PCFY-P-NKMU-E

1. SPECIFICATIONS....PCFY-3
2. EXTERNAL DIMENSIONS....PCFY-5
3. CENTER OF GRAVITY....PCFY-8
4. ELECTRICAL WIRING DIAGRAMS....PCFY-9
5. SOUND PRESSURE LEVELS....PCFY-10
   - 5-1. Sound Pressure Levels....PCFY-10
   - 5-2. NC Curves....PCFY-10
6. VENTILATION AIR INTAKE - STATIC PRESSURE CURVES....PCFY-11
7. TEMPERATURE/AIRFLOW DISTRIBUTIONS....PCFY-12
   - 7-1. Temperature Distributions....PCFY-12
   - 7-2. Airflow Distributions....PCFY-13
8. OPTIONAL PARTS....PCFY-14
   - 8-1. Optional Parts Line Up for the Indoor Unit....PCFY-14
   - 8-2. High Efficiency Filter PAC-SE-KF-E....PCFY-14
   - 8-3. Drain Pump PAC-SH-DM-E....PCFY-14
   - 8-4. Wireless Remote Controller Kit PAR-SL93B-E....PCFY-14
   - 8-5. i-see Sensor PAC-SH91MK-E....PCFY-15
   - 8-6. Wireless Remote Controller Kit with i-see Sensor PAR-SA92MW-E....PCFY-15
   - 8-7. External Heater Adapter CN24RELAY-KIT-CM3....PCFY-15



PCFY-P-NKMU-E

PCFY-P-NKMU-E

Ceiling-suspended type's compact dimensions ideal for restaurants and stores.

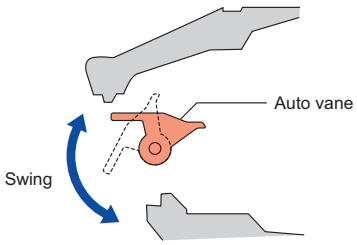


Wide-range outlet, strong air-flow make uniform air temperature and extremely quiet.

	Outlet	Max. airflow	Sound pressure level at low air flow
PCFY-P15NKMU-E	33-9/16 in.	459cfm	29 dBA
PCFY-P24NKMU-E	46-3/16 in.	636cfm	31 dBA
PCFY-P30NKMU-E	58-3/4 in.	989cfm	34 dBA
PCFY-P36NKMU-E	58-3/4 in.	1095cfm	36 dBA

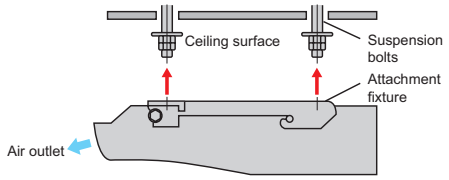
Strong air flow could even be used at a ceiling of 11'-5" height.

The PCFY's auto-vane swings the conditioned air and distributes it uniformly to corners of the room.



■ Install by direct-suspending, easy job.

①Suspend the bolts;
②Suspend the unit;
③Tight the nuts.



■ Auto fan speed feature

The PCFY-P-NKMU unit offers the choice from four fan speeds, or auto fan speed, to ensure faster achievement of room temperature target. Auto fan speed mode allows the fan to adjust its speed based on the degree of differential between set point and room temperature.

Ceiling suspended		P06	P08	P12	P15	P18	P24	P27	P30	P36	P48	P54	P72	P96
Nominal cooling cap.*1	BTU/h	6,000	8,000	12,000	15,000	18,000	24,000	27,000	30,000	36,000	48,000	54,000	72,000	96,000
Nominal heating cap.*2	BTU/h	6,700	9,000	13,500	17,000	20,000	27,000	30,000	34,000	40,000	54,000	60,000	80,000	108,000
PCFY-P-NKMU-E					●		●		●	●				

* Nominal conditions *1, *2 are referred to in the Specification sheet.

1. SPECIFICATIONS

Model			PCFY-P15NKMU-E	PCFY-P24NKMU-E	PCFY-P30NKMU-E	PCFY-P36NKMU-E
Power source			1-phase 208/230V 60Hz			
Cooling capacity (Nominal) *1		BTU / h	15,000	24,000	30,000	36,000
		kW	4.4	7.0	8.8	10.6
	Power input	kW	0.03	0.04	0.09	0.11
	Current input	A	0.35	0.41	0.83	0.97
Heating capacity (Nominal) *2		BTU / h	17,000	27,000	34,000	40,000
		kW	5.0	7.9	10.0	11.7
	Power input	kW	0.03	0.04	0.09	0.11
	Current input	A	0.35	0.41	0.83	0.97
MCA		A	0.44	0.52	1.22	1.22
External finish			MUNSELL (6.4Y 8.9/0.4)			
External dimension HxWxD		in.	9-1/16 x 37-13/16 x 26-3/4	9-1/16 x 50-3/8 x 26-3/4	9-1/16 x 63 x 26-3/4	9-1/16 x 63 x 26-3/4
		mm	230x960x680	230x1280x680	230x1600x680	230x1600x680
Net weight		lbs (kg)	53(24)	71(32)	79(36)	84(38)
Heat exchanger			Cross fin (Aluminum fin and copper tube)			
FAN	Type x Quantity		Sirocco fan x 2	Sirocco fan x 3	Sirocco fan x 4	Sirocco fan x 4
	External static pressure	in.WG	0.000 (208V)	0.000 (208V)	0.000 (208V)	0.000 (208V)
		Pa	0	0	0	0
		in.WG	0.000 (230V)	0.000 (230V)	0.000 (230V)	0.000 (230V)
		Pa	0	0	0	0
	Motor Type		DC motor	DC motor	DC motor	DC motor
	Motor output	kW	0.090	0.095	0.160	0.160
	Driving mechanism		Direct-drive	Direct-drive	Direct-drive	Direct-drive
	Airflow rate (Low-Mid1-Mid2-High)	cfm	353-388-424-459	494-530-565-636	703-777-883-989	742-847-953-1095
		m^3 / min	10-11-12-13	14-15-16-18	20-22-25-28	21-24-27-31
		L/s	167-183-200-217	233-250-267-300	333-367-417-467	350-400-450-517
Sound pressure level (Low-Mid1-Mid2-High) (measured in an anechoic room)		dB <A>	29-32-34-36	31-33-35-37	34-37-40-43	36-39-42-44
Insulation material			Polyester sheet			
Air filter			Polypropylene honeycomb (long life)			
Protection device			Fuse			
Refrigerant control device			LEV			
Connectable outdoor unit			R410A, R22 CITY MULTI			
Diameter of refrigerant pipe	Liquid (R410A)	in.(mm)	1/4(6.35) Flare	3/8(9.52) Flare	3/8(9.52) Flare	3/8(9.52) Flare
	(R22)		1/4(6.35) Flare	3/8(9.52) Flare	3/8(9.52) Flare	3/8(9.52) Flare
	Gas (R410A)	in.(mm)	1/2(12.7) Flare	5/8(15.88) Flare	5/8(15.88) Flare	5/8(15.88) Flare
	(R22)		1/2(12.7) Flare	5/8(15.88) Flare	5/8(15.88) Flare	3/4(19.05) Flare
Field drain pipe size		in.(mm)	O.D. 1(26)	O.D. 1(26)	O.D. 1(26)	O.D. 1(26)
Drawing	External		-	-	-	-
	Wiring		-	-	-	-
	Refrigerant cycle		-	-	-	-
Standard attachment	Document		Installation Manual, Instruction Book			
	Accessory		-	-	-	-
Optional parts	External heater adapter		CN24RELAY-KIT-CM3	CN24RELAY-KIT-CM3	CN24RELAY-KIT-CM3	CN24RELAY-KIT-CM3
	Drain pump kit		PAC-SH83DM-E	PAC-SH84DM-E	PAC-SH84DM-E	PAC-SH84DM-E
	i-see Sensor		PAC-SH91MK-E	PAC-SH91MK-E	PAC-SH91MK-E	PAC-SH91MK-E
	Wireless remote controller kit with i-see Sensor		PAR-SA92MW-E	PAR-SA92MW-E	PAR-SA92MW-E	PAR-SA92MW-E
	Wireless remote controller kit		PAR-SL93B-E	PAR-SL93B-E	PAR-SL93B-E	PAR-SL93B-E
	High efficiency filter (MERV 8)		PAC-SH88KF-E	PAC-SH89KF-E	PAC-SH90KF-E	PAC-SH90KF-E
Remarks			* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.			

Ventilation Air: Providing sufficient ventilation air is an important part of every building design. ASHRAE standard 62 provides the minimum ventilation air requirements. Also check local codes.

Note:	*1 Nominal cooling conditions	*2 Nominal heating conditions	Unit converter
Indoor:	80degF D.B./ 67degF W.B.	70degF D.B.	kcal =kW x 860
	(26.7degC D.B./ 19.4degC W.B.)	(21.1degC D.B.)	BTU/h =kW x 3,412
Outdoor:	95degF D.B. (35degC D.B.)	47degF D.B./ 43degF W.B. (8.3degC D.B./ 6.1degC W.B.)	cfm =m^3/min x 35.31
			lb =kg / 0.4536
Pipe length:	25ft.(7.6m)	25ft.(7.6m)	* Above specification data is subject to rounding variation.
Level difference:	0ft.(0m)	0ft.(0m)	
* Due to continuing improvement, above specifications may be subject to change without notice.			

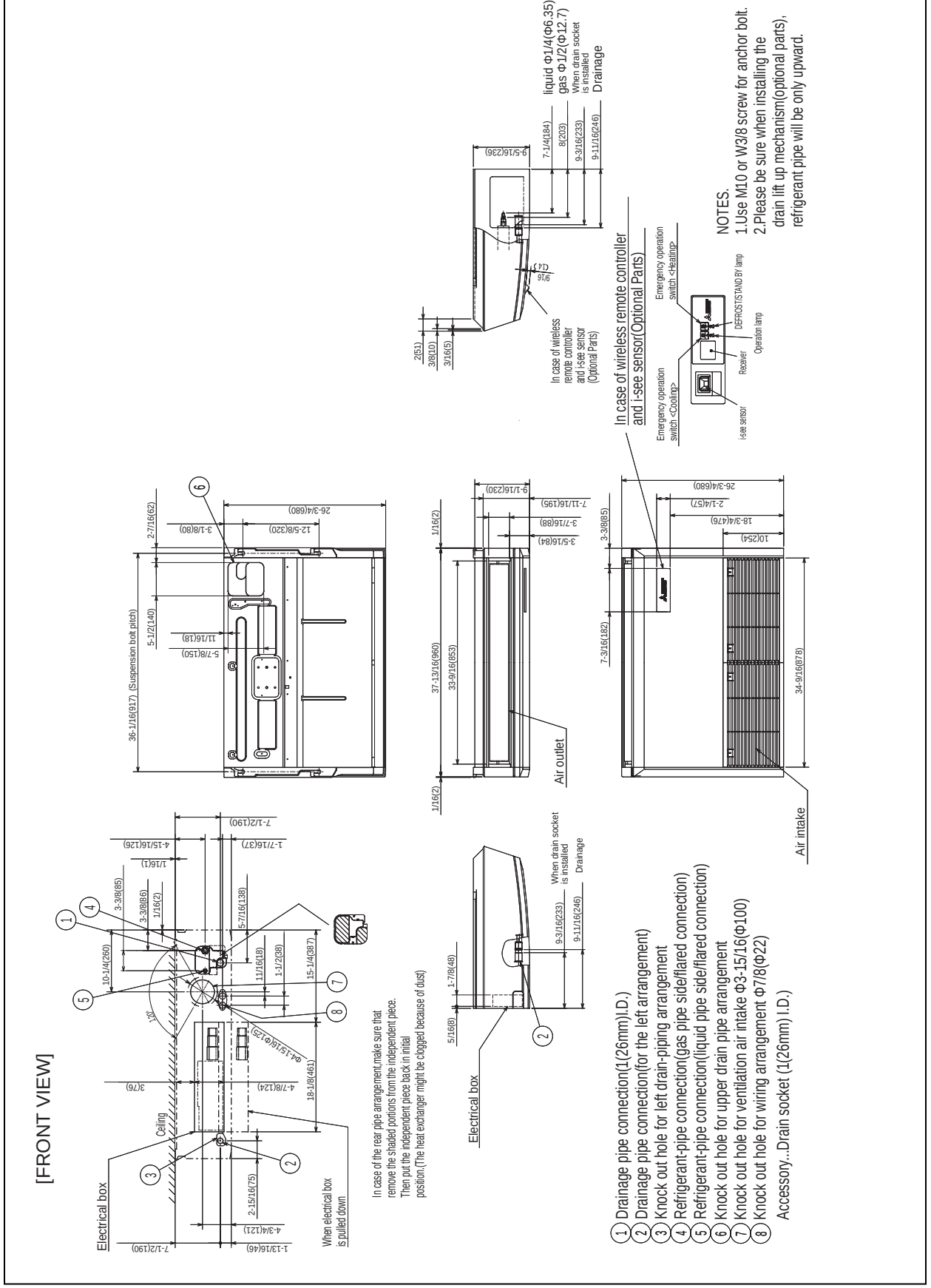
Symbols: MCA : Min.Circuit Amps (=1.25xFLA) FLA : Full Load Amps
IFM :Indoor Fan Motor

Electrical characteristics of Indoor unit

Model	Indoor Unit				IFM
	Hz	Volts	Voltage range	MCA(A)	FLA(A)
PCFY-P15NKMU-E	60Hz	208 / 230V	188 to 253V	0.44 / 0.44	0.35 / 0.35
PCFY-P24NKMU-E				0.52 / 0.52	0.41 / 0.41
PCFY-P30NKMU-E				1.22 / 1.22	0.97 / 0.97
PCFY-P36NKMU-E				1.22 / 1.22	0.97 / 0.97

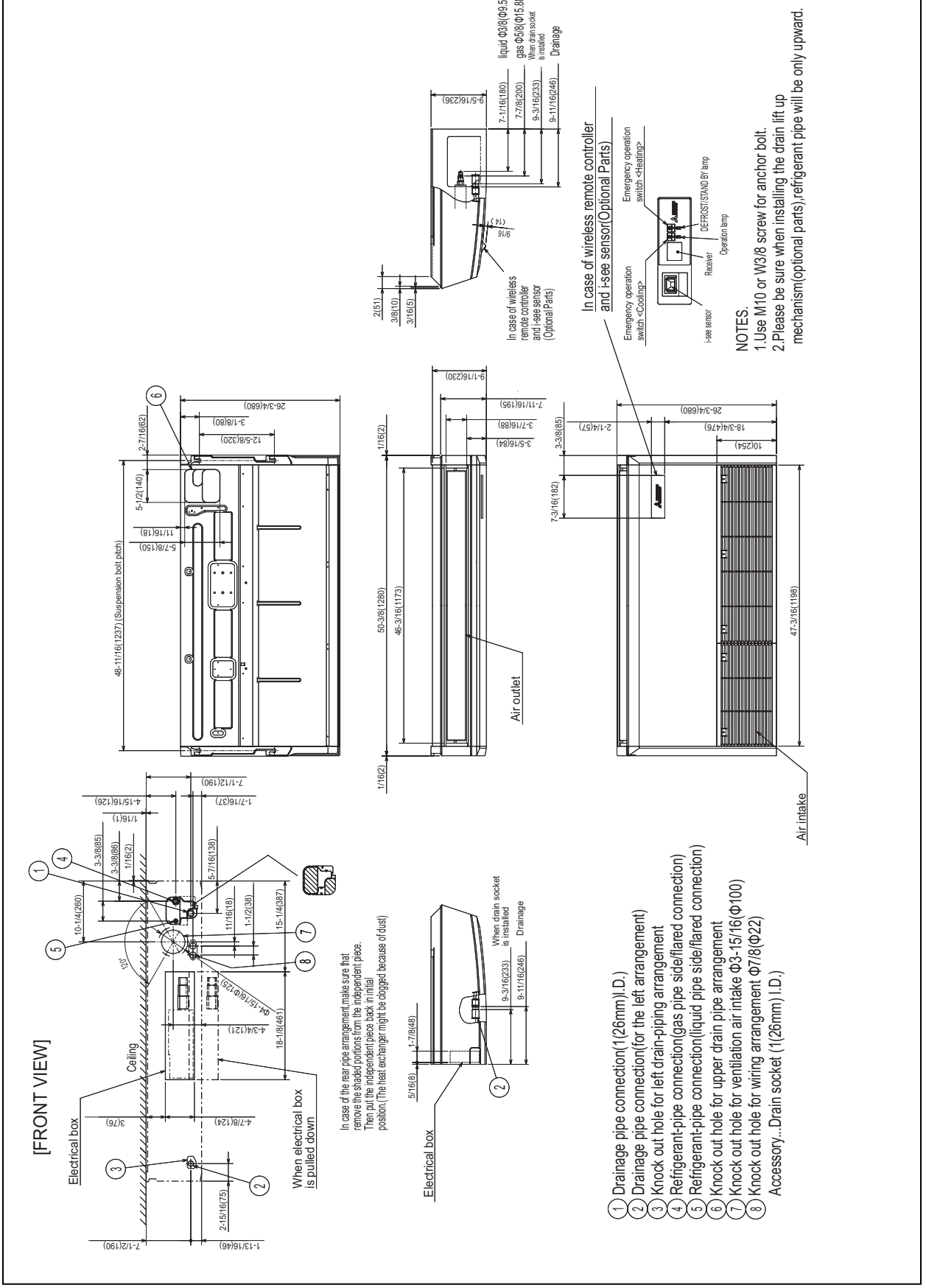
PCFY-P15NKMU-E

Unit : in(mm)



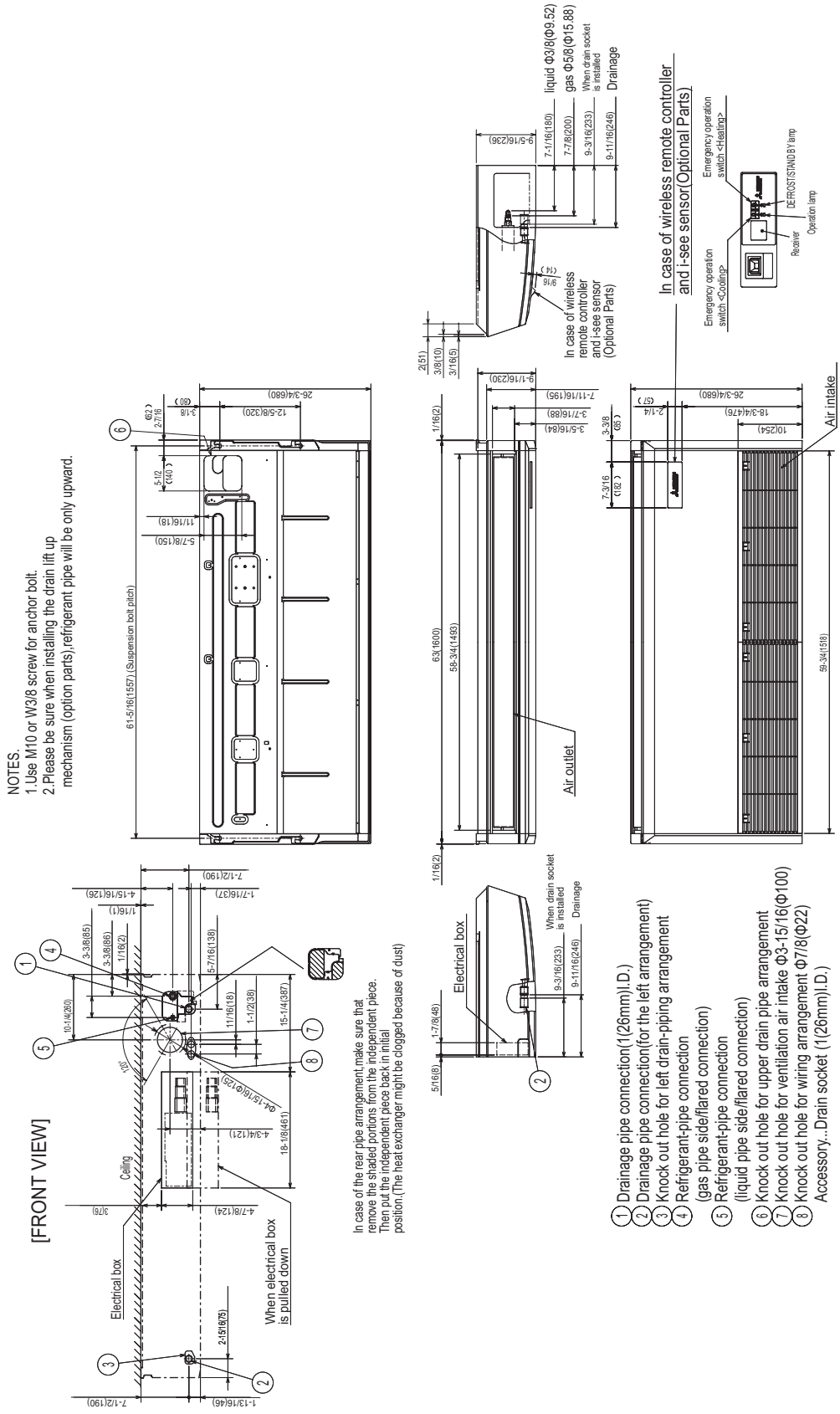
PCFY-P24NKMU-E

Unit : in(mm)

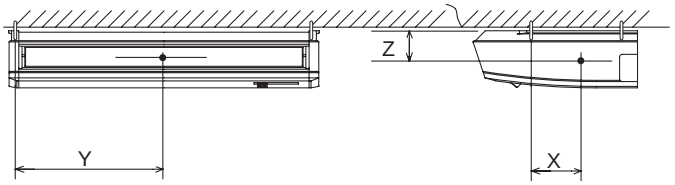


PCFY-P30, 36NKMU-E

Unit : in(mm)



PCFY-P15,24,30,36NKMU-E



in(mm)

Model	X	Y	Z
PCFY-P15NKMU-E	4-3/8(110)	17-3/4(450)	4-9/16(115)
PCFY-P24NKMU-E	4-3/8(110)	24-1/16(610)	4-9/16(115)
PCFY-P30NKMU-E	4-3/8(110)	30-3/8(770)	4-9/16(115)
PCFY-P36NKMU-E	4-3/8(110)	30-3/8(770)	4-9/16(115)

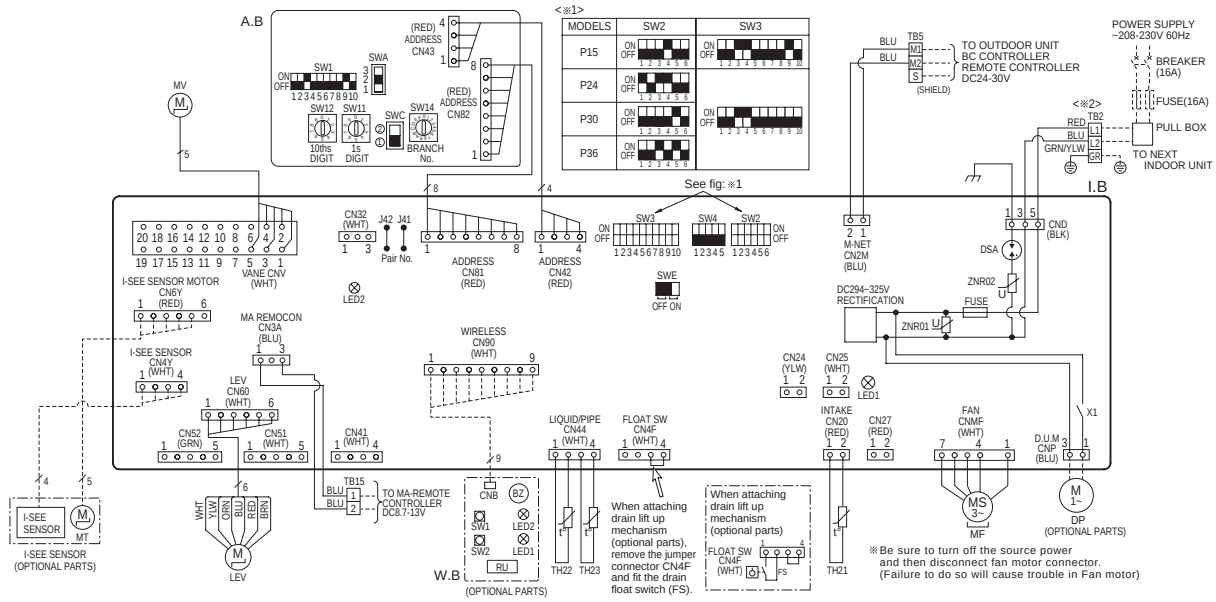
PCFY-P15, 24, 30, 36NKMU-E

[LEGEND]

SYMBOL		NAME		SYMBOL		NAME	
I. B		INDOOR CONTROLLER BOARD		TH22	THERMISTOR	PIPE TEMP. DETECTION / LIQUID (32°F/15KΩ, 77°F/5.4KΩ Detect)	
	CN24	CONNECTOR	EXTERNAL HEATER				
	CN27		DAMPER	TH23		PIPE TEMP. DETECTION / GAS (32°F/15KΩ, 77°F/5.4KΩ Detect)	
	CN32		REMOTE SWITCH				
	CN51		CENTRALLY CONTROL	A. B		ADDRESS BOARD	
	CN52		REMOTE INDICATION		SWA	SWITCH	CEILING HEIGHT SELECTOR
	DSA	SURGE ABSORBER			SWC		OPTION SELECTOR
	FUSE	FUSE (T6.3AL250V)			SW1		MODE SELECTION
	SW2	SWITCH	CAPACITY CODE		SW11		ADDRESS SETTING 1s DIGIT
	SW3		MODE SELECTION		SW12		ADDRESS SETTING 10ths DIGIT
	SW4		MODEL SELECTION		SW14		BRANCH No.
	SWE		DRAIN LIFT UP MECHANISM (TEST MODE)	OPTIONAL PARTS			
	X1	AUX. RELAY	DRAIN LIFT UP MECHANISM (OPTIONAL PARTS)		W.B		PCB FOR WIRELESS REMOTE CONTROLLER
	ZNR01,02	VARISTOR			BZ		BUZZER
LEV		LINEAR EXPANSION VALVE			LED1		LED (OPERATION INDICATION : GREEN)
MF		FAN MOTOR			LED2		LED (PREPARATION FOR HEATING : ORANGE)
MV		VANE MOTOR			RU		RECEVING UNIT
MT		I-SEE SENSOR MOTOR(OPTIONAL PARTS)			SW1		EMERGENCY OPERATION (HEAT / DOWN)
TB2		TERMINAL BLOCK	POWER SUPPLY		SW2		EMERGENCY OPERATION (COOL / UP)
TB5			TRANSMISSION		DP		DRAIN LIFT UP MECHANISM
TB15			MA-REMOTE CONTROLLER		FS		DRAIN FLOAT SWITCH
TH21		THERMISTOR	ROOM TEMP. DETECTION (32°F/15KΩ, 77°F/5.4KΩ Detect)				

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

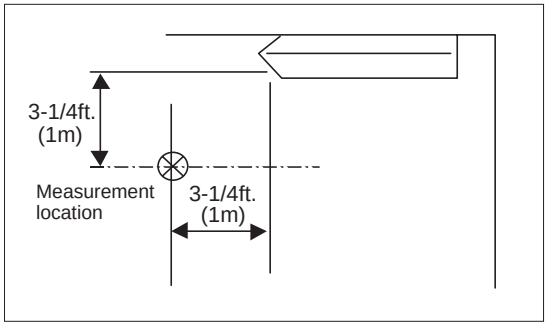


NOTES:
1.At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2.In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
3.In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4.Symbol [S] of TB5 is the shield wire connection.
5.Symbols used in wiring diagram above are, □□□: terminal block, ○○○: connecter.
6.The setting of the SW2 dip switches differs in the capacity. For the detail, refer to fig<※1>.

<※2>Use copper supply wires.

5-1. Sound Pressure Levels

Ceiling suspended



* Measured in anechoic room.

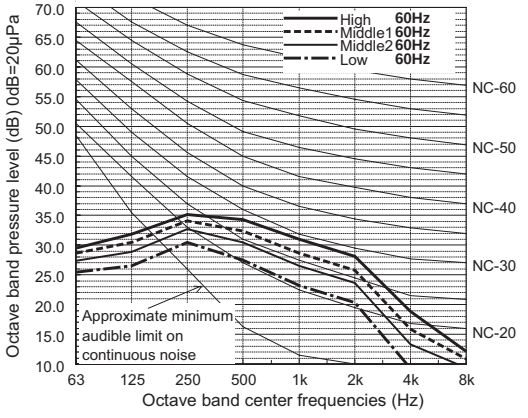
Sound level at anechoic room : Low-Middle2-Middle1-High

Model	Sound level dB (A)
PCFY-P15NKMU-E	29-32-34-36
PCFY-P24NKMU-E	31-33-35-37
PCFY-P30NKMU-E	34-37-40-43
PCFY-P36NKMU-E	36-39-42-44

5-2. NC Curves

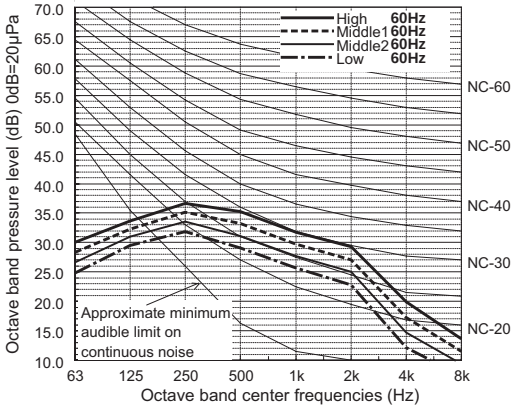
PCFY-P15NKMU-E

External Static Pressure: 0Pa (0 in. WG)
Power Source: 208-230V, 60Hz



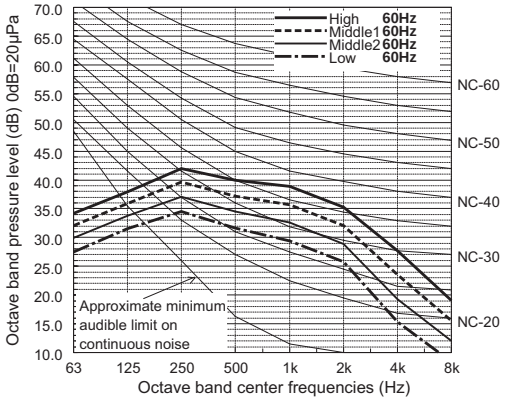
PCFY-P24NKMU-E

External Static Pressure: 0Pa (0 in. WG)
Power Source: 208-230V, 60Hz



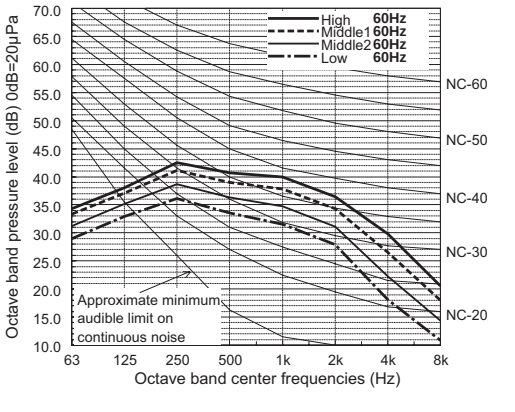
PCFY-P30NKMU-E

External Static Pressure: 0Pa (0 in. WG)
Power Source: 208-230V, 60Hz



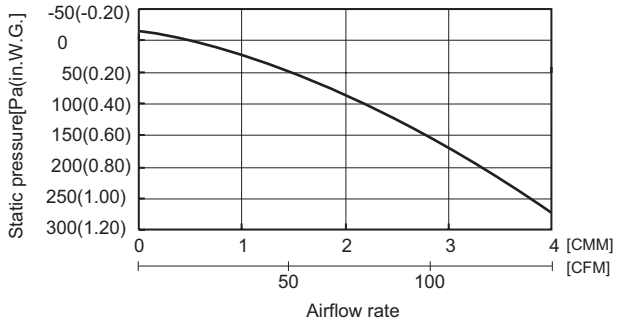
PCFY-P36NKMU-E

External Static Pressure: 0Pa (0 in. WG)
Power Source: 208-230V, 60Hz



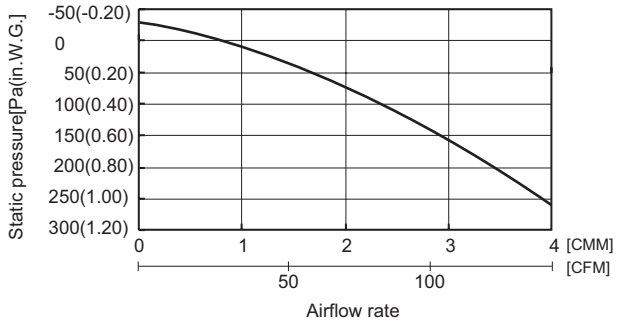
6. VENTILATION AIR INTAKE - STATIC PRESSURE CURVES

■ PCFY-P15NKMU-E

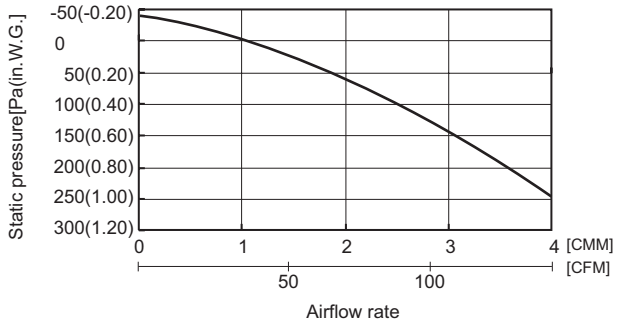


Note: An auxillary fan is required to bring outside air into the unit.

■ PCFY-P24NKMU-E



■ PCFY-P30, 36NKMU-E

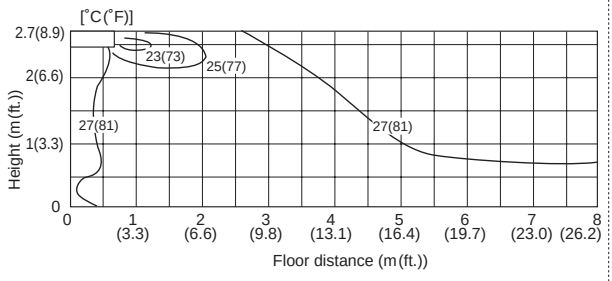


Note: To prevent sound issues, the airflow rate should be less than 75 CFM / inlet.

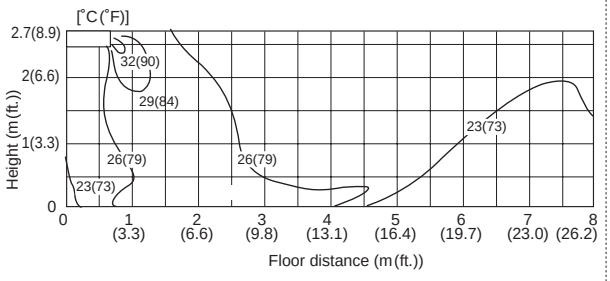
7-1. Temperature Distributions

PCFY-P15,24NKMU-E

<Cooling mode>
Flow angle : 10˚
Temperature setting : 27˚C(81˚F)
High notch

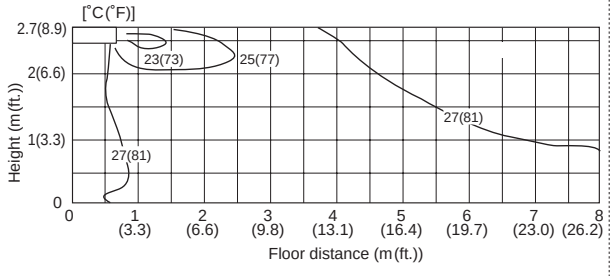


<Heating mode>
Flow angle : 60˚
Temperature setting : 20˚C(68˚F)
High notch

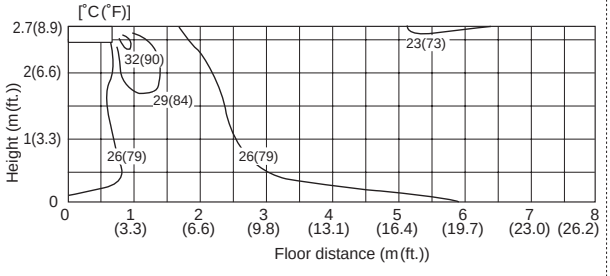


PCFY-P30,36NKMU-E

<Cooling mode>
Flow angle : 10˚
Temperature setting : 27˚C(81˚F)
High notch



<Heating mode>
Flow angle : 60˚
Temperature setting : 20˚C(68˚F)
High notch

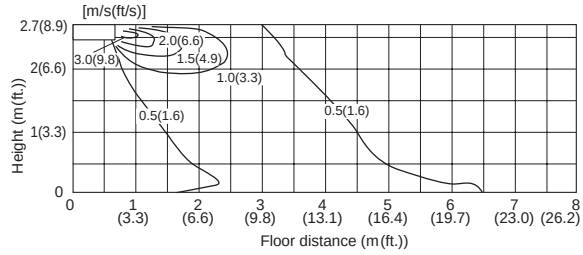


Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

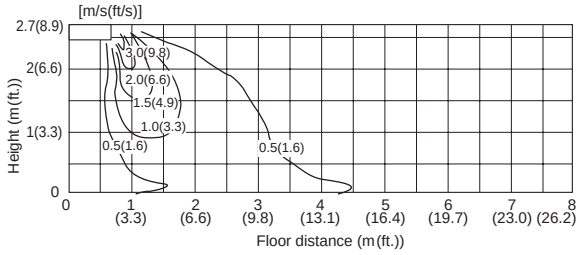
7-2. Airflow Distributions

PCFY-P15,24NKMU-E

<Cooling mode>
Flow angle : 10˚
Temperature setting : 27˚C(81˚F)
High notch
Ceiling height : 2.7m(8.9ft.)

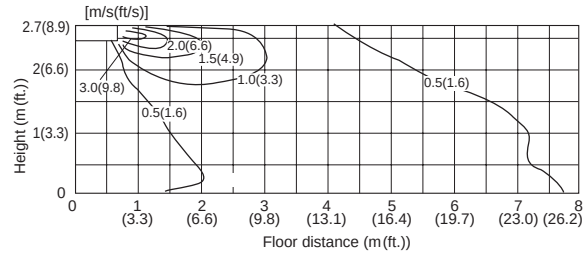


<Heating mode>
Flow angle : 60˚
Temperature setting : 27˚C(81˚F)
High notch
Ceiling height : 2.7m(8.9ft.)

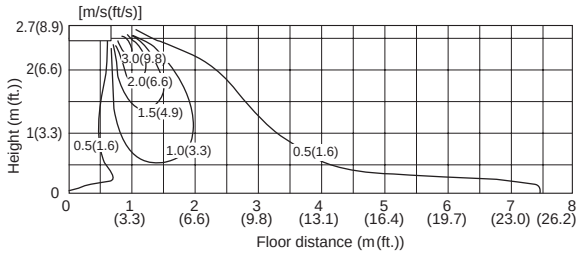


PCFY-P30,36NKMU-E

<Fan mode>
Flow angle : 10˚
Temperature setting : 27˚C(81˚F)
High notch
Ceiling height : 2.7m(8.9ft.)



<Fan mode>
Flow angle : 60˚
Temperature setting : 27˚C(81˚F)
High notch
Ceiling height : 2.7m(8.9ft.)



Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

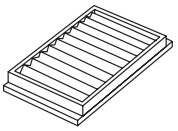
8. OPTIONAL PARTS

8-1. Optional Parts Line Up for the Indoor Unit

	High-efficiency filter (MERV 8)	Wireless remote controller kit	Drain pump
PCFY-P15NKMU-E	PAC-SH88KF-E	PAR-SL93B-E	PAC-SH83DM-E
PCFY-P24NKMU-E	PAC-SH89KF-E	PAR-SL93B-E	PAC-SH84DM-E
PCFY-P30,36NKMU-E	PAC-SH90KF-E	PAR-SL93B-E	PAC-SH84DM-E
	i-see Sensor	**Wireless remote controller with i-see Sensor**	**External heater adapter**
PCFY-P-NKMU-E	PAC-SH91MK-E	PAR-SA92MW-E	CN24RELAY-KIT-CM3

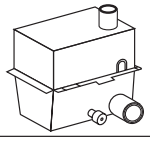
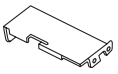
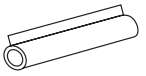
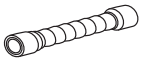
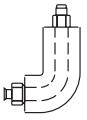
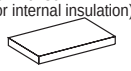
8-2. High-efficiency Filter (MERV 8) PAC-SH-KF-E for PCFY-P-NKMU-E

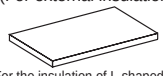
Material: Polypropylene Honeycomb
Gravimetric method: 70%

Item	PAC-SH88KF-E	PAC-SH89KF-E	PAC-SH90KF-E
Quantity	2 (Small)	1 (Small), 2 (Large)	2 (Large)
Shape			

8-3. Drain Pump PAC-SH-DM-E for PCFY-P-NKMU-E

If drain water can not flow out the Indoor unit by gravity and gradient, a drain pump is necessary.
Drain pump PAC-SH-DM-E can pump water up to 23-7/8 inches (600 mm) high from the ceiling.

Item	① Drain lift up mechanism	② Attachment	③ Screws (4×10)	④ VP-20 pipe	⑤ Pipe cover
Quantity	1	1	6	1	1
Shape		 ① Drain lift mechanism fixture	 For installating the drain lift mechanism ①		 For insulation of VP20 pipe④
Item	⑥ Flexible hose	⑦ Fastener	⑧ L-shaped pipe (gas pipe)	⑨ L-shaped pipe (liquid pipe)	⑩ Insulator A
Quantity	1	1	1	1	2
Shape					6t×220×80 (For internal insulation)  For the insulation of L-shaped pipes ⑧ and ⑨ and the refrigerant pipes.

Item	⑪ Insulator B
Quantity	2
Shape	3t×250×120 (For external insulation)  For the insulation of L-shaped pipes ⑧ and ⑨ and the refrigerant pipes.

Refer to the Installation Manual for detailed instructions.

8-4. Wireless Remote Controller Kit PAR-SL93B-E for PCFY-P-NKMU-E

Wireless remote controller receiver is built in.

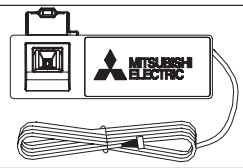
Item	① Wireless remote controller receiver	② Wireless remote controller	③ Remote control holder	④"AAA" LR3 alkanine batterise	⑤ 4.1 x 16 wood screw
Quantity	1	1	1	2	2

Item	⑥ Cord rataining clips	⑦ Connection cord fixing seal (12x30 size)
Quantity	2	1

Refer to the Installation Manual for detailed instructions.

8-5. i-see Sensor PAC-SH91MK-E for PCFY-P-NKMU-E

Sensor sweeps from side-to-side automatically motitoring the floor temperature over a wide area spanning 160°.
The "i-see Sensor" monitors floor-level temperature to ensure that optimum comfort is obtained throught the room.

Item	①i-see Sensor	
Quantity	1	
Shape		

Refer to the Installation Manual for detailed instructions.

8-6. Wireless Remote Controller Kit with i-see Sensor PAR-SA92MW-E for PCFY-P-NKMU-E

Wireless remote controller receiver is built-in type.

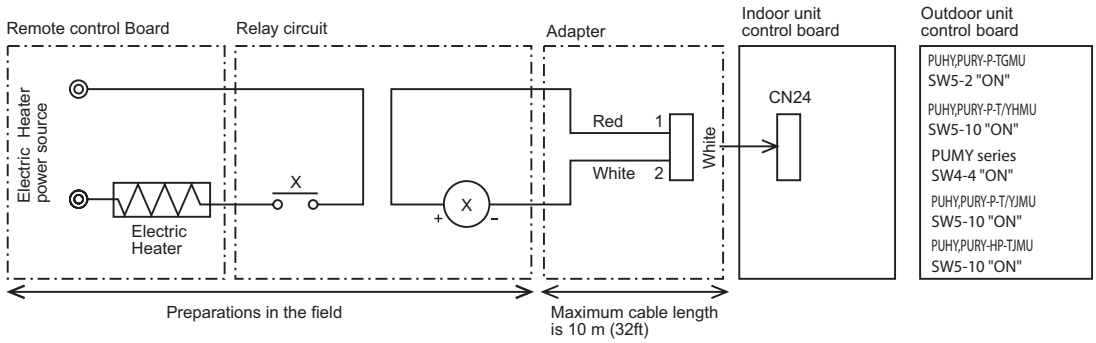
Item	①Wireless receiver with i-see sensor	② Wireless remote controller	③ Remote control holder	④"AAA" LR3 alkanine batterise	⑤ 4.1 x 16 wood screw
Quantity	1	1	1	2	2
Item	⑥ Cord rataining clips	⑦ Connection cord fixing seal (12x30 size)			
Quantity	2	1			

Refer to the Installation Manual for detailed instructions.

8-7. External Heater Adapter CN24RELAY-KIT-CM3 for PCFY-NKMU-E

External heater adaptor CN24RELAY-KIT-CM3 is a set of special wiring parts for controlling the electric heater* with the air conditioner system.
*The electric heater should be designed and prepared at the site.

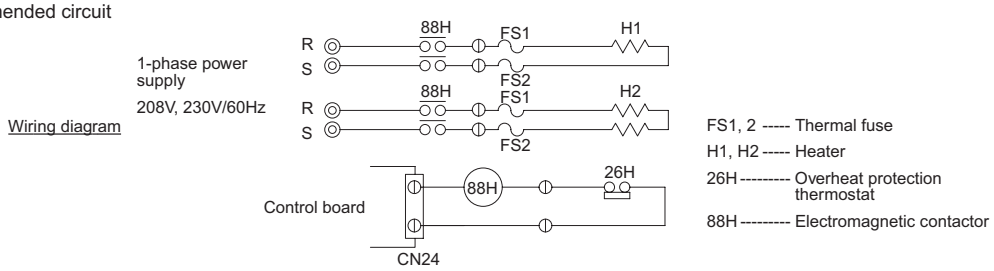
A basic connection method is shown as follows:(For details, refer to its Installation Manual.)

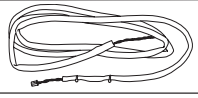
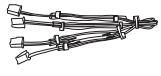


For relay X use the specifications given below Operation coil
- Rated voltage : 12VDC
- Power consumption : 0.9W or less

The length of the electrical wiring for the CN24RELAY-KIT-CM3 is 2 meters (6-1/2 ft)
To extend this length, use sheathed 2-core cable.
- Control cable type : CVV, CVS, CPEV or equivalent.
- Cable size : 0.5 mm^2 ~ 1.25 mm^2 (16 to 22 AWG)
- Don't extend the cable more than 10 meters (32ft)

Recommended circuit



Item	① External output cable	② Fan speed setting cable with resistance	
Quantity	2	2	
Shape			

Refer to the Installation Manual for wiring and installation details.

PCFY-P-NKMU-E