

# AHU connection kit PAH3M-1 for PACi NX

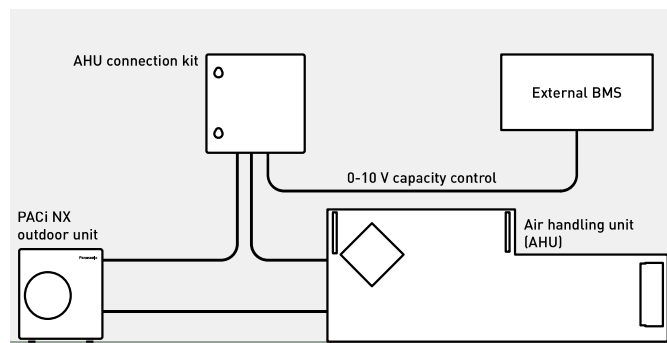
Compatible with R32 or R410A outdoor units.

The Panasonic AHU connection kits offer a wealth of connectivity possibilities, integrating easily into many systems.

Besides the advantages in terms of indoor air quality, air conditioning offers also an energy saving potential. For example, uncontrolled ventilation through open windows leads to large amounts of heat being lost to the outside during the heating season or gained from the outside during the cooling season. Whereas, combining heat recovery with air conditioning can allow for a high level of comfort whilst reducing the overall operating costs of running air conditioning alone.

The larger area of the comfort range, the better the energy saving opportunities.

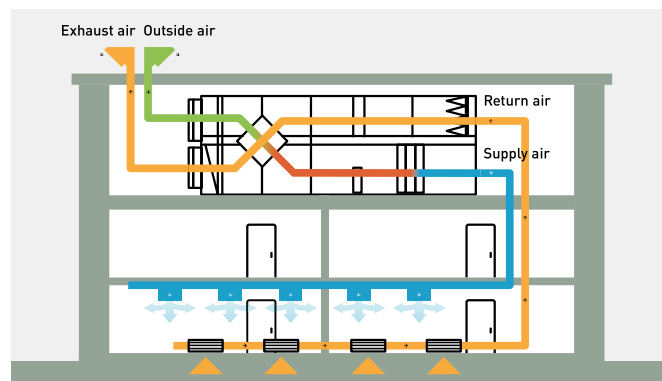
## System example with AHU connection kit PAH3M-1 and PACi NX outdoor unit



Demand control on the outdoor unit managed by external 0-10 V signal.

- AHU connection kit contains: IP 65 box with PCBs and terminal connections mounted inside, expansion valve and sensors
- Heat exchanger, fan and fan motor to be mounted in the AHU itself are field supplied

## Main components of mechanical ventilation systems



- Air handling unit (AHU)
- Air ducts
- Air distribution elements

## Control options

### Control option 1.

- The system's control is simple: control of actual suction temperature vs. set point
- Control works in the same way as that of any indoor unit
- Fan signal issued by the PCB (OFF while defrosting, for instance)

### Control option 2.

- System control by a 0-10 V control working from an external BMS that manages the set point for temperature or capacity. Enhances efficiency by adjusting capacity and enhances comfort as well
- All signals as standard

## 0-10 V control

With the 0-10 V demand control the capacity of the outdoor unit can be controlled by 20 steps.

| Input voltage* [V]            | 0                    | 1,0   | 1,5 | 2,0 | 2,5 | 3,0 | 3,5 | 4,0 | 4,5 | 5,0 | 5,5 | 6,0 | 6,5 | 7,0 | 7,5 | 8,0 | 8,5 | 9,0 | 9,5                                    |
|-------------------------------|----------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Demand [% of nominal current] | No cut <sup>1)</sup> | 40    | 45  | 50  | 55  | 60  | 65  | 70  | 75  | 80  | 85  | 90  | 95  | 100 | 105 | 110 | 115 | 120 | No limit / Full capacity <sup>2)</sup> |
| Indoor unit start / stop      | Stop <sup>1)</sup>   | Start |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |

1) No cut / stop: AHU system / indoor unit is completely switched OFF.

2) No limit: No restrictions applied by BMS to AHU system / indoor unit performance (equivalent to "full-load operation" of AHU system / indoor unit).

## AHU connection kit.

PCB, power trans, terminal block.



Thermistor x2 (refrigerant: E1, E2).



Thermistor (air: TA; 1 sensor).



Wired remote controller. CZ-RTC6BL.



## Optional controller.

Timer remote controller. CZ-RTC5B.



## AHU connection kit PAH3M-1 for PACi NX



PACi

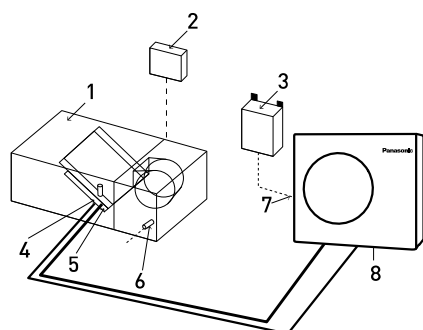
CONEX



CONEX Bluetooth®  
control built-in.  
CZ-RTC6BL



| PAW-280PAH3M-1                           |                |           | 2,5 kW          | 3,6 kW          | 5,0 kW          | 6,0 kW          | 7,5 kW          | 10,0 kW         | 12,5 kW         | 14,0 kW         | 20,0 kW         | 25,0 kW         |
|--|----------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Dimension                                | H x W x D      | mm        | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 | 500 x 400 x 150 |
| Net weight                               |                | kg        | 11,5            | 11,5            | 11,5            | 11,5            | 11,5            | 11,5            | 11,5            | 11,5            | 11,5            | 11,5            |
| Piping diameter                          | Liquid         | Inch (mm) | 1/4 (6,35)      | 1/4 (6,35)      | 1/4 (6,35)      | 3/8 (9,52)      | 3/8 (9,52)      | 3/8 (9,52)      | 3/8 (9,52)      | 3/8 (9,52)      | 3/8 (9,52)      | 1/2 (12,70)     |
|  | Gas            | Inch (mm) | 1/2 (12,70)     | 1/2 (12,70)     | 1/2 (12,70)     | 5/8 (15,88)     | 5/8 (15,88)     | 5/8 (15,88)     | 5/8 (15,88)     | 5/8 (15,88)     | 1 (25,40)       | 1 (25,40)       |
| Intake temperature of AHU connection kit | Cool Min ~ Max | °C DB     | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         | 18 ~ 32         |
|  | Cool Min ~ Max | °C WB     | 14 ~ 25         | 14 ~ 25         | 14 ~ 25         | 14 ~ 25         | 14 ~ 25         | 14 ~ 25         | 14 ~ 25         | 14 ~ 25         | —               | —               |
|  | Heat Min ~ Max | °C        | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         | 16 ~ 30         |
| <b>With PACi NX Elite</b>                |                |           |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| Cooling capacity                         |                | kW        | —               | 3,6             | 5,0             | 6,0             | 7,1             | 10,0            | 12,5            | 14,0            | 19,0            | 22,0            |
| Heating capacity                         |                | kW        | —               | 4,0             | 5,6             | 7,0             | 8,0             | 11,2            | 14,0            | 16,0            | 22,4            | 24,0            |
| Air flow                                 | Min / Max      | m³/h      | —               | 540/870         | 630/990         | 780/1320        | 780/1320        | 900/2160        | 1140/2280       | 1200/2400       | 2160/8000       | 2160/9000       |
| Pipe length range                        |                | m         | —               | 3 ~ 40          | 3 ~ 40          | 3 ~ 40          | 5 ~ 50          | 5 ~ 85          | 5 ~ 85          | 5 ~ 85          | 5 ~ 100         | 5 ~ 100         |
| Elevation difference (in / out)          | Max            | m         | —               | 30              | 30              | 30              | 30              | 30              | 30              | 30              | 30              | 30              |
| Ambient temperature of outdoor unit      | Cool Min ~ Max | °C        | —               | -15 ~ +46       | -15 ~ +46       | -15 ~ +46       | -15 ~ +46       | -20 ~ +48       | -20 ~ +48       | -20 ~ +48       | -15 ~ +52       | -15 ~ +52       |
|  | Heat Min ~ Max | °C        | —               | -20 ~ +24       | -20 ~ +24       | -20 ~ +24       | -20 ~ +24       | -20 ~ +24       | -20 ~ +24       | -20 ~ +24       | -20 ~ +35       | -20 ~ +35       |
| <b>With PACi NX Standard</b>             |                |           |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| Cooling capacity                         |                | kW        | 2,5             | 3,6             | 5,0             | 6,0             | 7,1             | 10,0            | 12,5            | 14,0            | —               | —               |
| Heating capacity                         |                | kW        | 3,2             | 4,0             | 5,0             | 6,0             | 7,1             | 10,0            | 12,5            | 14,0            | —               | —               |
| Air flow                                 | Min / Max      | m³/h      | 360 / 570       | 540/870         | 630/990         | 780/1320        | 780/1320        | 900/2160        | 1140/2280       | 1200/2400       | —               | —               |
| Pipe length range                        |                | m         | 3 ~ 15          | 3 ~ 15          | 3 ~ 20          | 3 ~ 40          | 3 ~ 40          | 5 ~ 50          | 5 ~ 50          | 5 ~ 50          | —               | —               |
| Elevation difference (in / out)          | Max            | m         | 30              | 30              | 30              | 30              | 30              | 30              | 30              | 30              | —               | —               |
| Ambient temperature of outdoor unit      | Cool Min ~ Max | °C        | -10 ~ +43       | -10 ~ +43       | -10 ~ +43       | -10 ~ +43       | -10 ~ +43       | -10 ~ +43       | -10 ~ +43       | -10 ~ +43       | —               | —               |
|  | Heat Min ~ Max | °C        | -15 ~ +24       | -15 ~ +24       | -15 ~ +24       | -15 ~ +24       | -15 ~ +24       | -15 ~ +24       | -15 ~ +24       | -15 ~ +24       | —               | —               |



## System and regulations. System overview.

- 1 | AHU equipment (field supplied)
- 2 | AHU system controller (field supplied)
- 3 | AHU connection kit controller box (with control PCB)
- 4 | Thermistor for gas pipe (E2)
- 5 | Thermistor for liquid pipe (E1)
- 6 | Thermistor for suction air
- 7 | Inter-unit wiring
- 8 | Outdoor unit

|                  | Air flow volume m³/min |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
|------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|
| Outdoor unit     | 360                    | 510 | 540 | 570 | 630 | 720 | 780 | 870 | 900 | 960 | 990 | 1,080 | 1,170 | 1,200 | 1,320 | 1,450 | 1,500 | 1,600 | 1,740 | 1,800 | 1,900 | 2,000 | 2,160 | 2,280 | 2,300 | 2,400 | 2,520 | 2,610 | 2,640 | 2,800 | 2,970 | 3,000 | 3,480 | 3,600 |  |  |  |  |
| PACi NX Elite    |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-36PZH3E5       |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-50PZH3E5       |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-60PZH3E5       |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-71PZH4E5/8     |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-100PZH4E5/8    |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-125PZH4E5/8    |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-140PZH4E5/8    |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| PACi NX Standard |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-25PZ3E5        |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-36PZ3E5        |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-50PZ3E5        |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-60PZ3E5        |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-71PZ3E5        |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-100PZ3E5/8     |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-125PZ3E5/8     |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| U-140PZ3E5/8     |                        |     |     |     |     |     |     |     |     |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |

Maximum allowed air volume flow under "Standard conditions".

Higher maximum allowed air volume flow under "Special conditions" <sup>1)</sup>: Maximum allowed air intake temperature at AHU DX coil heat exchanger in cooling mode is restricted to 30 °C DB.<sup>1)</sup> Using an AHU unit with a higher maximum allowed air volume flow is subject to a restriction of the "Air intake temperature" to 30 °C DB [instead of 32 °C WB under standard conditions].