8300100791

VBH0450CSPHS

EC centrifugal module - RadiPac

backward-curved, single-intake

with support bracket

ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	**8300100791**
Motor	**E09002-40**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	1470
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	55

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to Commission Regulation (EU) 327/2011 (prEN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	70.2	48.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		83.8	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.5
09 Air flow q_v	m^3/h	4250
09 Pressure increase p_{fs}	Pa	272
10 Speed (rpm) n	min^{-1}	1470
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-224053

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

8300100791

VBH0450CSPHS

EC centrifugal module - RadiPac

backward-curved, single-intake

with support bracket

Technical description

Size	450 mm
Motor size	90
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	ABS plastic
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display with LED - Locked-rotor detection - Speed control - External 15-30 VDC input (parameterization) - Alarm relay - Configurable inputs/outputs (I/O) - Power limiter - MODBUS V7.0 - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Electronic motor protection
With cable	Lateral

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.fansco.com · www.fansco.com

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

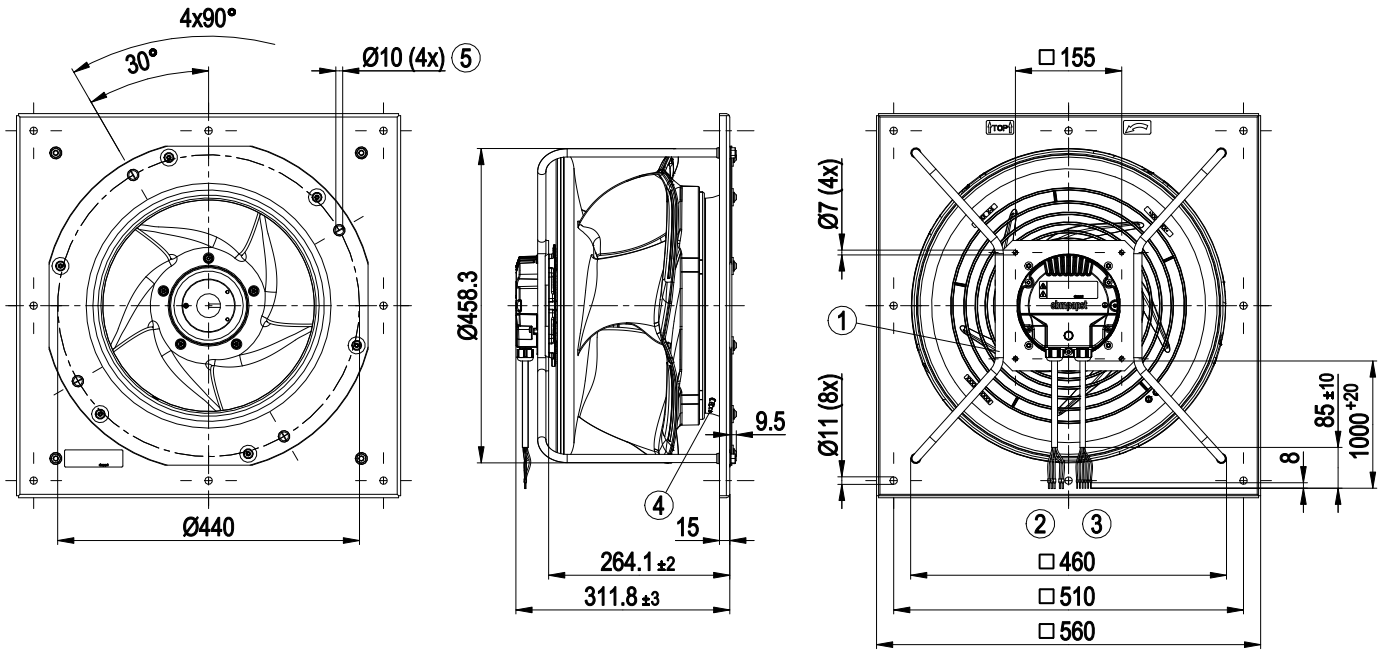
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 60335-1; EN 61800-5-1; CE; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.fansco.com · www.fansco.com

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

Product drawing



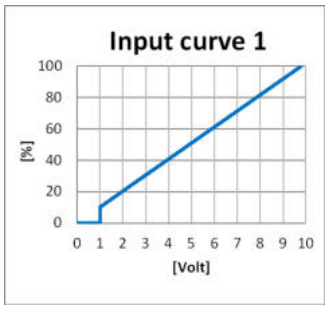
1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Supply line (PWR) PVC AWG18
	5x wire-end ferrule
3	Control wire (CTRL) PVC AWG22
	6x wire-end ferrule
4	Inlet ring with pressure tap (k-factor: 232)
5	Fastening holes for FlowGrid 35505-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.fansco.com · www.fansco.com

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

Connection diagram



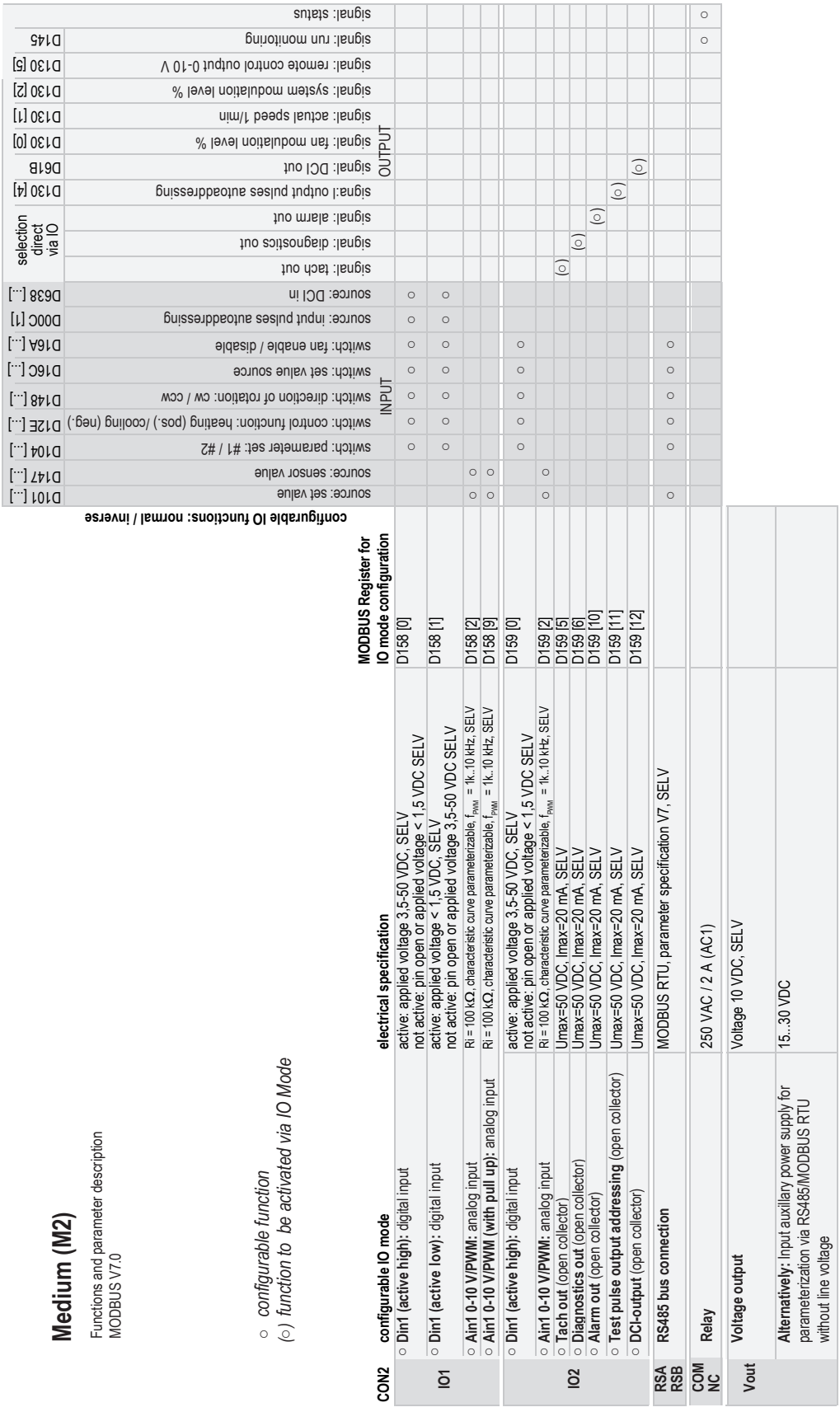
No.	Conn.	Designation	Color	Function/assignment
	PWR	PE	green/yellow	Protective earth
	PWR	L	black	Power supply, phase, see nameplate for voltage range
	PWR	N	blue	Power supply, neutral conductor, see nameplate for voltage range
	PWR	COM	orange	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	PWR	NC	orange	Status relay, floating status contact, break for failure
	CTRL	GND	blue	Reference ground for control interface, SELV
	CTRL	Vout	red	Voltage output 10 VDC +/-3%, Imax=10 mA Short-circuit-proof, power supply for external devices, SELV alternative: 15-30 VDC input for parameterization via MODBUS without line voltage
	CTRL	IO1	yellow	Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: set value Characteristic curve parameterizable (see input characteristic curve "Input curve 1"), SELV Function parameterizable (see table Optional interface functions)
	CTRL	IO2	white	Factory setting: Open collector output, Umax=50 VDC, Imax=20 mA, function:Tacho output 1 pulse/revolution, SELV Function parameterizable (see table Optional interface functions)
	CTRL	RSA	gray	RS-485 interface for MODBUS RSA, SELV dielectric strength to MODBUS RSB +/-14 V, dielectric strength to GND +/-7 V
	CTRL	RSB	brown	RS-485 interface for MODBUS RSB, SELV dielectric strength to MODBUS RSA +/-14 V, dielectric strength to GND +/-7 V
		LED		green: status = good, ready for operation orange: status = warning red: status = failure

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.fansco.com · www.fansco.com

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

Terminal/plug assignment



ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.fansco.com · www.fansco.com

8300100791

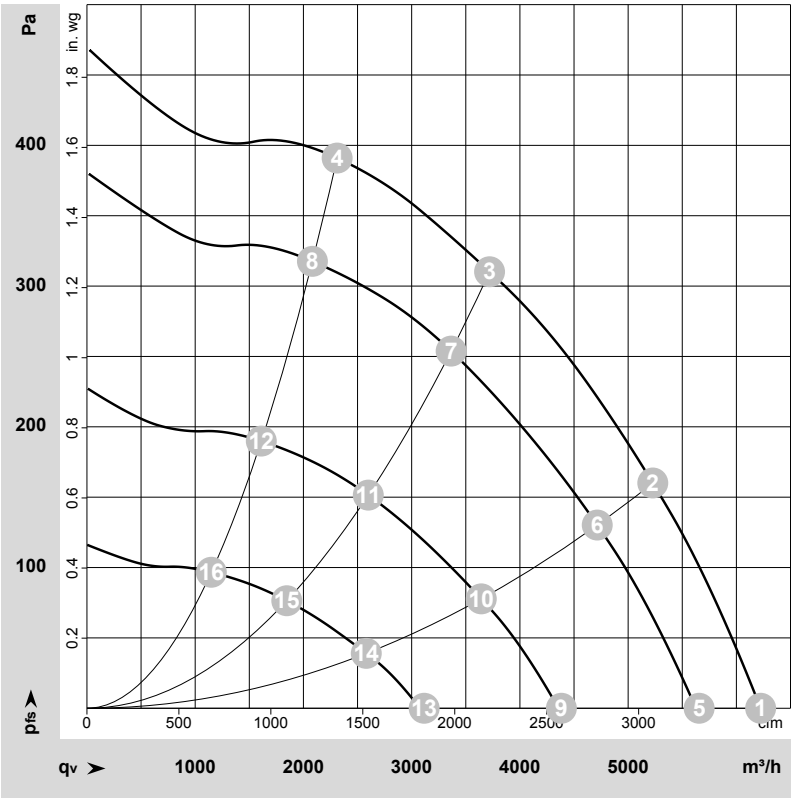
VBH0450CSPHS

EC centrifugal module - RadiPac

backward-curved, single-intake

with support bracket

Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-224053-1
Date: 2022-11-23
Nozzle: 8217101922

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

Measured values

	Wired	U	f	n	P_e	I	LpA_{in}	LwA_{in}	LwA_{out}	LwA	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	dB	m^3/h	Pa	cfm	in. wg
1	1~	230	50	1470	345	1.54	70	78	81	83	6225	0	3665	0.00
2	1~	230	50	1470	447	1.97	64	72	76	78	5230	160	3075	0.64
3	1~	230	50	1470	500	2.20	59	67	72	73	3720	310	2190	1.24
4	1~	230	50	1470	475	2.09	61	68	73	74	2310	390	1360	1.57
5	1~	230	50	1325	259	1.17	67	75	79	80	5655	0	3330	0.00
6	1~	230	50	1325	329	1.47	61	70	74	75	4715	131	2775	0.53
7	1~	230	50	1325	376	1.67	57	64	69	70	3365	254	1980	1.02
8	1~	230	50	1325	349	1.55	58	65	70	71	2085	318	1225	1.28
9	1~	230	50	1030	127	0.60	61	70	73	75	4385	0	2580	0.00
10	1~	230	50	1030	158	0.73	57	65	69	70	3645	78	2145	0.31
11	1~	230	50	1030	178	0.81	52	59	63	65	2600	152	1530	0.61
12	1~	230	50	1030	167	0.76	52	58	63	64	1610	190	950	0.76
13	1~	230	50	735	54	0.33	54	61	67	68	3115	0	1835	0.00
14	1~	230	50	735	65	0.36	47	55	62	63	2580	39	1520	0.16
15	1~	230	50	735	71	0.39	43	50	56	57	1845	76	1085	0.31
16	1~	230	50	735	67	0.37	43	49	54	55	1150	97	675	0.39

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.fansco.com · www.fansco.com