

VMF

Multi Flow Variable Systems

Range of components for the management of air conditioning, heating and domestic hot water production systems



DESCRIPTION

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 can manage different areas, each of which has one of the following types of terminals:

- Fancoil;
- Radiant only (heating only);
- Fancoil + Radiant;
- MZC Zone;
- MZC Zone + Radiant;

FEATURES

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 zone;
2. Control of a Master/Slave zone (one MASTER fancoil and up to 5 SLAVE fancoils);
3. Control of a network consisting of several independent zones (one MASTER fancoil and up to 5 SLAVE fancoils for each zone, or another of the types of terminals provided);
4. Control of several zones, plus heat pump management (if compatible with the VMF system);
5. Control of several zones, of heat pumps and management of the domestic hot water;
6. Control of several zones, heat pumps, domestic hot water production and additional pumps (up to a maximum of 12 using 3 additional VMF-CRP modules);

7. Control of several zones, heat pumps, 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) and/or a boiler;

CONTROL PANELS

The VMF system can pilot and manage a different number of areas, depending on the panel used: VMF-E6 / E5: maximum 64 zones (so a maximum of 64 Master Fancoil, each of which will pilot 5 Slave, for a total of 384 Fancoil); VMF-RCC: maximum 10 zones (then a maximum of 10 Master Fancoil, each of which will pilot 5 Slave, for a total of 50 Fancoil).

In addition to the centralised control provided by the VMF-E6/E5/RCC panel, the MASTER system terminal must be equipped with a local control interface; this interface can be mounted on board the terminal itself or on a wall panel.

Via panel VMF-E6/E5/RCC it is possible to control several functions:

- 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 fancoil network thanks to the SELF-DETECTION function of the MASTER fancoils

SYSTEM COMPONENTS

Control interfaces

VMF-E2Z: as VMF-E2 but for FCZ fan coils

VMF-E2D: is the machine user interface (just like the previous one) to be combined with VMF-E19 accessory, dedicated to the DUALJET range

VMF-E2H: is the machine user interface (just like the previous one) to be combined with VMF-E19 accessory, dedicated to the HL range

VMF-IR: is the user interface, only available in combination with the GLF M and GLFI M grid, supplied as infrared remote control

VMF-E3: is the simplified user interface, to be installed on the wall, can be combined with VMF-E19 and VMF-E19I accessories, with the GLF_N/M and GLL_N grids and with the VMF-E0X thermostats; it can also be controlled through VMF-IR command

VMF-E4X: is a wall-mounted user interface to be combined with VMF-E19 and VMF-E19I 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 (Cold Plasma / UV Lamp) and a heating element. Light grey front panel PANTONE COOL GRAY 1C

VMF-E4DX: is a variant of the previous code but with a light grey front panel PANTONE 425C (METAL)

VMF-E6: a white recessed panel with 4.3 inch touchscreen display, it allows the centralised command/control of a complete hydronic/aeraulic system consisting of: fan coils (up to 64 fan coil zones consisting of 1 master + up to 5 slaves), heat pumps (up to 4), MZC accessories (up to 5), radiant panels management (using a suitable number of VMF-REB accessories, up to 64 radiant panels associated with the fancoil zones and up to 32 radiant panels associated with the zones served by MZC), complete management of the domestic hot water production, control of the RAS heating element and/or boiler, digital I/O management, control of recovery units and VOC probes (up to 4)

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 + Cold Plasma, 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-E19: 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-E19 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-E19I: the same as VMF-E19, 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-E4X). 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 / GLF N: grid for FCL units, equipped with thermostat board for serial communication, with features equivalent to those of the VMF-E19 accessory; (this grid is a MANDATORY accessory for FCL units)

GLLI/GLFI N: grid for FCL units, equipped with thermostat board for serial communication, with features equivalent to those of the VMF-E19I accessory; (this grid is a MANDATORY accessory for FCL units)

GLF M: grid for FCL units, equipped with thermostat board for serial communication, with features equivalent to those of the VMF-E19 accessory; (this grid is a MANDATORY accessory for FCL units), furthermore, this grid is supplied with IR receiver (so are compatible with the VMF-IR accessory)

GLFI M: grid for FCL units, equipped with thermostat board for serial communication, with features equivalent to those of the VMF-E19I accessory; (this grid is a MANDATORY accessory for FCL units), furthermore, this grid is supplied with IR receiver (so are compatible with the VMF-IR accessory)

Probes

VMF-SW: water probe to be used, if necessary, to replace the one supplied as standard with VMF-E0X, VMF-E19 and VMF-E19I thermostats, for installation upstream of the valve

VMF-SW1: extra water probe to be used for 4-pipe systems with VMF-E19 and VMF-E19I thermostats for overall control in the cold range

Modules

VMF-CRP: accessory module for the control of the boilers, heat recovery units and pumps (if associated with VMF-E5/RCC panels); if associated with the VMF-E6 panel the VMF-CRP modules will be able to manage recovery units, RAS, boiler, domestic hot water management, I/O control, pumps

VMF-SIT3: Interface boards that allow connecting thermostats VMF-E0X to a fan coil with a high-power motor (for selection, see all the thermostat and fan coil documentation); if a VMF-E19 thermostat is used, this accessory will be replaced by the normal SIT3s

VMF-REB: only available for VMF-E6, manages the heads of the radiant panels (each module can manage up to 8), one pump and up to 3 thermostats through digital input

VMF-REB 1: only available for VMF-RCC, manages the heads of 10 radiant panels associated with fancoil and up to 10 thermostats through digital input

VMF-REB 2: only available for VMF-RCC, manages the heads of 10 radiant panels associated with MZC and up to 10 thermostats through digital input

VMF-REB 3: only available for VMF-RCC, manages the heads of 8 radiant panels associated with MZC and up to 10 thermostats through digital input

VMF-485LINK: serial interface for VMF communication protocol

IC-2P: connection cable required to connect the outdoor HMI units to the VMF-485LINK accessory

Electrical panels for DHW (Domestic hot water management for other suppliers' storage tanks, not available for VMF-E6)

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: heat storage tank 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 (not available for VMF-E6)

Control systems

AERCONNECT: web server that allows the supervision of the VMF-E6 system locally and remotely (by appropriately configuring the DNS service provided with the purchase of the accessory) through web pages; allows simultaneous access for up to 8 users

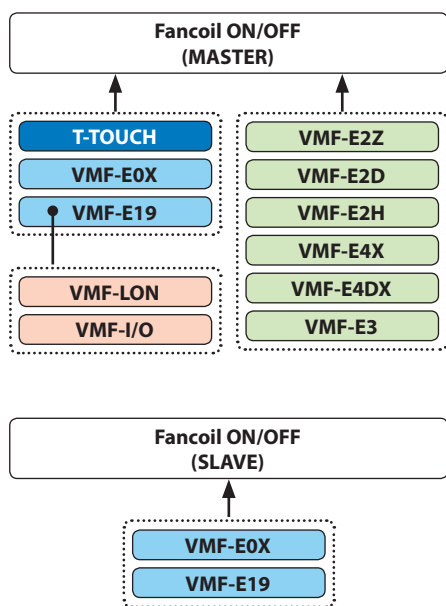
VMF-Monitoring: PC software to monitor and control the operation of one or several VMF controlled systems. Through the VMF-E5/RCC expansion

board, the VMF-485EXP 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 (not available for VMF-E6)

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 (not available for VMF-E6) (AERAPP available only on android systems)

VMF-485EXP: This accessory, specifically mounted in the VMF-E5/RCC panel, adds an RS485 serial communication port to external supervision (BMS, Aerweb or Aermec supervision systems) not available for VMF-E6

COMPATIBILITY OF VMF COMPONENTS WITH ON/OFF FAN COILS

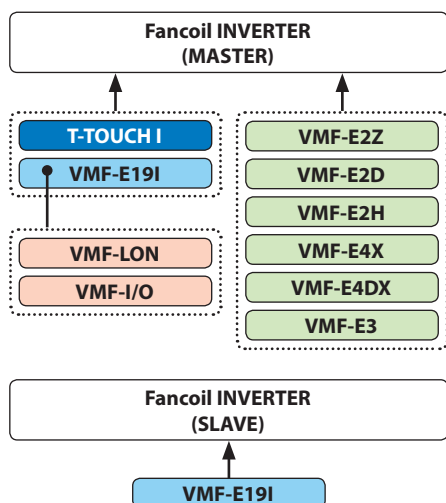


Notes:

- Each fan coil (Master or Slave) may have just one thermostat board, selected from those that are compatible
- The E19 thermostat board can manage just one expansion board, selected from those available
- Each Master fan coil must have just ONE command interface, selected from those that are compatible:

Command interfaces	Compatible ranges or models
VMF-E2Z	FCZ (AS-AF-U-UA-UF) FCZ D (DS) FCZ H
VMF-E2D	Omnia UL (S)
VMF-E2H	Omnia HL (S-SM)
VMF-E4X (E4DX)	FCZ (AS-AF-U-UA-UF) FCZ D (DS) FCZ H Omnia UL (S) Omnia radiant VEC FCW
T-TOUCH	FCZ (AS-AF-U-UA-UF-DS) FCZ D (DS) FCZ H

COMPATIBILITY OF VMF COMPONENTS WITH INVERTER FAN COILS



Notes:

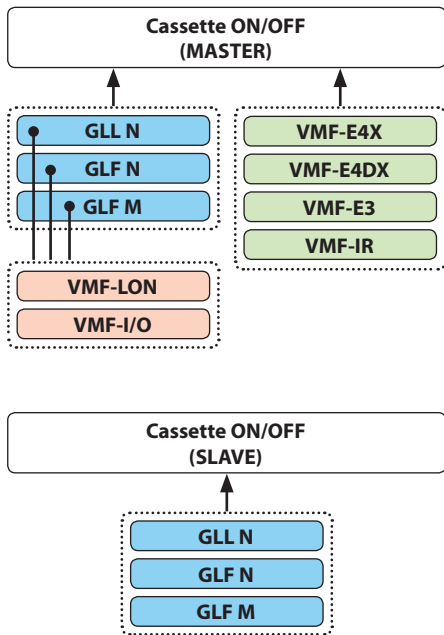
- Each fan coil (Master or Slave) may have just one thermostat board, selected from those that are compatible
- The E19I thermostat board can manage just one expansion board, selected from those available
- Each Master fan coil must have just ONE command interface, selected from those that are compatible:

Command interfaces	Compatible ranges or models
VMF-E2Z	FCZI (AS-AF-U-UF) FCZI H
VMF-E2D	Omnia ULI (S)
VMF-E4X (E4DX)	FCZI (AS-AF-U-UF) FCZI D (DS) Omnia ULI (S) Omnia radiant plus VEC I FCWI
T-TOUCH I	FCZI (AS-AF-U-UF)

Type of component:

- Thermostat boards
- Thermostat board + Command interface
- Expansion board
- Command interfaces

COMPATIBILITY OF VMF COMPONENTS WITH ON/OFF CASSETTES

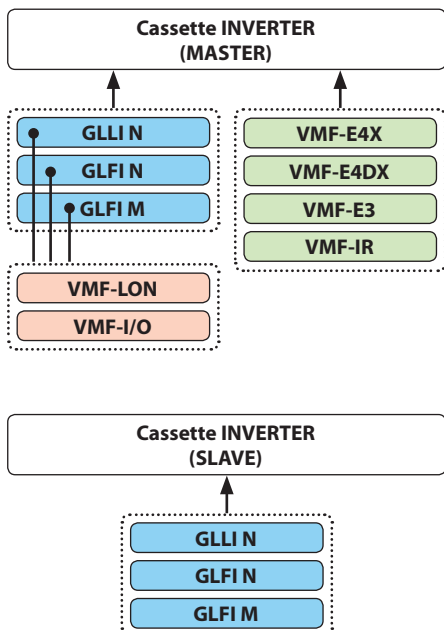


Notes:

- Each Cassette (Master or Slave) must have a delivery recovery grille (fitted with a VMF thermostat board) selected from those that are compatible
- The delivery recovery grilles can manage just one expansion board, selected from those available
- Each Master Cassette must have just ONE command interface, selected from those that are compatible:

Command interfaces	Compatible ranges or models
VMF-E4X (E4DX)	FCL
VMF-IR	FCL

COMPATIBILITY OF VMF COMPONENTS WITH INVERTER CASSETTES



Notes:

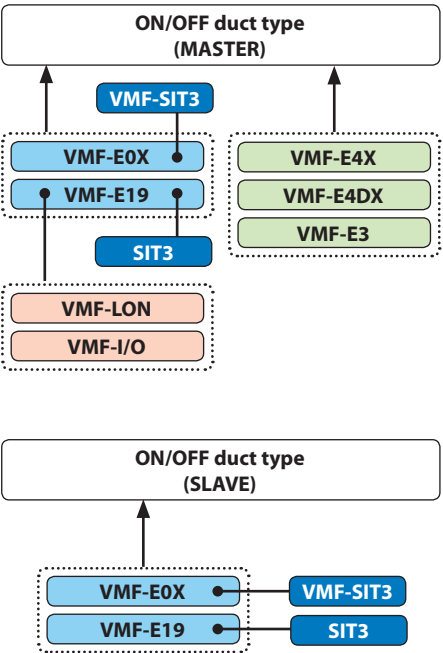
- Each Cassette (Master or Slave) must have a delivery recovery grille (fitted with a VMF thermostat board) selected from those that are compatible
- The delivery recovery grilles can manage just one expansion board, selected from those available
- Each Master Cassette must have just ONE command interface, selected from those that are compatible:

Command interfaces	Compatible ranges or models
VMF-E4X (E4DX)	FCL
VMF-IR	FCL

Type of component:

- Delivery suction grille with thermostat board
- Expansion board
- Command interfaces

COMPATIBILITY OF VMF COMPONENTS WITH ON/OFF DUCT TYPE FAN COILS

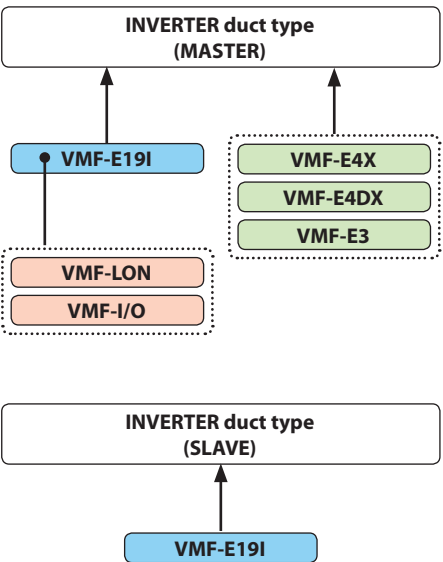


Notes:

- Each duct type fan coil (Master or Slave) may have just one thermostat board, selected from those that are compatible
- The E19 thermostat board can manage just one expansion board, selected from those available
- Depending on the size of the duct type fan coil, a motor control board (VMF-SIT3 or SIT-3) may be needed
- Each Master fan coil must have just ONE command interface, selected from those that are compatible:

Command interfaces	Compatible ranges or models
VMF-E4X (E4DX)	VED
	VES
	FCZ P0
	FCY
	Omnia UL (P - PAF)
	FCZ H (P-P0)

COMPATIBILITY OF VMF COMPONENTS WITH INVERTER DUCT TYPE FAN COILS



Notes:

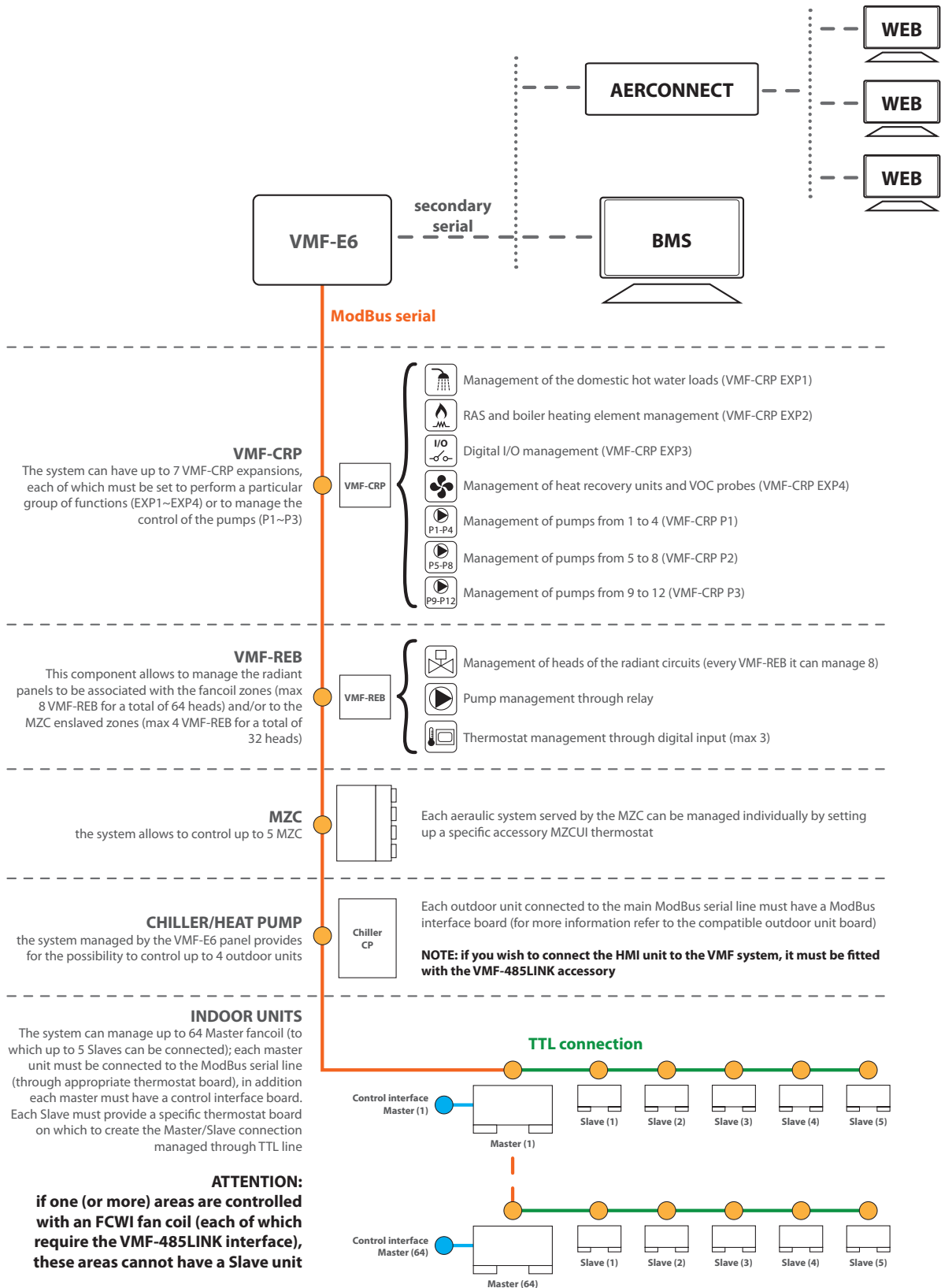
- Each duct type fan coil (Master or Slave) may have just one thermostat board, selected from those that are compatible
- The E19I thermostat board can manage just one expansion board, selected from those available
- Depending on the size of the duct type fan coil, a motor control board (VMF-SIT3 or SIT-3) may be needed
- Each Master fan coil must have just ONE command interface, selected from those that are compatible:

Command interfaces	Compatible ranges or models
VMF-E4X (E4DX)	VED I
	VES I
	FCZI P
	FCY I
	Omnia UL (P - PAF)
	FCZI H (P-P0)

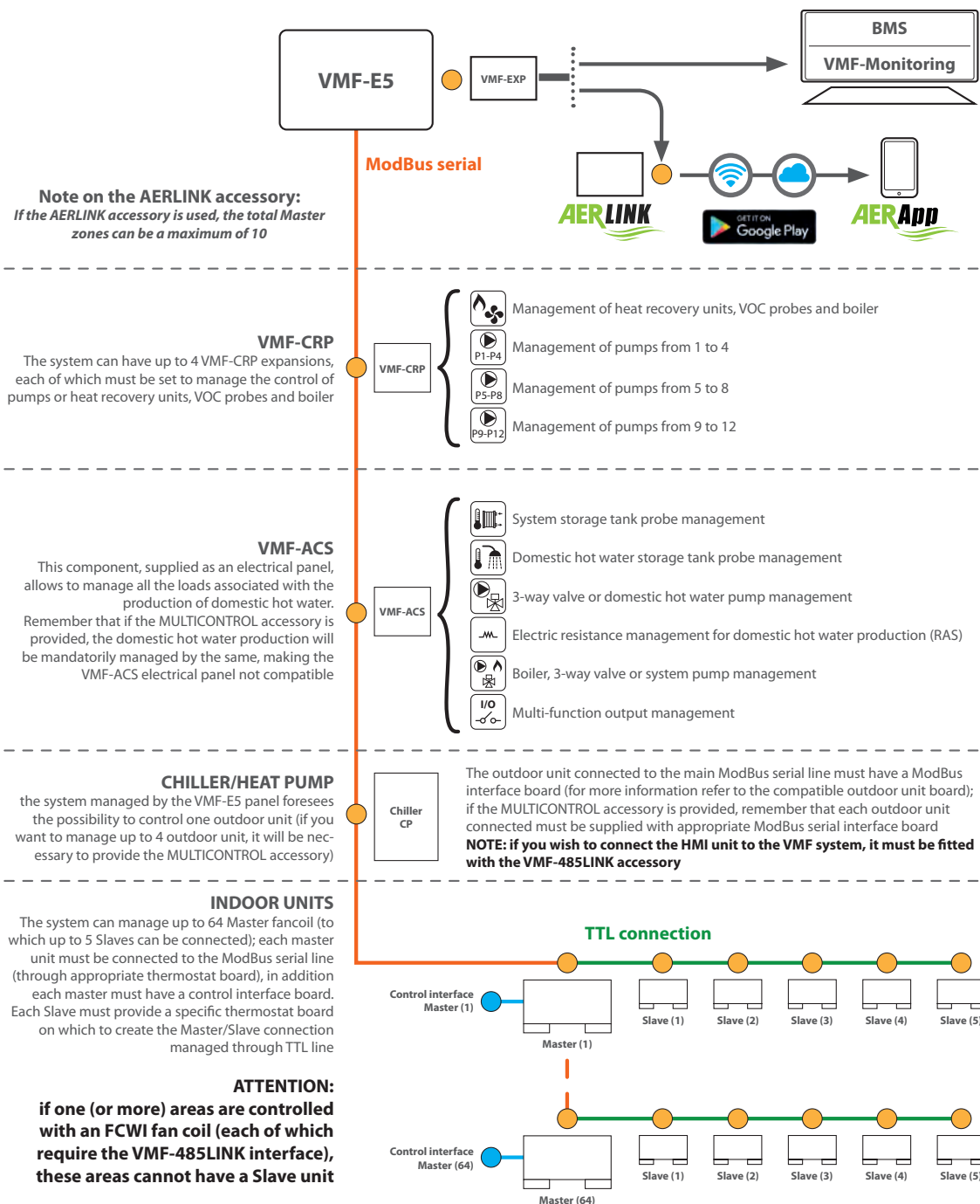
Type of component:

- Thermostat boards
- Motor control board
- Expansion board
- Command interfaces

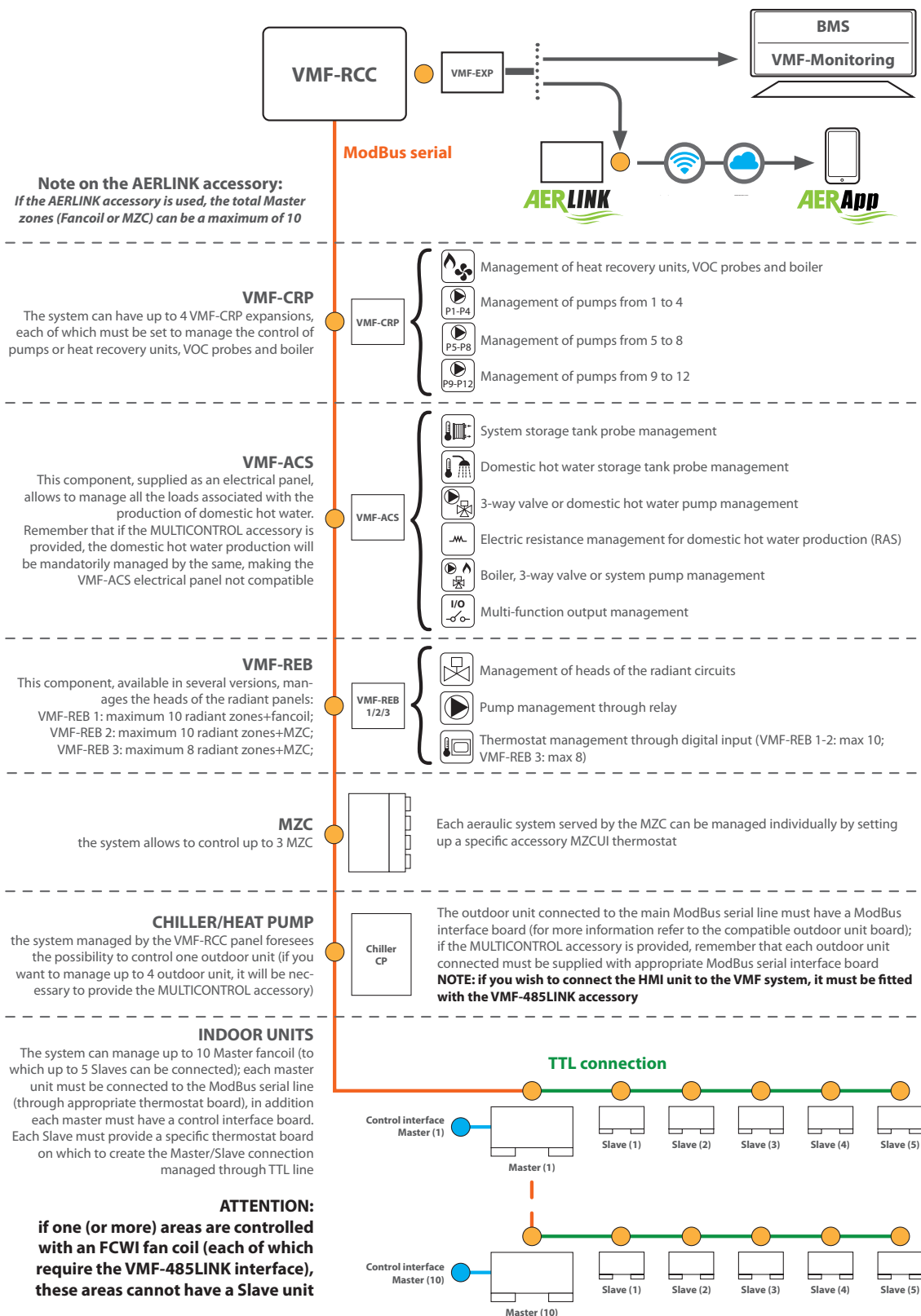
EXAMPLE OF SYSTEM COMPONENTS WITH VMF-E6



EXAMPLE OF SYSTEM COMPONENTS WITH VMF-E5



EXAMPLE OF SYSTEM COMPONENTS WITH VMF-RCC



Aermec reserves the right to make any modifications deemed necessary.
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