



TECNHICAL MANUAL

HEAT-RECOVERY VENTILATION UNIT, MCFA SERIES

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I. SPECIFICATIONS

1.1. SPECIFICATIONS TABLE

Model		MCF A250T	MCF A350T	MCF A500T
Main data	Body material	Sputter-coated metal sheet		
	Internal structure	Expanded polypropylene (EPP)		
	Heat exchanger	Polystyrene		
	Fan motor	EC		
	Filter class	G4 or (optional) F7		
	Control panel	Dual-screen control, buttons + indicator light / digital light		
	Bypass	100% automatic bypass		
Operation conditions	Standard	-10 to 40°C		
	Heater-equipped	- 20 to 40°C		
Pipe connection	Pipe diameter	Ø160 mm		Ø200 mm
	Power supply	230 V / 50 Hz		
Electrical specifications	Max. power	170 W	320 W	480 W
	Max. current	1,5 A	2.4A	3.2A

1.2. Components of the supply-and-exhaust unit

Control panels

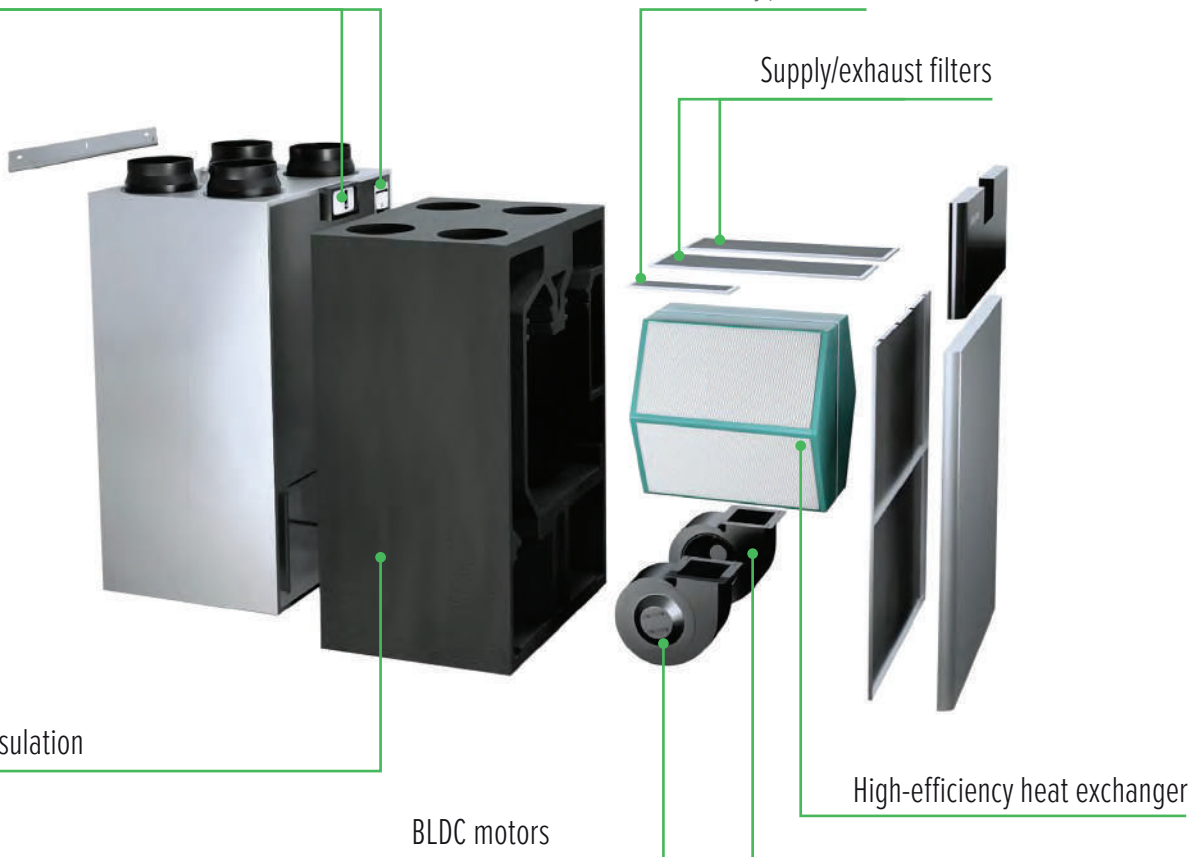
Bypass filter

Supply/exhaust filters

EPP insulation

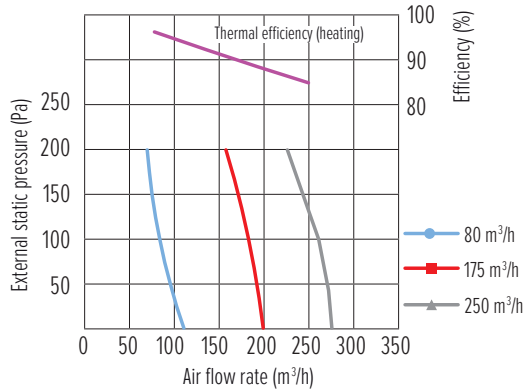
BLDC motors

High-efficiency heat exchanger



1.2. PERFORMANCE CHARTS AND TABLES

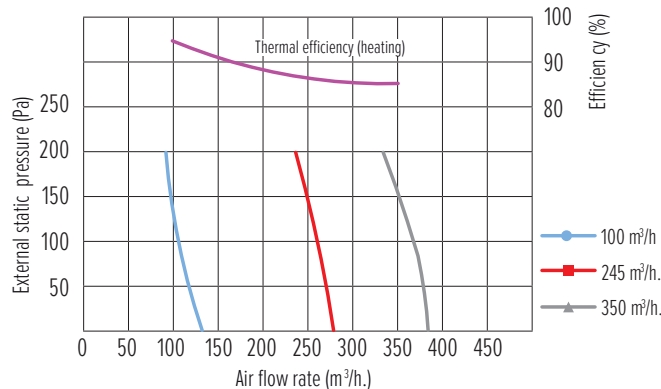
MCFA250T performance charts



N°	Air flow rate (m ³ /h)	Pressure (Pa)	P (W)	SFP* (W/L/s)
1	250	100	128,0	0,14
2	250	50	110,0	0,12
3	175	100	78,5	0,12
4	175	50	62,0	0,10
5	80	100	41,3	0,14
6	80	50	31,0	0,11

* The specific fan power (SFP) includes power consumption of both the fan and the control.

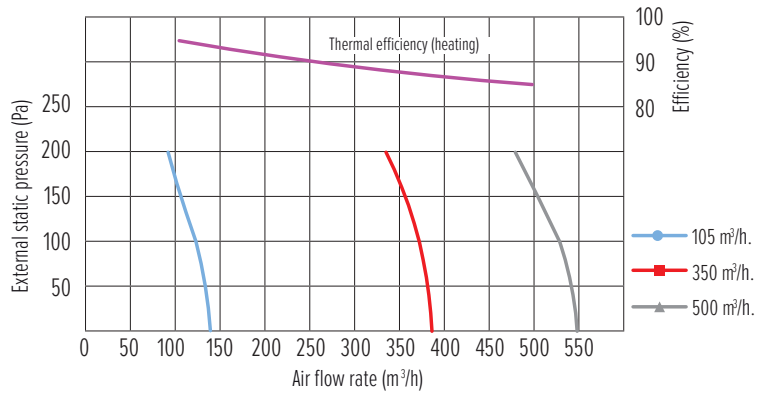
MCFA350T performance charts



N°	Air flow rate (m ³ /h)	Pressure (Pa)	P (W)	SFP* (W/L/s)
1	350	100	267,3	0,21
2	350	50	260,0	0,21
3	245	100	128,0	0,15
4	245	50	106,0	0,12
5	100	100	43,8	0,12
6	100	50	34,0	0,09

* The specific fan power (SFP) includes power consumption of both the fan and the control.

MCFA350T performance charts



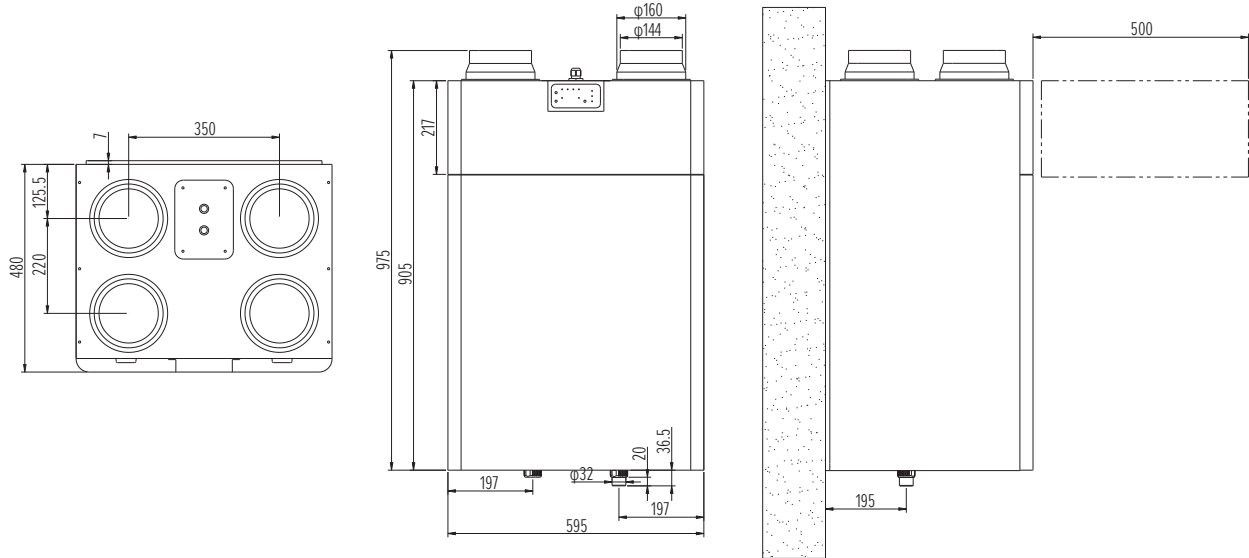
№ з/п	Air flow rate (m ³ /h)	Pressure (Pa)	P (W)	SFP* (W/L/s)
1	500	100	399,0	0,22
2	500	50	380,0	0,21
3	350	100	209,3	0,17
4	350	50	155,0	0,12
5	105	100	60,9	0,16
6	105	50	30,0	0,08

* The specific fan power (SFP) includes power consumption of both the fan and the control.

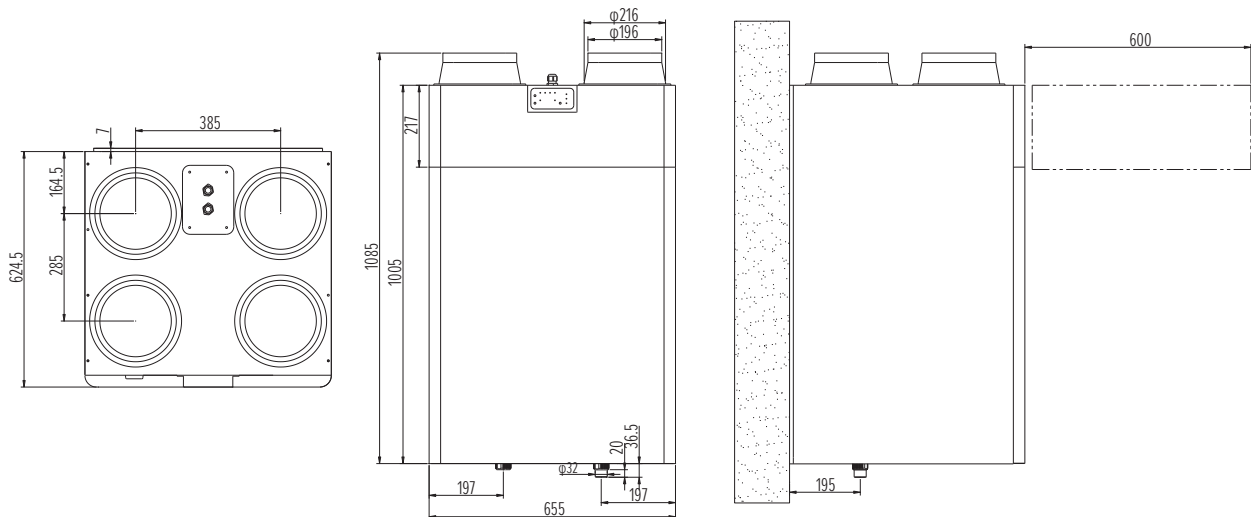
1.4. OUTLINE DRAWINGS

MCFA250T, MCFA350T

Units of measurement: mm

**MCFA500T**

Units of measurement: mm



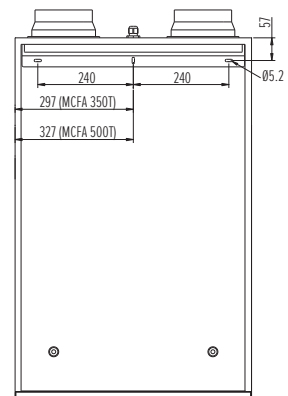
II. INSTALLATION

2.1. LOCATION

- All the installation works must be performed by qualified personnel. In particular, all the connection and wiring works must be performed by a qualified electrician.
- This unit is designed for installation at warehouses, in attics, or on technical floors. The installation room must be selected so that the unit will not be affected by frost, water or excessive temperatures.
- Provide working space around the unit for installation and connection of air ducts, wiring, and condensed water drainage pipelines. This will also facilitate replacement of the filters.
- Install the unit in such a position as to enable water drainage.

2.2. WALL INSTALLATION

- The unit must be installed on the wall in a vertical position.
- Hang the unit on the wall using a suspension plate (the wall must bear the weight of at least 60 kg); dimensions of the suspension plate are shown on the right.



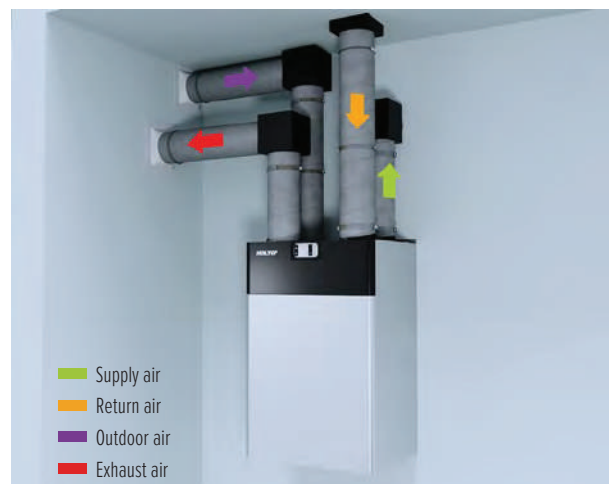
2.3. AIR DUCTS

The user can adjust positions of the inlet and outlet air ducts on the unit. To do so, first select and install the air duct, then adjust the filter position, and finally select the appropriate control program as described in the operation instructions (paragraph 4.3).

Note 1: By default, the unit comes in the configuration with right-side air duct installation.

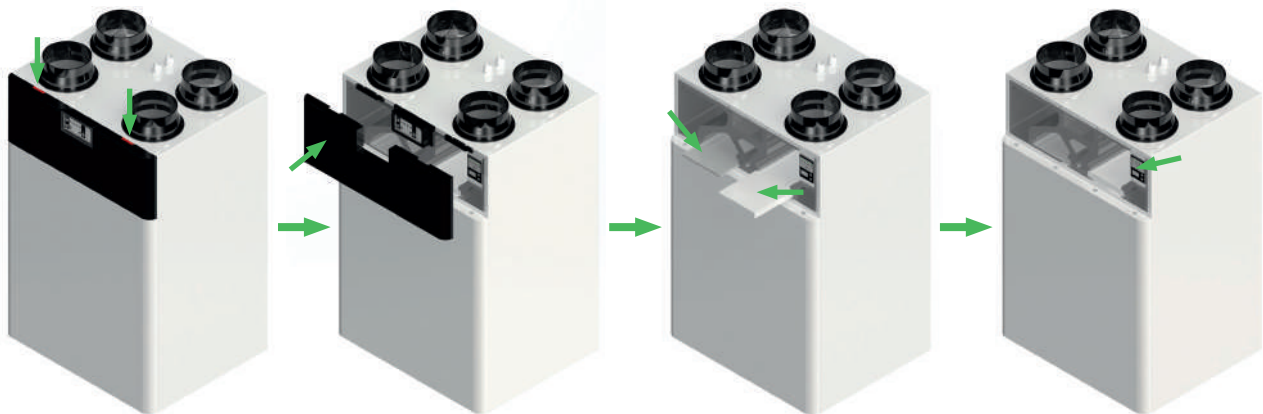


Right-side installation (standard)



Left-side installation

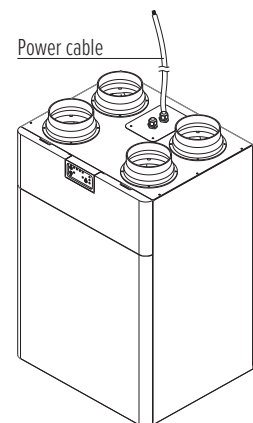
In order to switch from right-side installation (factory default) to left-side installation, perform the following steps:



- Step 1. Press on the protective panel in the place shown to disconnect its fixture.
- Step 2. Remove the protective panel.
- Step 3. If the unit is equipped with an optional F7 filter, switch positions of the two filters as shown. Note that you can skip this step if both filters are G4.
- Step 4. Select an appropriate control program using a concealed control panel in the top right corner of the unit, following the instructions (paragraph 4.3).
- Step 5. Re-install the filter and the inspection panel.

2.4. WIRING CONNECTION

- Power wiring of this unit must be connected by a qualified electrician. The unit must be earthed.
- Use cables that meet the national standards. Cable cross-section is 3x1.5 mm².
- Power supply: 230 V / 50 Hz / 1 phase
- L (phase) = brown wire, N (neutral) = blue wire, GND (earth) = yellow-and-green wire
- The electrical circuit must be protected with a double-pole circuit breaker.



Connection of a remote controller (option)

The unit can be equipped with a remote controller which is connected using a control wire. The controller must be connected by a qualified electrician. To connect the controller, perform the following steps:

- Step 1. Power the unit off.
- Step 2. With a screwdriver, remove the screws securing the cover of the electric control box on the top of the unit.
- Step 3. Pull out the circuit board sockets to work on them
- Step 4. Open the controller enclosure.

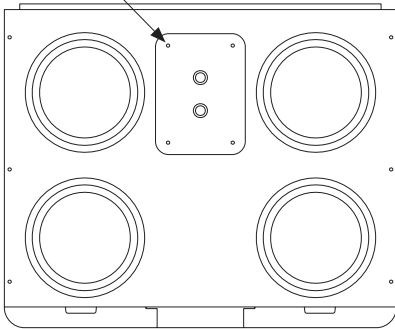
Step 5. Connect the controller to the sockets (pulled out of the board) by connecting A, B, GND and +12 V terminals with wires.

Note. Route all the wires through the threaded connector on the cover of the electric control box and tighten the threaded connector.

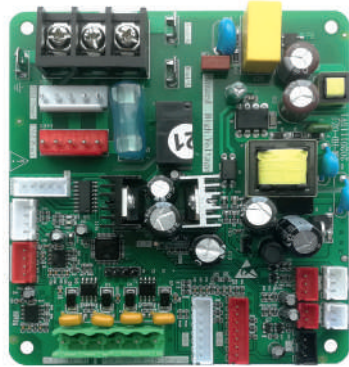
Step 6. Finally, re-install the sockets with the wires connected into the board and close the electric control box.

Step 2

4 screws



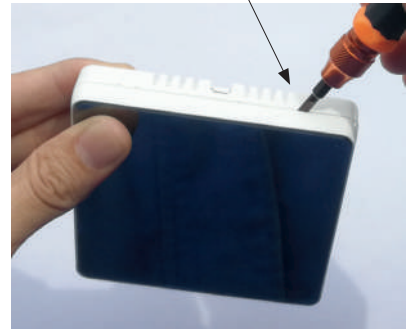
Step 3



Sockets

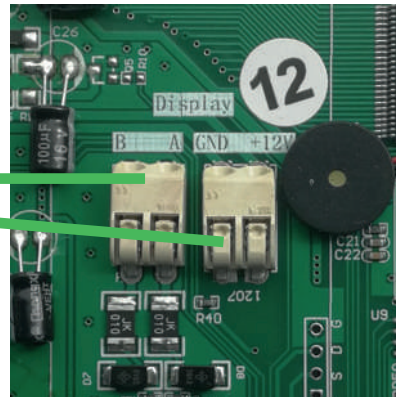
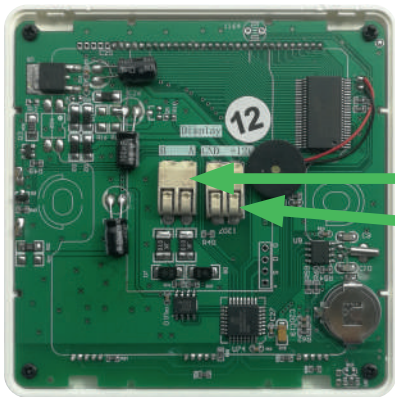
Step 4

Open the controller

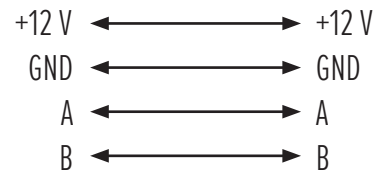
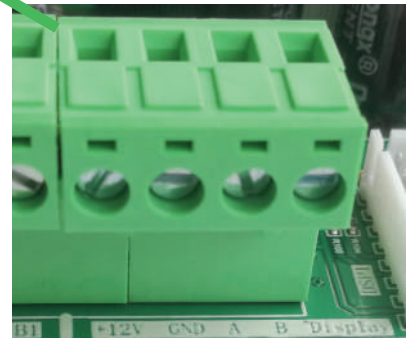


Step 5

Back of the controller board



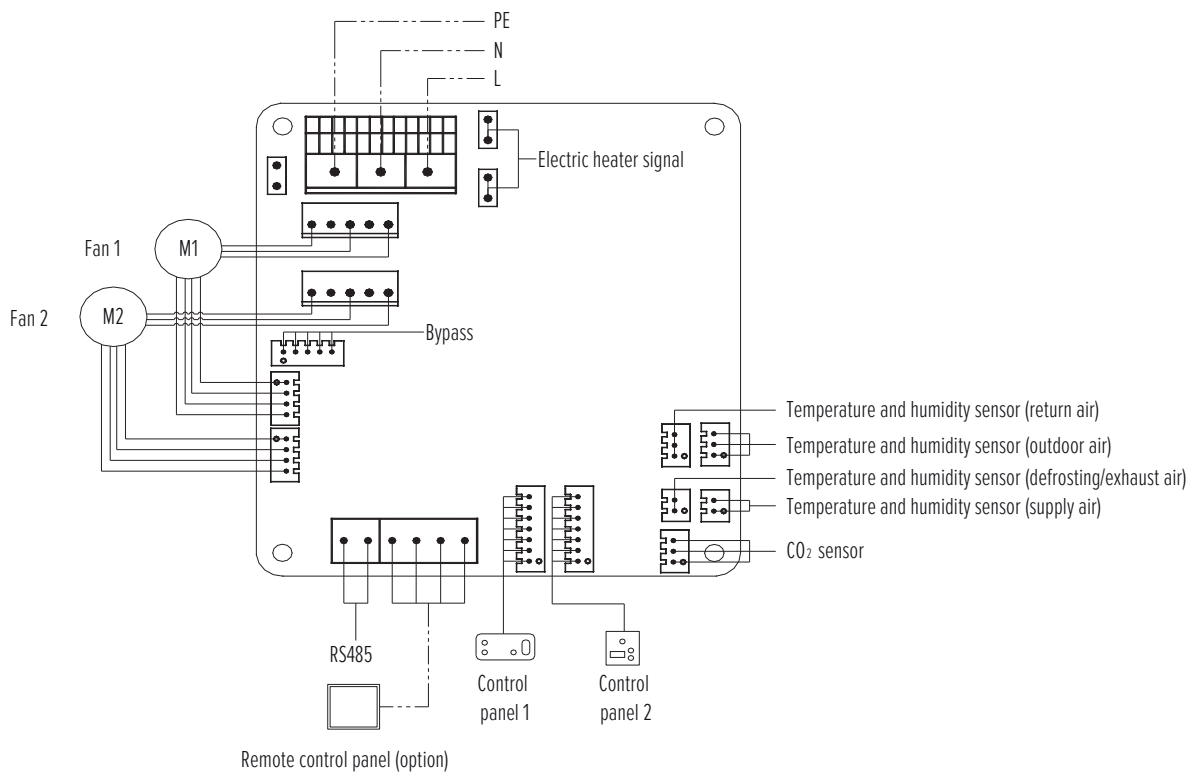
Sockets



Standard control vs. optional remote controller

No.	Functions	Local control panel	LCD remote control panel
1	Fan speed control	✓	✓
2	Adjustable air volume for each speed	✓	✓
3	Constant air flow rate	✓	✓
4	Balancing rate setting	✓	✓
5	One-button fan boost	✓	✓
6	Automatic bypass	Light indication	Bypass setting available
7	Temperature display	×	✓
8	Humidity control	✓	✓
9	Humidity display	×	✓
10	Defrosting	Light indication	Defrosting setting available
11	Filter replacement alarm	✓	✓
12	Filter timer reset	✓	✓
13	Fault alarm	✓	✓
14	Error code display	×	✓
15	RS485	✓	✓
16	Right-side and left-side installation switching	✓	✓
17	Restore factory settings	✓	✓
18	Auto-restart after incidental power failure	✓	✓
19	Travel mode	✓	✓
20	Sleep mode	×	✓
21	Timer function (4 periods)	×	✓
22	Time & date display and setting	×	✓
23	Power consumption statistics	×	✓
24	CO ₂ display and control	×	Optional
25	Heater temperature setting	×	✓
26	Wi-Fi	Optional	Optional
27	Fire signal interface	✓	✓
28	Fault signal interface	✓	✓
29	Running signal interface	✓	✓
30	Forced start signal interface	✓	✓

Wiring diagram

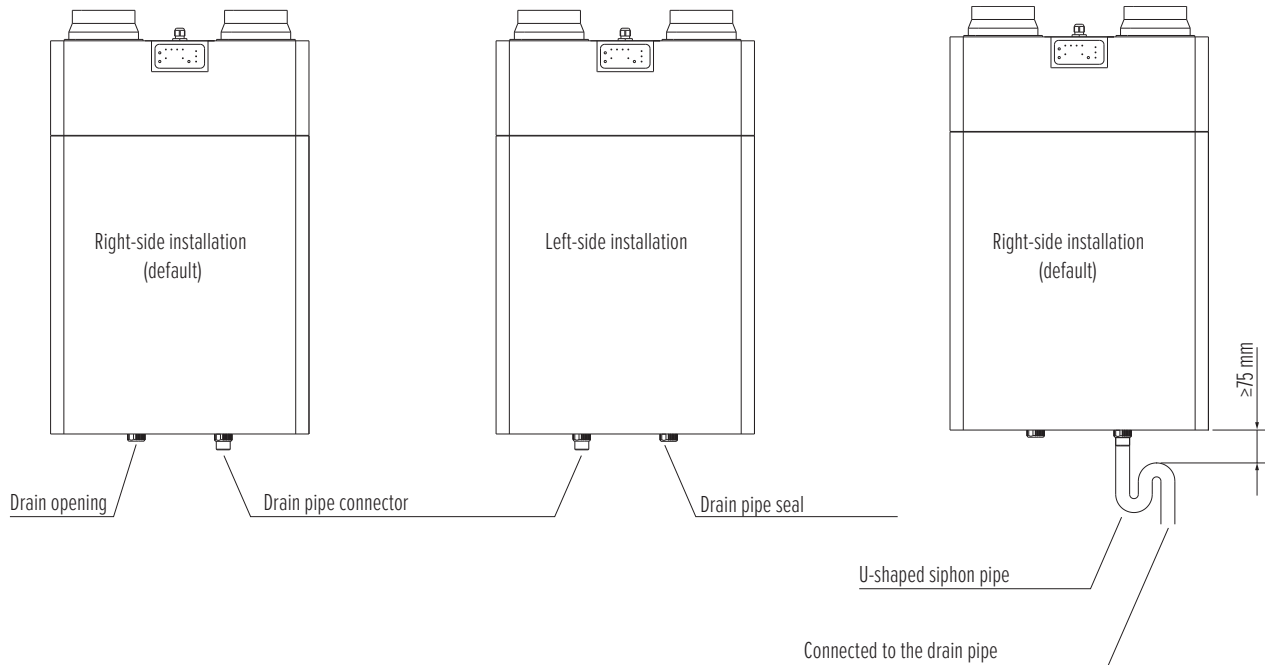


Note. This unit can be optionally equipped with a CO₂ sensor. You can also install an air duct heater (user supplied); its connection is shown on the wiring diagram.

2.5. CONDENSATE DRAINAGE

Before using the unit, connect the condensate drain pipeline as follows:

- Install the drain pipe connector and the drain pipe seal in appropriate positions, following the installation diagram.



- Connect the drain pipe to the drain pipe connector using a U-shaped siphon pipe.
- Before using the unit, ensure the drain pipe is submerged into the water.
- Ensure all the connectors are tight and do not leak.



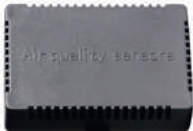

2.6. DEFAULT FACTORY SETTINGS

The unit comes with the following default settings:

Model		MCFA250T	MCFA350T	MCFA500T
Flow rate, m ³ /h	Speed 1	80	100	105
	Speed 2	100	130	185
	Speed 3	145	180	270
	Speed 4	175	245	350

III. ACCESSORIES

You can optionally install the following accessories and configure them according to your needs. The accessories must be purchased separately.

N°	Image	Description
1		F7 filter
2		Touch-screen control panel
3		CO ₂ sensor with a wire of about 5 m long
4		Duct-type heater



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