EN

TECHNICAL MANUAL

Fancoil units

Laser - Concealed - Low Body

YORK®

CE

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

INDEX

1. GENERAL INFORMATION

1.1 APPLICATIONS

Fan coils are used to directly treat the air in the room where they are installed.
They can be used both for heating and cooling applications; in the latter case, the air is also dehumidified.

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 vapour must be discharged from the unit: suitable drains must therefore be provided to drain the condensed water that collects in the condensate tray.

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 (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 optimised by controlling the inlet flow rate of the water with proper regulating valves (ON/OFF or modulating type), which can be supplied as accessories.
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.

1.4 OPERATING LIMITS

Each fancoil can work properly only if the operating limits listed below are respected:

- Maximum operating pressure (water side): 1600 kPa
- Minimum inlet water temperature in cooling: 5 °C
- Maximum inlet water temperature in cooling: 20 °C
- Minimum inlet water temperature in heating: 35 °C
- Maximum inlet water temperature in heating: 85 °C

1.5 PRODUCT RANGE

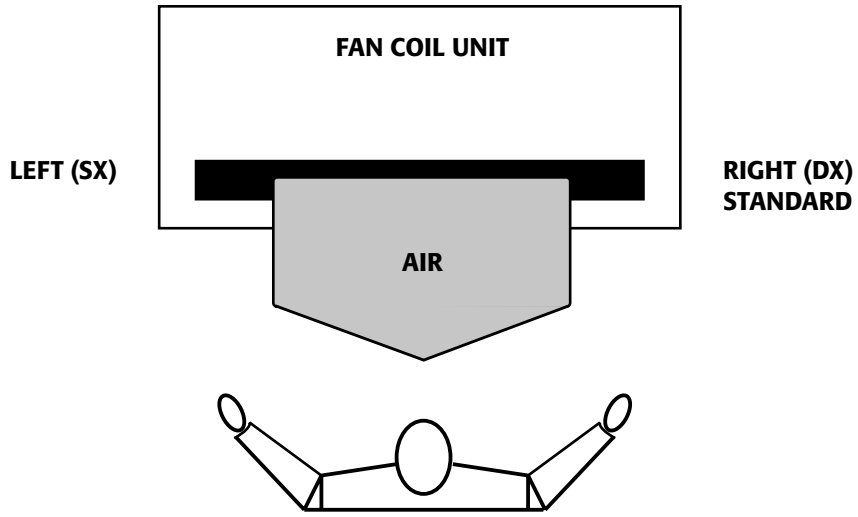
This manual covers the following models of YORK fancoil units:

MODEL	INSTALLATION	SIZE
LASER SERIE		
YLV with cabinet	vertical on the wall/floor (with feet)	110÷328
YLV/AF with cabinet and frontal air intake	vertical on the floor (without feet)	110÷328
YLH with cabinet	horizontal on the ceiling	110÷328
YLH/AF with cabinet and bottom air intake	horizontal on the ceiling	110÷328
LOW BODY SERIE		
YLVR with cabinet	vertical on the floor (without feet)	110÷218
YLIVR without cabinet	vertical and concealed	110÷218
CONCEALED SERIE		
YLIV without cabinet	vertical and concealed	110÷328
YLIV/AF without cabinet and frontal air intake	vertical and concealed	110÷328
YLIH without cabinet	horizontal and concealed	110÷328
YLIH/AF without cabinet and bottom air intake	horizontal and concealed	110÷328

1.6 SELECTION SOFTWARE

To facilitate choosing the correct size of a fan coil for any operating condition (including those differing from the standard ones), YORK offers a dedicated selection program. The program is available at the following address:
• **https://www.laserselection.com**

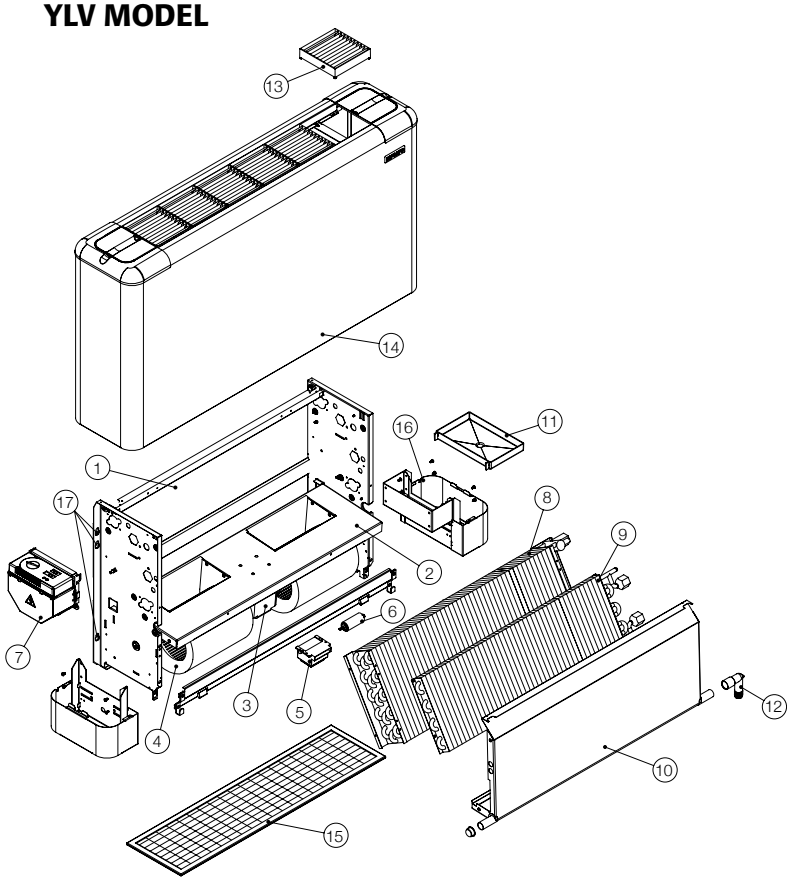
1.7 WATER CONNECTIONS



LEGEND

1.	Internal structure
2.	Fan deck
3.	Electric motor
4.	Scroll and impeller
5.	Autotransformer
6.	Capacitor
7.	Electric panel
8.	Standard coil (2, 3 or 4 rows)
9.	Additional coil
10.	Condensate tray
11.	Auxiliary drain pan (vertical)
12.	Water discharge plastic pipe
13.	Grilles
14.	Housing
15.	Filter
16.	Set of feet
17.	Fixing slots

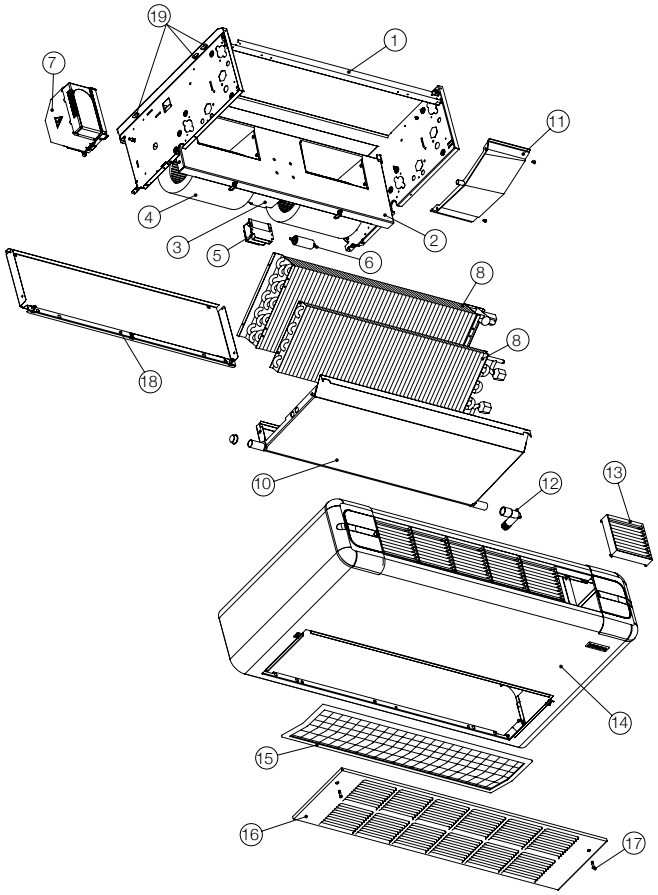
YLV MODEL



LEGEND

1.	Internal structure
2.	Fan deck
3.	Electric motor
4.	Scroll and impeller
5.	Autotransformer
6.	Capacitor
7.	Electric panel
8.	Standard coil (2, 3 or 4 rows)
9.	Additional coil
10.	Condensate tray
11.	Auxiliary drain pan (horizontal)
12.	Water discharge plastic pipe
13.	Grilles
14.	Housing
15.	Filter
16.	Air intake panel
17.	Fixing screws
18.	Back inner panel
19.	Fixing slots

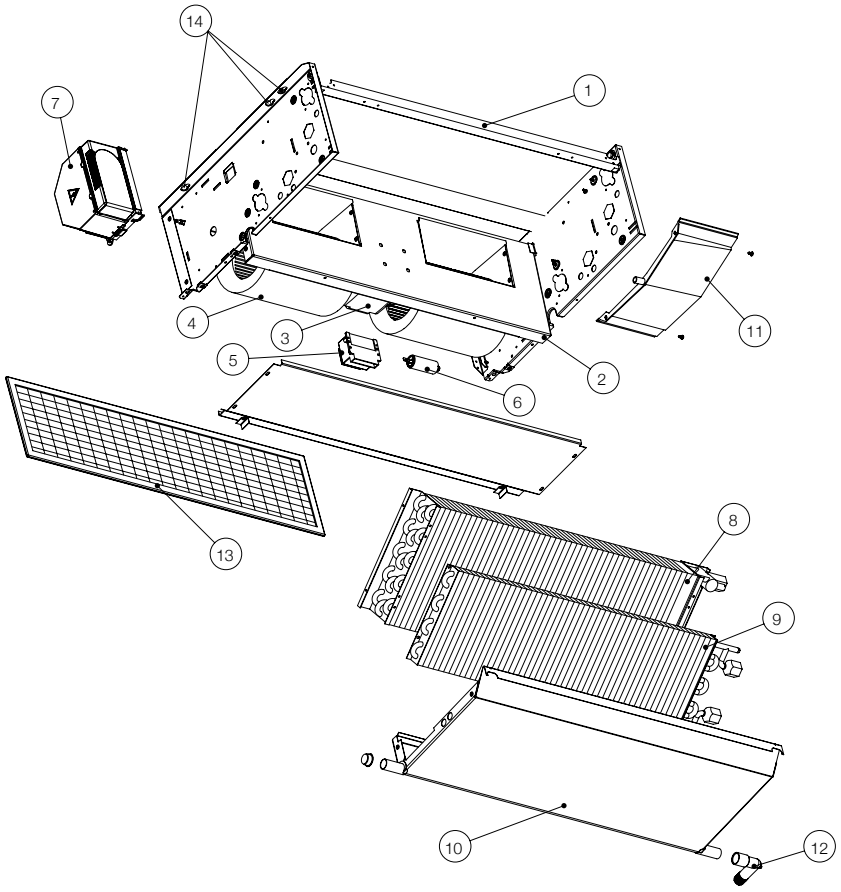
YLH/AF MODEL



LEGEND

1.	Internal structure
2.	Fan deck
3.	Electric motor
4.	Scroll and impeller
5.	Autotransformer
6.	Capacitor
7.	Electric panel
8.	Standard coil (2, 3 or 4 rows)
9.	Additional coil
10.	Condensate tray
11.	Auxiliary drain pan (horizontal)
12.	Water discharge plastic pipe
13.	Filter
14.	Fixing slots

YLIH MODEL



2. MODELS WITH CABINET

2.1 LASER SERIE: YLV – YLV/AF MODELS

Vertical units with upper air outlet and bottom (YLV) or frontal (YLV/AF) air intake, to be installed on the wall (YLV) or on the floor (both models, but with a set of feet in white RAL 9001 for YLV model).

- grilles can be adjusted in all four directions and are made of heat-resistant ABS
- models equipped with auxiliary drain pan
- 2 pipe systems: 2, 3 or 4 row coils; on 2 or 3 row coil units an electric heater can also be mounted
- 4 pipe systems: additional 1 row coil can be added to units with a 2 or 3 row coil
- standard colour: white casing (RAL 9001) with white grilles and access doors (RAL 9001)

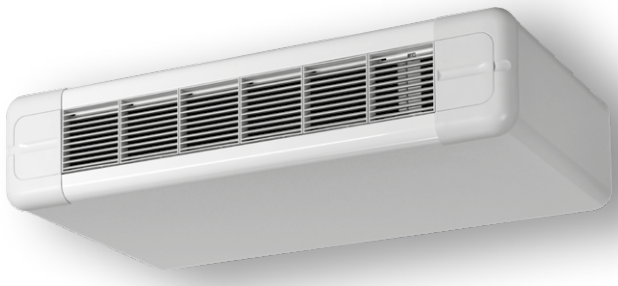
YLV MODEL

2.2 LASER SERIE: YLH – YLH/AF MODELS

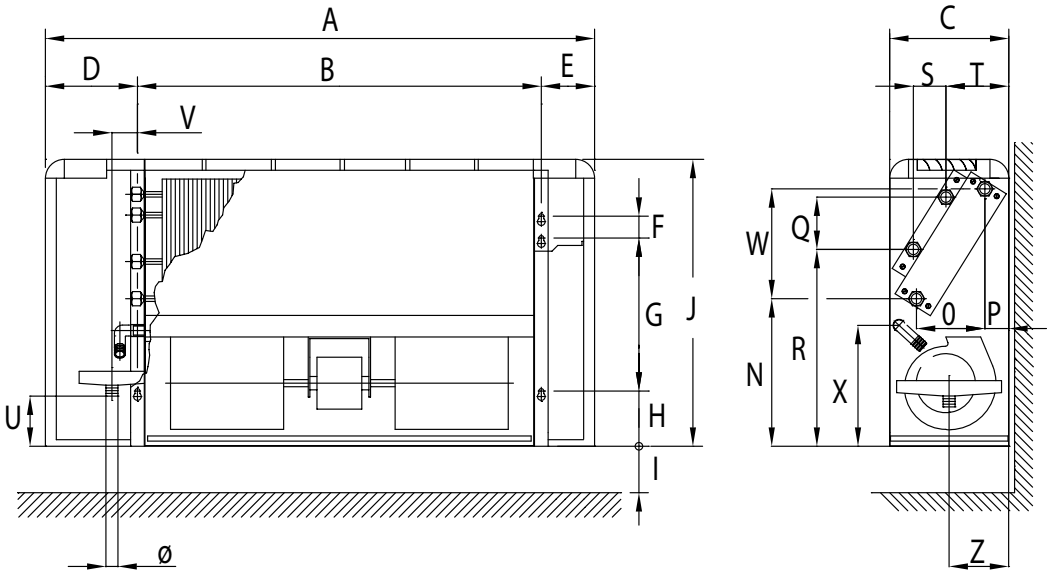
Horizontal units for ceiling installation with frontal air discharge and rear (YLH) or bottom (YLH/AF) air intake.

- grilles can be adjusted in all four directions and are made of heat-resistant ABS
- models equipped with auxiliary drain pan
- 2 pipe systems: 2, 3 or 4 row coils; in 2 or 3 row coil units an electric heater can also be mounted
- 4 pipe systems: additional 1 row coil can be added to units with a 2 or 3 row coil
- standard colour: white casing (RAL 9001) with white grilles and access doors (RAL 9001)

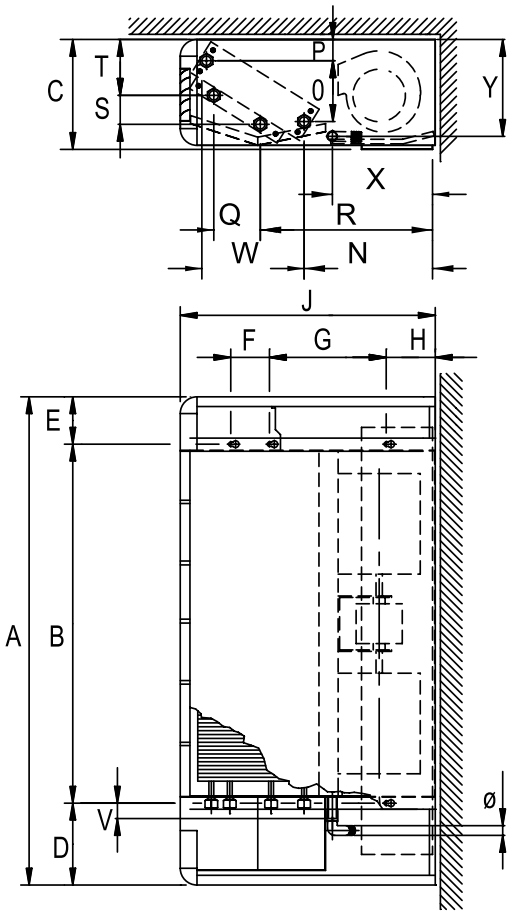
YLH MODEL



YLV MODEL



YLH/AF MODEL



YLV - YLH Dimensions and weights

Size	110	112	114	216	218	220	222	224	226	228.1	328
A	648	773	898	1023	1148	1273	1273	1523	1523	1773	1773
B	374	499	624	749	874	999	999	1249	1249	1499	1499
C	224	224	224	224	224	254	254	254	254	254	254
D	174	174	174	174	174	174	174	174	174	174	174
E	100	100	100	100	100	100	100	100	100	100	100
F	40	40	40	40	40	40	40	40	40	40	40
G	280	280	280	280	280	356	356	356	356	356	356
H	101	101	101	101	101	101	101	101	101	101	101
I	85	85	85	85	85	85	85	85	85	85	85
J	538	538	538	538	538	614	614	614	614	614	614
N	266	266	266	266	266	299	299	299	299	299	299
O	113	113	113	113	113	138	138	138	138	138	138
P	48	48	48	48	48	53	53	53	53	53	53
Q	87	87	87	87	87	87	87	87	87	87	87
R	335	335	335	335	335	409	409	409	409	409	409
S	50	50	50	50	50	50	50	50	50	50	50
T	117	117	117	117	117	135	135	135	135	135	135
U	90	90	90	90	90	116	116	116	116	116	116
V	47	47	47	47	47	47	47	47	47	47	47
W	195	195	195	195	195	238	238	238	238	238	238
X	219	219	219	219	219	252	252	252	252	252	252
Z	109	109	109	109	109	122	122	122	122	122	122
Ø	20	20	20	20	20	20	20	20	20	20	20
kg	18	20	23	28	31	41	44	52	52	58	58

YLV/AF - YLH/AF Dimensions and weights

Size	110	112	114	216	218	220	222	224	226	228.1	328
A	648	773	898	1023	1148	1273	1273	1523	1523	1773	1773
B	374	499	624	749	874	999	999	1249	1249	1499	1499
C	233	233	233	233	233	263	263	263	263	263	263
D	174	174	174	174	174	174	174	174	174	174	174
E	100	100	100	100	100	100	100	100	100	100	100
F	40	40	40	40	40	40	40	40	40	40	40
G	280	280	280	280	280	356	356	356	356	356	356
H	101	101	101	101	101	101	101	101	101	101	101
J	538	538	538	538	538	614	614	614	614	614	614
N	266	266	266	266	266	299	299	299	299	299	299
O	113	113	113	113	113	138	138	138	138	138	138
P	48	48	48	48	48	53	53	53	53	53	53
Q	87	87	87	87	87	87	87	87	87	87	87
R	335	335	335	335	335	409	409	409	409	409	409
S	50	50	50	50	50	50	50	50	50	50	50
T	117	117	117	117	117	135	135	135	135	135	135
V	28	28	28	28	28	28	28	28	28	28	28
W	195	195	195	195	195	238	238	238	238	238	238
X	219	219	219	219	219	252	252	252	252	252	252
Y	205	205	205	205	205	235	235	235	235	235	235
Ø	20	20	20	20	20	20	20	20	20	20	20
kg	19	21	24	30	32	43	46	54	54	61	61

2.3 LOW BODY SERIE: YLVR MODEL

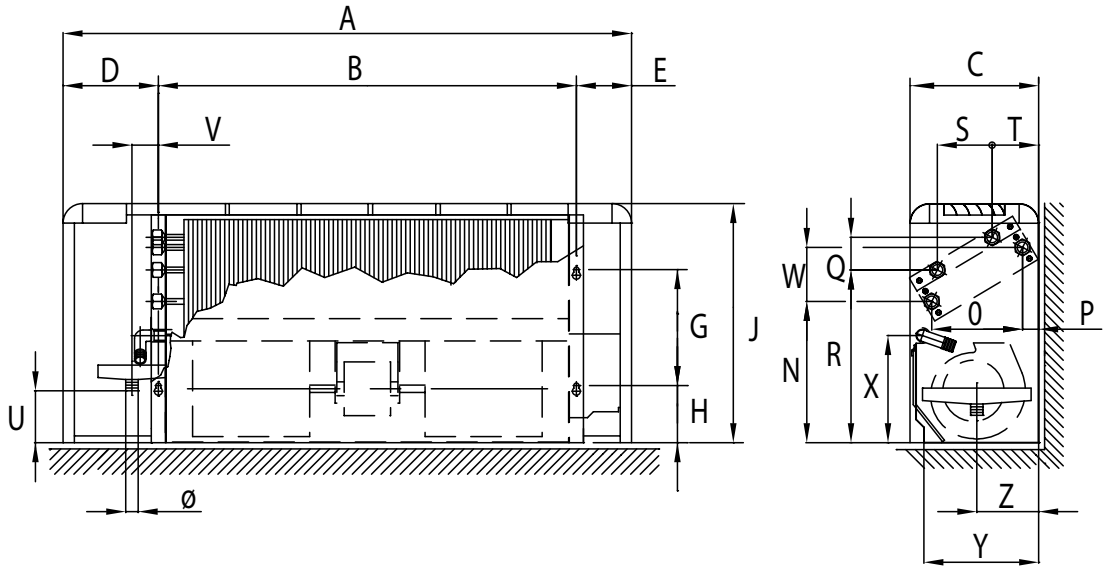
Vertical unit in a reduced height (430 mm) with upper air outlet and frontal air intake, to be installed on the floor.

- grilles can be adjusted in all four directions and are made of heat-resistant ABS
- model equipped with auxiliary drain pan
- 2 pipe systems: 2 or 3 row coils; on 2 row coil units an electric heater can also be mounted
- 4 pipe systems: additional 1 row coil can be added to units with a 2 or 3 row coil
- standard colour: white casing (RAL 9001) with white grilles and access doors (RAL 9001)

YLVR MODEL

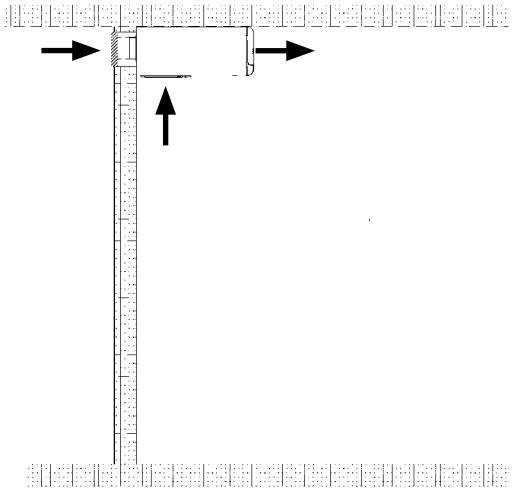
YLVR Dimensions and weights

Size	110	112	114	216	218
A	648	773	898	1023	1148
B	374	499	624	749	874
C	254	254	254	254	254
D	174	174	174	174	174
E	100	100	100	100	100
G	170	170	170	170	170
H	101	101	101	101	101
J	430	430	430	430	430
N	245	245	245	245	245
O	154	154	154	154	154
P	31	31	31	31	31
Q	47	47	47	47	47
R	304	304	304	304	304
S	88	88	88	88	88
T	87	87	87	87	87
U	65	65	65	65	65
V	47	47	47	47	47
W	84	84	84	84	84
X	214	214	214	214	214
Z	109	109	109	109	109
Ø	20	20	20	20	20
kg	15	17	22	23	26

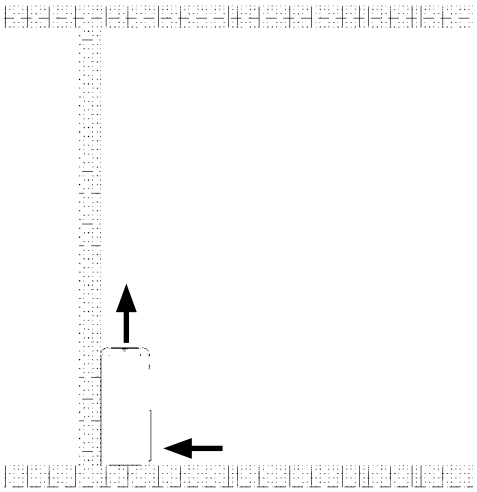


2.4 SUGGESTED INSTALLATION

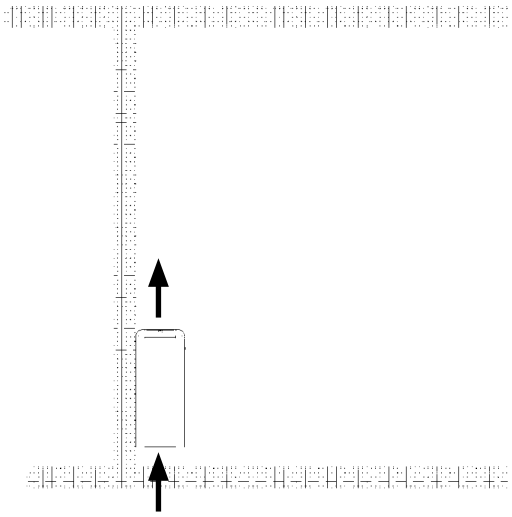
YLH/AF
PAE/HAF



YLV/AF



YLV



3. MODELS WITHOUT CABINET

3.1 CONCEALED SERIE: YLIV – YLIV/AF MODELS

Vertical units for concealed installation with upper air outlet and bottom (YLIV) or frontal (YLIV/AF) air intake.

- models equipped with auxiliary drain pan
- 2 pipe systems: 2, 3 or 4 row coils; in all units an electric heater can also be mounted
- 4 pipe systems: additional 1 row coil can be added to units with a 2 or 3 row coil; in 4 row coil units, the additional 1 row coil is fitted on the air outlet connection

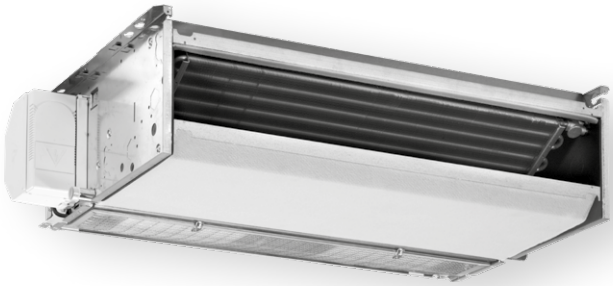
YLIV MODEL

3.2 CONCEALED SERIE: YLIH – YLIH/AF MODELS

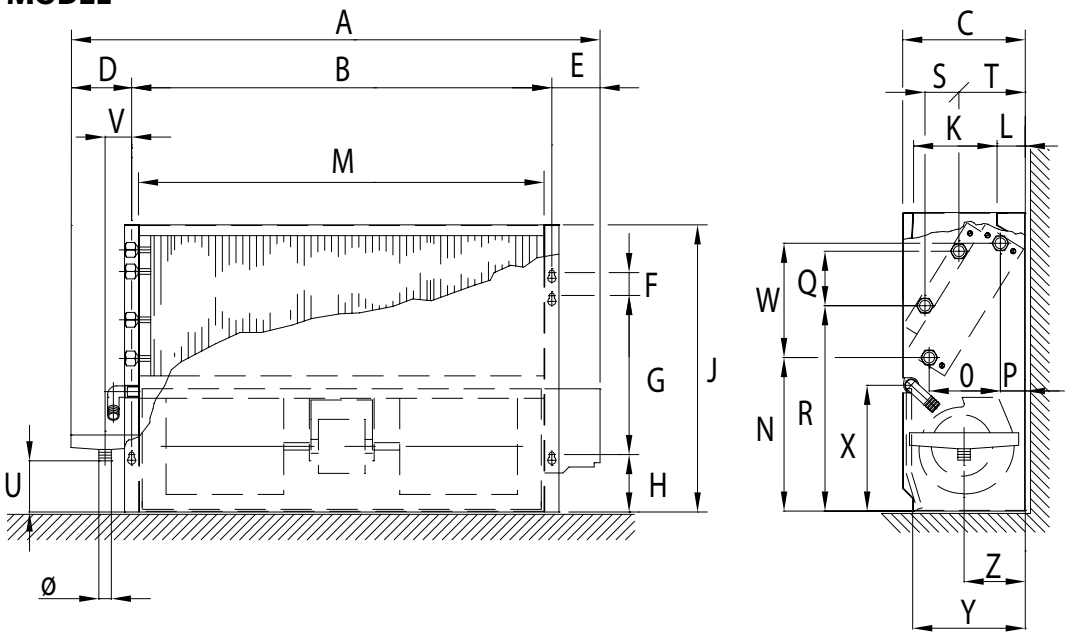
Horizontal units for concealed installation, with frontal air outlet and rear (YLIH) or bottom (YLIH/AF) air intake.

- models equipped with auxiliary drain pan
- 2 pipe systems: 2, 3 or 4 row coils; in all units an electric heater can also be mounted
- 4 pipe systems: additional 1 row coil can be added to units with a 2 or 3 row coil; in 4 row coil units, the additional 1 row coil is fitted on the air outlet connection

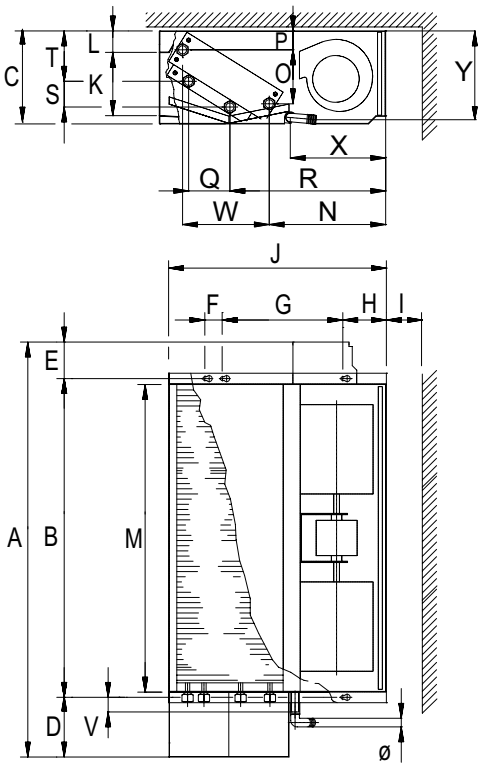
YLIH/AF MODEL



YLIV/AF MODEL



YLIH MODEL



YLIH - YLIH/AF Dimensions and weights

Size	110	112	114	216	218	220	222	224	226	228.1	328
A	574	699	824	949	1074	1199	1199	1449	1449	1699	1699
B	374	499	624	749	874	999	999	1249	1249	1499	1499
C	215	215	215	215	215	245	245	245	245	245	245
D	128	128	128	128	128	128	128	128	128	128	128
E	72	72	72	72	72	72	72	72	72	72	72
F	40	40	40	40	40	40	40	40	40	40	40
G	280	280	280	280	280	356	356	356	356	356	356
H	101	101	101	101	101	101	101	101	101	101	101
I	85	85	85	85	85	85	85	85	85	85	85
J	505	505	505	505	505	581	581	581	581	581	581
K	110	110	110	110	110	125	125	125	125	125	125
L	55	55	55	55	55	60	60	60	60	60	60
M	349	474	599	724	849	974	974	1224	1224	1474	1474
N	266	266	266	266	266	299	299	299	299	299	299
O	113	113	113	113	113	138	138	138	138	138	138
P	48	48	48	48	48	53	53	53	53	53	53
Q	87	87	87	87	87	87	87	87	87	87	87
R	355	355	355	355	355	409	409	409	409	409	409
S	50	50	50	50	50	50	50	50	50	50	50
T	117	117	117	117	117	135	135	135	135	135	135
V	28	28	28	28	28	28	28	28	28	28	28
W	195	195	195	195	195	238	238	238	238	238	238
X	219	219	219	219	219	252	252	252	252	252	252
Y	205	205	205	205	205	235	235	235	235	235	235
Ø	20	20	20	20	20	20	20	20	20	20	20
kg	10	13	16	19	22	29	31	38	38	42	42

YLIV - YLIV/AF Dimensions and weights

Size	110	112	114	216	218	220	222	224	226	228.1	328
A	555	680	805	930	1055	1180	1180	1430	1430	1680	1680
B	374	499	624	749	874	999	999	1249	1249	1499	1499
C	215	215	215	215	215	245	245	245	245	245	245
D	109	109	109	109	109	109	109	109	109	109	109
E	72	72	72	72	72	72	72	72	72	72	72
F	40	40	40	40	40	40	40	40	40	40	40
G	280	280	280	280	280	356	356	356	356	356	356
H	101	101	101	101	101	101	101	101	101	101	101
J	505	505	505	505	505	581	581	581	581	581	581
K	110	110	110	110	110	125	125	125	125	125	125
L	55	55	55	55	55	60	60	60	60	60	60
M	349	474	599	724	849	974	974	1224	1224	1474	1474
N	266	266	266	266	266	299	299	299	299	299	299
O	113	113	113	113	113	138	138	138	138	138	138
P	48	48	48	48	48	53	53	53	53	53	53
Q	87	87	87	87	87	87	87	87	87	87	87
R	355	355	355	355	355	409	409	409	409	409	409
S	50	50	50	50	50	50	50	50	50	50	50
T	117	117	117	117	117	135	135	135	135	135	135
U	90	90	90	90	90	116	116	116	116	116	116
V	47	47	47	47	47	47	47	47	47	47	47
W	195	195	195	195	195	238	238	238	238	238	238
X	219	219	219	219	219	252	252	252	252	252	252
Y	200	200	200	200	200	230	230	230	230	230	230
Z	109	109	109	109	109	122	122	122	122	122	122
Ø	20	20	20	20	20	20	20	20	20	20	20
kg	10	13	16	19	22	29	31	38	38	42	42

3.3 LOW BODY SERIE: YLIVR MODEL

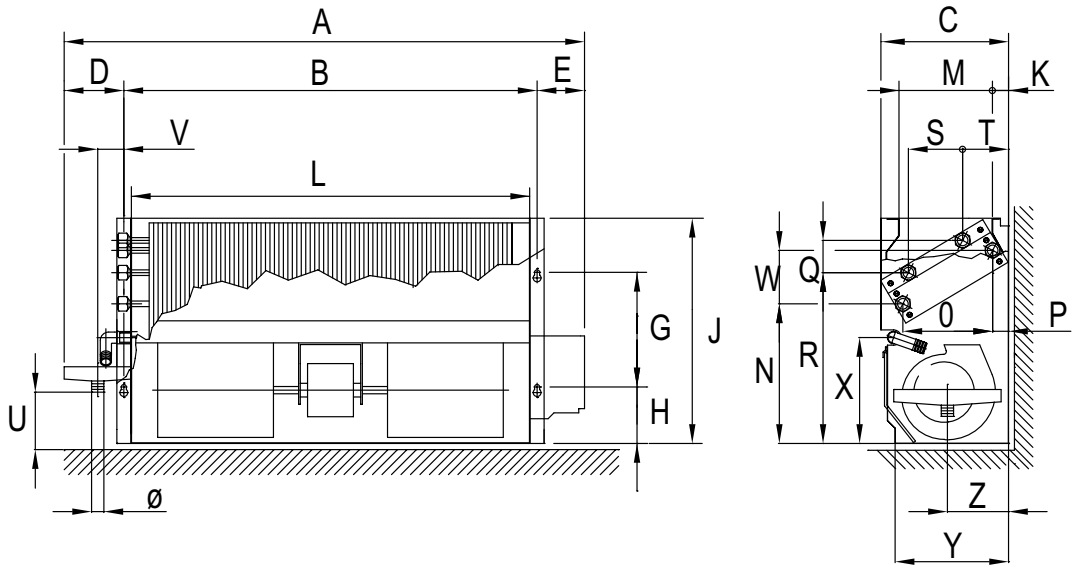
Vertical unit in a reduced height (395 mm) for concealed installation, with upper air outlet and frontal air intake.

- model equipped with auxiliary drain pan
- 2 pipe systems: 2 or 3 row coils; on 2 row coil units an electric heater can also be mounted
- 4 pipe systems: additional 1 row coil can be added to units with a 2 or 3 row coil

YLIVR MODEL

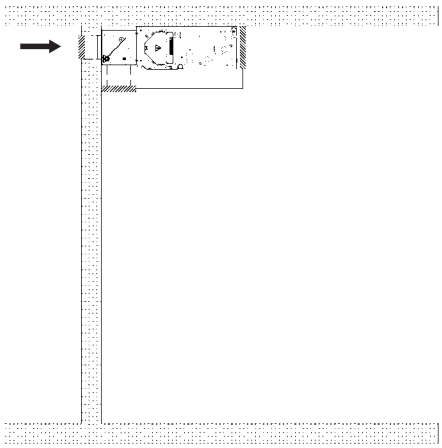
YLIVR Dimensions and weights

Size	110	112	114	216	218
A	555	680	805	930	1055
B	374	499	624	749	874
C	230	230	230	230	230
D	108	108	108	108	108
E	73	73	73	73	73
G	170	170	170	170	170
H	101	101	101	101	101
J	395	395	395	395	395
K	61	61	61	61	61
L	349	474	599	724	849
M	127	127	127	127	127
N	245	245	245	245	245
O	154	154	154	154	154
P	31	31	31	31	31
Q	47	47	47	47	47
R	304	304	304	304	304
S	88	88	88	88	88
T	87	87	87	87	87
U	65	65	65	65	65
V	47	47	47	47	47
W	84	84	84	84	84
X	214	214	214	214	214
Y	201	201	201	201	201
Z	109	109	109	109	109
Ø	20	20	20	20	20
kg	9	11	14	16	19

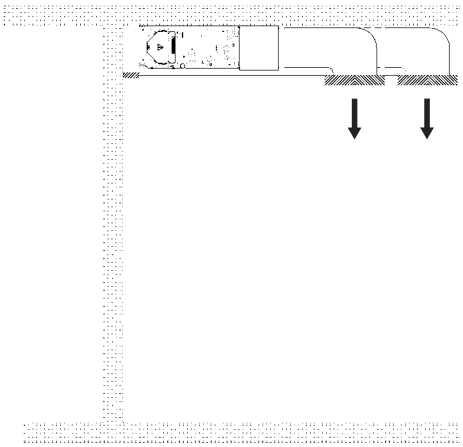


3.4 SUGGESTED INSTALLATION

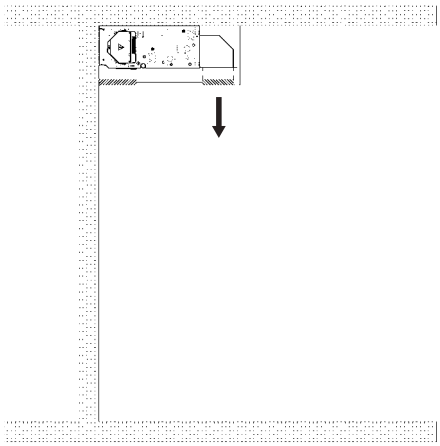
YLIH
PAE/HM



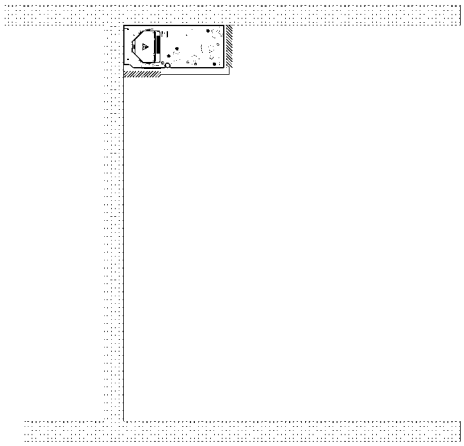
YLIH
PM



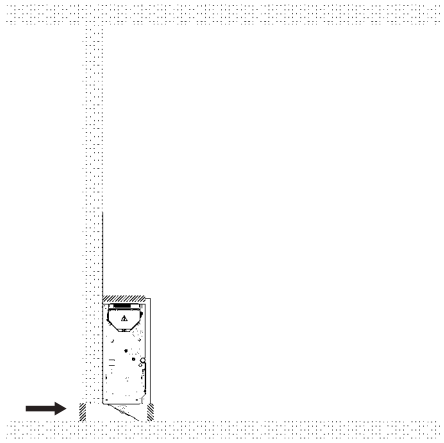
YLIH/AF
PM 90°



YLIH/AF



YLIV
PAE/V



4. COMPONENTS

4.1 INNER FRAME

The inner frame consists of 2 sides and a back panel assembled together, and of a movable element (condensate tray). It is made of galvanised steel: 8/10 mm thick for models up to size 218, 10/10 mm thick starting from size 220.
The sides have a special structure near the coil connections in order to avoid the headers' deformation while connecting the unit to the system (anti-torsion structure).
All the inner elements are completely lined with closed cell thermal insulation material.
The insulated condensate tray can be taken apart independently of the other components and it is perfectly effective both in vertical and in horizontal position.
The condensed water is discharged from the side (left or right, by choice), through a 20 mm external diameter header.

4.2 COILS

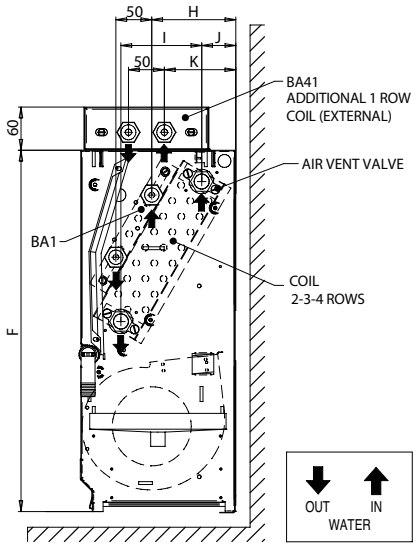
The coils consist of aluminium fin packs and mechanically expanded copper tubes.
Max operating pressure: 16 bar. Testing pressure: 30 bar. Standard water connections are on the right side of the unit, facing the air outlet; however the coils can be easily removed and reversed on site. Each header is provided with a very handy air valve, to allow air venting or water drainage from the coil. All water connections are ½" G (female threaded).
Laser and Concealed models (sizes 216÷328) are also available with **District Cooling** coils, designed with a reduced number of circuits, suitable for functioning with high water temperature difference.

Maximum operating pressure: 16 bar (without valves).

COMPATIBILITY					
Model	**YLV YLV/AF**	**YLH YLH/AF**	**YLIV YLIV/AF**	**YLIH YLIH/AF**	**YLVR YLIVR**
B2 (2 rows)	•	•	•	•	•
B3 (3 rows)	•	•	•	•	•
B4 (4 rows)	•	•	•	•	
B2 + BA1 (*)	•	•	•	•	•
B3 + BA1 (*)	•	•	•	•	•
B4 + BA41 (**)			•	•	

(*) BA1: additional 1 row coil for 4 pipe systems; the coil (for heating only) is placed inside the inner frame, in addition to 2 or 3 row coils.

(**) BA41: additional 1 row coil for 4 pipe systems; the coil (for heating only) is placed outside the frame, fixed on the air outlet (see drawing).



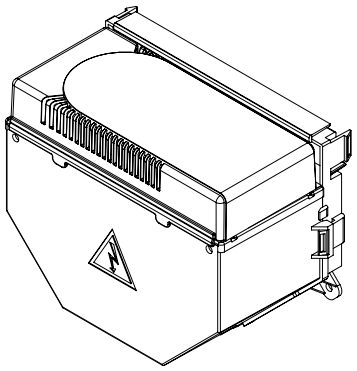
Size	F	H	I	J	K
110	505	117	113	48	100
112	505	117	113	48	100
114	505	117	113	48	100
216	505	117	113	48	100
218	505	117	113	48	100
220/222	581	135	138	53	104
224/226	581	135	138	53	104
228.1	581	135	138	53	104
328	581	135	138	53	104

4.3 FAN DECK

The centrifugal motor, single- or double-shaft, is single phase with permanently connected capacitor and thermal protection of the windings. Units 222÷328 have six speeds motors. Units 110÷220 have single-speed motor and are provided with 6 speeds (by using a transformer), 3 of them factory wired as standard. If an electric shock occurs to the unit, the autotransformer is also a protection for the motor: in this case it will burn before the shock damages the motor. The motors have a protection degree IP20 and insulation class B. IP44 motors in class F are available on request. All motors operate at 50/60Hz, and for all sizes the power supply is 230V ±6%.
The motor and the scrolls are fixed on a galvanized steel basement (12/10 mm thick for models 110÷218 and 15/10 mm thick from size 220÷328): the motor is located in a proper cradle and fixed with elastic ribbon supports. On request, motor for sizes 222÷328 are also available with ball bearings.
Each fan assembly is dynamically balanced, to reduce noise and wear of the components to minimum levels; it can easily be removed, independently of the inner frame, by taking off two fixing screws.
It consists of a centrifugal fan, one (110÷114 sizes), two (216÷228.1 sizes) or three (328) aluminium impellers, directly splined to the motor shaft, and of galvanized steel scrolls.

4.4 ELECTRICAL COMPONENTS AND CONTROLS

The electric panel (CBL00) consists of a self-extinguishing plastic box (class V0), which contains a 12 pole terminal board.
The plastic box is fixed on the left side (as standard) of the inner frame, and it can be easily pulled out and shifted from the left to the right side when the water connections are reversed.
Every unit is provided with an electric wiring diagram, always showing all the controls (both built-in and remote) and electric accessories eventually mounted on the unit. Everything must be correctly wired in accordance to the diagram, to obtain the requested working conditions of the unit.



CBL00

4.5 AIR FILTER

The air filter consists of a galvanized steel frame and two wide mesh nets enclosing the washable filter element with filtering cells made by non-hygroscopic material (see page 6, Fig. YLV, point 15).
The filter is placed on the bottom part of the unit (except for AF units) and it can be easily removed by releasing its fixing; it can be cleaned by washing with soap and water and drying in open-air. AF models have a shaped filter located behind the air inlet panel and suspended by splines (see page 6, Fig. YLH/AF, point 15).

4.6 HOUSING

The housing (see page 6, Fig. YLV, point 14) is manufactured with sheet steel painted with oven dried epoxy powders; its thickness is 8/10 mm for 110÷218 sizes and 10/10 mm for 220÷328 sizes. The standard colour is white (RAL 9001).
It is fixed to the inner frame with screws and also with retainers. In models having frontal air intake (AF), the panel covering the filter is fixed with a 1/4 turn screw system and can be taken off by using a screwdriver.
The standard grilles are movable and can be turned into all 4 directions without any tool. They are made of heat-resistant ABS (see page 6, Fig. YLV, point 13). At each side of the grilles, two doors in ABS give access to the control panel and to the water connections respectively. Both grilles and access doors are white (RAL 9001).

On request, the full range of RAL colours is available for each model with a slightly increased delivery time.

5. ELECTRICAL ACCESORIES

5.1 ELECTRIC BOX CBL10

Self-extinguishing plastic box (class V0), which contains a 12 pole terminal board and a voltage transformer (230/24 V~ 10 VA), for the electrical connection of the modulating valves. It is supplied as standard when the regulators CER10/B e CER30/B are requested.

5.2 ELECTRIC BOX CBL20

Self-extinguishing plastic box (class V0), which contains a 12 pole terminal board and a power relay card (230 V~): 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 and CER20.

5.3 ELECTRIC BOX CBL30

Self-extinguishing plastic box (class V0), which contains a 12 pole terminal board, a voltage transformer (230/24 V~ 10 VA) for the electrical connection of the modulating valves and/or 24 V~ controls, a power relay card (24 V~), 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 24 V).

5.4 ELECTRIC HEATER - KREL

Electric heater supplied with 2 safety thermostats, one with automatic resetting and the other one with manual resetting (in accordance with 2014/35/EU, EMC 2014/30/EU Directives), and a power relay card (CBL20).

Table A

COMPATIBILITY						
Model		**YLV YLV/AF**	**YLH YLH/AF**	**YLIV YLIV/AF**	**YLIH YLIH/AF**	**YLVR YLIVR**
Type of coil	B2	•	•	•	•	•
	B3	•	•	•	•	
	B4			•	•	

The table A shows the availability of the electric heater for the different models, in relation to the coil mounted on the unit.

Table B

SIZE	110	112	114	216	218	220	222	224	226	228.1	328
Power (kW)	0,5	1,0	1,5	2,0	2,25	2,5	2,5	3,0	3,0	3,5	3,5

The table B shows the power of the electric heater for each unit size. An electric heater with a lower power rating than shown can always be installed.

5.5 FAN SPEED SELECTORS CSL - CSR

This selector has no room thermostat and it can control the 3 fan speeds 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

SPEED SELECTORS	BUILT-IN	REMOTE
Functions	**CSL00**	**CSR00**
Manual fan speed selector + OFF position	•	•
Manual speed selector	•	•

		BUILT-IN	REMOTE
Compatibility	**Ref. YORK**	**CSL00**	**CSR00**
2 pipe system only		•	•
Minimum water temp. thermostat	TM	•	•
Remote room thermostat	TAD10	•	•

5.6 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

5.7 THERMOSTATS CML - 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

THERMOSTATS	BUILT-IN	REMOTE
Functions	**CML00**	**CMR00**
Ventilation mode (Thermostated – OFF – Continuous)	•	•
Manual speed selector	•	•
Manual S/W switch	•	•
Setting Temperature thermostat	•	•
Temperature setting range limitation	•	•

		BUILT-IN	REMOTE
Compatibility	**Ref. YORK**	**CML00**	**CMR00**
2/4 pipe system		•	•
ON/OFF 230V cooling and heating valve, 2/4 pipe system	J3A2	•	•
Minimum water temp. thermostat	TM	•	•
Electric Heater (in alternative to the heating valve)	KREL	•	•

5.8 ELECTRONIC REGULATORS CEL - CER

The YORK 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

ELECTRONIC REGULATORS	BUILT-IN				REMOTE			
Functions	**CEL00**	**CEL10/B CEL11**	**CEL20**	**CEL30/B CEL31**	**CER00**	**CER10/B CER11**	**CER20**	**CER30/B CER31**
Ventilation mode (Thermostated - OFF - Continuous)	•	•	•	•	•	•	•	•
Manual speed selector	•	•	•	•	•	•	•	•
Automatic speed selection			•	•			•	•
Automatic or external (centralized) S/W changeover	•	•	•	•	•	•	•	•
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	•	•	•	•	•	•	•	•

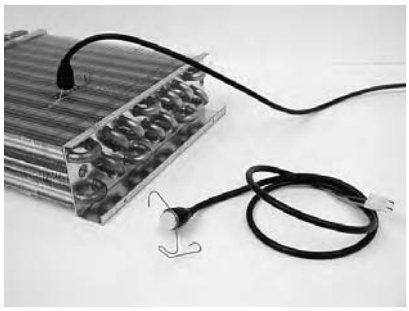
* not optoinsulated from 230 V~ power supply net

		BUILT-IN				REMOTE			
Compatibility	**Ref. YORK**	**CEL00**	**CEL10/B CEL11**	**CEL20**	**CEL30/B CEL31**	**CER00**	**CER10/B CER11**	**CER20**	**CER30/B CER31**
2/4 pipe system		•	•	•	•	•	•	•	•
ON/OFF 230V cooling and heating valve, 2/4 pipe system	J3A2	•		•		•		•	
Modulating 24V cooling and heating valve, 2/4 pipe system	J3AM		•		•		•		•
Minimum water temp. thermostat	TM	•	•	•	•	•	•	•	•
NTC sensor for automatic S/W changeover (2 pipe system only)	WS	•	•	•	•	•	•	•	•
Electric heater (in alternative to the heating valve)	KREL	•		•		•		•	

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

5.9 TM – MINIMUM WATER TEMPERATURE THERMOSTAT

Bimetallic thermostat with fixed set point, to be used in heating only. It is factory mounted or, upon request, supplied separately as a kit.



TM

Functions:

- during heating operation, it prevents the fan from starting if the coil temperature has not reached the set point temperature

Technical features:

- installation position: clipped to the coil fins
- set point temperature: 42 °C ± 3 °C
- differential: 10 °C
- rating of contacts: 3 A - 250 V~

5.10 WS – WATER SENSOR

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

WS

- WS combined with CER00, CER20, CER30/B, CEL00, CEL20, CEL30/B
  Summer: water temperature < 17 °C = cooling on
  water temperature > 19 °C = cooling off
  Winter: water temperature > 32 °C = valve open
  water temperature < 30 °C = valve closed
  water temperature > 35 °C = fan on
  water temperature < 33 °C = fan off

- WS combined with CER10/B, CER11, CEL10/B, CEL11, CER31, CEL31
  Summer: water temperature < 11 °C ± 1 K = cooling on
  water temperature > 14 °C ± 1 K = cooling off
  Winter: water temperature > 40 °C ± 1 K = heating on
  water temperature < 30 °C ± 1 K = heating off

The water sensor is not suitable when 2 way valves are mounted on the unit (i.e.: J2A2 or J2AM).

5.11 AS – AIR SENSOR

1 or 3m long NTC sensor (10K, 25°C), to be installed on the fancoil unit's air intake.
It is supplied as standard with the following regulators: CML00, CEL00, CEL10/B, CEL20, CEL30/B and CEL31.
It is optional, on request, with the following regulators: CMR00, CER00, CER10/B, CER20, CER30/B and CER31.

5.12 AFT – THERMOSTAT

5.12.1 AFT – ANTI-FROST FUNCTION

When combined with a motorized dumper (either PAE/VM or PAE/HM), the anti-frost thermostat closes the dumper if the air temperature is below the set point (i.e. 4 °C), avoiding any damage to the coil caused by the frozen water inside it.

5.12.2 AFT – IN COMBINATION WITH ELECTRIC HEATER

The AFT thermostat can be used in combination with an electric heater and controlled by a microprocessor control.
When the electronic regulator switches in heating operation, immediately it turns the electric heater ON, until the coil's temperature reaches the value set on the AFT thermostat (i.e. 40 °C).
When the heat exchanger is warm enough, the electric heater is deactivated and the unit will work with the water coil.

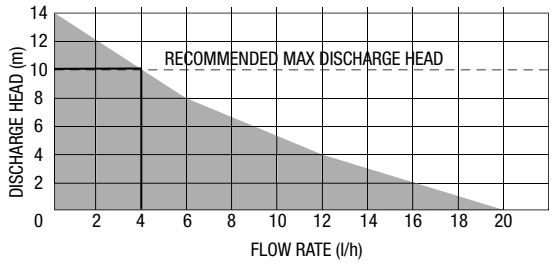
Technical features:
- operating range: 0 °C ±3 °C / 40 °C ±5 °C
- differential: 2 °C ±1K
- rating of contacts: 15 (2.5) A/250 V~

5.13 PC – CONDENSATE PUMP

The condensate pump is necessary when the natural water discharge is not allowed.

Functions:
- forced evacuation of the condensed water

Technical features:
- max water flow: 20 l/h
- max water discharge: 10 m head
- max suction: 3 m
- power supply: 230V~ 50/60 Hz
- power: 14 W
- alarm output: NC 8 A - 250 V
- detection levels in mm: running: 16, stop: 11, alarm: 19
- thermal protection (overheating): 115 °C
- sound level at 1 m: 20 dB (A)
- non-return valve on the outlet



6. REGULATING VALVES

6.1 ON/OFF VALVES: 3-WAY WITH 4 WATER CONNECTIONS (J3A2-J3B2) OR 2-WAY (J2A2-J2B2), 1/2"-3/4", 230V, FOR 2 OR 4 PIPE SYSTEMS

The ON/OFF 3-way regulating valves with bypass and 2-way regulating valves 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 110÷328 and available also with 24V~ (J3B0, J2B0, J3A0, J2A0).

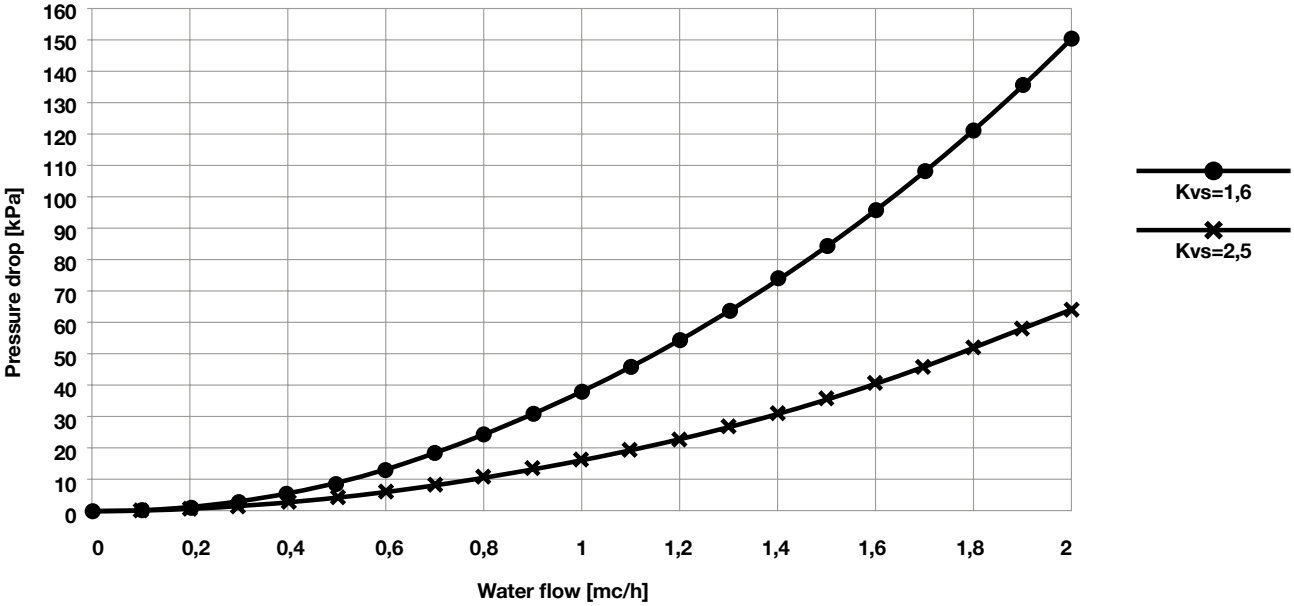
6.2 MODULATING VALVES: 3-WAY WITH 4 WATER CONNECTIONS (J3AM-J3BM) OR 2-WAY (J2AM-J2BM), 1/2"-3/4", 24V, FOR 2 OR 4 PIPE SYSTEMS

The modulating 3-way regulating valves with bypass and 2- way regulating valves are provided with modulating actuator and connection tubes. The direct water flow is closed by not giving the 0-10V signal to the actuator.
They are suitable for fan coils size 110÷328.

TECHNICAL FEATURES OF THE VALVES		
Nominal pressure	PN16	Cod.: J2A2, J3A2, J2AM, J3AM, J2B2, J3B2, J2BM, J3BM, J3B0, J2B0, J3A0, J2A0
Fluid	Hot or cold water for HVAC system, according to VDI standard quality or equivalent	Cod.: J2A2, J3A2, J2AM, J3AM, J2B2, J3B2, J2BM, J3BM, J3B0, J2B0, J3A0, J2A0
Connection	1/2" GM	Cod.: J2A2, J3A2, J2AM, J3AM, J3A0, J2A0
	3/4" GM	Cod.: J2B2, J3B2, J2BM, J3BM, J3B0, J2B0
Max close-off pressure	200kPa	Cod.: J2BM, J3BM, J2B2, J3B2, J3B0, J2B0
	250kPa	Cod.: J2AM, J3AM, J2A2, J3A2, J3A0, J2A0
Kvs	1,6	Cod.: J2AM, J3AM, J2A2, J3A2, J3A0, J2A0
	2,5	Cod.: J2BM, J2B2, J2B0, J3B2, J3BM, J3B0
Material	Brass	Cod.: J2A2, J3A2, J2AM, J3AM, J2B2, J3B2, J2BM, J3BM, J3B0, J2B0, J3A0, J2A0
Flow temperature limit	2÷110 °C	Cod.: J2AM, J3AM, J2BM, J3BM, J3A2, J2A2, J2B2, J3B2, J3B0, J2B0, J3A0, J2A0
Room temperature limit	2÷50 °C	Cod.: J2A2, J3A2, J2AM, J3AM, J2B2, J3B2, J2BM, J3BM, J3B0, J2B0, J3A0, J2A0
Actuator	On/Off	Cod.: J2A2, J3A2, J2A0, J3A0, J2B2, J3B2, J2B0, J3B0
	Modulating	Cod.: J2AM, J3AM, J2BM, J3BM
Voltage supply	230 VAC ±10% 50/60 Hz	Cod.: J2A2, J3A2, J2B2, J3B2
	24 VAC/DC ±15% 50/60 Hz	Cod.: J2AM, J3AM, J2BM, J3BM
	24VAC/DC +20%...-10% 50/60 Hz	Cod.: J3B0, J2B0, J3A0, J2A0
Control signal	0÷10 Vcc	Cod.: J2AM, J3AM, J2BM, J3BM
Operation power	1 W	Cod.: J2A2, J3A2, J2B2, J3B2, J3B0, J2B0, J3A0, J2A0
	1,5 W	Cod. J2AM, J3AM, J2BM, J3BM
Running time	~ 4 min	Cod.: J2A2, J3A2, J2B2, J3B2
	4,5 min	Cod.: J3B0, J2B0, J3A0, J2A0
Protection grade	IP54	Cod.: J2A2, J3A2, J2B2, J3B2, J3B0, J2B0, J3A0, J2A0
	IP43	Cod.: J2AM, J3AM, J2BM, J3BM

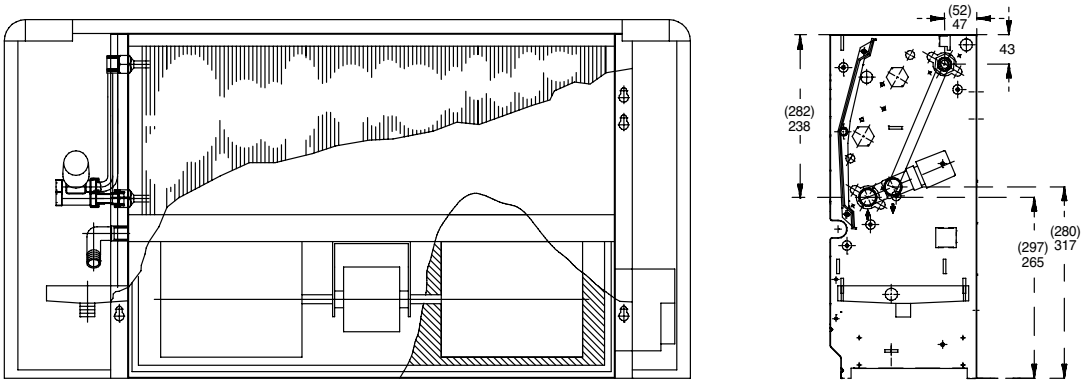
MAXIMUM OPERATING PRESSURE WITH VALVES: 10 BAR.

PRESSURE DROP DIAGRAM FOR VALVES WITH DIFFERENT KVS



Pressure drop diagram referred to the body valve only.

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



YLV WITH VALVE. DIMENSIONS BETWEEN BRACKETS ARE REFERRED TO SIZE 220÷328

6.3 DT – SHUT-OFF VALVE

It is a full bore ball valve with T handle; it is designed to separate the unit from the piping system if maintenance is required.

7. OTHER ACCESSORIES

7.1 CP – SET OF FEET

Set of painted steel feet, each of them composed by two elements: a bearing element fixed to the inner frame, on which the unit leans, and a visible element fixed to the previous one. They are designed to cover the water connections and the electric cables.
• Height: 85 mm
• Colour: RAL 9001 (white) for Laser serie

7.2 ZL – LONG SOCLE WITH FEET

Painted steel socle consisting of a set of feet (CP) and a frontal grill. It is designed to cover a vertical external air intake or other accessories.
• Height: 85 mm
• Colour: RAL 9001 (white) ffor Laser serie

7.3 PPV – VERTICAL BACK PANEL

It is a back panel made of steel painted in the same colour as the casing. It is mounted on vertical units with housing when the back side of the unit is in view.

7.4 PPH – HORIZONTAL BACK PANEL

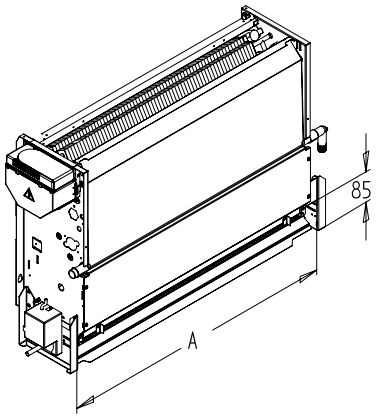
It is a back panel made of steel painted in the same colour as the casing. It is mounted on horizontal units with housing when the back side of the unit is in view.

7.5 PAE/V – VERTICAL EXTERNAL AIR INTAKE WITH MANUAL DAMPER

PAE/V is a vertical external air intake with supporting feet and manual damper.
All the elements are made of painted steel, in the same colour as the casing. The manual air damper provides the unit with a mixture of return air and outside air. An air intake at the rear of the fan coil must be foreseen to provide fresh outside air.
- Mixture rate: 0/100%
- Height: 85 mm
- Colour: RAL 9001 (white) for Laser serie

7.6 PAE/VM – VERTICAL EXTERNAL AIR INTAKE WITH MOTORIZED DAMPER

PAE/VM is a vertical external air intake with supporting feet and motorized damper.
All the elements are made of painted steel. The motorized air damper is regulated by a servomotor and provides the unit with a mixture of return air and outside air. The servomotor operating mode depends on the required working conditions. An air intake at the rear of the fan coil must be foreseen to provide fresh outside air.
- Mixture rate: 0/100%
- Height: 85 mm
- Colour: RAL 9001 (white) for Laser serie
- Servomotor regulation: ON/OFF (code LM230), ON/OFF with spring return (code LF230) or modulating with a proper controller (code LM24)



Size		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	424	549	674	799	924	1049	1049	1174	1174	1299	1299

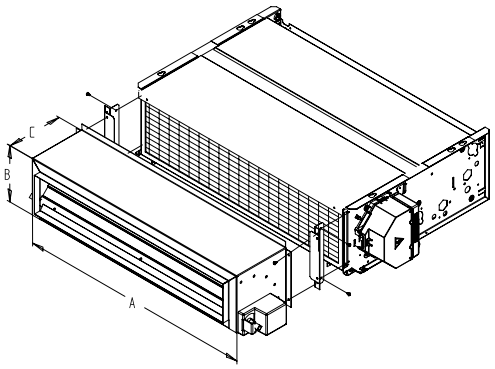
7.7 PAE/H – HORIZONTAL EXTERNAL AIR INTAKE WITH MANUAL DAMPER

Air suction plenum made of galvanized steel sheet, provided with a rectangular collar for the connection to the external air intake. It must be mounted on the air intake of the unit, between the external air intake and the filter, which remains accessible for maintenance. A lever located on the side of the unit can operate the manual damper.

SIZE		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	351	476	601	726	851	976	976	1226	1226	1476	1476
B	mm	176	176	176	176	176	206	206	206	206	206	206
C	mm	176	176	176	176	176	206	206	206	206	206	206

7.8 PAE/HM – HORIZONTAL EXTERNAL AIR INTAKE WITH MOTORIZED DAMPER

Air suction plenum made of galvanized steel sheet, provided with a rectangular collar for the connection to the external air intake. It must be mounted on the air intake of the unit, between the external air intake and the filter, which remains accessible for maintenance. A servomotor can operate the damper: ON/OFF (code LM230), ON/OFF with spring return (code LF230) or modulating with a proper controller (code LM24).

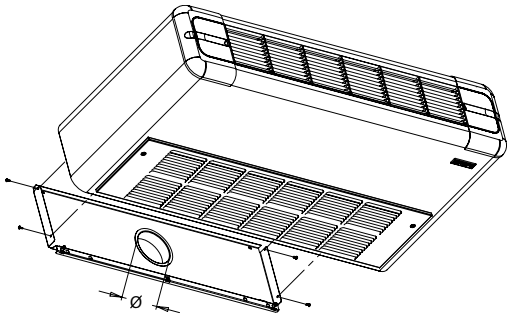


SIZE		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	351	476	601	726	851	976	976	1226	1226	1476	1476
B	mm	176	176	176	176	176	206	206	206	206	206	206
C	mm	176	176	176	176	176	206	206	206	206	206	206

7.9 PAE/HAF – HORIZONTAL EXTERNAL AIR INTAKE (FOR HORIZONTAL UNITS WITH BOTTOM AIR INTAKE)

This external air intake is made of galvanized steel and is installed on the back side of horizontal units with bottom air intake. It is provided with a collar to be located in a hole on the wall, which allows the entrance of outside air.

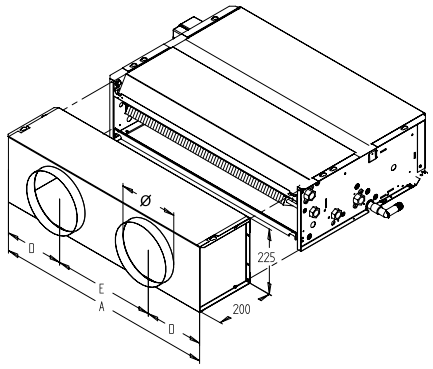
- Collar diameter of units 110÷218: 100 mm
- Collar diameter of units 220÷328: 150 mm



SIZE	110	112	114	216	218	220	222	224	226	228.1	328
No. of spigots	1	1	1	1	1	1	1	1	1	1	1
Spigots external Ø mm	100	100	100	100	100	150	150	150	150	150	150

7.10 PM – AIR DELIVERY PLENUM

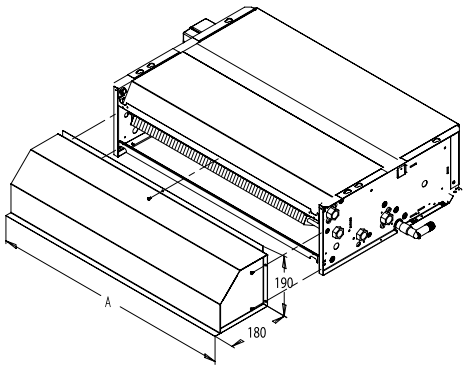
The air delivery plenum is made of galvanized steel sheet, insulated inside, provided with spigots for the connection to the air ducts. It must be mounted on the air outlet of the unit.



SIZE		110	112	114	216	218	220	222	224	226	228.1	328
No. of spigots		1	2	2	2	2	3	3	3	3	3	3
Spigots' external Ø	mm	150	150	150	200	200	200	200	200	200	200	200
A	mm	379	504	629	754	879	1004	1004	1254	1254	1504	1504
D	mm	189,5	127	139,5	202	252	152	152	277	277	377	377
E	mm	-	250	350	350	375	350	350	350	350	375	375

7.11 PM90 – 90° AIR DELIVERY PLENUM

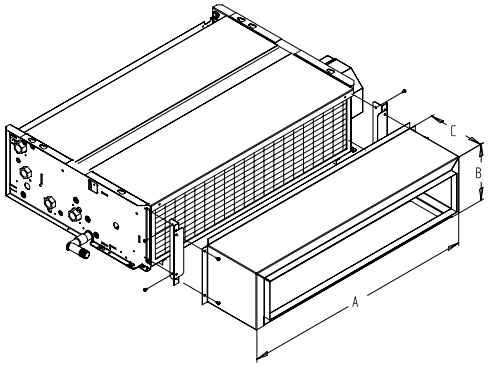
The 90° air delivery plenum is made of galvanized steel sheet, insulated inside, provided with a rectangular collar for the connection to the air duct. It must be mounted on the air outlet of the unit.



SIZE		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	379	504	629	754	879	1004	1004	1254	1254	1504	1504

7.12 PA – AIR SUCTION PLENUM

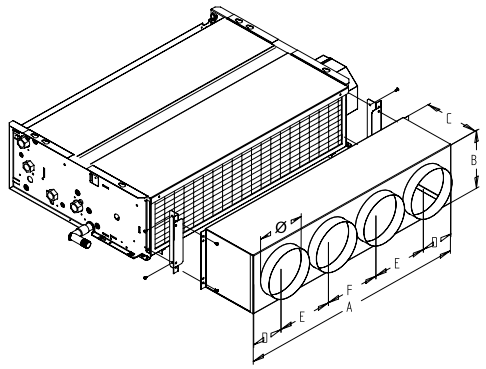
The air suction plenum is made of galvanized steel sheet, provided with a rectangular collar for the connection to the external air intake. It must be mounted on the air intake of the unit, between the external air intake and the filter, which remains accessible for maintenance.



SIZE		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	351	476	601	726	851	976	976	1226	1226	1476	1476
B	mm	176	176	176	176	176	206	206	206	206	206	206
C	mm	176	176	176	176	176	206	206	206	206	206	206

7.13 PAS – AIR SUCTION PLENUM WITH SPIGOTS

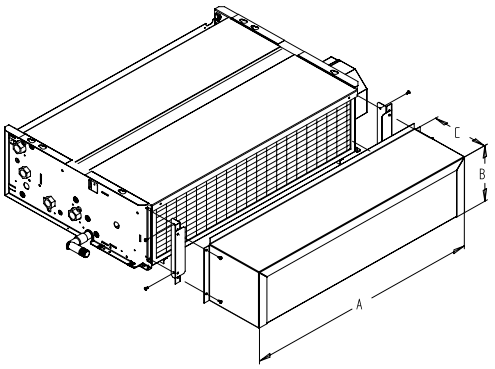
Air suction plenum made of galvanized steel sheet, provided with collars (spigots) for the connection to the external air intake. It must be mounted on the air intake of the unit, between the external air intake and the filter, which remains accessible for maintenance.



SIZE		110	112	114	216	218	220	222	224	226	228.1	328
No. of spigots		2	2	3	4	4	3	3	4	4	4	4
Spigots' external Ø	mm	100	150	150	150	150	200	200	200	200	200	200
A	mm	351	476	601	726	851	976	976	1226	1226	1476	1476
B	mm	191	191	191	191	191	221	221	221	221	221	221
C	mm	176	176	176	176	176	206	206	206	206	206	206
D	mm	76,8	101,8	101,8	101,8	101,8	116,8	116,8	126,8	126,8	126,8	126,8
E	mm	-	-	-	174	222,5	-	-	360	360	485	485
F	mm	197	272	198,5	174	202	371	371	252	252	252	252

7.14 PA90 – 90° AIR SUCTION PLENUM

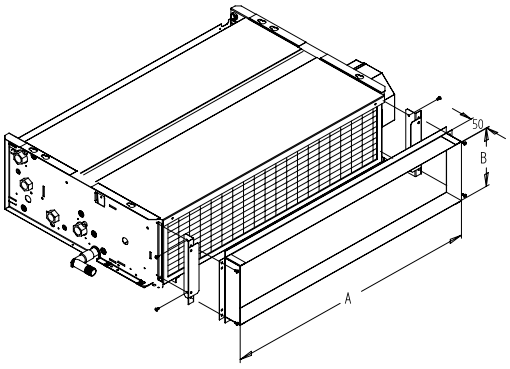
The 90° air suction plenum is made of galvanized steel sheet, provided with a rectangular collar for the connection to the external air intake. It must be mounted on the air intake of the unit, between the external air intake and the filter, which remains accessible for maintenance.



SIZE		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	351	476	601	726	851	976	976	1226	1226	1476	1476
B	mm	176	176	176	176	176	206	206	206	206	206	206
C	mm	176	176	176	176	176	206	206	206	206	206	206

7.15 RCA – DUCT CONNECTION

This duct connection is made of galvanized steel, provided with a rectangular collar for the connection to the suction air duct. It must be mounted on the air intake of the unit, between the duct and the filter, which remains accessible for maintenance.



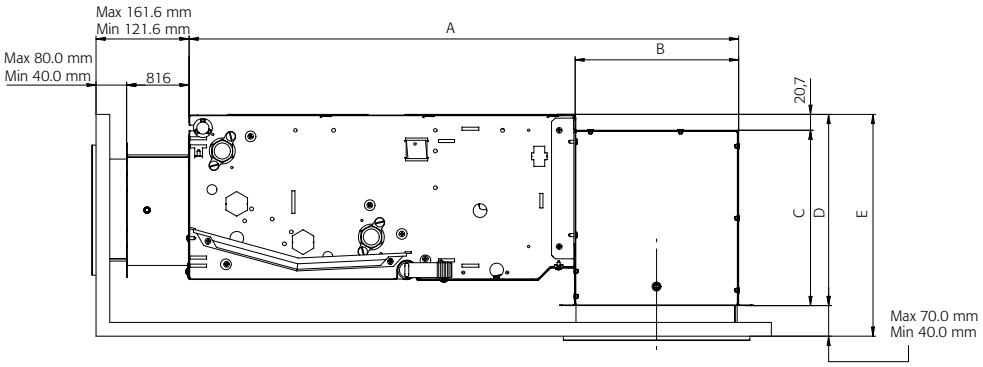
SIZE		110	112	114	216	218	220	222	224	226	228.1	328
A	mm	351	476	601	726	851	976	976	1226	1226	1476	1476
B	mm	176	176	176	176	176	206	206	206	206	206	206

7.16 RCCMF – TELESCOPIC AIR OUTLET CONNECTION

The telescopic connection is made of galvanized steel sheet. It is mounted on the air outlet of the unit. See drawing and tables.

7.17 RCCAF – 90° TELESCOPIC AIR INTAKE CONNECTION

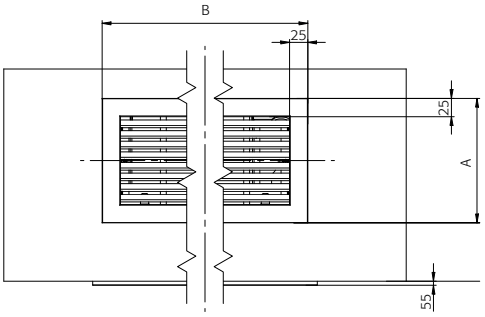
The 90° telescopic air intake connection is made of galvanized steel sheet, it is complete with G3 filter. It is mounted on the air intake of the unit. This connection can be mounted only on the YLIH unit specially pre-arranged. See drawing and tables.



SIZE		110	112	114	216	218	220	222	224	226	328
A	mm	719	719	719	719	719	825	825	825	825	825
B	mm	214	214	214	214	214	244	244	244	244	244
C	mm	229	229	229	229	229	259	259	259	259	259
D	mm	250	250	250	250	250	280	280	280	280	280
E	Min mm	290	290	290	290	290	320	320	320	320	320
	Max mm	320	320	320	320	320	350	350	350	350	350

7.18 GM – AIR OUTLET GRILL FOR RCCMF

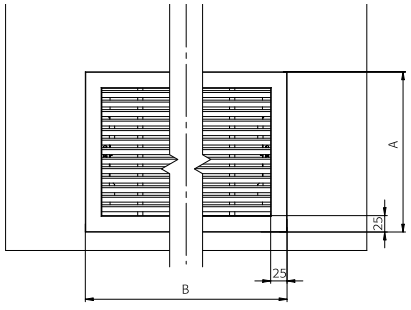
The grill is made of aluminium and it is available also painted (white-RAL 9001). It must be mounted on the telescopic air outlet connection.



SIZE		110	112	114	216	218	220	222	224	226	328
A	mm	170	170	170	170	170	185	185	185	185	185
B	mm	366	491	616	741	866	991	991	1241	1241	1491

7.19 GA – AIR INTAKE GRILL FOR RCCAF

The grill is made of aluminium and it is available also painted (white-RAL 9001). It must be mounted on the telescopic air intake connection.



SIZE		110	112	114	216	218	220	222	224	226	328
A	mm	244	244	244	244	244	274	274	274	274	274
B	mm	392	517	642	767	892	1017	1017	1267	1267	1517

8. TECHNICAL DATA

8.1 AIR VOLUMES

8.1.1 LASER, CONCEALED SERIE

Nominal values (m^3/h)

SIZE		110	112	114	216	218	220	222	224	226	228.1	328
Fan speed	Fan speed 1	291	383	500	719	875	1125	1315	1606	1757	2009	2341
	Fan speed 2 MAX	243	317	432	606	754	961	1115	1307	1507	1820	2010
	Fan speed 3 MED	181	253	352	488	616	776	928	1106	1318	1561	1687
	Fan speed 4	154	225	318	434	555	690	830	968	1171	1351	1359
	Fan speed 5 MIN	136	185	279	377	486	594	742	779	986	1106	1107
	Fan speed 6	124	170	259	344	445	548	665	690	878	927	939

Nominal air volumes refer to standard fan coils with clean air filter, 20 °C room temperature, at sea level, without external static pressure.

AIR VOLUMES AT DIFFERENT PA OF EXTERNAL STATIC PRESSURE

Values with external static pressure (m^3/h)

Pressure drop	(Pa)	10	20	30	40	50	60	70	80	90	100	110
Size 110	Fan speed 1	269	251	230	208	184	157	124	79	-	-	-
	Fan speed 2 MAX	215	199	183	165	143	115	78	-	-	-	-
	Fan speed 3 MED	163	146	127	105	73	-	-	-	-	-	-
	Fan speed 4	137	120	99	70	-	-	-	-	-	-	-
	Fan speed 5 MIN	112	88	59	-	-	-	-	-	-	-	-
	Fan speed 6	96	67	-	-	-	-	-	-	-	-	-
Size 112	Fan speed 1	352	333	308	280	249	216	181	146	109	70	-
	Fan speed 2 MAX	290	267	238	207	176	142	104	58	-	-	-
	Fan speed 3 MED	215	190	166	142	118	93	66	-	-	-	-
	Fan speed 4	185	158	133	110	87	63	-	-	-	-	-
	Fan speed 5 MIN	149	122	96	69	-	-	-	-	-	-	-
	Fan speed 6	131	102	73	-	-	-	-	-	-	-	-
Size 114	Fan speed 1	475	449	420	388	356	322	284	240	186	115	-
	Fan speed 2 MAX	400	376	351	325	298	266	226	175	105	-	-
	Fan speed 3 MED	322	298	276	252	226	195	156	109	50	-	-
	Fan speed 4	288	261	236	211	186	159	127	86	-	-	-
	Fan speed 5 MIN	240	210	185	162	139	114	85	50	-	-	-
	Fan speed 6	216	186	162	141	120	96	67	-	-	-	-
Size 216	Fan speed 1	683	648	609	565	515	457	392	319	240	155	68
	Fan speed 2 MAX	571	538	500	459	414	364	309	249	181	105	-
	Fan speed 3 MED	442	408	374	339	301	258	210	156	96	-	-
	Fan speed 4	388	351	315	280	243	204	161	113	59	-	-
	Fan speed 5 MIN	321	279	242	208	175	142	106	66	-	-	-
	Fan speed 6	292	249	209	172	136	101	66	-	-	-	-

Values with external static pressure (m^3/h)

Size 218	Fan speed 1	831	785	736	682	623	558	486	408	324	232	134
	Fan speed 2 MAX	704	657	612	566	517	462	401	331	253	166	69
	Fan speed 3 MED	561	512	466	423	380	334	285	229	165	91	-
	Fan speed 4	497	445	399	357	316	274	229	178	117	-	-
	Fan speed 5 MIN	421	366	320	278	240	201	159	112	56	-	-
	Fan speed 6	377	323	279	240	202	160	110	-	-	-	-
Size 220	Fan speed 1	1074	1017	956	890	818	742	660	573	480	381	275
	Fan speed 2 MAX	912	858	800	737	670	599	524	446	365	280	194
	Fan speed 3 MED	703	639	581	528	476	425	371	312	246	171	83
	Fan speed 4	615	550	494	443	395	348	299	245	185	115	-
	Fan speed 5 MIN	516	450	394	345	301	258	214	166	112	48	-
	Fan speed 6	463	394	337	289	245	203	159	109	50	-	-
Size 222	Fan speed 1	1265	1213	1156	1093	1025	950	869	780	683	577	463
	Fan speed 2 MAX	1046	990	940	891	840	782	716	641	556	463	362
	Fan speed 3 MED	860	804	755	708	661	609	553	489	419	343	261
	Fan speed 4	753	693	644	600	558	513	464	408	346	276	202
	Fan speed 5 MIN	664	602	551	507	465	422	377	328	273	213	148
	Fan speed 6	577	513	464	423	385	347	305	259	208	154	100
Size 224	Fan speed 1	1548	1471	1389	1303	1212	1119	1021	920	815	706	590
	Fan speed 2 MAX	1230	1153	1076	999	922	846	767	686	601	510	410
	Fan speed 3 MED	1077	998	922	848	775	700	623	543	458	369	275
	Fan speed 4	945	860	781	706	633	562	491	419	344	266	182
	Fan speed 5 MIN	740	651	571	500	434	371	310	248	183	114	-
	Fan speed 6	648	553	471	397	330	265	199	128	50	-	-
Size 226	Fan speed 1	1711	1627	1540	1449	1355	1258	1159	1056	949	838	720
	Fan speed 2 MAX	1435	1350	1268	1187	1106	1024	939	851	758	660	554
	Fan speed 3 MED	1280	1196	1116	1037	960	881	801	718	630	536	436
	Fan speed 4	1094	1012	935	861	788	716	642	566	486	401	309
	Fan speed 5 MIN	948	858	775	696	620	547	475	403	330	255	176
	Fan speed 6	829	744	661	581	502	425	351	278	208	139	73
Size 228.1	Fan speed 1	1938	1837	1732	1625	1513	1395	1271	1140	1002	854	699
	Fan speed 2 MAX	1728	1642	1554	1461	1361	1254	1139	1015	883	742	594
	Fan speed 3 MED	1469	1401	1327	1245	1156	1061	959	849	734	611	481
	Fan speed 4	1257	1193	1129	1061	988	907	817	719	613	499	380
	Fan speed 5 MIN	1008	938	869	799	729	656	579	498	411	318	217
	Fan speed 6	828	749	673	598	526	454	383	311	237	161	81
Size 328	Fan speed 1	2288	2237	2186	2133	2074	2004	1920	1818	1693	1542	1359
	Fan speed 2 MAX	1957	1905	1853	1798	1736	1666	1583	1485	1369	1233	1072
	Fan speed 3 MED	1652	1607	1555	1496	1432	1362	1285	1199	1099	982	841
	Fan speed 4	1306	1256	1208	1160	1108	1049	979	896	795	673	527
	Fan speed 5 MIN	1060	1002	940	878	819	762	706	645	572	477	349
	Fan speed 6	866	792	722	657	597	541	487	429	362	277	165

8.1.2 LOW BODY SERIE

Nominal values (m^3/h)

SIZE		110	112	114	216	218
Fan speed	Fan speed 1	291	383	500	719	875
	Fan speed 2 MAX	243	317	432	606	754
	Fan speed 3 MED	181	253	352	488	616
	Fan speed 4	154	225	318	434	555
	Fan speed 5 MIN	136	185	279	377	486
	Fan speed 6	124	170	259	344	445

Nominal air volumes refer to standard fan coils with clean air filter, 20 °C room temperature, at sea level, without external static pressure.

Values with external static pressure (m^3/h)

Pressure drop (Pa)		10	20	30	40	50	60	70	80
Size 110	Fan speed 1	269	251	230	208	184	157	124	79
	Fan speed 2 MAX	215	199	183	165	143	115	78	-
	Fan speed 3 MED	163	146	127	105	73	-	-	-
	Fan speed 4	137	120	99	70	-	-	-	-
	Fan speed 5 MIN	112	88	59	-	-	-	-	-
	Fan speed 6	96	67	-	-	-	-	-	-
Size 112	Fan speed 1	352	333	308	280	249	216	181	146
	Fan speed 2 MAX	290	267	238	207	176	142	104	58
	Fan speed 3 MED	215	190	166	142	118	93	66	-
	Fan speed 4	185	158	133	110	87	63	-	-
	Fan speed 5 MIN	149	122	96	69	-	-	-	-
	Fan speed 6	131	102	73	-	-	-	-	-
Size 114	Fan speed 1	475	449	420	388	356	322	284	240
	Fan speed 2 MAX	400	376	351	325	298	266	226	175
	Fan speed 3 MED	322	298	276	252	226	195	156	109
	Fan speed 4	288	261	236	211	186	159	127	86
	Fan speed 5 MIN	240	210	185	162	139	114	85	50
	Fan speed 6	216	186	162	141	120	96	67	-
Size 216	Fan speed 1	683	648	609	565	515	457	392	319
	Fan speed 2 MAX	571	538	500	459	414	364	309	249
	Fan speed 3 MED	442	408	374	339	301	258	210	156
	Fan speed 4	388	351	315	280	243	204	161	113
	Fan speed 5 MIN	321	279	242	208	175	142	106	66
	Fan speed 6	292	249	209	172	136	101	66	-
Size 218	Fan speed 1	831	785	736	682	623	558	486	408
	Fan speed 2 MAX	704	657	612	566	517	462	401	331
	Fan speed 3 MED	561	512	466	423	380	334	285	229
	Fan speed 4	497	445	399	357	316	274	229	178
	Fan speed 5 MIN	421	366	320	278	240	201	159	112
	Fan speed 6	377	323	279	240	202	160	110	-

8.2 COOLING CAPACITIES

8.2.1 LASER, CONCEALED SERIE

Room temperature: 27 °C D.B. - 47% Humid. IN — Water temperature: 7/12 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
2 ROWS													
Fan speed 1	Total cooling capacities	kW	1,28	1,52	2,12	2,89	2,98	4,58	5,07	6,40	6,77	7,66	8,97
	Sensible cooling capacities	kW	1,11	1,27	1,86	2,46	2,76	3,94	4,39	5,51	5,86	6,40	7,71
	Water flow	l/h	217	258	360	493	508	781	867	1092	1158	1315	1524
	Water pressure drop	kPa	20,4	4,7	9,5	20,5	4,7	11,5	13,8	22,3	24,7	40,5	53,2
Fan speed 2 MAX	Total cooling capacities	kW	1,14	1,33	1,92	2,58	2,70	4,12	4,55	5,59	6,14	7,22	8,18
	Sensible cooling capacities	kW	0,98	1,12	1,67	2,18	2,49	3,52	3,91	4,76	5,27	5,99	6,96
	Water flow	l/h	194	227	328	440	460	701	776	952	1047	1239	1397
	Water pressure drop	kPa	16,7	3,7	8,1	16,8	3,9	9,6	11,4	17,6	20,8	37,0	45,7
Fan speed 3 MED	Total cooling capacities	kW	0,92	1,05	1,66	2,23	2,32	3,56	4,02	4,99	5,62	6,54	7,30
	Sensible cooling capacities	kW	0,78	0,88	1,43	1,87	2,14	3,01	3,43	4,22	4,79	5,39	6,15
	Water flow	l/h	157	178	283	379	396	608	684	849	958	1123	1245
	Water pressure drop	kPa	11,7	2,5	6,3	13,0	3,1	7,6	9,2	14,5	17,8	31,1	37,5
Fan speed 4	Total cooling capacities	kW	0,82	0,96	1,46	2,06	2,11	3,27	3,73	4,57	5,19	5,96	6,32
	Sensible cooling capacities	kW	0,68	0,81	1,26	1,71	1,96	2,75	3,16	3,83	4,40	4,88	5,27
	Water flow	l/h	139	163	250	352	361	559	638	781	884	1024	1075
	Water pressure drop	kPa	9,5	2,2	5,1	11,5	2,6	6,5	8,2	12,6	15,5	26,4	29,2
Fan speed 5 MIN	Total cooling capacities	kW	0,74	0,84	1,32	1,86	1,77	2,93	3,45	3,70	4,61	5,21	5,50
	Sensible cooling capacities	kW	0,62	0,70	1,14	1,54	1,66	2,45	2,91	3,09	3,87	4,23	4,53
	Water flow	l/h	126	144	225	318	301	500	589	632	783	894	940
	Water pressure drop	kPa	8,1	1,8	4,3	9,7	1,9	5,4	7,2	8,8	12,6	20,9	23,2
Fan speed 6	Total cooling capacities	kW	0,69	0,80	1,26	1,74	1,65	2,76	3,19	3,39	4,26	4,62	4,89
	Sensible cooling capacities	kW	0,57	0,66	1,07	1,43	1,56	2,30	2,67	2,81	3,56	3,72	3,99
	Water flow	l/h	117	136	214	297	282	469	544	579	728	793	836
	Water pressure drop	kPa	7,2	1,6	4,0	8,7	1,7	4,9	6,3	7,6	11,2	17,2	19,0
Water content		l	0,4	0,6	0,7	0,9	1,1	1,5	1,5	1,9	1,9	2,3	2,3

Room temperature: 27 °C D.B. - 47% Humid. IN — Water temperature: 7/12 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
3 ROWS													
Fan speed 1	Total cooling capacities	kW	1,29	1,72	2,34	3,66	3,70	5,27	6,16	7,69	8,18	9,60	11,19
	Sensible cooling capacities	kW	1,13	1,44	1,96	2,96	3,14	4,33	5,24	6,31	6,75	7,62	9,22
	Water flow	l/h	219	294	400	625	630	897	1047	1307	1391	1648	1904
	Water pressure drop	kPa	3,9	8,2	6,1	15,2	15,0	26,2	30,0	19,3	22,5	32,0	80,0
Fan speed 2 MAX (Eurovent)	Total cooling capacities	kW	1,11	1,59	2,14	3,30	3,50	4,44	5,07	6,43	7,25	8,86	9,73
	Sensible cooling capacities	kW	0,93	1,25	1,90	2,46	3,06	3,53	4,42	5,06	5,70	7,13	8,04
	Water flow	l/h	191	274	368	568	602	764	873	1107	1248	1525	1675
	Water pressure drop	kPa	3,4	7,1	5,8	14,8	13,6	24,1	28,4	18,8	21,0	28,7	74,6
Fan speed 3 MED (Eurovent)	Total cooling capacities	kW	0,95	1,31	1,88	2,67	2,99	3,68	4,39	5,75	6,67	7,97	8,75
	Sensible cooling capacities	kW	0,78	0,99	1,64	1,95	2,51	2,84	3,74	4,44	5,18	6,33	7,15
	Water flow	l/h	164	225	324	460	515	633	756	990	1148	1372	1506
	Water pressure drop	kPa	2,8	5,0	4,6	12,5	9,8	17,4	21,8	15,5	18,1	23,6	61,5
Fan speed 4	Total cooling capacities	kW	0,86	1,17	1,70	2,52	2,68	3,23	4,02	5,37	6,18	7,30	7,65
	Sensible cooling capacities	kW	0,70	0,95	1,38	1,80	2,23	2,56	3,65	4,28	4,97	5,68	6,08
	Water flow	l/h	147	200	289	430	457	636	758	916	1055	1252	1306
	Water pressure drop	kPa	2,2	3,4	3,8	9,7	8,0	13,9	18,8	12,9	16,0	20,2	40,0
Fan speed 5 MIN (Eurovent)	Total cooling capacities	kW	0,76	1,07	1,57	2,20	2,46	2,94	3,84	4,62	5,50	6,30	6,36
	Sensible cooling capacities	kW	0,61	0,79	1,33	1,56	2,00	2,20	3,20	3,45	4,15	4,90	5,03
	Water flow	l/h	131	184	270	379	423	506	661	795	947	1085	1095
	Water pressure drop	kPa	2,0	3,4	3,3	8,5	6,7	11,6	17,2	10,5	12,8	16,2	30,8
Fan speed 6	Total cooling capacities	kW	0,74	0,91	1,40	2,10	2,27	2,89	3,75	4,13	4,98	5,51	5,78
	Sensible cooling capacities	kW	0,59	0,75	1,15	1,42	1,87	2,32	3,04	3,24	3,96	4,22	4,50
	Water flow	l/h	126	155	238	358	386	493	640	703	850	945	986
	Water pressure drop	kPa	1,6	2,3	2,4	5,6	4,4	7,5	13,0	8,0	8,5	12,5	20,1
Water content		l	0,6	0,8	1,1	1,3	1,6	2,2	2,2	2,9	2,9	3,5	3,5

Room temperature: 27 °C D.B. - 47% Humid. IN

Water temperature: 7/12 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
4 ROWS													
Fan speed 1	Total cooling capacities	kW	1,47	1,94	2,63	4,00	4,26	6,05	6,62	8,66	9,20	10,46	11,94
	Sensible cooling capacities	kW	1,22	1,55	2,10	3,19	3,58	4,80	5,37	6,82	7,29	8,27	9,73
	Water flow	l/h	250	331	449	683	725	1033	1131	1480	1564	1795	2042
	Water pressure drop	kPa	2,3	4,2	8,1	10,3	5,2	11,7	13,7	16,2	17,7	26,1	34,6
Fan speed 2 MAX	Total cooling capacities	kW	1,29	1,69	2,36	3,51	3,81	5,38	5,86	7,44	8,27	9,73	10,70
	Sensible cooling capacities	kW	1,06	1,34	1,88	2,78	3,15	4,24	4,72	5,81	6,49	7,67	8,64
	Water flow	l/h	219	287	403	600	647	918	1001	1272	1413	1670	1828
	Water pressure drop	kPa	1,9	3,3	6,7	8,3	4,3	9,6	11,1	12,5	14,9	23,1	28,6
Fan speed 3 MED	Total cooling capacities	kW	1,06	1,41	2,02	2,97	3,25	4,56	5,11	6,56	7,49	8,69	9,40
	Sensible cooling capacities	kW	0,84	1,11	1,59	2,33	2,70	3,56	4,08	5,08	5,84	6,79	7,51
	Water flow	l/h	180	240	345	507	554	777	872	1119	1280	1491	1605
	Water pressure drop	kPa	1,4	2,5	5,2	6,2	3,3	7,3	8,8	10,1	12,6	19,0	22,9
Fan speed 4	Total cooling capacities	kW	0,95	1,29	1,87	2,71	2,87	4,15	4,69	5,92	6,85	7,79	7,97
	Sensible cooling capacities	kW	0,74	1,01	1,47	2,10	2,42	3,23	3,73	4,56	5,32	6,05	6,29
	Water flow	l/h	161	218	318	462	487	707	799	1009	1170	1336	1361
	Water pressure drop	kPa	1,1	2,1	4,5	5,3	2,7	6,2	7,6	8,5	10,9	15,8	17,3
Fan speed 5 MIN	Total cooling capacities	kW	0,87	1,12	1,68	2,41	2,56	3,68	4,29	4,96	6,00	6,66	6,78
	Sensible cooling capacities	kW	0,67	0,87	1,31	1,86	2,16	2,84	3,39	3,79	4,62	5,14	5,30
	Water flow	l/h	149	191	285	411	437	626	730	843	1023	1143	1154
	Water pressure drop	kPa	1,0	1,7	3,8	4,4	2,2	5,0	6,5	6,3	8,7	12,0	13,1
Fan speed 6	Total cooling capacities	kW	0,82	1,06	1,57	2,24	2,41	3,47	4,04	4,46	5,48	5,78	6,00
	Sensible cooling capacities	kW	0,62	0,81	1,23	1,72	2,01	2,66	3,15	3,40	4,20	4,43	4,63
	Water flow	l/h	139	180	268	380	409	591	687	761	933	992	1020
	Water pressure drop	kPa	0,9	1,5	3,4	3,8	2,0	4,6	5,9	5,3	7,4	9,5	10,7
Water content		l	0,7	1,1	1,4	1,7	2,1	2,9	2,9	3,8	3,8	4,6	4,6

8.2.2 LOW BODY SERIE

Room temperature: 27 °C D.B. - 47% Humid. IN — Water temperature: 7/12 °C

SIZE			110	112	114	216	218
			2 ROWS				
Fan speed 1	Total cooling capacities	kW	0,83	1,21	1,62	2,38	2,98
	Sensible cooling capacities	kW	0,79	1,13	1,51	2,16	2,59
	Water flow	l/h	144	209	280	410	508
	Water pressure drop	kPa	6,2	2,2	4,3	11,2	16,1
Fan speed 2 MAX	Total cooling capacities	kW	0,74	1,08	1,45	2,12	2,72
	Sensible cooling capacities	kW	0,70	1,00	1,36	1,92	2,35
	Water flow	l/h	128	183	246	361	463
	Water pressure drop	kPa	5,1	1,7	3,5	9,0	13,8
Fan speed 3 MED	Total cooling capacities	kW	0,63	0,85	1,27	1,84	2,39
	Sensible cooling capacities	kW	0,60	0,80	1,18	1,65	2,05
	Water flow	l/h	108	144	216	314	409
	Water pressure drop	kPa	3,8	1,2	2,8	7,1	11,1
Fan speed 4	Total cooling capacities	kW	0,58	0,80	1,20	1,70	2,24
	Sensible cooling capacities	kW	0,53	0,75	1,10	1,52	1,90
	Water flow	l/h	99	136	206	289	381
	Water pressure drop	kPa	3,3	1,1	2,6	6,2	9,9
Fan speed 5 MIN	Total cooling capacities	kW	0,53	0,72	1,13	1,54	2,04
	Sensible cooling capacities	kW	0,49	0,66	1,00	1,37	1,73
	Water flow	l/h	91	122	191	261	348
	Water pressure drop	kPa	2,9	0,9	2,3	5,2	8,4
Fan speed 6	Total cooling capacities	kW	0,48	0,69	1,04	1,44	1,92
	Sensible cooling capacities	kW	0,45	0,62	0,95	1,28	1,62
	Water flow	l/h	82	118	177	245	327
	Water pressure drop	kPa	2,4	0,8	2,0	4,7	7,6
Water content		l	0,3	0,4	0,6	0,7	0,9

Room temperature: 27 °C D.B. - 47% Humid. IN — Water temperature: 7/12 °C

SIZE			110	112	114	216	218
			3 ROWS				
Fan speed 1	Total cooling capacities	kW	1,12	1,36	2,07	3,07	3,56
	Sensible cooling capacities	kW	1,03	1,25	1,81	2,63	3,02
	Water flow	l/h	191	232	352	581	674
	Water pressure drop	kPa	3,2	4,2	10,0	8,6	11,9
Fan speed 2 MAX	Total cooling capacities	kW	0,98	1,21	1,87	2,74	3,23
	Sensible cooling capacities	kW	0,90	1,09	1,62	2,32	2,71
	Water flow	l/h	166	207	318	519	614
	Water pressure drop	kPa	2,5	3,5	8,4	7,1	10,2
Fan speed 3 MED	Total cooling capacities	kW	0,81	1,02	1,61	2,35	2,81
	Sensible cooling capacities	kW	0,73	0,92	1,39	1,97	2,34
	Water flow	l/h	139	175	274	442	531
	Water pressure drop	kPa	1,9	2,6	6,5	5,4	7,9
Fan speed 4	Total cooling capacities	kW	0,73	0,91	1,50	2,16	2,61
	Sensible cooling capacities	kW	0,64	0,83	1,28	1,78	2,16
	Water flow	l/h	125	154	256	404	492
	Water pressure drop	kPa	1,6	2,2	5,8	4,7	7,0
Fan speed 5 MIN	Total cooling capacities	kW	0,64	0,80	1,37	1,84	2,37
	Sensible cooling capacities	kW	0,56	0,71	1,15	1,54	1,95
	Water flow	l/h	109	137	233	346	446
	Water pressure drop	kPa	1,3	1,8	5,0	3,6	5,9
Fan speed 6	Total cooling capacities	kW	0,60	0,76	1,29	1,72	2,21
	Sensible cooling capacities	kW	0,52	0,67	1,08	1,43	1,82
	Water flow	l/h	102	130	219	323	416
	Water pressure drop	kPa	1,1	1,6	4,5	3,2	5,2
Water content		l	0,4	0,6	0,8	1,1	1,3

8.3 HEATING CAPACITIES

8.3.1 LASER, CONCEALED SERIE

Room temperature: 20 °C — Water temperature: 45/40 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
2 ROWS													
Fan speed 1	Heating capacities	kW	1,49	1,82	2,51	3,52	4,09	5,37	6,00	7,49	7,98	9,33	10,20
	Water flow	l/h	258	316	435	610	709	932	1041	1300	1386	1621	1762
	Water pressure drop	kPa	22,1	4,9	10,6	24,0	6,6	14,3	17,4	28,5	31,9	44,9	60,3
Fan speed 2 MAX	Heating capacities	kW	1,30	1,59	2,26	3,11	3,67	4,79	5,34	6,46	7,16	8,70	9,18
	Water flow	l/h	225	276	391	538	636	831	926	1121	1243	1512	1595
	Water pressure drop	kPa	17,4	3,9	8,8	19,3	5,4	11,8	14,2	22,0	26,4	39,7	50,6
Fan speed 3 MED	Heating capacities	kW	1,04	1,34	1,94	2,64	3,16	4,09	4,67	5,72	6,50	7,79	8,11
	Water flow	l/h	179	232	334	457	547	709	810	991	1128	1353	1407
	Water pressure drop	kPa	11,8	2,9	6,7	14,5	4,2	8,9	11,2	17,8	22,3	32,6	40,6
Fan speed 4	Heating capacities	kW	0,91	1,23	1,79	2,42	2,92	3,75	4,30	5,18	5,97	7,00	6,93
	Water flow	l/h	157	212	309	418	505	649	746	897	1034	1217	1201
	Water pressure drop	kPa	9,4	2,5	5,8	12,4	3,7	7,7	9,7	14,9	19,1	27,1	30,8
Fan speed 5 MIN	Heating capacities	kW	0,83	1,06	1,61	2,17	2,64	3,34	3,96	4,39	5,25	6,03	5,95
	Water flow	l/h	142	183	278	374	456	578	685	760	910	1048	1030
	Water pressure drop	kPa	7,9	1,9	4,9	10,3	3,1	6,3	8,4	11,2	15,3	20,8	23,5
Fan speed 6	Heating capacities	kW	0,77	0,99	1,52	2,02	2,47	3,14	3,64	4,00	4,81	5,27	5,25
	Water flow	l/h	132	171	262	348	426	543	631	692	833	916	908
	Water pressure drop	kPa	6,9	1,7	4,4	9,1	2,7	5,6	7,3	9,5	13,1	16,5	18,9
Water content		l	0,3	0,5	0,7	0,9	1,1	1,5	1,5	1,9	1,9	2,3	2,3

Room temperature: 20 °C — Water temperature: 45/40 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
3 ROWS													
Fan speed 1	Heating capacities	kW	1,61	1,90	2,86	4,07	4,52	5,37	6,77	8,48	9,07	10,68	12,00
	Water flow	l/h	278	329	494	704	783	932	1173	1468	1571	1857	2081
	Water pressure drop	kPa	4,6	7,8	7,0	14,1	16,6	16,7	23,2	23,4	26,3	32,3	47,8
Fan speed 2 MAX (Eurovent)	Heating capacities	kW	1,37	1,83	2,60	3,46	4,17	4,80	6,04	6,60	7,86	9,96	10,54
	Water flow	l/h	236	315	448	596	718	826	1040	1136	1353	1714	1814
	Water pressure drop	kPa	4,9	6,0	6,5	14,7	16,0	23,4	27,7	18,9	25,3	29,8	82,4
Fan speed 3 MED (Eurovent)	Heating capacities	kW	1,13	1,46	2,07	2,90	3,51	3,89	5,11	5,84	7,17	8,86	9,64
	Water flow	l/h	194	251	356	499	604	670	880	1005	1234	1525	1659
	Water pressure drop	kPa	4,6	6,0	5,1	10,5	11,7	16,3	21,1	15,3	21,6	24,0	67,7
Fan speed 4	Heating capacities	kW	0,96	1,26	1,99	2,73	3,19	3,72	4,74	5,74	6,66	7,88	7,93
	Water flow	l/h	166	218	343	471	552	644	820	991	1152	1369	1373
	Water pressure drop	kPa	1,9	3,8	3,7	7,0	9,1	8,8	12,4	11,9	15,4	18,9	23,1
Fan speed 5 MIN (Eurovent)	Heating capacities	kW	0,87	1,14	1,70	2,31	2,83	3,01	4,41	4,58	5,76	6,65	6,73
	Water flow	l/h	150	196	293	398	487	518	759	788	991	1145	1158
	Water pressure drop	kPa	3,0	4,1	4,0	6,9	8,1	10,8	16,4	10,3	14,9	14,3	29,7
Fan speed 6	Heating capacities	kW	0,80	1,02	1,68	2,25	2,68	3,11	3,97	4,37	5,31	5,83	5,91
	Water flow	l/h	138	175	289	388	463	537	687	754	917	1014	1022
	Water pressure drop	kPa	1,4	2,6	2,8	5,1	6,7	6,4	9,1	7,4	10,4	11,2	13,9
Water content		l	0,5	0,8	1,1	1,3	1,6	2,2	2,2	2,8	2,8	3,5	3,5

Room temperature: 20 °C — Water temperature: 45/40 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
4 ROWS													
Fan speed 1	Heating capacities	kW	1,78	2,15	2,95	4,29	4,85	6,44	7,28	9,05	9,70	11,97	12,63
	Water flow	l/h	307	371	510	742	838	1115	1260	1567	1681	2079	2187
	Water pressure drop	kPa	2,5	4,0	8,6	10,2	6,2	12,2	15,1	15,9	17,9	30,2	36,6
Fan speed 2 MAX	Heating capacities	kW	1,53	1,85	2,63	3,74	4,31	5,69	6,40	7,70	8,61	11,06	11,23
	Water flow	l/h	264	320	454	646	746	984	1107	1332	1491	1921	1944
	Water pressure drop	kPa	1,9	3,1	7,1	8,0	5,1	9,8	12,1	12,0	14,6	26,3	29,8
Fan speed 3 MED	Heating capacities	kW	1,20	1,54	2,22	3,13	3,67	4,79	5,53	6,74	7,75	9,76	9,79
	Water flow	l/h	209	265	384	541	634	828	957	1165	1341	1697	1695
	Water pressure drop	kPa	1,3	2,3	5,3	5,9	3,9	7,3	9,4	9,5	12,1	21,2	23,5
Fan speed 4	Heating capacities	kW	1,05	1,40	2,04	2,84	3,38	4,35	5,06	6,05	7,06	8,67	8,25
	Water flow	l/h	181	240	353	490	583	751	874	1046	1220	1507	1426
	Water pressure drop	kPa	1,0	1,9	4,6	5,0	3,3	6,2	8,0	7,9	10,3	17,3	17,4
Fan speed 5 MIN	Heating capacities	kW	0,94	1,19	1,83	2,52	3,03	3,84	4,62	5,06	6,14	7,34	6,98
	Water flow	l/h	163	205	316	436	523	663	798	874	1062	1276	1206
	Water pressure drop	kPa	0,8	1,5	3,8	4,1	2,8	5,0	6,9	5,8	8,1	12,9	13,1
Fan speed 6	Heating capacities	kW	0,87	1,11	1,72	2,33	2,82	3,59	4,22	4,57	5,58	6,32	6,09
	Water flow	l/h	150	193	296	403	486	620	729	789	965	1098	1053
	Water pressure drop	kPa	0,7	1,3	3,4	3,6	2,5	4,5	5,9	4,9	6,9	10,0	10,3
Water content		l	0,7	1,1	1,4	1,8	2,1	2,9	2,9	3,8	3,8	4,6	4,6

Room temperature: 20 °C — Water temperature: 65/55 °C

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
1 ROW													
Fan speed 1	Heating capacities	kW	1,17	1,48	2,04	2,81	3,56	5,20	5,72	6,94	7,31	8,54	9,21
	Water flow	l/h	102	130	180	248	312	456	502	613	646	747	809
	Water pressure drop	kPa	2,1	3,6	7,6	14,1	8,3	12,2	14,4	36,4	40,0	34,5	38,9
Fan speed 2 MAX (Eurovent)	Heating capacities	kW	0,91	1,31	1,93	2,79	3,20	4,33	4,92	6,16	6,30	7,81	8,00
	Water flow	l/h	78	113	166	240	275	373	423	530	542	672	688
	Water pressure drop	kPa	1,3	3,4	6,7	14,7	7,1	10,3	11,7	33,0	31,7	29,8	46,5
Fan speed 3 MED (Eurovent)	Heating capacities	kW	0,83	1,13	1,85	2,40	2,81	3,67	4,33	5,55	5,98	7,24	7,43
	Water flow	l/h	71	97	159	207	242	316	373	478	515	623	639
	Water pressure drop	kPa	1,1	2,6	5,8	10,5	5,7	7,7	9,5	23,0	28,9	26,0	40,6
Fan speed 4	Heating capacities	kW	0,79	1,07	1,55	2,07	2,70	3,82	4,30	5,07	5,70	6,69	6,63
	Water flow	l/h	70	94	136	182	238	337	380	446	503	585	585
	Water pressure drop	kPa	1,1	2,0	4,7	8,2	5,2	7,2	8,8	20,9	25,8	22,3	22,0
Fan speed 5 MIN (Eurovent)	Heating capacities	kW	0,71	0,95	1,51	2,06	2,38	2,99	3,84	4,55	5,03	5,92	5,83
	Water flow	l/h	61	82	130	177	205	257	330	392	433	509	502
	Water pressure drop	kPa	0,9	1,8	5,2	9,4	4,0	5,4	7,7	16,3	21,4	18,1	24,7
Fan speed 6	Heating capacities	kW	0,69	0,90	1,36	1,79	2,34	3,28	3,73	4,07	4,75	5,26	5,23
	Water flow	l/h	60	79	119	157	207	289	329	358	418	460	461
	Water pressure drop	kPa	0,9	1,5	3,7	6,4	4,1	5,5	6,9	14,2	18,7	14,6	14,5
Water content		l	0,2	0,2	0,3	0,4	0,4	0,6	0,6	0,8	0,8	1,0	1,0

8.3.2 LOW BODY SERIE

Room temperature: 20 °C — Water temperature: 45/40 °C

SIZE			110	112	114	216	218
			2 ROWS				
Fan speed 1	Heating capacities	kW	1,09	1,45	2,02	2,89	3,44
	Water flow	l/h	189	254	352	503	601
	Water pressure drop	kPa	7,9	2,7	5,9	13,8	19,1
Fan speed 2 MAX	Heating capacities	kW	0,96	1,28	1,83	2,57	3,11
	Water flow	l/h	168	223	316	445	538
	Water pressure drop	kPa	6,4	2,2	4,9	11,1	15,8
Fan speed 3 MED	Heating capacities	kW	0,78	1,09	1,59	2,21	2,70
	Water flow	l/h	135	188	275	384	466
	Water pressure drop	kPa	4,4	1,6	3,9	8,6	12,2
Fan speed 4	Heating capacities	kW	0,70	1,01	1,48	2,03	2,51
	Water flow	l/h	120	174	256	353	436
	Water pressure drop	kPa	3,6	1,4	3,4	7,5	10,9
Fan speed 5 MIN	Heating capacities	kW	0,64	0,88	1,34	1,84	2,29
	Water flow	l/h	110	152	232	319	397
	Water pressure drop	kPa	3,1	1,1	2,9	6,3	9,3
Fan speed 6	Heating capacities	kW	0,59	0,83	1,27	1,72	2,15
	Water flow	l/h	102	143	219	298	372
	Water pressure drop	kPa	2,8	1,0	2,6	5,6	8,3
Water content		l	0,3	0,4	0,6	0,7	0,9

Room temperature: 20 °C — Water temperature: 45/40 °C

SIZE			110	112	114	216	218
			3 ROWS				
Fan speed 1	Heating capacities	kW	1,35	1,75	2,47	3,59	4,21
	Water flow	l/h	233	304	428	681	804
	Water pressure drop	kPa	3,1	5,3	11,2	9,2	14,4
Fan speed 2 MAX	Heating capacities	kW	1,18	1,53	2,22	3,16	3,78
	Water flow	l/h	204	265	384	595	717
	Water pressure drop	kPa	2,5	4,2	9,3	7,3	11,8
Fan speed 3 MED	Heating capacities	kW	0,95	1,29	1,90	2,67	3,25
	Water flow	l/h	163	224	328	501	612
	Water pressure drop	kPa	1,7	3,2	7,1	5,4	8,9
Fan speed 4	Heating capacities	kW	0,83	1,18	1,76	2,44	3,00
	Water flow	l/h	144	204	303	455	563
	Water pressure drop	kPa	1,4	2,7	6,2	4,6	7,7
Fan speed 5 MIN	Heating capacities	kW	0,76	1,02	1,58	2,18	2,71
	Water flow	l/h	130	176	273	405	506
	Water pressure drop	kPa	1,2	2,1	5,2	3,7	6,4
Fan speed 6	Heating capacities	kW	0,70	0,96	1,49	2,03	2,53
	Water flow	l/h	121	165	257	375	471
	Water pressure drop	kPa	1,0	1,9	4,7	3,3	5,7
Water content		l	0,4	0,6	0,8	1,1	1,3

Room temperature: 20 °C — Water temperature: 65/55 °C

SIZE			110	112	114	216	218
			1 ROW				
Fan speed 1	Heating capacities	kW	1,25	2,02	2,04	2,81	4,20
	Water flow	l/h	110	178	180	248	372
	Water pressure drop	kPa	2,2	5,9	7,6	14,1	7,0
Fan speed 2 MAX	Heating capacities	kW	1,12	1,79	1,87	2,54	3,83
	Water flow	l/h	98	157	165	224	338
	Water pressure drop	kPa	1,8	4,8	6,5	11,8	5,9
Fan speed 3 MED	Heating capacities	kW	0,93	1,54	1,65	2,22	3,37
	Water flow	l/h	81	135	145	196	297
	Water pressure drop	kPa	1,3	3,7	5,2	9,4	4,7
Fan speed 4	Heating capacities	kW	0,84	1,42	1,55	2,07	3,15
	Water flow	l/h	74	125	136	182	277
	Water pressure drop	kPa	1,1	3,2	4,7	8,2	4,2
Fan speed 5 MIN	Heating capacities	kW	0,77	1,25	1,42	1,89	2,88
	Water flow	l/h	68	109	125	167	254
	Water pressure drop	kPa	1,0	2,5	4,0	7,1	3,6
Fan speed 6	Heating capacities	kW	0,73	1,18	1,36	1,79	2,72
	Water flow	l/h	64	104	119	157	239
	Water pressure drop	kPa	0,9	2,3	3,7	6,4	3,3
Water content		l	0,2	0,2	0,3	0,4	0,4

8.4 ELECTRICAL DATA

Power supply: 230±6%-1-50/60 [V-ph-Hz]

SIZE			110	112	114	216	218	220	222	224	226	228.1	328
Nominal absorbed power	Fan speed 1	[kW]	58	63	73	83	95	108	143	181	192	250	238
	Fan speed 2 MAX (Eurovent)	[kW]	46	48	57	61	76	90	117	140	162	213	213
	Fan speed 3 MED (Eurovent)	[kW]	37	38	45	49	58	70	93	120	145	196	196
	Fan speed 4	[kW]	34	35	40	47	52	59	86	100	109	166	149
	Fan speed 5 MIN (Eurovent)	[kW]	28	29	33	37	43	50	69	80	115	146	146
	Fan speed 6	[kW]	26	27	31	36	40	45	66	68	74	105	100
Nominal absorbed current	Fan speed 1	[A]	0,27	0,30	0,32	0,36	0,42	0,47	0,63	0,82	0,84	1,16	1,06
	Fan speed 2 MAX	[A]	0,21	0,21	0,25	0,27	0,33	0,39	0,52	0,64	0,71	0,95	0,95
	Fan speed 3 MED	[A]	0,17	0,17	0,20	0,21	0,26	0,30	0,43	0,56	0,65	0,85	0,89
	Fan speed 4	[A]	0,15	0,16	0,17	0,20	0,22	0,26	0,38	0,48	0,49	0,72	0,69
	Fan speed 5 MIN	[A]	0,13	0,13	0,15	0,16	0,19	0,22	0,31	0,39	0,53	0,64	0,68
	Fan speed 6	[A]	0,12	0,12	0,13	0,16	0,17	0,20	0,30	0,34	0,34	0,46	0,47
Locked rotor current		[A]	1,25	1,25	1,55	2,00	2,00	3,40	1,00	1,05	1,40	2,00	6,00

Electrical data refer to standard fan coils with clean filter and without external static pressure. A dirty filter or an external air pressure drop will lower the absorbed power level. The installation of electric accessories increase the absorbed power level.

9. NOISE LEVELS

9.1 SOUND POWER

The acoustic emission characteristics of any noise source is defined as its **«sound power»** (SWL). This typical measurement indicates the total radiated energy which does not vary for a given noise source; that is, it does not depend on the observer, location, distance or any other factor which is not part of the source.

9.2 SOUND PRESSURE IN A CLOSED ENVIRONMENT

The perceived noise radiated from a sound source is something quite different: noise perception is indicated by its **«sound pressure»** (SPL). Even though it is caused by the emission of sound energy, it greatly depends on the environment through which the sound travels, on the distance from the source and on all other circumstances that are not directly related to the primary noise source.
Besides the distance from the source, the most important factor that influences the **«sound pressure»** (and, as a result, the perceived noise) in a closed environment is the amount of sound energy reflected off surfaces that have a greater or lesser reflection capacity: it depends, therefore, on the re-transmission of sound energy (**power**) acting upon reflecting surfaces.
Covering the walls with sound absorbing material (i.e. material with a low sound reflecting capacity) is the most effective way to reduce the noise level in a closed environment. The following values indicate the sound pressure emitted by the fan coils. By using the YORK software for selection it is possible to calculate the new sound pressure level obtained by changing the parameters: room volume, distance from the noise source and reverberation time.
The reverberation time measures the sound characteristics of a room: it increases as the room dimensions increase and decreases as the sound absorption capacity of the structure increases.

Sound power level

		dB (A)
Size 110	Fan Speed 1	51
	Fan Speed 2 MAX (Eurovent)	48
	Fan Speed 3 MED (Eurovent)	42
	Fan Speed 4	37
	Fan Speed 5 MIN (Eurovent)	36
	Fan Speed 6	32
Size 112	Fan Speed 1	54
	Fan Speed 2 MAX (Eurovent)	50
	Fan Speed 3 MED (Eurovent)	45
	Fan Speed 4	42
	Fan Speed 5 MIN (Eurovent)	38
	Fan Speed 6	37
Size 114	Fan Speed 1	57
	Fan Speed 2 MAX (Eurovent)	54
	Fan Speed 3 MED (Eurovent)	49
	Fan Speed 4	46
	Fan Speed 5 MIN (Eurovent)	42
	Fan Speed 6	41
Size 216	Fan Speed 1	55
	Fan Speed 2 MAX (Eurovent)	53
	Fan Speed 3 MED (Eurovent)	47
	Fan Speed 4	42
	Fan Speed 5 MIN (Eurovent)	40
	Fan Speed 6	36
Size 218	Fan Speed 1	59
	Fan Speed 2 MAX (Eurovent)	55
	Fan Speed 3 MED (Eurovent)	50
	Fan Speed 4	47
	Fan Speed 5 MIN (Eurovent)	43
	Fan Speed 6	42
Size 220	Fan Speed 1	57
	Fan Speed 2 MAX (Eurovent)	54
	Fan Speed 3 MED (Eurovent)	48
	Fan Speed 4	43
	Fan Speed 5 MIN (Eurovent)	40
	Fan Speed 6	37
Size 222	Fan Speed 1	63
	Fan Speed 2 MAX (Eurovent)	60
	Fan Speed 3 MED (Eurovent)	56
	Fan Speed 4	50
	Fan Speed 5 MIN (Eurovent)	50
	Fan Speed 6	44
Size 224	Fan Speed 1	64
	Fan Speed 2 MAX (Eurovent)	60
	Fan Speed 3 MED (Eurovent)	55
	Fan Speed 4	52
	Fan Speed 5 MIN (Eurovent)	47
	Fan Speed 6	44
Size 226	Fan Speed 1	66
	Fan Speed 2 MAX (Eurovent)	63
	Fan Speed 3 MED (Eurovent)	60
	Fan Speed 4	56
	Fan Speed 5 MIN (Eurovent)	53
	Fan Speed 6	49
Size 228.1	Fan Speed 1	66
	Fan Speed 2 MAX (Eurovent)	64
	Fan Speed 3 MED (Eurovent)	61
	Fan Speed 4	57
	Fan Speed 5 MIN (Eurovent)	53
	Fan Speed 6	49
Size 328	Fan Speed 1	70
	Fan Speed 2 MAX (Eurovent)	67
	Fan Speed 3 MED (Eurovent)	63
	Fan Speed 4	57
	Fan Speed 5 MIN (Eurovent)	52
	Fan Speed 6	48

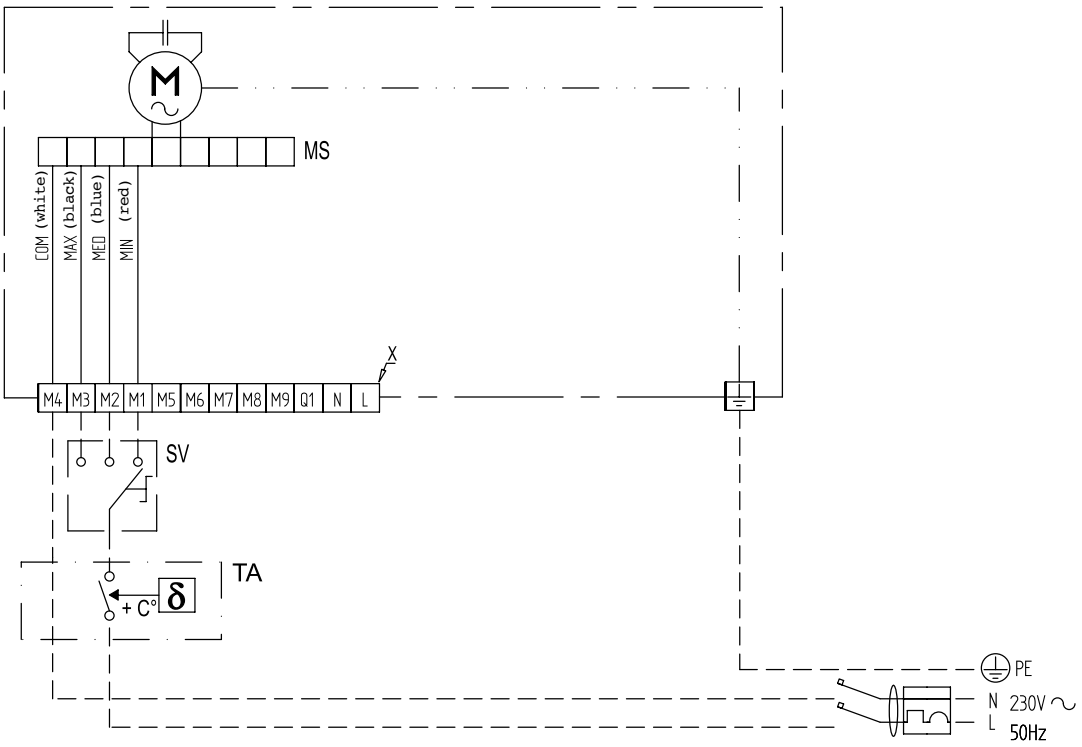
Sound pressure in a closed environment

		dB (A)
Size 110	Fan speed 1	42
	Fan speed 2 MAX	39
	Fan speed 3 MED	33
	Fan speed 4	28
	Fan speed 5 MIN	27
	Fan speed 6	23
Size 112	Fan speed 1	45
	Fan speed 2 MAX	41
	Fan speed 3 MED	36
	Fan speed 4	32
	Fan speed 5 MIN	29
	Fan speed 6	28
Size 114	Fan speed 1	48
	Fan speed 2 MAX	45
	Fan speed 3 MED	40
	Fan speed 4	38
	Fan speed 5 MIN	33
	Fan speed 6	31
Size 216	Fan speed 1	46
	Fan speed 2 MAX	44
	Fan speed 3 MED	38
	Fan speed 4	33
	Fan speed 5 MIN	31
	Fan speed 6	27
Size 218	Fan speed 1	50
	Fan speed 2 MAX	46
	Fan speed 3 MED	41
	Fan speed 4	38
	Fan speed 5 MIN	34
	Fan speed 6	32
Size 220	Fan speed 1	48
	Fan speed 2 MAX	45
	Fan speed 3 MED	39
	Fan speed 4	34
	Fan speed 5 MIN	31
	Fan speed 6	28
Size 222	Fan speed 1	53
	Fan speed 2 MAX	51
	Fan speed 3 MED	47
	Fan speed 4	41
	Fan speed 5 MIN	40
	Fan speed 6	35
Size 224	Fan speed 1	55
	Fan speed 2 MAX	51
	Fan speed 3 MED	46
	Fan speed 4	43
	Fan speed 5 MIN	38
	Fan speed 6	34
Size 226	Fan speed 1	57
	Fan speed 2 MAX	54
	Fan speed 3 MED	51
	Fan speed 4	47
	Fan speed 5 MIN	44
	Fan speed 6	40
Size 228.1	Fan speed 1	57
	Fan speed 2 MAX	55
	Fan speed 3 MED	52
	Fan speed 4	48
	Fan speed 5 MIN	44
	Fan speed 6	40
Size 328	Fan speed 1	61
	Fan speed 2 MAX	58
	Fan speed 3 MED	54
	Fan speed 4	47
	Fan speed 5 MIN	43
	Fan speed 6	38

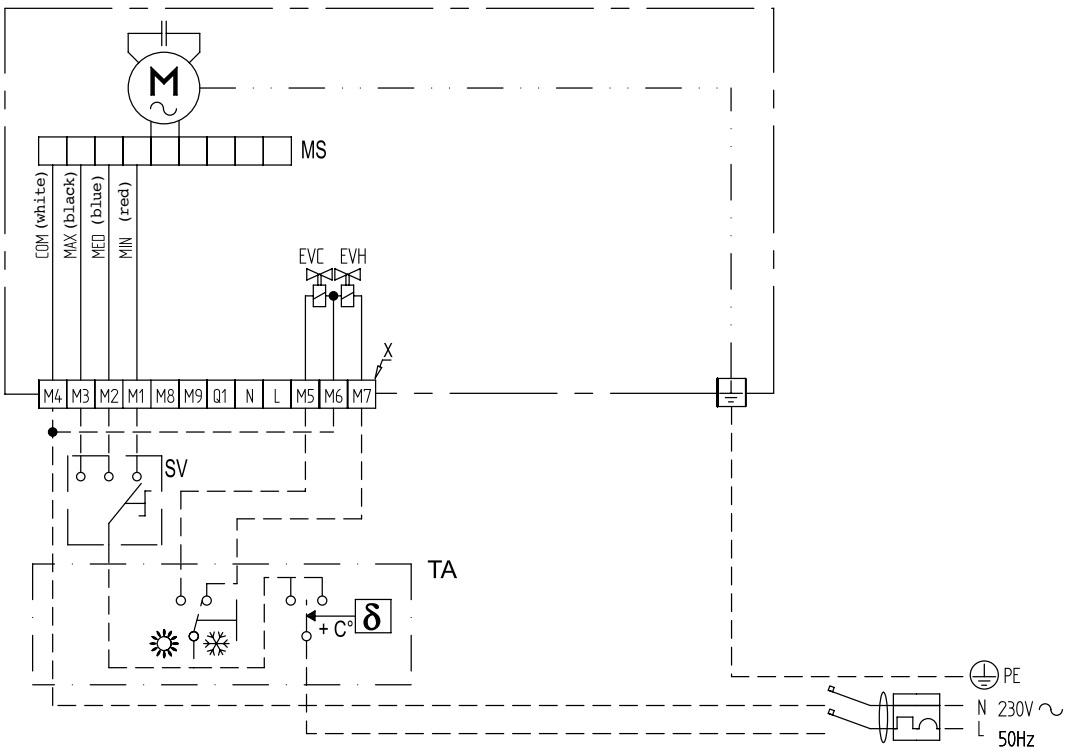
10. ELECTRICAL CONNECTIONS

The following wiring diagrams are the most frequently used for fancoil applications:

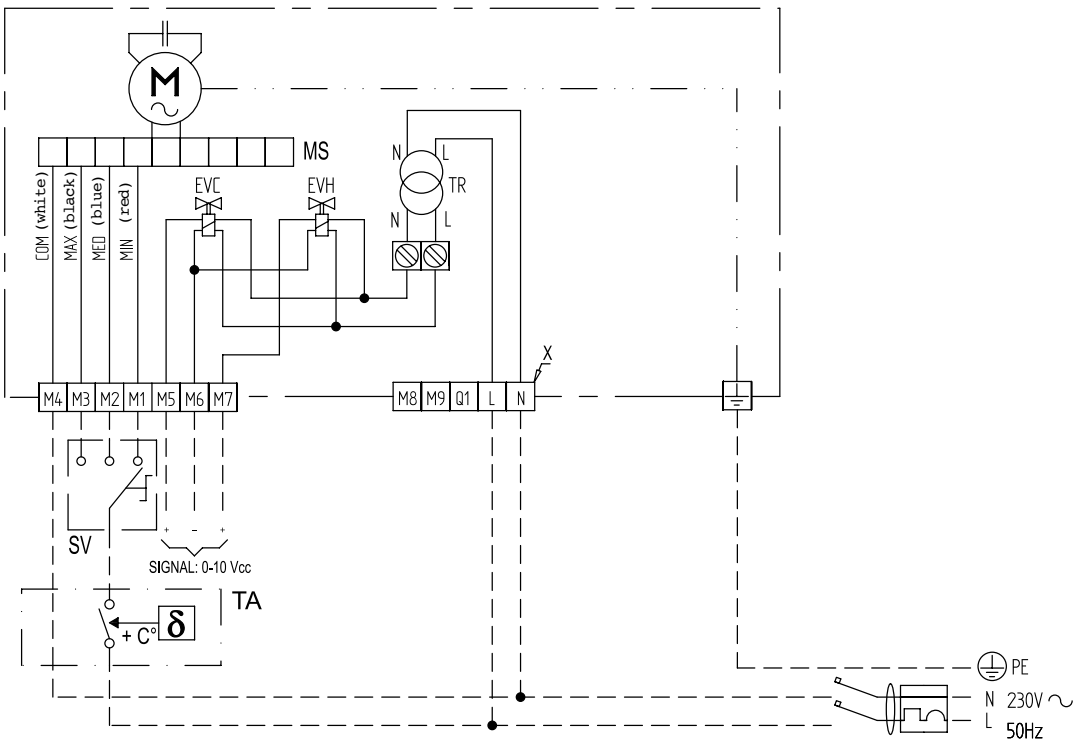
CBL00



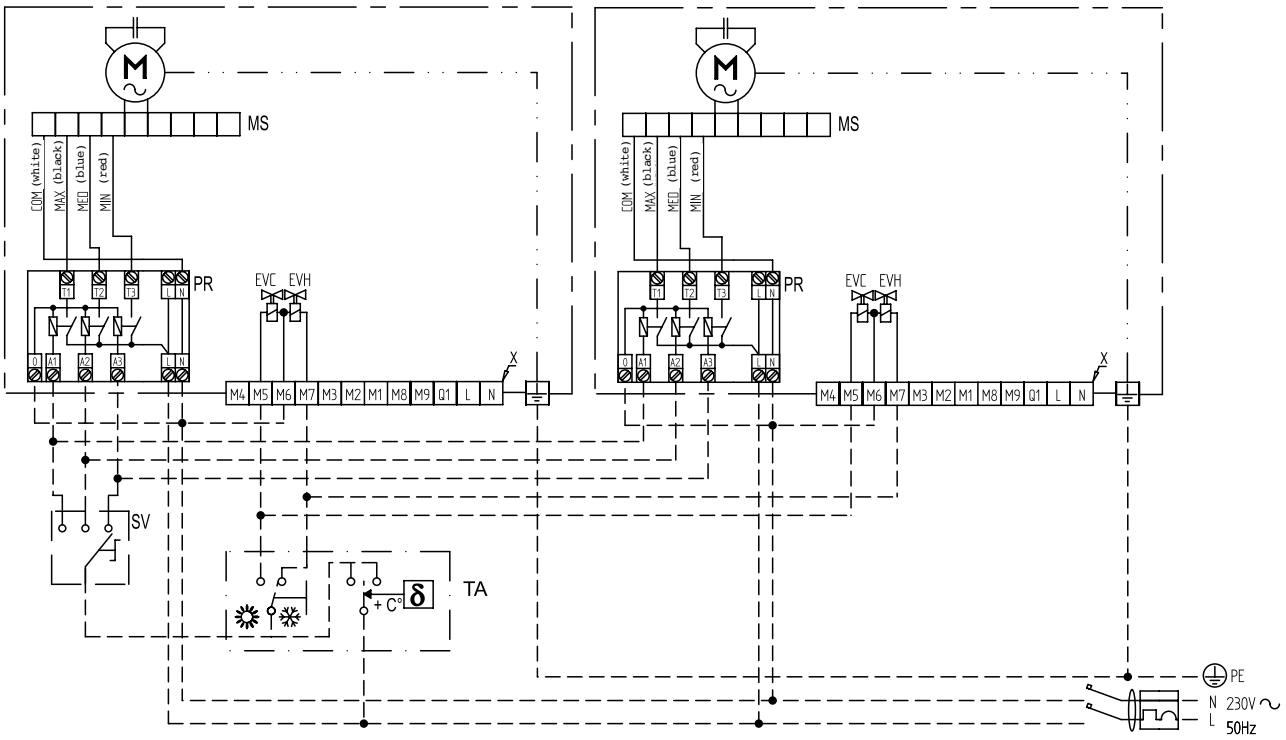
CBL00 – EVC – EVH



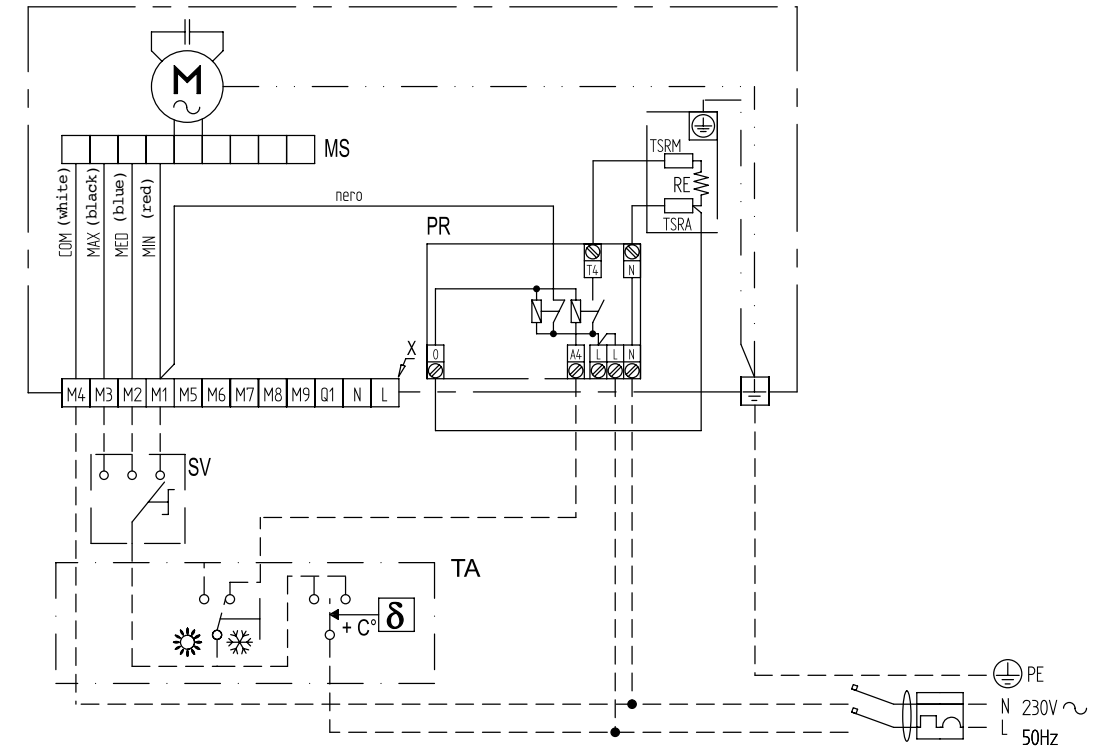
CBL10 – EVCM – EVHM



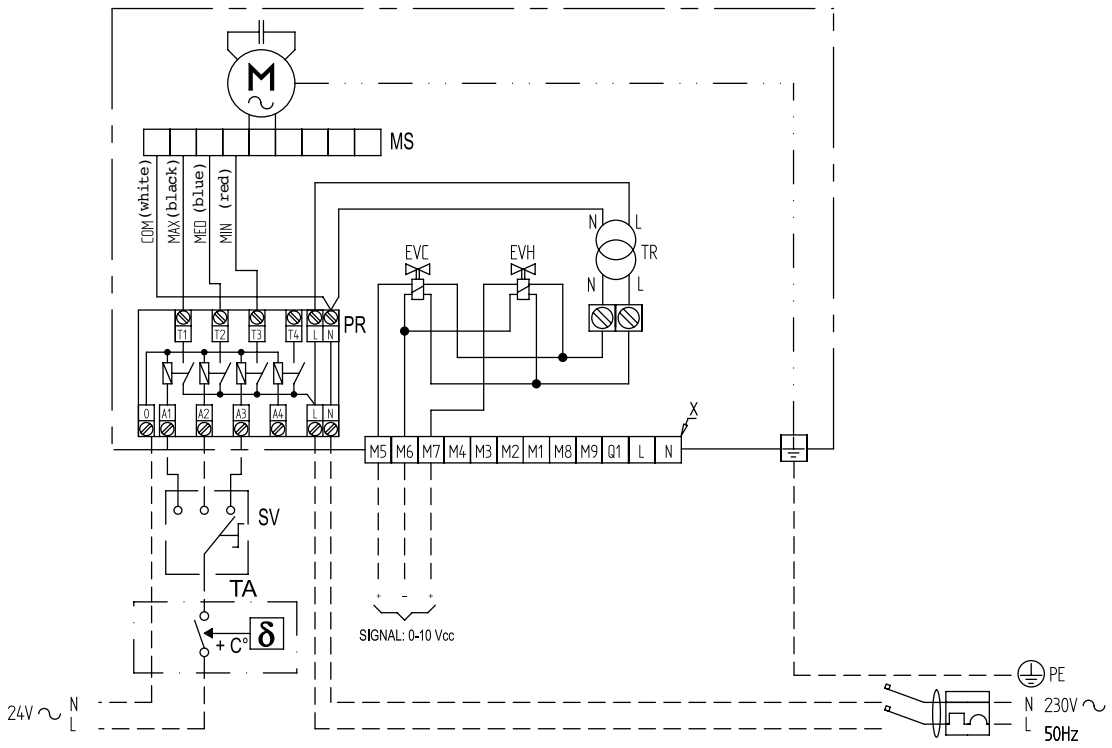
CBL20 – EVC – EVH – MASTER/SLAVE



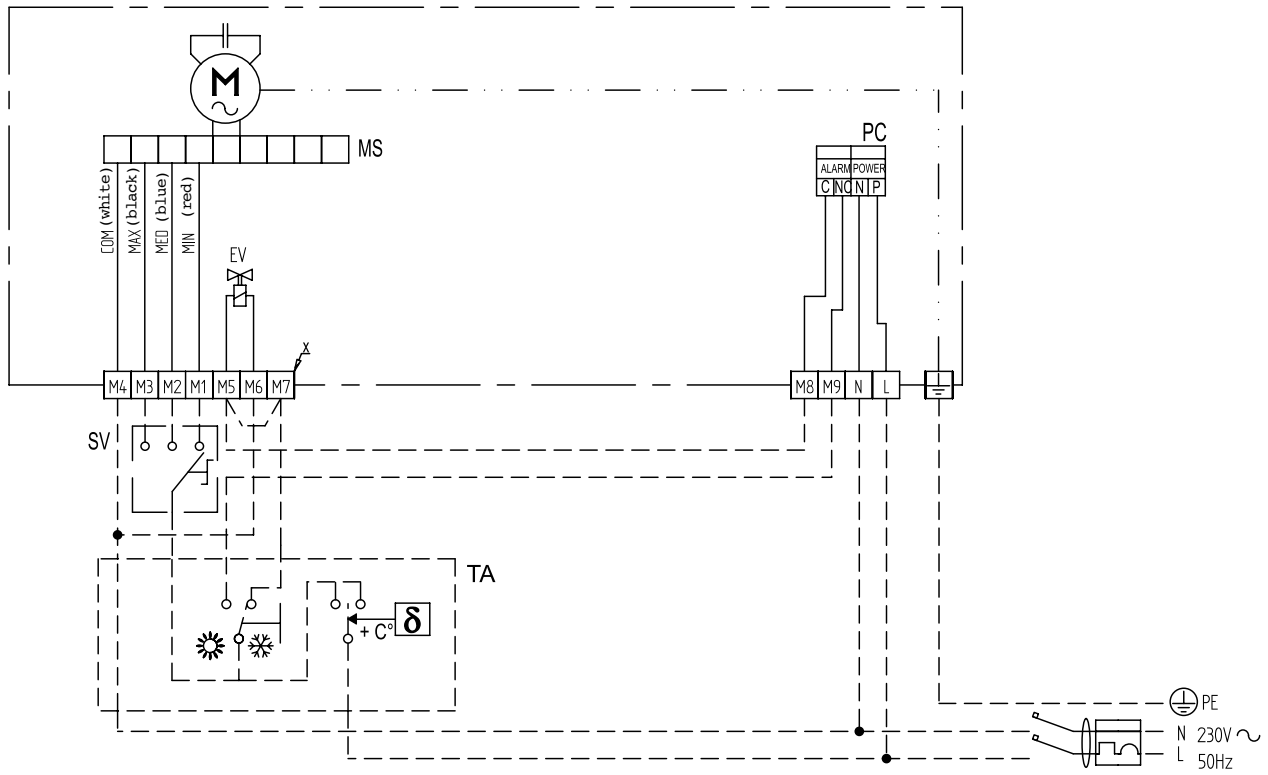
CBL20 – RE



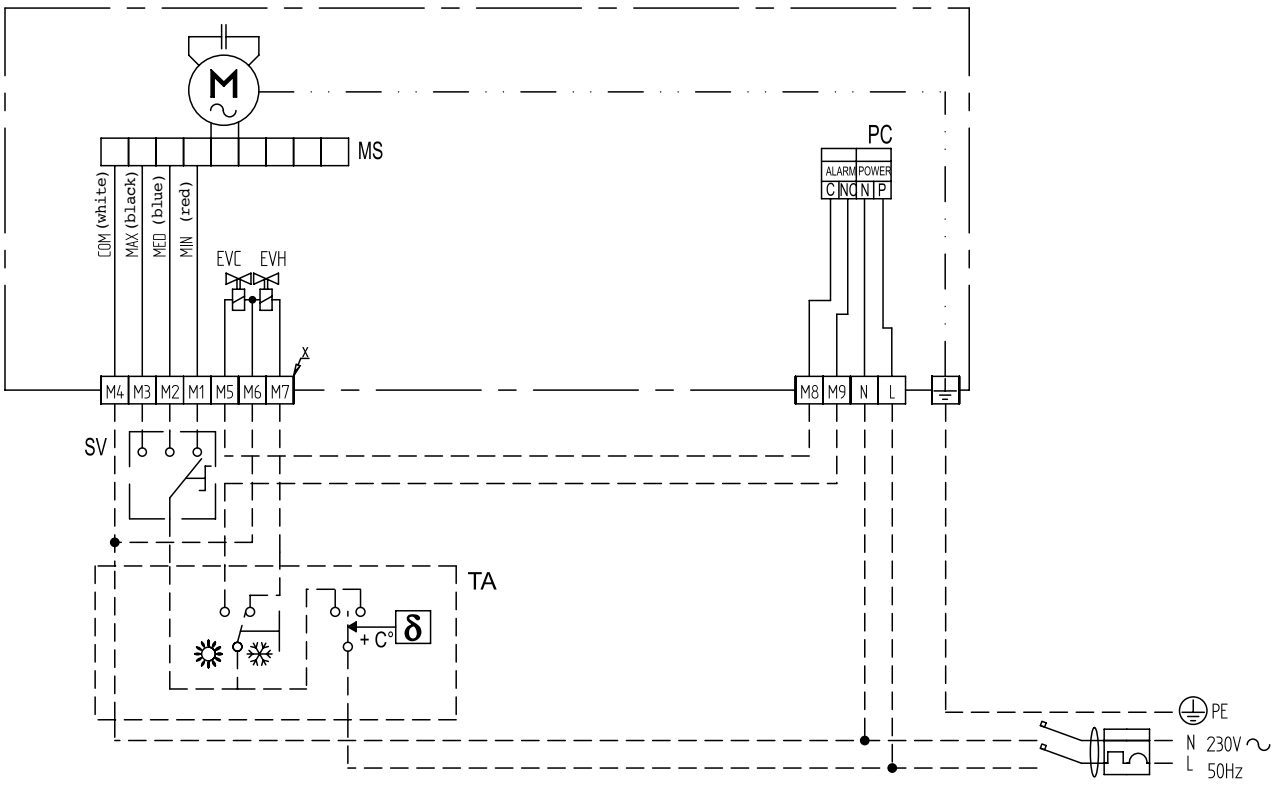
CBL30 – EVCM – EVHM



CBL00 – EV – PC



CBL00 – EVC – EVH – PC



LEGEND (for all the electrical diagrams)

M	Fan motor
MS	Terminal board for motor
YLV	Fan speed selector (OFF-1-2-3)
PE	Earth
N	Neutral
L	Phase
EV	Regulating valve: EVC for cooling; EVH for heating

RE	Electric heater
PR	Power Relay card
PC	Condensate pump
TSRM	Safety thermostat with manual resetting
TSRA	Safety thermostat with automatic resetting
X	CBL00 terminal board
TA	Room thermostat
☀ ❄	Summer/Winter switch

NOTE. If other configurations are required, different from the standard ones, please refer to the instruction manual of every specific YORK regulator.

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