MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS S.p.A.

Climaveneta **Data Book**

I_MXW_10_40_202010_EN

HEATING

COOLING

i-MXW

10 - 40
2,0 - 3,7 kW

High-wall fan coil unit, with EC brushless fan

(The photo of the unit is purely indicative and may vary depending on the model)

- Configuration
- User frendly
- Full integration
- Real savings

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

CLIMAVENETA®

SUMMARY

This company participates in the Eurovent Certifi cation Programme.
The products are listed in the Directory of certifi ed products.
Eurovent certifi cation applied to units with cooling capacity up to 1500 kW
for air cooled water chillers and water cooled liquid chillers.

1. RANGE

i-MXW
version with cabinet.

2. GENERAL DESCRIPTION

The new i-MXW range is brilliantly engineered to provide a more efficient, more silent and more compact cooling solution. The EC fan allows continuous, stepless airflow and capacity modulation so that the unit can easily follow any variation in the thermal load. The extreme efficiency offers a reduction in power consumption: up to 40% in comparison to a traditional AC fan.

The units are available for installation in 2-pipe system and in four sizes to meet any kind of installation requirement. The elegant design (RAL 9003 white colour) meets the needs of modern residential and commercial architecture: i-MXW compact silhouette perfectly fits in any environment, adding refined aesthetics to any interior.

i-MXW are characterized by high flexibility and versatility: a vast array of already mounted options (e.g. 2 way or 3 way valves and condensate pump can be mounted into the casing) together with the smart unit design ensures a quick and easy installation as well as easy maintenance operations.

NOMENCLATURE

i - M X W | 1 0 | E | T | 3 V

Valves
- **-** Without valves
- **2V** with 2-way valve
- **3V** with 3-way valve

Controller
- **-** Universal for 0-10 V controllers
- **T** with electronic board and IR remote control
- **B** with electronic board for iMW wall-mounted control (opt.)

Configuration
- **-** 2-pipe standard
- **E** with electric heater

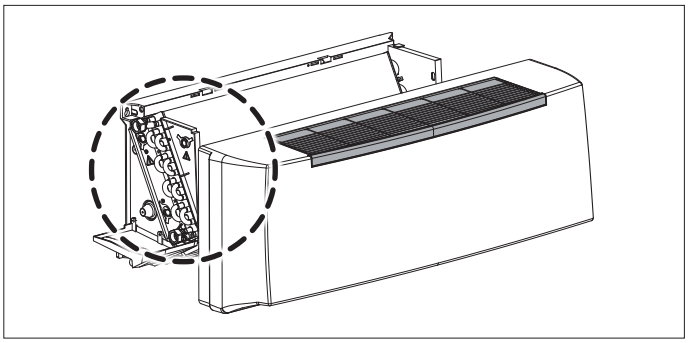
Size
10-20-30-40

i-MXW product
Wall-mounted fan coil with EC motor

3. UNIT DESCRIPTION

CASING

Impact-proof synthetic material. It can be easily disassembled for complete access to the appliance. The air intake grill forming part of the cabinet, has fixed flaps and is positioned on the upper part.
Made of auto-extinguishing ABS UL94 HB plastic with high specifications and great resistance to aging. In RAL 9003, shiny surface.
The diffusion flap is adjusted manually in std version, and automatically with remote controllers (IR remote controller and iMW wall mounted thermostat)

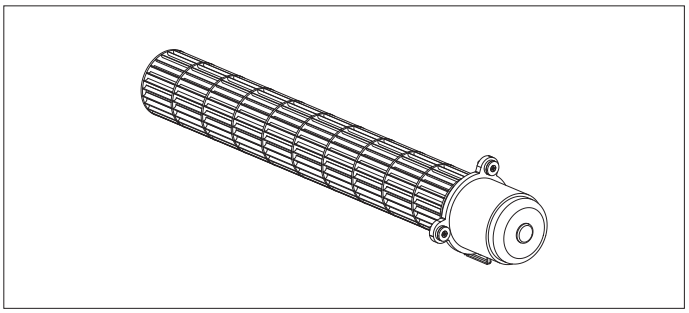


FAN ASSEMBLY

Consisting of tangential fan, particularly silent with statically and dynamically balanced plastic propeller, directly tapered onto the motor shaft.

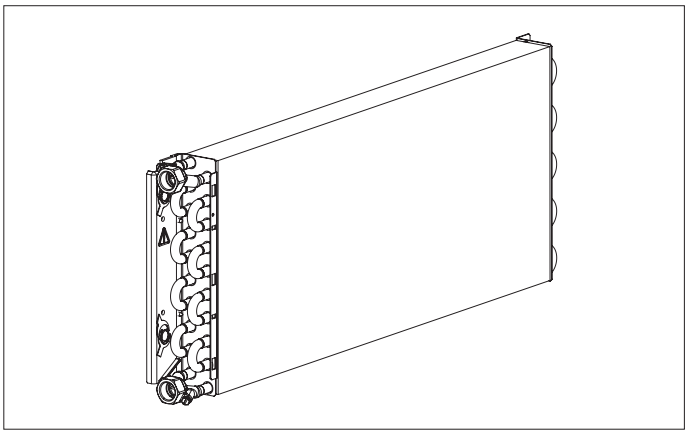
ELECTRIC MOTOR

Three phase permanent magnet DC brushless electronic motor that is controlled with current reconstructed
according to a BLAC sinusoidal wave. The inverter board that controls the motor operation is powered by 230 Volt, single-phase and, with a switching system, it generates a three-phase frequency modulated, wave
form power supply. The electric power supply required for the machine is therefore singlephase with voltage of 230 V and frequency of 50 Hz.



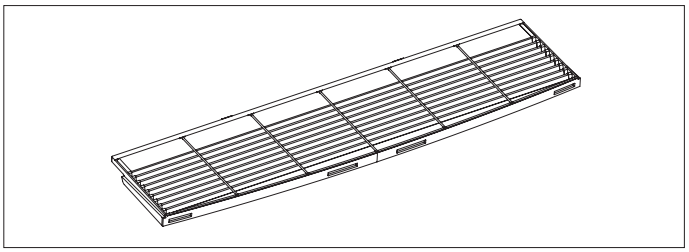
HEAT EXCHANGE COIL

Made with aluminium finned copper tubes. The exchanger has two 1/2” female gas connections. Coil headers with air vents and water drain outlets (1/8” dia. gas). The connections are only on the left hand side facing the unit.
The heat exchanger is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion



WASHABLE FILTER

Washable-regenerable synthetic filter, readily accessible.



CONDENSATE COLLECTION TRAY

Plastic, L-shaped, fixed to internal structure. The outside diameter of the condensate discharge pipe is Ø 16mm.

INSTALLATION TEMPLATE

A cardboard installation template is supplied with every unit to help the mounting on the wall.

4. OPERATING LIMITS

The basic specification of the fan coil and heat exchanger is given below:

Fan coil and heat exchanger:
- Maximum temperature of heat vector fluid: 70°C
- Minimum temperature of refrigerant fluid: 6°C
- Maximum working pressure: 1000 kPa
- Power supply voltage: 230V - 50Hz
- Electric energy consumption: see technical data label
- Index of protection: IP 20

The technical specification of the valves with thermoelectric actuator is given below:

Valves with thermoelectric actuator:
- Working pressure: 1000 kPa
- Power supply voltage: 230V~50Hz
- Rating VA / protection IP: 5 VA/IP 44
- Closing time: 180 sec.
- Maximum glycol content in water: 50%

Other technical data
All other important technical data (dimensions, weights, connections, noise emissions, etc.) are given elsewhere in this User Information Manual, in the separate technical documentation or in the technical proposal.

5. MOTOR ELECTRICAL DATA - MAX. ABSORPTION

MOTOR ABSORPTION					
Mod.		**10**	**20**	**30**	**40**
230/1 50Hz	**W (Max.)**	15	21	20	30
	A (Max.)	0,14	0,19	0,18	0,26

6. ACCESSORIES COMPATIBILITY

STANDARD CONFIGURATION							
Type	Option	Description	Size				Note
			10	20	30	40	
VERSION	B771	EC HYDRONIC HI-WALL					The option 1-10 Vdc signal, which controls the inverter, must be supplied by a controller (e.g. ATW-EC). Fan Drive Signal Fan OFF = 0 Vdc Fan ON > 1 Vdc Max. speed = 10 Vdc Blac-ECM Inverter board 0÷10 Vdc Circuit Input Impedance Value = 68kOhm
POWER SUPPLY	A552	230/1/50 POWER SUPPLY					
SYSTEM TYPE	A611	2 PIPES SYSTEM					
FAN TYPE	A646	EC BRUSHLESS FAN					
HYDRAULIC CONNECTIONS	A022	LEFT HYDRAULIC CONNECTIONS					
CONTROL UNIT	B780	WITHOUT CONTROL					

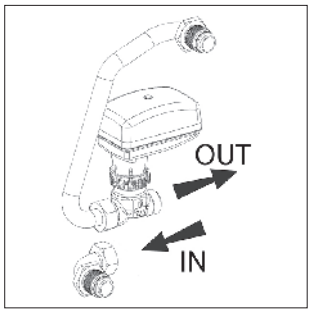
FACTORY MOUNTED OPTIONS							
Type	Option	Description	Size				Note
			10	20	30	40	
CONTROL OPTION							
CONTROL UNIT	B781	IR REMOTE CONTROL	√	√	√	√	The option includes an electronic power board, infra-red remote control and receiver. Allows timer and automatic swing function. This can be combined to opt. 5573048000 to connect the unit to BMS (RS485) or for Master/Slave configuration.
CONTROL UNIT	B782	ELECTRONICS CONTROL & SUPERVISION	√	√	√	√	The option includes an electronic power board to control the unit with opt. 5569020700 wall mounted controller iMW or 5573048200 IR remote control. Allows programming and automatic swing function. M/S configuration or connection to BMS (RS485).
ELECTRIC HEATER							
ELECTRIC RESISTANCE	A403	1000 W ELECTRIC RESISTANCE	√	√	N.A.	N.A.	The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted. The electrical heater is controlled in place of the hot water valve. The electric heaters of the FLY-ECM units are single phase 230V supply. The electric heater is fitted with a overheat protection. The unit is fitted with two safety thermostats: • thermostat with manual reset. • thermostat with automatic reset.
ELECTRIC RESISTANCE	A405	1500 W ELECTRIC RESISTANCE	N.A.	N.A.	√	√	
2-WAY VALVES							
BODY VALVES 2V2A	A671	MAIN COIL 1/2" 2V2A VALVE UNIT	√	√	N.A.	N.A.	2-way valves kit. Body valve and actuator can not be supplied separately.
BODY VALVES 2V2A	A673	MAIN COIL 3/4" 2V2A VALVE UNIT	N.A.	N.A.	√	√	
ACTUATOR VALVE TYPE 2V2A	A681	ON-OFF 230V 50+60HZ 2V2A VAL.	√	√	√	√	
3-WAY VALVES							
BODY VALVES 3V4A	A691	MAIN COIL 1/2" 3V4A VALVE UNIT	√	√	N.A.	N.A.	3-way valves kit. Body valve and actuator can not be supplied separately.
BODY VALVES 3V4A	A693	MAIN COIL 3/4" 3V4A VALVE UNIT	N.A.	N.A.	√	√	
ACTUATOR VALVE TYPE 3V2A	A701	ON-OFF 230V 50+60HZ 3V4A VAL.	√	√	√	√	

6. ACCESSORIES COMPATIBILITY

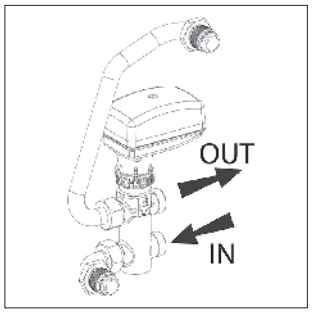
OTHER LOOSE OPTIONS						
Option	Description	Size				Note
		10	20	30	40	
CONTROL OPTION						
5549061400	KIT WALL THERMOSTAT ATW-EC CV	√	√	√	√	Wall mounted thermostat, only in combination with opt. B780-unit std.
5569020700	KIT WALL PROGRAMMABLE THERMOSTAT	√	√	√	√	Wall mounted programmable thermostat, only in coupling with opt. B782 control unit. Units can be managed according to the Master/Slave logic (up to 20 units) or by supervisory components.
5573048200	KIT IR REMOTE CONTROL AND RECEIVER	√	√	√	√	The option includes infra-red remote control and receiver, only in coupling with opt. B782.
5573048000	MODBUS SERIAL INTERFACE MXW T	√	√	√	√	Modbus serial interface, only in coupling with B781 to connect the unit to BMS (RS485) or in Master/Slave configuration.
WALL INSTALLATION KIT						
5573048300	KIT FOR WALL/CONCEALED INSTALL MXW 10÷20	√	√	N.D.	N.D.	Wall or concealed installation kit to be used as an installation template or in case the right connections are previously designed (the units are provided only with left connections). The technical space within the frame allows to connect the right hydraulic connections of the system and the left connections of the unit. Two installation are allowed: • Recessed box installation. • Wall installation with aesthetic frame fitting the unit esthetically (the unit thickness increase of 60mm) The aesthetic frame characteristics are: • Galvanized steel painted RAL 9003 • Pre-drilled panels for cables and ductworks • Internal insulation
5573048400	KIT FOR WALL/CONCEALED INSTALL MXW 0÷40	N.D.	N.D.	√	√	
2-WAY VALVES						
5573048500	KIT ON-OFF 2-W VALVE MXW 10÷20 W/ACT	√	√	N.D.	N.D.	2-way valves kit with body valve and actuator.
5573048600	KIT ON-OFF 2-W VALVE MXW 30÷40 W/ACT	N.D.	N.D.	√	√	
3-WAY VALVES						
5573048700	KIT ON-OFF 3-W VALVE MXW 10÷20 W/ACT	√	√	N.D.	N.D.	3-way valves kit with body valve and actuator.
5573048800	KIT ON-OFF 3-W VALVE MXW 30÷40 W/ACT	N.D.	N.D.	√	√	
OTHER						
5573047900	KIT CONDENSATE PUMP MXW	√	√	√	√	Condensate drain pump, to be installed inside the cabinet.
5573048100	T2 PROBE CHANGEOVER MXW B/T	√	√	√	√	Change Over probe T2 for enabling automatic changer-over function, only in coupling with B781 or B782 control units. The probe (1800mm) must be positioned before the 3 way valve. Not available for units with el. heater and/or 2 way valve.

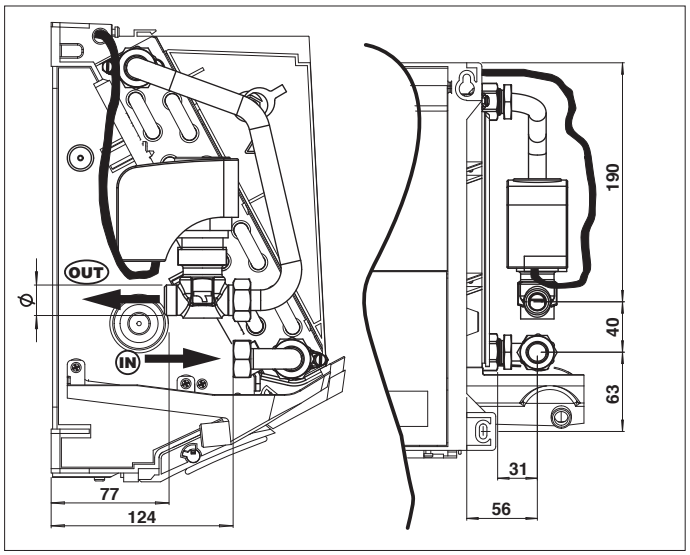
7. ACCESSORIES

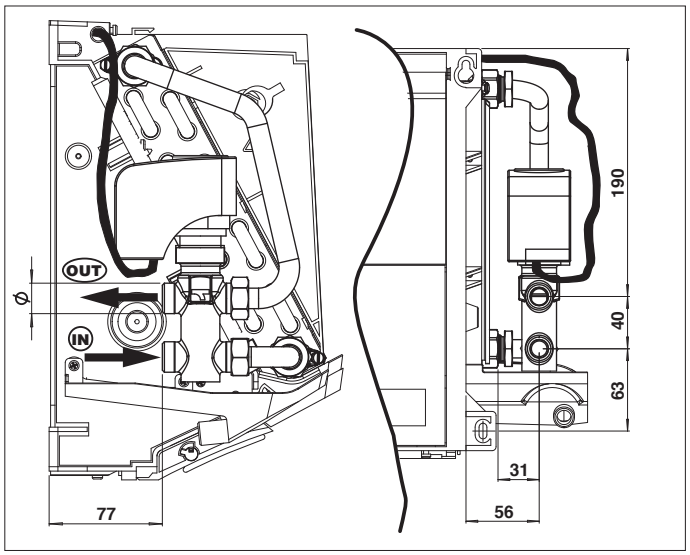
2-WAY VALVE
2-way valves kit with body valve and ON/OFF 230V actuator.
Available as factory mounted option (A671/A673, A681) or supplied loose (5573048500; 5573048600).

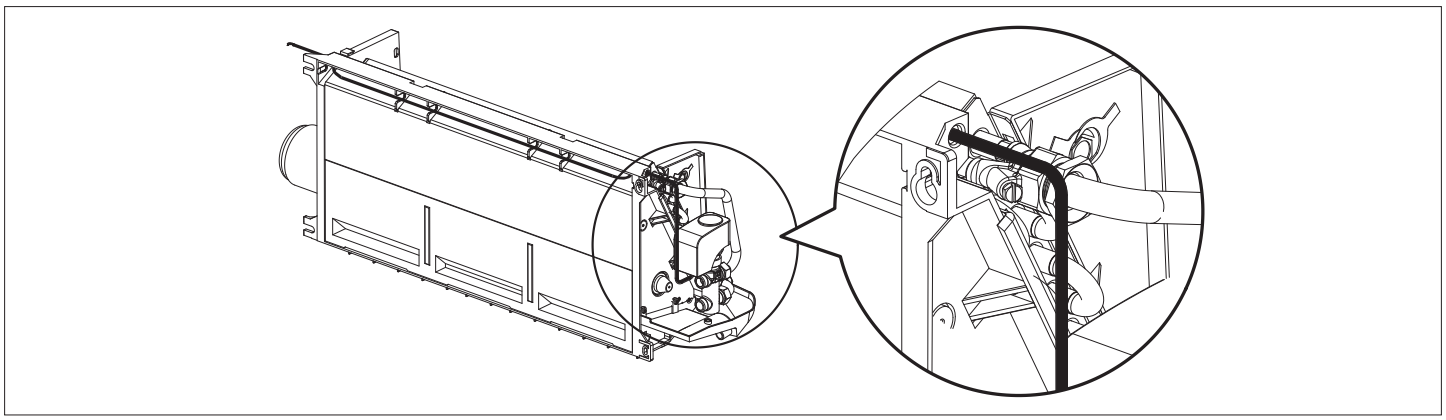


3-WAY VALVE
3-way valves kit with body valve and ON/OFF 230V actuator.
Available as factory mounted option (A691/A693, A701) or supplied loose (5573048700; 5573048800).

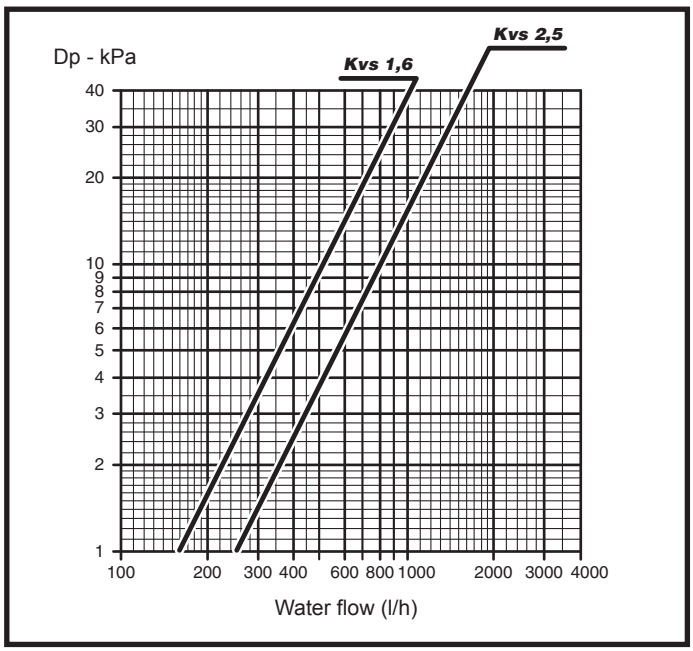








Valve				Not fitted	
				Code	
Mod.	**DN**	**(Ø)**	**Kvs**	**2 way**	**3 way**
10-20	15	1/2" G	1,6	5573048500	5573048700
30-40	20	3/4" G	2,5	5573048600	5573048800



7. ACCESSORIES

ELECTRIC HEATER

The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted.
The electric heaters are single phase 230V supply.
The electric heater is fitted with a overheat protection.

Maximum ambient air temperature with electric heater in heating mode: +25°C
Power supply single-phase rated operating voltage: 230/1/50 (Vac/Ph/Hz)

The unit is fitted with two safety thermostats:
• one thermostat with manual reset.
• one thermostat with automatic reset.

Model	i-MXW E 10-20	i-MXW E 30-40
Nominal installed power	1000 Watt	1500 Watt
Nominal power voltage	230V ~	230V ~
Number and section of connecting wires	3 x 1,5mm²	3 x 1,5mm²
Current input	4,5 A	7 A
Recommended fuse (Typo gG) for overload protection	6 A	8 A

KIT FOR WALL OR CONCEALED INSTALLATION

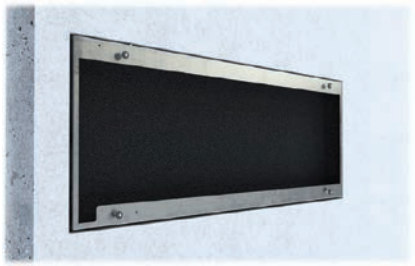
Wall or concealed installation kit to be used as an installation template or in case the right connections are previously designed (the units are provided only with left connections). The technical space within the frame allows to connect the right hydraulic connections of the system and the left connections of the unit.

Two installation are allowed:
• Recessed box installation.
• Wall installation with aesthetic frame fitting the unit esthetically (the unit thickness increase of 60mm)

The aesthetic frame characteristics are:
• Galvanized steel painted RAL 9003
• Pre-drilled panels for cables and ductworks
• Internal insulation.

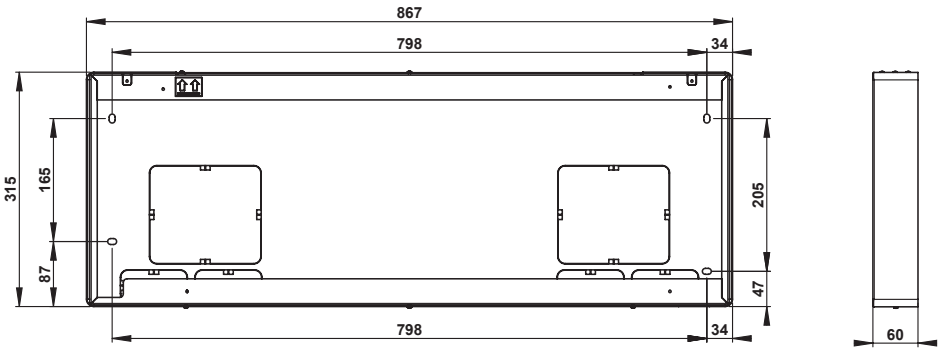
Mod.	Kit code
i-MXW 10-20	5573048300
i-MXW 10-20	5573048400

Wall installation

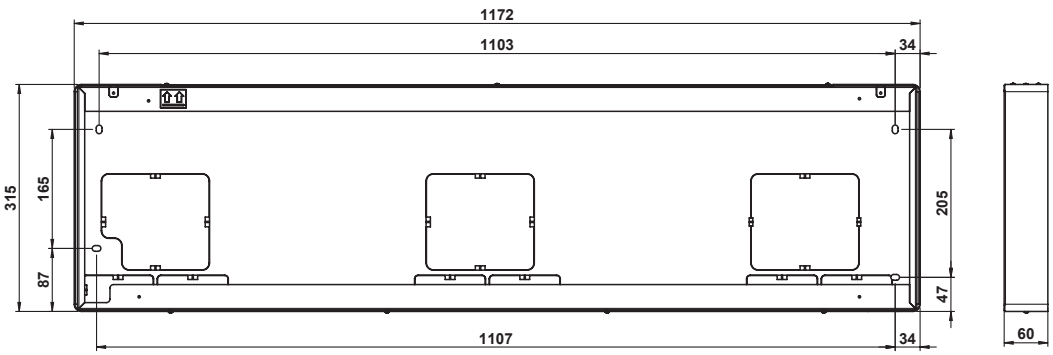


Concealed installation

SIZE 10-20



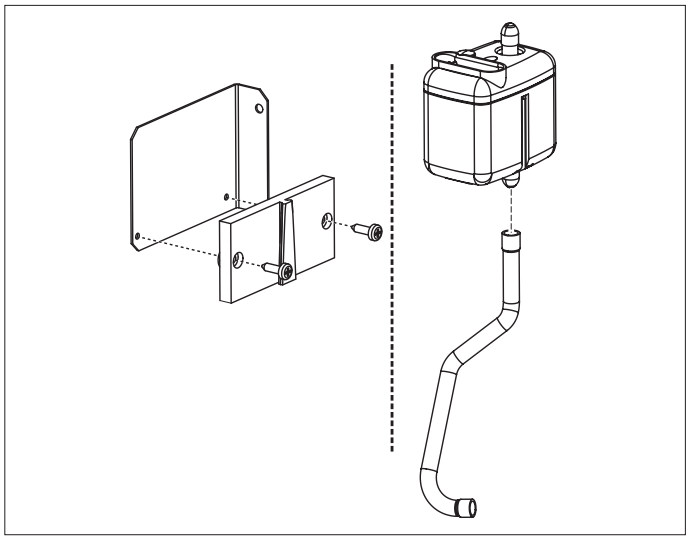
SIZE 30-40



7. ACCESSORIES

CONDENSATE DRAIN PUMP
Condensate drain pump, supplied loose.

Height for vertical flow (m)	Water flow (l/h) depending on the length of horizontal flow	
	5m	10m
1	7,6	7,2
2	**5,6**	**5,2**
3	**4,0**	**3,7**
4	**3,2**	**2,9**



8. CONTROL OPTIONS

STANDARD UNIT CONFIGURATION - B780
For std units, the 1-10 Vdc signal to control the inverter must be supplied by a controller (e.g. ATW-EC).

Fan Drive Signal
Fan OFF = 0 Vdc
Fan ON > 1 Vdc
Max. speed = 10 Vdc

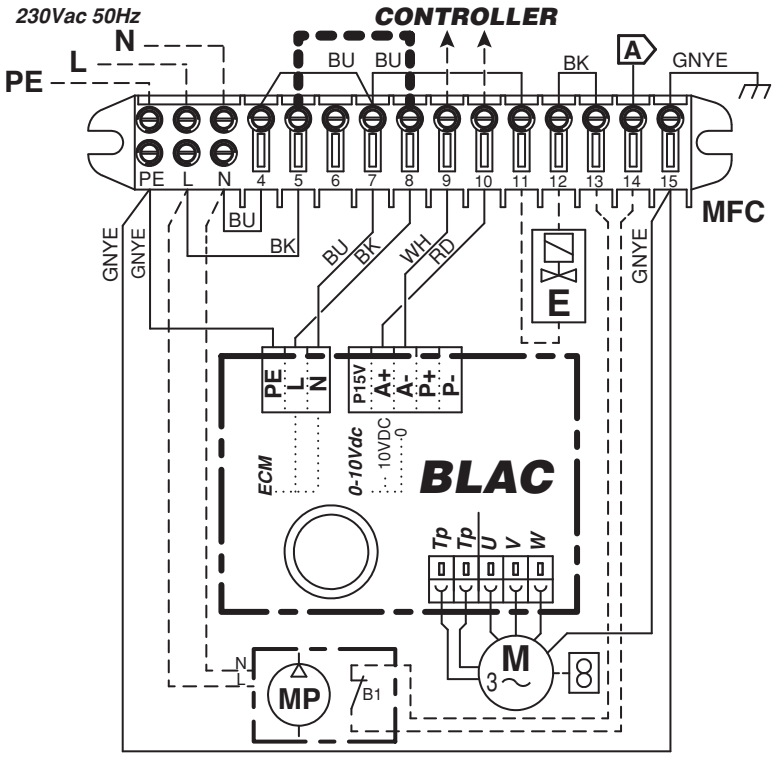
Blac-ECM Inverter board
0÷10 Vdc Circuit Input Impedance Value = 68kOhm

Note: Manual vertical and horizontal air flow management.

WIRING DIAGRAM
- 2-tube installation (1 valve)
- Thermostatic controlon the valve
- Condensate pump

KEY:

MFC	Fan coil terminal board
M	Fan
E	Water valve
BLAC	Inverter circuit board
Tp	Motor fan thermal protector connection
0-10Vdc	Input signal
U/V/W	Motor fan connection
A+/A-	Digital fault signals
P+/P-	Digital fault signals
CONTROLLER	Controller
MP	Condensate pump
GNYE	Yellow/Green
WH	White
RD	Red
BK	Black
BU	Dark Blue
A	Input for "**E**"



Warning! Jumper terminals 5 and 8

0÷10 Vdc Circuit Input
Impedance Value= 68kOhm

Warning! The same signal supplied by one controller cannot be branched to control multiple fan coils.

8. CONTROL OPTIONS

STANDARD UNIT CONFIGURATION - B780

For std units, the 1-10 Vdc signal to control the inverter must be supplied by a controller (e.g. ATW-EC).

ATW-EC WALL MOUNTED THERMOSTAT
compatible only with opt. B780

- Mode (OFF/COOLING/HEATING/AUTO) and fan speed control (Max/Med/Min/AUTO).
- Air temperature set-point
- Main coil valve ON/OFF control in cooling/heating operation.
- Electric heater control.
- Proportional control 0-10Vdc of the fan speed.
- Digital input configurable as: window contact, economy, heating or cooling remote changeover.
- Periodic ventilation set. HOT START function (heating mode only). TOO COOL function (cooling mode only).
- Blue LEDs indicates system's turning-on, mode and fan speed.
- 230V~ or 24V~ 50-60Hz power supply.

The ATW-EC thermostat cannot be connected in BMS centralized management system.

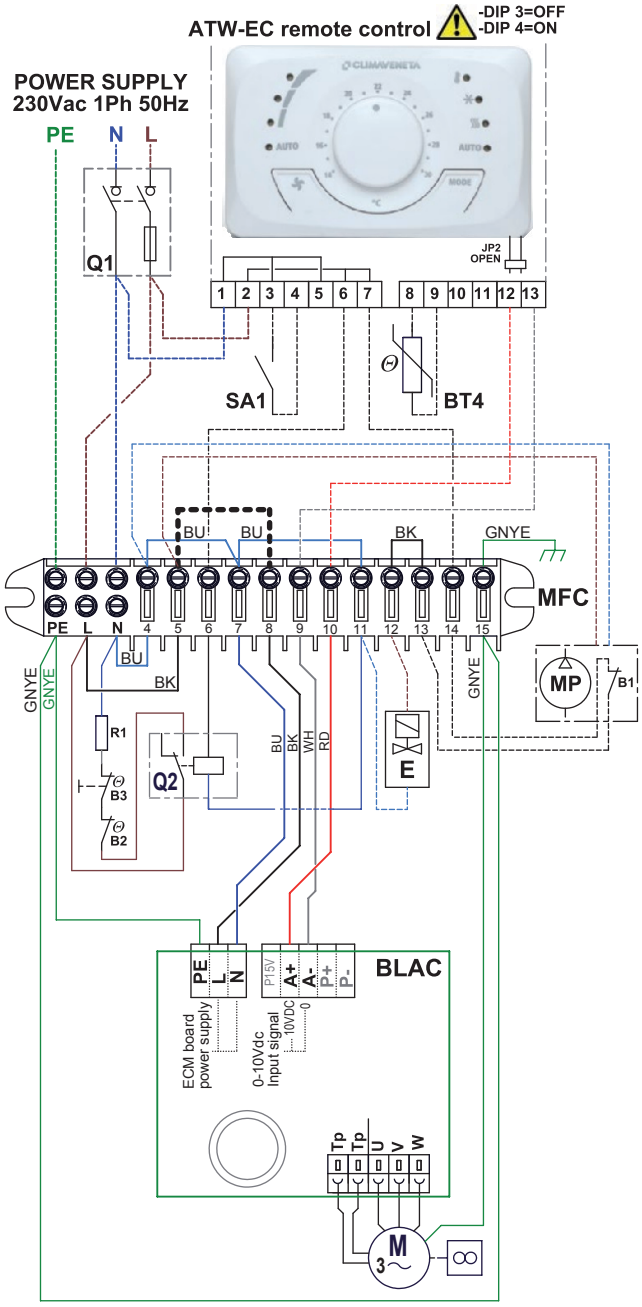
CONTROL SIGNALS AND WIRING DIAGRAMS FOR ATW-EC CONNECTION

- 2-tube installation (1 valve)
- Thermostatic controlon the valve
- Condensate pump

KEY:

MFC	Fan coil terminal board
M	Fan
E	Water valve
BLAC	Inverter circuit board
ATW	ATW-EC wall-mounted control
BT4	Water temp. probe
SA1	"NO" multifunction contact
Tp	Motor fan thermal protector connection
0-10Vdc	Input signal
U/V/W	Motor fan connection
A+/A-	Digital fault signals
P+/P-	Digital fault signals
MP	Condensate pump
R1	Electrical heater
B2	Self reset safety thermostat
B3	Manual reset safety thermostat
Q1	Disconnect switch
Q2	Electrical heater Power-ON relay

GNYE	Yellow/Green
WH	White
RD	Red
BK	Black
BU	Dark Blue



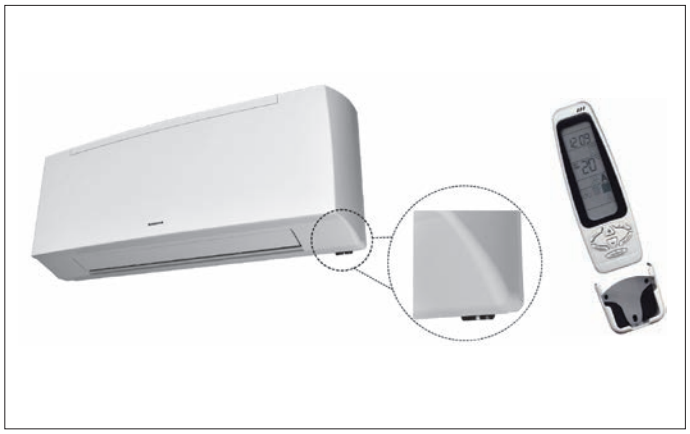
8. CONTROL OPTIONS

UNIT WITH INFRA-RED REMOTE CONTROLLER - B781

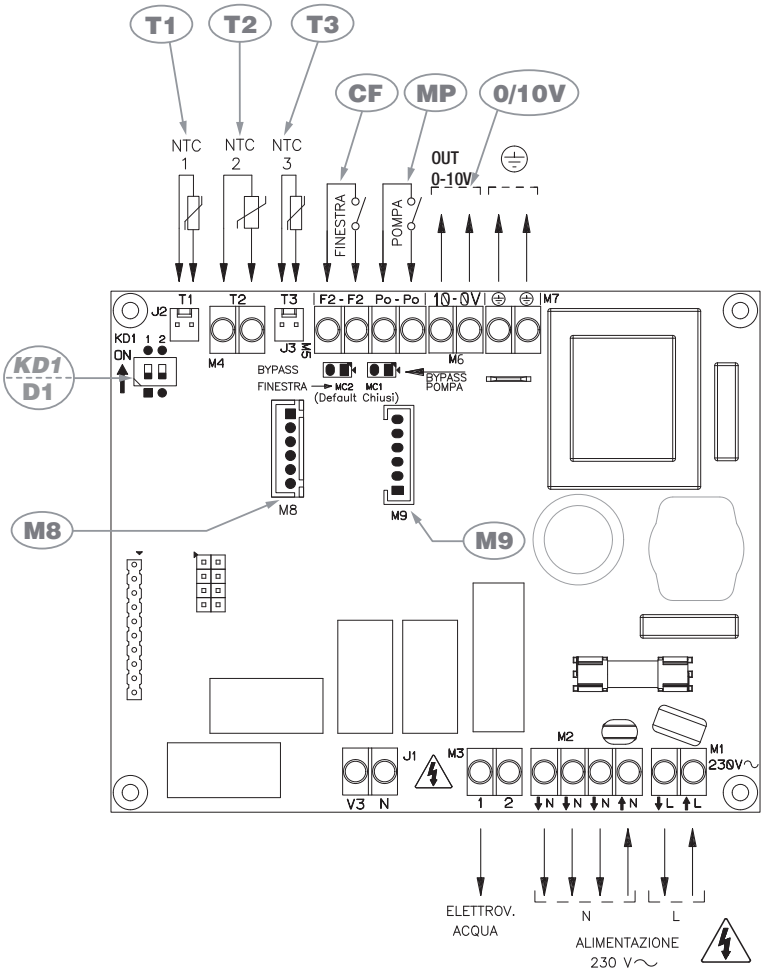
The unit includes an electronic power board, an infra-red remote control and semi-integrated IR receiver (factory mounted).

- Fan speed control (Max/Med/Min/AUTO).
- Air temperature set-point
- Operating Mode (OFF/COOLING/HEATING/AUTO*)
- Main coil valve ON/OFF control in cooling/heating operation.
- Electric heater control.
- Automatic vertical swing of the flap
- ON/OFF timer

* Opt. change over probe T2 (5573048100) required for enabling automatic changer-over function, only in coupling with B781 or B782 control units.



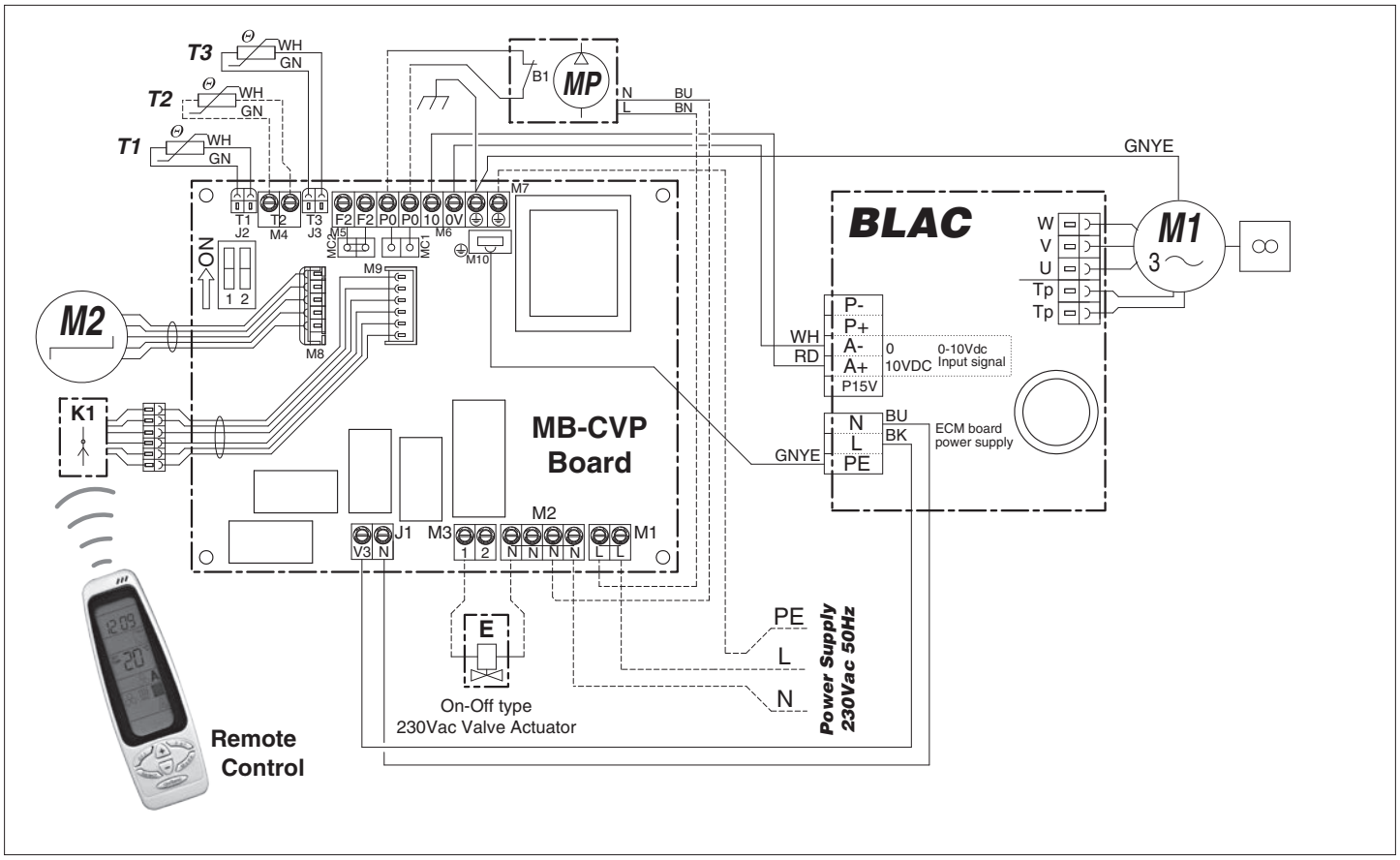
This option can be combined to opt. 5573048000 to connect the unit to BMS (RS485), max. no. 60 i-MXW units, or for Master/Slave configuration with up to 20 units controlled simultaneously. Settings transmitted only by Master unit and its controller.



KEY:

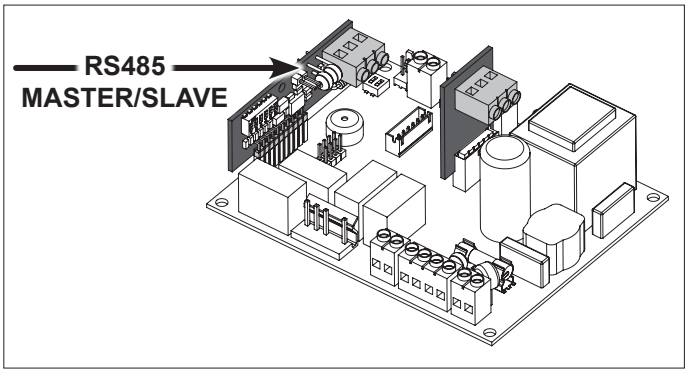
D1	Configuration dipswitches
E	Water valve
T1	Air probe (fitted at the appliance intake)
T2	Change-Over probe (optional)
T3	Minimum probe
M1	Fan
M2	Flap Motor
M8	Flap Connector
M9	Infra-red receiver connector
K1	Receiver
CF	F2-F2 Window open / person presence voltage-free contact. If open the unit stops
MP	Condensate pump
RS485	Terminals 0/D-/D+ f or the Master-Slave/ RS485 serial connection
0-10V	Input signal
BLAC	Inverter circuit board

8. CONTROL OPTIONS



MODBUS SERIAL INTERFACE (5573048000)

The serial interface allows the connection of i-MXW to BMS via RS485 (max. no. 60 i-MXW units), or for Master/Slave configuration with up to 20 units controlled simultaneously. Settings transmitted only by Master unit and its controller. Supplied loose.



8. CONTROL OPTIONS

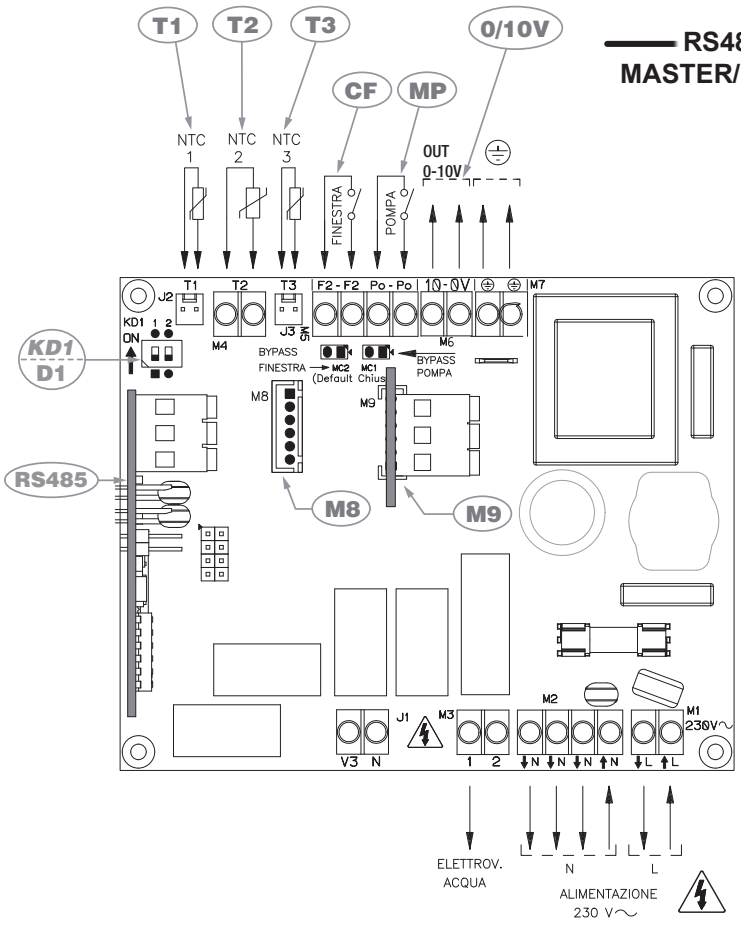
UNIT WITH POWER BOARD - B782

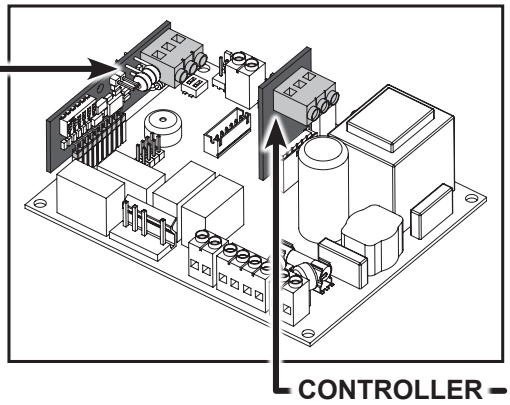
The option includes an electronic power board to control the unit with opt. 5569020700 wall mounted controller iMW (or 5573048200 IR remote control).

iMW WALL MOUNTED PROGRAMMABLE THERMOSTAT (5569020700) compatible only with opt. B782

- Fan speed control (Max/Med/Min/AUTO).
- Air temperature set point
- Operating Mode (OFF/COOLING/HEATING/AUTO*/VENTILATION)
- Main coil valve ON/OFF control in cooling/heating operation.
- Electric heater control.
- Automatic vertical swing of the flap
- Weekly ON/OFF scheduling (1 operating interval per day)
- Master/Slave configuration with up to 20 units controlled simultaneously. Settings transmitted only by Master unit and its controller.
- BMS connectivity via RS485 serial line, max. no. 60 i-MXW units

* Opt. change over probe T2 (5573048100) required for enabling automatic changer-over function, only in coupling with B781 or B782 control units.

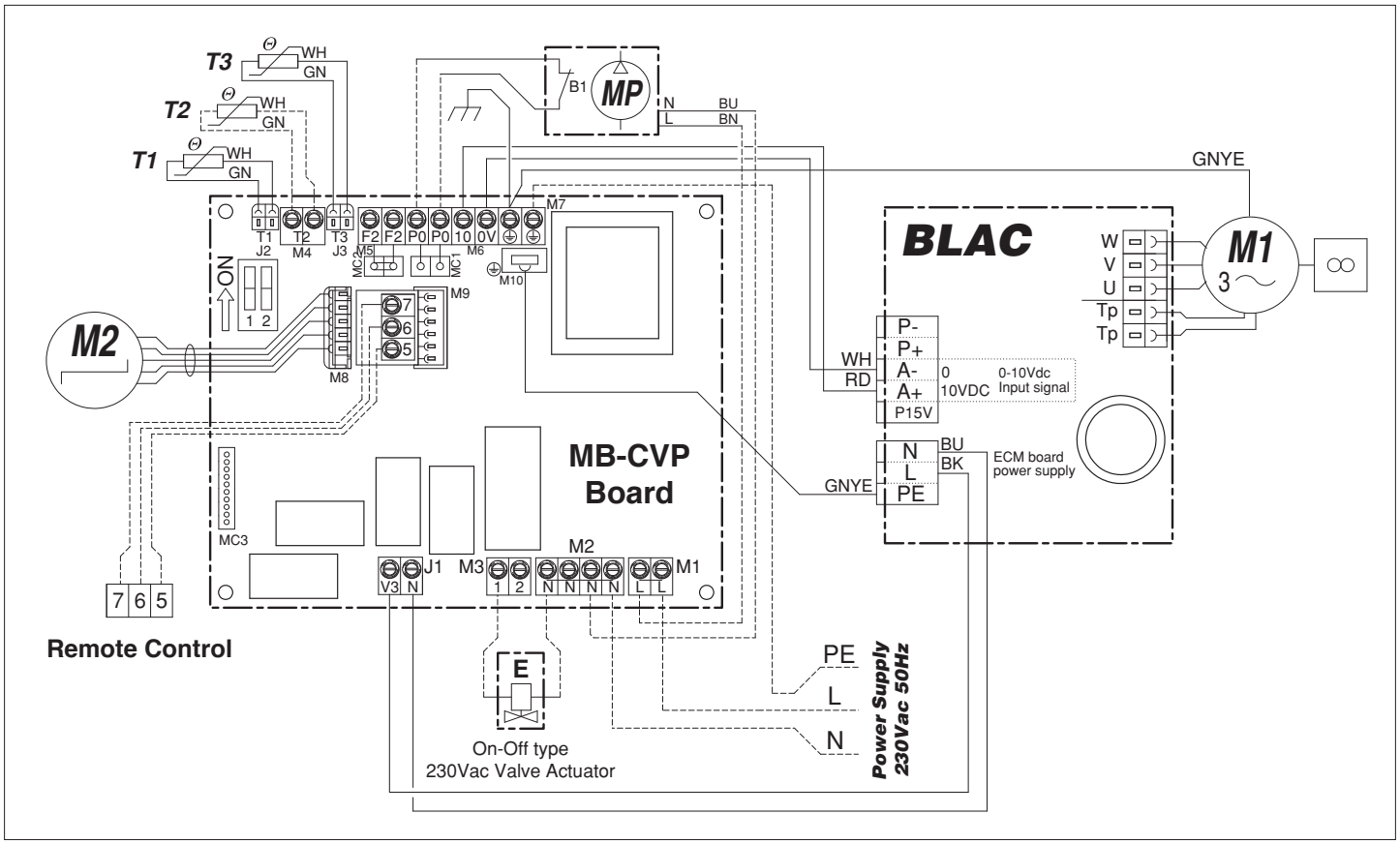




KEY:

D1	Configuration dipswitches
E	Water valve
T1	Air probe (fitted at the appliance intake)
T2	Change-Over probe (optional)
T3	Minimum probe
M1	Fan
M2	Flap Motor
M8	Flap Connector
M9	Infra-red receiver connector
CF	F2-F2 Window open / person presence voltage-free contact. If open the unit stops
MP	Condensate pump
RS485	Terminals 0/D-/D+ f or the Master-Slave/RS485 serial connection
0-10V	Input signal
BLAC	Inverter circuit board

8. CONTROL OPTIONS



CHANGE OVER PROBE

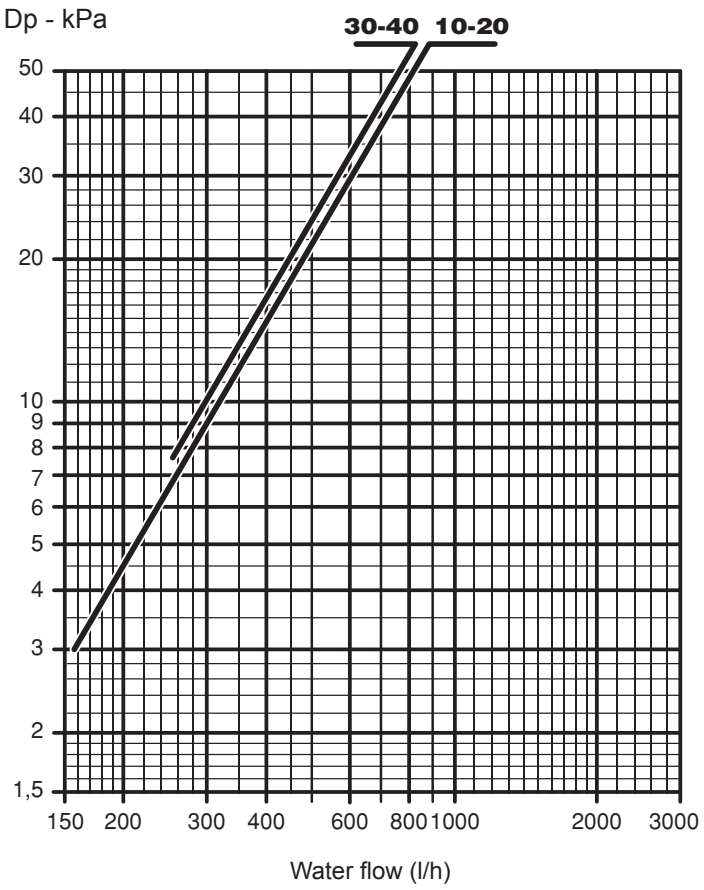
Opt. change over probe T2 (5573048100) required for enabling automatic changer-over function, only in coupling with B781 or B782 control units.

The probe (1800mm) must be positioned before the 3 way valve. Not available for units with el. heater and/or 2 way valve.

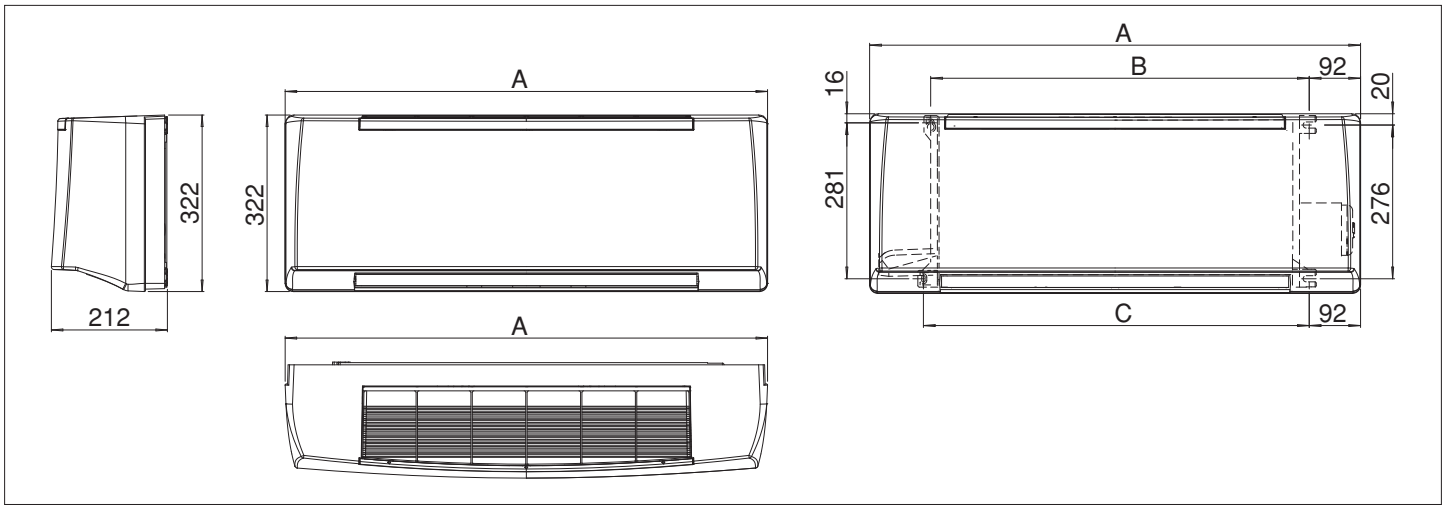
9. COIL PRESSURE DROP

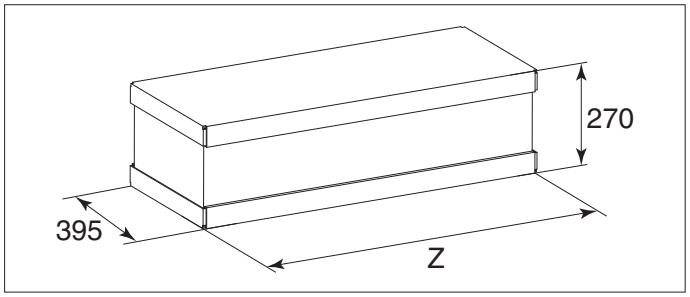
The table indicates the pressure drop for a mean water temperature of **10°C**.
For different water temperatures multiply by the correction factors **K**.

°C	20	30	40	50	60	70	80
K	0,94	0,90	0,86	0,82	0,78	0,74	0,70



10. DIMENSIONAL DATA

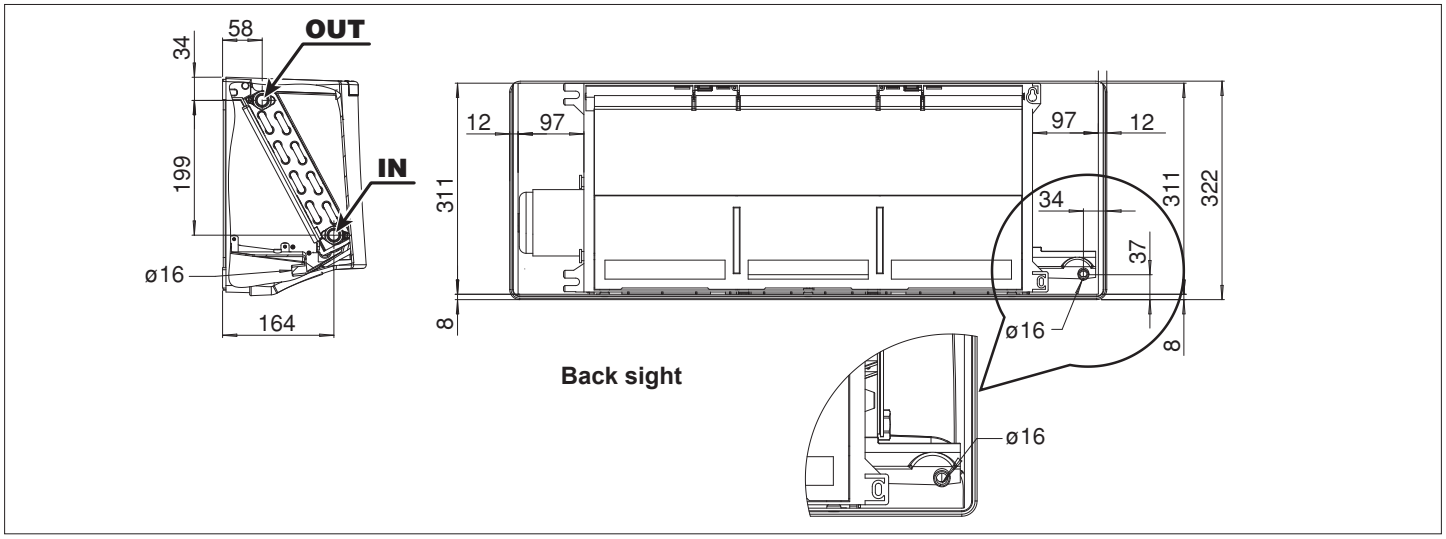




DIMENSIONS					
Mod.		10	20	30	40
mm	A	880	880	1185	1185
	B	678	678	983	983
	C	691	691	996	996
	Z	950	950	1255	1255

WEIGHT									
Mod.		10	20	30	40	10	20	30	40
		Packed unit				Unpacked unit			
without valves	kg	12	12	16	16	10	10	13	13
with valves	kg	13	13	17	17	11	11	14	14

11. HYDRAULIC CONNECTIONS



WATER CONTENTS				
Mod.	10	20	30	40
Liters	0,85	0,85	1,28	1,28

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Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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