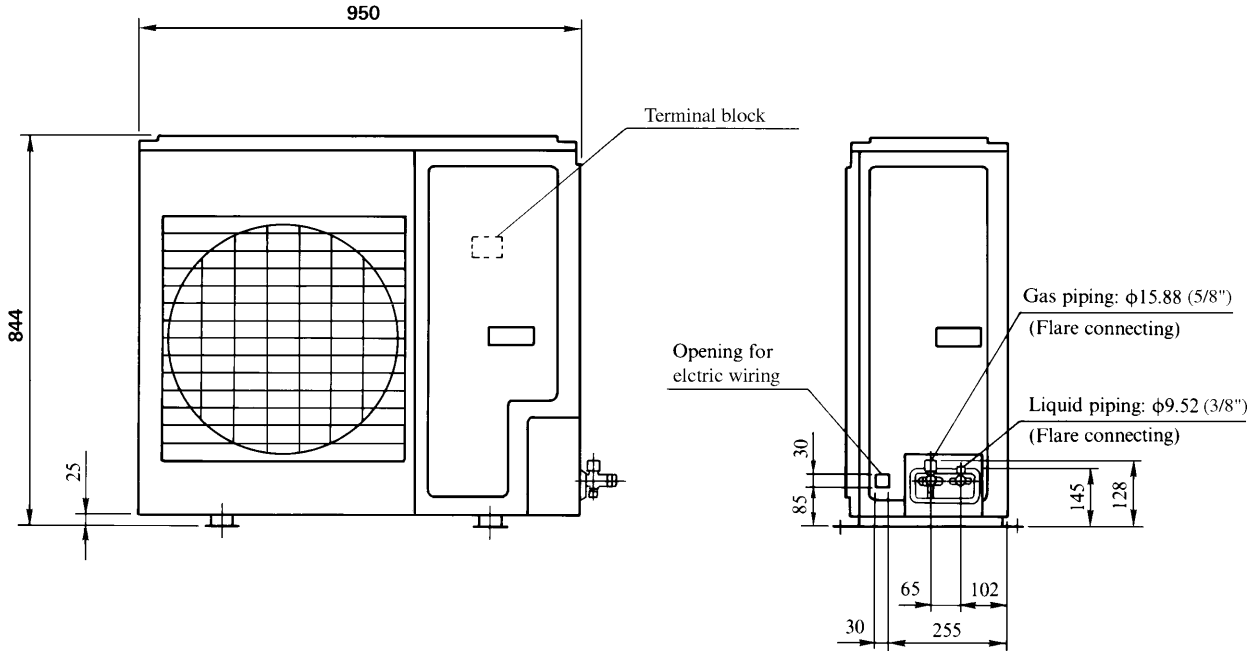
Standard Within	0.3 mm²	× Within 100 m
	0.5 mm²	× Within 200 m
	0.75 mm²	× Within 300 m
	1.25 mm²	× Within 400 m
	2 mm²	× Within 600 m

(3) Outdoor unit

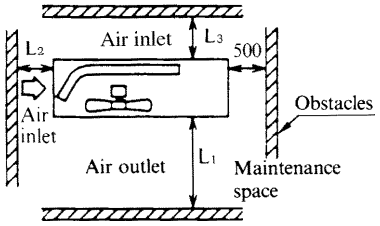
Models FDC306CEN3, 306CES3

Unit: mm





Required space for maintenance and air flow



Minimum allowable space to the obstacles

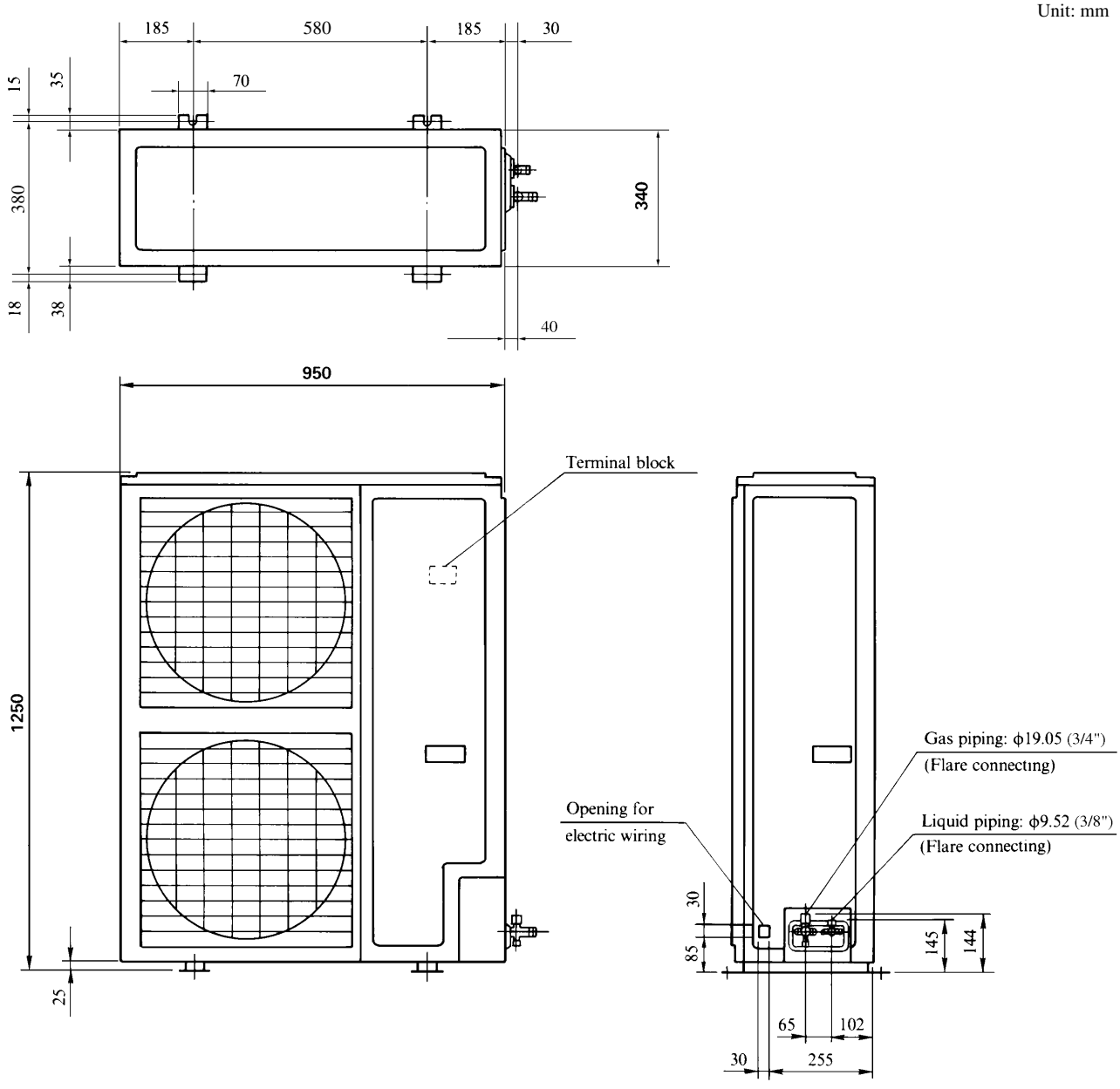
Unit:mm

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

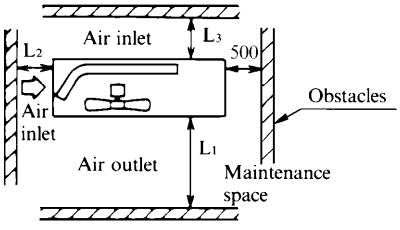
Notes
(1) Fix the unit with anchor bolts.
(2) Strong wind must not be directed to the air outlet.
(3) Free space over the unit must be larger than 1 m.
(4) The unit should not be surrounded by obstructions in all direction.
At least one direction around the unit must be free.

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

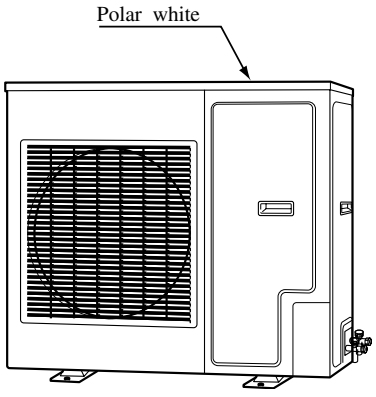
Notes
(1) Fix the unit with anchor bolts.
(2) Strong wind must not be directed to the air outlet.
(3) Free space over the unit must be larger than 1 m.
(4) The unit should not be surrounded by obstructions in all direction.
At least one direction around the unit must be free.

10.2.4 Exterior appearance

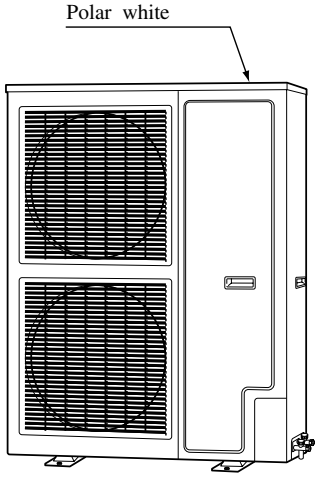
(1) Indoor unit·····Zinc steel plate

(2) Outdoor unit

Models FDC306CEN3, 306CES3

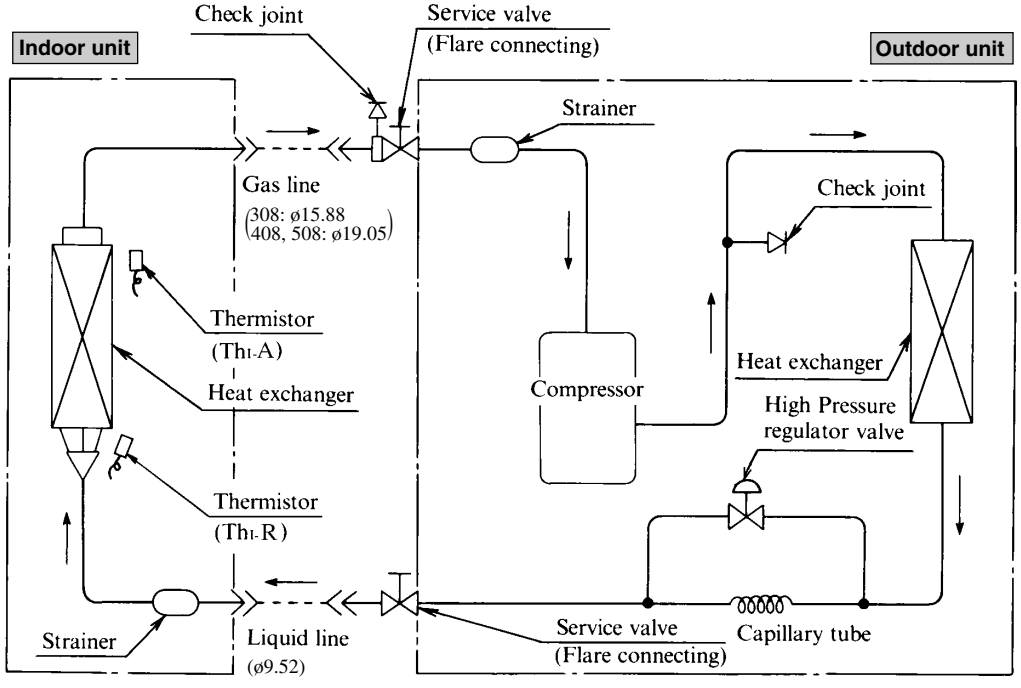


Models FDC406CES3, 506CES3



10.2.5 Piping system

Models FDUR308CEN-A, 308CES-A, 408CES-A, 508CES-A



Preset point of the protective devices

Parts name	Mark	Equipped unit	FDUR308~508
Thermistor (for frost prevention)	**Thi-R**	Indoor unit	OFF 2.5˚C ON 10˚C

10.2.6 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

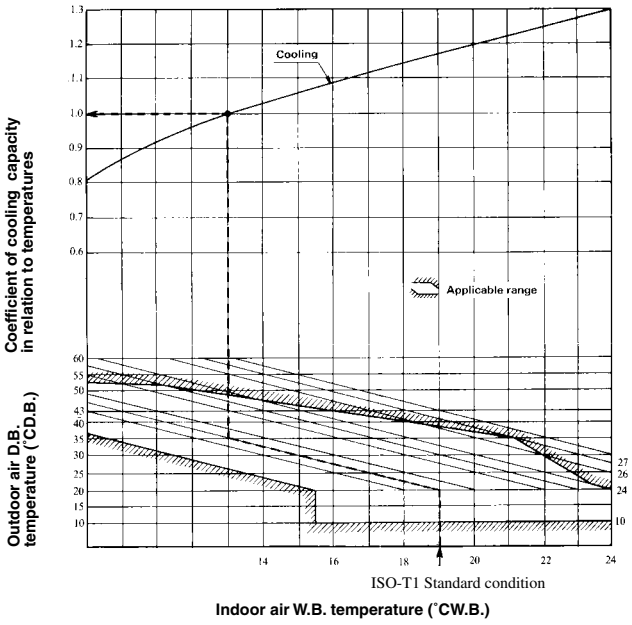


Table of bypass factor

Item \ Model		FDUR 308	FDUR 408	FDUR 508
Air flow	Hi	0.069	0.106	0.050
	Lo	0.049	0.079	0.034

(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		7.5	10	15	20	25	30	35
Cooling	FDUR308	1.0	0.995	0.985/0.98	0.975/0.97	0.965/0.955	0.955/0.945	0.945/0.93
	FDUR408	1.0	0.998/0.995	0.99/0.985	0.985/0.975	0.975/0.965	0.97/0.955	0.96/0.945
	FDUR508	1.0	0.995/0.99	0.98/0.975	0.97/0.96	0.955/0.945	0.945/0.93	0.93/0.915

Note (1) Equivalent piping length can be obtained by calculating as follows.
308 :[ϕ15.88(5/8″)]: Equivalent piping length = Real piping length + (0.10 × Number or bends in piping)
408, 508 :[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	FDUR308~508
Max. one way piping length	30m
Max. vertical height difference	15m

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

How to obtain the cooling capacity

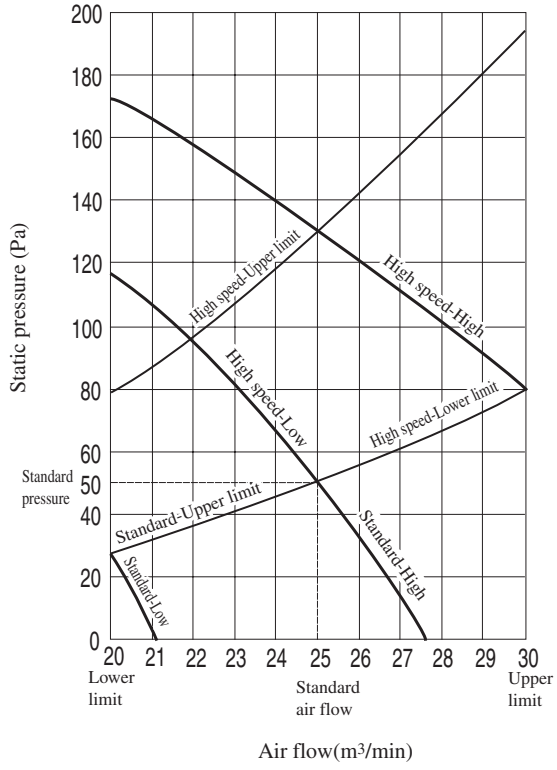
Example : The net cooling capacity of the model FDUR308CEN-A with the air flow "High", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0 ˚C and outdoor dry-bulb temperature 35 ˚C is

Net cooling capacity = 7100 × 1.00 × (0.985 - 0.01) × 1.0 = 6923 w

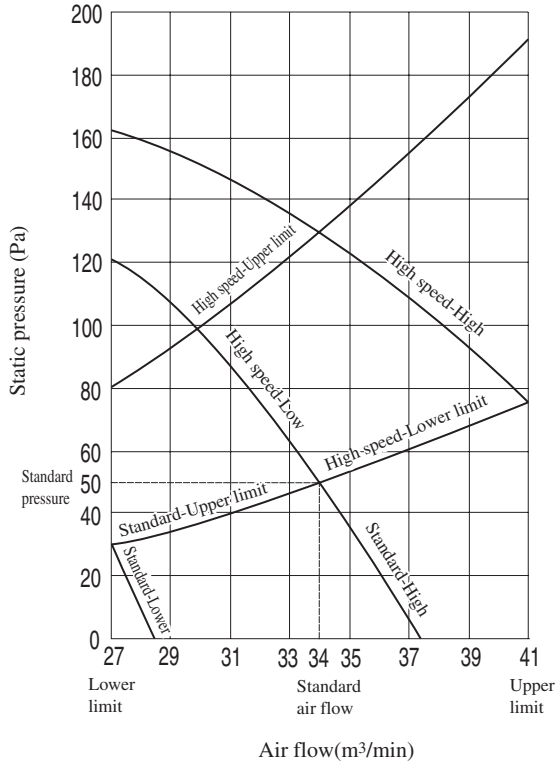
- 7100 : FDUR308CEN-A
- 1.00 : Air flow "High"
- (0.985 - 0.01) : Length 15m. Height difference 5 m
- 1.0 : Factor by air temperatures

10.2.7 Characteristics of fan

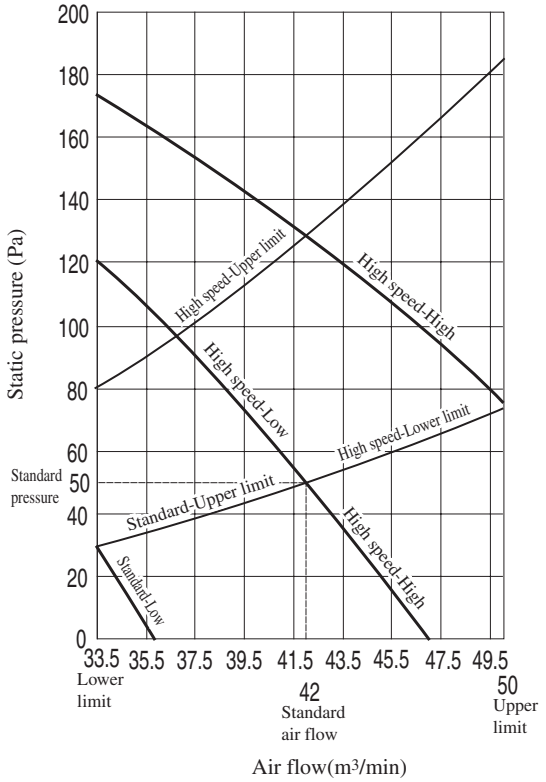
Model FDUR308-A



Model FDUR408-A



Model FDUR508-A



10.2.8 Noise level

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

Ambient air temperature:

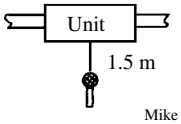
Indoor unit 27˚C DB, 19˚C WB.

Outdoor unit 35˚C DB.

Indoor unit

Measured based on JIS B 8616

Mike position as below



Mike (center & low points)

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

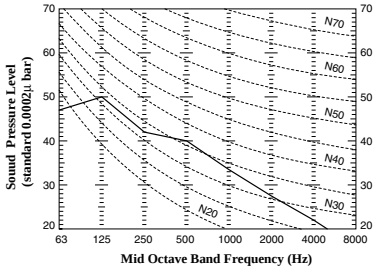
(2) The data in the chart are measured in an unechonic room.

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

(1) Indoor unit

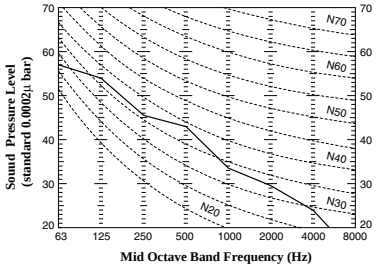
Models FDUR308-A

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



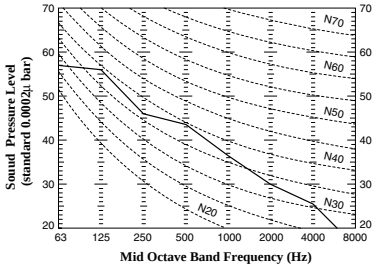
Models FDUR408-A

Noise level 44 dB (A) at HIGH
40 dB (A) at LOW



Models FDUR508-A

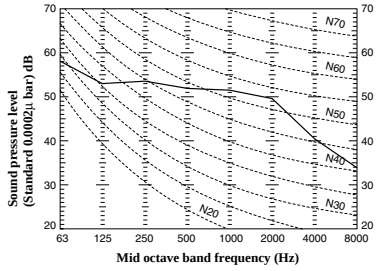
Noise level 45 dB (A) at HIGH
41 dB (A) at LOW



(2) Outdoor unit

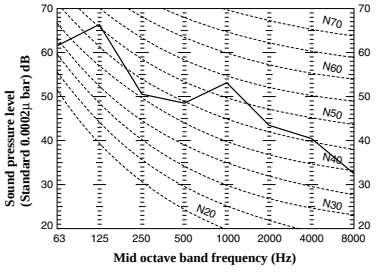
Model FDC306CEN3

Noise level 56 dB (A)



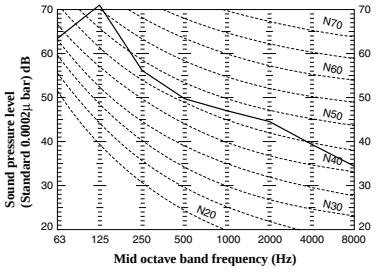
Model FDC306CES3

Noise level 56 dB (A)



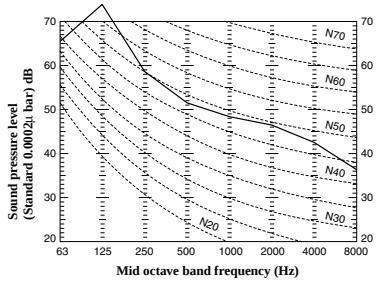
Model FDC406CES3

Noise level 57dB (A)



Model FDC506CES3

Noise level 59 dB (A)

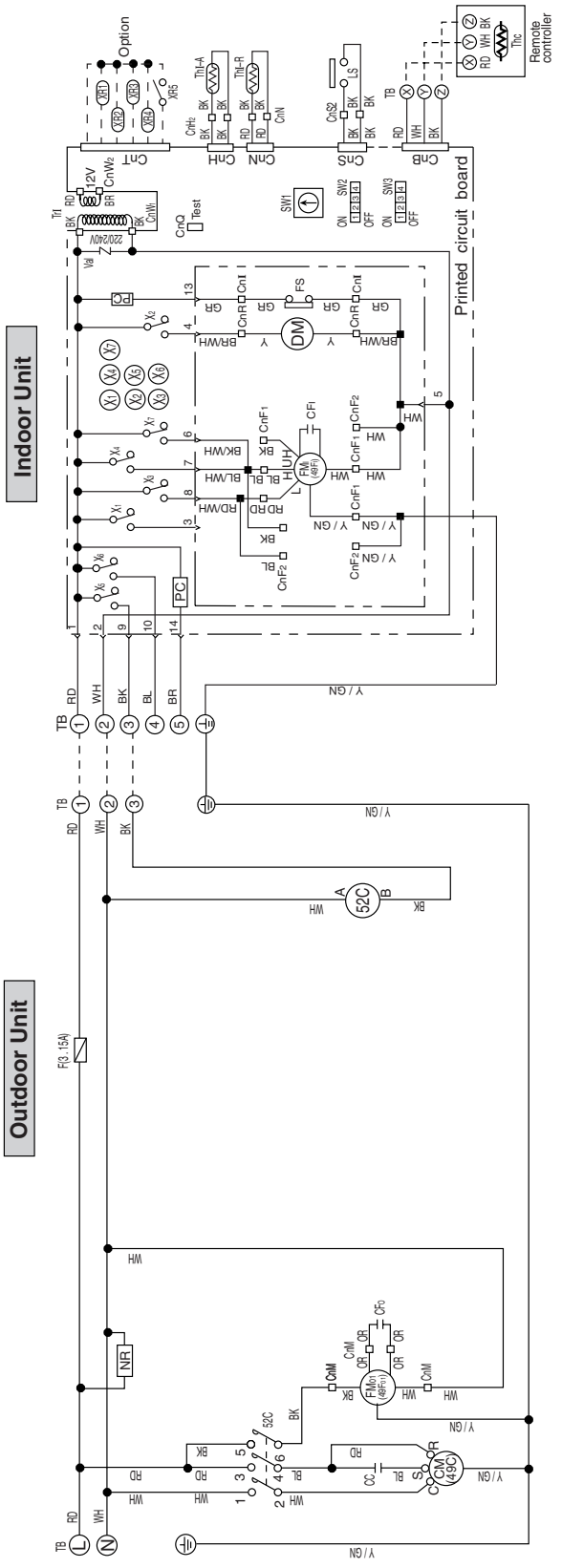


10.3 ELECTRICAL DATA

10.3.1 Electrical wiring

Model FDUR308CEN-A

Power source
1 Phase 220/240V 50Hz



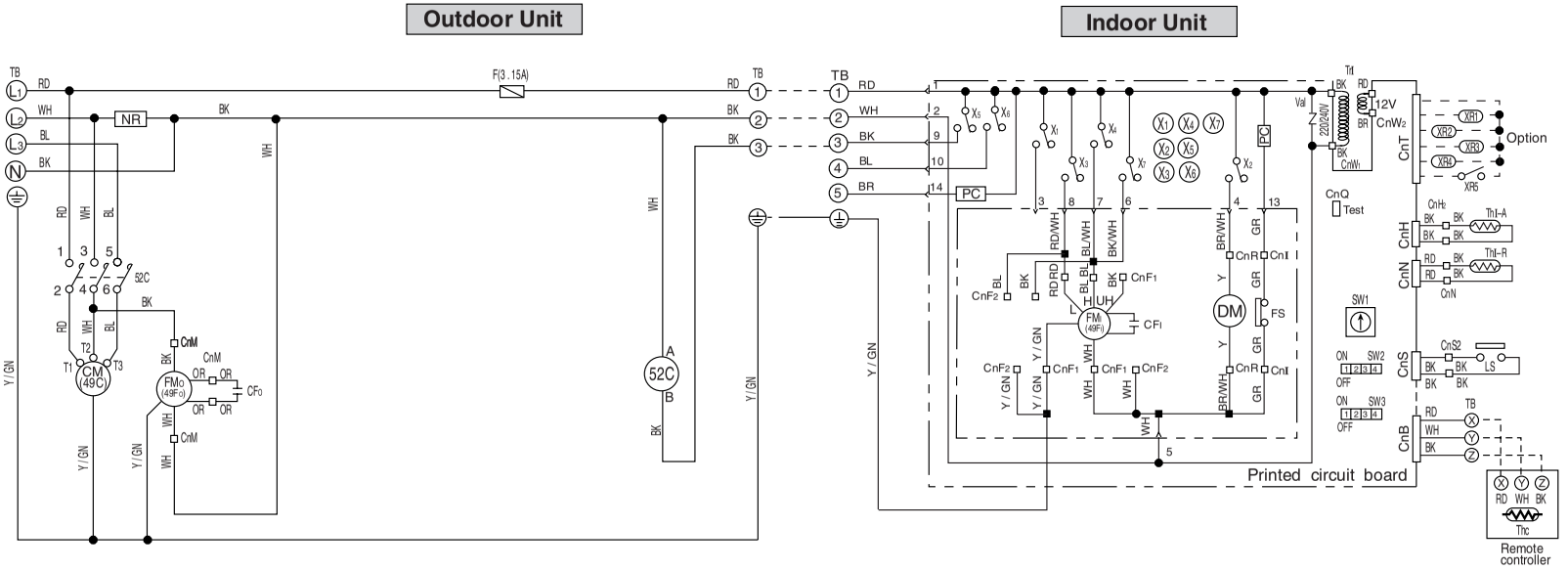
Color mark

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

Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**TB**	Terminal block (○mark)
CFi	Capacitor for FMi	**Thc**	Thermistor
CFo	Capacitor for FMo	**Th-A**	Thermistor
CM	Compressor motor	**Th-R**	Thermistor
CnA ~ W	Connector	**Trl**	Transformer
DM	Drain motor	**Val**	Varistor
F	Fuse	**49C**	Internal thermostat for CM
FMi	Fan motor (Indoor unit)	**49Fo**	Internal thermostat for FMo
FMo	Fan motor (Outdoor unit)	**49Fi**	Internal thermostat for FMi
FS	Float switch	**52C**	Magnetic contactor for CM
NR	Surge suppressor	**X1~7**	Auxiliary relay
PC	Photo coupler	**▽**	Terminal (F)
SW1	Switch (Address set)	**■**	Connector
SW2, 3	Changeover switch		

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



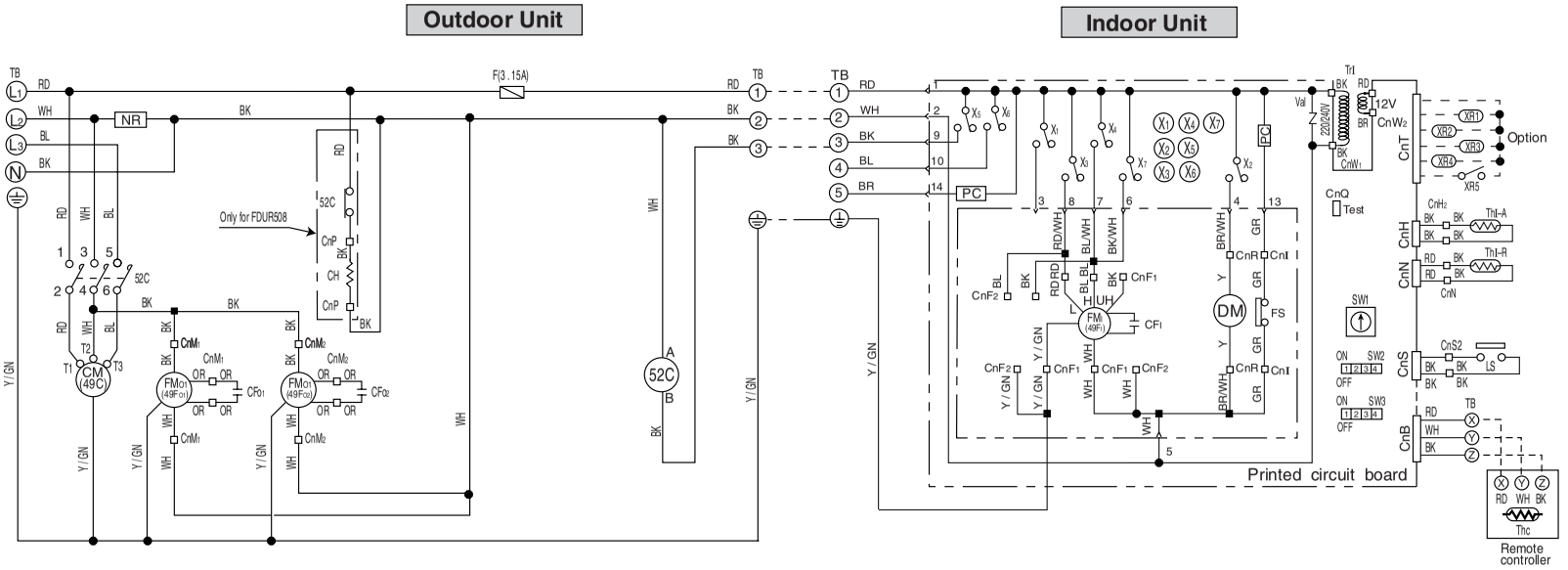
Meaning of marks

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	**Trl**	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
NR	Surge suppressor	**52C**	Magnetic contactor for CM
PC	Photo coupler	**X1~7**	Auxiliary relay
TB	Terminal block (○ mark)	◁	Terminal (F)
SW1	Switch (Address set)	■	Connector

Color mark

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

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
CFO1,2	Capacitor for FMO	**Thc**	Thermistor
CH	Crankcase heater	**THI-A**	Thermistor
CM	Compressor motor	**THI-R**	Thermistor
CnA ~ W	Connector	**TrI**	Transformer
DM	Drain motor	**Val**	Varistor
F	Fuse	**49C**	Internal thermostat for CM
FMI	Fan motor (Indoor unit)	**49FO1,2**	Internal thermostat for FMO
FMO1,2	Fan motor (Outdoor unit)	**49FI**	Internal thermostat for FMI
FS	Float switch	**52C**	Magnetic contactor for CM
NR	Surge suppressor	**X1~7**	Auxiliary relay
PC	Photo coupler	◁	Terminal (F)
TB	Terminal block (○mark)	■	Connector
SW1	Switch (Address set)		

Color mark

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

10.4 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

Except for function relating to heating, same at the unit for FDUR heat pump type. See page 306.

10.5 APPLICATION DATA

The application data for the cooling only models are similar to those for the heat pump models. (See page 322.)

10.6 MAINTENANCE DATA

This is same as FDUR heat pump series. Refer to page 340.