















VDCA D

Fan coil unit for ducted installations



- For district cooling applications
- Horizontal and vertical installation
- · Built-in sanitization system
- Large range of available static pressure





DESCRIPTION

The ducted range VDCA_D has been designed for air conditioning in environments where the installation of high-performance units with a wide range of useful head and compact dimensions is required.

Thanks to the availability of various versions and configurations, it's easy to choose the optimal solution for any requirement.

FEATURES

Ventilation group

Centrifugal fans in anti-static plastic material with aerofoil profile designed to achieve high airflows and pressures whilst at the same time producing low noise.

Their characteristics permit energy savings compared to conventional fans. They are statically and dynamically balanced and directly coupled to the motor shaft.

The electric motor is single-phase multi-speed (3 selectable), mounted on anti-vibration supports and with a permanently inserted capacitor.

Fan housing in plastic material removable for easy and effective cleaning.

Finned pack heat exchanger

The high-efficiency heat exchanger is designed to operate with a high temperature difference, typical of District Cooling solutions.

Controls and Accessoires

To facilitate and streamline installation operations on-site, we have made it possible through the configurator, and therefore at the ordering stage, to receive the unit with certain accessories already pre-installed in the factory.

With copper pipes and aluminum fins, the main heat exchanger has female gas hydraulic connections and is equipped with air vents.

The hydraulic connections can be inverted during installation.

Air filter

All fan coils come equipped with an easily removable and cleanable air filter. Various types of air filters are available through the configurator to meet different needs.

Control

The unit's electrical box is reversible, with the option of mounting it also on the same side of the water connections.

The standard equipment includes a single 10-pin control board as an interface for the electrical connections, the preparation for the VMF series thermostat fastener and the included supply of a DIN guide for the installation of a third-party control.

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GUIDE TO SELECTING THE POSSIBLE CONFIGURATIONS

Field	Description
1,2,3,4	VDCA
5	Size
	1,2,3,5,7
6	main heat exchanger
0	Standard
7	Secondary heat exchanger
0	No present
1	Present
8	Configuration
D	High head
P	Low head
9	Installation
U	Universal
V	Only vertical
10	Position of connections
D	Water connections and electrical panel on the right
G	Water connections and electrical panel on the left
L	Hydraulic connections on the left and electric connections on the opposite side
R	Hydraulic connections on the right and electric connections on the opposite side
11	Use
V	With VMF system
W	Without control board
12	Device / accessoires
Н	Electric heater
1	loniser
Р	Photocatalytic lamp
W	Without devices
13	Filter
В	Basic filter
M	Increased filter
P	Special for units with photocatalytic device
V	With washable mesh filter

ACCESSORIES

Control panels

AER503IR: Flush-mounting thermostat with backlit display, capacitive keypad and infrared receiver, for controlling both brushless fan coils and those with an asynchronous motor. In 2-pipe systems, the thermostat can control standard fan coils or those equipped with an electric heater, with air purifying devices (Cold Plasma and germicidal lamp), with radiant plate or with FCZ-D twin delivery (Dualjet). In addition, it can control systems with radiant panels or mixed (fan coil and radiant floor) systems. Being equipped with an infrared receiver, it can, in turn, be controlled by the VMF-IR remote control. **PRO503:** Wall box for AER503IR and VMF-E4 thermostats.

SA5: air probe kit (L = 15 m) with probe-locking cable grommet.

SA503: Wall-mountable ambient sensor, compatible with AER503IR.

SIT3: Thermostat Interface Card allowing the creation of a network of fan coils (max. 10) commanded by a central control panel (selector or thermostat). Commands the 3 fan speeds and must be installed on each fan coil within the network; receives the commands from the selector or the SIT5 card. In case you decide to install Aermec thermostats and current absorbed by the unit exceeds 0.7 A, you're obliged to include SIT3 accessory.

SIT5: Thermostat Interface Card allowing the creation of a network of fan coils (max. 10) commanded by a central control panel. Commands the 3 fan speeds and up to 2 valves (four pipe systems); sends the thermostat's commands to the fan coil network.

SW3: Water probe (L = 2.5 m) for controlling the minimum and maximum and to allow automatic seasonal switching for electronic thermostats fitted with water side changeover.

SW5: Water probe kir (L=15m) with probe-holder connection point, fixing clip and probe-holder from heat exchanger.

TX: Wall-mounting thermostat for controlling either brushless fan coils or those with asynchronous motors for 2/4 pipe. In 2-pipe systems, the thermostat can control standard fan coils or those equipped with an electric heater, with air purifying devices, radiant plate or FCZ-D twin delivery (Dualjet).

VMF-RIC: Thermostat interface for fan coil units

VMF Components

DI24: Flush-mounted interface (503 box) with 2.4" touch screen display to be combined with VMF-E19, VMF-E19I accessories. It allows you to regulate

and monitor the temperature inside rooms precisely and on time; in addition to accessing and interacting with your system's operating information, parameters and alarms, it allows you to set time slots. Thanks to its Wi-Fi connection, Dl24 in combination with the AerSuite APP (available for Android and iOS) can also be remotely controlled. All programming and most functions are done in a simple and intuitive way using the APP. It is supplied with a graphite grey plate; however, to allow the interface to be customised so that it fits in perfectly with the style of any home, Dl24 is compatible with plates of the major brands available on the market, for more information please refer to our documentation.

VMF-E19: Thermostat to be secured to the side of the fan coil, fitted as standard with an air probe and a water probe.

VMF-E3: Wall mounted user interface, to be combined with accessories VMF-E19, VMF-E19I, with grids GLF_N/M and GLL_N, can be controlled with VMF-IR control

VMF-E4DX: Wall-mounted user interface. Grey front panel PANTONE 425C (METAL).

VMF-E4X: Wall-mounted user interface. Light grey front panel PANTONE COOL GRAY 1C.

VMF-IO: Manage the unit exclusively from a centralized VMF control panel without area control panel.

VMF-IR: User interface compatible with the AER503IR, VMF-E3 thermostat and with all the grids of cassettes equipped with the infrared receiver compatible with the VMF system.

VMF-SW: Water probe (L=2.5m) used if required in place of the standard unit supplied with the VMF-E19 and VMF-E19I thermostats for mounting it upstream of the valve.

VMF-SW1: Additional water probe (L=2.5m) to be used if required for 4-pipe systems with the VMF-E19 and VMF-E19I thermostats for maximum control in the cold range

VMHI: The VMHI panel can be used as a user interface for VMF-E19/E19I thermostats, GLFxN/M or GLLxN grids, or as an interface for the MZC system. What determines the function to be performed by the user interface is determined by its correct parametrisation and by following the electrical connections between interface and thermostat or interface and plenum.

Valves and additional water coil

BV: Hot water heat exchanger with 1 row.

VCF_X: 3-way valve kit for fan coils with single heat exchanger and hydraulic connections on the left side, for installation in 4-pipe systems. The kit is composed by 2 insulated 3-way valves and 4 connections complete with electrothermal actuators, insulating shells for the valves and with hydraulic fittings. 230V power supply. Hydraulic connections: Valve body Ø G 3/4" Male; Valve side connection pipes Ø G 3/4" Female; Unit side connection pipes Ø G 3/4" Male.

VCZ: 3-way motorised valve kit for the main coil. The kit is made up of a valve with its insulating shell, actuator and relative hydraulic fittings. It can be installed on fan coils with both right and left connections. If the valve is combined with the BCZ5 or BCZ6 condensate drain pan, to ensure a better housing it is possible to remove the insulating shell.

VCZD: 2-way motorised valve kit. The kit consists of a valve, an actuator and the relative pipe fittings. It can be installed on fan coils with both right and left connections.

VDP: Combined adjustment and balancing valve, for 2 and 4 pipe systems to be installed outside the unit. It is comprised of a valve body without nipples with Ø 3/4'M water connections, a 230 V powered actuator with On-Off function and a 5 m power supply cable. The valve is supplied without connections or hydraulic components.

VCT102: These are 3-way ball valves made of bronze, with female/female connections \emptyset 1/2". That can be servo-activated via servo commands. The valves do not have fittings and pipes for water connections, which are the installer's responsibility.

VCT103: These are 3-way ball valves made of bronze, with female/female connections $\,\emptyset\,$ 1/2". That can be servo-activated via servo commands. The valves do not have fittings and pipes for water connections, which are the installer's responsibility.

VCTK: The VCT series valves can be combined with the actuators On-Off 230V. The actuator must be selected according to the type of system/adjustment provided.

VCTKM: The VCT series valves can be combined with the actuators 24V modulating. The actuator must be selected according to the type of system/ $\,$ adjustment provided.

Installation accessories

AMP: Wall mounting kit

BCZ: Condensate drip. If the valve is paired with the BCZ5 or BCZ6 condensate drip tray, the insulating shell can be removed to ensure better housing. DSC: Condensate drainage device.

Accessories for intake

RDA_V: Straight intake connection with rectangular flange.

RDA_C: Straight intake connection with circular flanges.

RPA_V: Suction plenum with rectangular flange; both sides have a circular push-out Ø 150mm that can be removed.

PA_V: Suction plenum with circular plastic flanges; both sides have a circular push-out Ø 150mm that can be removed.

MZC: Plenum with motorised dampers.

MZCACV: Electrical system with relay interface board. Mandatory accessory on units where motor absorption exceeds 0.7 A. The relay interface board is supplied with a 2A fuse to protect the fan coil. If the fan coil absorbs more than 2A and up to 4A, the fuse inside must be replaced with a 4A fuse sup-

MZCAC: Mandatory electrical system for connecting the MZC plenum with a fan coil fitted with an asynchronous motor.

KFV: Circular flanges kit for plenum.

GA: Intake grid with fixed louvers

GAF: Intake grid with filter and fixed louvers

GM: Flow grid with adjustable louvers.

Delivery accessories

PM_V: Internally insulated delivery plenum with circular flanges; both sides have a circular push-out Ø 150mm that can be removed.

RPM_V: Internally insulated delivery plenum with rectangular flange; both sides have a circular push-out Ø 150mm that can be removed.

RDM_V: Straight delivery coupling in galvanised sheet metal.

RDM_C: Straight discharge internally insulated, with circular flanges.

ACCESSORIES COMPATIBILITY

Control panels and dedicated accessories

Accessory	VDCB100D	VDCB200D	VDCB300D	VDCB500D	VDCB700D
AER503IR (1)	•	•	•	•	•
F3VU	•	•	•	•	•
PR0503	•	•	•	•	•
SA5 (2)	•	•	•	•	•
SA503 (3)	•	•	•	•	•
SW3 (2)	•	•	•	•	•
SW5 (2)	•	•	•	•	•
TX (4)	•	•	•	•	
VMF-RIC	•	•		•	•

⁽¹⁾ Wall-mount installation.

VMF system

VMF system

Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
DI24	•	•	•	•	•
VMF-E19 (1)	•	•	•	•	•
VMF-E3	•	•	•	•	•
VMF-E4DX	•	•	•	•	•
VMF-E4X	•	•	•	•	•
VMF-I0	•	•	•	•	•
VMF-IR	•	•	•	•	•
VMF-SW	•	•	•	•	•
VMF-SW1	•	•	•	•	•
VMHI	•	•	•		•

(1) Also the accessory VMF-SIT3V is mandatory if the unit exceeds 0.7 Amperes.

(Heating only) additional heat exchanger

Accessory	VDCA100D	VDCA200D	VDCA300D
BV130 (1)	•		
BV162 (1)			•
BV230 (1)		•	

(1) Not available for sizes with oversized main coil.

⁽²⁾ Probe for AER503IR-TX thermostats, if fitted.(3) Thermostat probe for AER503IR if available.

⁽⁴⁾ Wall-mounting. If the unit intake exceeds 0.7A, or several units need to be managed with a single thermostat, board SIT3 and/or SIT5 is required.

Water valves

Valve Kit for 4 pipe systems with main coil

Accessory	VDCA100D	VDCA200D	VDCA300D
VCF3X4L	•	•	•
VCF3X4R	•	•	•

3 way valve kit

	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
3 way valve kit					
Main heat exchanger	VCZ43 / VCZ4324	VCZ43 / VCZ4324	VCZ43 / VCZ4324	VCF45CS	VCF45CS
Secondary heat exchanger for					
four pipes	-	-	-	-	-
Additional coil "BV"	VCF45 / VCF4524	VCF45 / VCF4524	VCF45 / VCF4524	-	-

 $VCZ43-VCF45-VCF45H-VCF47H\ A limentazione\ 230V-VCZ4324-VCF4524\ Power\ supply\ 24V-Hydraulic\ connection\ \emptyset\ 3/4"$

2 way valve kit

	VDCA100D	VDCA200D	VDCA300D
2 way valve kit			
Main heat exchanger	VCZD3 / VCZD324	VCZD3 / VCZD324	VCZD3 / VCZD324
Secondary heat exchanger for			
four pipes	-	-	-
Additional coil "BV"	VCFD4/VCFD424	VCFD4/VCFD424	VCFD4 / VCFD424

VCZD3 - VCFD4 Power supply 230V - VCZD324 - VCFD424 Power supply 24V

- Hydraulic connection Ø 3/4"

Combined adjustment and balancing valve cold side

Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
VDP15	•	•	•	•	•
VDP15HF (1)	•	•	•	•	•
VDP15LF		•	•		
VDP20HF				•	•

(1) The compatibility of the valves with the unit must be checked using the project capacity. Select the appropriate valve based on the project water flow rate.

2-way globe valves actuator excluded

, 5		
Accessory	VDCA500D	VDCA700D
VCT103	•	•
Accessory	VDCA500D	VDCA700D
VCT102	•	•
Accessory	VDCA500D	VDCA700D
VCTK	•	•
Accessory	VDCA500D	VDCA700D
VCTKM	•	•

Installation accessories

Installation accessories

Accessory	VDCA100D	VDCA200D	VDCA300D
AMP	•	•	•

Condensate drip

Accessory	VDCA100D	VDCA200D	VDCA300D
BCZ4 (1)	•	•	•
BCZ6 (2)	•	•	•

(1) For vertical installation.(2) For horizontal installation.

<u> </u>			
Accessory	VDCA100D	VDCA200D	VDCA300D
RC9 (1)	•		•

(1) For horizontal installation.

Accessory	VDCA500D	VDCA700D
BCV45	•	
BCV67		•

Condensate recirculation device

Accessory	VDCA100D	VDCA200D	VDCA300D		
DSCZ4 (1)	•	•			

⁽¹⁾ DSCZ4 due to space problems inside the unit, the VCZ1-2-3-4 X4L/R valves cannot be mounted together with the amp/AMPZ accessories, with all the condensate collection trays. With the VMF-E19/E19I thermostats, please contact the head office.

Accessories for intake

Accessory	rectangular flanges VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
RDA100V	•				.5
RDA200V	·	•			
RDA300V			•		
RDA450V			<u>. </u>	•	
RDA670V				.	•
					•
	rnally insulated, with circula VDCA100D	ir flanges	VDCA200D		VDCA300D
Accessory			VDCAZOOD		VDCA300D
RDAC100V RDAC200V	•				
			•		
RDAC300V					•
	rectangular flanges	VDCA200D	VDCA300D	VDCATOOD	VDCA700D
Accessory	VDCA100D	VDCAZUUD	VDCASUUD	VDCA500D	VDCA700D
RPA100V	•				
RPA200V		•			
RPA300V			•		
RPA450V				•	
RPA670V					•
Intake plenum with					
Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
PA100V	•				
PA200V		•			
PA300V			•		
PA450V				•	
PA670V					•
Circular flanges kit	for plenum				
Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
KFV				•	•
(FV10	•	•	•		
ntake grids					
Accessory	VDCA100D		VDCA200D		VDCA300D
GA32	•				
GA42			•		
GA62					•
	er and fixed louvers				
Accessory	VDCA100D		VDCA200D		VDCA300D
GAF32	•				
GAF42			•		
GAF62					
Flow grid with adju	stable louvers				
Accessory	VDCA100D		VDCA200D		VDCA300D
GM32	•				
GM42			•		
5M62					•
Delivery accessor	ries				
	ternally insulated, with circu	ılar flanges			
Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
PM100V	•				
PM200V		•			
			•		
PM300V					
PM300V PM450V PM670V				•	

Delivery plenum internally insulated, with rectangular flanges

Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
RPM100V	•				
RPM200V		•			
RPM300V			•		
RPM450V				•	
RPM670V					•

Straight delivery coupling

Accessory	VDCA100D	VDCA200D	VDCA300D
RDM100V	•		
RDM200V		•	
DUM3UUA			

Delivery straight internally insulated, with circular flanges

Accessory	VDCA100D	VDCA200D	VDCA300D
RDMC100V	•		
RDMC200V		•	
RDMC300V			•

Plenum with motor-driven dampers

Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
MZC320	•				
MZC5040				•	
MZC530					
MZC7050					•
MZC830			•		

Electrical system with relays

Accessory	VDCA500D	VDCA700D
MZCACV (1)	•	•

 $(1) \ \ It is mandatory to use MZCACV if the intake of the unit combined with the MZC accessory exceeds 0.7 Ampere.$

Electric plant

Accessory	VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D		
MZCAC	•	•	•	•	•		

PERFORMANCE SPECIFICATIONS

2-pipe

			VI	CA10	0D			VI	CA20	0D			VD	CA30	0D		VDCA500D					VDCA700D				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
		UL	L	М	Н	HH	UL	L	М	Н	НН	UL	L	М	Н	HH	UL	L	M	Н	НН	UL	L	М	Н	НН
Heating performances 45 °C/35 °C(1)																										
Heating capacity	kW	1,57	1,79	2,58	2,81	4,03	2,74	2,95	3,80	4,08	5,34	3,46	4,15	5,46	5,69	6,66	4,44	5,15	7,02	8,21	10,11	8,25	10,00	12,63	14,62	16,67
Water flow rate system side	I/h	136	156	224	244	350	238	256	330	354	463	300	360	474	494	578	386	447	609	713	877	716	868	1096	1269	1447
Pressure drop system side	kPa	7	9	17	19	37	23	26	40	46	74	11	16	26	28	37	6	8	14	18	26	9	13	20	26	33
Cooling performance 5.5 °C / 14.5 °C (2)																										
Cooling capacity	kW	1,21	1,38	1,98	2,16	3,10	2,11	2,27	2,92	3,13	4,10	2,66	3,19	4,20	4,38	5,12	3,42	3,96	5,40	6,31	7,77	6,34	7,69	9,71	11,23	12,81
Sensible cooling capacity	kW	0,90	1,03	1,51	1,65	2,46	1,52	1,64	2,16	2,33	3,15	2,00	2,43	3,28	3,44	4,11	2,44	2,81	3,77	4,39	5,44	4,98	5,88	7,20	8,19	9,27
Water flow rate system side	I/h	115	132	190	207	296	202	217	279	299	392	254	305	401	418	489	327	378	516	603	743	606	735	928	1074	1225
Pressure drop system side	kPa	6	7	14	17	32	19	22	35	39	64	10	13	22	24	32	5	7	12	16	23	8	11	17	22	28
Cooling performances 9 °C / 18 °C (3)																										
Cooling capacity	kW	0,79	0,91	1,30	1,42	2,04	1,39	1,49	1,92	2,06	2,69	1,75	2,09	2,76	2,88	3,36	2,24	2,60	3,55	4,15	5,10	4,17	5,05	6,38	7,38	8,42
Sensible cooling capacity	kW	0,75	0,86	1,27	1,39	2,04	1,27	1,38	1,81	1,95	2,64	1,68	2,04	2,75	2,88	3,36	2,05	2,36	3,16	3,69	4,56	4,17	4,93	6,04	6,88	7,78
Water flow rate system side	I/h	76	86	125	136	195	132	142	183	197	257	167	200	264	275	321	214	249	339	396	488	398	483	610	705	805
Pressure drop system side	kPa	3	3	7	8	15	9	10	16	19	30	5	6	10	11	15	2	3	6	7	11	4	5	8	10	13
Fan																										
Туре	type		(entrifu	gal			C	entrifu	gal			Ce	entrifu	gal			(6	entrifu	gal			(entrifu	gal	
Fan motor	type		Asy	/nchroi	nous			Asy	nchro	nous			Asy	nchror	nous			Asy	nchror	ous			Asy	nchror	nous	
Number	no.			2					2					3					2					3		
Air flow rate	m³/h	260	288	398	435	680	400	436	585	635	870	500	606	840	886	1100	800	911		1393		1400	1621		2380	2800
High static pressure	Pa	32	26	50	60	24	34	28	50	59	30	45	26	50	56	37	50	29	50	67	35	63	32	50	70	44
Input power	W	33	34	52	75	85	43	44	67	95	107	54	61	87	98	120	137	144	198	259	282	217	233	285	371	408
Electrical wiring		1	1	4	6	6	1	1	4	6	6	1	_1_	4	6	_7	1	_1_	3	5	5	1	_1	3	5	5
Duct type fan coil sound data (4)																										
Sound power level (inlet + radiated)	dB(A)	47,0	46,0	53,0	54,0	55,0	-						52,0				52,0	51,0	57,0	63,0	61,0	63,0	62,0	66,0	68,0	68,0
Sound power level (outlet)	dB(A)	45,0	44,0	50,0	52,0	54,0	48,0	48,0	55,0	56,0	59,0	52,0	50,0	57,0	58,0	60,0	48,0	47,0	53,0	59,0	57,0	58,0	58,0	62,0	64,0	63,0
Diametre hydraulic fittings																										
Main heat exchanger	Ø			3/4"					3/4"					3/4"					3/4"					3/4"		
Power supply																										
Power supply			23	0V~50)Hz			23	0V~50)Hz			23	0V~50)Hz			23	0V~50)Hz			23	0V~50)Hz	

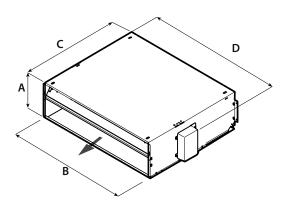
Eurovent certified speed: H,M,L

⁽¹⁾ Room air temperature 20 °C d.b.; Water (in/out) 45 °C/35 °C;
(2) Room air temperature 24°C d.b./18°C w.b.; Water (in/out) 5.5 °C/14.5 °C; EUROVENT
(3) Room air temperature 26°C d.b./18.6°C w.b.; Water (in/out) 9 °C/18 °C; EUROVENT
(4) Aermec determines the sound power value on the basis of measurements taken in accordance with standard UNI EN 16583:15, respecting the Eurovent certification.

Only for units configured with electric heater (field 12 of the configurator, option H)

		VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
Electric heater						
Number	no.	1	1	1	1	1
Heating power	kW	1310	1970	2190	2920	4000

DIMENSIONS



		VDCA100D	VDCA200D	VDCA300D	VDCA500D	VDCA700D
Dimensions and weights						
A	mm	217	217	217	300	351
В	mm	781	1001	1122	1133	1153
(mm	584	584	584	737	789
D	mm	807	1027	1148	1158	1558