MITSUBISHI ELECTRIC

Changes for the Better

AIR CONDITIONING SYSTEMS

CITY MULTI

DATA BOOK

MODEL

PCFY-M-NKMU-A

CONTENTS

PCFY-M-NKMU-A

1. SPECIFICATIONS

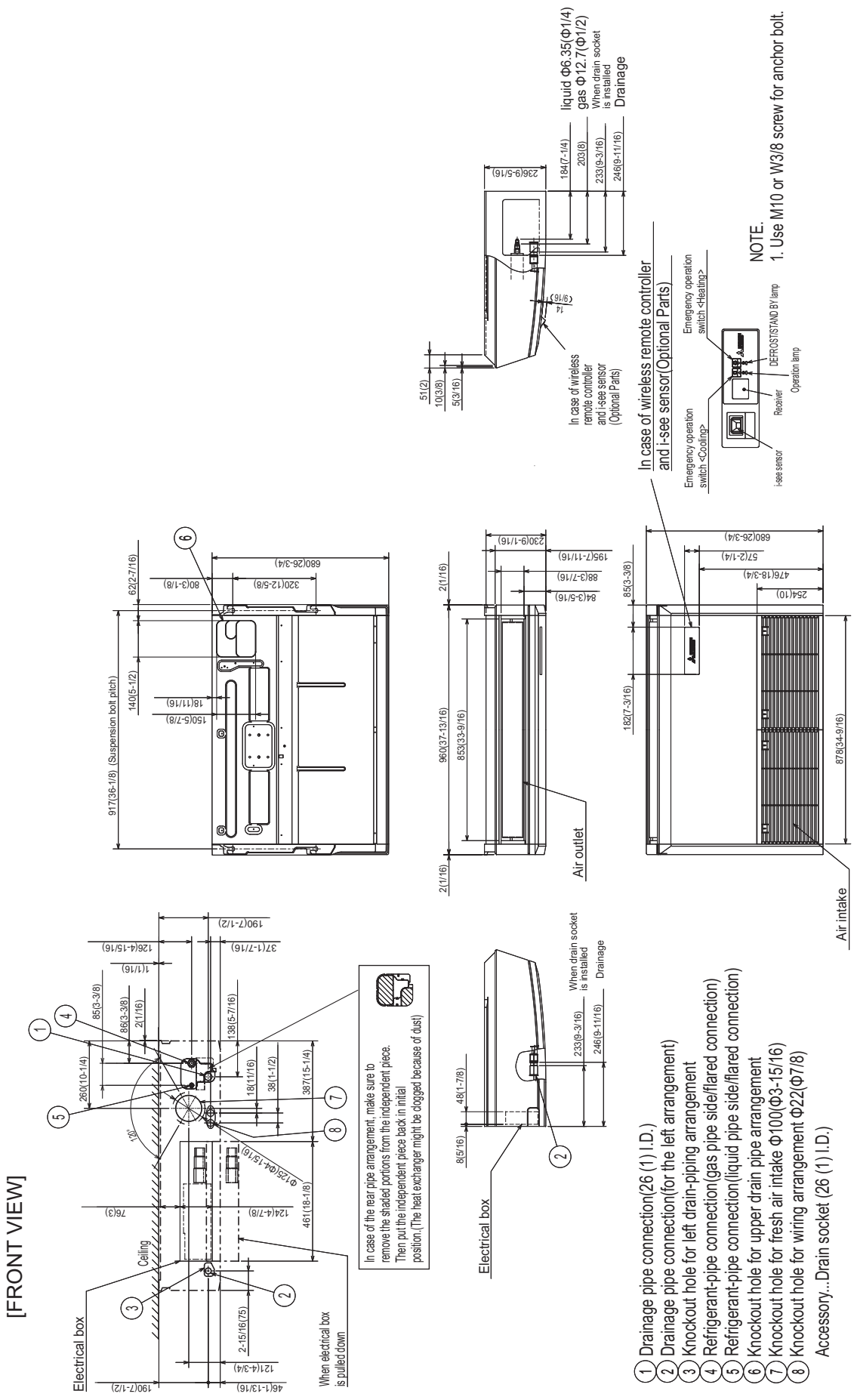
Model			PCFY-M15NKMU-A	PCFY-M24NKMU-A	PCFY-M30NKMU-A	PCFY-M36NKMU-A
Power source			1-phase 208/230V 60Hz	1-phase 208/230V 60Hz	1-phase 208/230V 60Hz	1-phase 208/230V 60Hz
Cooling capacity	*1	BTU / h	15,000	24,000	30,000	36,000
(Nominal)	*1	kW	4.4	7.0	8.8	10.6
	Power input	kW	0.03	0.04	0.09	0.11
	Current input	A	0.35	0.41	0.83	0.97
Heating capacity	*2	BTU / h	17,000	27,000	34,000	40,000
(Nominal)	*2	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	0.82	0.97
External finish			MUNSELL (6.4Y 8.9/0.4)	MUNSELL (6.4Y 8.9/0.4)	MUNSELL (6.4Y 8.9/0.4)	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)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	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 press.	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 driven by motor	Direct driven by motor	Direct driven by motor	Direct driven by motor
	Airflow rate	cfm	353-388-424-459	494-530-565-636	703-777-883-989	742-847-953-1095
	(Low-Mid2-Mid1-High)	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 (measured in anechoic room)		dB <A>	29-32-34-36	31-33-35-37	34-37-40-43	36-39-42-44
Insulation material			Polyethylene sheet	Polyethylene sheet	Polyethylene sheet	Polyethylene sheet
Air filter			PP honeycomb	PP honeycomb	PP honeycomb	PP honeycomb
Protection device			Fuse	Fuse	Fuse	Fuse
Refrigerant control device			LEV	LEV	LEV	LEV
Connectable outdoor unit			R32/R454B CITY MULTI	R32/R454B CITY MULTI	R32/R454B CITY MULTI	R32/R454B CITY MULTI
Diameter of refrigerant pipe	Liquid	in.(mm)	1/4(6.35) Flare	3/8(9.52) Flare	3/8(9.52) Flare	3/8(9.52) Flare
	Gas	in.(mm)	1/2(12.7) Flare	5/8(15.88) Flare	5/8(15.88) Flare	5/8(15.88) 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	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory		Drain joint socket	Drain joint socket	Drain joint socket	Drain joint socket
Optional parts	External heater adapter		PAC-YU25HT	PAC-YU25HT	PAC-YU25HT	PAC-YU25HT
	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		PAC-SH88KF-E	PAC-SH89KF-E	PAC-SH90KF-E	PAC-SH90KF-E
	Alarm Kit		PAC-SL54AL-E	PAC-SL54AL-E	PAC-SL54AL-E	PAC-SL54AL-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. * Due to continuing improvement, above specification may be subject to change without notice.			

Notes:	*1 Nominal cooling conditions	*2 Nominal heating conditions
Indoor:	80°F D.B./67°F W.B.	70°F D.B.
	(26.7°C D.B./19.4°C W.B.)	(21°C D.B.)
Outdoor:	95°F D.B.	47°F D.B./43°F W.B.
	(35°C D.B.)	(8.3°C D.B./6.1°C W.B.)
Pipe length:	25 ft. (7.6 m)	25 ft. (7.6 m)
Level difference:	0 ft. (0 m)	0 ft. (0 m)

Unit converter
BTU/h = kW x 3,412
cfm = m^3/min x 35.31
lbs = kg/0.4536
*The specification data is subject to rounding variation.

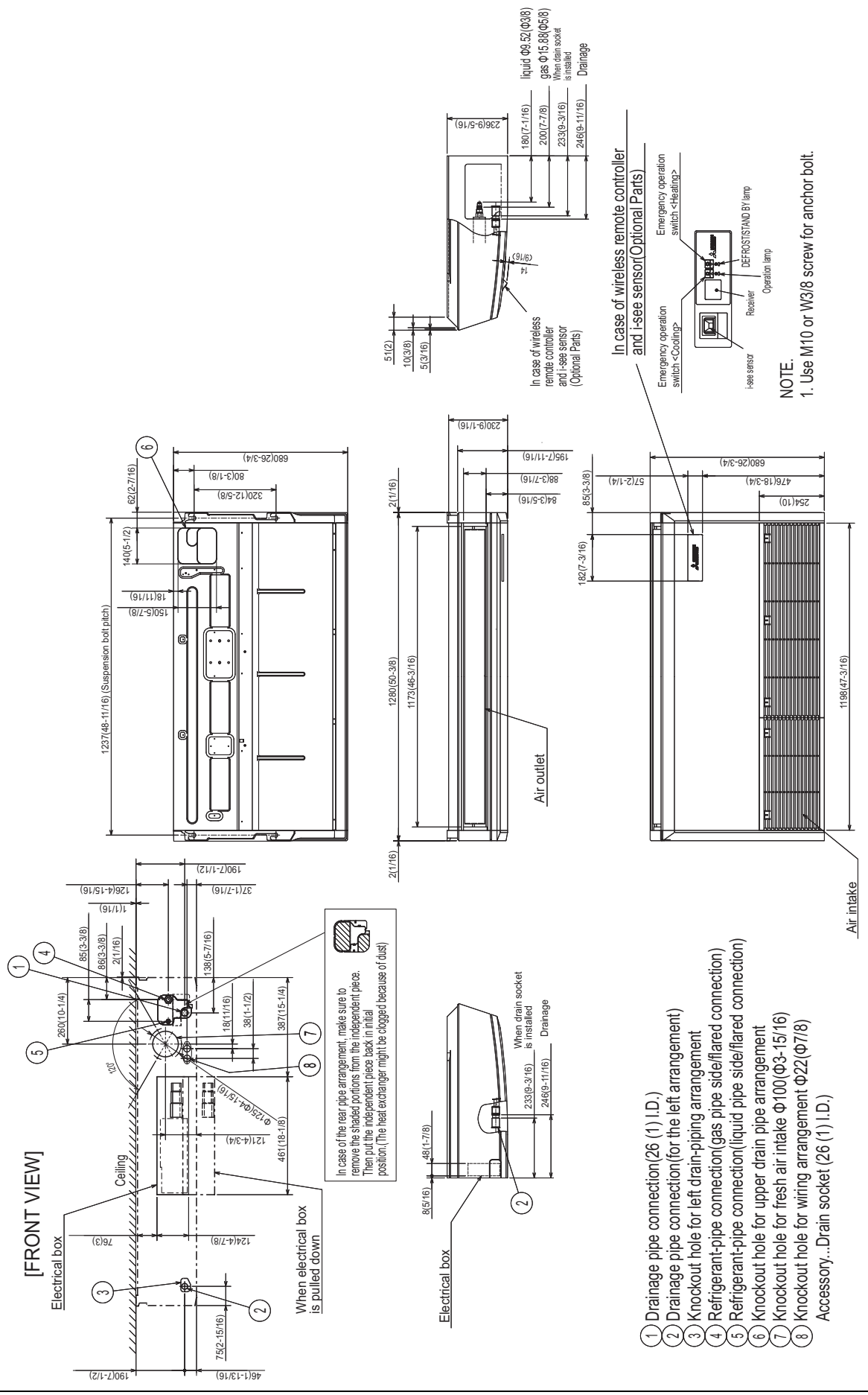
PCFY-M15NKMU-A

Unit: mm (in)



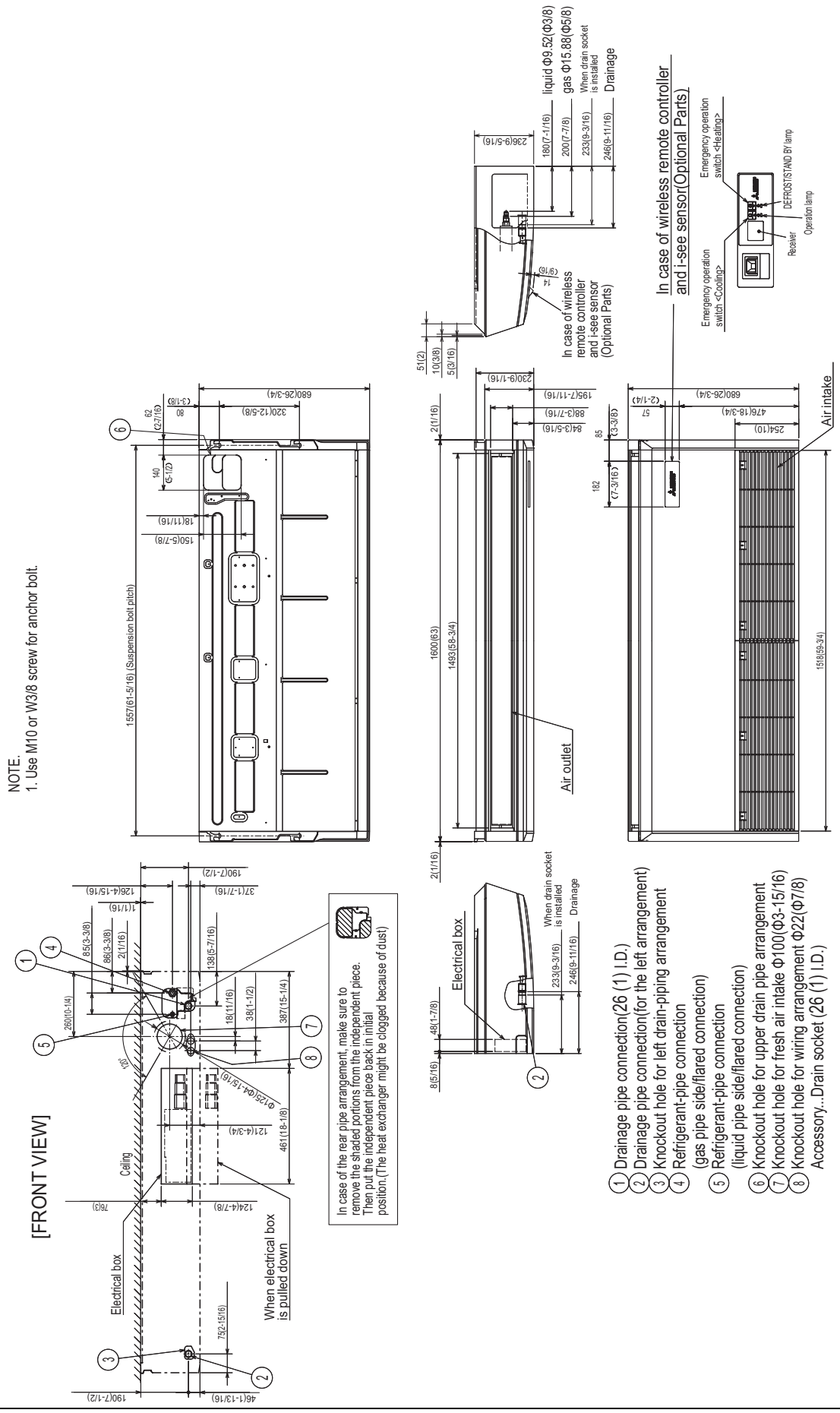
PCFY-M24NKMU-A

Unit: mm (in)

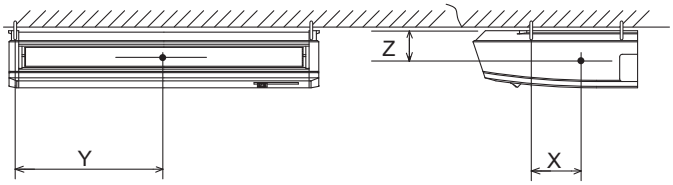


PCFY-M30, 36NKMU-A

Unit: mm (in)



PCFY-M15, 24, 30, 36NKMU-A



in (mm)

Model	X	Y	Z
PCFY-M15NKMU-A	4-3/8 (110)	17-3/4 (450)	4-9/16 (115)
PCFY-M24NKMU-A	4-3/8 (110)	24-1/16 (610)	4-9/16 (115)
PCFY-M30NKMU-A	4-3/8 (110)	30-3/8 (770)	4-9/16 (115)
PCFY-M36NKMU-A	4-3/8 (110)	30-3/8 (770)	4-9/16 (115)

PCFY-M15, 24, 30, 36NKMU-A

[LEGEND]

SYMBOL		NAME		SYMBOL		NAME	
I. B		INDOOR CONTROLLER BOARD		TB2	TERMINAL BLOCK	POWER SUPPLY	
	CN24	CONNECTOR	EXTERNAL HEATER	TB5		TRANSMISSION	
	CN32		REMOTE SWITCH	TB15		MA-REMOTE CONTROLLER	
	CN51		CENTRALLY CONTROL	TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)(32°F / 15kΩ, 77°F / 5.4kΩ)	
	CN52		REMOTE INDICATION				
	CN105		IT TERMINAL	TH22		PIPE TEMP. DETECTION / LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)(32°F / 15kΩ, 77°F / 5.4kΩ)	
	F1	FUSE (T6.3AL250V)					
	SW1	SWITCH	MODE SELECTION	TH23		PIPE TEMP. DETECTION / GAS (0°C / 15kΩ, 25°C / 5.4kΩ)(32°F / 15kΩ, 77°F / 5.4kΩ)	
	SW2		CAPACITY CODE				
	SW3		MODE SELECTION	OPTIONAL PARTS			
	SW11		ADDRESS SETTING 1s DIGIT	W.B		PCB FOR WIRELESS REMOTE CONTROLLER	
	SW12		ADDRESS SETTING 10s DIGIT		BZ	BUZZER	
	SW14		BRANCH No.		LED1	LED (OPERATION INDICATION : GREEN)	
	SW21		CEILING HEIGHT SELECTOR OPTION SELECTOR		LED2	LED (PREPARATION FOR HEATING : ORANGE)	
					RU	RECEVING UNIT	
	SW22		PAIR NO. SETTING		SW1	EMERGENCY OPERATION (HEAT / DOWN)	
	SWE		TEST MODE		SW2	EMERGENCY OPERATION (COOL / UP)	
LEV		LINEAR EXPANSION VALVE		MT		i-see Sensor MOTOR	
MF		FAN MOTOR					
MV		VANE MOTOR					

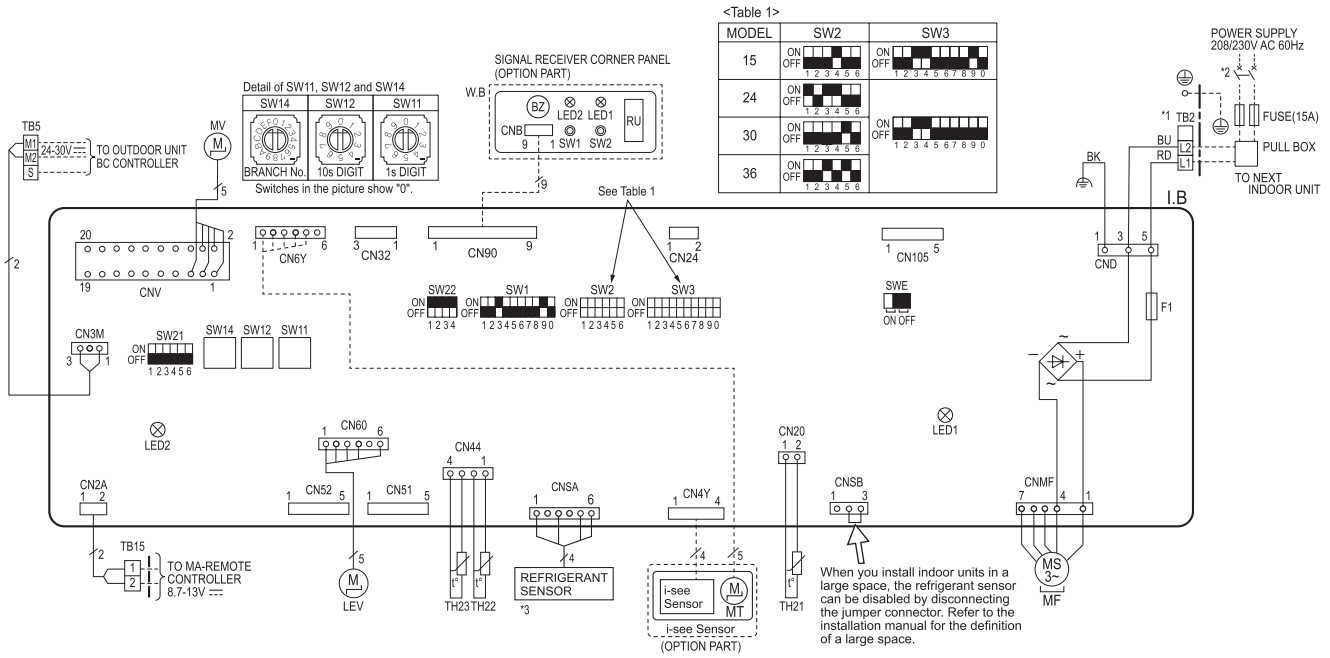
*1 Use copper supply wires.
Utiliser des fils d'alimentation en cuivre.

*2 A disconnect should be required by local code.
Se procurer un sectionneur conforme aux réglementations locales.

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:208/230V AC 60Hz) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

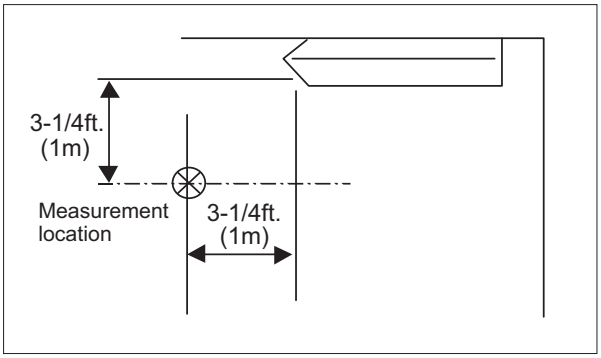
*3 This refrigerant sensor shall only be replaced with manufacturer approved sensor.
Ce capteur de réfrigérant ne doit être remplacé que par un capteur approuvé par le fabricant.



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. Symbol [S] of TB5 is the shield wire connection.
4. Symbols used in wiring diagram are, □□□: terminal block, ○○○, □□□: connector.
5. The setting of the SW2, SW3 differs in the capacity. For the detail, see Table 1.
6. The black square (■) in the wiring diagram indicates a switch position.

5-1. Sound levels

Ceiling suspended



* Measured in anechoic room.

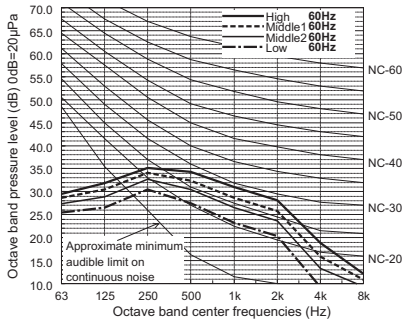
Sound level at anechoic room: Low-Middle2-Middle1-High

Model	Sound level dB (A)
PCFY-M15NKMU-A	29-32-34-36
PCFY-M24NKMU-A	31-33-35-37
PCFY-M30NKMU-A	34-37-40-43
PCFY-M36NKMU-A	36-39-42-44

5-2. NC curves

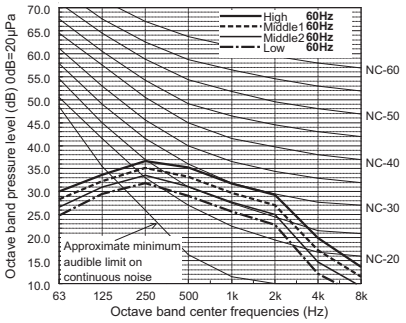
PCFY-M15NKMU-A

External Static Pressure: 0Pa [0.00 in.WG]
Power Source: 208-230V, 60Hz



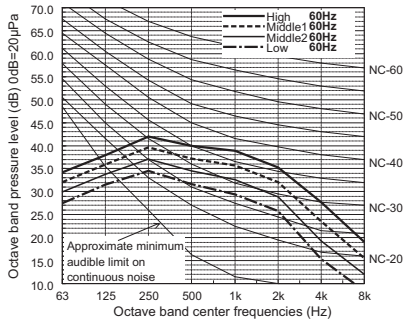
PCFY-M24NKMU-A

External Static Pressure: 0Pa [0.00 in.WG]
Power Source: 208-230V, 60Hz



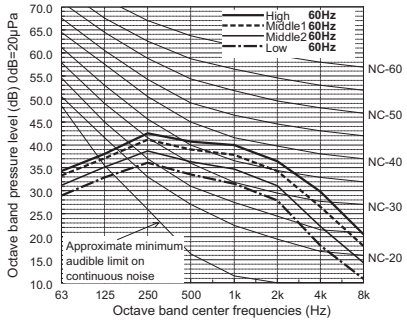
PCFY-M30NKMU-A

External Static Pressure: 0Pa [0.00 in.WG]
Power Source: 208-230V, 60Hz

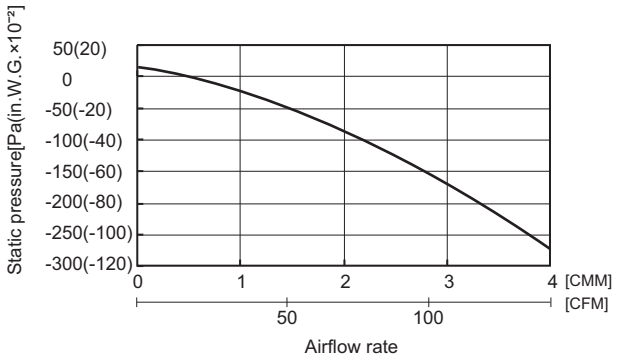


PCFY-M36NKMU-A

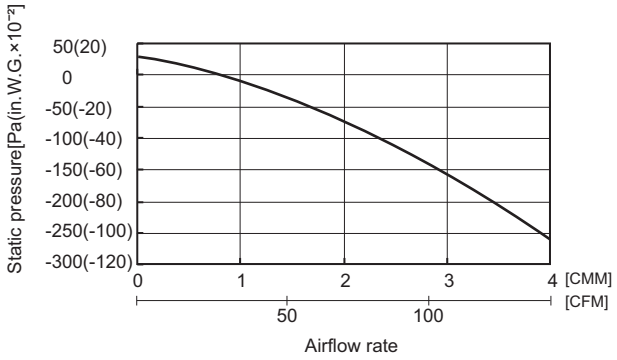
External Static Pressure: 0Pa [0.00 in.WG]
Power Source: 208-230V, 60Hz



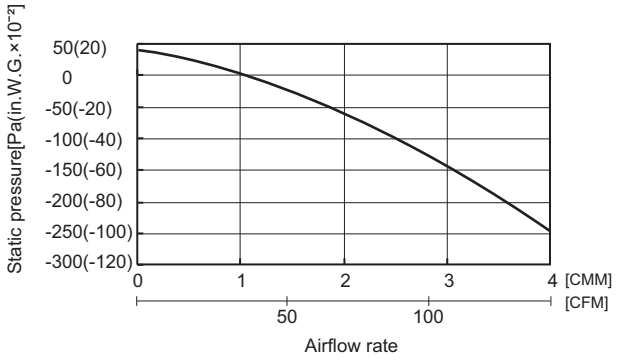
■ PCFY-M15NKMU-A



■ PCFY-M24NKMU-A



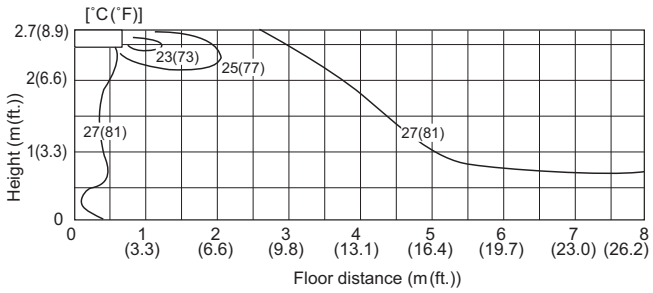
■ PCFY-M30, 36NKMU-A



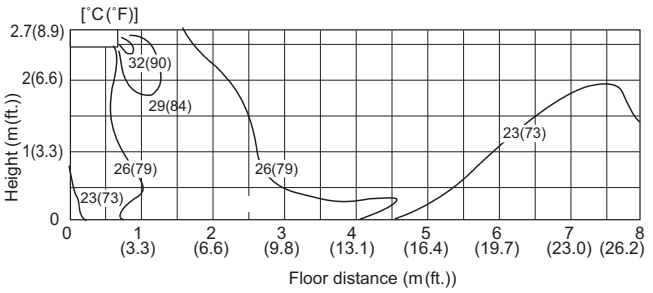
7-1. Temperature distributions

PCFY-M15-24NKMU-A

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

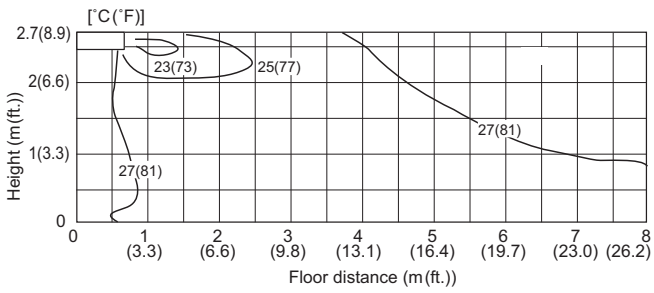


<Heating mode>
Flow angle : 60˚
Temperature setting : 20˚C(68˚F)
High notch

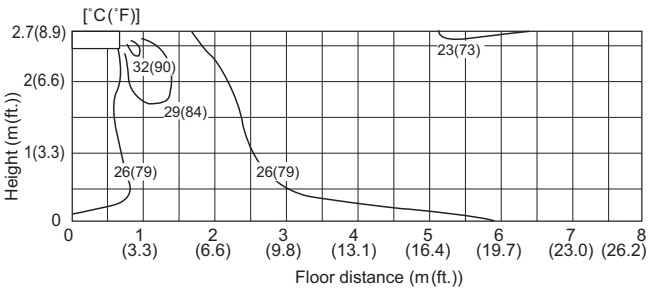


PCFY-M30-36NKMU-A

<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

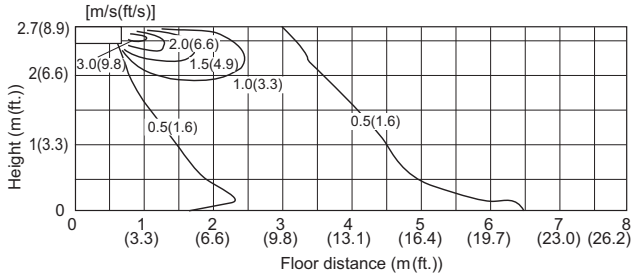


Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

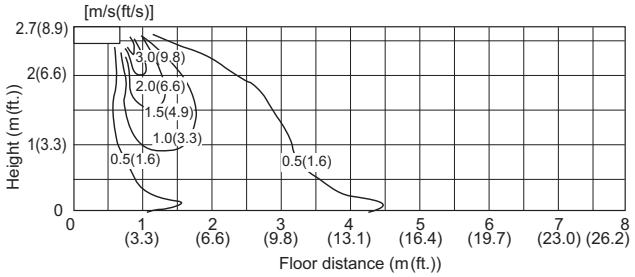
7-2. Airflow distributions

PCFY-M15-24NKMU-A

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

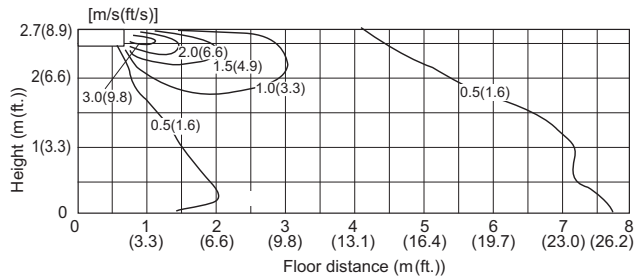


<Heating mode>
Flow angle : 60˚
Temperature setting : 27˚C(81˚F)
High notch
Ceiling height : 2.7m(8.9ft.)

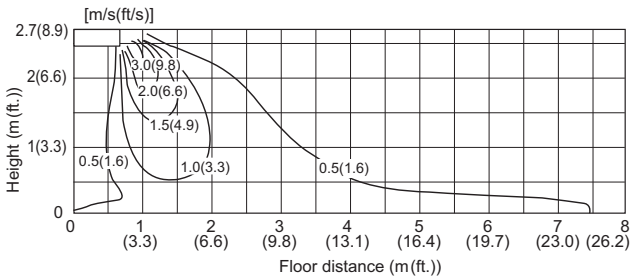


PCFY-M30-36NKMU-A

<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.

Symbols: MCA: Minimum Circuit Ampacity (= 1.25 x FLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

Model	Indoor Unit				IFM	
	Hz	Volts	Voltage range	MCA (A)	Output (kW)	FLA (A)
PCFY-M15NKMU-A	60Hz	208 / 230V	187 to 253V	0.44	0.090	0.35
PCFY-M24NKMU-A				0.51	0.095	0.41
PCFY-M30NKMU-A				1.04	0.160	0.83
PCFY-M36NKMU-A				1.21	0.160	0.97

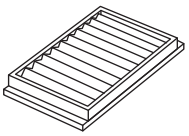
9-1. Optional parts line up for the Indoor unit

	High-efficiency filter	Wireless remote controller kit
PCFY-M15NKMU-A	PAC-SH88KF-E	PAR-SL93B-E
PCFY-M24NKMU-A	PAC-SH89KF-E	PAR-SL93B-E
PCFY-M30, 36NKMU-A	PAC-SH90KF-E	PAR-SL93B-E

	i-see Sensor	Wireless remote controller with i-see Sensor	External heater adapter	Alarm Kit	Power Supply Interface for Alarm Kit
PCFY-M-NKMU-A	PAC-SH91MK-E	PAR-SA92MW-E	PAC-YU25HT	PAC-SL54AL-E	PAC-IF55AL-E

9-2. High efficiency filter

Material: PP honeycomb
Gravimetric method: 70%

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

9-3. Wireless remote controller kit

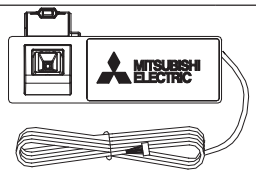
Wireless remote controller receiver is built-in type.

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			

Detailed installation information should be referred to its Installation Manual.

9-4. i-see Sensor

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		

Detailed installation information should be referred to its Installation Manual.

9-5. Wireless remote controller kit with i-see Sensor

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			

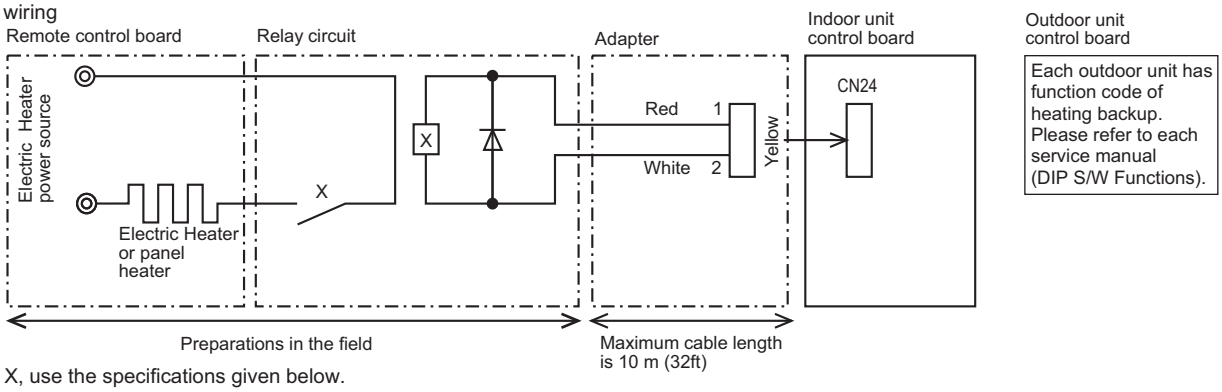
Detailed installation information should be referred to its Installation Manual.

9-6. External heater adapter

External heater adapter PAC-YU25HT 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.)

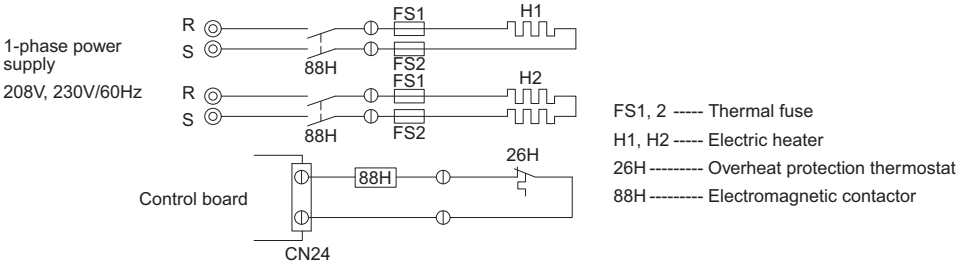
(1) Basic wiring

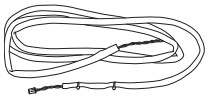
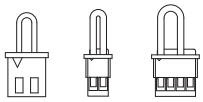


For relay X, use the specifications given below.
- Operation coil
- Rated voltage: 12VDC
- Power consumption: 0.9W or less
- * Use the diode that is recommended by the relay manufacturer at both ends of the relay coil.

The length of the electrical wiring for the PAC-YU25HT 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).

(2) Recommended circuit

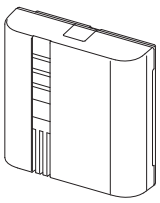
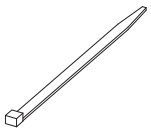


Item	① External output cable	② Connector (for use with the panel heater)	
Quantity	2	3	
Shape			

Wiring details and Installation details should be referred to its Installation Manual.

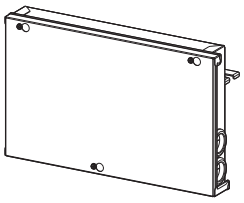
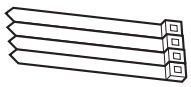
9-7. Alarm Kit

PAC-SL54AL-E

Use both Alarm Kit and Power Supply Interface to notice refrigerant leakage by the alarm beeping.			
Item	1 Body	2 Fixing screw	3 Cable tie
Quantity	1	2	1
Shape			

9-8. Power Supply Interface for Alarm Kit

PAC-IF55AL-E

Use both Alarm Kit and Power Supply Interface to notice refrigerant leakage by the alarm beeping.			
Item	1 Power Supply Interface for Alarm Kit	2 Fastener	3 Washer
Quantity	1	4	4
Shape			

⚠Warning

■ Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

■ Our air conditioning equipment and heat pumps contain a fluorinated greenhouse gas, R32/R454B.

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