

Variable Multi Flow

VMF systems central interface



VMF-E5B/E5N

Accessory module



VMF-VOC

VMF-CRP

Thermostat with serial communication



VMF-E0

VMF-E1 / VMF-E18



VMF-SW/SW1

Zone interface



VMF-E4



VMF-E2/E2H

Domestic water panel



VMF-ACS

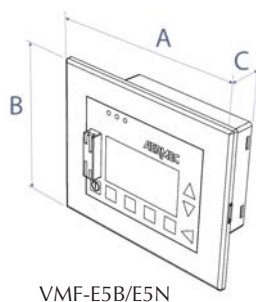
Features

- VMF: Variable Multi Flow system.
Management and control system of hydronic systems for the conditioning, heating and production of domestic hot water.
The VMF system allows complete control of every component of a hydronic system both locally and centrally and, communicating between the various components of the system, manages the performance without ever neglecting the end user's request of comfort, but reaching it as efficiently as possible with energy saving.
Combining the control (local and central) and flexibility of installation and operation typical of a hydronic system is an alternative to variable refrigerant flow systems (VRF).
The VMF system is extremely flexible, enough to allow various control and management strategies, expandable at different moments:
 - 1) Control of a single fancoil.
 - 2) Control of a microzone (one MASTER fancoil and a maximum of 5 SLAVE fancoils).
 - 3) Control of multi independent zones system (one MASTER fancoil and a maximum of 5 SLAVE fancoils for each zone).
 - 4) Control of a fancoil system, plus management of the heat pump (if compatible with the VMF system).
 - 5) Control of a fancoil system, heat pump and management of the domestic hot water system (DHW).
 - 6) Control of a fancoil system, heat pump, domestic hot water production and additional circulators (up to a maximum of 12 using three additional VMF-CRP modules).
 - 7) Control of a fancoil system, heat pump, domestic hot water production, additional circulators and management of heat recovery units, maximum 3, (with the ability to handle up to 3 VOC sensors) or a boiler.
- The VMF system can operate and manage, through a VMF-E5 panel, a maximum of 64 zones consisting of a MASTER fancoil and a maximum of 5 SLAVE fancoils connected to each MASTER, for a total of 384 fancoils.
- Besides the central control supplied by the VMF-E5 panel, the MASTER fancoils must be provided with a local control interface; this interface can be mounted on the fancoil (VMF-E2/E2H) or be mounted into a wall panel (VMF-E4).
- Different functions can be controlled through the VMF-E5 panel, including:
 - Identify the different zones setting a name for each one.
 - Check and set the ON-OFF function and the set temperature of each zone.
 - Set and manage the set temperature of the heat pump.
 - Scheduling time slots.
- Simple installation of the fancoil system through the SELF-MONITORING function of the MASTER fancoils.

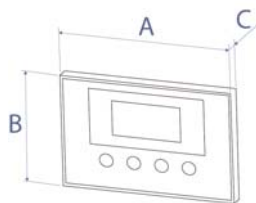
System components

- **VMF-E0:** thermostat accessory to fix on the side of the fancoil, equipped with air and water sensors as standard, controls 2 pipes, 4 pipes, 2 pipes + Plasmacluster, 2 pipes + UV lamps, 2 pipes + Electric heater systems. Equipped with external contact to be used as low voltage remote ON-OFF. This thermostat can create a single fancoil zone through 2-wire serial communication (1 master + 5 slaves maximum). The thermostat is fuse protected.
- **VMF-E1:** like VMF-E0 with extra:
 - Economy contact/presence sensor.
 - Auxiliary water sensor for general control in 4-tube systems (with VMF-SW1 accessory).
 - Serial RS485, protocol ModBus RTU, for centralised control.
 - Possibility to insert expansion cards for future development. The VMF-E1 accessory must therefore be used in the Masters in the presence of multiple zones, or for communication with the chiller/heat pump.
- **VMF-E18:** the same as the VMF-E1, but for fancoils with inverter motors.
- **VMF-E2:** this is the user interface on the machine to match to the VMF-E0, E1 and E18 accessories for the UL-S-AS FCX, FCX-U series (sizes 62-82-102). Equipped with 2 selector switches, one for temperature and one for speed control.
- **VMF-E2H:** this is the User Interface (as above) on the machine, to match to the VMF-E0, E1, accessories dedicated to the HL series.
- **VMF-E4:** this is the light coloured wall mounted user interface, to match to the VMF-E0, E1 and E18 accessories for the UL, HL, and FCX series without on-board control. Innovative design, extremely slim and inexpensive, allows control of functions via a capacitive touch keypad with LCD display. The environment can be adjusted with the sensor on the panel (standard), or the sensor of the fancoil which it is connected to, or by their arithmetic mean. It also allows the activation of the air purifier accessory (Plasmacluster / UV Lamp) and the electrical heating element.
- **VMF-E5B:** white recessed panel, with backlit graphic LCD and capacitive keyboard allows the centralised command/control of a complete hydronic system consisting of:
 - o Fancoils: up to 64 fancoil zones consisting of a master + 5 slaves.
 - o Chiller/heat pump equipped with Modu_Control, GR3 and pCO2/PCO³ controls (accessory required for RS 485 interface with MODU-485A, AER485, AER485P2 / AER485P1)
 - o Circulators: up to 12 configurable zone circulators.
 - o Boiler: boiler consensus management for hot water production.
 - o Heat recovery units: consents up to 3 per programmable recovery units based on the timing and/or by measuring the air quality obtained with the VMF-VOC accessory.
 - o Domestic water module: complete management of the domestic hot water production through the control of: Diverting/circulator valve Integrated resistor Accumulation temperature sensor.
- **Anti-legionella circuit.**
- **VMF-E5N:** this is the variant of the previous code, but with black plastic.
- **VMF-VOC :** accessories for measuring air quality (see related point in the description of the VMF-E5B).
- **VMF-CRP:** accessory module for the control of the boilers, pumps and heat recovery units.
- **VMF-SW:** water sensor may be used in place of the standard supplied with VMF-E0/E1/E18 thermostats for the installation upstream of the valve.
- **VMF-SW1:** additional water sensor may be used for 4-pipe systems with VMF-E1/E18 thermostats for the maximum control in the cold range.
- **VMF-ACS3KM:** electrical panel for the complete command/control for hot water storage (3-way control valve, integrated single phase 3kW resistor command, Anti-legionella and temperature sensor).
- **VMF-ACS3KTN:** electrical panel for the complete command/control for hot water storage (3-way control valve, integrated three-phase 3kW resistor command, Anti-legionella and temperature sensor).
- **VMF-ACS6KTN:** electrical panel for the complete command/control for hot water storage (3-way control valve, integrated single phase 6kW resistor command, Anti-legionella and temperature sensor).
- **VMF-ACS8KTN:** electrical panel for the complete command/control for hot water storage (3-way control valve, integrated three phase 6kW resistor command, Anti-legionella and temperature sensor).

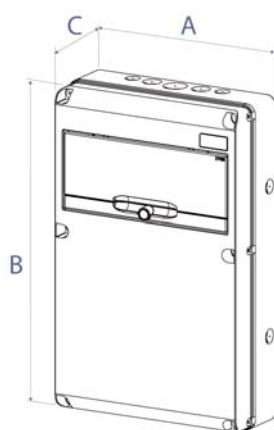
Dimensions (mm)



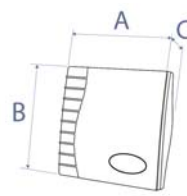
VMF-E5B/E5N



VMF-E4



VMF-ACS



VMF-VOC

	A (mm)	B (mm)	C (mm)
VMF-E5B/E5N	138	110	45
VMF-E4	125	80	11
VMF-ACS	354	544	135
VMF-VOC	79	81	26

Selection 1 • Compatibility of thermostats for serial communication and control interface for MASTER units

Models	Versions	Notes	VMF-E0	VMF-E1	VMF-E18	VMF-E2	VMF-E2H	VMF-E4
FCX	AS - U		✓	✓	-	✓	-	✓
	AN	(1)	-	-	-	-	-	-
	P - PPC - PO		✓	✓	-	-	-	✓
FCXI	AS - U - P		-	-	✓	✓	-	✓
HL	S - SM		✓	✓	-	-	✓	✓
	N	(1)	-	-	-	-	-	-
UL	S		✓	✓	-	✓	-	✓
	N	(1)	-	-	-	-	-	-
	P		✓	✓	-	✓	-	✓
FHX	UV		✓	✓	-	✓	-	✓
	UVP - UVPO		✓	✓	-	-	-	✓
VEC			✓	✓	-	✓	-	✓

Selection 2 • Compatibility of VMF-E5 centralised control

Models	Versions	Notes	VMF-E5
FCX	AS - U	(4)	✓
	AN	(1)	-
	P - PPC - PO	(4)	✓
FCXI	AS - U - P	(4)	✓
HL	S - SM	(4)	✓
	N	(1)	-
UL	S	(4)	✓
	N	(1)	-
	P	(4)	✓
FHX	UV - UVP - UVPO	(4)	✓
VEC		(4)	✓

Selection 3 • Compatibility of heat pumps with electrical panel for domestic hot water management

Models	Versions	Notes	VMF-ACS3KM	VMF-ACS3KT	VMF-ACS6KT	VMF-ACS8KT
ANL	H	(5) (6)	✓	✓	✓	✓
ANLI	All	(6)	✓	✓	✓	✓
ANK	All	(6)	✓	✓	✓	✓
ANR	H	(5) (6)	✓	✓	✓	✓
ANF	H	(5) (6)	✓	✓	✓	✓
SRA	All	(6)	✓	✓	✓	✓
SRP-V1	All	(6)	✓	✓	✓	✓
NRL	H	(5) (6)	✓	✓	✓	✓
NRC	H	(5) (6)	✓	✓	✓	✓
RVB H	All	(6)	✓	✓	✓	✓
WSH	All	(6)	✓	✓	✓	✓

Selection 4 • Compatibility of modules and additional sensors

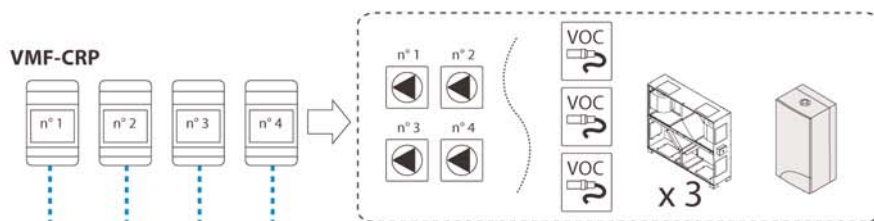
Models	Versions	Notes	VMF-CRP	VMF-VOC
VMF-E5	All	(7)	✓	✓ (8)

- (1) This version has the VMF-E0 thermostat and VMF-E2/E2H controls interface already fitted; these characteristics make these models suitable for the MASTER function only in microzone systems (Systems comprising just one zone, without VMF-E5 centralised control);
- (2) All fancoil models for suspended and/or channel installation, cannot use the VMF-E2 or VMF-E2H command interface (for master units);
- (3) The suspended versions with MA or MU accessories may be equalised to their FCX AS and FCX U versions;
- (4) To be compatible with the VMF-E5 centralised control, a fancoil should be set to zone MASTER, therefore it must be equipped with a thermostat for VMF-E1 serial communication and combined with a user interface (VMF-E2/E2H or VMF-E4);
- (5) The heat pumps with integrated storage are not suitable for producing domestic hot water;
- (6) To know the maximum temperature of the hot water production (system and/or domestic), refer to the unit's operating limits in the related technical manual;
- (7) All types of systems that with VMF-E5 centralised control are compatible with the VMF-CRP accessory modules (maximum 4); each module can function as a pump control (4 for each accessory module) or boiler and heat recovery control (with boiler ON/OFF management and management of 3 recovery units plus 3 VMF-VOC accessories);
- (8) The compatibility of the VMF-VOC sensor depends on the presence of the VMF-CRP accessory module with heat recovery unit control function;

Example of system components

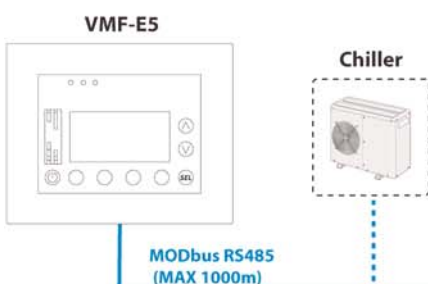
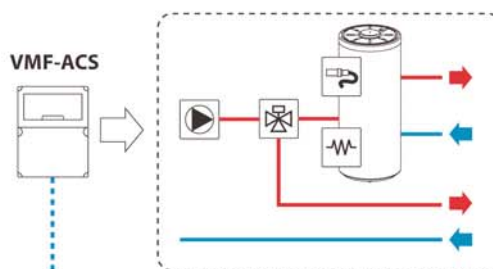
- A maximum number of 4 VMF-CRP modules can be installed and each one can perform several tasks based on the type of setting:
 - Control 4 pumps
 - Control 3 heat recovery units and 3 VOC sensors (in this case the correct number of VMF-VOC accessories must be purchased)
 - Control a boiler
- The only requirement to install VMF-CRP modules is the presence of a VMF-E5 centralised control

Selection 4:

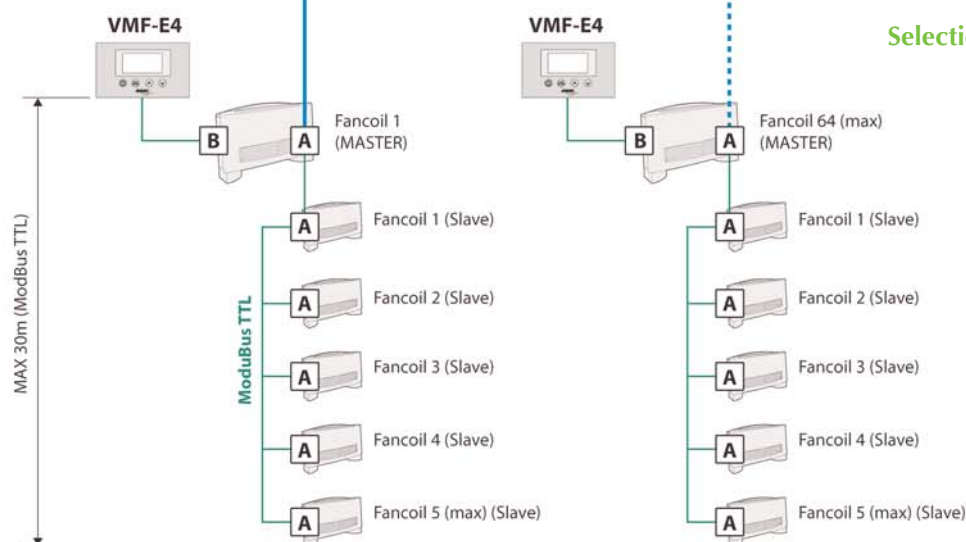


- The VMF-ACS accessory allows to control the different components needed to produce domestic hot water; for detailed information on the types of systems manageable by VMF-ACS, refer to technical documentation of the accessory

Selection 3:



Selection 2:



Selection 1:

A Thermostat for serial connection VMF-E0/E1/E18

B Commands interface for MASTER unit VMF-E2/E2H/E4