9. CEILING SUSPENSION TYPE PACKAGED AIR CONDITIONER

(Split system, Air cooled cooling only type)

FDEN208CEN-S, FDEN208CEP-S, FDEN208CEN
FDEN208CEP, FDEN258CEN-S, FDEN258CEP-S
FDEN258CEN, FDEN258CEP, FDEN308CEN
FDEN308CEP, FDEN308CES, FDEN408CES
FDEN508CES, FDEN508CEM

CONTENTS

9.1 GENERAL INFORMATION

9.1.1 Specific features

(1) Less refrigerant charge amount due to use of double phase refrigerant flow system. The total refrigerant charge amount has been reduced by more than 50%.

(2) The indoor outdoor interconnection signal wiring has been done away with. The microcomputer chip is installed in the indoor unit. There is no need for the unit to communicate between the outdoor and indoor units so the unit is more resistant to electromagnetic noise thus the incidence of microcomputer malfunction has been reduced. The compressor in the outdoor unit has its own self protection function, that reacts according to abnormal high pressure and excessive high temperature.

(3) There are only four power lines between the outdoor and indoor unit. As no signal wire is used there is no need to separate the power line from the signal line. One cab tyre cable with 4 wires encased in one sheath is enough for conducting the wiring work between the outdoor unit and the indoor unit. This contributes to simpler wiring work in the field.

(4) The operaion modes are only cooling and fan operation for easier control.

(5) All air supply ports have auto swing louvers. The indoor fan motor has two speeds of high and low.

(6) The controls are wireless residential split air conditioner type remote controller with 4 malfunction modes.

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

(8) Simple design

With the model change, the design has been completely renewed. A simple and modern form with curves harmonizes more with the interior. The suction grill also comes in two segments, simplifying the maintenance.

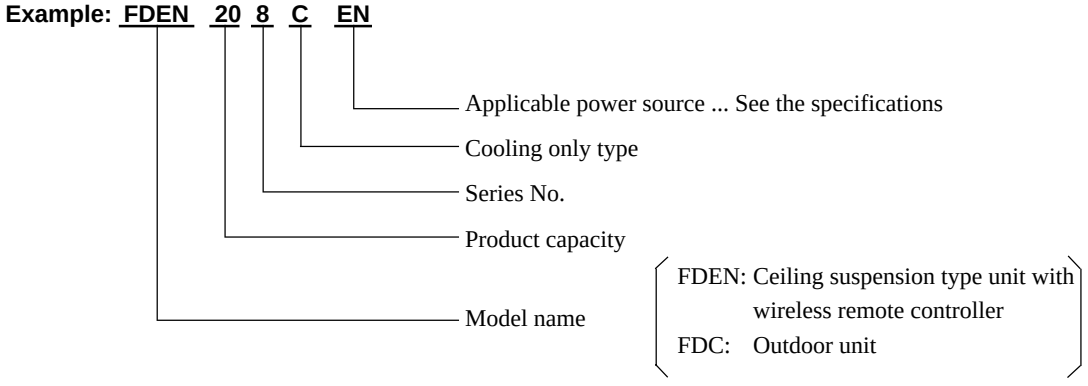
(9) Amazingly quiet operation

Due to adoption of a newly developed silent stream fan, unpleasant operation sound, such as sound made when the fan runs against the air, has been minimized, thus achieving the trade's lowest noise level in the weak flow mode.

(10) "Aerowing" louver

In order to make air conditioning more comfortable, an "aerowing" louver has been newly developed by applying MHI's advanced aerodynamics, leading to improved air directivity and air conditioning feeling. In the auto swing mode, the louver angle is optimum from 0 (level) to 75°, thus distributing the refreshing air evenly throughout your room. By working the remote controller, you can also set the louver angle easily. The sideways blowout angle can also be set manually up to 45° either right or left side.

9.1.2 How to read the model name



9.2 SELECTION DATA

9.2.1 Specifications

Model FDEN208CEN-S

Item		Model	FDEN208CEN-S	
			FDEN208C	**FDC208CEN3**
Nominal cooling capacity(1)		W	**5000**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	1.77/1.86	
	Running current (Cooling)	A	8.2/8.0	
	Power factor (Cooling)	%	98/97	
	Inrush current (L.R.A)	A	44	
	Noise level(4)	dB(A)	Hi:43 Lo:38	52
Exterior dimensions Height × Width × Depth		**mm**	**184 × 1000 × 650**	**690 × 880 × 290**
Net weight		**kg**	**22**	**49**
Refrigerant equipment Compressor type & Q'ty			–	**RM5523GNE4 × 1**
	Motor	kW	–	**1.6**
	Starting method		–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			Capillary tube	Capillary tube
Refrigerant			**R22**	
Quantity		**kg**	**Holding charged**	**0.9 [Pre-charged up to the piping length of 0m]**
Refrigerant oil		ℓ	–	**0.7 (BARREL FREEZE 32 SAM)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Multiblade centrifugal fan × 2	Propeller fan × 1
	Motor	W	40 × 1	55 × 1
	Starting method		Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:14 Lo:10**	**56**
Fresh air intake			Unavailable	–
Air filter, Q'ty			Polypropylene net × 2 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermostat for discharge temperature.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ6.35 (1/4″) Gas line: ϕ15.88 (5/8″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP20)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V and 240V respectively.

(4) Indicates the value at mild mode.

Model FDEN208CEP-S

Item		Model	FDEN208CEP-S	
			FDEN208C	FDC208CEP3
Nominal cooling capacity(1)		W	**5200**	
Power source			**1 Phase, 220V, 60Hz**	
Operation data(3)	Cooling input	kW	1.76	
	Running current (Cooling)	A	8.3	
	Power factor (Cooling)	%	96	
	Inrush current (L.R.A)	A	52	
	Noise level(4)	dB(A)	Hi:44 Lo:39	52
Exterior dimensions Height × Width × Depth		**mm**	**184 × 1000 × 650**	**690 × 880 × 290**
Net weight		**kg**	**22**	**49**
Refrigerant equipment Compressor type & Q'ty			–	**RM5520GP4 × 1**
Motor		kW	–	**1.6**
Starting method			–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			Capillary tube	Capillary tube
Refrigerant			**R22**	
Quantity		**kg**	**Holding charged**	**0.9 [Pre-charged up to the piping length of 0m]**
Refrigerant oil		ℓ	–	**0.7 (BARREL FREEZE 32 SAM)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Multiblade centrifugal fan × 2	Propeller fan × 1
Motor		W	40 × 1	55 × 1
Starting method			Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:14 Lo:10**	**56**
Fresh air intake			Unavailable	–
Air filter, Q'ty			Polypropylene net × 2 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Crank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermostat for discharge temperature.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ6.35 (1/4″) Gas line: ϕ15.88 (5/8″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP20)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V.

(4) Indicates the value at mild mode.

Model FDEN258CEN-S

Item		Model	FDEN258CEN-S	
			FDEN258C	FDC258CEN3
Nominal cooling capacity(1)		W	**5700**	
Power source			**1 Phase, 220/240V, 50Hz**	
Operation data(3)	Cooling input	kW	2.04/2.15	
	Running current (Cooling)	A	9.4/9.4	
	Power factor (Cooling)	%	99/95	
	Inrush current (L.R.A)	A	51	
	Noise level(4)	dB(A)	Hi:44 Lo:39	52
Exterior dimensions Height × Width × Depth		**mm**	**184 × 1260 × 650**	**845 × 880 × 340**
Net weight		**kg**	**27**	**55**
Refrigerant equipment Compressor type & Q'ty			–	**RM5526GNE4 × 1**
	Motor	kW	–	**1.9**
	Starting method		–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			Capillary tube	Capillary tube
Refrigerant			**R22**	
Quantity		**kg**	**Holding charged**	**1.05 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**0.7 (BARREL FREEZE 32 SAM)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Multiblade centrifugal fan × 4	Propeller fan × 1
	Motor	W	25 × 2	55 × 1
	Starting method		Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:16 Lo:10.5**	**56**
Fresh air intake			Unavailable	–
Air filter, Q'ty			Polypropylene net × 2 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		kW	–	20 (Cank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment(4)			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermostat for discharge temperature.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ9.52 (3/8″) Gas line: ϕ15.88 (5/8″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP20)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V and 240V respectively.

(4) Indicates the value at mild mode.

Model FDEN258CEP-S

Item		Model	FDEN258CEP-S	
			FDEN258C	FDC258CEP3
Nominal cooling capacity(1)		W	**6200**	
Power source			**1 Phase, 220V, 60Hz**	
Operation data(3)	Cooling input	kW	2.77	
	Running current (Cooling)	A	12.8	
	Power factor (Cooling)	%	98	
	Inrush current (L.R.A)	A	71	
	Noise level(4)	dB(A)	Hi:45 Lo:40	52
Exterior dimensions Height × Width × Depth		**mm**	**184 × 1260 × 650**	**845 × 880 × 340**
Net weight		**kg**	**27**	**55**
Refrigerant equipment Compressor type & Q'ty			–	**RM5526GP4 × 1**
	Motor	kW	–	**1.9**
	Starting method		–	Line starting
Heat exchanger			Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control			Capillary tube	Capillary tube
Refrigerant			**R22**	
Quantity		**kg**	**Holding charged**	**1.31 [Pre-charged up to the piping length of 5m]**
Refrigerant oil		ℓ	–	**0.7 (BARREL FREEZE 32 SAM)**
High pressure control			–	
Air handling equipment Fan type & Q'ty			Multiblade centrifugal fan × 4	Propeller fan × 1
	Motor	W	25 × 2	55 × 1
	Starting method		Line starting	Line starting
Air flow (Standard)		**CMM**	**Hi:16 Lo:10.5**	**56**
Fresh air intake			Unavailable	–
Air filter, Q'ty			Polypropylene net × 2 (washable)	–
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater		W	–	20 (Cank case heater)
Operation control Operation switch			Wireless remote control switch	– (Indoor unit side)
Room temperature control			Thermostat by electronics	–
Safety equipment			Internal thermostat for fan motor. Frost protection thermostat.	Internal thermostat for fan motor. Thermostat for discharge temperature.
Installation data Refrigerant piping size		**mm (in)**	**Liquid line: ϕ9.52 (3/8″) Gas line: ϕ15.88 (5/8″)**	
Connecting method			**Flare piping**	
Drain hose			(Connectable with VP20)	–
Insulation for piping			Necessary (both Liquid & Gas lines)	
Accessories			Mounting kit. Wireless remote controller.	
Optional parts			–	

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

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

(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 220V.

(4) Indicates the value at mild mode.

Model FDEN208CEN

Item			Model	FDEN208CEN	
				FDEN208C	FDC206CEN3
Nominal cooling capacity(1)		ISO-T1	W	**5000**	
		ISO-T3		**4100**	
Power source				**1 Phase, 220/240V, 50Hz**	
Operation data(3)	ISO-T1	Cooling input	kW	2.08/2.11	
		Running current (Cooling)	A	9.9/9.7	
		Power factor (Cooling)	%	96/91	
	ISO-T3	Cooling input	kW	2.34/2.36	
		Running current (Cooling)	A	11.0/10.8	
		Power factor (Cooling)	%	97/91	
	Inrush current (L.R.A)		A	47	
	Noise level(4)		dB(A)	Hi:43 Lo:38	59
Exterior dimensions Height × Width × Depth			**mm**	**184 × 1000 × 650**	**615 × 850 × 290 + 30**
Net weight			**kg**	**22**	**55**
Refrigerant equipment Compressor type & Q'ty				–	**RC5520ENE1 × 1**
Motor			kW	–	**1.49**
Starting method				–	Line starting
Heat exchanger				Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control				Capillary tube	Capillary tube
Refrigerant				**R22**	
Quantity			**kg**	**Holding charged**	**0.9 [Pre-charged up to the piping length of 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	40 × 1	55 × 1
Starting method				Line starting	Line starting
Air flow (Standard)			**CMM**	**Hi:14 Lo:10**	**42**
Fresh air intake				Unavailable	–
Air filter, Q'ty				Polypropylene net × 2 (washable)	–
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater			W	–	–
Operation control Operation switch				Wireless remote control switch	– (Indoor unit side)
Room temperature control				Thermostat by electronics	–
Safety equipment				Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
Installation data Refrigerant piping size			**mm (in)**	**Liquid line: ϕ6.35 (1/4″) Gas line: ϕ15.88 (5/8″)**	
Connecting method				**Flare piping**	
Drain hose				(Connectable with VP20)	–
Insulation for piping				Necessary (both Liquid & Gas lines)	
Accessories				Mounting kit. Wireless remote controller.	
Optional parts				–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V and 240V respectively.

(4) Indicates the value at mild mode.

Model FDEN208CEP

Item				Model	FDEN208CEP	
					FDEN208C	FDC206CEP
Nominal cooling capacity(1)			ISO-T1	W	**5200**	
			ISO-T3		**4500**	
Power source					**1 Phase, 220V, 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	2.06	
		Running current (Cooling)		A	9.6	
		Power factor (Cooling)		%	98	
	ISO-T3	Cooling input		kW	2.32	
		Running current (Cooling)		A	10.9	
		Power factor (Cooling)		%	97	
	Inrush current (L.R.A)			A	50	
	Noise level(4)			dB(A)	Hi:44 Lo:39	59
Exterior dimensions Height × Width × Depth				**mm**	**184 × 1000 × 650**	**615 × 850 × 290 + 30**
Net weight				**kg**	**22**	**44**
Refrigerant equipment Compressor type & Q'ty					–	**RC5520EPE1 × 1**
Motor				kW	–	**1.31**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.15 [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	40× 1	55 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:14 Lo:10**	**44**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 2 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal protector for compressor. Internal thermostat for fan motor. Internal Pressure relief valve for compressor.
Installation data Refrigerant piping size				**mm (in)**	**Liquid line: ϕ6.35 (1/4″) Gas line: ϕ15.88 (5/8″)**	
Connecting method					**Flare piping**	
Drain hose					(Connectable with VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V.

(4) Indicates the value at mild mode.

Model FDEN258CEN

Item				Model	FDEN258CEN	
					FDEN258C	FDC256CEN3
Nominal cooling capacity(1)			ISO-T1	W	**5900**	
			ISO-T3		**4900**	
Power source					**1 Phase, 220/240V, 50Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	2.58/2.62	
		Running current (Cooling)		A	12.6/13.2	
		Power factor (Cooling)		%	93/83	
	ISO-T3	Cooling input		kW	2.76/2.80	
		Running current (Cooling)		A	13.4/14.0	
		Power factor (Cooling)		%	94/83	
	Inrush current (L.R.A)			A	64	
	Noise level(4)			dB(A)	Hi:44 Lo:37	59
Exterior dimensions Height × Width × Depth				**mm**	**184 × 1260 × 650**	**615 × 850 × 290 + 30**
Net weight				**kg**	**27**	**55**
Refrigerant equipment Compressor type & Q'ty					–	**RC5527ENE1 × 1**
Motor				kW	–	**1.87**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.35 [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 × 4	Propeller fan × 1
Motor				W	25× 2	55 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:16 Lo:10.5**	**42**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 2 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V and 240V respectively.

(4) Indicates the value at mild mode.

Model FDEN258CEP

Item				Model	FDEN258CEP	
					FDEN258C	FDC256CEP3
Nominal cooling capacity(1)			ISO-T1	W	**6200**	
			ISO-T3		**5200**	
Power source					**1 Phase, 220V, 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	2.68	
		Running current (Cooling)		A	12.4	
		Power factor (Cooling)		%	98	
	ISO-T3	Cooling input		kW	3.06	
		Running current (Cooling)		A	14.4	
		Power factor (Cooling)		%	97	
	Inrush current (L.R.A)			A	66	
	Noise level(4)			dB(A)	Hi:45 Lo:40	59
Exterior dimensions Height × Width × Depth				**mm**	**184 × 1260 × 650**	**615 × 850 × 290 + 30**
Net weight				**kg**	**27**	**56**
Refrigerant equipment Compressor type & Q'ty					–	**RC5528EPE1 × 1**
Motor				kW	–	**1.68**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.35 [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 × 4	Propeller fan × 1
Motor				W	25 × 2	55 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:16 Lo:10.5**	**44**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 2 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V.

(4) Indicates the value at mild mode.

Model FDEN308CEN

Item				Model	FDEN308CEN	
					FDEN308C	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	3.08/3.12	
		Running current (Cooling)		A	15.6/16.3	
		Power factor (Cooling)		%	90/80	
	ISO-T3	Cooling input		kW	3.27/3.31	
		Running current (Cooling)		A	16.6/17.3	
		Power factor (Cooling)		%	90/80	
	Inrush current (L.R.A)			A	89	
	Noise level(4)			dB(A)	Hi:45 Lo:39	56
Exterior dimensions Height × Width × Depth				**mm**	**184 × 1260 × 650**	**844 × 950 × 340**
Net weight				**kg**	**27**	**67**
Refrigerant equipment Compressor type & Q'ty					–	**RC5532ENE1 × 1**
Motor				kW	–	**2.24**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.3 [Pre-charged up to the piping length of 5m]**
Refrigerant oil				ℓ	–	**1.63 (SUNISO 3GS)**
High pressure control					High pressure regulator valve	
Air handling equipment Fan type & Q'ty					Multiblade centrifugal fan × 4	Propeller fan × 1
Motor				W	35× 2	60 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:16.5 Lo:11.5**	**54**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 2 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V and 240V respectively.

(4) Indicates the value at mild mode.

Model FDEN308CEP

Item				Model	FDEN308CEP	
					FDEN308C	FDC306CEP3
Nominal cooling capacity(1)			ISO-T1	W	**7100**	
			ISO-T3		**5700**	
Power source					**1 Phase, 220V, 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	3.05	
		Running current (Cooling)		A	14.2	
		Power factor (Cooling)		%	98	
	ISO-T3	Cooling input		kW	3.28	
		Running current (Cooling)		A	15.3	
		Power factor (Cooling)		%	97	
	Inrush current (L.R.A)			A	78	
	Noise level(4)			dB(A)	Hi:46 Lo:40	59
Exterior dimensions Height × Width × Depth				**mm**	**184 × 1260 × 650**	**844 × 950 × 340**
Net weight				**kg**	**27**	**67**
Refrigerant equipment Compressor type & Q'ty					–	**RC5533EPE1 × 1**
Motor				kW	–	**1.87**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**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 × 4	Propeller fan × 1
Motor				W	35 × 2	60 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:16.5 Lo:11.5**	**56**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 2 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 220V.

(4) Indicates the value at mild mode.

Model FDEN308CES

Item				Model	FDEN308CES	
					FDEN308C	FDC306CES3
Nominal cooling capacity(1)			ISO-T1	W	**7100/7700**	
			ISO-T3		**5700/6000**	
Power source					**3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	2.84/2.85/3.37	
		Running current (Cooling)		A	5.3/5.3/6.1	
		Power factor (Cooling)		%	81/75/84	
	ISO-T3	Cooling input		kW	3.03/3.04/3.60	
		Running current (Cooling)		A	5.7/5.7/6.6	
		Power factor (Cooling)		%	81/74/83	
	Inrush current (L.R.A)			A	43	
	Noise level(4)			dB(A)	Hi:45/46 Lo:39/40	59
Exterior dimensions Height × Width × Depth				**mm**	**184 × 1260 × 650**	**844 × 950 × 340**
Net weight				**kg**	**27**	**67**
Refrigerant equipment Compressor type & Q'ty					–	**RC5538ESE1 × 1**
Motor				kW	–	**2.24**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.3 [Pre-charged up to the piping length of 5m]**
Refrigerant oil				ℓ	–	**1.63 (SUNISO 3GS)**
High pressure control					High pressure regulator valve	
Air handling equipment Fan type & Q'ty					Multiblade centrifugal fan × 4	Propeller fan × 1
Motor				W	35 × 2	60 × 1
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:16.5 Lo:11.5**	**54/56**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 2 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

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

(4) Indicates the value at mild mode.

Model FDEN408CES

Item				Model	FDEN408CES	
					FDEN408C	FDC406CES3
Nominal cooling capacity(1)			ISO-T1	W	**10200/11300**	
			ISO-T3		**8900/9900**	
Power source					**3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz**	
Operation data(3)	**ISO-T1**	Cooling input		kW	3.74/3.74/4.61	
		Running current (Cooling)		A	7.3/7.3/8.6	
		Power factor (Cooling)		%	78/71/81	
	ISO-T3	Cooling input		kW	4.08/4.08/5.11	
		Running current (Cooling)		A	7.9/7.9/9.3	
		Power factor (Cooling)		%	78/72/83	
	Inrush current (L.R.A)			A	45	
	Noise level(4)			dB(A)	Hi:49/50 Lo:43/43	57
Exterior dimensions Height × Width × Depth				**mm**	**239 × 1260 × 650**	**1250 × 950 × 340**
Net weight				**kg**	**34**	**80**
Refrigerant equipment Compressor type & Q'ty					–	**RC5547ESE1 × 1**
Motor				kW	–	**2.61**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.55 [Pre-charged up to the piping length of 5m]**
Refrigerant oil				ℓ	–	**1.63 (SUNISO 3GS)**
High pressure control					High pressure regulator valve	
Air handling equipment Fan type & Q'ty					Multiblade centrifugal fan × 3	Propeller fan × 2
Motor				W	35 + 55	60 × 2
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:26 Lo:19**	**100/110**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 3 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	–
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

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

(4) Indicates the value at mild mode.

Model FDEN508CES

Item			Model	FDEN508CES	
				FDEN508C	FDC506CES3
Nominal cooling capacity(1)		ISO-T1	W	**12500/14000**	
		ISO-T3		**10600/11900**	
Power source				**3 Phase, 380-415V 50Hz or 380V 50Hz/415V 50Hz, 380V 60Hz**	
Operation data(3)	ISO-T1	Cooling input	kW	4.82/4.82/5.78	
		Running current (Cooling)	A	9.8/9.8/10.8	
		Power factor (Cooling)	%	75/68/81	
	ISO-T3	Cooling input	kW	5.37/5.37/6.38	
		Running current (Cooling)	A	11.1/11.1/11.8	
		Power factor (Cooling)	%	74/67/82	
	Inrush current (L.R.A)		A	68	
	Noise level(4)		dB(A)	Hi:50/51 Lo:44/45	59
Exterior dimensions Height × Width × Depth			**mm**	**239 × 1470 × 650**	**1250 × 950 × 340**
Net weight			**kg**	**40**	**85**
Refrigerant equipment Compressor type & Q'ty				–	**RC5563ESE2 × 1**
Motor			kW	–	**3.73**
Starting method				–	Line starting
Heat exchanger				Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control				Capillary tube	Capillary tube
Refrigerant				**R22**	
Quantity			**kg**	**Holding charged**	**1.85 [Pre-charged up to the piping length of 5m]**
Refrigerant oil			ℓ	–	**2.07 (SUNISO 3GS)**
High pressure control				High pressure regulator valve	
Air handling equipment Fan type & Q'ty				Multiblade centrifugal fan × 4	Propeller fan × 2
Motor			W	55 × 2	60 × 2
Starting method				Line starting	Line starting
Air flow (Standard)			**CMM**	**Hi:28 Lo:20**	**100/110**
Fresh air intake				Unavailable	–
Air filter, Q'ty				Polypropylene net × 3 (washable)	–
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater			W	–	40 (Crank case heater)
Operation control Operation switch				Wireless remote control switch	– (Indoor unit side)
Room temperature control				Thermostat by electronics	–
Safety equipment				Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping				Necessary (both Liquid & Gas lines)	
Accessories				Mounting kit. Wireless remote controller.	
Optional parts				–	

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

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

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

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

(4) Indicates the value at mild mode.

Model FDEN508CEM

Item				Model	FDEN508CEM	
					FDEN508C	FDC506CEM3
Nominal cooling capacity(1)			ISO-T1	W	**12500/14000**	
			ISO-T3		**11900**	
Power source					**3 Phase, 230V 50Hz, 220V 60Hz**	
Operation data(3)	ISO-T1	Cooling input		kW	4.59/5.51	
		Running current (Cooling)		A	14.8/16.2	
		Power factor (Cooling)		%	78/89	
	ISO-T3	Cooling input		kW	6.03	
		Running current (Cooling)		A	17.5	
		Power factor (Cooling)		%	90	
	Inrush current (L.R.A)			A	108	
	Noise level(4)			dB(A)	Hi:50/51 Lo:44/45	59
Exterior dimensions Height × Width × Depth				**mm**	**239 × 1470 × 650**	**1250 × 950 × 340**
Net weight				**kg**	**40**	**85**
Refrigerant equipment Compressor type & Q'ty					–	**RC5559EME2 × 1**
Motor				kW	–	**3.36**
Starting method					–	Line starting
Heat exchanger					Louver fins & inner grooved tubing	Slitted fines & bare tubing
Refrigerant control					Capillary tube	Capillary tube
Refrigerant					**R22**	
Quantity				**kg**	**Holding charged**	**1.8 [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					Maltiblade centrifugal fan × 4	Propeller fan × 2
Motor				W	55 × 2	60 × 2
Starting method					Line starting	Line starting
Air flow (Standard)				**CMM**	**Hi:28 Lo:20**	**100/110**
Fresh air intake					Unavailable	–
Air filter, Q'ty					Polypropylene net × 3 (washable)	–
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber mount (for compressor)
Electric heater				W	–	40 (Crank case heater)
Operation control Operation switch					Wireless remote control switch	– (Indoor unit side)
Room temperature control					Thermostat by electronics	–
Safety equipment					Internal thermostat for fan motor. Frost protection thermostat.	Internal 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 VP20)	–
Insulation for piping					Necessary (both Liquid & Gas lines)	
Accessories					Mounting kit. Wireless remote controller.	
Optional parts					–	

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

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

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

(3) The operation data indicate when the air conditioner is operated at 230V,50Hz and 220V,60Hz respectively.

(4) Indicates the value at mild mode.

9.2.2 Range of usage & limitations

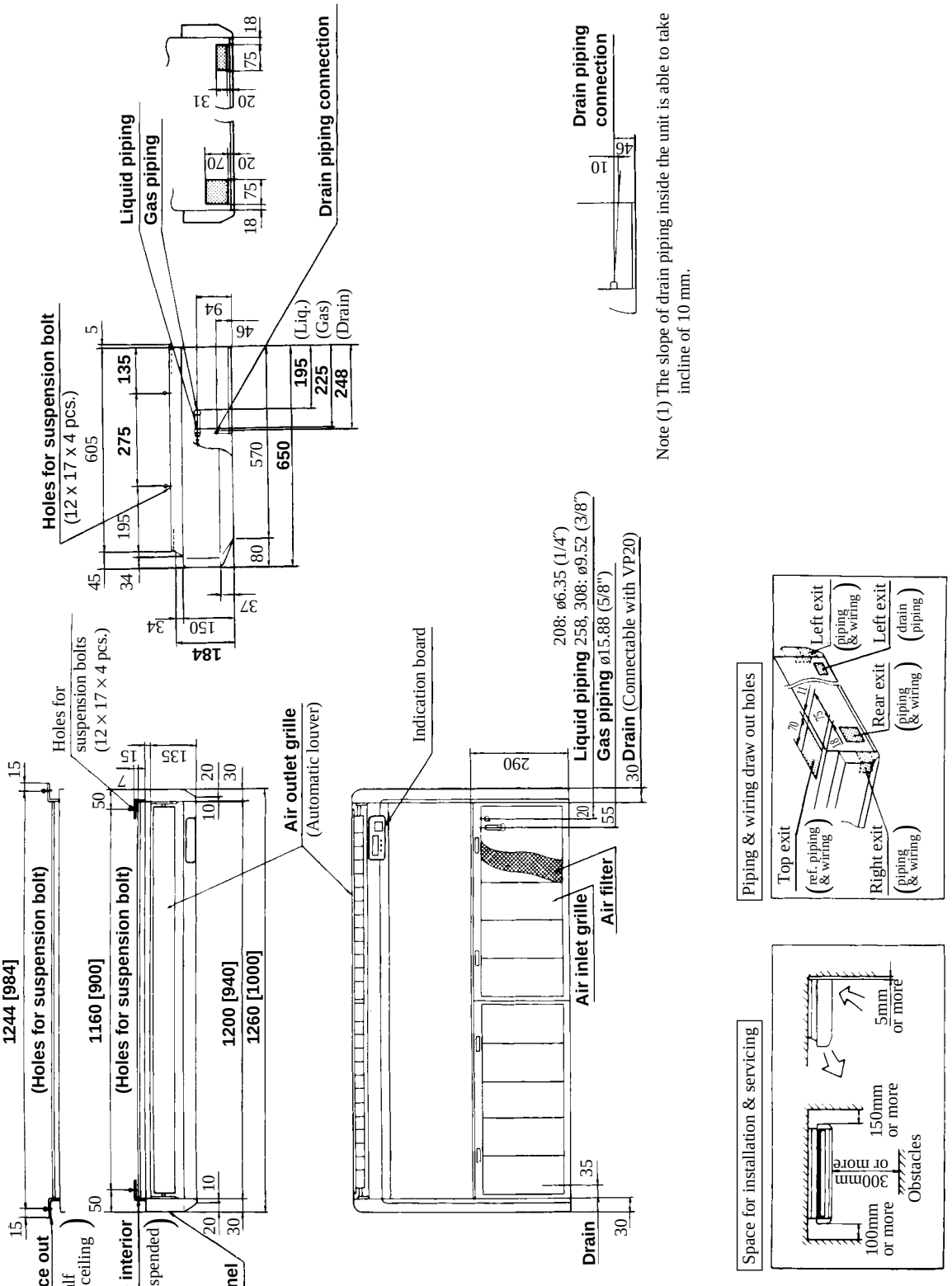
Item \ Models	FDEN208, 258 (FDC208, 258 type)	FDEN208~508 (FDC206~506 type)
Indoor return air temperature (Upper, lower limits)	Refer to the selection chart	
Outdoor air temperature (Upper, lower limits)		
Refrigerant line (one way) length	**Max. 30m**	
Vertical height difference between outdoor unit and indoor unit	**Max. 20 m (Outdoor unit is higher)** **Max. 15 m (Outdoor unit is lower)**	**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

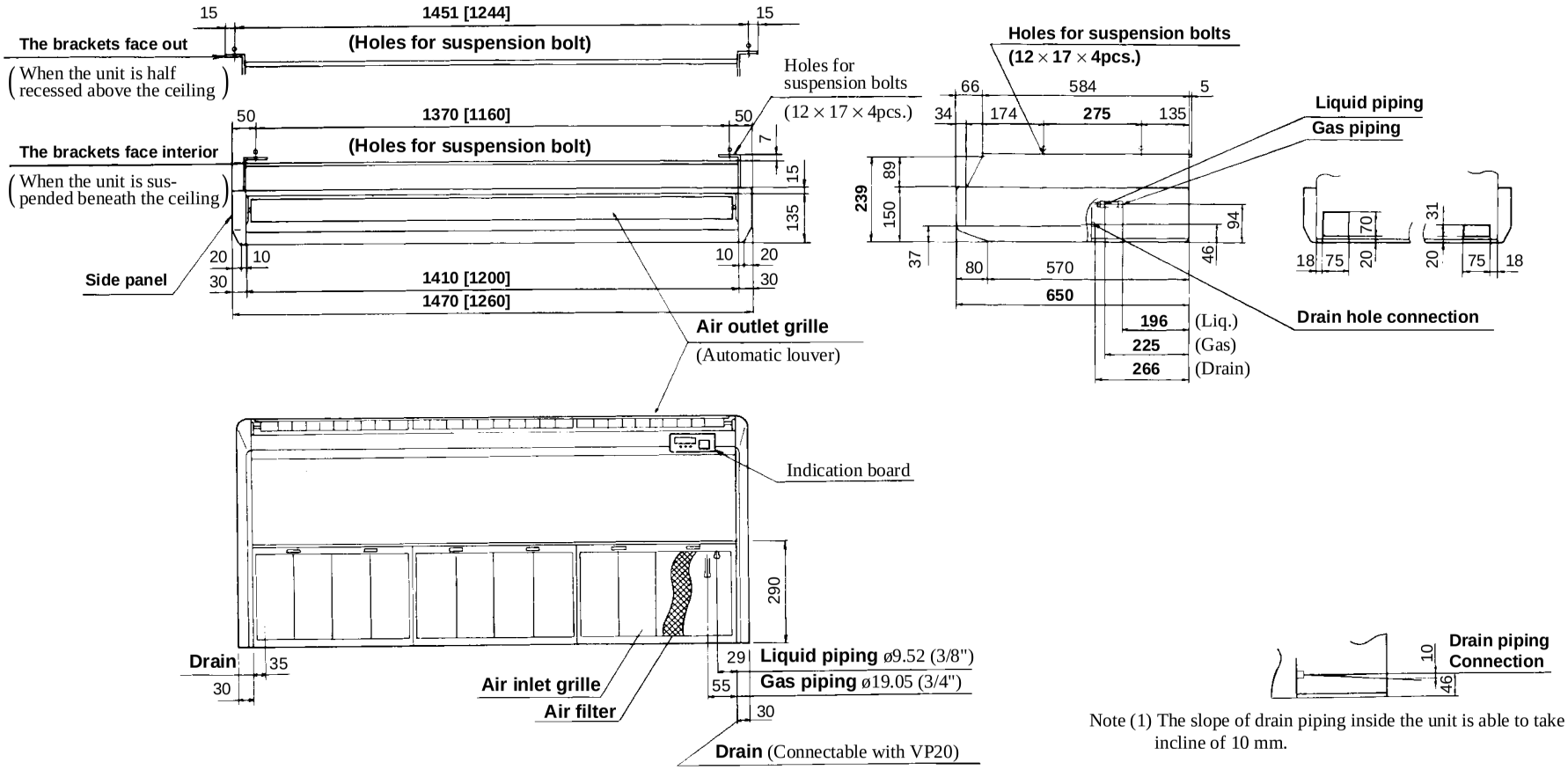
(1) Indoor unit

Models FDEN208C, 258C, 308C

Unit: mm



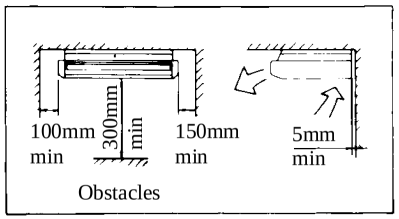
Note (1) The [ ] value dimension for models FDEN208C.



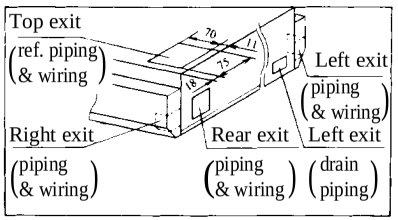
Note (1) The slope of drain piping inside the unit is able to take incline of 10 mm.

Space for installation & servicing

Ceiling suspension installation



Piping & wiring draw out holes



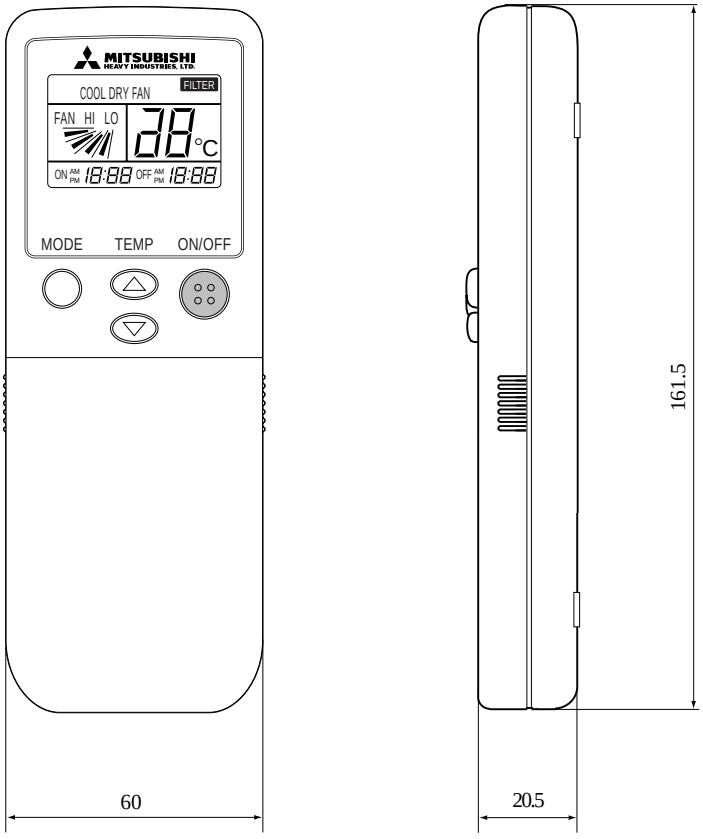
Note (1) The [ ] value dimension for models FDEN408C

Unit: mm

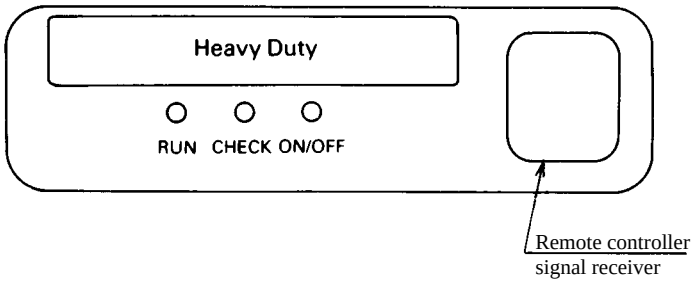
(2) Remote controller

(a) Wireless remote controller

Unit: mm



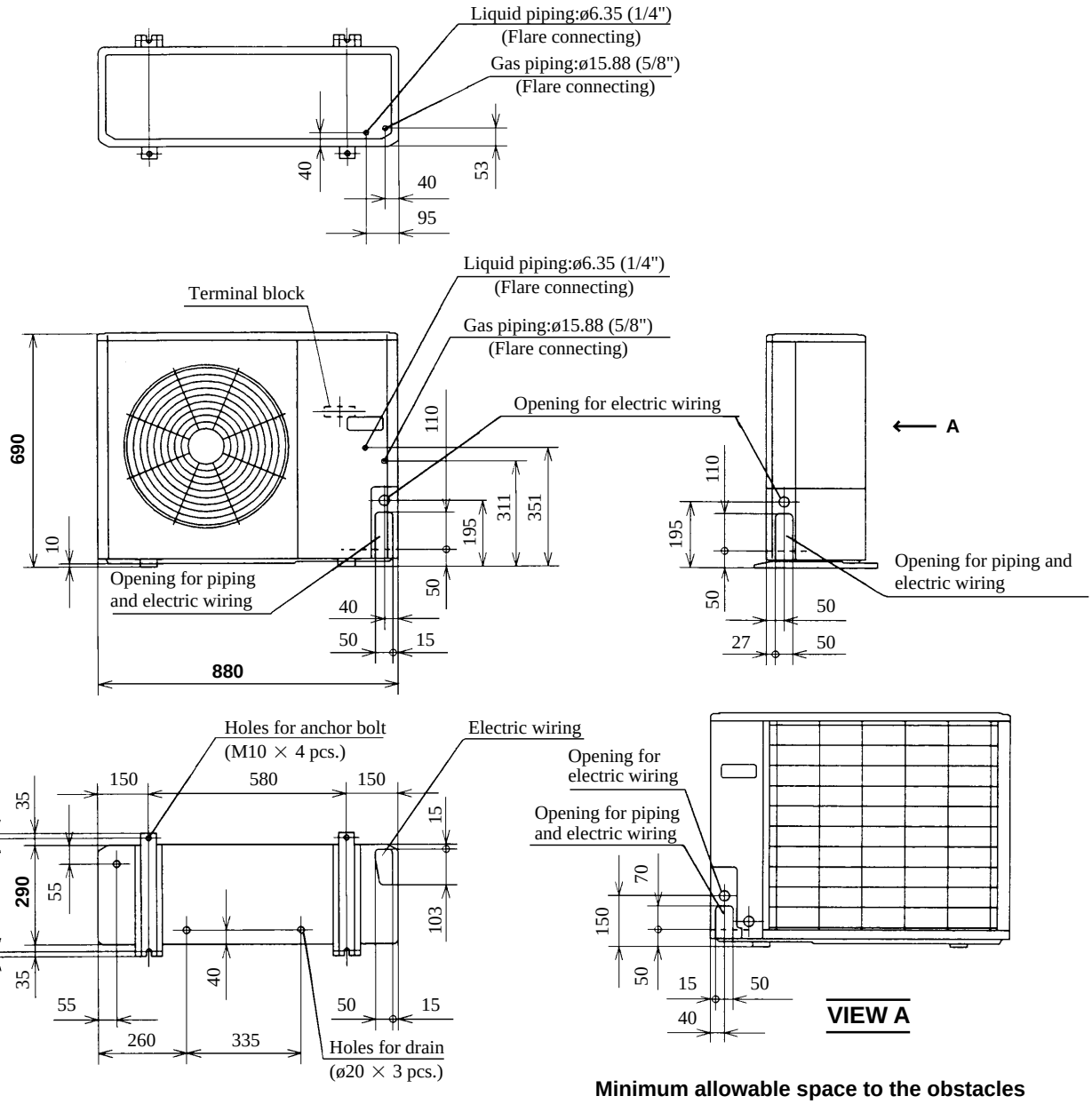
(b) Indication board of indoor unit



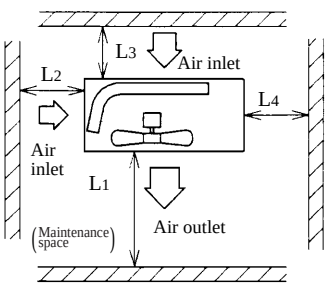
(3) Outdoor unit

Models FDC208CEN3, 208CEP3

Unit: mm



Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

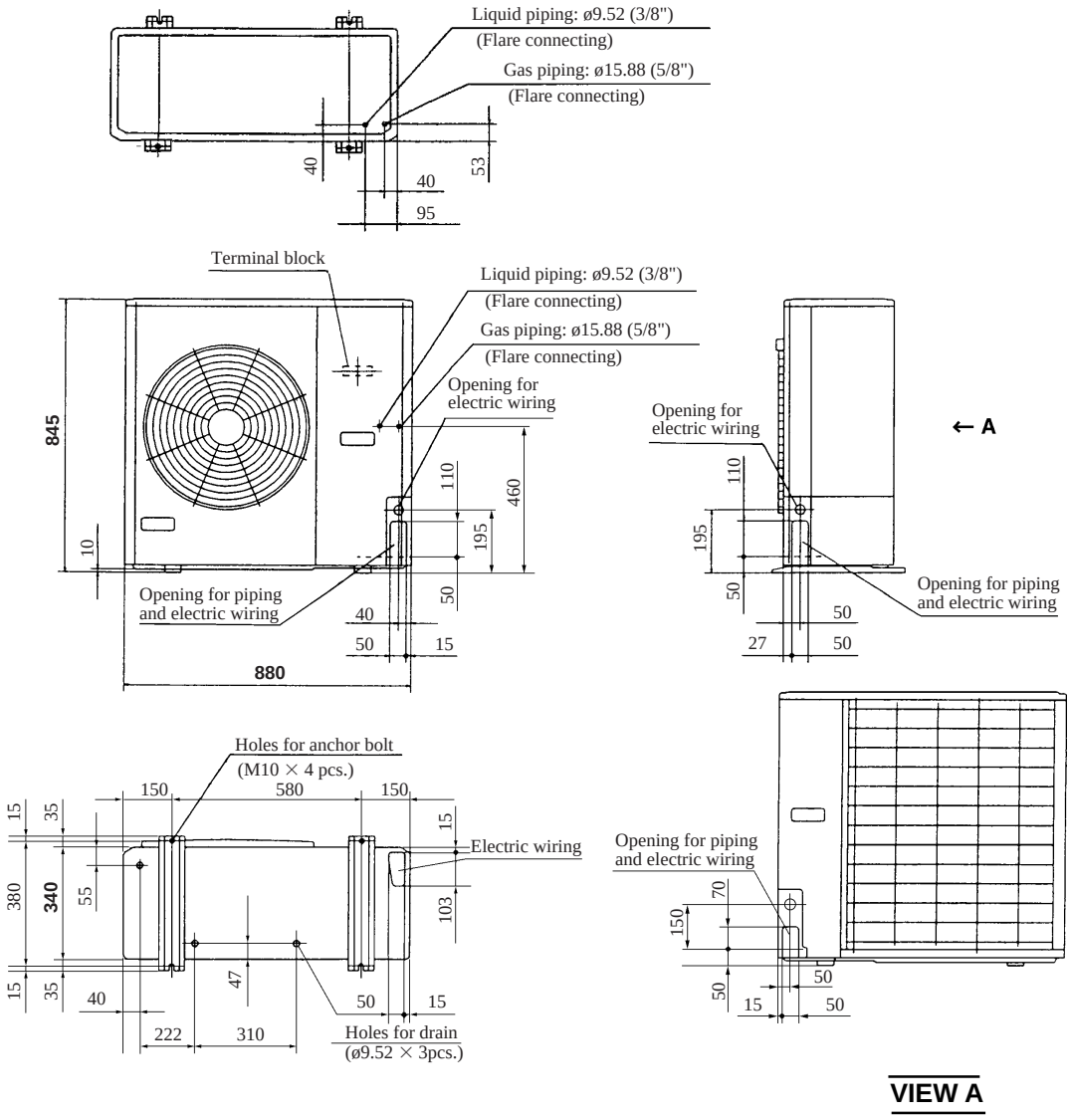
Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	5	Open
L_3	100	150	100
L_4	5	5	5

Notes

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

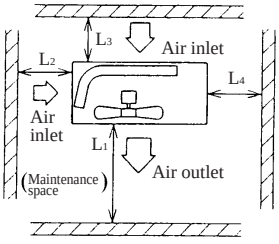
Models FDC258CEN3, 258CEP3

Unit: mm



VIEW A

Required space for maintenance and air flow



Minimum allowable space to the obstacles

Unit:mm

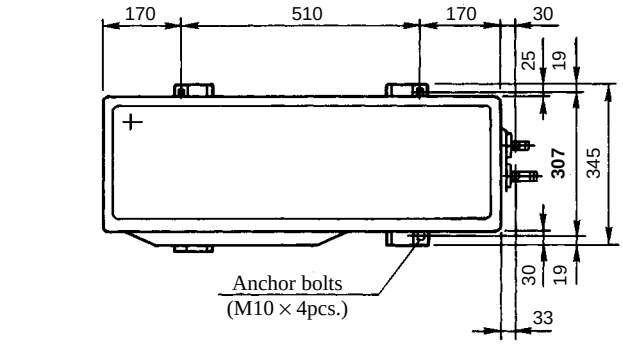
Mark \ Installation type	Ⅰ	Ⅱ	Ⅲ
L_1	Open	Open	500
L_2	300	5	Open
L_3	100	150	100
L_4	5	5	5

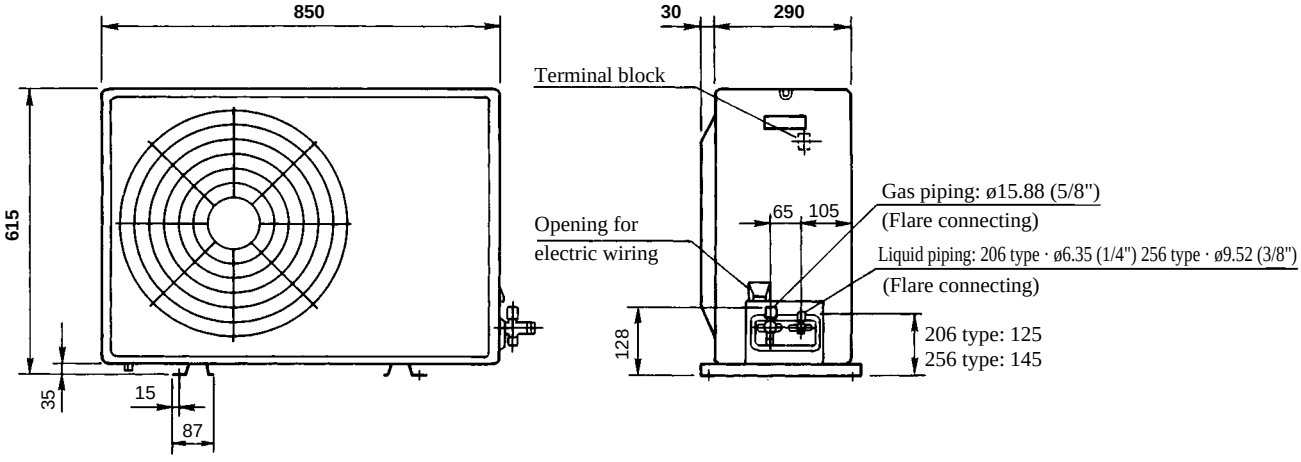
Notes

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

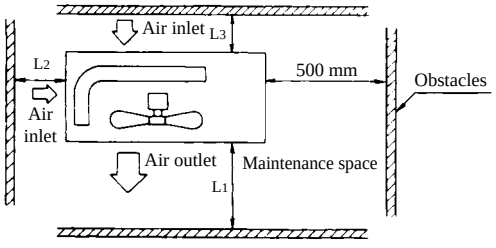
Models FDC206CEN3, 206CEP3, 256CEN3, 256CEP3

Unit: mm





Required space for maintenance and air flow



Minimum allowable space to the obstacles

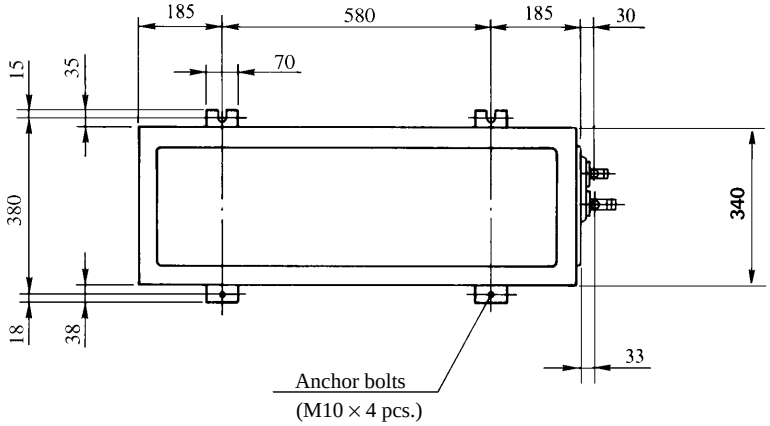
Unit:mm

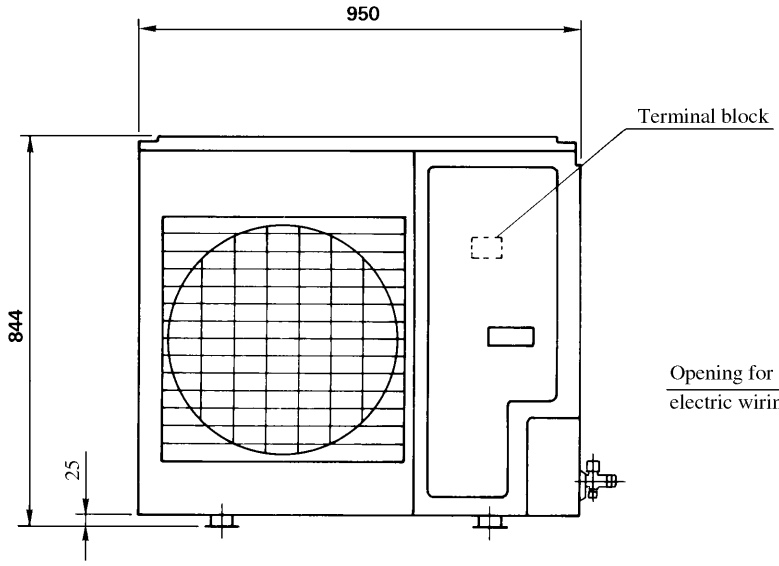
Mark \ Installation type	Ⅰ	Ⅱ
L_1	Open	100
L_2	100	Open
L_3	100	500

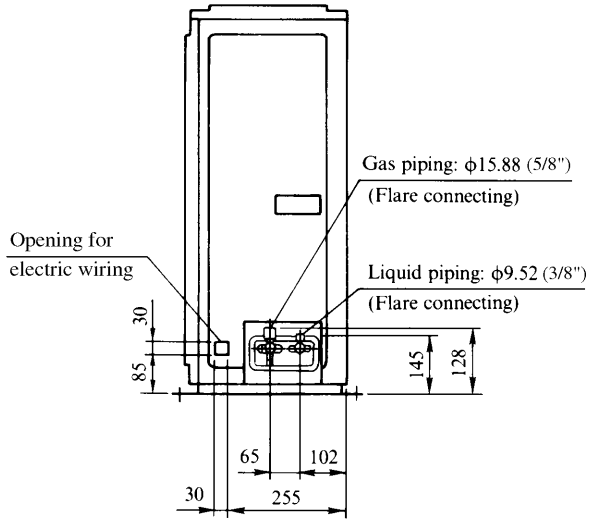
Notes
(1) Fix the unit with anchor bolts.
(2) Strong wind must not be directed to the air outlet.
(3) Free space over the unit must be larger than 1 m.
(4) The unit should not be surrounded by obstructions in all direction. At least one direction around the unit must be free.

Models FDC306CEN3, 306CEP3, 306CES3

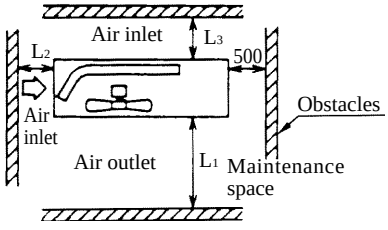
Unit: mm







Required space for maintenance and air flow



Minimum allowable space to the obstacles

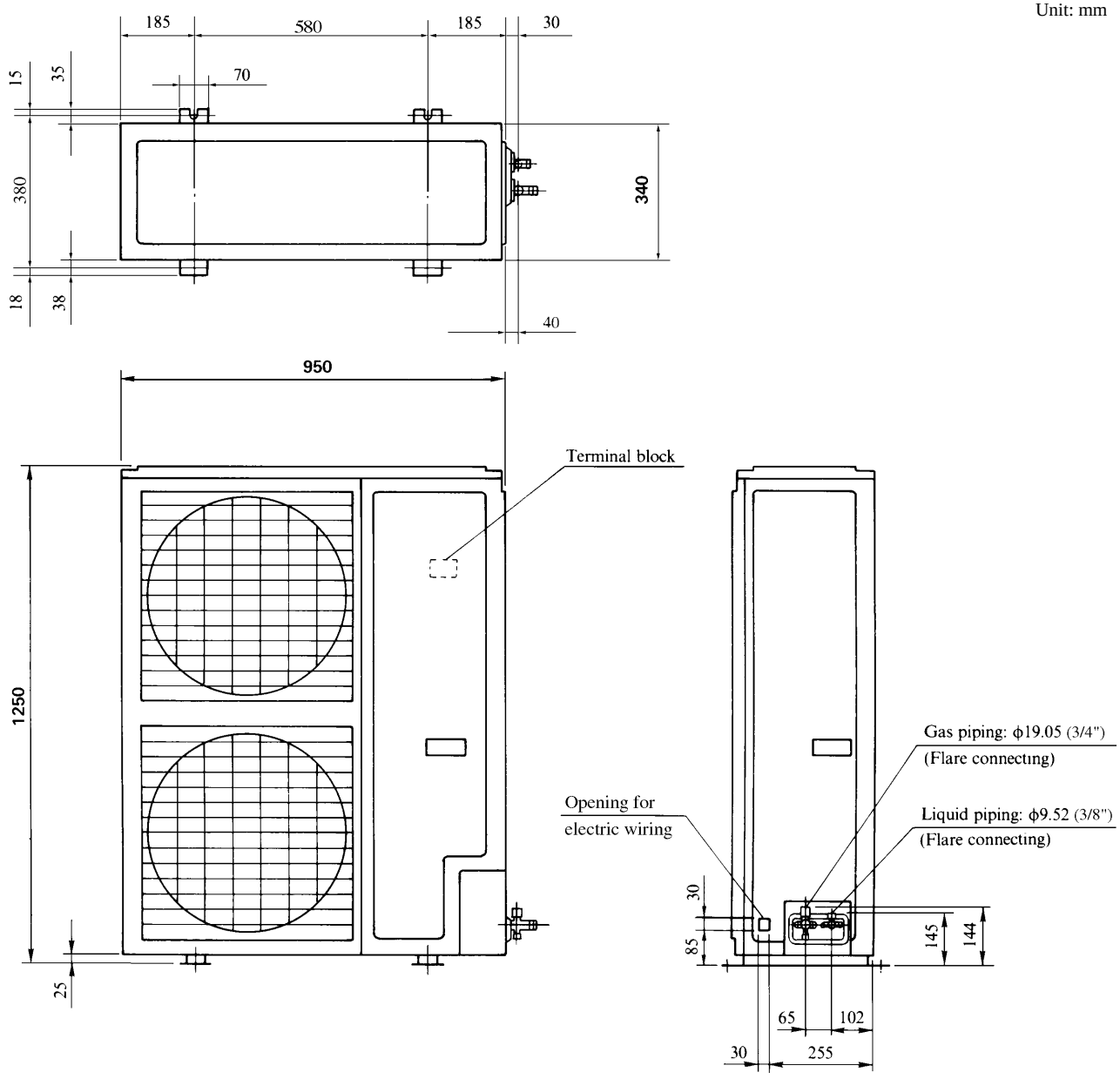
Unit:mm

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

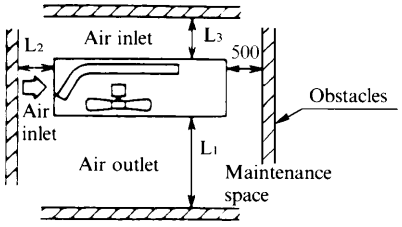
Notes
(1) Fix the unit with anchor bolts.
(2) Strong wind must not be directed to the air outlet.
(3) Free space over the unit must be larger than 1 m.
(4) The unit should not be surrounded by obstructions in all direction.
At least one direction around the unit must be free.

Models FDC406CES3, 506CES3, 506CEM3

Unit: mm



Required space for maintenance and air flow



Minimum allowable space to the obstacles

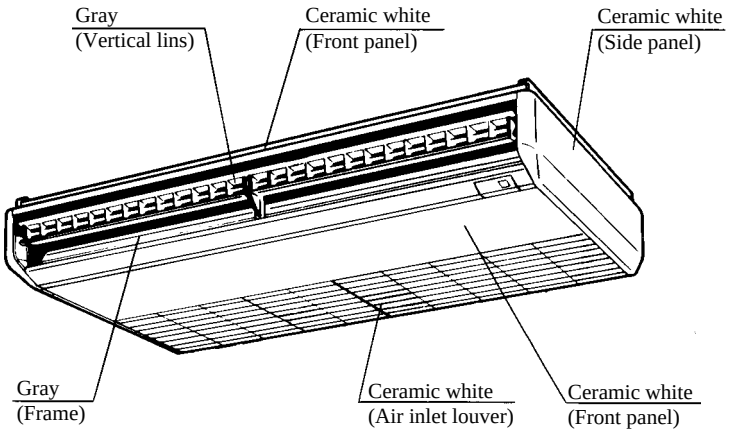
Unit:mm

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

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

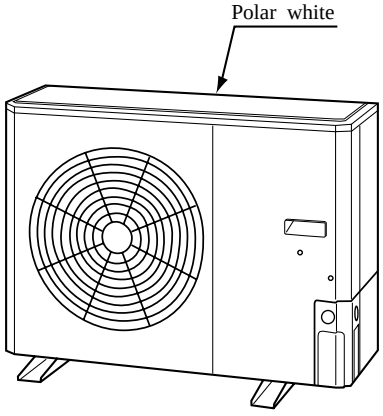
9.2.4 Exterior appearance

(1) Indoor unit

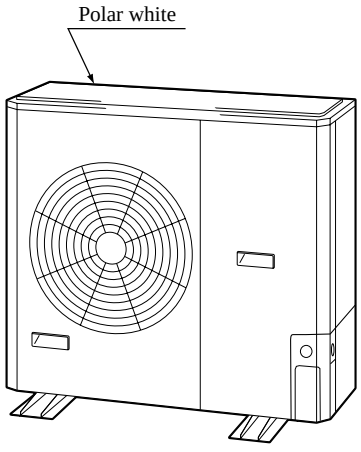


(2) Outdoor unit

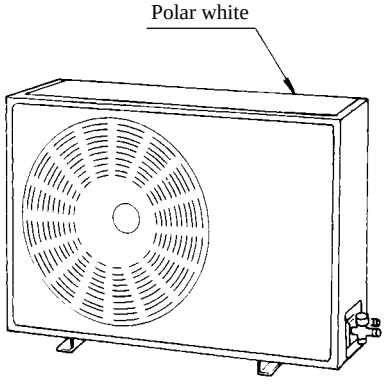
Models FDC208CEN3, 208CEP3



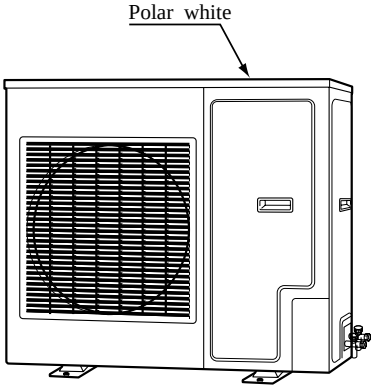
Models FDC258CEN3, 258CEP3



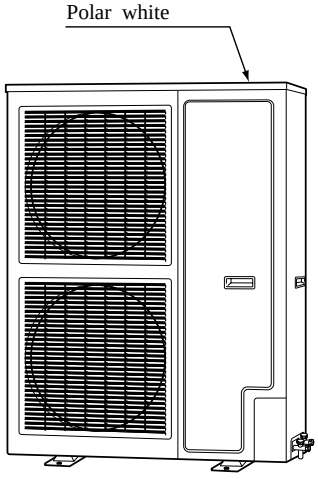
Models FDC206CEN3, 206CEP3
256CEN3, 256CEP3



Models FDC306CEN3, 306CEP3
306CES3

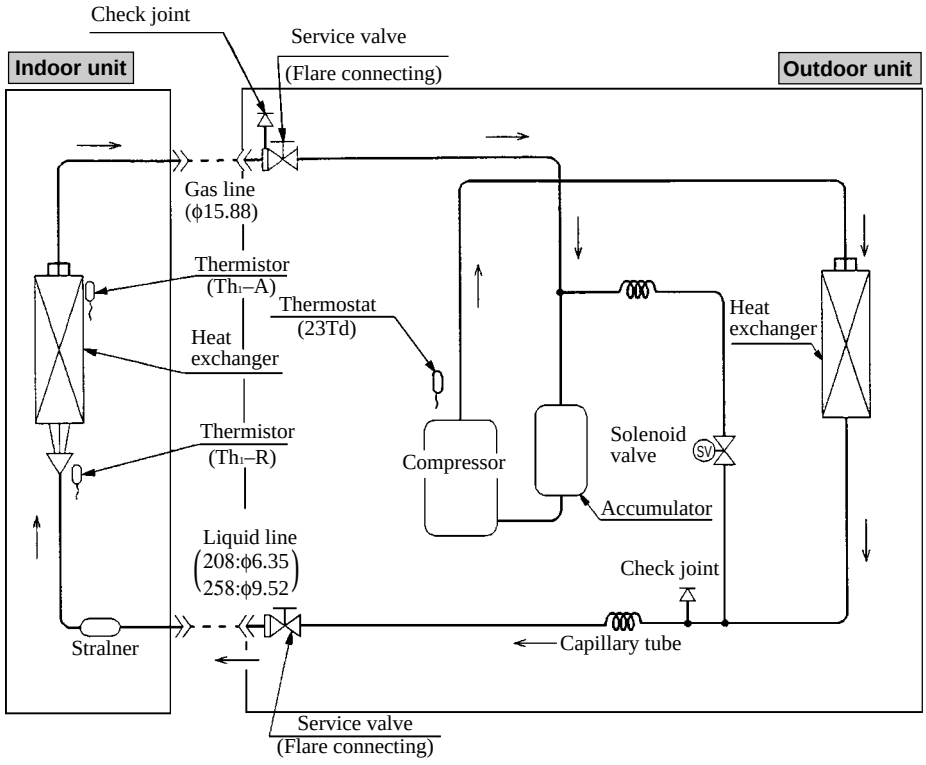


Models FDC406CES3, 506CES3
506CEM3

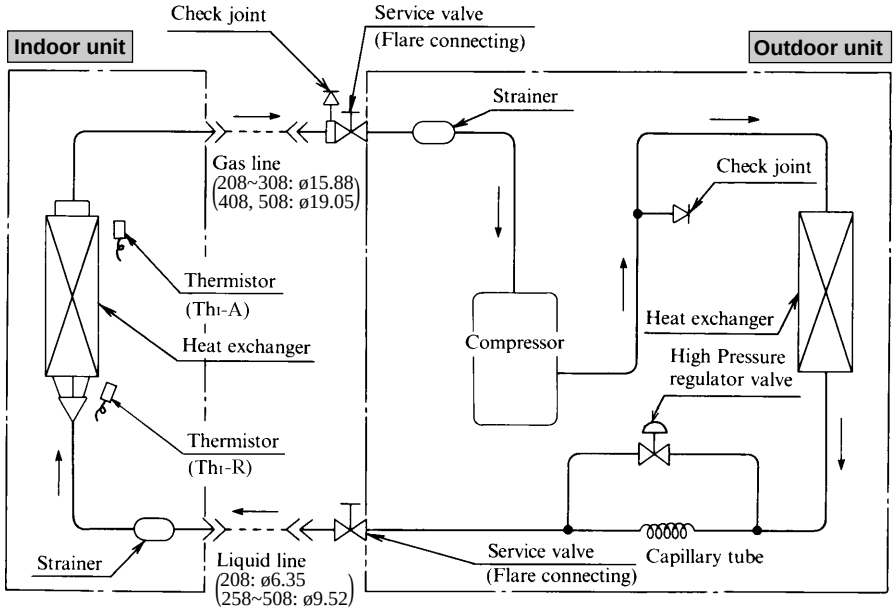


9.2.5 Piping system

Models FDEN208CEN-S, 208CEP-S, 258CEN-S, 258CEP-S



Models FDEN208CEN, 208CEP, 258CEN, 258CEP, 308CEN, 308CEP, 308CES, 408CES, 508CES, 508CEM



Preset point of the protective devices

Part name	Mark	Equipped unit	All models
Thermistor (for frost prevention)	**Thi-R**	Indoor unit	OFF 2.5°C ON 10°C

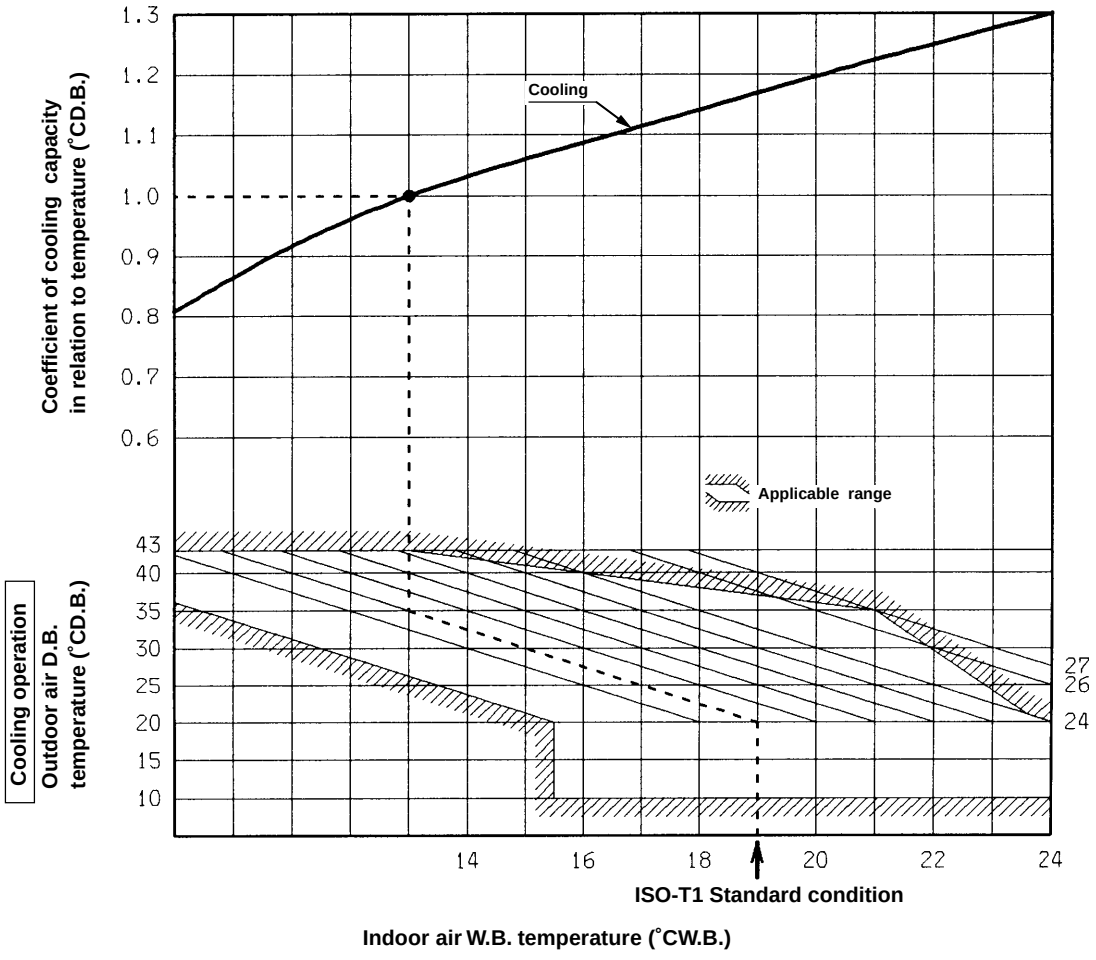
9.2.6 Selection chart

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



Only case of ISO-T3 and SASO models

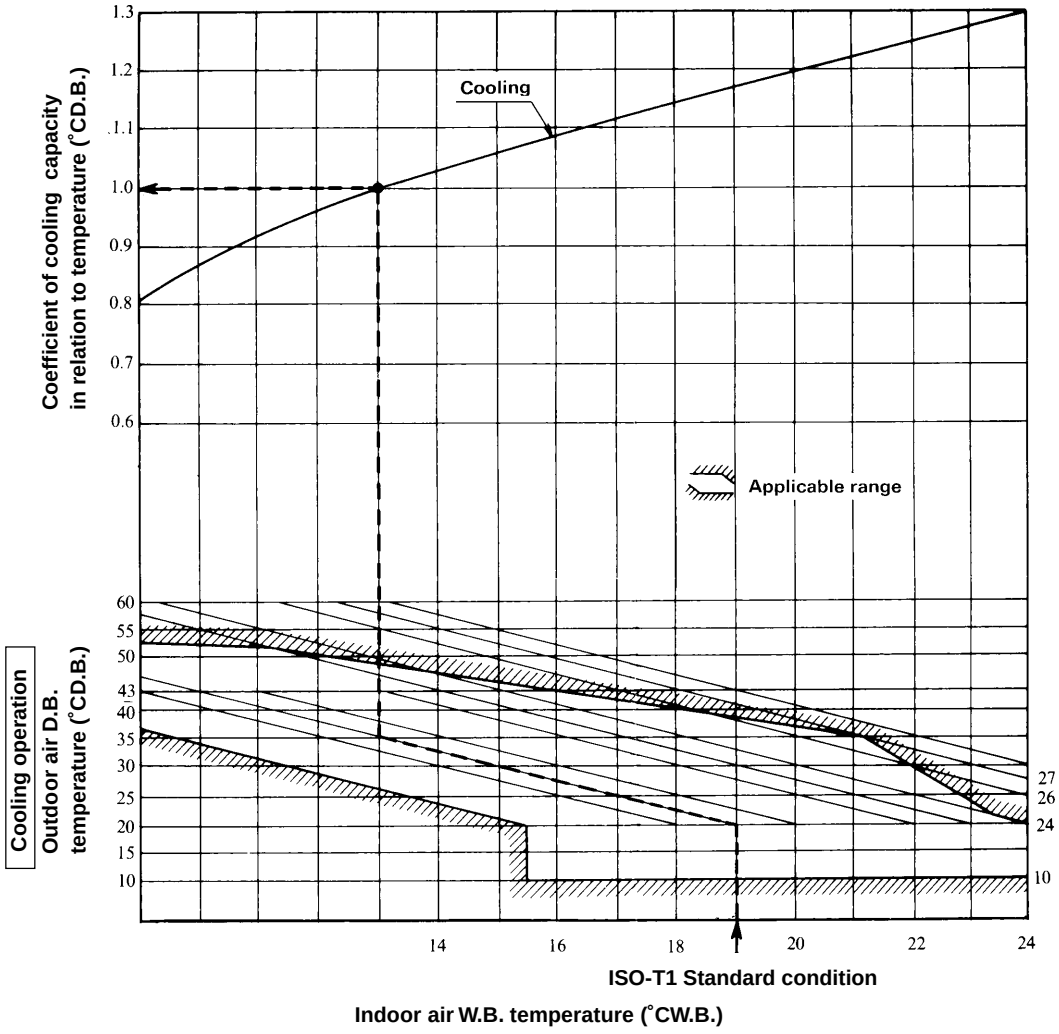


Table of bypass factor

Item \ Model		FDEN208 type	FDEN258 type	FDEN308 type	FDEN408·508 type
Air flow	Hi	0.031	0.030	0.036	0.018
	Lo	0.016	0.013	0.018	0.010

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

Coefficient: 1.00 at High, 0.95 at Low

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

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

(50/60Hz)

Equivalent piping length(1) m		5	10	15	20	25	30	35
Cooling	FDEN208 type	1.0	0.995	0.995/0.99	0.99/0.985	0.985/0.98	0.985/0.975	0.98/0.97
	FDEN258 type	1.0	0.995	0.99	0.985	0.98	0.975	0.97
	FDEN308 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
	FDEN408 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
	FDEN508 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	FDEN208, 258 (FDC208, 258 type)	FDEN208 ~ 508 (FDC206~506 type)
Max. one way piping length	30m	
Max. vertical height difference	20m (Outdoor unit is higher) 15m (Outdoor unit is lower)	15m

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

How to obtain the cooling capacity

Example : The net cooling capacity of the model FDEN308CEN with the air flow "High", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0 ˚C and outdoor dry-bulb temperature 35 ˚C is

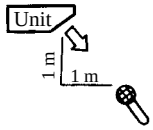
Net cooling capacity = 7100 × 1.00 × (0.98 - 0.01) × 1.0 = **6887 w**

- 7100 : FDEN308CEN
- 1.00 : Air flow "High"
- (0.98 - 0.01) : Length 15m. Height difference 5 m
- 1.0 : Factor by air temperatures

9.2.7 Noise level

Notes (1) The data are based on the following conditions.
Ambient air temperature:
Indoor unit 27˚C DB, 19˚C WB.
Outdoor unit 35˚C DB.

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

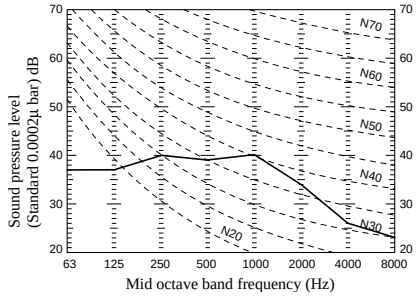


Mike (front & at low point)

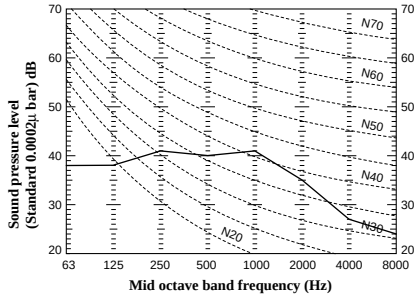
Outdoor unit
Measured based on JIS B 8616
Mike position: at highest noise level in position as below
Distance from front side 1 m
Height 1 m

(1) Indoor unit

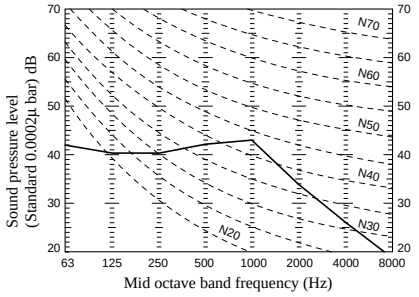
Model FDEN208C (50Hz)
Noise level 43 dB (A) at HIGH
38 dB (A) at LOW



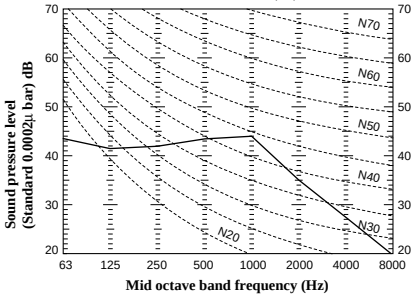
Model FDEN208C (60Hz)
Noise level 44 dB (A) at HIGH
39 dB (A) at LOW



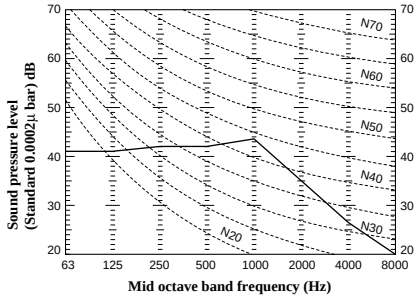
Model FDEN258C (50Hz)
Noise level 44 dB (A) at HIGH
39 dB (A) at LOW



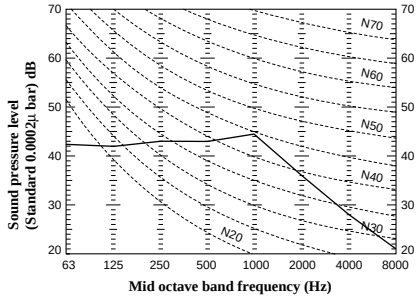
Model FDEN258C (60Hz)
Noise level 45 dB (A) at HIGH
40 dB (A) at LOW



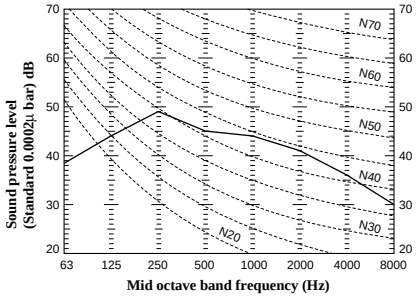
Model FDEN308C (50Hz)
Noise level 45 dB (A) at HIGH
39 dB (A) at LOW



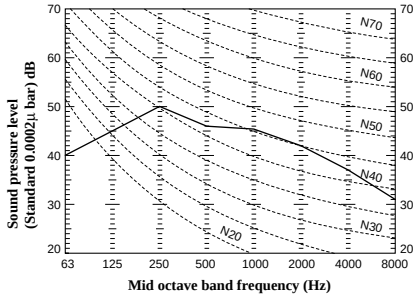
Model FDEN308C (60Hz)
Noise level 46 dB (A) at HIGH
40 dB (A) at LOW



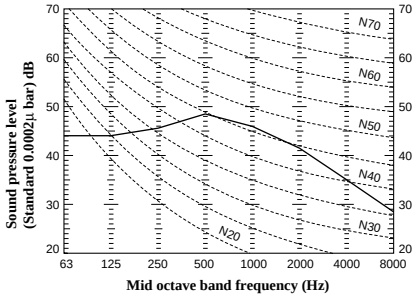
Model FDEN408C (50Hz)
Noise level 49 dB (A) at HIGH
43 dB (A) at LOW



Model FDEN408C (60Hz)
Noise level 50 dB (A) at HIGH
43 dB (A) at LOW



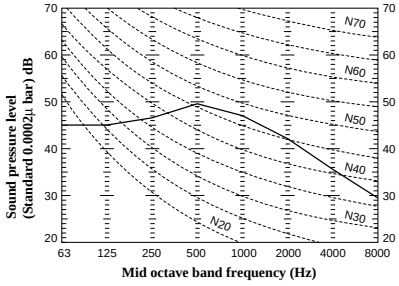
Model FDEN508C (50Hz)
Noise level 50 dB (A) at HIGH
44 dB (A) at LOW



(2) Outdoor unit

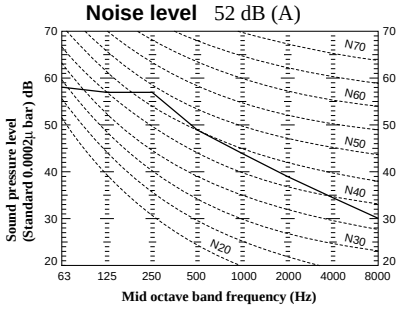
Model FDEN508C (60Hz)

Noise level 51 dB (A) at HIGH
45 dB (A) at LOW



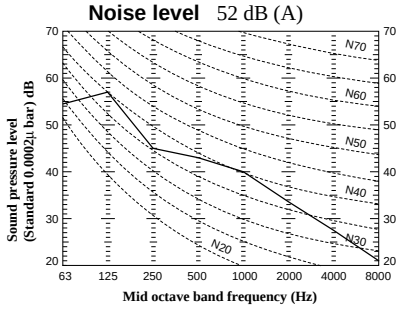
Model FDC208CEN3

Noise level 52 dB (A)



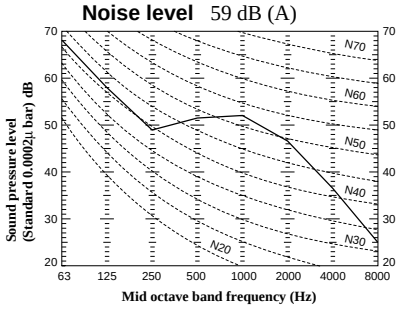
Model FDC208CEP3

Noise level 52 dB (A)



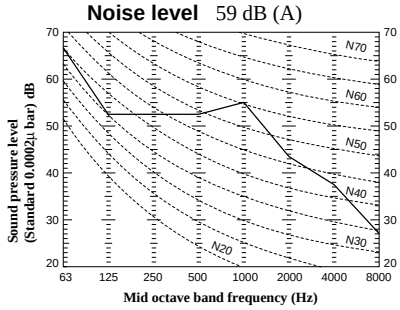
Model FDC206CEN3

Noise level 59 dB (A)



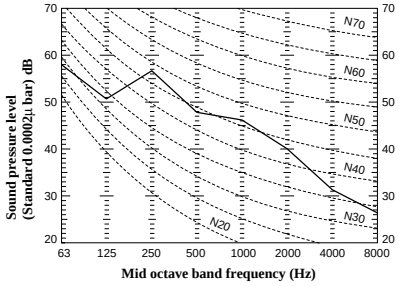
Model FDC206CEP3

Noise level 59 dB (A)



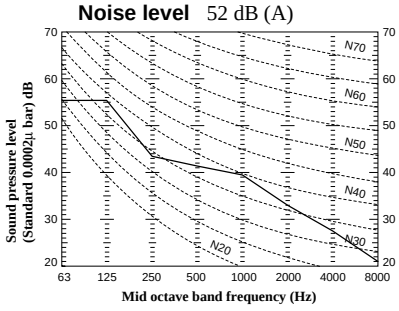
Model FDC258CEN3

Noise level 52 dB (A)



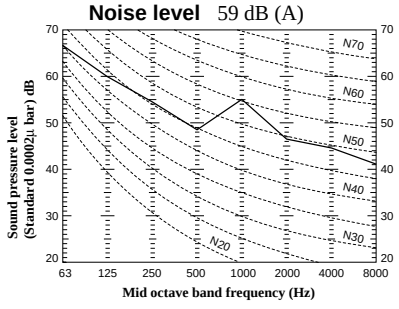
Model FDC258CEP3

Noise level 52 dB (A)



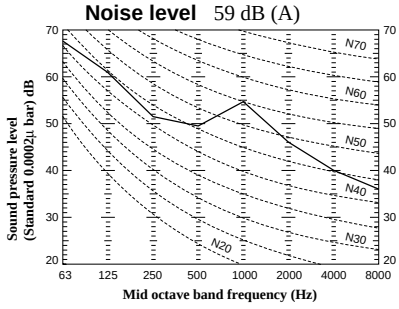
Model FDC256CEN3

Noise level 59 dB (A)



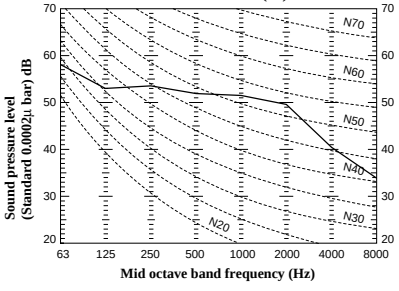
Model FDC256CEP3

Noise level 59 dB (A)



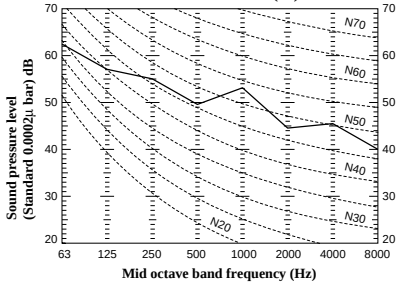
Model FDC306CEN3

Noise level 56 dB (A)



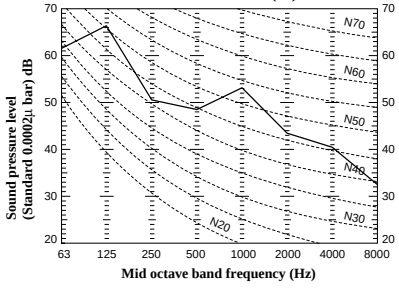
Model FDC306CEP3

Noise level 59 dB (A)



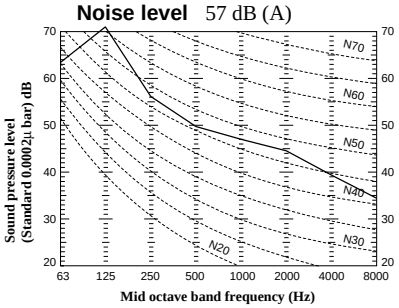
Model FDC306CES3

Noise level 59 dB (A)



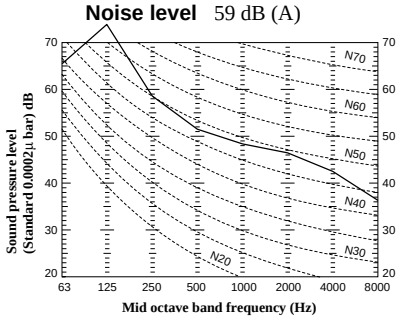
Model FDC406CES3

Noise level 57 dB (A)



Models FDC506CES3, 506CEM3

Noise level 59 dB (A)

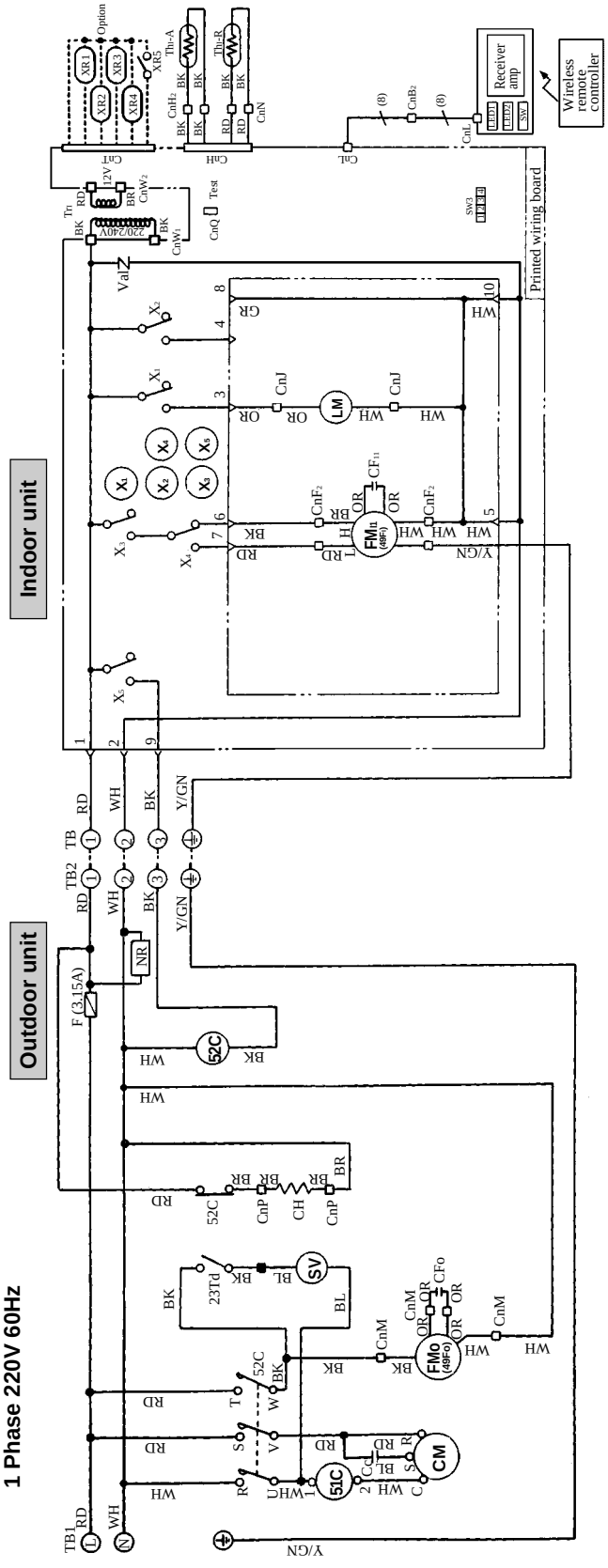


9.3 ELECTRICAL DATA

9.3.1 Electrical wiring

Models FDEN208CEN-S, 208CEP-S

Power Source
FDEN208CEN-S
1 Phase 220/240V 50Hz
FDEN208CEP-S
1 Phase 220V 60Hz



Meaning of marks

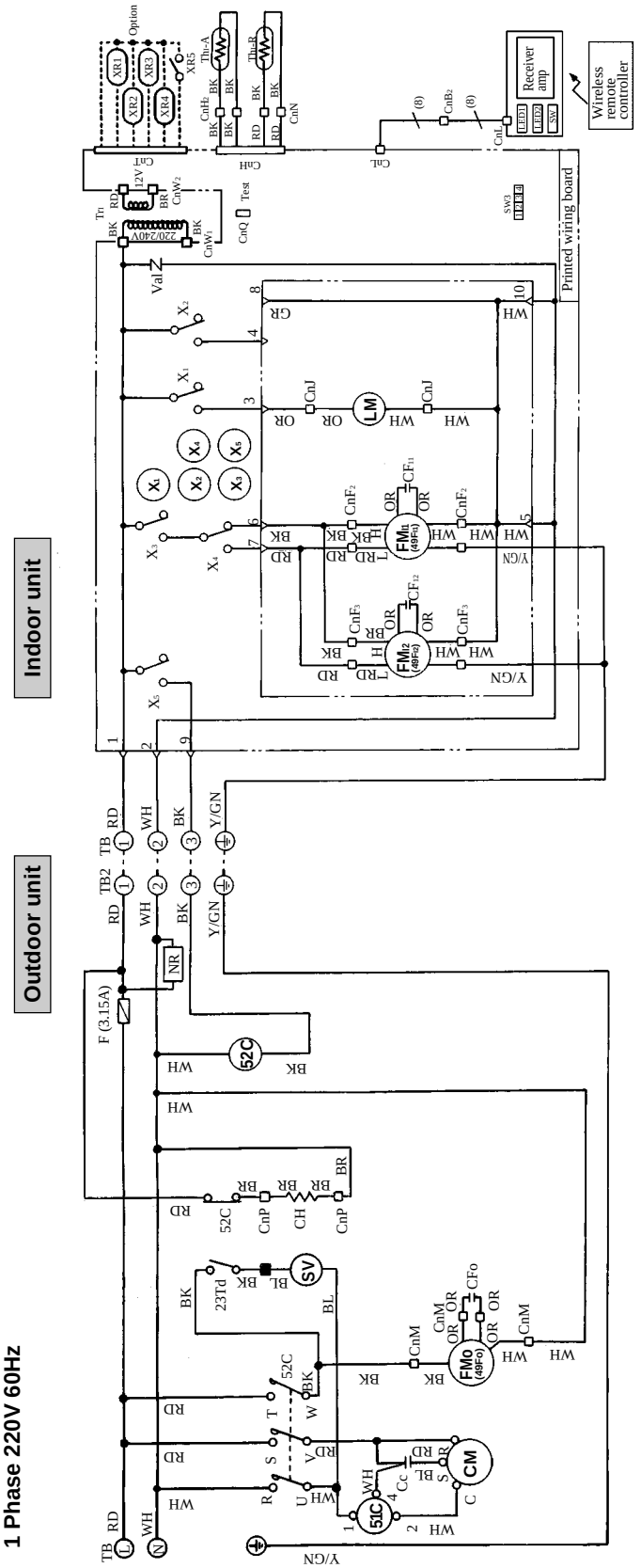
Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**TB**	Terminal block (○ mark)
CFI	Capacitor for FMI	**Thı-A**	Thermistor
CFo	Capacitor for FMo	**Thı-R**	Thermistor
CH	Crankcase heater	**Trı**	Transformer
CM	Compressor motor	**Vaı**	Varistor
CnA~W	Connector	**23Td**	Thermostat
F	Fuse	**49Fı**	Internal thermostat for FMI
FMI	Fan motor (Indoor unit)	**49Fo**	Internal thermostat for FMo
FMo	Fan motor (Outdoor unit)	**51C**	Overcurrent relay for CM
LED1	Indication lamp (Green-Run)	**52C**	Magnetic contactor for CM
LED2	Indication lamp (Yellow-Check)	**X1~6**	Auxiliary relay
LM	Louver motor	**▽**	Terminal (F)
SV	Solenoid coil (for control)	**NR**	Surge suppressor
SW	Back up switch (ON/OFF)	**■**	Connector

Color mark

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

Models FDEN258CEN-S, 258CEP-S

Power Source
FDEN258CEN-S
1 Phase 220/240V 50Hz
FDEN258CEP-S
1 Phase 220V 60Hz



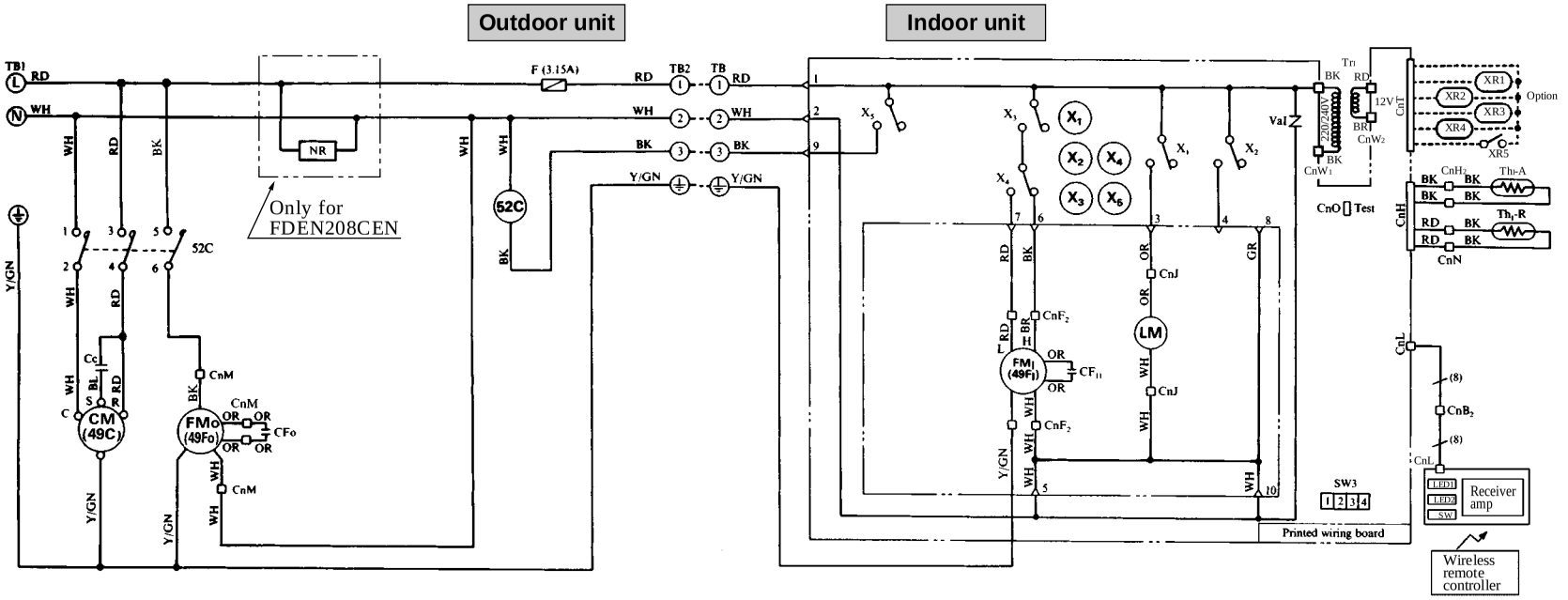
Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**TB**	Terminal block (○ mark)
CFi, 1, 2	Capacitor for FMi	**Thi-A**	Thermistor
CFo	Capacitor for FMo	**Thi-R**	Thermistor
CH	Crankcase heater	**Tri**	Transformer
CM	Compressor motor	**Vai**	Varistor
CnA~W	Connector	**23Td**	Thermostat
F	Fuse	**49Fo**	Internal thermostat for FMo
FMi1, 2	Fan motor (Indoor unit)	**49Fi,1,2**	Internal thermostat for FMi
FMo	Fan motor (Outdoor unit)	**51C**	Overcurrent relay for CM
LED1	Indication lamp (Green-Run)	**52C**	Magnetic contactor for CM
LED2	Indication lamp (Yellow-Check)	**X1~5**	Auxiliary relay
LM	Louver motor	**▽**	Terminal (F)
SV	Solenoid coil (for control)	**NR**	Surge suppressor
SW	Back up switch (ON/OFF)	**■**	Connector

Color mark

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

Power Source
FDEN208CEN
1 Phase 220/240V 50Hz
FDEN208CEP
1 Phase 220V 60Hz



Meaning of marks

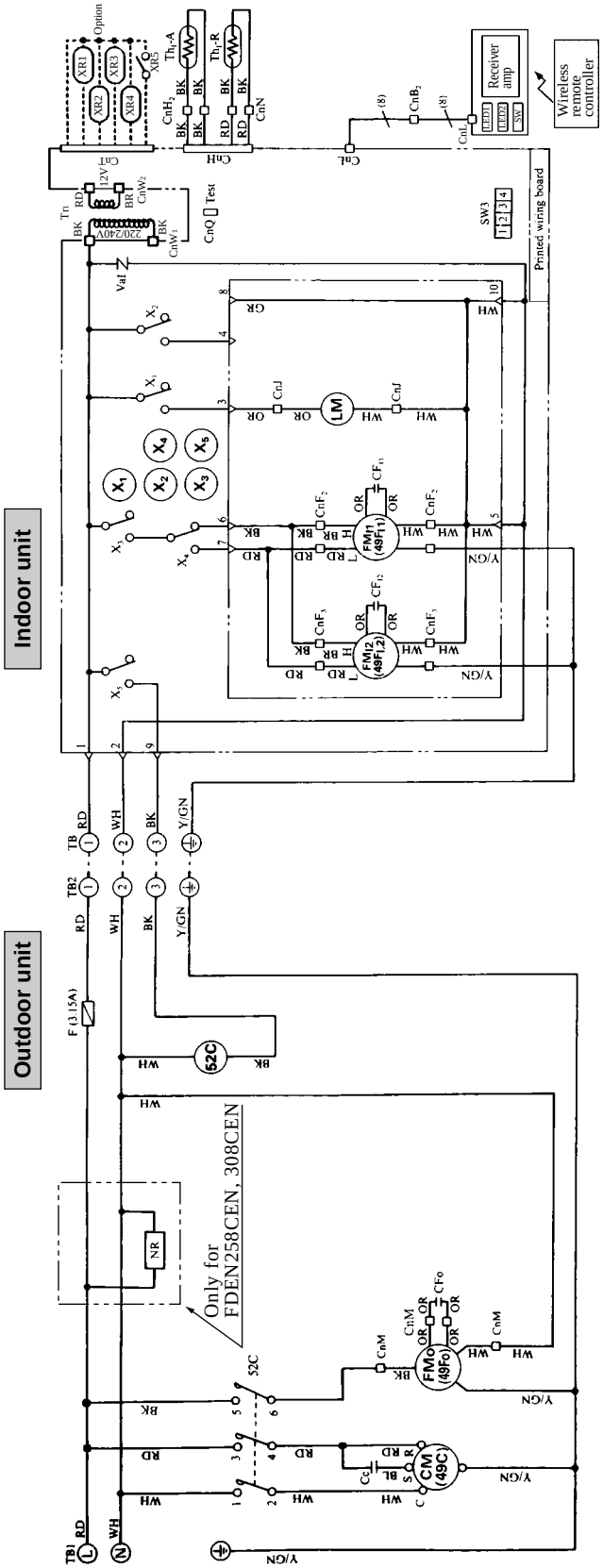
Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**Th-A**	Thermistor
CFI	Capacitor for FMI	**Th-R**	Thermistor
CFo	Capacitor for FMo	**TrI**	Transformer
CM	Compressor motor	**VaI**	Varistor
CnA~W	Connector	**49FI**	Internal thermostat for FMI
F	Fuse	**49C**	Internal thermostat for CM
FMI	Fan motor (Indoor unit)	**49Fo**	Internal thermostat for FMo
FMo	Fan motor (Outdoor unit)	**52C**	Magnetic contactor for CM
LED1	Indication lamp (Green-Run)	**X1~5**	Auxiliary relay
LED2	Indication lamp (Yellow-Check)	◁	Terminal (F)
LM	Louver motor	**NR**	Surge suppressor
SW	Back up switch (ON/OFF)	■	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 FDEN258CEN, 258CEP, 308CEN, 308CEP

Power Source
FDEN258CEN, 308CEN
1 Phase 220/240V 50Hz
FDEN258CEP, 308CEP
1 Phase 220V 60Hz



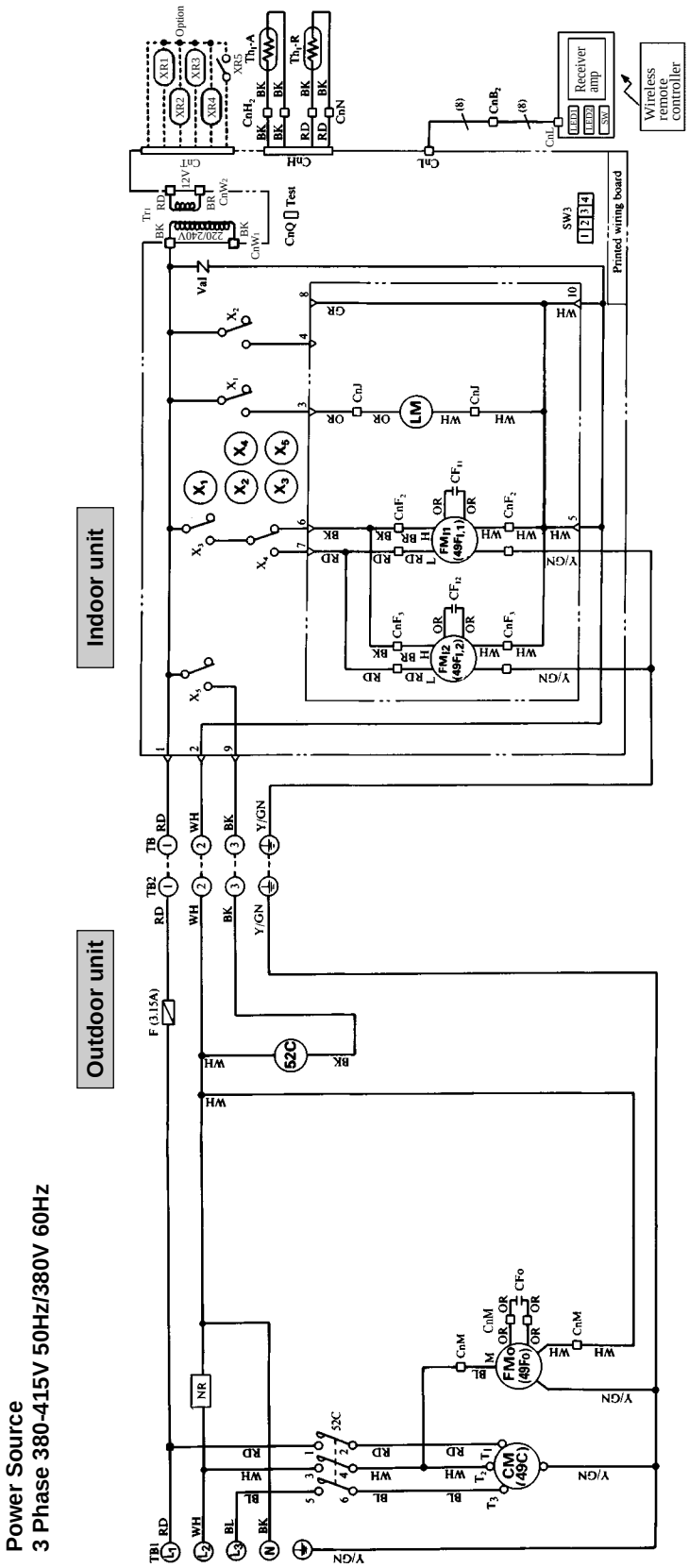
Meaning of marks

Mark	Parts name	Mark	Parts name
Cc	Capacitor for CM	**Th-A**	Thermistor
CF1, 1,2	Capacitor for FM1	**Th-R**	Thermistor
CFo	Capacitor for FMo	**Tr1**	Transformer
CM	Compressor motor	**Va1**	Varistor
CnA~W	Connector	**49C**	Internal thermostat for CM
F	Fuse	**49Fo**	Internal thermostat for FMo
FM1.2	Fan motor (Indoor unit)	**49F1,1,2**	Internal thermostat for FM1
FMo	Fan motor (Outdoor unit)	**52C**	Magnetic contactor for CM
LED1	Indication lamp (Green-Run)	**X1~5**	Auxiliary relay
LED2	Indication lamp (Yellow-Check)	▽	Terminal (F)
LM	Louver motor	**NR**	Surge suppressor
SW	Back up switch (ON/OFF)	■	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

Model FDEN308CES



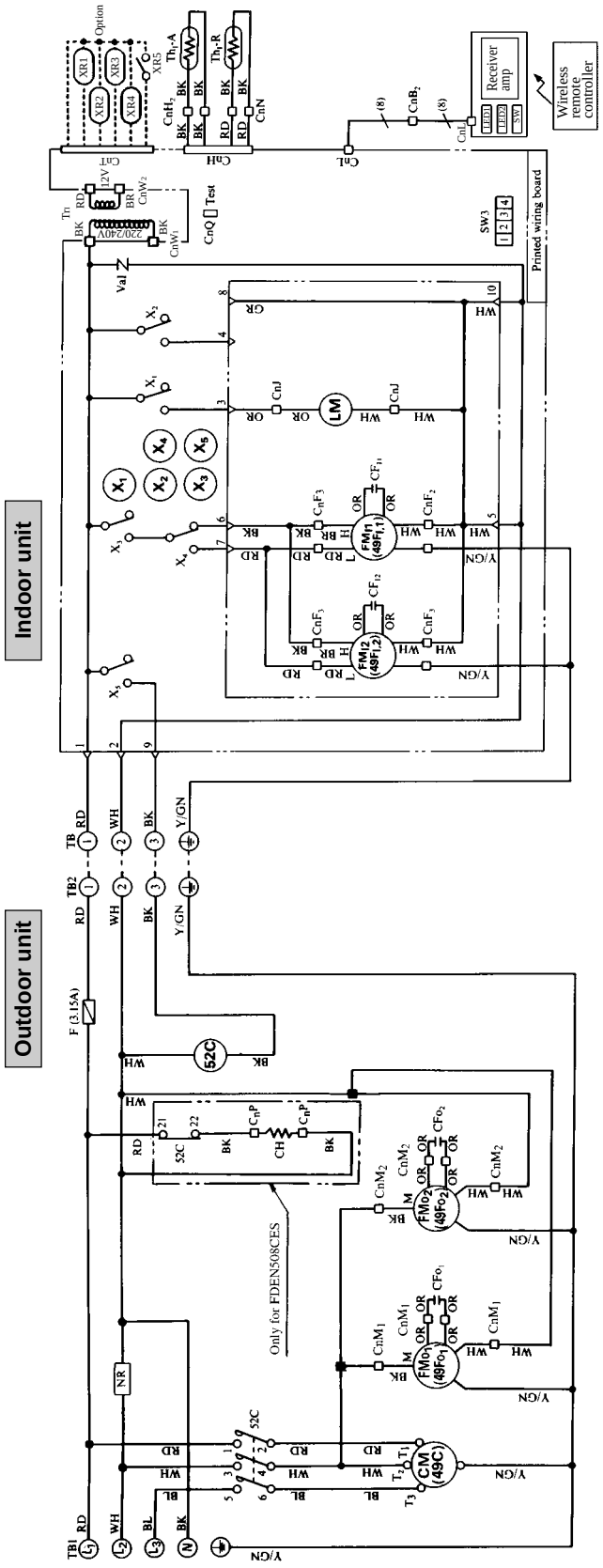
Meaning of marks

Mark	Parts name	Mark	Parts name
$CF_{I\ 1,2}$	Capacitor for FMI	**Thı-A**	Thermistor
CFo	Capacitor for FMo	**Thı-R**	Thermistor
CM	Compressor motor	**Trı**	Transformer
CnA~W	Connector	**Vaı**	Varistor
F	Fuse	**49C**	Internal thermostat for CM
FMı,2	Fan motor (Indoor unit)	**49Fo**	Internal thermostat for FMo
FMo	Fan motor (Outdoor unit)	**49F$_{I,1,2}$**	Internal thermostat for FMı
LED1	Indication lamp (Green-Run)	**52C**	Magnetic contactor for CM
LED2	Indication lamp (Yellow-Check)	**X1~5**	Auxiliary relay
LM	Louver motor	▽	Terminal (F)
SW	Back up switch (ON/OFF)	**NR**	Surge suppressor
TB	Terminal block (○ mark)	■	Connector

Color mark

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

Models FDEN408CES, 508CES



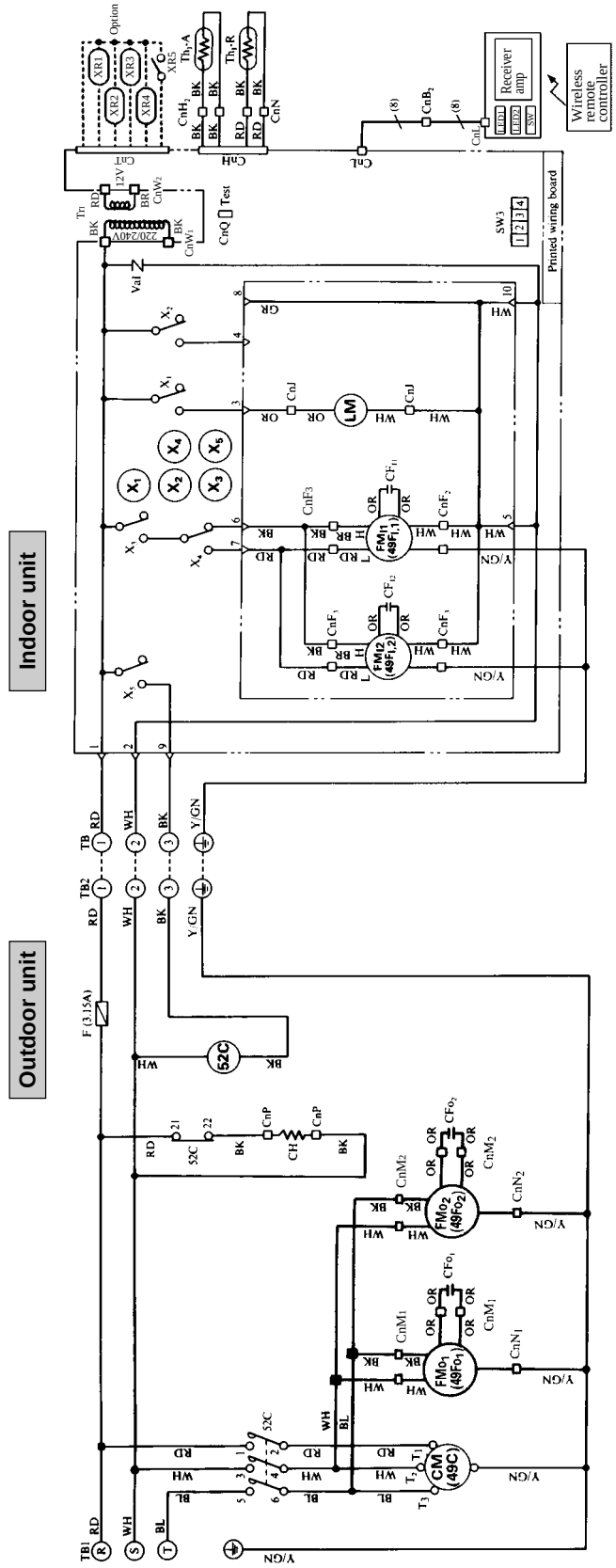
Meaning of marks

Mark	Parts name	Mark	Parts name
$CF_{1,2}$	Capacitor for FM_1	**Th-A**	Thermistor
$CF_{O1,2}$	Capacitor for FM_O	**Th-R**	Thermistor
CH	Crankcase heater	**Tr**	Transformer
CM	Compressor motor	**Va**	Varistor
CnA~W	Connector	**49C**	Internal thermostat for CM
F	Fuse	**49F$_{O1,2}$**	Internal thermostat for FM_O
$FM_{1,2}$	Fan motor (Indoor unit)	**49F$_{1,2}$**	Internal thermostat for FM_1
$FM_{O1,2}$	Fan motor (Outdoor unit)	**52C**	Magnetic contactor for CM
LED1	Indication lamp (Green-Run)	**X1~5**	Auxiliary relay
LED2	Indication lamp (Yellow-Check)	▽	Terminal (F)
LM	Louver motor	**NR**	Surge suppressor
SW	Back up switch (ON/OFF)	■	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

Model FDEN508CEM



Meaning of marks

Mark	Parts name	Mark	Parts name
CFI, 1,2	Capacitor for FMI	**TB**	Terminal block (○ mark)
CFO1,2	Capacitor for FMo	**Thı-A**	Thermistor
CH	Crankcase heater	**Thı-R**	Thermistor
CM	Compressor motor	**Trı**	Transformer
CnA–W	Connector	**Vaı**	Varistor
F	Fuse	**49C**	Internal thermostat for CM
FMI, 1,2	Fan motor (Indoor unit)	**49FI1,2**	Internal thermostat for FMI
FMO1,2	Fan motor (Outdoor unit)	**49FO1,2**	Internal thermostat for FMo
LED1	Indication lamp (Green-Run)	**52C**	Magnetic contactor for CM
LED2	Indication lamp (Yellow-Check)	**X1–5**	Auxiliary relay
LM	Louver motor	▽ ■	Terminal (F)
SW	Back up switch (ON/OFF)		Connector

Color mark

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

9.4 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

Except for function relating to heating, same as the unit for FDT(N) heat pump type. See page 241.

9.5 APPLICATION DATA

The application data for the cooling only models are similar to those for the heat pump models. (See page 380.)

9.6 MAINTENANCE DATA

Same as the cooling /heating equipment for FDT(N) heat pump type. Refer to page 271.