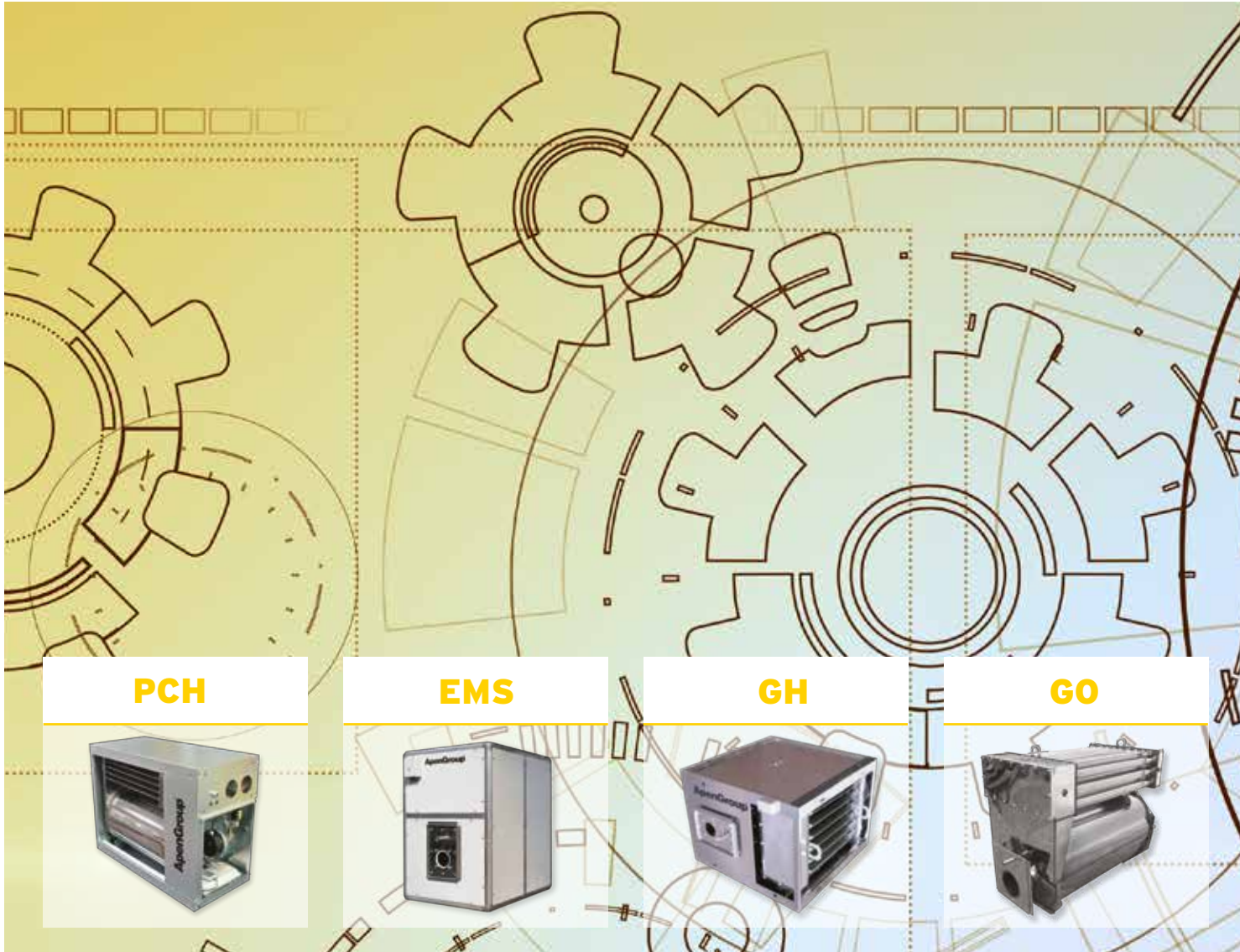


# ApenGroup®



Heat Exchangers for Industrial Processes,  
Air Handling Units and Roof Tops

**ApenGroup®**

# PCH

HEAT EXCHANGER MODULES FOR AHU AND ROOFTOP



**A SYSTEM  
SINGLE MODULE**



**B SYSTEM  
HORIZONTAL MODULE.**



**C SYSTEM  
VERTICAL MODULE.**



**ErP  
2021**



# PCH HEAT EXCHANGERS MODULES

## HEAT EXCHANGER MODULES FOR AHU AND ROOFTOP

### DESCRIPTION

High efficiency condensing heating module in AISI 441 stainless steel, equipped with a premix burner with low NOx emissions, with efficiencies higher than 108%, thanks to condensation and modulation technology.

### TECHNICAL FEATURES

- Power range from 5 kW to 400 kW.
- Very high efficiency, up to 108%.
- Combustion chamber made of AISI 441 stainless steel, heat exchanger pipes and fume collection box made of AISI 441 stainless steel, with low carbon content.
- Premix modulating gas burner, class 5 low NOx emissions in compliance with EN 17082 2019 standard.
- Sealed combustion circuit.
- Electronic card for continuous power modulation controlled by a microprocessor and it includes a 0-10 Vdc input signal.
- Multifunction LCD display for management, module configuration and diagnostics of all the units' operating parameters.
- Compliant with all EC applicable regulations.

### STANDARD ACCESSORIES

- Kit for conversion to LPG.
- Kit siphon for condensate drain.
- A connection for inlet combustion air.
- A combustion air intake terminal for application of B23 type
- A connection for flue gas exhaust.

### ACCESSORIES ON REQUEST

PCH exchanger modules are provided with a front panel made of galvanized sheet not suitable for outdoor installation and without door panel.

A kit including one front panel and one door panel is available upon request.

### NOTE

The module is supplied for natural gas operation as standard set. For conversion to LPG, use the special kit supplied as standard.

### SAFETY AND CONTROL DEVICES

The safety and control devices are constituted by:

- Safety thermostat with manual reset and positive safety;
- Electronic ignition device for the burner and ionization flame control device;
- Ignition and flame detection electrodes.
- Condensate detection electrode in the siphon

### CAD DRAWINGS

When ordering the PCH modules, ask for its size drawings. We supply drawings in 3D CAD format to ease your assembling work of the PCH module into your installation!

### MULTIFUNCTION LCD DISPLAY

The PCH module is fitted as standard with a multifunction LCD panel located inside the burner housing, and is used to control, configure and diagnose all operating parameters of the equipment.



# PCH HEAT EXCHANGER MODULES - A SYSTEM

## DESCRIPTION

### TECHNICAL FEATURES

- CONDENSING exchanger module.
- The shape of the combustion chamber, made of AISI 441 stainless steel, assures optimal heat exchange and reduces pressure drops.
- High-efficiency heat exchanger made of stainless steel with low carbon content.
- Sealed combustion circuit.
- Efficiency beyond 108% Hi of NCV (Net Calorific Value).
- Premix modulating gas burner, Class 5 low NOx emissions in compliance with EN1020/2009 standards.
- Electronic card for continuous power modulation controlled by a microprocessor and it includes a 0-10 Vdc input
- An advanced technique of air/gas mixing guarantees total safety. The gas valve delivers fuel according to the air:gas ratio that was set in the factory.
- If combustion air fails, the gas valve shuts up. If combustion air decreases, the valve automatically reduces the gas flow while maintaining optimal combustion parameters.
- Safety and control devices.
- Safety thermostat.
- 230 V /1ph/ 50 Hz Power supply.
- Compliant with all EC applicable regulations.

### STANDARD ACCESSORIES

- Kit for conversion to LPG.
- Multifunction LCD display for management, module configuration and diagnostics of all the unit's operating parameters.



### A - SINGLE MODULE

Consist of a single exchanger.

The range includes 6 models for PCH with maximum power output up to 100 kW.

The modules can be installed either vertically or horizontally, depending on the air flow direction.

If the installation is with **VERTICAL** air flow direction, this must be indicated when ordering. For example: PCHxxx-**00VO**.

## PCH SERIES - A SYSTEM

| Useful Heat Output* |        | Efficiency |       | Nominal Heat Input | Minimum Air Flow** | Model    |
|---------------------|--------|------------|-------|--------------------|--------------------|----------|
| max kW              | min kW | max %      | min % | kW                 | m³/h               | Code     |
| 18,18               | 4,97   | 104,63     | 95,68 | 19,00              | 1490               | PCH020IT |
| 33,56               | 8,13   | 106,97     | 96,3  | 34,85              | 2750               | PCH034IT |
| 40,45               | 8,97   | 105,5      | 96,3  | 42,00              | 3330               | PCH045IT |
| 62,93               | 13,4   | 108,06     | 96,82 | 65,00              | 5160               | PCH065IT |
| 80,03               | 17,77  | 108,35     | 97,6  | 82,00              | 6560               | PCH080IT |
| 97,15               | 22,77  | 108,4      | 97,15 | 100,00             | 7960               | PCH105IT |

\* with standard ventilation

\*\* Minimum air flow has been calculated for a  $\Delta t$  value of 35°C. For process plants or special applications, with  $\Delta t$  value > 40°C, please contact Apen Group.

### FRONT PANEL KIT (\*)

| Code   | Description                     | Model      |
|--------|---------------------------------|------------|
| G28881 | PCH 020/034 EXTERNAL PANELS KIT | PCH020/034 |
| G28882 | PCH 045/065 EXTERNAL PANELS KIT | PCH045/065 |
| G28883 | PCH 080/105 EXTERNAL PANELS KIT | PCH080/105 |

(\*) Front panel kit includes three panels: front panel, door panel and rain protection profile.

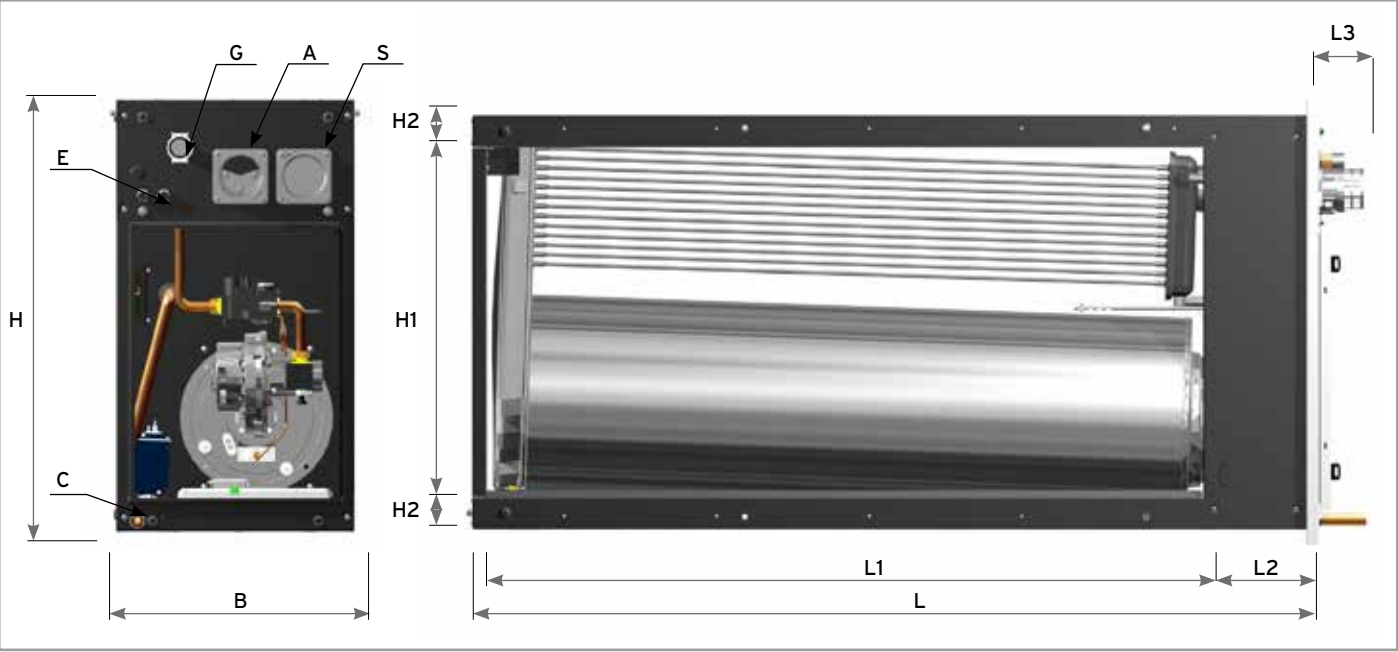
### LOW TEMPERATURES KIT (FOR INSTALLATION IN AMBIENT TEMPERATURE < -15°C)

| Code   | Description                  |
|--------|------------------------------|
| G28510 | Low temperature kit for PCH* |

\* One kit is required for each module.

# PCH HEAT EXCHANGER MODULES - A SYSTEM

## DIMENSIONS (mm)



| Model  | B   | H   | L    | H1  | H2 | H3 | L1   | L2  | L3 | E         | G             | A    | S    | C           |
|--------|-----|-----|------|-----|----|----|------|-----|----|-----------|---------------|------|------|-------------|
| PCH020 | 450 | 660 | 710  | 534 | 63 | -  | 450  | 230 | 47 | 2X<br>Ø21 | 3/4"<br>GAS M | Ø 80 | Ø 80 | ½"<br>GAS M |
| PCH034 |     |     |      |     |    |    |      |     |    |           |               |      |      |             |
| PCH045 |     | 730 | 950  | 604 |    |    | 690  |     |    |           |               |      |      |             |
| PCH065 |     |     | 1250 |     |    |    | 990  |     |    |           |               |      |      |             |
| PCH080 |     | 815 | 1440 | 689 |    |    | 1180 |     |    |           |               |      |      |             |
| PCH105 |     |     | 1670 |     |    |    | 1410 |     |    |           |               |      |      |             |

KEY:

**E:** Electrical connections    **G:** Gas connections    **A:** Intake    **S:** Flue gas drainage    **C:** Condensate drainage



# PCH HEAT EXCHANGER MODULES - B SYSTEM

## DESCRIPTION

### TECHNICAL FEATURES

- CONDENSING exchanger module.
- The shape of the combustion chamber, made of AISI 441 stainless steel, assures optimal heat exchange and reduces pressure drops.
- High-efficiency heat exchanger made of stainless steel with low carbon content.
- Sealed combustion circuit.
- Efficiency beyond 108% Hi of NCV (Net Calorific Value).
- Premix modulating gas burner, Class 5 low NOx emissions in compliance with EN1020/2009 standards.
- Electronic card for continuous power modulation controlled by a microprocessor and it includes a 0-10 Vdc input
- An advanced technique of air/gas mixing guarantees total safety. The gas valve delivers fuel according to the air:gas ratio that was set in the factory.
- If combustion air fails, the gas valve shuts up. If combustion air decreases, the valve automatically reduces the gas flow while maintaining optimal combustion parameters.
- Safety and control devices.
- Safety thermostat.
- 230 V /1ph/ 50 Hz Power supply.
- Compliant with all EC applicable regulations.



### STANDARD ACCESSORIES

- Kit for conversion to LPG.
- Multifunction LCD display for management, module configuration and diagnostics of all the unit's operating parameters.

### NOTE

- If the installation is with **VERTICAL** air flow direction, this must be indicated when ordering. For example: PCHxxx-**OOVO**.
- Upon request Apen Group may provide also PCH - B SYSTEM composed of a **SINGLE MODULE**. Please ask our export office an offer for the models 034, 045, 065, 080 or 105 "**OOHO**".
- There is an extra cost for PCH when it is used with **UNIQUE** flue pipes (where flue gas probe is mandatory). See page 20.

### B - HORIZONTALLY COMBINED MODULES

They consist of two or more exchangers: burners, gas equipment and chimneys are equal in number to the number of the heat exchangers. Gas and electrical connection is unique for the double modules. For modules with three or four exchangers there are two gas connections and one electrical connection.

The range includes the models in two modules, three modules and four modules, to reach at a maximum output power of about 400 kW.

The modules are inserted in cascade with the signal 0/10 Vdc and/or with the ON/OFF signal carried on the single module.

The modules can be installed either vertically or horizontally, depending on the air flow direction.

## PCH SERIES - B SYSTEM

| Useful Heat Output* |        | Efficiency |       | Nominal Heat Input | Minimum Air Flow** | Model    |
|---------------------|--------|------------|-------|--------------------|--------------------|----------|
| max kW              | min kW | max %      | min % | kW                 | m³/h               | Code     |
| 125,86              | 13,4   | 108,06     | 96,82 | 130,00             | 10320              | PCH130IT |
| 160,06              | 17,77  | 108,35     | 97,6  | 164,00             | 13120              | PCH160IT |
| 194,3               | 22,77  | 108,4      | 97,15 | 200,00             | 15920              | PCH210IT |
| 291,45              | 22,77  | 108,4      | 97,15 | 300,00             | 23880              | PCH320IT |
| 388,6               | 22,77  | 108,4      | 97,15 | 400,00             | 31840              | PCH420IT |

\* with standard ventilation

\*\* Minimum air flow has been calculated for a  $\Delta t$  value of 35°C. For process plants or special applications, with  $\Delta t$  value > 40°C, please contact Apen Group.

### FRONT PANEL KIT (\*)

| Code   | Description                     | Model      |
|--------|---------------------------------|------------|
| G28884 | PCH 130 EXTERNAL PANELS KIT     | PCH130     |
| G28885 | PCH 160/210 EXTERNAL PANELS KIT | PCH160/210 |
| G28886 | PCH 320 EXTERNAL PANELS KIT     | PCH320     |
| G28887 | PCH 420 EXTERNAL PANELS KIT     | PCH420     |

(\*) Front panel kit includes three panels: front panel, door panel and rain protection profile.

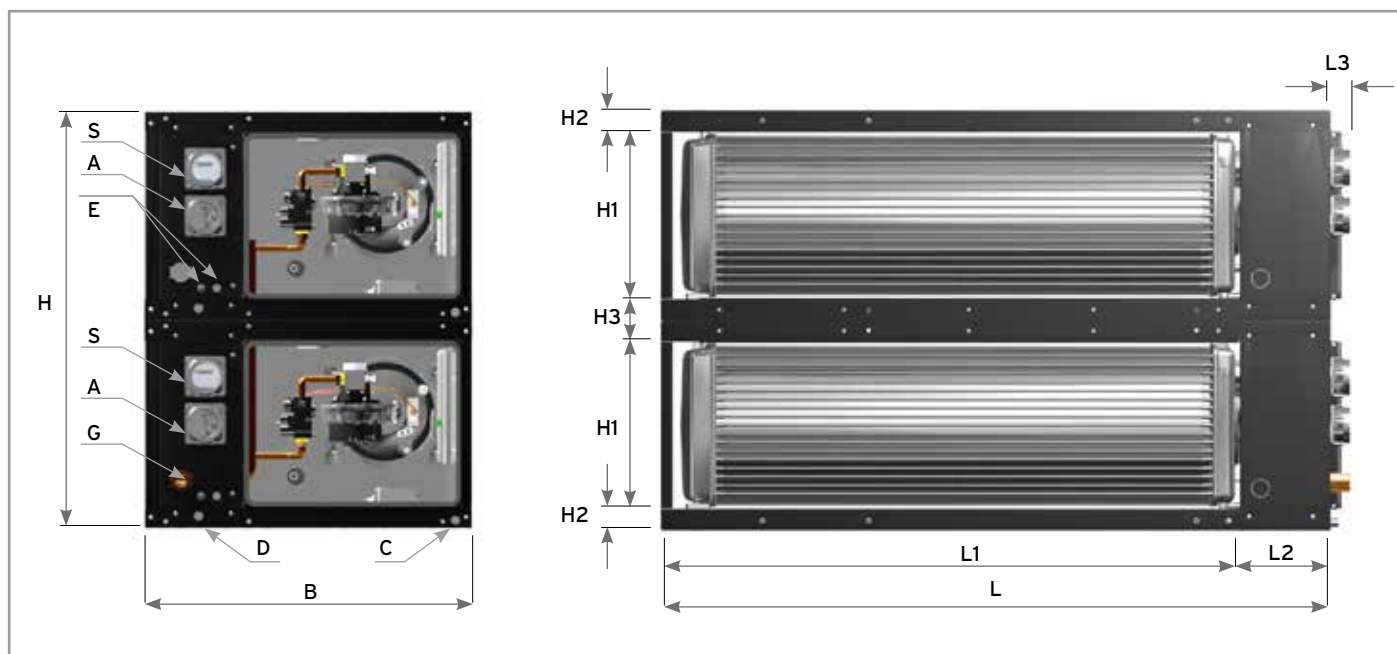
### LOW TEMPERATURES KIT (FOR INSTALLATION IN AMBIENT TEMPERATURE < -15°C)

| Code   | Description                  |
|--------|------------------------------|
| G28510 | Low temperature kit for PCH* |

\* One kit is required for each module.

# PCH HEAT EXCHANGER MODULES - B SYSTEM

## DIMENSIONS (mm)



| Model  | B   | H    | L    | H1  | H2 | H3  | L1   | L2  | L3 | E         | G                         | A          | S          | C               | D    |
|--------|-----|------|------|-----|----|-----|------|-----|----|-----------|---------------------------|------------|------------|-----------------|------|
| PCH130 | 740 | 1050 | 1260 | 418 | 53 | 108 | 1000 | 230 | 47 | 2X<br>Ø21 | G 1 ½"                    | 2X<br>Ø 80 | 2X<br>Ø 80 | 1 X ½"<br>GAS M | Ø 21 |
| PCH160 | 825 |      | 1450 |     |    |     | 1190 |     |    |           |                           |            |            |                 |      |
| PCH210 |     |      | 1680 |     |    |     | 1420 |     |    |           |                           |            |            |                 |      |
| PCH320 |     | 1575 |      |     |    |     |      |     |    |           | 1xG 1 ½"<br>+<br>1xG 3/4" | 3X<br>Ø 80 | 3X<br>Ø 80 |                 |      |
| PCH420 |     | 2100 |      |     |    |     |      |     |    |           | 2xG 1 ½"                  | 4X<br>Ø 80 | 4X<br>Ø 80 |                 |      |

### KEY:

**E:** Electrical connections   **G:** Gas connections   **A:** Intake   **S:** Flue gas drainage   **C:** Condensate drainage   **D:** Condensate vent



PCH130 / PCH160 / PCH210

PCH320

PCH420

# PCH HEAT EXCHANGER MODULES - C SYSTEM

## DESCRIPTION

### TECHNICAL FEATURES

- CONDENSING exchanger module.
- The shape of the combustion chamber, made of AISI 441 stainless steel, assures optimal heat exchange and reduces pressure drops.
- High-efficiency heat exchanger made of stainless steel with low carbon content.
- Sealed combustion circuit.
- Efficiency beyond 108% Hi of NCV (Net Calorific Value).
- Premix modulating gas burner, Class 5 low NOx emissions in compliance with EN1020/2009 standards.
- Electronic card for continuous power modulation controlled by a microprocessor and it includes a 0-10 Vdc input
- An advanced technique of air/gas mixing guarantees total safety. The gas valve delivers fuel according to the air:gas ratio that was set in the factory.
- If combustion air fails, the gas valve shuts up. If combustion air decreases, the valve automatically reduces the gas flow while maintaining optimal combustion parameters.
- Safety and control devices.
- Safety thermostat.
- Power supply 230 V /1ph/ 50 Hz.
- Compliant with all EC applicable regulations.



### STANDARD ACCESSORIES

- Kit for conversion to LPG.
- Multifunction LCD display for management, module configuration and diagnostics of all the unit's operating parameters.

### C - VERTICALLY COMBINED MODULES

They consist of two or more exchangers: burners, gas equipment and chimneys are equal in number to the number of the heat exchangers. Gas and electrical connection is unique for all modules.

These modules present a width limited space and low pressure loss to the air flow.

The range includes the models in two modules, up to a maximum power of about 200 kW.

The modules are inserted in cascade with the signal 0/10 Vdc and/or with the ON/OFF signal carried on the single module.

**The modules can be installed only with horizontal air flow direction.**

## PCH SERIES - C SYSTEM

| Useful Heat Output* |        | Efficiency |       | Nominal Heat Input | Minimum Air Flow** | Model    |
|---------------------|--------|------------|-------|--------------------|--------------------|----------|
| max kW              | min kW | max %      | min % | kW                 | m <sup>3</sup> /h  | Code     |
| 125,86              | 13,4   | 108,06     | 96,82 | 130,00             | 10320              | PCH132IT |
| 160,06              | 17,77  | 108,35     | 97,6  | 164,00             | 13120              | PCH162IT |
| 194,3               | 22,77  | 108,4      | 97,15 | 200,00             | 15920              | PCH212IT |

\* with standard ventilation

\*\* Minimum air flow has been calculated for a  $\Delta t$  value of 35°C. For process plants or special applications, with  $\Delta t$  value > 40°C, please contact Apen Group.

### FRONT PANEL KIT (\*)

| Code   | Description                     | Model      |
|--------|---------------------------------|------------|
| G28888 | PCH 132 EXTERNAL PANELS KIT     | PCH132     |
| G28889 | PCH 162/212 EXTERNAL PANELS KIT | PCH162/212 |

(\*) Front panel kit includes three panels: front panel, door panel and rain protection profile.

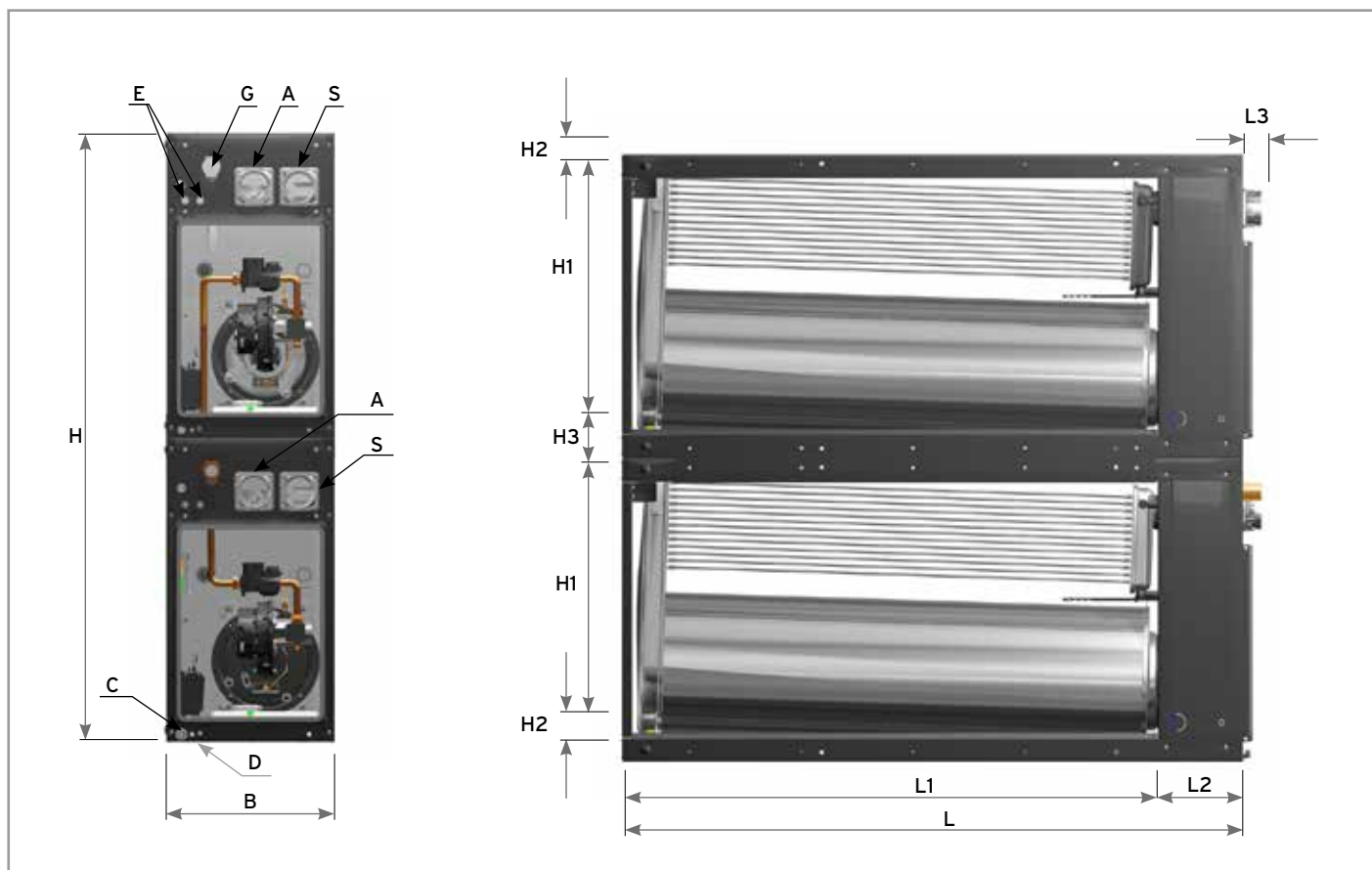
### LOW TEMPERATURES KIT (FOR INSTALLATION IN AMBIENT TEMPERATURE < -15°C)

| Code   | Description                  |
|--------|------------------------------|
| G28510 | Low temperature kit for PCH* |

\* One kit is required for each module.

# PCH HEAT EXCHANGER MODULES - C SYSTEM

## DIMENSIONS (mm)



| Model  | B   | H    | L    | H1  | H2 | H3  | L1   | L2  | L3 | E         | G             | A          | S          | C               | D    |
|--------|-----|------|------|-----|----|-----|------|-----|----|-----------|---------------|------------|------------|-----------------|------|
| PCH132 | 450 | 1460 | 1250 | 604 | 63 | 126 | 990  | 230 | 47 | 2X<br>Ø21 | 1 ½"<br>GAS M | 2X<br>Ø 80 | 2X<br>Ø 80 | 1 X ½"<br>GAS M | Ø 21 |
| PCH162 |     | 1630 | 1440 | 689 |    |     | 1180 |     |    |           |               |            |            |                 |      |
| PCH212 |     |      | 1670 |     |    |     | 1410 |     |    |           |               |            |            |                 |      |

### KEY:

**E:** Electrical connections   **G:** Gas connections   **A:** Intake   **S:** Flue gas drainage   **C:** Condensate drainage   **D:** Condensate vent



# PCH HEAT EXCHANGER MODULES

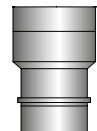
## FLUE OUTLET TERMINAL B23 TYPE

| Code        | Description                        | Diameter |
|-------------|------------------------------------|----------|
| TB23-08-VSC | Conical windproof exhaust terminal | Ø80      |
| TB23-10-VSC | Conical windproof exhaust terminal | Ø100     |



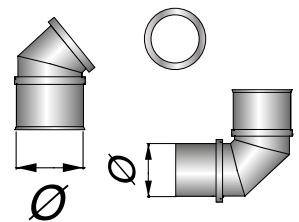
## ADAPTERS

| Code         | Description                   | Target             |
|--------------|-------------------------------|--------------------|
| G15815-08-10 | 15/10-thick aluminium adapter | from Ø 80 to Ø 100 |



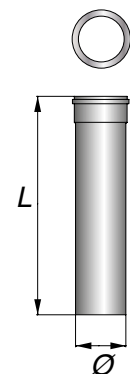
## BEND WITH GASKET

| Code         | Description        | Diameter |
|--------------|--------------------|----------|
| G15810-08-90 | Aluminium bend 90° | Ø 80     |
| G15810-10-90 | Aluminium bend 90° | Ø 100    |
| G15810-08-45 | Aluminium bend 45° | Ø 80     |
| G15810-10-45 | Aluminium bend 45° | Ø 100    |



## EXTENSIONS WITH GASKET

| Code          | Description                     | Diameter | Lunghezza |
|---------------|---------------------------------|----------|-----------|
| G15820-08-100 | 15/10-thick aluminium extension | Ø 80     | L=1000    |
| G15820-08-050 | 15/10-thick aluminium extension | Ø 80     | L=500     |
| G15820-10-100 | 15/10-thick aluminium extension | Ø 100    | L=1000    |
| G15820-10-050 | 15/10-thick aluminium extension | Ø 100    | L=500     |



## UNIQUE FLUE PIPES

| Code      | Description            |
|-----------|------------------------|
| SSFPCH-01 | For PCH with 1 module  |
| SSFPCH-02 | For PCH with 2 modules |
| SSFPCH-03 | For PCH with 3 modules |
| SSFPCH-04 | For PCH with 4 modules |



# PCH HEAT EXCHANGER MODULES

## EC CERTIFICATE

**kiwa**

Number: KIP-1576402 Issue: Revision 01/10/420  
Issue date: 06-05-2016 Edition: B  
Expiry date: 07-05-2036  
File: 0176000401 Page: 1 of 3

**CERTIFICATE**

**EU TYPE-EXAMINATION CERTIFICATE**

Kiwa Cermet Italia declares that the products type:  
gas-fired air heaters

Trade mark: **APEN GROUP**  
Models: as specified in the Annex 1

Placed on the market by: **APEN GROUP S.p.A.**  
Via Isonzo 1, 20060 Pessano con Bornago (MI) Italia

meets the essential requirements as described in the Regulation (EU) 2016/426 relating to appliances burning gaseous fuels.

Appliance type: Bst, Bst, Cst, Cst, Cst, Cst, Cst

Countries: AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IS, IT, LT, LL, LV, MK, MT, NO, PL, PT, RO, SE, SI, SK, TR

Related to the following gas groups: as specified in the Annex 1

The assessment test have been performed using the following standards as guidelines:

Applicable to models series PCH = LK = LKC  
EN 1020:2009, EN 1195:2011

Applicable to models series PRH = LR = LRC = LPC  
EN 1020:2009

Chief Operating Officer:  
Giancarlo Baccini

**ACCREDITA**

**CE**

GASTEC

**kiwa**

Number: KIP-1576402 Issue: Revision 01/10/420  
Issue date: 06-05-2016 Edition: B  
Expiry date: 07-05-2036  
File: 0176000401 Page: 2 of 3

**CERTIFICATE**

**EU TYPE-EXAMINATION CERTIFICATE**

ANNEX 1

Models:

|         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|
| PCH 020 | PCH 034 | PCH 045 | PCH 065 | PCH 080 | PCH 105 | PCH 130 |
| PCH 132 | PCH 160 | PCH 162 | PCH 210 | PCH 212 | PCH 320 | PCH 420 |
| LK 020  | LK 034  | LK 045  | LK 065  | LK 080  | LK 105  |         |
| LKC 020 | LKC 034 | LKC 045 | LKC 065 | LKC 080 | LKC 105 |         |
| PRH 015 | PRH 024 | PRH 034 | PRH 042 | PRH 052 | PRH 072 | PRH 102 |
| PRH 144 | PRH 152 | PRH 202 | PRH 204 | PRH 310 | PRH 410 |         |
| LR 015  | LR 024  | LR 034  | LR 042  | LR 052  | LR 072  | LR 102  |
| LRC 015 | LRC 024 | LRC 034 | LRC 042 | LRC 052 | LRC 072 | LRC 102 |
| LP 015  | LP 024  | LP 034  | LP 042  | LP 052  | LP 072  | LP 102  |
| LPC 015 | LPC 024 | LPC 034 | LPC 042 | LPC 052 | LPC 072 | LPC 102 |

The models could be followed by a suffix "xx" (means country of destination) can be added to the appliance's name.

Gas groups:

| Group | mbar  | Group    | mbar  | Group | mbar       |
|-------|-------|----------|-------|-------|------------|
| E     | 20    | Es, E(S) | 20/25 | Lw    | 20         |
| H     | 20;25 | Er, E(R) | 20/25 | B     | 20; 25     |
| L     | 25    | Ls       | 13    | B/P   | 30; 50     |
| LL    | 25    | S        | 25    | P     | 30; 37; 50 |
| EK    | 20/25 |          |       |       |            |

The above gas groups can be combined according to the standard EN437:2009 and national situation of countries.

**CERTIFICATE**

Replaces — Page 2 of 2

## EU TYPE-EXAMINATION CERTIFICATE

### ANNEX 1

#### Models:

|         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|
| PCH 020 | PCH 034 | PCH 045 | PCH 065 | PCH 080 | PCH 105 | PCH 130 |
| PCH 132 | PCH 160 | PCH 162 | PCH 210 | PCH 212 | PCH 320 | PCH 420 |
| LK 020  | LK 034  | LK 045  | LK 065  | LK 080  | LK 105  |         |
| LKC 020 | LKC 034 | LKC 045 | LKC 065 | LKC 080 | LKC 105 |         |
| PRH 015 | PRH 024 | PRH 034 | PRH 042 | PRH 052 | PRH 072 | PRH 102 |
| PRH 144 | PRH 152 | PRH 202 | PRH 204 | PRH 310 | PRH 410 |         |
| LR 015  | LR 024  | LR 034  | LR 042  | LR 052  | LR 072  | LR 102  |
| LRC 015 | LRC 024 | LRC 034 | LRC 042 | LRC 052 | LRC 072 | LRC 102 |
| LP 015  | LP 024  | LP 034  | LP 042  | LP 052  | LP 072  | LP 102  |
| LPC 015 | LPC 024 | LPC 034 | LPC 042 | LPC 052 | LPC 072 | LPC 102 |

The models could be followed by a suffix "xx" (means country of destination) can be added to the appliance's name.

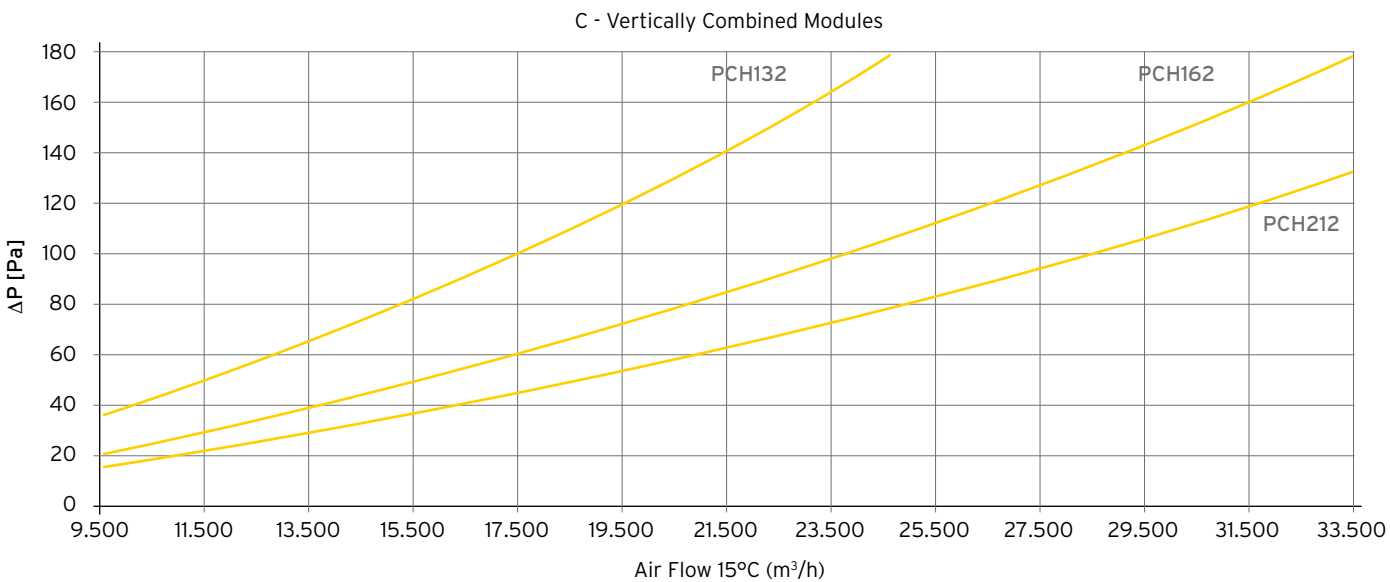
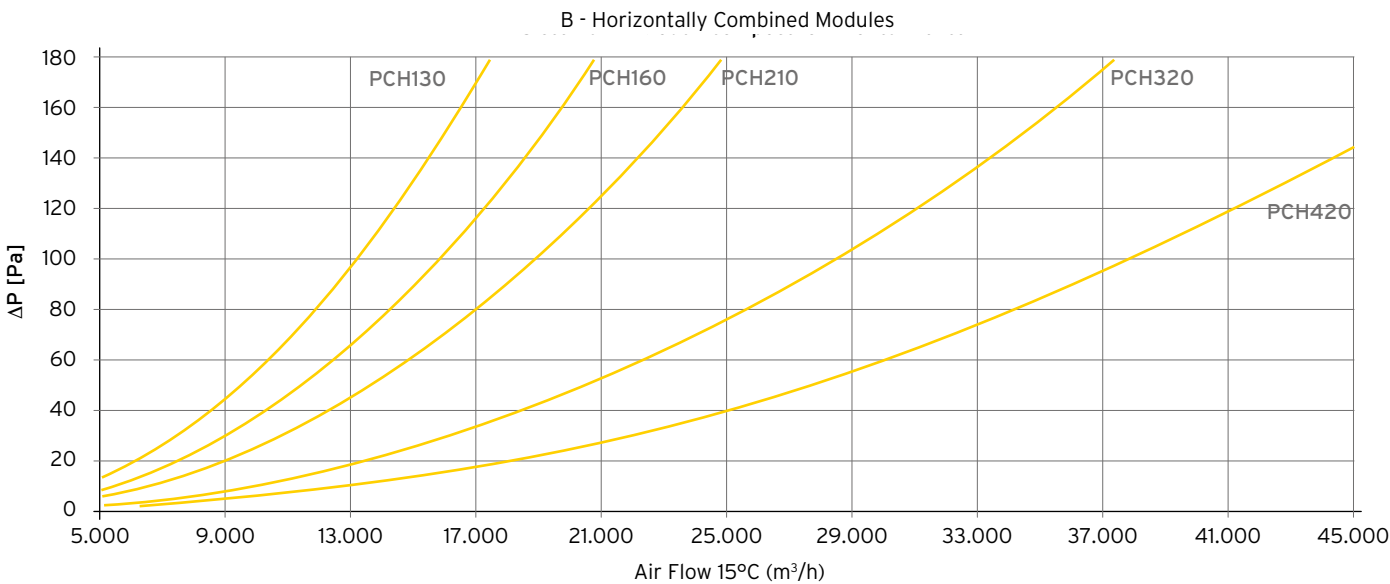
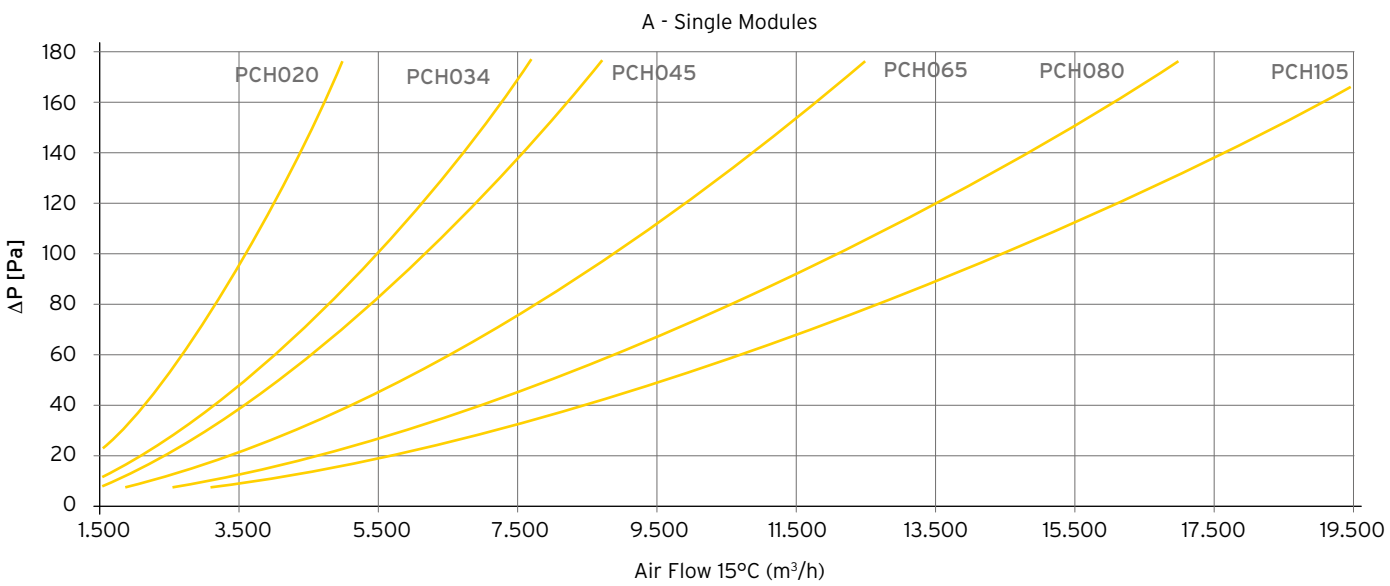
#### Gas groups:

| Group | mbar  | Group    | mbar  | Group | mbar       |
|-------|-------|----------|-------|-------|------------|
| E     | 20    | Es, E(S) | 20/25 | Lw    | 20         |
| H     | 20;25 | Er, E(R) | 20/25 | B     | 20; 25     |
| L     | 25    | Ls       | 13    | B/P   | 30; 50     |
| LL    | 25    | S        | 25    | P     | 30; 37; 50 |
| EK    | 20/25 |          |       |       |            |

The above gas groups can be combined according to the standard EN437:2009 and national situation of countries.

# PCH HEAT EXCHANGER MODULES

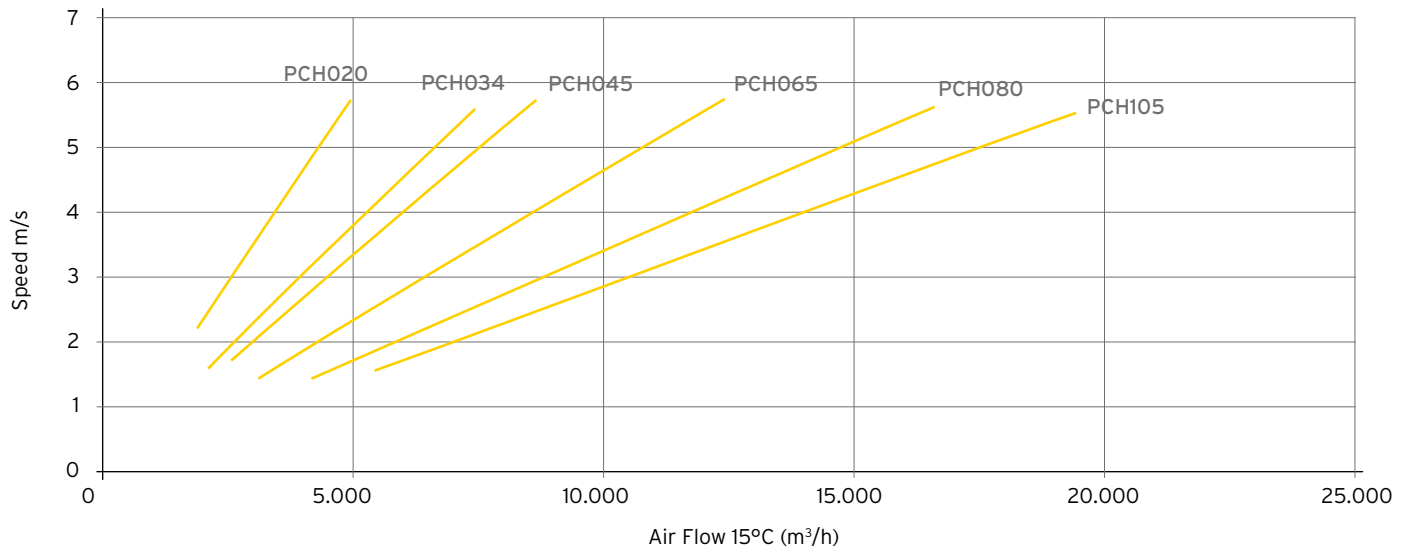
## AIR FLOW RATE / PRESSURE DROP CHART



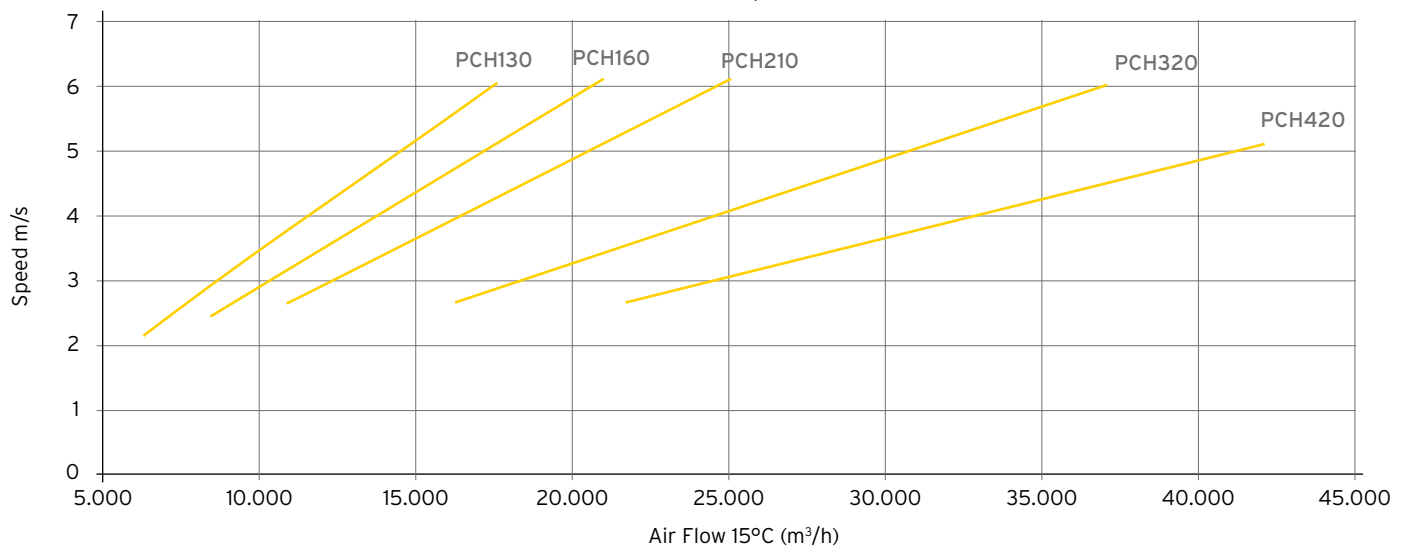
# PCH HEAT EXCHANGER MODULES

## DIAGRAM OF AIR FLOW RATES - AIR SPEED IN THE HEAT EXCHANGER SECTION

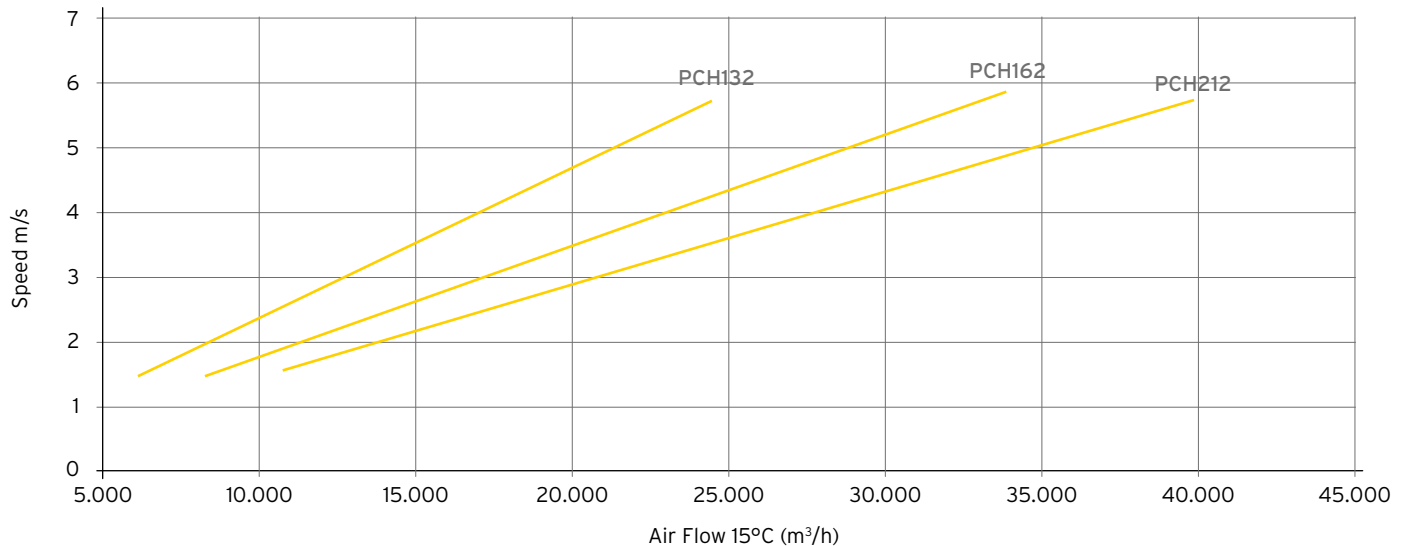
A - Single Modules



B - Horizontally Combined Modules



C - Vertically Combined Modules



# PCH HEAT EXCHANGER MODULES

## INSTALLING SINGLE OR MULTIPLE MODULES

Multiple PCH modules can be assembled in a single Air Handling or Roof-top unit, in order to achieve greater heat output.

The modules can be assembled in series or parallel installation, according to project requirements; ventilation can be provided on the right or on the left because the PCH heater uses a single safety device against air over-temperature, which works both for the right and for the left airflow.

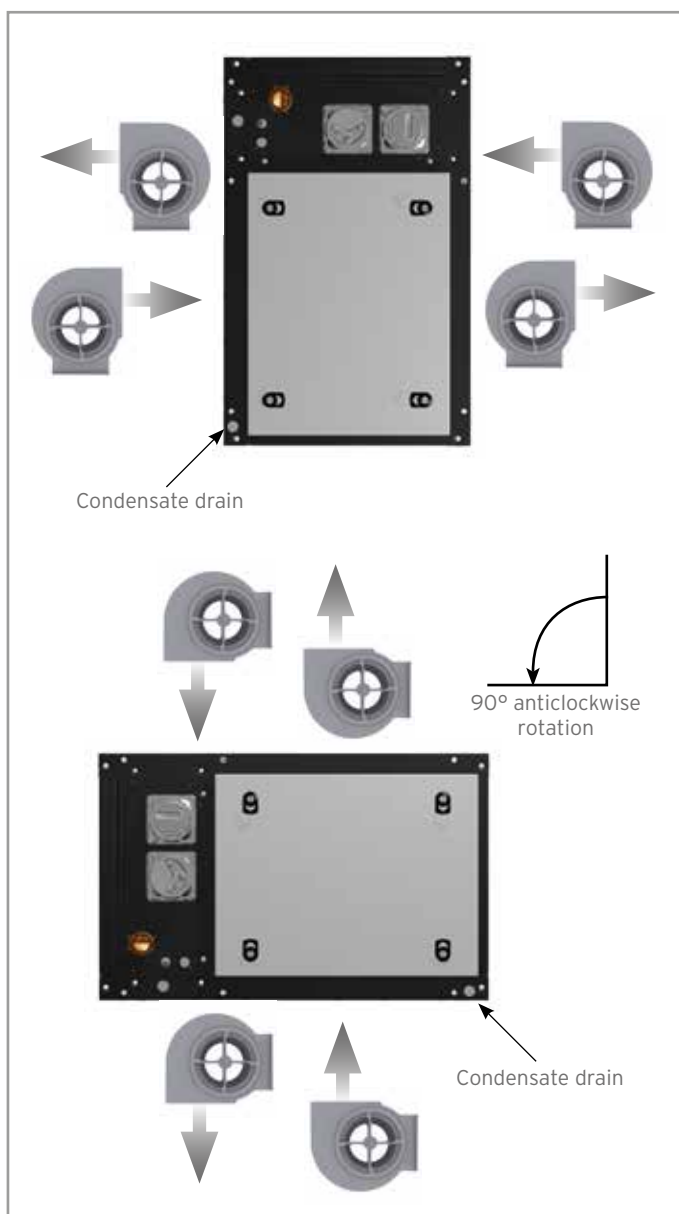
When multiple heaters are installed, safety is always ensured by the thermostat provided on each module.

### FITTING A SINGLE HEATER (A SYSTEM)

In standard installations with a single heater, the air flow is horizontal and can have either a right or left direction. The fan can be fitted upstream or downstream of the heat exchanger.

On request, the air flow can be vertical.

In this case the PCH module must be ordered with code ending with "-00VO". This specification determines the correct position and orientation of the condensate drain.



# PCH HEAT EXCHANGER MODULES

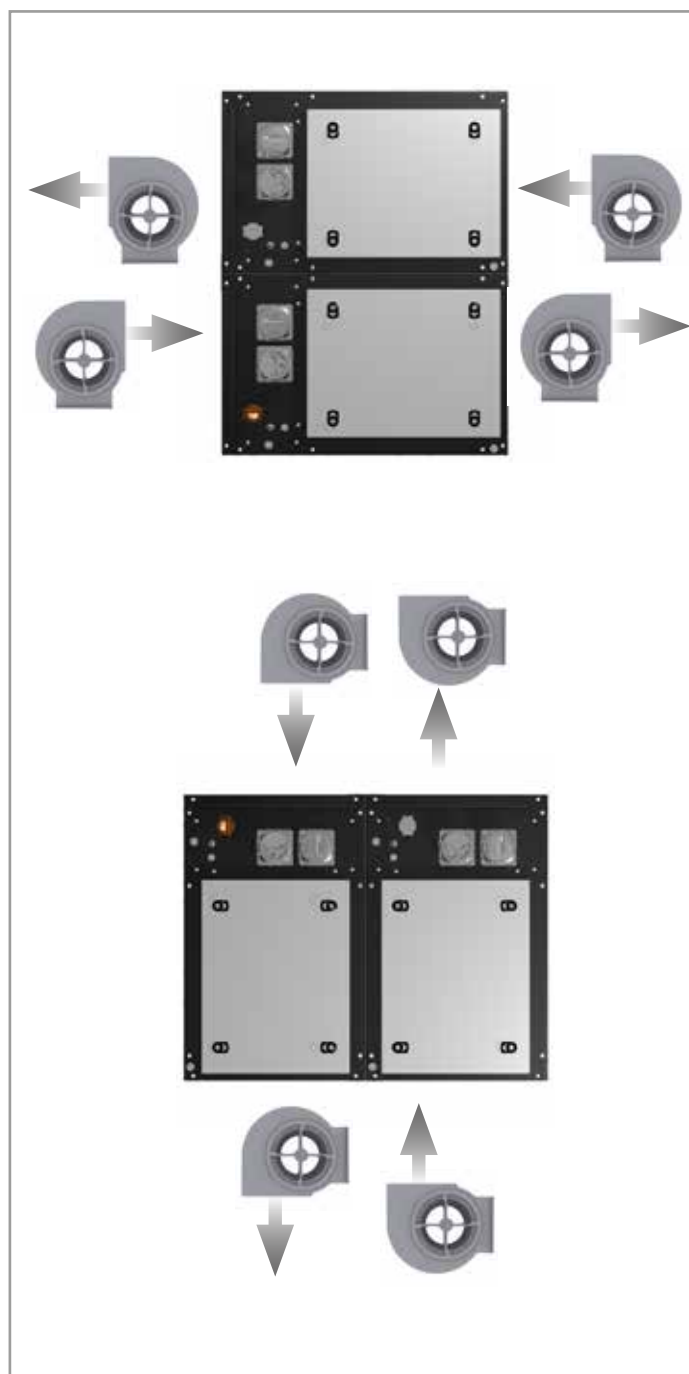
## INSTALLING SINGLE OR MULTIPLE MODULES

When high heat output is required, a solution with two or more heat exchangers must be used. In this type of installation, it is essential to check that the air flow on the heat exchanger is balanced.

### HORIZONTALLY COMBINED MODULES (B SYSTEM)

In the standard configuration, the air flow going through the heat exchanger is horizontal, coming either from the right or from the left. On request, the air flow can be vertical.

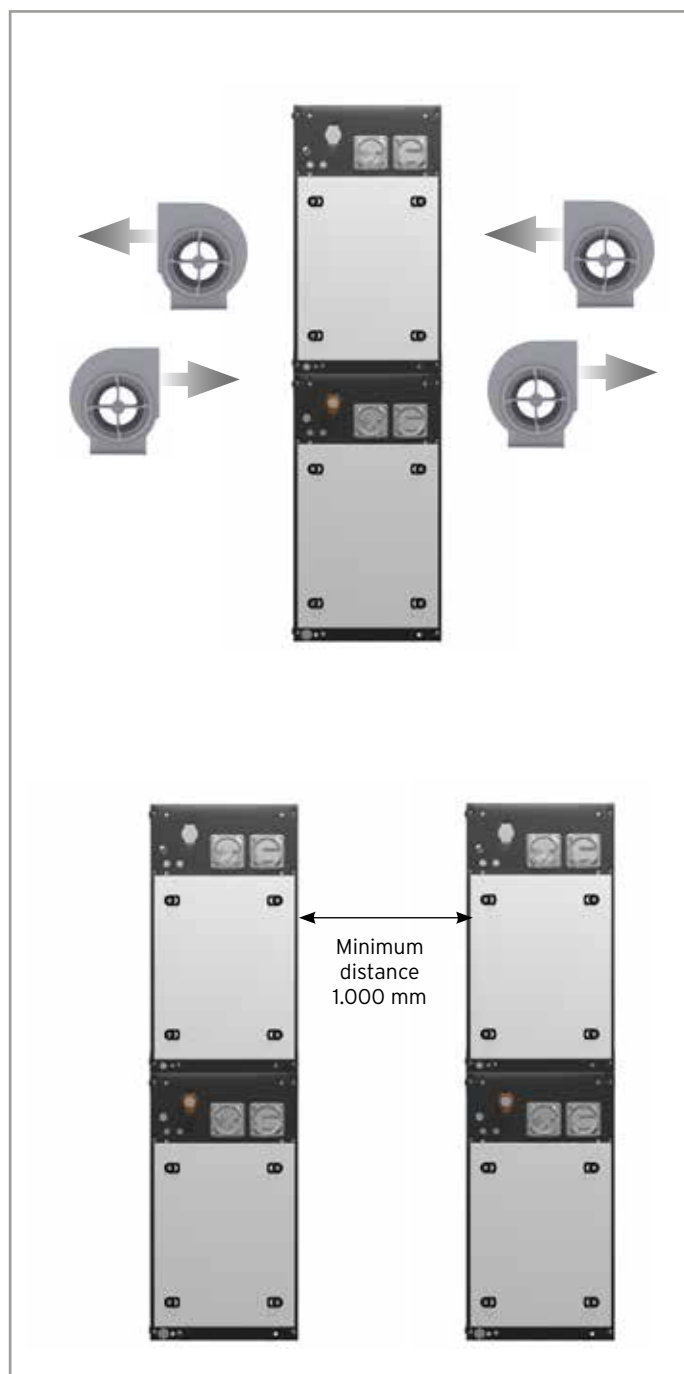
In this case the PCH module must be ordered with code ending with "-00VO". This specification determines the correct position and orientation of the condensate drain.



### VERTICALLY COMBINED MODULES (C SYSTEM)

In this type of application the air flow can only be horizontal, coming from either the right or the left direction.

If the installation allows it, if higher outputs are required, the vertically combined modules can be positioned next to each other, keeping the air flow horizontal, making sure a minimum distance of 1000 mm is kept between the modules.





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