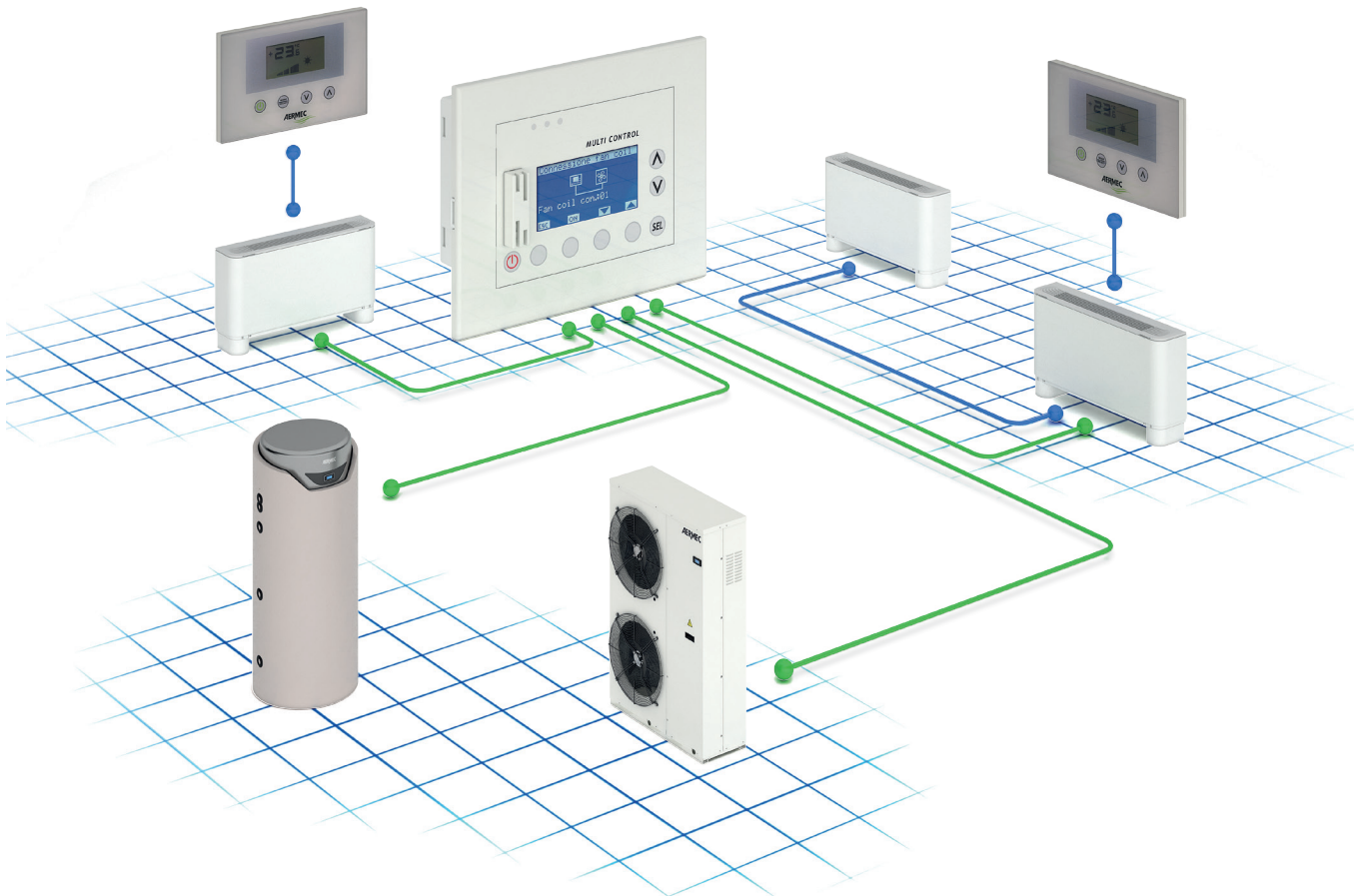


## Variable Multi Flow



### Features

- **VMF:** Variable Multi Flow System  
Hydronic system management and control unit for air conditioning, heating and domestic hot water production.  
The VMF system ensures the complete control of every single component of a hydronic system, both local and centralised, through communication between the various system components, managing the performance without neglecting the end user's request for comfort at any time, but reaching it as efficiently as possible, with consequent energy savings.  
Summing up the advantages of a such an innovative control with the flexibility of a hydronic system, you achieve a more effective and efficient alternative to variable refrigerant volume (VRF) systems.  
The VMF system is extremely flexible, to the extent that it offers various control and management steps, also expandable at different times:
  - 1) Control of a single fan coil
  - 2) Control of a micro-zone (one MASTER fan coil and up to 5 SLAVE fan coils).
  - 3) Control of a network consisting of several independent zones (one MASTER fan coil and up to 5 SLAVE fan coils per each zone)
  - 4) Control of a fan coil network, plus heat pump management (if compatible with the VMF system)
  - 5) Fan coil network and heat pump control as well as domestic hot water system management (VMF-ACS or SAF)
  - 6) Control of a fan coil network, heat pump, domestic hot water production and additional pumps (up to 12 using 3 additional VMF-CRP modules).
  - 7) Control of a fan coil network, heat pump, domestic hot water production, additional pumps and management of up to 3 heat recovery units (with the possibility to manage up to 3 VMF-VOC probes) or a boiler.
- The VMF system can control and manage, via a VMF-E5N / VMF-E5B panel, up to 64 zones, consisting of a MASTER fan coil and up to 5 SLAVE fan coils connected to each MASTER, for a total of 384 fan coils
- In addition to the centralised control provided by the VMF-E5N / VMF-E5B panel, the MASTER fan coils must be equipped with a local control interface; this interface can be mounted on the fan coil (VMF-E2 / VMF-E2D / VMF-E2H) or on a wall panel (VMF-E4 / VMF-E4D)
- Via panel VMF-E5N / VMF-E5B it is possible to control several functions such as:
  - Identify the various zones by giving each of them a name that characterises it
  - Control and set the ON-OFF function and the temperature setting of each zone
  - Set and manage the heat pump temperature
  - Schedule time slots
- Simple installation of the fan coil network thanks to the SELF-DETECTION function of the MASTER fan coils

## System components

### CONTROL PANELS

- **VMF-E2:** is a machine-mounted user interface to be combined with VMF-E0X, VMF-E1X and VM-E18X accessories. VMF-E2 has 2 selector switches, one for temperature and the other for speed control.
- **VMF-E2D:** is the machine user interface (just like the previous one) to be combined with VMF-E0X and VMF-E1X accessories, dedicated to the DUALJET range
- **VMF-E2H:** is a machine-mounted user interface (just like the previous one) to be combined with VMF-E0X and VMF-E1X accessories, dedicated to the HL range
- **VMF-E4:** is a wall-mounted user interface to be combined with VMF-E0X, VMF-E1X and VMF-E18X accessories for drawer grids. Featuring an innovative, extremely slim and cost-effective design, it allows running functions via a capacitive touchscreen keyboard with LCD display. You can choose to adjust the environment with a panel-mounted sensor probe (standard), or with the fan coil probe to which it is connected, or through mediated reading. It also enables the activation of an air purifier (Plasmacluster / UV lamp) and a heating element.  
Light grey front panel PANTONE COOL GRAY 1C
- **VMF-E4D:** is a variant of the previous code but with a light grey front panel PANTONE 425C (METAL)
- **VMF-E5B:** a white recessed panel with backlit graphic LCD display and capacitive keyboard, it allows the centralised command/control of a complete hydronic system consisting of Fan coils: **up to 64 fan coil zones** consisting of **1 master + up to 5 slaves**; Chiller/heat pump (accessory required for RS 485 interface), pumps: up to 12 configurable zone pumps; boiler: boiler hook-up management for hot water production; heat recovery units: up to 3 hook-ups per programmable recovery units based on timing and/or by measuring air quality with the VMF-VOC accessory; domestic water module: complete management of the domestic hot water production through the control of: diverting valve/pump, integrated heating element, accumulation temperature sensor, anti-legionella circuit system
- **VMF-E5N:** is a variant of the previous code but with black plastic.
- **VMF-VOC :** an accessory for measuring air quality (see related point in VMF-E5B description).

### THERMOSTATS

- **VMF-E0X:** a thermostat accessory to be secured to the side of the fan coil, fitted as standard with an air probe and a water probe, **it controls systems with 2 pipes, 4 pipes, 2 pipes + Plasmacluster, 2 pipes + UV lamps, 2 pipes + Heating element.** Equipped with an external contact to be used as a remote ON-OFF at low voltage. By means of 2-wire serial communication, this thermostat allows for the creation of a single fan coil area (1 master + maximum 5 slaves). **Compared to the previous model, thanks to a different dip switch configuration, it allows implementing new features:**

- **In systems with two pipes and a heating element, the latter can be activated as a complete replacement, allowing you to warm the environment exclusively with this accessory.**
- **Dualjet features are available in standard software and can be set via dip switch. The thermostat is protected by a fuse**
- **VMF-E1X:** like VMF-E0X plus:
  - Economy contact/presence sensor
  - Additional water sensor for overall control in 4-pipe systems (with VMF-SW1 accessory).
  - Serial RS485, ModBus RTU protocol, for centralised control.
  - Possibility of inserting expansion boards for future developments. The VMF-E1X accessory must be therefore used in masters in the presence of multiple zones, or for communication with the chiller/heat pump
  - Compatibility with the VMF-IO accessory
  - Compatibility with VMF-LON expansion board
- **VMF-E18X:** the same as VMF-E1X, but for fan coils with inverter motors
- **VMF-IO: Expansion board that expands the availability of Digital Inputs and Outputs, configurable via dip switches,** thus making it possible to control the thermostat via an external BMS without using a local user interface (e.g. VMF-E2 or VMF-E4). **The expansion board can be used to configure the MODBUS addresses** of the single thermostats included in a system, thus avoiding having to interact with the user interface for allocating an address and, most importantly, in order to replicate the address when replacing thermostats.
- **VMF-LON:** Expansion that allows interfacing with a thermostat with BMS systems using the LON protocol.
- **GLL N:** grid for FCL units, equipped with thermostat board for serial communication, with features equivalent to those of the VMF-E1X accessory; (this grid is a MANDATORY accessory for FCL units).
- **GLLI N:** grid for FCLI units, equipped with thermostat board for serial communication, with features equivalent to those of the VMF-E18X accessory; (this grid is a MANDATORY accessory for FCLI units).

### PROBES

- **VMF-SW:VMF-SW:** water probe to be used, if necessary, to replace the one supplied as standard with VMF-E0X, VMF-E1X and VMF-E18X thermostats, for installation upstream of the valve
- **VMF-SW1:** extra water probe to be used for 4-pipe systems with VMF-E1X and VMF-E18X thermostats for overall control in the cold range.

### MODULES

- **VMF-CRP:** accessory module for the control of the boilers, heat recovery units and pumps
- **VMF-SIT3:** Interface boards that allow connecting thermostats VMF-E0X and VMF-E1X to a fan coil with a high-power motor (for selection, see all the thermostat and fan coil documentation).

### ELECTRICAL PANELS FOR DHW (Domestic hot water management for other suppliers' storage tanks)

- **VMF-ACS3KM:** electrical panel for the complete command/control of a hot water storage tank (3-way control valve, integrated single phase 3kW resistor command, anti-legionella function and temperature sensor)
- **VMF-ACS3KTN:** electrical panel for the complete command/control of a hot water storage tank (3-way control valve, integrated three-phase 3kW resistor command, anti-legionella function and temperature sensor)
- **VMF-ACS6KTN:** electrical panel for the complete command/control of a hot water storage tank (3-way control valve, integrated three-phase 6kW resistor command, anti-legionella function and temperature sensor)
- **VMF-ACS8KTN:** electrical panel for the complete command/control of a hot water storage tank (3-way control valve, integrated three-phase 8kW resistor command, anti-legionella function and temperature sensor)

### HEAT STORAGE TANK with integrated domestic hot water management (no need to be combined with a VMF-ACS accessory)

- **SAF:** thermoaccumulator for the instant production of domestic hot water. It integrates as a single unit both an energy storage element and a heat exchange one, in addition to various adjustment functions.

### CONTROL SYSTEMS

- **VMF-Monitoring:** PC software to monitor and control the operation of one or several VMF controlled systems. Through the VMF-485EXP expansion board, the VMF-E5 panel provides the RS485 serial communication port used by the VMF-MONITORING application for controlling the hydronic system. The maximum number of controllable systems, each with VMF-E5 and VMF-485EXP expansion, is 10.
- **AERLINK:** Wifi Gateway with an RS485 serial port that can be installed on all machines or on all controllers having an RS485 serial port themselves. The module is capable of simultaneously activating the AP WIFI (Access point) and WIFI Station functions, the latter making it possible to connect to the home or business LAN.
- **VMF-485EXP:** This accessory, specifically mounted in the VMF-E5 panel, adds an RS485 serial communication port to external supervision (BMS, Aerweb or Aermec supervision systems).

## Thermostat compatibility for serial communication and control interfaces for MASTER units

Models	Versions	Notes	VMF-E0X	VMF-E1X	VMF-E18X	VMF-EZZ	VMF-EZD	VMF-EZH	VMF-E4 / VMF-E4D	GLL N	GLLI N
FCZ	DS		•	•	-	-	-	-	-	-	-
	AS-U-UA		•	•	-	•	-	-	•	-	-
FCZI	D		-	-	•	-	-	-	-	-	-
	AS-U		-	-	•	•	-	-	•	-	-
Omnia HL	S-SM		•	•	-	-	-	•	-	-	-
Omnia UL	S		•	•	-	-	-	-	•	-	-
Omnia ULI	S		-	-	•	-	-	-	•	-	-
FCZ_P	P-PPC-PO		•	•	-	-	-	-	•	-	-
FCZI_P			-	-	•	-	-	-	•	-	-
Omnia UL_P			•	•	-	-	-	-	•	-	-
Omnia ULI_P			-	-	•	-	-	-	•	-	-
VED			•	•	-	-	-	-	•	-	-
VED_I			-	-	•	-	-	-	•	-	-
VES			•	•	-	-	-	-	•	-	-
VES_I			-	-	•	-	-	-	•	-	-
VEC			•	•	-	-	-	-	•	-	-
VEC_I			-	-	•	-	-	-	•	-	-
FCL			-	-	-	-	-	-	•	•	-
FCLI			-	-	-	-	-	-	•	-	•
FCW			•	•	-	-	-	-	•	-	-

## Heat pump compatibility with electric panel or heat storage tank for domestic hot water management

Models	Versions	Notes	VMF-ACS3KM	VMF-ACS3KT	VMF-ACS6KT	VMF-ACS8KT	SAF (4)
ANL	H		•	•	•	•	•
ANLI	H		•	•	•	•	•
ANK	H		•	•	•	•	•
NRK	H		-	-	-	-	-
CL	H		-	-	-	-	-
ANKI	H		•	•	•	•	•
WRL	H		•	•	•	•	•

## Modules and additional probes compatibility

Models	Versions	Notes	VMF-CRP	VMF-VOC	VMF-SIT3
VMF-E5N/ E5D	All	(1) (2)	•	• (2)	
VED	All	(3)			•
RePuro		(1) (2)	•	• (2)	

## Control system compatibility

Models	GLL N	GLLI N	VMF-E1X	VMF-E18X
VMF-E5	•	•	•	•
VMF-IO	•	•	•	•
VMF-LON	•	•	•	•

### Notes:

- (1) All system types including VMF-E5N / VMF-E5B centralised control are compatible with VMF-CRP accessory modules (up to 4); each module can perform the pump control function (4 pumps for each accessory module) or boiler and recovery unit control (with ON/OFF boiler and HRS management and management of 3 recovery units plus 3 VMF-VOC accessories).
- (2) The compatibility of the VMF-VOC probe is only related to the presence of the VMF-CRP accessory module in the system with a recovery unit control function.
- (3) Mandatory accessory for combining VED units with VMF-E0X or VMF-E1X thermostats. Use a VMF-SIT3 for each unit.
- (4) The SAF heat storage tank manages DHW independently. So, if included, integrating the VMF-ACS electrical panel into the VMF system is required.

For the dimensions of the accessories, please refer to the dedicated documentation.

Example of system components

