

8300101510
VBH0175SSLES

EC centrifugal module - RadiCal

backward-curved, single-intake
with housing

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	8300101510	
Motor	E06003-23	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min ⁻¹	5000
Power consumption	W	170
Current draw	A	1.4
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

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}	%	62	43.6	09 Power consumption P_{ed}	kW	0.17
02 Measurement category		A		09 Air flow q_v	m³/h	610
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	569
04 Efficiency grade N		80.4	62	10 Speed (rpm) n	min ⁻¹	5070
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.
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).

* Specific ratio = $1 + p_{fs} / 100\,000\text{ Pa}$ LU-223912

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Technical description

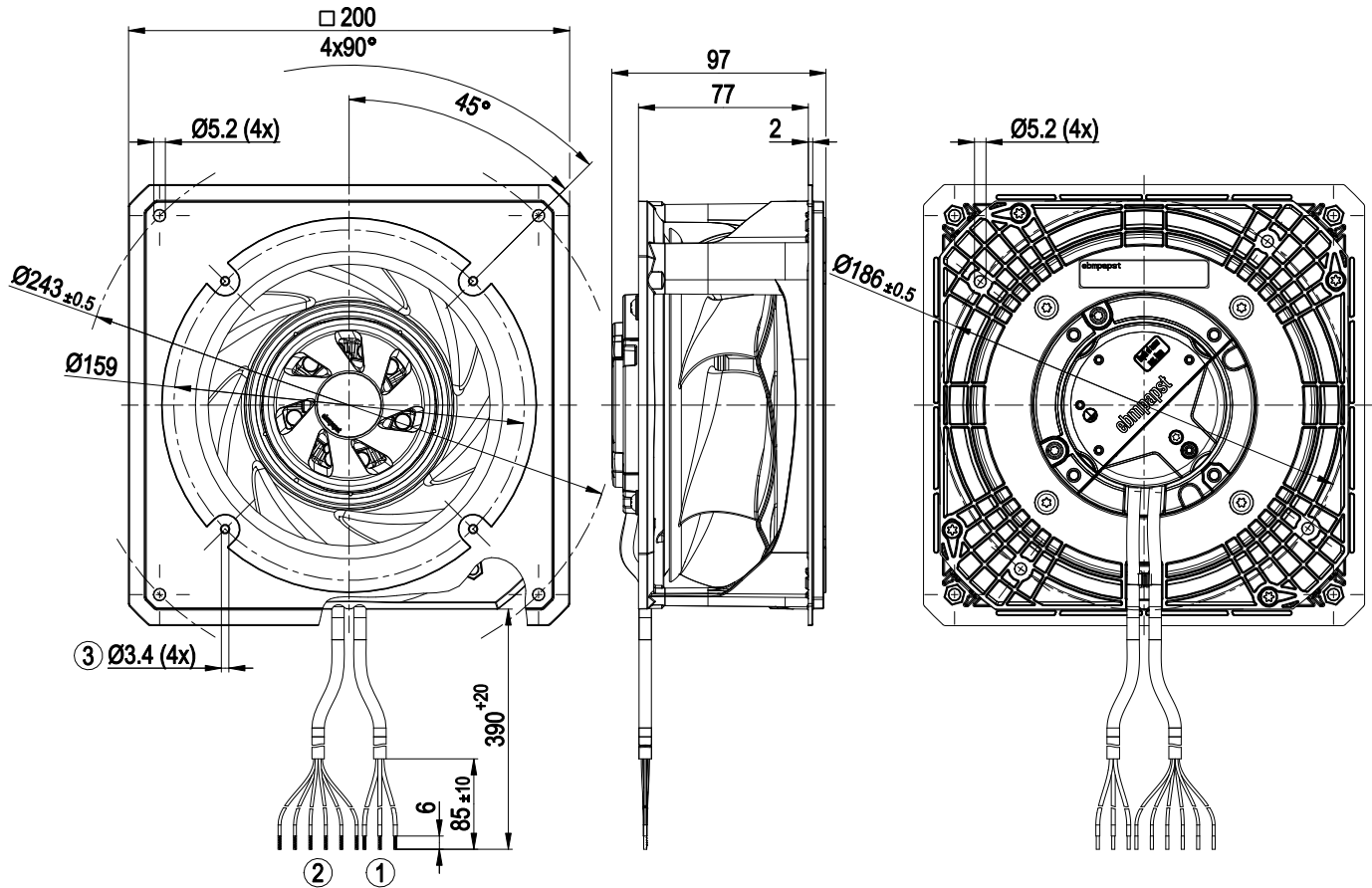
Weight	1.65 kg
Size	175 mm
Motor size	60
Rotor surface	Thick-film passivated
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Housing material	PP plastic
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+ 80 °C
Min. permitted ambient temp. for motor (transport/storage)	- 40 °C
Installation position	Any
Condensation drainage holes	None, open rotor
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Locked-rotor detection - Tach output - Speed control - Power limiter - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - Thermal overload protection for electronics/motor - Line undervoltage detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Electronic motor protection
With cable	Variable
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 60034-1; EN 60204-1; EN 60335-1; CE; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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Product drawing



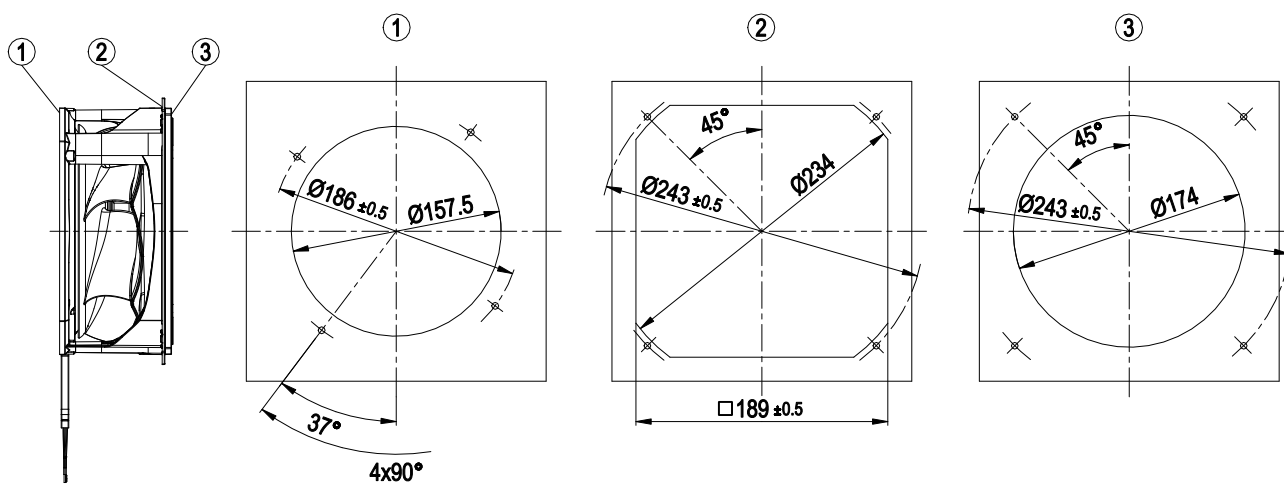
1	Supply line (PWR) PVC AWG20 3x splice
2	Control wire (CTRL) PVC AWG22 6x splice
3	Fastening holes for FlowGrid 8217118111 (not included in scope of delivery) are provided and must only be used for FlowGrid

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Mounting dimensions

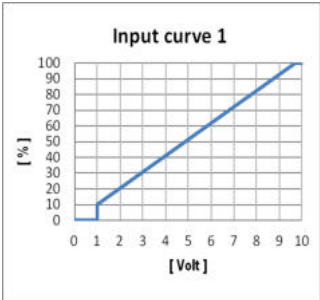


1	Installation of motor plate
2	Installation of nozzle plate on outlet side
3	Installation of nozzle plate on intake side

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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	PWR	L	black	Power supply, phase, see nameplate for voltage range
	PWR	N	blue	Power supply, neutral conductor, see nameplate for voltage range
	PWR	PE	green/yellow	Protective earth
	CTRL	GND	blue	Reference ground for control interface, SELV
	CTRL	IO1	yellow	Factory setting: Analog input 0-10 V/PWM, Ri=100 KΩ, fPWM=1 kHz..10 kHz, Function: Speed 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= 10 mA, function: Tach output 1 pulse/revolution, SELV Function parameterizable at factory (see table Optional interface functions)
	CTRL	Vout	red	Voltage output 10 VDC +/-3%, Imax=10 mA Short-circuit-proof, power supply for external devices, SELV
	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

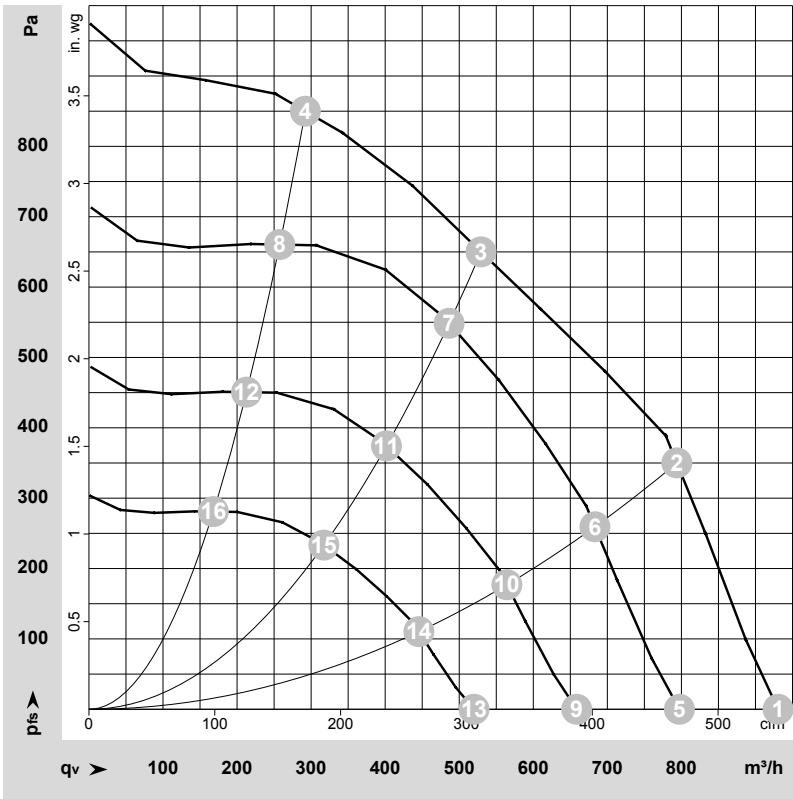
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Terminal/plug assignment

Medium (M1)		Functions and parameter description MODBUS V7.0		configurable IO functions: normal / inverse	
CON2		configurable IO mode		MODBUS Register for IO mode configuration	
		electrical specification		INPUT	
				OUTPUT	
IO1	○ Dint1 (active high): digital input	active: applied voltage 3,5-50 VDC, SELV not active: pin open or applied voltage < 1,5 VDC SELV	D158 [0]	○	signal: tach out
	○ Dint1 (active low): digital input	active: applied voltage < 1,5 VDC, SELV not active: pin open or applied voltage 3,5-50 VDC SELV	D158 [1]	○	signal: diagnostics out
	○ Ain1 0-10 V/PWM: analog input	Ri = 100 kΩ, characteristic curve parameterizable, f _{PWM} = 1k..10 kHz, SELV	D158 [2]	○	signal: alarm out
	○ Ain1 0-10 V/PWM (with pull up): analog input	Ri = 100 kΩ, characteristic curve parameterizable, f _{PWM} = 1k..10 kHz, SELV	D158 [9]	○	signal: DCI out
IO2	○ Tach out (open collector)	Umax=50 VDC, Imax=10 mA, SELV	D159 [5]		
	○ Diagnostics out (open collector)	Umax=50 VDC, Imax=10 mA, SELV	D159 [6]		
	○ Alarm out (open collector)	Umax=50 VDC, Imax=10 mA, SELV	D159 [10]		(○)
	○ Test pulse output addressing (open collector)	Umax=50 VDC, Imax=10 mA, SELV	D159 [11]		
	○ DCI-output (open collector)	Umax=50 VDC, Imax=10 mA, SELV	D159 [12]		(○)
RSA RSB	RS485 bus connection	MODBUS RTU, parameter specification V7, SELV		○	
Vout	Voltage output	Voltage 10 VDC, SELV			

Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-223912-1
Date: 2023-02-14
Nozzle: 8217117486

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}	q _v	P _{fs}	q _v	P _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	m ³ /h	Pa	cfm	in. wg
1	1~	230	50	5370	145	1.21	74	82	930	0	550	0.00
2	1~	230	50	5345	173	1.42	71	79	795	350	465	1.41
3	1~	230	50	5010	175	1.44	68	77	530	650	310	2.61
4	1~	230	50	5220	176	1.45	74	83	290	850	170	3.41
5	1~	230	50	4600	91	0.76	70	78	795	0	470	0.00
6	1~	230	50	4600	110	0.91	67	75	685	259	400	1.04
7	1~	230	50	4600	136	1.12	66	74	485	549	285	2.20
8	1~	230	50	4600	121	0.99	71	80	260	660	150	2.65
9	1~	230	50	3800	51	0.43	65	73	660	0	390	0.00
10	1~	230	50	3800	62	0.51	63	70	565	177	330	0.71
11	1~	230	50	3800	77	0.63	61	69	400	374	235	1.50
12	1~	230	50	3800	68	0.56	66	75	215	451	125	1.81
13	1~	230	50	3000	25	0.21	59	67	520	0	305	0.00
14	1~	230	50	3000	31	0.25	57	64	445	110	265	0.44
15	1~	230	50	3000	38	0.31	55	63	315	233	185	0.94
16	1~	230	50	3000	33	0.28	60	69	170	281	100	1.13

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
q_v = Air flow · P_{fs} = Pressure increase