

TECHNICAL MANUAL



HIGH PRESSURE UNIT EDS

EUROPO

INTEGRATED
COMFORT
SYSTEMS



INDEX

1. GENERAL INFORMATION	
1.1 Applications	4
1.2 Operation	4
1.3 Performances	4
1.4 Product range	4
1.5 Selection software	4
2. DIMENSIONS AND WEIGHTS	5
3. COMPONENTS	
3.1 Structure	6
3.2 Coils	7
3.3 Fan deck	7
3.4 Condensate tray	8
3.5 Air filter	8
3.6 Standard electrical panel IP55.....	8
3.7 Packing	9
4. ELECTRICAL ACCESSORIES	
4.1 GW10	10
4.2 GW20	10
4.3 GW30	10
4.4 Electrical heater - KREL	10
4.5 AS - Air sensor	10
4.6 CS - check sensor	11
4.7 WS - Water sensor	11
4.8 Fan Speed Selector - CSR	11
4.9 Room temperature thermostat - TAD10	11
4.10 CMR - Thermostat	11
4.11 CER - Electronic regulators	11
4.12 OMNIBUS digital control	12
4.12.1 Power Omnibus card for BMS - OPT10	12
4.12.2 Display Console - OC236	13
4.12.3 Analogue Plus Console - OC736	13
4.12.4 Infrared receiver (OC516) and remote control (OIR30)	13
4.13 OMNIBUS Supervision	14
4.13.1 Manager Console - OC436.....	14
4.13.2 OTOUCH - OCB30	14
4.13.3 WEBSERVER - OCB10.....	14
4.14 PC - Condensate pump	14
5. HYDRAULIC ACCESSORIES	
5.1 J3B2.....	15
5.2 J3C2	15
5.3 J3BM	16
5.4 J3CM	16
5.5 J2B2.....	16
5.6 J2C2	16
6. OTHER ACCESSORIES	
6.1 PM - Air delivery plenum	19
6.2 PA - Air intake plenum.....	19
6.3 F5 - Filter	19
7. TECHNICAL DATA	
7.1 Air volumes	20
7.2 Capacities size 004.....	21
7.3 Capacities size 006.....	23
7.4 Capacities size 008.....	25
7.5 Capacities size 020	27
7.6 Capacities size 030	29
7.7 Capacities size 040	31
7.8 Capacities size 050	33
7.9 Capacities size 060	35
7.10 Capacities size 070	37
7.11 Electrical data	39
7.12 Working operation limits	39
8. NOISE LEVELS	40
9. ELECTRICAL CONNECTIONS	41

1

2

3

4

5

6

7

8

9

1

1. GENERAL INFORMATION

2

1.1 APPLICATIONS

EDS high pressure ducted fan coils are specifically designed for ducted installations, with external static pressure up to 350 Pa. Their high pressure fan decks permit to satisfy every request of heating and cooling application in big environments.

3

1.2 OPERATION

The effectiveness of a fan coil is due to the large surface area of the finned heat exchanger (coil) where the air drawn from the room by the fan passes through.

Heating operation: the hot water circulating in the finned coil supplies heat to the air passing through the heat exchanger.

Cooling operation: the chilled water circulating in the finned coil removes heat from the air passing through the heat exchanger.

The air is also dehumidified and the condensed water vapor must be discharged from the unit: suitable drains must therefore be provided to drain the condensed water that collects in the condensate tray.

5

1.3 PERFORMANCES

The performance of a fan coil can vary greatly with changes in the temperature and in the amount of water circulating through the coil, as well as with changes in the temperature and in the amount of air circulating through the coil.

The air volume is determined by selecting the proper fan speed (MIN-MED-MAX) through electronic or digital regulators (OMNIBUS-also for BMS systems), while the water flow rate is determined by the specifications of the system and of the pump.

Thermal performances of the unit can be optimized by controlling the inlet flow rate of the water with proper regulating valves (ON/OFF or modulating), which can be supplied as accessories and which are necessary in case of cooling operation.

For each model, thermal performances in heating and cooling depend on the number of rows of the coil installed, which gives the opportunity to make the air treatment suit every condition required.

In cooling function, under the same operating conditions, the more rows the heat exchanger has, the more it will dehumidify.

6
7
8
9

1.4 PRODUCT RANGE

The EDS high pressure fan coil units are available in 9 sizes (004, 006, 008, 020, 030, 040, 050, 060 e 070) for concealed horizontal installation, in 2 pipe systems.

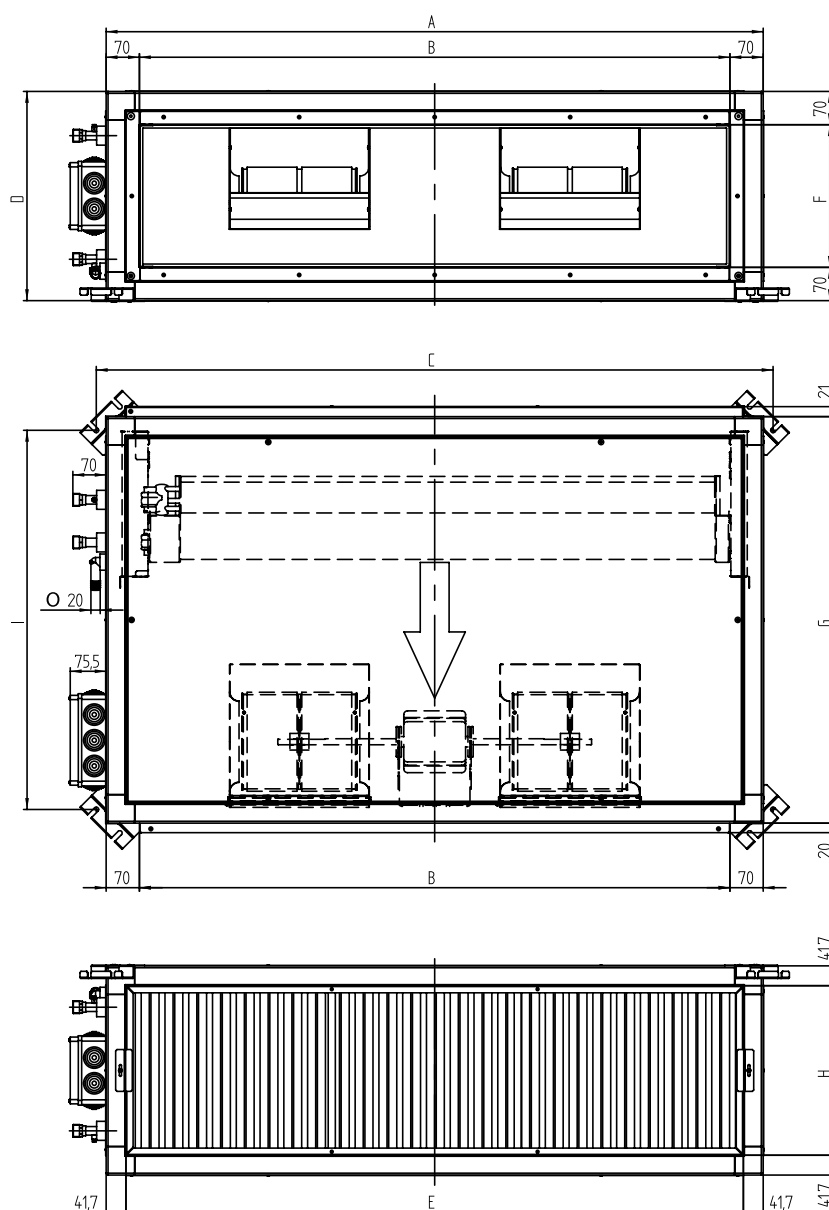
1.5 SELECTION SOFTWARE

To facilitate choosing the correct size of a fan coil for any operating condition (including those differing from the standard ones), EURAPO offers a dedicated computer program which can be downloaded from the ftp address <http://ftp.eurapo.it/> and can be updated with automatic upload through internet.



Installation and Operation instructions concerning the software for selection are provided with the software itself.

2. DIMENSIONS AND WEIGHTS



		004	006	008	020	030	040	050	060	070
A	[mm]	882,0	1007,0	1007,0	1132,0	1132,0	1382,0	1382,0	1777,0	1777,0
B	[mm]	742,0	867,0	867,0	992,0	992,0	1242,0	1242,0	1637,0	1637,01
C	[mm]	923,5	1048,5	1048,5	1173,5	1173,5	1423,5	1423,5	1818,5	1818,5
D	[mm]	390,0	390,0	390,0	440,0	440,0	440,0	440,0	550,0	550,0
E	[mm]	798,6	923,6	923,6	1048,6	1048,6	1298,6	1298,6	1693,6	1693,6
F	[mm]	250,0	250,0	250,0	300,0	300,0	300,0	300,0	410,0	410,0
G	[mm]	855,0	855,0	855,0	855,0	855,0	855,0	855,0	1030,0	1030,0
H	[mm]	306,6	306,6	306,6	356,6	356,6	356,6	356,6	466,6	466,6
I	[mm]	797,5	797,5	797,5	797,5	797,5	797,5	797,5	972,5	972,5
Weight	[kg]	52,5	57,5	59,0	68,0	69,5	82,0	83,0	117,5	131,5
Water content 4R	[l]	1,7	2,0	2,0	2,6	2,6	3,7	3,7	6,3	6,3
Water connection		G 3/4" M	G 3/4" M	G 3/4" M	G 3/4" M	G 3/4" M	G 3/4" M	G 3/4" M	G 1" M	G 1" M

Note: The dimensions C and I indicate the fixing brackets (mounting points of the unit).

3. COMPONENTS

3.1 STRUCTURE

The structure is composed by aluminium supporting frame and 25 mm thick sandwich panel, which are insulating and soundproof. The panels are composed by a rigid piece of expanded polyurethane, covered on one side by galvanized metal sheet and on the other side by grey-white varnished metal sheet (colour RAL 9002).

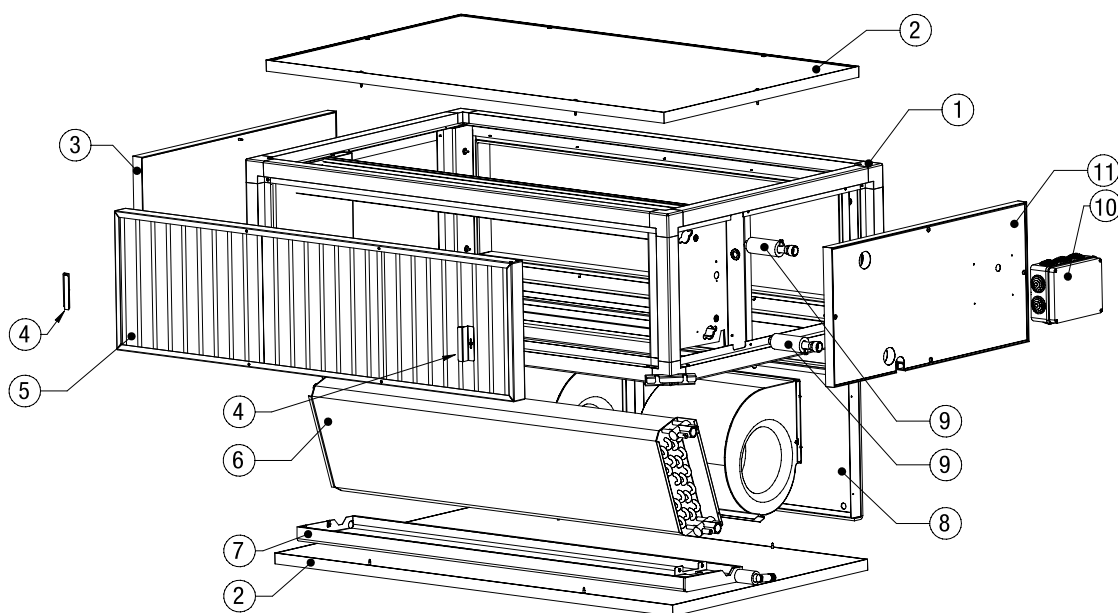
The production procedure for the expansion of the polyurethane is made by using water therefore the foam does not content CFC, HCFC and HFC. The fire reaction rate is: B – s2, d0. (Giordano Insitute certification).

All the inner elements that could be cooled are completely lined with a polyurethane foam layer, which is not only a thermal insulation material but also a good sound attenuator. Self extinguishing grade in accordance to norms UL94 HBF.

In order to facilitate all maintenance operations, the structure is divided in 3 separate and independent sections:

- Fan deck
- Condensate tray
- Air filter

The EDS fan coils can be installed on the ceiling by using the four fixing brackets always supplied with every unit.



LEGEND

- | | |
|-----|-------------------------|
| 1. | Structure |
| 2. | Cover panel upper/lower |
| 3. | Blank side panel |
| 4. | Filter block |
| 5. | Air filter |
| 6. | Heat exchangers |
| 7. | Condensate tray |
| 8. | Fan deck |
| 9. | Additional header |
| 10. | Electric box |
| 11. | Header side panel |

3.2 COILS

For unit size 004, 006, 008, 020, 030, 040 e 050 there are 2, 3 and 4 row coils available. For unit size 060 and 070 there are 2, 3, 4 and 5 row coils available. All coils consist of 3/8" external diameter copper pipes mechanically expanded to the aluminum fin packs, provided with copper headers and brass soldering connections.

Max. operating pressure 1,6 MPa, testing pressure 2,8 MPa.

Each header is provided with a very handy air valve, to allow air venting or water drainage from the coil. The air valve can be easily reached from the outside of the unit.

EDS units can be ordered with right (standard) or left water connections, so defined when facing the air outlet.



The units can not be reversed on site.

Water connections are G 3/4" M for sizes 004, 006, 008, 020, 030, 040 e 050 and G 1" M for sizes 060 and 070.

3.3 FAN DECK

The fan deck is composed by a 3 speed motor and 2 centrifugal galvanized steel scrolls. The motor and the scrolls are fixed on a rigid galvanized steel 1,5 mm thick basement. All motors are provided with permanently connected capacitor and thermal protection of the windings with automatic recharge; single phase 50 Hz. For all sizes the power supply is 230V± 10%. Each fan assembly is dynamically balanced, to reduce noise and wear of the components to minimum levels; it can easily be removed for maintenance operation.



1

2

3

4

5

6

7

8

9

1

2

3

4

5

6

7

8

9

3.4 CONDENSATE TRAY

The condensate tray is made of galvanized steel and it is completely insulated by a 6 mm thick closed cell polyurethane foam layer. The condensed water is discharged from both sides (left or right) through a 20 mm diameter header. The condensate tray is available, on request, also in stainless steel (AISI 316).

3.5 AIR FILTER

The air filter consists of a washable polyester acrylic fiber, filtration class G3; A filter with higher filtering grade (F5) is also available upon request for each model. The particular pleated shape of the filter, protected by a metal frame, allows having a big filtering surface with only 45 mm thickness. The filter section can be easily removed for cleaning and maintenance operation.

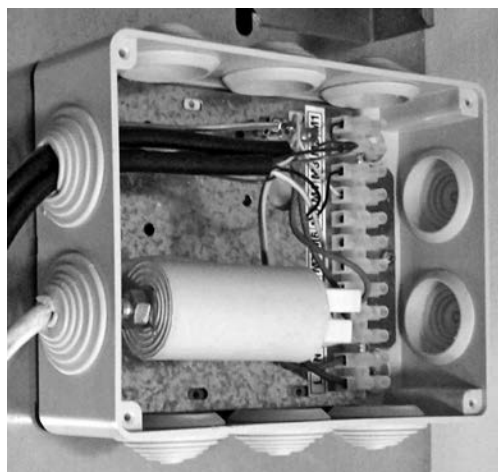


Filter

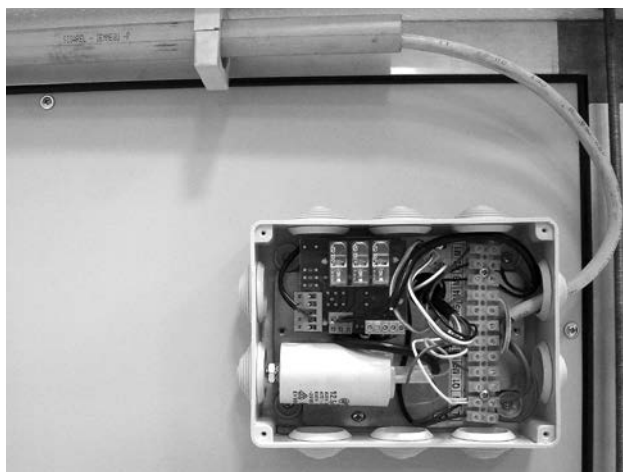
3.6 STANDARD ELECTRICAL PANEL (IP55)

All models are provided with a terminal board with screw terminals contained in a self-extinguishing ABS plastic box (IP55). For sizes 040÷070 a supporting relay is installed as standard on the electrical panel, where the power supply must be connected (GW20). The electric box must be fixed on the pre-arranged position on the side of the EDS unit and connected with a «plug and play» system to the plug already present on the side itself.

Every EDS model is supplied with an electric wiring diagram showing all the electrical components, accessories factory fitted and/or remote controllers ordered together with the unit. Everything must be correctly wired in accordance to the diagram, to obtain the requested working conditions of the unit.



GW00 (sizes 004÷030)

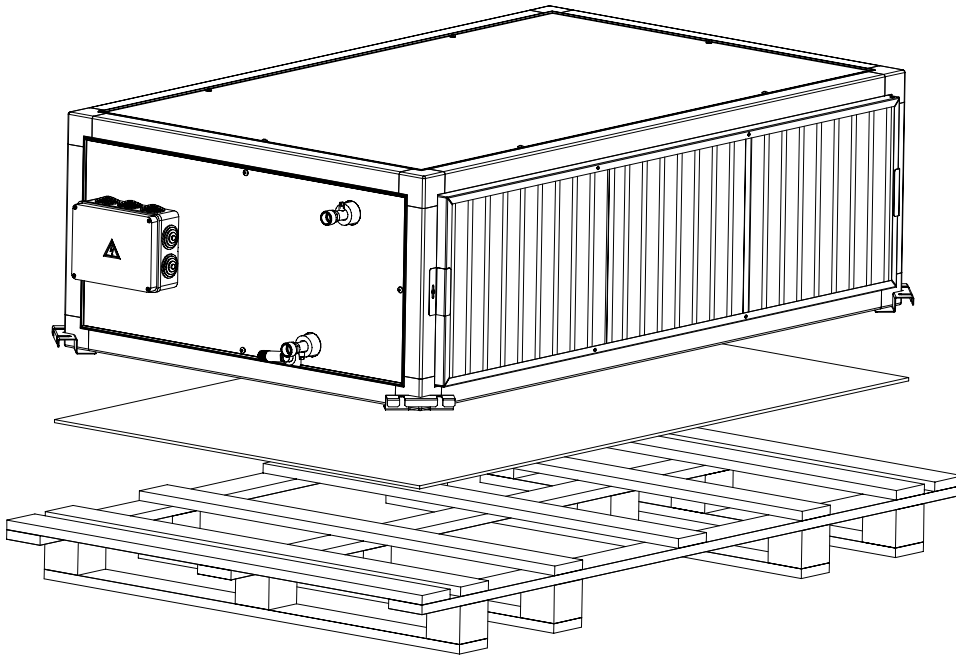


GW20 (sizes 040÷070)

3.7 PACKING

All handling units are packed on pallets to ensure maximum maneuverability, in order to avoid any risk resulting from improper handling.

The standard pallet is made of untreated wood. They are available on request treated (ISPM15-IPPC) pallets.



1

2

3

4

5

6

7

8

9

4. ELECTRICAL ACCESSORIES

4.1 GW10

High protection plastic box (IP55), which contains a 12 pole terminal board and a double insulated transformer (230/24 V~10 VA), for the electrical connection of the modulating valves. It is supplied as standard for sizes 004÷030 when the regulators CER10/B and CER30/B are requested.

4.2 GW20

High protection plastic box (IP55), which contains a 12 pole terminal board and a power relay card (230V): this card is requested either when an electric heater is mounted on the fancoil unit or to control the fan speeds in Master/Slave configuration. It can be combined with the following regulators: CMR00, CER00, CER20. It is always supplied as standard for units size 040÷070.

4.3 GW30

High protection plastic box (IP55), which contains a 12 pole terminal board, a double insulated transformer (230/24 V~10 VA) for the electrical connection of the modulating valves and/or 24V controls, a power relay card (24V), which is requested to control the fan speeds in Master/Slave configuration. It can be combined with the following regulators: CER11, CER31, CER00 and CER20 (with power supply 24V). It is always supplied as standard for units size 040 and 070 when ordering the CER11 or CER31 controls.

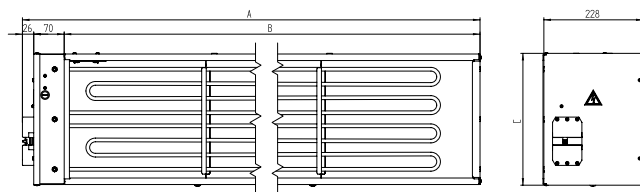


EURAPO recommend to use also on sizes 004÷030 the GW30 electric box every time that modulating valves are installed.

4.4 ELECTRICAL HEATER - KREL

Additional module for Electrical heater supplied with 2 safety thermostats, one with automatic resetting and the other one with manual resetting, a power relay card and a terminal board for the electrical connection. The table shows the power of the electric heater for each unit size.

EDS	P [kW]	Power supply [V-ph-Hz]	A	B	C
004	2,0	230-1-50	837	741	253
006 008	2,5	230-1-50	962	866	
020 030	3,0	230-1-50	1087	991	303
040 050	6,0	380-3-50	1337	1241	
060 070	9,0	380-3-50	1732	1636	413



4.5 AS - AIR SENSOR

1 m long NTC sensor fixed on the air inlet of the ducted unit. It is optional, on request, with the following regulators: CMR00, CER00, CER10/B, CER11, CER20, CER30/B, CER31 and OMNIBUS.

4.6 CS - CHECK SENSOR

1m long NTC sensor, to be installed on the air outlet of the ducted unit. In combination with OMNIBUS card, it allows highlighting any faults in the functioning of the ducted unit, by reporting an alarm signal.

4.7 WS - WATER SENSOR

3m long NTC sensor (10K, 25°C), requested for the automatic S/W switch when a ducted unit is controlled by a regulator with microprocessor or OMNIBUS, in a 2 pipe system, for both heating and cooling operation. The Summer/Winter changeover works as follows:

WS combined with CER00, CER20, CER30/B

- Summer: water temperature $< 17^{\circ}\text{C}$ = cooling on
- water temperature $> 19^{\circ}\text{C}$ = cooling off
- Winter: water temperature $> 32^{\circ}\text{C}$ = valve open
- water temperature $< 30^{\circ}\text{C}$ = valve closed
- water temperature $> 35^{\circ}\text{C}$ = fan on
- water temperature $< 33^{\circ}\text{C}$ = fan off

WS combined with CER10/B, CER11, CER31

- Summer: water temperature $< 11^{\circ}\text{C} \pm 1\text{ K}$ = cooling on
- water temperature $> 14^{\circ}\text{C} \pm 1\text{ K}$ = cooling off
- Winter: water temperature $> 40^{\circ}\text{C} \pm 1\text{ K}$ = heating on
- water temperature $< 30^{\circ}\text{C} \pm 1\text{ K}$ = heating off

The water sensor is not compatible with 2 way valves (J2B2 or J2C2, for example).



WS

4.8 FAN SPEED SELECTOR - CSR

This selector has no room thermostat and it can control the 3 fan speed only. The speed selector does not control any valve: a remote thermostat (TAD10) is requested in order to control the ON/OFF valves, in case.



CSR00

4.9 ROOM TEMPERATURE THERMOSTAT - TAD10

Room temperature thermostat for wall installation with manual selection of the working mode (Summer/Winter changeover) and set point regulation of the room temperature.



TAD10

4.10 THERMOSTATS - CMR

Room temperature thermostats with manual fan speed selector and Summer/Winter switch. The comfort temperature zone (20-25 °C) is marked around the knob. It is also possible to limit the temperature setting range.



CMR00

4.11 ELECTRONIC REGULATORS - CER

The EURAPO electronic controllers with microprocessor offer a wide range of functions for the fancoil regulation; they are provided with the comfort temperature zone (20-25 °C) and with the opportunity to limit the temperature setting range. These regulators can also provide the following functions: automatic fan speed and automatic S/W changeover.



CER00

1

2

3

4

5

6

7

8

9

EURAPO REGULATORS

Functions	CSR00	CMR00	CER00	CER10/B CER11	CER20	CER30/B CER31
Ventilation mode (Thermostated - OFF - Continuous)		•	•	•	•	•
Manual speed selector	•	•	•	•		
Automatic or manual speed selection					•	•
Manual Summer/Winter changeover		•				
Summer/Winter changeover with dead band or external (centralized)			•	•	•	•
Setting Temperature thermostat		•	•	•	•	•
Temperature setting range limitation		•	•	•	•	•
De-stratification function			•	•	•	•
Economy/occupancy contact*			•	•	•	•
Window contact*			•	•	•	•
Frost protection (only with heating valve)			•	•	•	•
Operating mode LED (Summer - Winter)			•	•	•	•
Dirty filter alarm LED			•	•	•	•

* not optoinsulated from 230 V~ power supply net

EURAPO REGULATORS

Compatibility	CSR00	CMR00	CER00	CER10/B CER11	CER20	CER30/B CER31
2 pipe system only	•					
2/4 pipe system		•	•	•	•	•
ON/OFF 230V cooling and heating valve		•	•		•	
Modulating 24V cooling and heating valve				•		•
Room temperature thermostat TAD	•					
NTC sensor for automatic S/W changeover (2 pipe system only)			•	•	•	•
Electric heater (in alternative to the heating valve)			•		•	

For more information please refer to the TECHNICAL MANUAL FOR EURAPO CONTROLLERS.

4.12 OMNIBUS DIGITAL CONTROL



The OMNIBUS digital control system permits a complete and integrated management of several fancoil units installed in the same building. It is designed either for a stand-alone operating mode, or to be integrated, at different levels, to a centralized Building Automation System, with a serial communication protocol RS-485 (Modbus RTU).

The digital regulator can control many fancoils at the same time (Master/Slave solution), which are connected together by two twisted wires (AWG 24).

4.12.1 POWER OMNIBUS CARD for BMS – OPT10

The Power Omnibus card mounted on the unit is designed to fully regulate (directly or via Modbus) the water terminal units. The card can provide:

- 6 ON/OFF outputs: Fan speed Minimum-Medium-Maximum; Electric heater/Dehumidification; Hot water valve, Cold water valve

- 3 Analogue 0-10V outputs: Heating modulating valve, Cooling modulating valve, Auxiliary fan.
- 5 Outputs on the additional multitask card OPT50: On/off heating valve 24V; On/off cooling valve 24V; Auxiliary fan for fresh air and/or free cooling; Alarm contact; External air damper.
- 5 Analogue inputs: Room temperature sensor (AS), Water sensor (WS), Air outlet sensor (CS), External air temperature sensor and relative humidity sensor.
- 3 Digital inputs: Economy contact; Window contact; contact for the thermal protection of the motor.
- 2 Serial communication ports (RS485): Network "Local Bus" for the connection of the Console (built-in the unit or for remote installation); Network Modbus for the connection of the Manager Console or other Supervision System (BMS).



OPT10

This card is available also without BMS communication (ONT10).

4.12.2 CONSOLE DISPLAY - OC236

The Console is connected to the Power Omnibus card by a phone cable (4 wires), from which it is energized (15 Vcc) and it receives information from the Local-bus network. The Display Console is provided with four buttons for setting the parameters and the operating modes of the water terminal unit:

- Stato: OFF-Comfort-Economy
- Fan: Low, Med, High, Auto
- Mode: Cool-Heat-Fan-Dry
- Room temperature Set-point

The Display Console can be used as "service tool":

- identification by code of possible alarms
- setting or variation of the Modbus address
- visualization of the I/O status



OC236

4.12.3 ANALOGUE PLUS CONSOLE – OC736

The Console is connected to the Power Omnibus card by a phone cable (4 wires), from which it is energized (15 Vcc) and it receives information from the Local-bus network. The Analogue Plus Console is composed by:

- One LED showing the operating mode and operating status of the Power Omnibus card
- Four LEDs to visualize the fan speed status and warnings, in case
- Two buttons: one for setting the operating mode of the terminal unit (Cooling/Heating) and one for the selection of the fan speed
- Room temperature sensor
- One knob for setting the room temperature set-point value and OFF position



OC736

4.12.4 INFRARED RECEIVER – OC516 AND REMOTE CONTROL – OIR30

The end user has the possibility to regulate the fan coil unit through the Infrared remote control (OIR30). The IR receiver is connected to the Power Omnibus card by a flat phone cable from which it takes the power supply (15 Vcc) and by which it exchanges information on the RS485 "Local bus" network. The IR console has a built-in air sensor and one LED showing the Status of the unit, in particular:

- fixed green: cooling mode
- fixed red: heating mode
- flashing yellow: alarm or warning status



OC516



OIR30

1

2

3

4

5

6

7

8

9

1

2

3

4

5

6

7

8

9

4.13 OMNIBUS SUPERVISION

4.13.1 MANAGER CONSOLE - OC436 (up to 10 units)

- Modbus/RTU protocol
- Different access levels (user/service/factory)
- Direct configuration of the connected units
- Centralized operation
- Set-up parameters configuration
- INPUT/OUTPUT status monitoring
- Daily and weekly program
- Alarms management



OC436

4.13.2 OTOUCH - OCB30 (up to 100 units)

- Modbus/RTU protocol
- Different access levels (user/service/factory)
- Centralized operation
- Set-up parameters configuration
- INPUT/OUTPUT status monitoring
- Daily and weekly program
- Alarms management
- 7 inches touch screen
- Optional modem for remote management via GSM
- Boiler room management (pumps, boiler, heat pump)
- Radiant systems management (mixing valves and manifolds)
- Scenarios management
- Multilanguage



OTOUCH

4.13.3 WEBSERVER - OCB10 (up to 1000 units)

- Modbus/RTU protocol
- Different access levels (user/service/factory)
- Centralized operation
- Set-up parameters configuration
- INPUT/OUTPUT status monitoring
- Daily and weekly program
- Alarms management
- Suitable for connecting up to 8 lines of 128 units each
- LAN interface with TCP/IP protocol
- Suitable for the most common web browsers
- Remote management via Internet
- Available with touch screen interface
- LON converter



OCB10

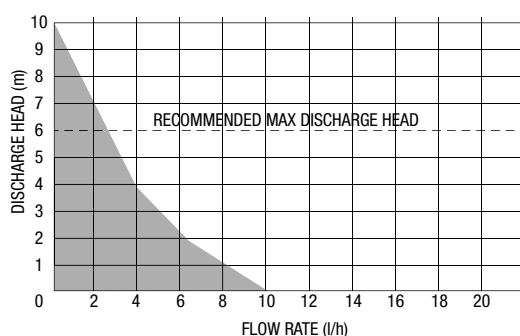
For more information please refer to the TECHNICAL MANUAL FOR OMNIBUS CONTROLLERS.

4.14 PC – CONDENSATE PUMP

The condensate pump is necessary when the traditional water discharge is not allowed. It is supplied already mounted on the unit. The power of the pump is different for the different models where it has to be installed. Functions:

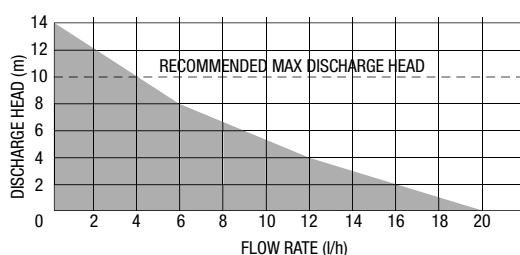
- forced evacuation of the condensed water.

PC Technical features for sizes 004÷030:



Max flow rate	10 l/h
Max suction head	2 m
Max discharge head	6 m
Electric power	18 W
Electric voltage	230 V~ 50/60 Hz
Alarm contact	NC 8 A - 250 V
Detection levels in mm	ON: 16, OFF: 11, Alarm: 19
Sound level at 1 m	25,1 dBA
Protection	IP20
Detection	remote
Thermal protection (overheating)	90 °C
Safety standards	CE
RhOS and WEEE directives	Complies

PC Technical features for sizes 040÷070:



Max flow rate	20 l/h
Max suction head	3 m
Max discharge head	10 m (flow= 4 l/h)
Electric power	14 W
Electric voltage	230 V~ 50/60 Hz
Alarm contact	NC 8 A resistive - 250 V
Detection levels in mm	ON: 16, OFF: 11, Alarm: 19
Sound level at 1 m	< 20 dBA
Protection	IP20
Detection	remote
Thermal protection (overheating)	90 °C
Safety standards	CE
RhOS and WEEE directives	Complies

5. HYDRAULIC ACCESSORIES

5.1 J3B2 – ON/OFF 3-WAY VALVES WITH 4 WATER CONNECTIONS, 3/4", FOR 2 OR 4 PIPE SYSTEMS, 230V

The ON/OFF 3-way regulating valves with bypass are provided with thermoelectric actuator and connection tubes. The direct water flow is closed by not supplying power to the actuator. They are suitable for fan coils size 004÷050 and available also with 24V. They are always supplied loose together with their proper insulating shell.

5.2 J3C2 – ON/OFF 3-WAY VALVES WITH 4 WATER CONNECTIONS, 1", FOR 2 OR 4 PIPE SYSTEMS, 230V

The ON/OFF 3-way regulating valves with bypass are provided with thermoelectric actuator and connection tubes. The direct water flow is closed by not supplying power to the actuator. They are suitable for fan coils size 060÷070 and available also with 24V. They are always supplied loose together with their proper insulating shell.

1

5.3 J3BM – MODULATING (24V) 3-WAY VALVES WITH 4 WATER CONNECTIONS, 3/4", FOR 2 OR 4 PIPE SYSTEMS

The modulating 3-way regulating valves with bypass are provided with modulating actuator and connection tubes. The direct water flow is closed by not supplying power to the actuator. They are suitable for fan coils size 004÷050. They are always supplied loose together with their proper insulating shell.

2

3

5.4 J3CM – MODULATING (24V) 3-WAY VALVES WITH 4 WATER CONNECTIONS, 1", FOR 2 OR 4 PIPE SYSTEMS

The modulating 3-way regulating valves with bypass are provided with modulating actuator and connection tubes. The direct water flow is closed by not supplying power to the actuator. They are suitable for fan coils size 060÷070. They are always supplied loose together with their proper insulating shell.

4

5

5.5 J2B2 – ON/OFF 2-WAY VALVES, 3/4", FOR 2 OR 4 PIPE SYSTEMS, 230V

The ON/OFF 2-way regulating valves with bypass are provided with thermoelectric actuator and connection tubes. They are suitable for fan coils size 004÷050 and available also with 24V. They are always supplied loose, and must be insulated on site as they are not provided with insulating shell.

6

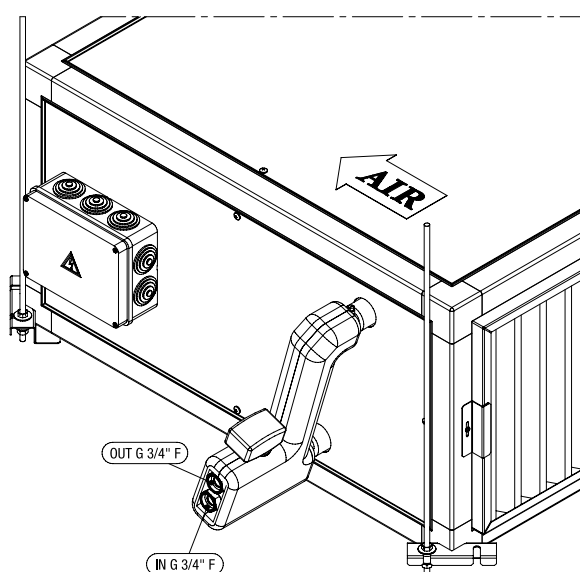
7

5.6 J2C2 – ON/OFF 2-WAY VALVES, 1", FOR 2 OR 4 PIPE SYSTEMS, 230V

The ON/OFF 2-way regulating valves with bypass are provided with thermoelectric actuator and connection tubes. They are suitable for fan coils size 060÷070 and available also with 24V. They are always supplied loose, and must be insulated on site as they are not provided with insulating shell.

8

9



EDS WITH J3B2 (004÷050)

TECHNICAL FEATURES OF THE VALVES

Nominal pressure	PN16	Cod.: J3B2, J3BM, J3C2, J3CM, J2B2, J2C2
Fluid	Hot or cold water for HVAC system, according to VDI standard quality or equivalent	Cod.: J3B2, J3BM, J3C2, J3CM, J2B2, J2C2
Hydraulic connection	1" GF 3/4" GF	Cod.: J3C2, J3CM, J2C2 Cod.: J3B2, J3BM, J2B2
Max close-off pressure	62kPa 70kPa 150kPa	Cod.: J2C2 Cod.: J3C2, J3CM Cod.: J3B2, J3BM, J2B2
Kvs	2,5 2,6 4,5 5,5	Cod.: J3B2, J3BM Cod.: J2B2 Cod.: J3C2, J3CM Cod.: J2C2
Material	Brass	Cod.: J3B2, J3BM, J3C2, J3CM, J2B2, J2C2
Flow temperature limit	2÷95° C 2÷110° C	Cod.: J2C2 Cod.: J3B2, J3BM, J3C2, J3CM, J2B2
Room temperature limit	2÷50° C	Cod.: J3B2, J3BM, J3C2, J3CM, J2B2, J2C2
Actuator	On/Off Modulating	Cod.: J3B2, J3C2, J2B2, J2C2 Cod.: J3CM, J3BM
Voltage supply	230V ~ ±15% 50/60 Hz 24V ~ ±15% 50/60 Hz	Cod.: J3B2, J3C2, J2B2, J2C2 Cod.: J3CM, J3BM
Control signal	0÷10 Vcc	Cod.: J3BM, J3CM
Absorption	2,5 VA	Cod.: J3B2, J3BM, J3C2, J3CM
Opening time 20° C	~ 180s	Cod.: J3B2, J3C2, J2C2
Closing time 20° C	~ 260s	Cod.: J3B2, J3C2, J2C2
Protection grade	IP44 (EN 60529) IP43 (EN 60529)	Cod.: J3B2, J3C2, J2B2 Cod.: J3CM, J3BM, J2C2

1

2

3

4

5

6

7

8

9

GRAPHIC PRESSURE DROP VALVES

1

2

3

4

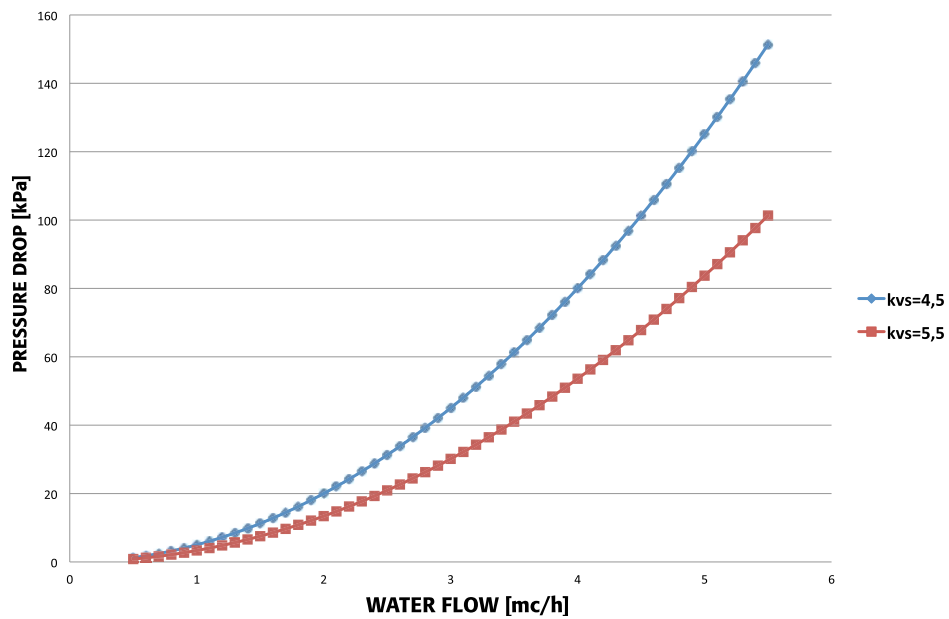
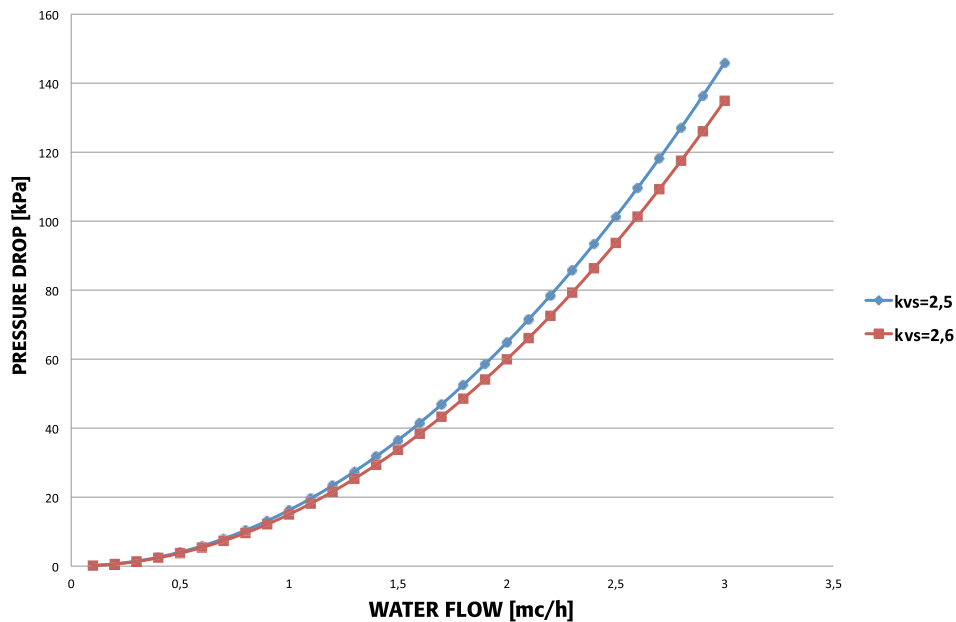
5

6

7

8

9



In order to choose the correct type of valve it is necessary to know the system's technical specifications; for this reason the consultant should take full responsibility for this choice.

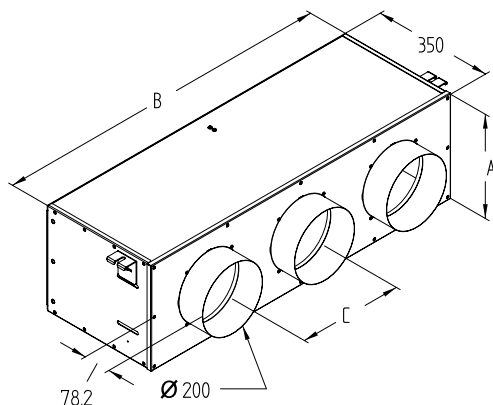


MAXIMUM OPERATING PRESSURE WITH VALVES: 16 BAR.

6. OTHER ACCESSORIES

6.1 PM – AIR DELIVERY PLENUM

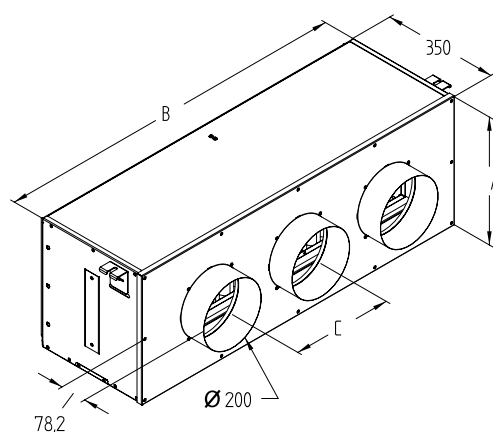
The air delivery plenum is made of galvanized steel sheet, insulated inside with polyurethane foam, 12 mm thick, provided with spigots for the connection to the air ducts and with fixing supports. It must be installed on the air outlet of the unit.



PM					
Mod.	004	006÷008	020÷030	040÷050	060÷070
N. Collars	2	2	3	4	5
A	254	254	304	304	414
B	747	872	997	1247	1642
C	370	450	306	300	311

6.2 PA – AIR INTAKE PLENUM

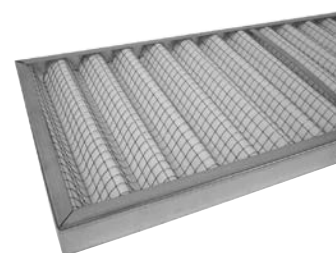
The air intake plenum is made of galvanized steel sheet, insulated inside with polyurethane foam, 12 mm thick, provided with spigots for the connection to the air ducts and with fixing supports. It must be installed on the air inlet of the unit.



PA					
Mod.	004	006÷008	020÷030	040÷050	060÷070
N. Collars	2	2	3	4	5
A	338	338	388	388	498
B	834	959	1084	1334	1729
C	370	450	306	300	311

6.3 FILTER F5

High filtering grade air filter consisting of a polyester acrylic fiber foam, filtration class F5.



Filter F5 (on request)

1

2

3

4

5

6

7

8

9

7. TECHNICAL DATA

7.1 AIR VOLUMES [m³/h] AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

MOD	SPEED	0	25	50	75	100	125	150	175	200	250	300
004	max	632	527	401	241	-	-	-	-	-	-	-
	med	496	383	272	-	-	-	-	-	-	-	-
	min	373	245	-	-	-	-	-	-	-	-	-
006	max	875	756	596	404	-	-	-	-	-	-	-
	med	692	566	428	290	-	-	-	-	-	-	-
	min	521	378	270	-	-	-	-	-	-	-	-
008	max	1072	958	794	575	313	-	-	-	-	-	-
	med	891	796	658	460	239	-	-	-	-	-	-
	min	704	594	472	333	-	-	-	-	-	-	-
020	max	1860	1665	1441	1180	873	531	-	-	-	-	-
	med	1591	1438	1247	1009	735	447	-	-	-	-	-
	min	1015	863	708	552	386	133	-	-	-	-	-
030	max	2411	2312	2185	2009	1756	1445	1144	799	-	-	-
	med	1780	1685	1566	1412	1212	974	724	437	-	-	-
	min	1392	1295	1182	1052	903	736	547	303	-	-	-
040	max	2884	2706	2525	2335	2127	1896	1630	1329	1013	-	-
	med	2323	2168	1998	1815	1613	1393	1159	915	681	-	-
	min	1881	1728	1565	1386	1193	989	781	583	403	-	-
050	max	3598	3437	3248	3028	2766	2451	2091	1723	1393	882	-
	med	3059	2911	2733	2515	2254	1968	1685	1418	1168	679	-
	min	2611	2481	2325	2136	1912	1664	1412	1174	951	522	-
060	max	-	-	4375	4219	4038	3825	3571	3257	2872	1929	767
	med	-	-	3306	3210	3097	2959	2783	2540	2206	1475	653
	min	-	-	2645	2561	2460	2332	2160	1919	1622	1096	767
070	max	-	-	5496	5423	5341	5246	5133	4992	4805	4083	3042
	med	-	-	4867	4816	4757	4690	4611	4512	4380	3725	2921
	min	-	-	4303	4272	4237	4195	4142	4067	3897	3181	2841



The air volume refers to standard fan coils, with clean air filter, 20 °C room temperature, at sea level and without plenum.

7.2 CAPACITIES FOR SIZE 004 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.2.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75
004-2R	max	Total cooling capacity [kW]	2,15	1,89	1,57	1,05
		Sensible cooling capacity [kW]	1,72	1,61	1,40	0,97
		Water flow [l/h]	369	323	270	180
		Pressure drop [kPa]	6,8	5,3	3,8	1,8
		Heating capacity [kW]	2,99	2,66	2,20	1,52
		Pressure drop [kPa]	4,6	3,6	2,6	1,3
	med	Total cooling capacity [kW]	1,79	1,47	1,14	-
		Sensible cooling capacity [kW]	1,63	1,34	1,05	-
		Water flow [l/h]	307	252	195	-
		Pressure drop [kPa]	3,7	2,5	1,5	-
		Heating capacity [kW]	2,15	1,81	1,41	-
		Pressure drop [kPa]	3,1	2,2	1,4	-
	min	Total cooling capacity [kW]	1,46	1,03	-	-
		Sensible cooling capacity [kW]	1,14	0,91	-	-
		Water flow [l/h]	251	176	-	-
		Pressure drop [kPa]	2,3	1,0	-	-
		Heating capacity [kW]	1,97	1,45	-	-
		Pressure drop [kPa]	1,8	1,0	-	-
004-3R	max	Total cooling capacity [kW]	2,79	2,42	1,95	1,14
		Sensible cooling capacity [kW]	2,33	2,11	1,68	0,99
		Water flow [l/h]	479	416	334	195
		Pressure drop [kPa]	5,2	4,0	2,7	1,0
		Heating capacity [kW]	3,71	3,23	2,64	1,73
		Pressure drop [kPa]	3,5	2,7	1,8	0,7
	med	Total cooling capacity [kW]	2,26	1,83	1,32	-
		Sensible cooling capacity [kW]	2,02	1,59	1,14	-
		Water flow [l/h]	388	314	227	-
		Pressure drop [kPa]	2,7	1,8	1,0	-
		Heating capacity [kW]	3,11	2,55	1,93	-
		Pressure drop [kPa]	2,3	1,5	0,8	-
	min	Total cooling capacity [kW]	1,82	1,13	-	-
		Sensible cooling capacity [kW]	1,47	1,00	-	-
		Water flow [l/h]	312	194	-	-
		Pressure drop [kPa]	1,7	0,6	-	-
		Heating capacity [kW]	2,51	1,77	-	-
		Pressure drop [kPa]	1,3	0,6	-	-
004-4R	max	Total cooling capacity [kW]	3,49	3,03	2,42	1,52
		Sensible cooling capacity [kW]	2,80	2,38	1,85	1,14
		Water flow [l/h]	599	520	416	261
		Pressure drop [kPa]	10,0	7,6	5,0	2,1
		Heating capacity [kW]	4,56	3,97	3,18	2,07
		Pressure drop [kPa]	6,6	5,2	3,5	1,5
	med	Total cooling capacity [kW]	2,82	2,28	1,69	-
		Sensible cooling capacity [kW]	2,22	1,76	1,28	-
		Water flow [l/h]	483	392	290	-
		Pressure drop [kPa]	5,1	3,3	1,9	-
		Heating capacity [kW]	3,75	3,03	2,27	-
		Pressure drop [kPa]	4,3	2,9	1,7	-
	min	Total cooling capacity [kW]	2,25	1,49	-	-
		Sensible cooling capacity [kW]	1,74	1,14	-	-
		Water flow [l/h]	386	256	-	-
		Pressure drop [kPa]	3,1	1,2	-	-
		Heating capacity [kW]	2,99	2,10	-	-
		Pressure drop [kPa]	2,4	1,2	-	-

7.2.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75
004-2R	max	Heating capacity [kW]	5,22	4,63	3,83	2,63
		Water flow [l/h]	459	402	330	224
		Pressure drop [kPa]	6,6	5,3	3,7	1,8
	med	Heating capacity [kW]	3,69	3,14	2,43	-
		Water flow [l/h]	324	313	243	-
		Pressure drop [kPa]	3,4	3,1	2,0	-
	min	Heating capacity [kW]	3,41	2,53	-	-
		Water flow [l/h]	300	220	-	-
		Pressure drop [kPa]	2,4	1,5	-	-
004-3R	max	Heating capacity [kW]	6,38	5,58	4,54	3,04
		Water flow [l/h]	560	501	405	267
		Pressure drop [kPa]	4,5	3,7	2,5	1,2
	med	Heating capacity [kW]	5,36	4,40	3,36	-
		Water flow [l/h]	471	383	293	-
		Pressure drop [kPa]	3,2	2,2	1,3	-
	min	Heating capacity [kW]	4,32	3,09	-	-
		Water flow [l/h]	379	261	-	-
		Pressure drop [kPa]	1,8	1,0	-	-
004-4R	max	Heating capacity [kW]	7,77	6,73	5,40	3,50
		Water flow [l/h]	682	579	460	295
		Pressure drop [kPa]	8,2	6,1	4,0	1,8
	med	Heating capacity [kW]	6,39	5,15	3,85	-
		Water flow [l/h]	561	434	325	-
		Pressure drop [kPa]	5,5	3,4	2,0	-
	min	Heating capacity [kW]	5,08	3,55	-	-
		Water flow [l/h]	447	288	-	-
		Pressure drop [kPa]	3,0	1,5	-	-

7.3 CAPACITIES FOR SIZE 006 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.3.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75
006-2R	max	Total cooling capacity [kW]	2,53	2,33	1,75	1,27
		Sensible cooling capacity [kW]	2,19	2,05	1,42	0,57
		Water flow [l/h]	435	399	301	218
		Pressure drop [kPa]	3,7	3,2	1,8	0,7
		Heating capacity [kW]	3,73	3,34	2,66	1,87
		Pressure drop [kPa]	3,3	2,8	1,6	0,7
	med	Total cooling capacity [kW]	1,96	1,72	1,55	1,20
		Sensible cooling capacity [kW]	1,82	1,51	1,36	1,15
		Water flow [l/h]	337	295	266	206
		Pressure drop [kPa]	2,4	1,8	1,4	0,9
		Heating capacity [kW]	3,14	2,66	2,23	1,71
		Pressure drop [kPa]	2,1	1,6	1,3	0,8
	min	Total cooling capacity [kW]	1,59	1,36	1,12	-
		Sensible cooling capacity [kW]	1,38	1,23	1,04	-
		Water flow [l/h]	272	233	192	-
		Pressure drop [kPa]	1,5	1,1	0,8	-
		Heating capacity [kW]	2,54	2,07	1,67	-
		Pressure drop [kPa]	1,4	0,9	0,7	-
006-3R	max	Total cooling capacity [kW]	4,08	4,04	3,44	2,17
		Sensible cooling capacity [kW]	3,03	2,85	2,10	0,79
		Water flow [l/h]	701	694	589	372
		Pressure drop [kPa]	11,7	11,5	7,9	2,3
		Heating capacity [kW]	5,22	4,76	3,89	2,63
		Pressure drop [kPa]	10,5	10,3	7,1	2,4
	med	Total cooling capacity [kW]	3,56	3,39	2,75	1,63
		Sensible cooling capacity [kW]	2,53	2,24	1,91	1,29
		Water flow [l/h]	611	582	472	279
		Pressure drop [kPa]	9,2	8,1	5,3	2,0
		Heating capacity [kW]	4,50	3,91	3,15	2,24
		Pressure drop [kPa]	8,3	7,3	4,9	1,9
	min	Total cooling capacity [kW]	2,43	2,19	1,54	-
		Sensible cooling capacity [kW]	2,05	1,68	1,21	-
		Water flow [l/h]	417	376	264	-
		Pressure drop [kPa]	6,3	3,5	1,9	-
		Heating capacity [kW]	3,70	2,85	2,19	-
		Pressure drop [kPa]	5,9	2,9	1,6	-
006-4R	max	Total cooling capacity [kW]	4,47	4,23	3,26	2,11
		Sensible cooling capacity [kW]	3,61	3,34	2,43	0,85
		Water flow [l/h]	768	726	560	362
		Pressure drop [kPa]	5,8	5,3	3,0	0,9
		Heating capacity [kW]	5,97	5,35	4,26	2,83
		Pressure drop [kPa]	5,2	4,7	2,7	1,0
	med	Total cooling capacity [kW]	3,65	3,20	2,56	2,00
		Sensible cooling capacity [kW]	2,97	2,54	1,97	1,44
		Water flow [l/h]	627	549	440	343
		Pressure drop [kPa]	4,1	3,1	2,0	1,2
		Heating capacity [kW]	5,03	4,26	3,38	2,49
		Pressure drop [kPa]	3,6	2,7	1,8	1,2
	min	Total cooling capacity [kW]	2,79	2,27	1,87	-
		Sensible cooling capacity [kW]	2,26	1,75	1,35	-
		Water flow [l/h]	478	390	321	-
		Pressure drop [kPa]	2,3	1,6	1,1	-
		Heating capacity [kW]	4,00	3,11	2,41	-
		Pressure drop [kPa]	2,1	1,3	1,0	-

7.3.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75
006-2R	max	Heating capacity [kW]	6,79	6,32	5,29	3,68
		Water flow [l/h]	596	659	579	397
		Pressure drop [kPa]	5,7	6,9	5,1	2,0
	med	Heating capacity [kW]	5,88	5,32	4,40	3,28
		Water flow [l/h]	517	577	491	347
		Pressure drop [kPa]	4,5	5,2	3,8	2,1
	min	Heating capacity [kW]	4,87	4,05	3,22	-
		Water flow [l/h]	428	421	322	-
		Pressure drop [kPa]	3,0	2,6	1,7	-
006-3R	max	Heating capacity [kW]	9,00	8,29	6,76	4,63
		Water flow [l/h]	790	864	741	498
		Pressure drop [kPa]	12,7	14,9	10,5	3,9
	med	Heating capacity [kW]	7,71	6,79	5,51	4,04
		Water flow [l/h]	677	735	615	427
		Pressure drop [kPa]	9,7	10,8	7,7	4,0
	min	Heating capacity [kW]	6,49	5,04	3,90	-
		Water flow [l/h]	570	524	390	-
		Pressure drop [kPa]	10,2	5,1	3,2	-
006-4R	max	Heating capacity [kW]	10,33	9,45	7,64	5,11
		Water flow [l/h]	907	986	837	551
		Pressure drop [kPa]	6,8	7,9	5,5	2,0
	med	Heating capacity [kW]	8,78	7,65	6,12	4,38
		Water flow [l/h]	771	829	684	464
		Pressure drop [kPa]	5,1	5,6	3,9	2,0
	min	Heating capacity [kW]	7,06	5,56	4,23	-
		Water flow [l/h]	620	578	423	-
		Pressure drop [kPa]	3,3	2,6	1,6	-

7.4 CAPACITIES FOR SIZE 008 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.4.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75	100
008-2R	max	Total cooling capacity [kW]	3,00	2,81	2,47	1,82	1,34
		Sensible cooling capacity [kW]	2,62	2,52	2,25	1,51	1,11
		Water flow [l/h]	514	483	425	313	230
		Pressure drop [kPa]	4,7	4,4	3,6	2,0	1,2
		Heating capacity [kW]	4,26	3,94	3,43	2,63	1,76
		Pressure drop [kPa]	4,2	3,8	3,1	1,8	1,0
	med	Total cooling capacity [kW]	2,62	2,45	2,09	1,69	1,19
		Sensible cooling capacity [kW]	2,39	2,22	1,92	1,34	0,94
		Water flow [l/h]	449	420	358	290	204
		Pressure drop [kPa]	4,2	3,5	2,5	1,7	0,9
		Heating capacity [kW]	3,90	3,56	3,05	2,36	1,50
		Pressure drop [kPa]	3,7	3,2	2,3	1,5	0,8
	min	Total cooling capacity [kW]	2,07	1,95	1,75	1,29	-
		Sensible cooling capacity [kW]	1,92	1,73	1,50	1,13	-
		Water flow [l/h]	356	334	301	221	-
		Pressure drop [kPa]	2,6	2,3	1,9	1,0	-
		Heating capacity [kW]	3,20	2,93	2,49	1,84	-
		Pressure drop [kPa]	2,3	2,0	1,6	0,8	-
008-3R	max	Total cooling capacity [kW]	4,78	4,56	4,22	3,65	1,82
		Sensible cooling capacity [kW]	3,65	3,49	3,11	2,31	1,42
		Water flow [l/h]	820	783	724	626	312
		Pressure drop [kPa]	14,6	14,1	12,5	9,1	2,6
		Heating capacity [kW]	6,01	5,54	4,87	3,88	2,32
		Pressure drop [kPa]	12,9	12,2	10,8	8,4	2,4
	med	Total cooling capacity [kW]	4,33	4,17	3,85	3,07	1,66
		Sensible cooling capacity [kW]	3,35	3,06	2,64	1,91	1,13
		Water flow [l/h]	743	715	661	527	284
		Pressure drop [kPa]	13,7	12,2	10,0	6,4	2,2
		Heating capacity [kW]	5,52	5,04	4,39	3,37	1,96
		Pressure drop [kPa]	12,3	11,2	9,4	5,8	1,9
	min	Total cooling capacity [kW]	3,72	3,82	3,24	1,78	-
		Sensible cooling capacity [kW]	2,64	2,55	2,18	1,45	-
		Water flow [l/h]	639	655	556	305	-
		Pressure drop [kPa]	9,7	10,1	7,4	2,5	-
		Heating capacity [kW]	4,61	4,29	3,60	2,44	-
		Pressure drop [kPa]	8,7	9,2	6,6	2,0	-
008-4R	max	Total cooling capacity [kW]	5,40	5,07	4,50	3,42	2,24
		Sensible cooling capacity [kW]	4,36	4,15	3,57	2,64	1,57
		Water flow [l/h]	926	870	773	588	384
		Pressure drop [kPa]	7,6	7,2	5,9	3,5	1,6
		Heating capacity [kW]	6,97	6,37	5,50	4,23	2,59
		Pressure drop [kPa]	6,7	6,2	5,1	3,1	1,5
	med	Total cooling capacity [kW]	4,71	4,45	3,86	2,79	2,01
		Sensible cooling capacity [kW]	3,88	3,55	3,00	2,06	1,24
		Water flow [l/h]	808	764	662	479	345
		Pressure drop [kPa]	6,7	5,8	4,3	2,3	1,3
		Heating capacity [kW]	6,27	5,71	4,86	3,60	2,15
		Pressure drop [kPa]	6,0	5,3	3,9	2,1	1,1
	min	Total cooling capacity [kW]	3,86	3,63	2,88	2,14	-
		Sensible cooling capacity [kW]	3,12	2,77	2,20	1,58	-
		Water flow [l/h]	662	622	494	367	-
		Pressure drop [kPa]	4,4	3,9	2,6	1,5	-
		Heating capacity [kW]	5,16	4,69	3,84	2,73	-
		Pressure drop [kPa]	3,9	3,5	2,2	1,2	-

7.4.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75	100
008-2R	max	Heating capacity [kW]	7,67	7,33	6,45	5,23	3,43
		Water flow [l/h]	673	741	688	608	399
		Pressure drop [kPa]	6,6	8,1	7,3	5,9	2,7
	med	Heating capacity [kW]	7,11	6,69	5,88	4,64	2,87
		Water flow [l/h]	624	679	636	540	335
		Pressure drop [kPa]	6,6	7,5	6,4	4,5	1,8
	min	Heating capacity [kW]	5,95	5,82	4,97	3,56	-
		Water flow [l/h]	523	644	567	384	-
		Pressure drop [kPa]	4,4	6,5	5,0	2,2	-
008-3R	max	Heating capacity [kW]	10,30	9,67	8,44	6,77	4,21
		Water flow [l/h]	904	977	900	787	489
		Pressure drop [kPa]	15,0	17,7	15,7	12,5	5,2
	med	Heating capacity [kW]	9,44	8,76	7,64	5,88	3,48
		Water flow [l/h]	829	889	826	685	406
		Pressure drop [kPa]	14,6	16,2	13,7	9,1	3,5
	min	Heating capacity [kW]	7,87	7,45	6,27	4,41	-
		Water flow [l/h]	691	824	715	475	-
		Pressure drop [kPa]	9,8	13,6	10,1	4,3	-
008-4R	max	Heating capacity [kW]	12,00	11,18	9,69	7,61	4,58
		Water flow [l/h]	1054	1130	1034	885	533
		Pressure drop [kPa]	8,3	9,7	8,4	6,4	2,5
	med	Heating capacity [kW]	10,88	10,07	8,65	6,55	3,75
		Water flow [l/h]	955	1022	935	763	437
		Pressure drop [kPa]	7,9	8,7	7,2	4,6	1,6
	min	Heating capacity [kW]	8,93	8,41	7,00	4,84	-
		Water flow [l/h]	784	930	799	522	-
		Pressure drop [kPa]	5,1	7,1	5,2	2,1	-

7.5 CAPACITIES FOR SIZE 020 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.5.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% R.H. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75	100	125
020-2R	max	Total cooling capacity [kW]	4,40	4,12	3,77	3,30	2,68	1,83
		Sensible cooling capacity [kW]	3,81	3,62	3,26	2,87	2,36	1,69
		Water flow [l/h]	755	707	647	567	460	315
		Pressure drop [kPa]	13,6	12,0	10,2	8,0	5,5	2,8
		Heating capacity [kW]	6,13	5,73	5,20	4,57	3,74	2,63
		Pressure drop [kPa]	8,3	7,4	6,3	4,9	3,3	1,7
	med	Total cooling capacity [kW]	4,15	3,90	3,54	3,05	2,47	1,60
		Sensible cooling capacity [kW]	3,58	3,35	3,08	2,70	2,17	1,56
		Water flow [l/h]	712	669	608	523	423	274
		Pressure drop [kPa]	11,6	10,3	8,7	6,6	4,5	2,1
		Heating capacity [kW]	6,06	5,66	5,18	4,48	3,64	2,50
		Pressure drop [kPa]	8,2	7,3	6,2	4,7	3,2	1,4
	min	Total cooling capacity [kW]	3,26	2,91	2,54	2,06	1,24	0,71
		Sensible cooling capacity [kW]	2,52	2,32	2,01	1,71	1,24	0,58
		Water flow [l/h]	559	499	435	354	213	122
		Pressure drop [kPa]	7,4	6,0	4,7	3,3	1,3	0,5
		Heating capacity [kW]	4,72	4,24	3,69	3,09	2,25	1,02
		Pressure drop [kPa]	5,9	4,8	3,7	2,5	1,0	0,4
020-3R	max	Total cooling capacity [kW]	6,47	5,90	5,41	4,71	3,81	2,60
		Sensible cooling capacity [kW]	5,32	4,98	4,50	3,94	3,23	2,23
		Water flow [l/h]	1110	1013	928	808	653	447
		Pressure drop [kPa]	38,9	34,0	28,9	22,5	15,2	7,6
		Heating capacity [kW]	8,44	7,80	7,06	6,14	4,93	3,37
		Pressure drop [kPa]	23,9	20,8	17,7	13,7	9,3	4,6
	med	Total cooling capacity [kW]	6,05	5,40	4,88	4,23	3,36	2,27
		Sensible cooling capacity [kW]	4,97	4,62	4,25	3,67	2,95	1,91
		Water flow [l/h]	1037	926	837	725	577	389
		Pressure drop [kPa]	32,7	29,2	24,3	18,7	12,3	6,1
		Heating capacity [kW]	8,25	7,71	6,96	5,98	4,73	3,2
		Pressure drop [kPa]	23,2	20,7	17,2	13,2	8,7	4,2
	min	Total cooling capacity [kW]	4,71	3,94	3,41	2,83	2,11	0,88
		Sensible cooling capacity [kW]	3,50	3,12	2,73	2,27	1,70	0,65
		Water flow [l/h]	808	677	585	485	362	151
		Pressure drop [kPa]	20,6	16,7	12,8	9,1	5,4	1,2
		Heating capacity [kW]	6,29	5,58	4,82	3,97	2,97	1,19
		Pressure drop [kPa]	16,4	13,2	10,1	7,2	4,2	0,9
020-4R	max	Total cooling capacity [kW]	7,59	7,16	6,55	5,77	4,75	3,20
		Sensible cooling capacity [kW]	6,43	5,95	5,40	4,68	3,77	2,45
		Water flow [l/h]	1302	1228	1125	991	815	549
		Pressure drop [kPa]	22,4	19,6	16,2	12,2	8,0	3,7
		Heating capacity [kW]	9,89	9,13	8,21	7,05	5,58	3,71
		Pressure drop [kPa]	13,7	12,0	9,9	7,5	4,9	2,2
	med	Total cooling capacity [kW]	7,05	6,37	5,93	5,18	4,07	2,60
		Sensible cooling capacity [kW]	5,99	5,55	5,03	4,32	3,26	2,03
		Water flow [l/h]	1209	1093	1017	889	698	445
		Pressure drop [kPa]	18,6	16,3	13,5	10,0	6,3	2,9
		Heating capacity [kW]	9,62	8,93	8,01	6,82	5,30	3,49
		Pressure drop [kPa]	13,2	11,6	9,5	7,1	4,4	2,0
	min	Total cooling capacity [kW]	5,33	4,37	3,91	3,14	2,21	0,85
		Sensible cooling capacity [kW]	4,12	3,65	3,14	2,48	1,74	0,63
		Water flow [l/h]	915	749	671	540	379	145
		Pressure drop [kPa]	11,1	8,8	6,5	4,3	2,5	0,7
		Heating capacity [kW]	7,18	6,31	5,38	4,37	3,22	1,23
		Pressure drop [kPa]	8,8	7,0	5,1	3,4	1,9	0,5

7.5.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75	100	125
020-2R	max	Heating capacity [kW]	10,78	10,11	9,15	8,08	6,60	4,64
		Water flow [l/h]	947	913	826	729	596	419
		Pressure drop [kPa]	12,3	11,5	9,5	7,6	5,2	2,7
	med	Heating capacity [kW]	10,73	9,95	9,08	7,90	6,37	4,46
		Water flow [l/h]	942	855	780	678	547	383
		Pressure drop [kPa]	13,3	11,1	9,4	7,3	4,9	2,5
	min	Heating capacity [kW]	8,31	7,45	6,51	5,46	4,20	1,80
		Water flow [l/h]	730	645	564	473	364	155
		Pressure drop [kPa]	9,3	7,4	5,8	4,2	2,6	0,5
020-3R	max	Heating capacity [kW]	14,43	13,42	12,09	10,49	8,43	5,75
		Water flow [l/h]	1267	1191	1073	931	749	511
		Pressure drop [kPa]	29,4	27,1	22,4	17,2	11,5	5,7
	med	Heating capacity [kW]	14,17	13,20	11,93	10,21	8,06	5,46
		Water flow [l/h]	1245	1075	972	831	656	444
		Pressure drop [kPa]	31,3	26,3	21,9	16,4	10,6	5,2
	min	Heating capacity [kW]	10,75	9,51	8,21	6,75	5,07	2,01
		Water flow [l/h]	944	774	668	549	412	163
		Pressure drop [kPa]	21,0	16,3	12,5	8,7	5,1	0,9
020-4R	max	Heating capacity [kW]	16,94	15,67	14,04	12,08	9,54	6,34
		Water flow [l/h]	1488	1435	1308	1154	945	658
		Pressure drop [kPa]	16,9	15,4	12,6	9,5	6,2	2,9
	med	Heating capacity [kW]	16,57	15,32	13,73	11,67	9,05	5,96
		Water flow [l/h]	1455	1275	1183	1033	813	533
		Pressure drop [kPa]	17,9	14,8	12,1	9,0	5,6	2,6
	min	Heating capacity [kW]	12,28	10,79	9,19	7,48	5,49	2,07
		Water flow [l/h]	1079	869	784	645	455	144
		Pressure drop [kPa]	11,5	8,8	6,6	4,5	2,5	0,4

7.6 CAPACITIES FOR SIZE 030 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.6.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75	100	125	150	175
030-2R	max	Total cooling capacity [kW]	5,20	5,08	4,87	4,63	4,25	3,79	3,21	2,53
		Sensible cooling capacity [kW]	4,43	4,28	4,22	3,97	3,72	3,27	2,82	2,25
		Water flow [l/h]	892	872	836	795	728	651	552	434
		Pressure drop [kPa]	17,9	17,2	15,9	14,5	12,4	10,1	7,4	4,8
		Heating capacity [kW]	6,96	6,78	6,55	6,21	5,71	5,05	4,33	3,41
		Pressure drop [kPa]	13,8	13,2	12,2	11,1	9,5	7,7	5,7	3,7
	med	Total cooling capacity [kW]	4,75	4,55	4,32	4,05	3,69	3,20	2,57	1,65
		Sensible cooling capacity [kW]	3,87	3,80	3,60	3,36	3,07	2,69	2,21	1,57
		Water flow [l/h]	814	780	741	694	633	549	441	282
		Pressure drop [kPa]	15,3	14,1	12,9	11,4	9,6	7,4	5,0	2,3
		Heating capacity [kW]	6,68	6,45	6,17	5,77	5,22	4,52	3,69	2,53
		Pressure drop [kPa]	11,9	11,0	10,0	8,9	7,5	5,7	3,8	1,7
	min	Total cooling capacity [kW]	4,26	4,04	3,81	3,50	3,17	2,74	2,17	1,15
		Sensible cooling capacity [kW]	3,29	3,20	2,99	2,76	2,52	2,19	1,81	1,15
		Water flow [l/h]	730	693	654	601	544	471	372	197
		Pressure drop [kPa]	11,6	10,6	9,5	8,1	6,8	5,2	3,4	1,1
		Heating capacity [kW]	5,90	5,61	5,28	4,90	4,41	3,84	3,09	1,92
		Pressure drop [kPa]	9,6	8,7	7,9	6,7	5,6	4,3	2,8	0,9
030-3R	max	Total cooling capacity [kW]	7,65	7,46	7,19	6,79	6,29	5,53	4,70	3,63
		Sensible cooling capacity [kW]	6,28	6,12	5,88	5,63	5,11	4,51	3,89	3,04
		Water flow [l/h]	1313	1280	1233	1166	1079	949	806	622
		Pressure drop [kPa]	51,7	49,3	46,1	41,5	36,1	28,5	21,1	13,2
		Heating capacity [kW]	9,70	9,41	9,07	8,60	7,85	6,86	5,81	4,47
		Pressure drop [kPa]	39,6	37,7	35,2	31,7	27,5	21,7	16,1	10,0
	med	Total cooling capacity [kW]	6,90	6,69	6,37	5,94	5,35	4,60	3,71	2,48
		Sensible cooling capacity [kW]	5,44	5,25	5,02	4,68	4,23	3,64	2,98	1,96
		Water flow [l/h]	1184	1147	1093	1019	917	789	636	425
		Pressure drop [kPa]	43,1	40,6	37,2	32,7	27,0	20,4	13,8	6,7
		Heating capacity [kW]	9,19	8,82	8,41	7,81	7,02	6,01	4,81	3,24
		Pressure drop [kPa]	33,4	31,5	28,8	25,3	20,8	15,8	10,6	5,1
	min	Total cooling capacity [kW]	6,18	5,86	5,53	5,09	4,57	3,95	3,14	1,86
		Sensible cooling capacity [kW]	4,59	4,37	4,09	3,82	3,44	2,98	2,41	1,41
		Water flow [l/h]	1060	1006	949	874	784	677	538	319
		Pressure drop [kPa]	32,7	29,7	26,7	23,0	18,8	14,4	9,5	3,7
		Heating capacity [kW]	7,97	7,56	7,08	6,52	5,83	5,00	3,98	2,45
		Pressure drop [kPa]	27,0	24,5	22,0	18,9	15,4	11,8	7,7	3,0
030-4R	max	Total cooling capacity [kW]	9,13	8,05	7,79	7,37	6,70	5,81	4,90	3,68
		Sensible cooling capacity [kW]	7,62	6,82	6,52	6,16	5,65	4,93	4,18	3,20
		Water flow [l/h]	1566	1381	1336	1264	1149	997	841	632
		Pressure drop [kPa]	30,6	24,3	22,9	20,7	17,4	13,4	9,8	5,8
		Heating capacity [kW]	11,52	10,25	9,88	9,29	8,44	7,31	6,14	4,62
		Pressure drop [kPa]	23,4	21,2	19,9	18,0	15,1	11,6	8,5	5,0
	med	Total cooling capacity [kW]	8,08	7,81	7,41	6,84	6,11	5,17	4,06	2,58
		Sensible cooling capacity [kW]	6,57	6,28	6,02	5,58	5,03	4,24	3,23	2,00
		Water flow [l/h]	1387	1340	1271	1174	1049	887	697	443
		Pressure drop [kPa]	24,7	23,1	21,0	18,2	14,8	10,9	7,1	3,2
		Heating capacity [kW]	10,75	10,33	9,81	9,06	8,08	6,82	5,38	3,52
		Pressure drop [kPa]	19,1	17,9	16,2	14,0	11,4	8,4	5,4	2,4
	min	Total cooling capacity [kW]	7,12	6,76	6,30	5,79	5,10	4,32	3,31	1,93
		Sensible cooling capacity [kW]	5,46	5,21	4,87	4,48	4,02	3,36	2,53	1,44
		Water flow [l/h]	1221	1159	1082	993	875	742	567	331
		Pressure drop [kPa]	18,2	16,5	14,6	12,5	9,9	7,4	4,6	1,8
		Heating capacity [kW]	9,22	8,72	8,14	7,45	6,60	5,61	4,38	2,62
		Pressure drop [kPa]	15,0	13,6	12,0	10,2	8,1	6,0	3,7	1,4

7.6.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75	100	125	150	175
030-2R	max	Heating capacity [kW]	12,11	11,98	11,56	10,95	10,04	8,88	7,64	5,97
		Water flow [l/h]	1063	1121	1082	1024	940	831	715	559
		Pressure drop [kPa]	18,5	20,4	19,0	17,2	14,7	11,7	8,8	5,6
	med	Heating capacity [kW]	11,79	11,37	10,86	10,14	9,23	7,96	6,50	4,52
		Water flow [l/h]	1036	1005	960	896	816	704	575	400
		Pressure drop [kPa]	17,9	17,0	15,6	13,7	11,5	8,8	6,0	3,1
	min	Heating capacity [kW]	10,27	9,88	9,32	8,56	7,76	6,74	5,46	3,53
		Water flow [l/h]	902	893	842	773	700	609	494	318
		Pressure drop [kPa]	13,7	13,5	12,1	10,3	8,6	6,6	4,5	2,0
030-3R	max	Heating capacity [kW]	16,49	16,24	15,64	14,76	13,47	11,74	9,97	7,62
		Water flow [l/h]	1448	1520	1464	1381	1260	1098	933	713
		Pressure drop [kPa]	45,8	50,1	46,7	41,9	35,4	27,4	20,3	12,3
	med	Heating capacity [kW]	15,76	15,12	14,4	13,37	12,01	10,26	8,20	5,51
		Water flow [l/h]	1384	1337	1273	1182	1062	907	725	487
		Pressure drop [kPa]	43,0	40,3	36,8	32,1	26,3	19,6	13,0	6,3
	min	Heating capacity [kW]	13,55	12,93	12,11	11,14	9,94	8,52	6,77	4,18
		Water flow [l/h]	1190	1168	1093	1006	898	770	611	378
		Pressure drop [kPa]	32,1	31,1	27,5	23,6	19,1	14,4	9,4	3,9
030-4R	max	Heating capacity [kW]	19,65	17,66	16,95	15,98	14,49	12,53	10,48	7,90
		Water flow [l/h]	1725	1641	1576	1485	1347	1164	974	735
		Pressure drop [kPa]	27,1	28,2	26,1	23,4	19,5	14,9	10,7	6,4
	med	Heating capacity [kW]	18,41	17,73	16,78	15,52	13,81	11,67	9,19	6,02
		Water flow [l/h]	1617	1568	1483	1372	1221	1032	813	532
		Pressure drop [kPa]	24,5	23,1	20,9	18,0	14,5	10,7	6,9	3,2
	min	Heating capacity [kW]	15,71	14,95	13,95	12,71	11,29	9,58	7,48	4,48
		Water flow [l/h]	1380	1350	1260	1148	1020	865	676	405
		Pressure drop [kPa]	18,1	17,4	15,3	12,9	10,3	7,6	4,8	1,9

7.7 CAPACITIES FOR SIZE 040 AT DIFFERENT EXTERNAL STATIC PRESSURES [Pa]

7.7.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75	100	125	150	175	200	250
040-2R	max	Total cooling capacity [kW]	7,12	6,93	6,60	6,33	5,97	5,59	5,07	4,45	3,72	2,26
		Sensible cooling capacity [kW]	5,74	5,46	5,25	5,03	4,73	4,39	4,03	3,54	2,99	1,89
		Water flow [l/h]	1222	1189	1132	1086	1024	959	870	763	638	388
		Pressure drop [kPa]	19,9	19,0	17,3	16,1	14,4	12,8	10,7	8,4	6,1	2,5
		Heating capacity [kW]	10,08	9,76	9,29	8,89	8,37	7,78	7,07	6,16	5,15	3,15
		Pressure drop [kPa]	16,4	15,6	14,2	13,2	11,8	10,5	8,8	6,9	5,0	2,0
	med	Total cooling capacity [kW]	6,77	6,47	6,12	5,81	5,38	4,87	4,35	3,69	3,00	1,21
		Sensible cooling capacity [kW]	5,42	5,18	4,92	4,63	4,30	3,96	3,53	3,02	2,47	1,09
		Water flow [l/h]	1161	1111	1051	997	923	836	747	634	515	208
		Pressure drop [kPa]	18,5	17,1	15,4	14,0	12,2	10,2	8,3	6,1	4,2	0,9
		Heating capacity [kW]	9,49	9,07	8,64	8,13	7,51	6,82	6,04	5,13	4,17	2,02
		Pressure drop [kPa]	15,2	14,0	12,6	11,5	10,0	8,3	6,8	5,0	3,4	0,7
	min	Total cooling capacity [kW]	5,79	5,50	5,14	4,78	4,34	3,80	3,24	2,62	1,94	-
		Sensible cooling capacity [kW]	5,05	4,87	4,56	4,24	3,84	3,40	2,91	2,36	1,68	-
		Water flow [l/h]	994	944	881	821	745	652	556	450	333	-
		Pressure drop [kPa]	17,0	15,5	13,6	12,0	10,0	7,9	5,9	4,0	2,4	-
		Heating capacity [kW]	8,70	8,24	7,72	7,13	6,45	5,67	4,81	3,90	2,95	-
		Pressure drop [kPa]	12,9	11,8	10,4	9,1	7,6	6,0	4,5	3,0	1,7	-
040-3R	max	Total cooling capacity [kW]	9,66	9,25	8,87	8,46	7,94	7,34	6,62	5,74	4,70	2,62
		Sensible cooling capacity [kW]	7,76	7,42	7,20	6,78	6,35	5,94	5,37	4,67	3,87	2,19
		Water flow [l/h]	1658	1588	1523	1451	1362	1260	1136	985	806	449
		Pressure drop [kPa]	16,6	15,3	14,2	13,0	11,6	10,0	8,3	6,4	4,4	1,6
		Heating capacity [kW]	13,48	12,89	12,31	11,68	10,95	10,13	9,11	7,87	6,45	3,75
		Pressure drop [kPa]	13,6	12,6	11,6	10,6	9,5	8,2	6,8	5,2	3,6	1,2
	med	Total cooling capacity [kW]	9,02	8,64	8,18	7,65	7,06	6,34	5,57	4,66	3,69	1,62
		Sensible cooling capacity [kW]	7,27	6,91	6,63	6,19	5,74	5,21	4,60	3,88	2,98	1,25
		Water flow [l/h]	1548	1483	1403	1312	1212	1088	956	800	632	278
		Pressure drop [kPa]	14,9	13,8	12,5	11,0	9,6	7,9	6,2	4,5	3,0	0,7
		Heating capacity [kW]	12,52	11,94	11,28	10,53	9,71	8,74	7,64	6,39	5,08	2,36
		Pressure drop [kPa]	12,2	11,3	10,2	9,0	7,8	6,4	5,0	3,6	2,4	0,5
	min	Total cooling capacity [kW]	7,64	7,21	6,75	6,18	5,57	4,81	4,02	3,10	2,10	-
		Sensible cooling capacity [kW]	6,88	6,45	6,06	5,63	4,89	4,15	3,35	2,54	1,74	-
		Water flow [l/h]	1311	1236	1157	1060	955	826	689	533	361	-
		Pressure drop [kPa]	13,4	12,1	10,7	9,1	7,5	5,8	4,2	2,7	1,3	-
		Heating capacity [kW]	11,30	10,67	9,95	9,10	8,18	7,10	5,92	4,69	3,43	-
		Pressure drop [kPa]	10,2	9,2	8,1	6,9	5,7	4,4	3,1	2,0	1,0	-
040-4R	max	Total cooling capacity [kW]	12,44	11,93	11,37	10,77	10,05	9,27	8,26	7,08	5,69	3,07
		Sensible cooling capacity [kW]	9,75	9,35	8,93	8,44	7,92	7,32	6,59	5,68	4,52	2,36
		Water flow [l/h]	2134	2047	1951	1848	1724	1591	1418	1215	976	527
		Pressure drop [kPa]	33,8	31,3	28,7	26,0	22,9	19,8	16,0	12,1	8,2	2,8
		Heating capacity [kW]	16,70	15,98	15,20	14,37	13,43	12,35	11,03	9,42	7,60	4,27
		Pressure drop [kPa]	30,4	28,1	25,8	23,3	20,5	17,7	14,3	10,8	7,2	2,4
	med	Total cooling capacity [kW]	11,31	10,73	10,17	9,46	8,66	7,74	6,71	5,49	4,14	2,01
		Sensible cooling capacity [kW]	8,87	8,47	8,04	7,50	6,90	6,21	5,25	4,22	3,16	1,41
		Water flow [l/h]	1940	1841	1745	1624	1486	1328	1151	941	710	345
		Pressure drop [kPa]	29,0	26,4	23,9	21,0	17,8	14,5	11,2	7,8	4,8	1,4
		Heating capacity [kW]	15,09	14,34	13,5	12,57	11,51	10,28	8,90	7,36	5,74	2,58
		Pressure drop [kPa]	25,4	23,1	20,9	18,3	15,6	12,7	9,7	6,7	4,0	1,1
	min	Total cooling capacity [kW]	10,90	10,26	9,51	8,65	7,69	6,58	5,33	4,11	2,86	-
		Sensible cooling capacity [kW]	8,42	7,94	7,28	6,55	5,72	4,83	3,86	2,93	2,03	-
		Water flow [l/h]	1870	1761	1632	1484	1319	1128	914	705	490	-
		Pressure drop [kPa]	26,5	23,8	20,7	17,4	14,1	10,6	7,3	4,6	2,5	-
		Heating capacity [kW]	14,37	13,51	12,51	11,39	10,14	8,73	7,18	5,61	4,05	-
		Pressure drop [kPa]	23,1	20,7	18,0	15,1	12,2	9,2	6,2	3,9	2,0	-

7.7.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75	100	125	150	175	200	250
040-2R	max	Heating capacity [kW]	17,68	16,92	16,18	15,46	14,54	13,48	12,19	10,67	8,89	5,44
		Water flow [l/h]	1553	1461	1396	1334	1255	1164	1052	921	767	470
		Pressure drop [kPa]	24,5	21,9	20,2	18,5	16,6	14,4	12,0	9,4	6,7	2,7
	med	Heating capacity [kW]	16,50	15,83	14,99	14,09	13,05	11,82	10,45	8,88	7,22	3,59
		Water flow [l/h]	1450	1366	1293	1216	1126	1020	902	767	623	310
		Pressure drop [kPa]	22,0	19,7	17,8	15,9	13,8	11,5	9,2	6,8	4,6	1,3
	min	Heating capacity [kW]	15,27	14,27	13,35	12,31	11,17	9,80	8,31	6,74	5,10	-
		Water flow [l/h]	1342	1148	1074	990	898	788	668	542	410	-
		Pressure drop [kPa]	21,6	16,2	14,3	12,3	10,3	8,1	6,0	4,1	2,4	-
040-3R	max	Heating capacity [kW]	23,34	22,31	21,29	20,18	18,91	17,44	15,69	13,52	11,06	6,46
		Water flow [l/h]	2050	1926	1837	1742	1632	1505	1354	1167	955	558
		Pressure drop [kPa]	19,4	17,3	15,8	14,3	12,7	11,0	9,0	6,9	4,7	1,8
	med	Heating capacity [kW]	21,62	20,6	19,45	18,15	16,71	15,03	13,12	10,99	8,74	4,07
		Water flow [l/h]	1899	1778	1679	1566	1442	1297	1132	948	754	351
		Pressure drop [kPa]	17,1	15,2	13,7	12	10,3	8,5	6,6	4,8	3,1	0,8
	min	Heating capacity [kW]	19,74	18,38	17,12	15,64	14,04	12,18	10,16	8,06	5,95	-
		Water flow [l/h]	1734	1478	1377	1258	1129	979	817	648	478	-
		Pressure drop [kPa]	16,4	12,2	10,7	9,1	7,5	5,7	4,1	2,7	1,5	-
040-4R	max	Heating capacity [kW]	28,75	27,49	26,14	24,69	23,10	21,19	18,89	16,12	13,01	7,33
		Water flow [l/h]	2525	2426	2307	2179	2039	1871	1668	1423	1148	647
		Pressure drop [kPa]	39,9	37,1	33,8	30,4	26,9	22,9	18,6	13,9	9,4	3,3
	med	Heating capacity [kW]	25,88	24,63	23,17	21,59	19,73	17,6	15,25	12,61	9,86	4,39
		Water flow [l/h]	2273	2180	2051	1911	1746	1558	1350	1116	873	388
		Pressure drop [kPa]	32,7	30,3	27,1	23,8	20,1	16,3	12,5	8,8	5,6	1,3
	min	Heating capacity [kW]	24,65	23,16	21,46	19,56	17,37	14,95	12,32	9,62	6,96	-
		Water flow [l/h]	2165	2068	1916	1746	1551	1335	1100	858	621	-
		Pressure drop [kPa]	29,1	26,7	23,2	19,6	15,8	12,0	8,4	5,3	2,9	-

7.8 CAPACITIES FOR SIZE 050 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.8.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% R.H. - Water temperature: 50 °C

MOD	SPEED		0	25	50	75	100	125	150	175	200	250
050-2R	max	Total cooling capacity [kW]	7,70	7,45	7,24	6,93	6,56	6,10	5,56	4,94	4,27	3,18
		Sensible cooling capacity [kW]	6,61	6,44	6,22	6,00	5,67	5,26	4,78	4,28	3,76	2,79
		Water flow [l/h]	1321	1279	1243	1189	1125	1046	955	847	733	545
		Pressure drop [kPa]	37,2	35,0	33,3	30,7	27,7	24,3	20,5	16,5	12,7	7,4
		Heating capacity [kW]	11,80	11,47	11,08	10,61	10,05	9,32	8,42	7,46	6,47	4,76
		Pressure drop [kPa]	32,9	31,0	29,4	27,1	24,5	21,4	18,1	14,5	11,1	6,5
	med	Total cooling capacity [kW]	7,44	7,19	6,94	6,63	6,17	5,71	5,17	4,64	4,05	2,82
		Sensible cooling capacity [kW]	6,22	6,09	5,77	5,51	5,22	4,76	4,32	3,85	3,43	2,41
		Water flow [l/h]	1276	1233	1190	1137	1058	980	887	796	696	483
		Pressure drop [kPa]	31,3	29,4	27,5	25,3	22,2	19,3	16,1	13,2	10,3	5,3
		Heating capacity [kW]	10,92	10,62	10,23	9,70	9,05	8,31	7,54	6,72	5,92	4,06
		Pressure drop [kPa]	27,7	26,0	24,3	22,4	19,6	17,0	14,2	11,6	9,1	4,6
	min	Total cooling capacity [kW]	7,10	6,88	6,65	6,31	5,85	5,42	4,87	4,30	3,74	2,41
		Sensible cooling capacity [kW]	5,89	5,71	5,56	5,25	4,89	4,50	4,03	3,63	3,15	2,11
		Water flow [l/h]	1218	1181	1141	1083	1005	929	835	737	641	414
		Pressure drop [kPa]	26,1	24,7	23,2	21,1	18,4	15,9	13,1	10,4	8,1	3,7
		Heating capacity [kW]	10,44	10,12	9,72	9,23	8,58	7,87	7,07	6,24	5,41	3,52
		Pressure drop [kPa]	23,1	21,8	20,4	18,6	16,2	14,0	11,5	9,2	7,1	3,2
050-3R	max	Total cooling capacity [kW]	10,47	10,21	9,84	9,42	8,89	8,22	7,42	6,50	5,60	3,99
		Sensible cooling capacity [kW]	9,06	8,85	8,50	8,21	7,73	7,19	6,45	5,69	4,95	3,58
		Water flow [l/h]	1797	1752	1688	1615	1526	1410	1273	1116	961	684
		Pressure drop [kPa]	31,1	29,7	27,7	25,6	23,1	20,0	16,6	13,0	9,9	5,4
		Heating capacity [kW]	15,84	15,39	14,85	14,19	13,34	12,31	11,05	9,65	8,30	5,91
		Pressure drop [kPa]	27,5	26,2	24,5	22,6	20,3	17,6	14,6	11,4	8,7	4,7
	med	Total cooling capacity [kW]	10,07	9,75	9,34	8,83	8,23	7,54	6,77	6,01	5,23	3,41
		Sensible cooling capacity [kW]	8,47	8,23	7,86	7,53	6,96	6,38	5,81	5,15	4,51	2,88
		Water flow [l/h]	1728	1674	1603	1516	1411	1294	1162	1031	897	586
		Pressure drop [kPa]	26,0	24,5	22,6	20,4	17,9	15,3	12,6	10,1	7,8	3,7
		Heating capacity [kW]	14,62	14,14	13,53	12,82	11,90	10,85	9,74	8,60	7,47	4,93
		Pressure drop [kPa]	22,9	21,6	19,9	18,0	15,8	13,5	11,0	8,9	6,9	3,2
	min	Total cooling capacity [kW]	9,55	9,28	8,87	8,40	7,78	7,04	6,31	5,54	4,70	2,82
		Sensible cooling capacity [kW]	8,07	7,81	7,46	7,04	6,59	6,03	5,39	4,76	4,01	2,29
		Water flow [l/h]	1639	1593	1522	1441	1335	1209	1082	950	806	483
		Pressure drop [kPa]	21,4	20,3	18,7	16,9	14,7	12,3	10,0	7,9	5,9	2,4
		Heating capacity [kW]	13,82	13,38	12,80	12,08	11,20	10,15	9,04	7,90	6,74	4,19
		Pressure drop [kPa]	18,9	17,9	16,5	14,9	12,9	10,8	8,8	6,9	5,1	2,0
050-4R	max	Total cooling capacity [kW]	13,45	13,15	12,62	12,05	11,33	10,39	9,28	8,08	6,86	4,70
		Sensible cooling capacity [kW]	11,46	11,05	10,65	10,15	9,58	8,90	7,95	6,96	5,87	3,84
		Water flow [l/h]	2308	2256	2165	2067	1944	1782	1591	1386	1177	806
		Pressure drop [kPa]	39,7	38,1	35,3	32,4	29,0	24,7	20,1	15,6	11,6	5,9
		Heating capacity [kW]	19,15	18,61	17,89	17,02	15,96	14,66	13,05	11,31	9,61	6,68
		Pressure drop [kPa]	36,5	35,0	32,5	29,8	26,6	22,7	18,4	14,3	10,6	5,3
	med	Total cooling capacity [kW]	12,86	12,46	11,91	11,26	10,41	9,44	8,44	7,39	6,33	3,90
		Sensible cooling capacity [kW]	10,58	10,30	9,88	9,35	8,68	7,89	7,08	6,13	5,14	3,07
		Water flow [l/h]	2207	2138	2044	1932	1786	1620	1448	1268	1086	668
		Pressure drop [kPa]	36,7	34,6	31,9	28,8	24,9	20,9	17,0	13,3	10,1	4,3
		Heating capacity [kW]	18,10	17,49	16,71	15,78	14,55	13,17	11,74	10,29	8,84	5,66
		Pressure drop [kPa]	33,9	32,0	29,4	26,5	23,0	19,2	15,6	12,3	9,2	3,8
	min	Total cooling capacity [kW]	11,95	11,56	11,07	10,42	9,64	8,71	7,65	6,62	5,56	3,24
		Sensible cooling capacity [kW]	9,81	9,54	9,08	8,58	7,95	7,19	6,21	5,26	4,33	2,45
		Water flow [l/h]	2051	1983	1900	1787	1653	1495	1313	1136	955	556
		Pressure drop [kPa]	31,6	29,8	27,5	24,6	21,3	17,8	14,0	10,8	7,9	3,0
		Heating capacity [kW]	16,54	15,96	15,24	14,31	13,20	11,89	10,49	9,08	7,66	4,62
		Pressure drop [kPa]	29,1	27,3	25,3	22,6	19,6	16,3	12,8	9,8	7,2	2,7

7.8.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		0	25	50	75	100	125	150	175	200	250
050-2R	max	Heating capacity [kW]	20,90	19,97	19,27	18,54	17,45	16,23	14,63	12,92	11,22	8,21
		Water flow [l/h]	1836	1593	1538	1479	1392	1295	1167	1031	895	655
		Pressure drop [kPa]	58,2	44,8	42,0	39,1	34,9	30,6	25,2	20,0	15,5	8,7
	med	Heating capacity [kW]	19,18	18,44	17,75	16,90	15,73	14,42	13,05	11,61	10,24	7,00
		Water flow [l/h]	1685	1524	1467	1397	1300	1192	1079	960	847	579
		Pressure drop [kPa]	44,5	37,0	34,5	31,5	27,6	23,5	19,5	15,8	12,5	6,2
	min	Heating capacity [kW]	18,28	17,54	16,90	15,96	14,94	13,61	12,22	10,79	9,34	6,06
		Water flow [l/h]	1606	1452	1400	1322	1237	1127	1012	894	774	502
		Pressure drop [kPa]	37,0	30,7	28,7	25,8	22,8	19,2	15,8	12,5	9,6	4,3
050-3R	max	Heating capacity [kW]	27,87	26,62	25,67	24,49	23,06	21,28	19,07	16,63	14,27	10,14
		Water flow [l/h]	2448	2124	2048	1954	1840	1698	1522	1327	1138	809
		Pressure drop [kPa]	46,8	36,1	33,7	30,9	27,7	23,8	19,5	15,1	11,4	6,1
	med	Heating capacity [kW]	25,55	24,49	23,43	22,13	20,56	18,71	16,77	14,79	12,86	8,48
		Water flow [l/h]	2244	2025	1937	1829	1700	1547	1386	1223	1063	701
		Pressure drop [kPa]	35,7	29,6	27,2	24,5	21,4	18,0	14,7	11,7	9,0	4,2
	min	Heating capacity [kW]	24,08	23,13	22,07	20,85	19,31	17,48	15,54	13,56	11,59	7,22
		Water flow [l/h]	2115	1915	1827	1727	1599	1447	1287	1123	959	598
		Pressure drop [kPa]	29,1	24,2	22,2	20,0	17,4	14,4	11,6	9,0	6,8	2,9
050-4R	max	Heating capacity [kW]	33,26	32,1	30,84	29,32	27,47	25,19	22,41	19,39	16,45	11,43
		Water flow [l/h]	2922	2695	2589	2462	2306	2115	1881	1628	1381	960
		Pressure drop [kPa]	54,3	46,8	43,5	39,6	35,1	29,9	24,1	18,5	13,6	7,0
	med	Heating capacity [kW]	31,39	30,15	28,76	27,13	25,03	22,64	20,13	17,64	15,16	9,71
		Water flow [l/h]	2757	2545	2427	2290	2113	1911	1699	1489	1279	820
		Pressure drop [kPa]	49,2	42,4	38,9	34,9	30,1	25,0	20,1	15,8	12,0	5,3
	min	Heating capacity [kW]	28,54	27,45	26,19	24,57	22,65	20,39	17,97	15,53	13,12	7,92
		Water flow [l/h]	2506	2355	2248	2109	1943	1749	1542	1333	1126	680
		Pressure drop [kPa]	40,5	36,1	33,1	29,4	25,3	20,9	16,5	12,7	9,3	3,7

7.9 CAPACITIES FOR SIZE 060 AT DIFFERENT EXTERNAL STATIC PRESSURES [PA]

7.9.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% R.H. - Water temperature: 50 °C

MOD	SPEED		30	50	75	100	125	150	175	200	250	300
060-3R	max	Total cooling capacity [kW]	14,90	14,66	14,26	13,83	13,41	12,82	12,02	10,99	8,26	3,50
		Sensible cooling capacity [kW]	12,42	12,23	11,90	11,61	11,10	10,73	10,08	9,28	7,06	3,12
		Water flow [l/h]	2557	2516	2446	2373	2300	2200	2063	1886	1416	600
		Pressure drop [kPa]	19,8	19,4	18,7	17,9	17,2	16,1	14,6	12,6	7,7	1,7
		Heating capacity [kW]	22,29	22,09	21,71	21,23	20,64	19,82	18,69	17,15	12,58	5,98
		Pressure drop [kPa]	17,4	17,2	16,6	16,1	15,5	14,6	13,3	11,5	6,9	1,5
	med	Total cooling capacity [kW]	12,28	12,11	11,89	11,63	11,21	10,78	10,09	9,11	6,73	2,89
		Sensible cooling capacity [kW]	10,32	10,20	9,97	9,72	9,52	9,06	8,57	7,75	5,83	2,62
		Water flow [l/h]	2107	2077	2040	1996	1924	1850	1731	1563	1155	496
		Pressure drop [kPa]	14,4	14,0	13,5	12,9	12,0	11,1	9,7	8,0	4,6	1,0
		Heating capacity [kW]	18,54	18,29	17,89	17,41	16,81	16,04	14,93	13,35	9,79	4,93
		Pressure drop [kPa]	12,6	12,3	11,9	11,4	10,7	9,9	8,8	7,3	4,2	0,9
	min	Total cooling capacity [kW]	10,56	10,40	10,15	9,89	9,50	8,97	8,25	7,23	5,19	-
		Sensible cooling capacity [kW]	8,91	8,77	8,57	8,37	8,05	7,63	7,03	6,26	4,53	-
		Water flow [l/h]	1813	1785	1741	1697	1629	1539	1415	1241	891	-
		Pressure drop [kPa]	10,6	10,2	9,7	9,1	8,3	7,3	6,1	4,8	2,7	-
		Heating capacity [kW]	15,66	15,35	14,90	14,36	13,68	12,80	11,61	10,24	7,51	-
		Pressure drop [kPa]	9,3	9,0	8,5	8,1	7,4	6,6	5,5	4,4	2,4	-
060-4R	max	Total cooling capacity [kW]	20,24	19,85	19,35	18,73	18,01	17,16	16,05	14,59	10,68	4,36
		Sensible cooling capacity [kW]	15,03	14,83	14,47	14,06	13,51	12,91	12,12	11,09	8,34	3,45
		Water flow [l/h]	3473	3406	3319	3214	3091	2944	2754	2503	1833	748
		Pressure drop [kPa]	15,6	15,2	14,7	14,0	13,2	12,3	11,1	9,5	5,6	1,2
		Heating capacity [kW]	26,81	26,53	26,12	25,57	24,86	23,86	22,46	20,49	14,77	6,71
		Pressure drop [kPa]	13,7	13,4	13,0	12,6	11,9	11,2	10,1	8,7	5,0	1,0
	med	Total cooling capacity [kW]	16,45	16,20	15,88	15,43	14,93	14,26	13,27	11,88	8,30	3,99
		Sensible cooling capacity [kW]	12,40	12,25	11,98	11,67	11,32	10,82	10,14	9,16	6,59	3,04
		Water flow [l/h]	2823	2779	2725	2648	2561	2447	2276	2038	1423	684
		Pressure drop [kPa]	11,0	10,7	10,3	9,7	9,1	8,3	7,2	5,8	3,1	0,9
		Heating capacity [kW]	22,37	22,00	21,51	20,90	20,14	19,17	17,75	15,75	11,27	5,57
		Pressure drop [kPa]	9,6	9,4	9,0	8,6	8,1	7,4	6,5	5,3	2,7	0,7
	min	Total cooling capacity [kW]	13,90	13,71	13,34	12,96	12,42	11,62	10,62	9,09	6,32	-
		Sensible cooling capacity [kW]	10,62	10,44	10,20	9,93	9,53	9,00	8,30	7,24	4,96	-
		Water flow [l/h]	2385	2352	2289	2223	2131	1994	1822	1560	1085	-
		Pressure drop [kPa]	7,9	7,6	7,2	6,7	6,1	5,3	4,4	3,3	1,8	-
		Heating capacity [kW]	18,67	18,28	17,71	17,04	16,19	15,07	13,6	11,86	8,52	-
		Pressure drop [kPa]	6,9	6,7	6,3	5,9	5,4	4,7	4,0	3,0	1,5	-
060-5R	max	Total cooling capacity [kW]	26,80	26,41	25,69	24,90	23,73	22,19	20,12	17,29	9,93	4,45
		Sensible cooling capacity [kW]	20,67	20,28	19,64	18,89	17,96	16,76	15,03	12,73	7,36	3,11
		Water flow [l/h]	4598	4532	4407	4272	4071	3808	3452	2966	1704	764
		Pressure drop [kPa]	39,8	40,7	40,6	39,5	36,6	31,9	25,5	17,8	6,0	1,5
		Heating capacity [kW]	31,42	30,80	29,83	28,66	27,11	25,10	22,45	18,98	10,55	4,70
		Pressure drop [kPa]	37,2	37,2	36,4	35,1	32,7	29,2	24,4	18,2	6,1	1,4
	med	Total cooling capacity [kW]	21,12	20,73	20,05	19,25	18,13	16,57	14,41	11,60	7,83	3,93
		Sensible cooling capacity [kW]	15,86	15,57	15,16	14,61	13,68	12,39	10,66	8,53	5,68	2,69
		Water flow [l/h]	3624	3557	3440	3304	3110	2843	2472	1990	1344	675
		Pressure drop [kPa]	27,8	28,1	27,4	25,7	22,5	17,8	11,8	6,6	3,3	1,0
		Heating capacity [kW]	25,20	24,60	23,67	22,50	20,91	18,71	15,40	10,54	5,81	2,81
		Pressure drop [kPa]	24,8	24,8	24,0	22,6	20,0	16,2	11,0	5,5	2,2	0,6
	min	Total cooling capacity [kW]	18,12	17,79	17,32	16,52	15,25	13,32	10,96	9,63	6,70	-
		Sensible cooling capacity [kW]	13,23	12,99	12,62	11,97	11,05	9,73	8,15	7,03	4,82	-
		Water flow [l/h]	3109	3053	2971	2835	2617	2286	1880	1653	1149	-
		Pressure drop [kPa]	19,6	18,7	17,4	15,7	13,4	10,4	7,3	5,8	3,1	-
		Heating capacity [kW]	20,40	19,80	18,92	17,81	16,34	14,31	11,95	10,39	7,36	-
		Pressure drop [kPa]	17,8	16,3	14,6	12,7	10,4	7,9	5,5	4,4	2,3	-

7.9.2 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		30	50	75	100	125	150	175	200	250	300
060-3R	max	Heating capacity [kW]	38,56	38,19	37,53	36,74	35,70	34,26	32,27	29,56	21,69	10,45
		Water flow [l/h]	3089	3039	2962	2876	2772	2641	2475	2265	1693	816
		Pressure drop [kPa]	23,7	23,4	22,7	22,0	21,0	19,6	17,8	15,4	9,2	2,4
	med	Heating capacity [kW]	32,03	31,57	30,88	30,04	29,05	27,66	25,76	23,00	16,84	8,69
		Water flow [l/h]	2537	2503	2451	2388	2315	2212	2073	1870	1379	712
		Pressure drop [kPa]	17,0	16,6	15,9	15,2	14,4	13,2	11,7	9,7	5,5	1,6
	min	Heating capacity [kW]	27,02	26,48	25,67	24,73	23,58	22,06	19,98	17,62	12,94	-
		Water flow [l/h]	2169	2136	2084	2024	1947	1842	1684	1485	1091	-
		Pressure drop [kPa]	12,4	12,0	11,4	10,7	9,8	8,7	7,3	5,8	3,3	-
060-4R	max	Heating capacity [kW]	46,18	45,75	45,00	44,07	42,82	41,07	38,64	35,24	25,36	11,65
		Water flow [l/h]	4149	4077	3967	3844	3695	3510	3277	2979	2182	1002
		Pressure drop [kPa]	18,2	17,9	17,4	16,7	15,9	14,8	13,3	11,4	6,6	1,6
	med	Heating capacity [kW]	38,49	37,85	37,00	35,97	34,66	32,94	30,53	27,05	19,40	9,60
		Water flow [l/h]	3364	3311	3240	3155	3048	2907	2711	2426	1753	868
		Pressure drop [kPa]	12,7	12,4	11,9	11,3	10,6	9,7	8,6	7,0	3,8	1,1
	min	Heating capacity [kW]	32,09	31,42	30,43	29,28	27,83	25,91	23,35	20,38	14,69	-
		Water flow [l/h]	2842	2796	2726	2643	2535	2387	2171	1896	1366	-
		Pressure drop [kPa]	9,1	8,8	8,3	7,8	7,1	6,3	5,2	4,1	2,2	-
060-5R	max	Heating capacity [kW]	54,04	52,96	51,32	49,22	46,55	43,12	38,55	32,57	18,13	8,04
		Water flow [l/h]	5471	5384	5249	5068	4833	4524	4100	3530	2093	928
		Pressure drop [kPa]	49,2	49,0	48,1	46,1	43,0	38,5	32,1	24,0	8,5	1,9
	med	Heating capacity [kW]	43,23	42,20	40,64	38,62	35,89	32,11	26,42	18,10	9,95	4,78
		Water flow [l/h]	4286	4213	4094	3928	3699	3389	2959	2411	1623	779
		Pressure drop [kPa]	32,3	32,4	31,6	29,7	26,3	21,4	14,6	7,5	3,0	0,8
	min	Heating capacity [kW]	34,99	33,98	32,44	30,56	28,04	24,57	20,54	17,80	12,63	-
		Water flow [l/h]	3705	3655	3552	3395	3148	2768	2308	2000	1419	-
		Pressure drop [kPa]	23,5	21,8	19,4	16,9	14,0	10,7	7,7	5,9	3,2	-

7.10 CAPACITIES FOR SIZE 070 AT DIFFERENT EXTERNAL STATIC PRESSURES [Pa]

7.10.1 COOLING AND HEATING CAPACITIES WITH THE SAME WATER FLOW

Cooling: Room temperature: 27 °C d.b. - 48% r.h. – Water temperature: 7/12 °C

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 50 °C

MOD	SPEED		50	75	100	125	150	175	200	250	300
070-3R	max	Total cooling capacity [kW]	20,81	20,79	20,52	20,27	20,02	19,60	19,13	17,19	14,11
		Sensible cooling capacity [kW]	17,61	17,38	17,20	16,94	16,70	16,49	16,03	14,49	11,93
		Water flow [l/h]	3570	3567	3520	3478	3435	3362	3282	2949	2422
		Pressure drop [kPa]	25,1	25,1	24,5	24,0	23,4	22,5	21,6	17,7	12,4
		Heating capacity [kW]	28,22	28,02	27,71	27,37	27,00	26,46	25,82	23,13	18,88
		Pressure drop [kPa]	22,3	22,3	21,8	21,3	20,8	20,0	19,1	15,7	11,0
	med	Total cooling capacity [kW]	19,93	19,75	19,51	19,42	19,20	18,92	18,66	16,70	14,19
		Sensible cooling capacity [kW]	16,43	16,31	16,13	16,04	15,94	15,75	15,43	13,84	11,85
		Water flow [l/h]	3420	3390	3347	3332	3295	3247	3202	2865	2436
		Pressure drop [kPa]	21,8	21,4	20,9	20,8	20,3	19,8	19,3	15,8	11,7
		Heating capacity [kW]	26,42	26,24	25,97	25,75	25,46	25,11	24,65	22,06	18,62
		Pressure drop [kPa]	19,4	19,1	18,6	18,5	18,1	17,6	17,2	14,0	10,4
	min	Total cooling capacity [kW]	18,34	18,26	18,16	18,08	17,90	17,69	17,16	14,95	13,87
		Sensible cooling capacity [kW]	14,82	14,73	14,63	14,52	14,40	14,33	13,86	12,14	11,28
		Water flow [l/h]	3146	3133	3115	3101	3072	3035	2944	2566	2380
		Pressure drop [kPa]	19,1	19,0	18,8	18,6	18,3	17,9	16,9	13,2	11,5
		Heating capacity [kW]	24,41	24,33	24,17	24,02	23,81	23,50	22,85	19,83	18,34
		Pressure drop [kPa]	17,0	16,9	16,7	16,6	16,3	15,9	15,1	11,7	10,2
070-4R	max	Total cooling capacity [kW]	23,43	23,25	22,95	22,73	22,41	21,95	21,38	19,08	15,40
		Sensible cooling capacity [kW]	19,89	19,64	19,51	19,32	19,06	18,67	18,23	16,28	12,95
		Water flow [l/h]	4020	3989	3938	3900	3845	3766	3669	3273	2643
		Pressure drop [kPa]	20,2	19,9	19,5	19,1	18,7	18,0	17,1	13,9	9,4
		Heating capacity [kW]	32,62	32,35	31,97	31,59	31,11	30,48	29,68	26,41	21,27
		Pressure drop [kPa]	17,9	17,7	17,3	17,0	16,5	15,9	15,2	12,3	8,3
	med	Total cooling capacity [kW]	22,10	21,96	21,77	21,53	21,24	20,94	20,56	18,26	15,34
		Sensible cooling capacity [kW]	18,63	18,53	18,38	18,18	17,95	17,7	17,39	15,54	12,64
		Water flow [l/h]	3791	3768	3736	3695	3645	3593	3527	3134	2632
		Pressure drop [kPa]	17,2	17,0	16,8	16,4	16,0	15,6	15,1	12,2	8,9
		Heating capacity [kW]	29,37	29,16	28,9	28,61	28,23	27,81	27,25	24,20	20,21
		Pressure drop [kPa]	15,3	15,1	14,9	14,6	14,2	13,9	13,4	10,8	7,8
	min	Total cooling capacity [kW]	20,29	20,29	20,11	19,91	19,78	19,48	18,93	16,30	14,99
		Sensible cooling capacity [kW]	16,7	16,68	16,54	16,41	16,26	16,04	15,61	13,54	12,32
		Water flow [l/h]	3482	3482	3451	3417	3393	3343	3248	2797	2571
		Pressure drop [kPa]	15,0	15,0	14,8	14,5	14,3	13,9	13,2	10,1	8,6
		Heating capacity [kW]	27,86	27,73	27,57	27,34	27,12	26,75	25,93	22,32	20,48
		Pressure drop [kPa]	13,4	13,4	13,1	12,9	12,7	12,4	11,8	8,9	7,7
070-5R	max	Total cooling capacity [kW]	29,56	29,4	29,05	28,69	28,20	27,70	26,82	23,76	18,89
		Sensible cooling capacity [kW]	23,40	23,11	22,84	22,56	22,25	21,79	21,35	18,56	14,29
		Water flow [l/h]	5071	5045	4984	4923	4838	4754	4602	4077	3242
		Pressure drop [kPa]	47,5	47,0	46,0	45,0	43,6	42,2	39,8	31,9	21,0
		Heating capacity [kW]	36,58	36,23	35,81	35,36	34,77	34,07	33,11	29,27	23,28
		Pressure drop [kPa]	42,2	41,8	40,9	39,9	38,7	37,5	35,3	28,3	18,6
	med	Total cooling capacity [kW]	27,62	27,28	27,14	26,76	26,46	26,04	25,48	22,46	18,5
		Sensible cooling capacity [kW]	21,23	21,15	21,04	20,82	20,56	20,25	19,78	17,24	13,86
		Water flow [l/h]	4739	4681	4658	4592	4539	4468	4371	3854	3174
		Pressure drop [kPa]	41,8	40,9	40,5	39,5	38,7	37,6	36,1	28,7	20,2
		Heating capacity [kW]	34,13	33,82	33,56	33,18	32,76	32,24	31,51	27,82	22,97
		Pressure drop [kPa]	37,9	37,0	36,7	35,8	35,0	34,0	32,7	26,0	18,2
	min	Total cooling capacity [kW]	25,39	25,22	25,07	24,91	24,67	24,23	23,58	20,06	18,29
		Sensible cooling capacity [kW]	19,49	19,40	19,26	19,15	18,94	18,66	18,03	15,07	13,59
		Water flow [l/h]	4356	4328	4301	4274	4233	4158	4045	3442	3138
		Pressure drop [kPa]	32,2	31,8	31,5	31,1	30,6	29,6	28,2	21,0	17,8
		Heating capacity [kW]	31,18	31,00	30,81	30,57	30,29	29,84	28,91	24,67	22,54
		Pressure drop [kPa]	32,2	31,8	31,5	31,1	30,6	29,6	28,1	20,9	17,7

7.10.3 HEATING CAPACITIES

Heating: Room temperature: 20 °C - 50% r.h. - Water temperature: 70/60 °C

MOD	SPEED		50	75	100	125	150	175	200	250	300
070-3R	max	Heating capacity [kW]	48,94	48,48	48,03	47,44	46,77	45,92	44,71	40,03	32,57
		Water flow [l/h]	4367	4326	4286	4234	4174	4098	3990	3573	2907
		Pressure drop [kPa]	31,1	30,6	30,1	29,4	28,6	27,7	26,3	21,5	14,7
	med	Heating capacity [kW]	45,74	45,42	45,04	44,65	44,06	43,43	42,62	38,08	32,11
		Water flow [l/h]	4150	4121	4087	4052	3998	3941	3867	3455	2914
		Pressure drop [kPa]	26,6	26,2	25,8	25,4	24,8	24,2	23,3	19,0	13,9
	min	Heating capacity [kW]	42,28	42,06	41,86	41,52	41,21	40,68	39,46	34,23	31,62
		Water flow [l/h]	3814	3794	3776	3746	3718	3670	3560	3088	2853
		Pressure drop [kPa]	23,3	23,1	22,9	22,5	22,2	21,7	20,5	15,8	13,7
070-4R	max	Heating capacity [kW]	56,39	55,83	55,25	54,53	53,7	52,64	51,24	45,51	36,57
		Water flow [l/h]	4845	4797	4747	4685	4614	4523	4402	3911	3142
		Pressure drop [kPa]	24,3	23,9	23,4	22,9	22,2	21,4	20,4	16,4	11,0
	med	Heating capacity [kW]	50,71	50,33	49,88	49,33	48,72	47,98	47,00	41,68	34,74
		Water flow [l/h]	4556	4522	4481	4432	4377	4310	4222	3744	3121
		Pressure drop [kPa]	20,6	20,3	20,0	19,6	19,1	18,6	17,9	14,4	10,3
	min	Heating capacity [kW]	48,05	47,78	47,46	47,13	46,71	46,11	44,64	38,38	35,25
		Water flow [l/h]	4169	4146	4118	4090	4053	4000	3873	3330	3058
		Pressure drop [kPa]	17,9	17,7	17,5	17,2	16,9	16,5	15,6	11,8	10,1
070-5R	max	Heating capacity [kW]	63,01	62,41	61,73	60,89	59,92	58,65	56,97	50,30	39,94
		Water flow [l/h]	6078	6019	5954	5873	5779	5656	5495	4852	3852
		Pressure drop [kPa]	56,5	55,5	54,4	53,1	51,5	49,5	46,9	37,3	24,5
	med	Heating capacity [kW]	58,70	58,24	57,7	57,09	56,31	55,42	54,16	47,83	39,43
		Water flow [l/h]	5625	5580	5528	5470	5396	5310	5189	4582	3778
		Pressure drop [kPa]	49,8	49,1	48,3	47,3	46,2	44,8	43,0	34,2	24,0
	min	Heating capacity [kW]	53,58	53,31	52,97	52,56	52,07	51,33	49,65	42,33	38,68
		Water flow [l/h]	5173	5147	5115	5075	5028	4956	4794	4087	3735
		Pressure drop [kPa]	42,4	42,0	41,5	40,9	40,2	39,2	36,8	27,5	23,3

7.11 ELECTRICAL DATA

Electrical data refer to standard fan coils with clean standard filter G3 e in absence of external static pressure (0 Pa) for sizes 004÷008 and with 50Pa of external static pressure for sizes 020÷070. A dirty filter or an external air pressure drop will lower the absorbed power level. The installation of electric accessories increases the absorbed power level.

	Absorbed current [A]			Power input [W]			Power supply [V ph-Hz]
	max	med	min	max	med	min	
004	0,3	0,23	0,17	68	52	39	230-1-50
006	0,38	0,30	0,22	90	69	50	230-1-50
008	0,51	0,43	0,34	118	98	76	230-1-50
020	0,99	0,76	0,47	202	165	107	230-1-50
030	1,86	1,39	1,17	382	322	271	230-1-50
040	1,81	1,32	1,00	419	298	224	230-1-50
050	2,69	2,05	1,77	608	467	393	230-1-50
060	4,96	3,32	2,70	1072	730	583	230-1-50
070	7,85	7,40	6,69	1784	1610	1411	230-1-50

7.12 WORKING OPERATION LIMITS

The EDS ducted unit can work correctly only if the following operational limits are respected:

- Max. operating pressure (water side): 1,6 Mpa
- Min. inlet cold water temperature: 5 °C;
- Max. inlet cold water temperature: 20 °C;
- Min. inlet hot water temperature: 35 °C;
- Max. inlet hot water temperature: 85 °C.



In order to select the EDS ducted fancoil with calculating conditions differing from the standard ones, please use the EURAPO software for selection.



Note. Some units can present the risk of condensing water sprays if selected under particular calculating conditions in water temperature and relative humidity. In this case it is necessary to modify the calculating parameters or select a different EDS model.



Units size 060 and 070 can be used only with external static pressure >30Pa (060) or >40Pa (070). For a correct selection of the units, pls use the EURAPO software for selection.

8. SOUND LEVEL

These data are determined in accordance to the Eurovent specification "High static ducted fan coil-Acoustical measurements in reverberation room (2004)".

MOD	SPEED		Lw	Lp
			dB(A)	dB(A)
004	max	Outlet	52	41
		Inlet + Structure	52	41
	med	Outlet	48	37
		Inlet + Structure	49	38
	min	Outlet	42	31
		Inlet + Structure	43	32
006	max	Outlet	54	43
		Inlet + Structure	53	42
	med	Outlet	51	40
		Inlet + Structure	50	39
	min	Outlet	45	34
		Inlet + Structure	45	34
008	max	Outlet	56	45
		Inlet + Structure	56	45
	med	Outlet	54	43
		Inlet + Structure	54	43
	min	Outlet	50	39
		Inlet + Structure	50	39
020	max	Outlet	62	51
		Inlet + Structure	62	51
	med	Outlet	56	45
		Inlet + Structure	56	45
	min	Outlet	46	35
		Inlet + Structure	47	36
030	max	Outlet	66	55
		Inlet + Structure	64	54
	med	Outlet	60	50
		Inlet + Structure	59	48
	min	Outlet	56	45
		Inlet + Structure	55	44
040	max	Outlet	66	55
		Inlet + Structure	67	56
	med	Outlet	62	51
		Inlet + Structure	63	52
	min	Outlet	57	46
		Inlet + Structure	59	48
050	max	Outlet	70	59
		Inlet + Structure	69	58
	med	Outlet	67	56
		Inlet + Structure	67	56
	min	Outlet	64	53
		Inlet + Structure	64	53
060	max	Outlet	76	65
		Inlet + Structure	76	65
	med	Outlet	72	62
		Inlet + Structure	72	61
	min	Outlet	64	53
		Inlet + Structure	65	54
070	max	Outlet	79	68
		Inlet + Structure	78	67
	med	Outlet	76	65
		Inlet + Structure	76	65
	min	Outlet	74	63
		Inlet + Structure	74	63

The following sound levels are referred to EDS units with air delivery plenum with spigots, at 50 Pa external static pressure at medium speed.

Lw= Total sound power level

Lp= Total sound pressure level in open field at 1 m from the source

dB(A)= Sound level, weighted

9. ELECTRICAL CONNECTIONS

Most frequently used wiring diagrams:

LEGEND (for all the electric diagrams)

M Fan motor

N Neutral

L Phase

PE Earth

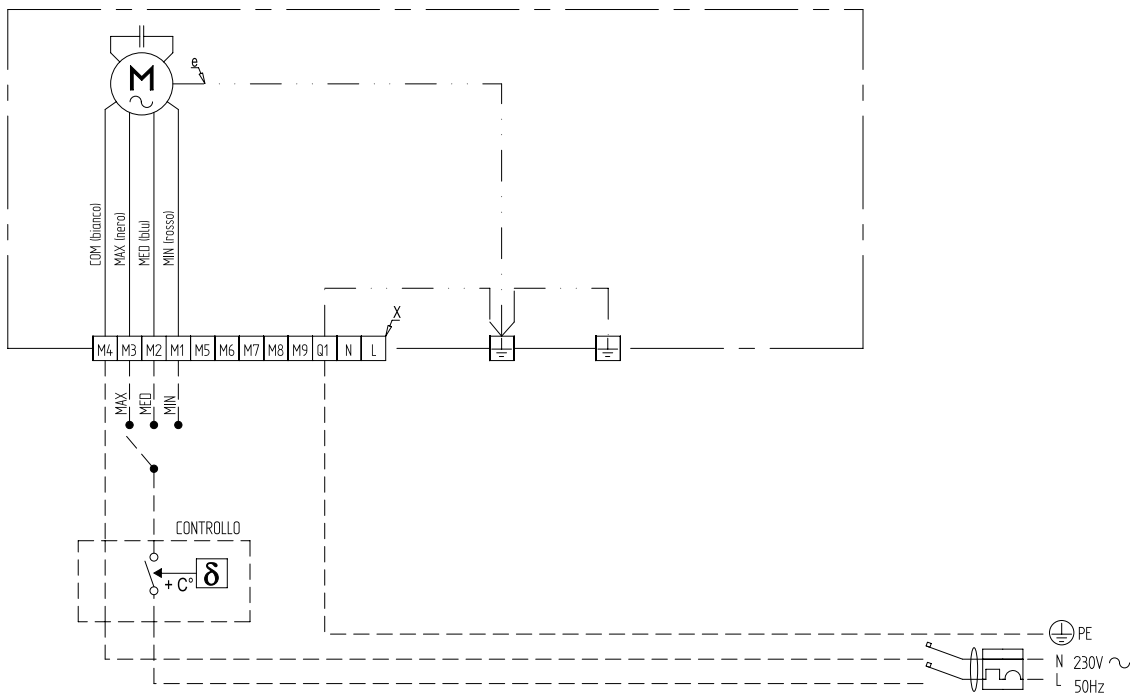
X Terminal board

EV Regulating valve: EVC for cooling;
EVH for heating

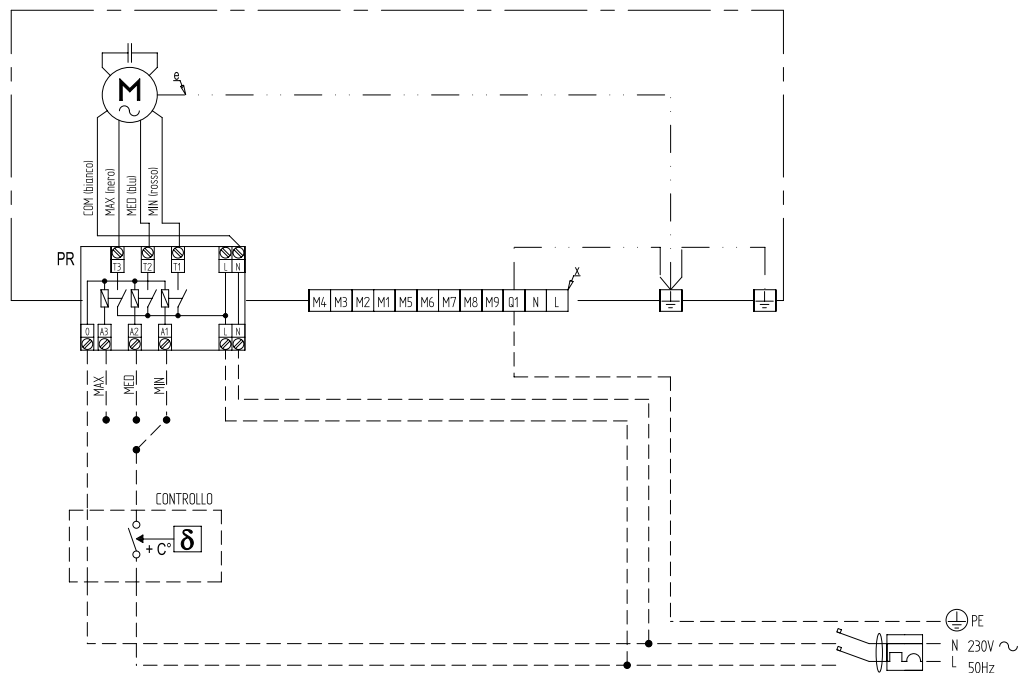
PR Power Relay card

 Summer/Winter switch

GW00



GW20



1

2

3

4

5

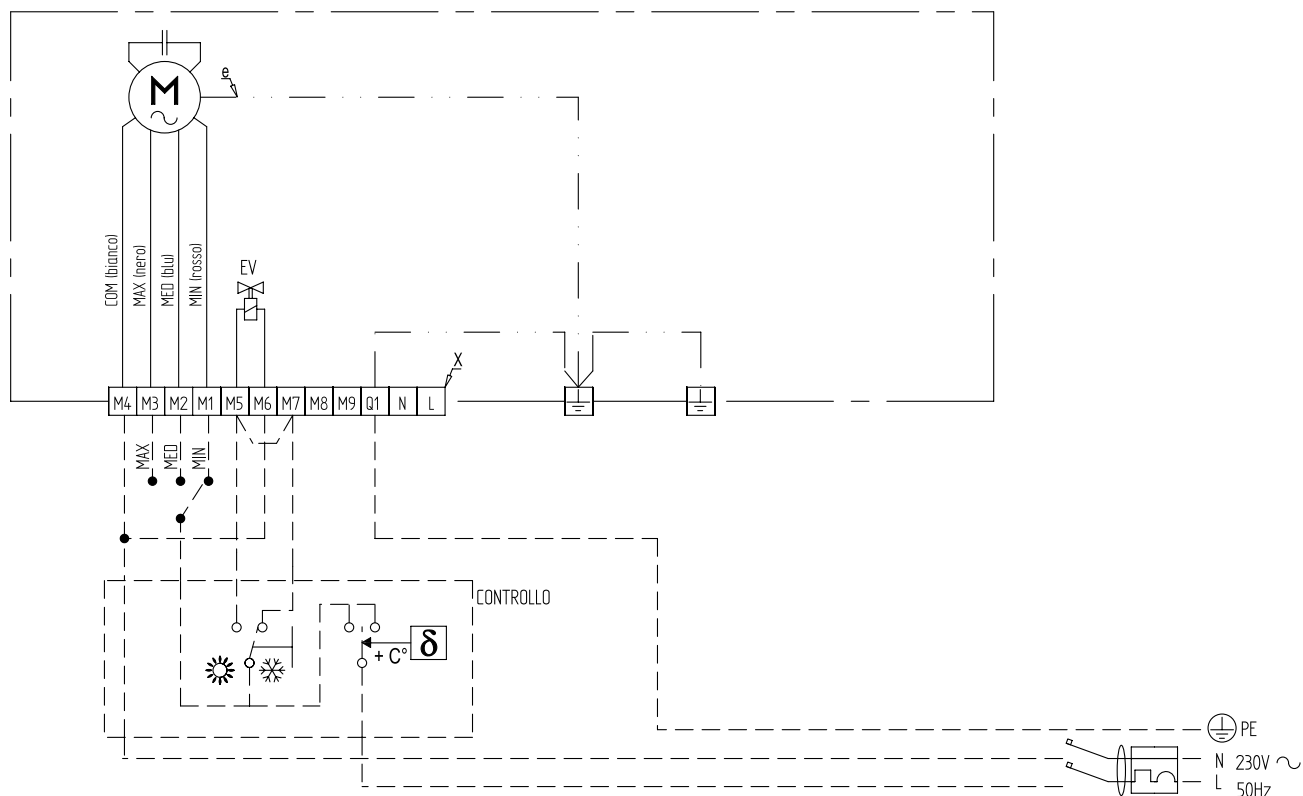
6

7

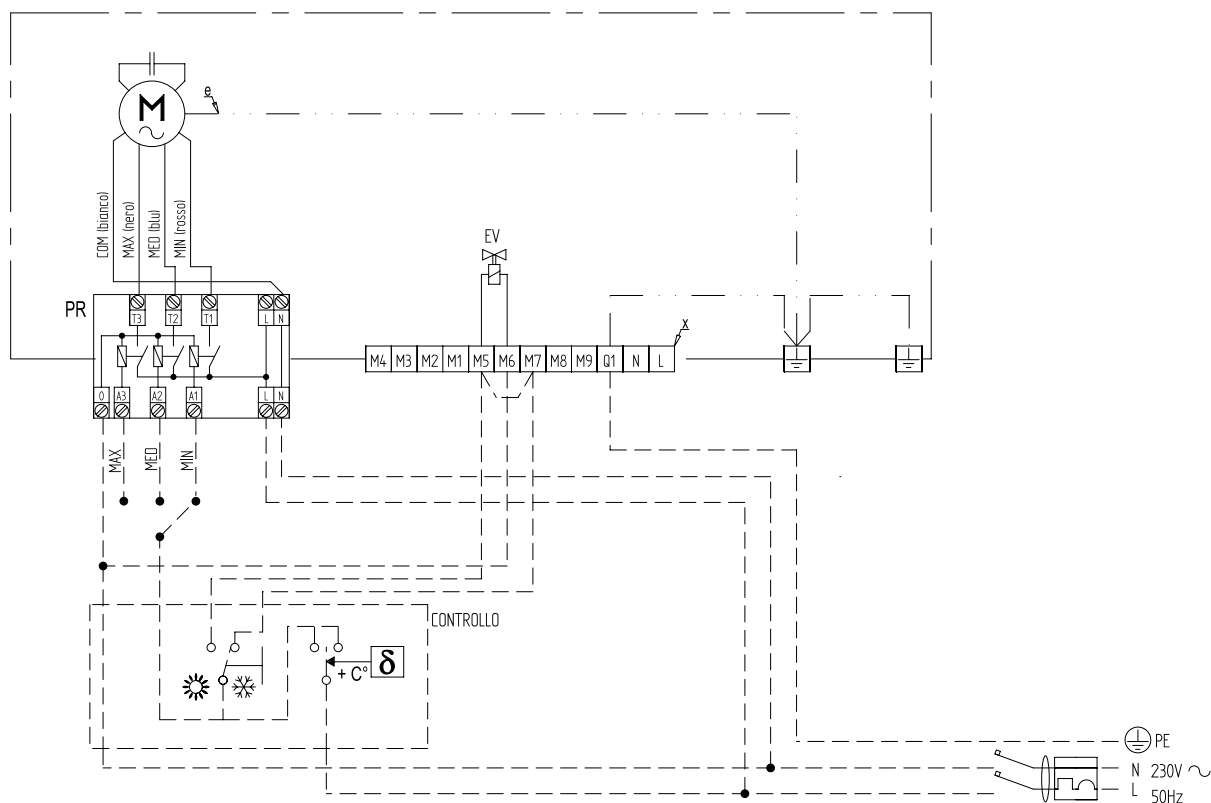
8

9

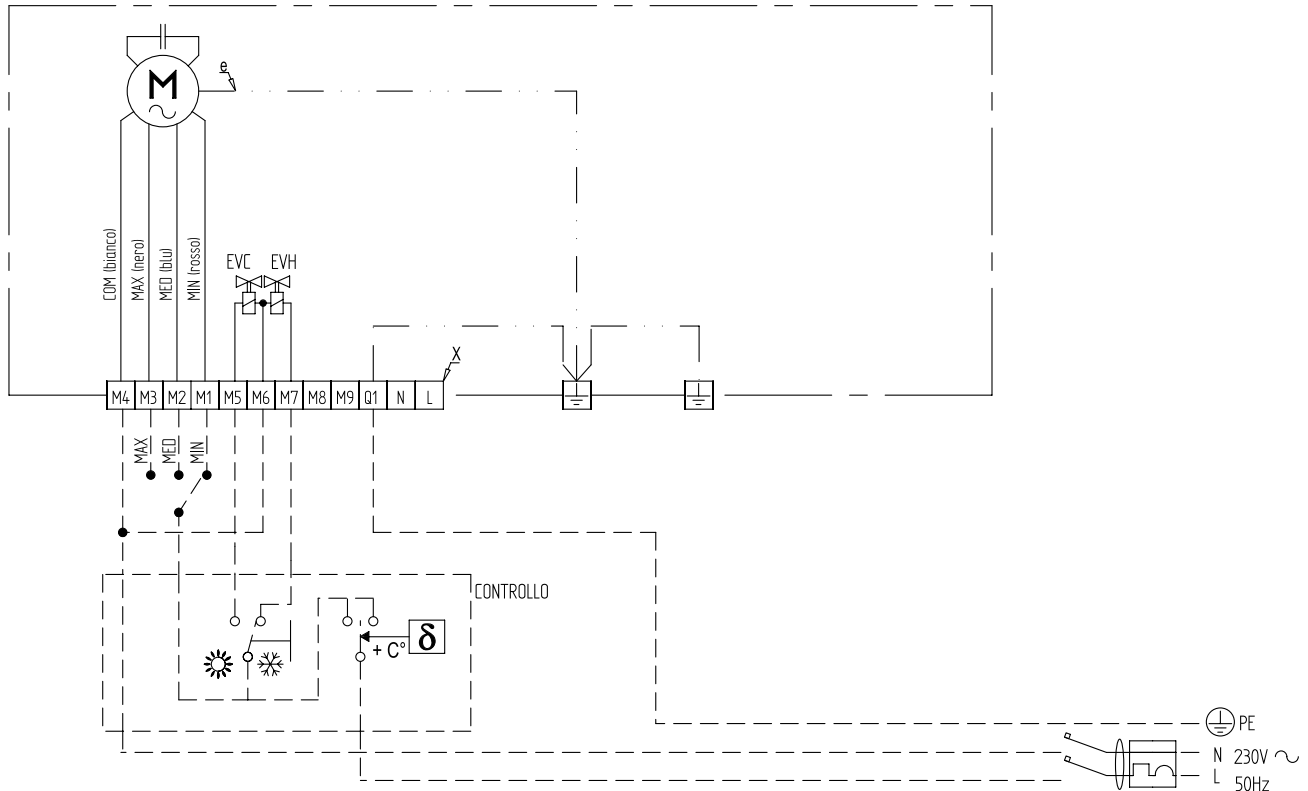
GW00 - EV



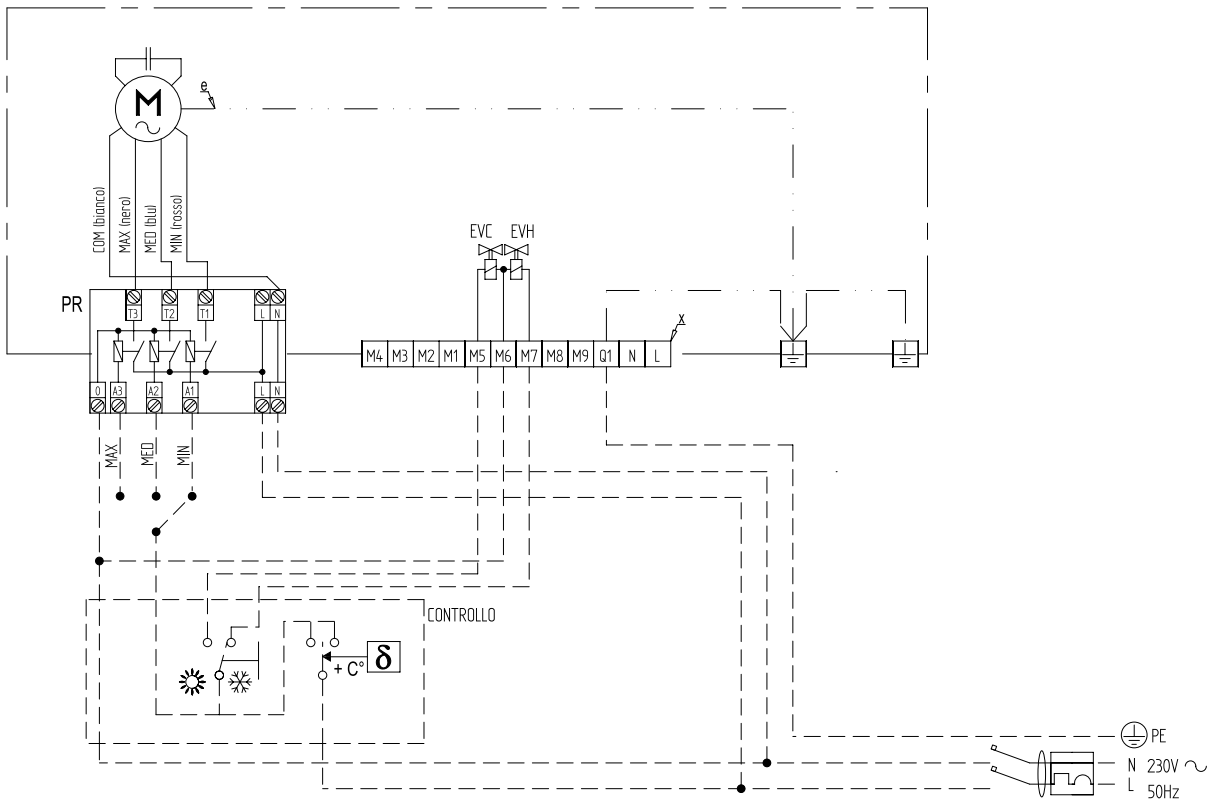
GW20 - EV



GW00 - EVC - EVH



GW20-EVC-EVH



1

2

3

4

5

6

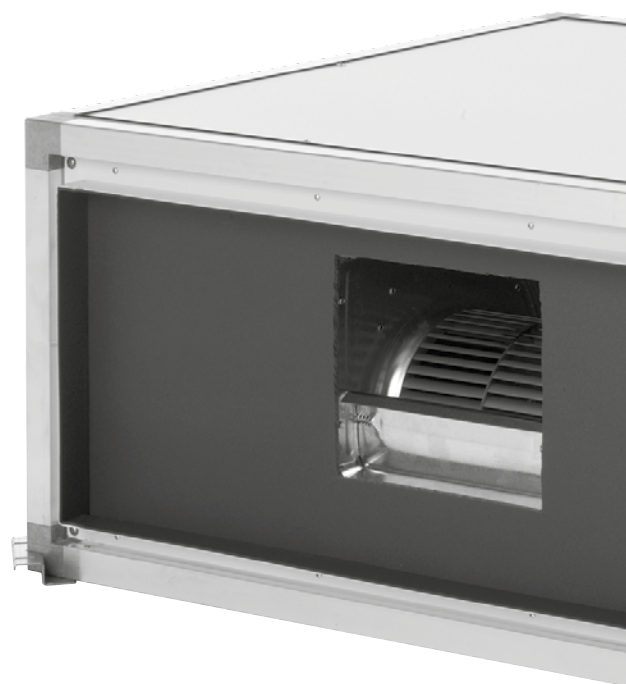
7

8

9

EURAPO

Eurapo Srl
Via A. Malignani, 12
33170 Pordenone - Italy
T +39 0434 572552
F +39 0434 28667
info@eurapo.it
www.eurapo.it



CE



www.eurovent-certification.com
www.certiflash.com

As programs and technologies are always improving, description, data and drawings must be intended as merely indicative and can be modified without any notice.