

8300100177
VBH0250RSLFS

EC centrifugal module - RadiCal

backward-curved, single-intake
with housing

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	8300100177	
Motor	E06003-30	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min ⁻¹	2550
Power consumption	W	170
Current draw	A	1.35
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}	%	54.7	43.4	09 Power consumption P_{ed}	kW	0.16
02 Measurement category		A		09 Air flow q_v	m³/h	890
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	330
04 Efficiency grade N		73.3	62	10 Speed (rpm) n	min ⁻¹	2510
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = $1 + p_b / 100\,000\text{ Pa}$

LU-218123

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).



8300100177
VBH0250RSLFS

EC centrifugal module - RadiCal

backward-curved, single-intake
with housing

Technical description

Weight	2.6 kg
Size	250 mm
Motor size	60
Rotor surface	Thick-film passivated
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic
Housing material	PA 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
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-4 (industrial environment)
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; UKCA; CE
Approval	UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1

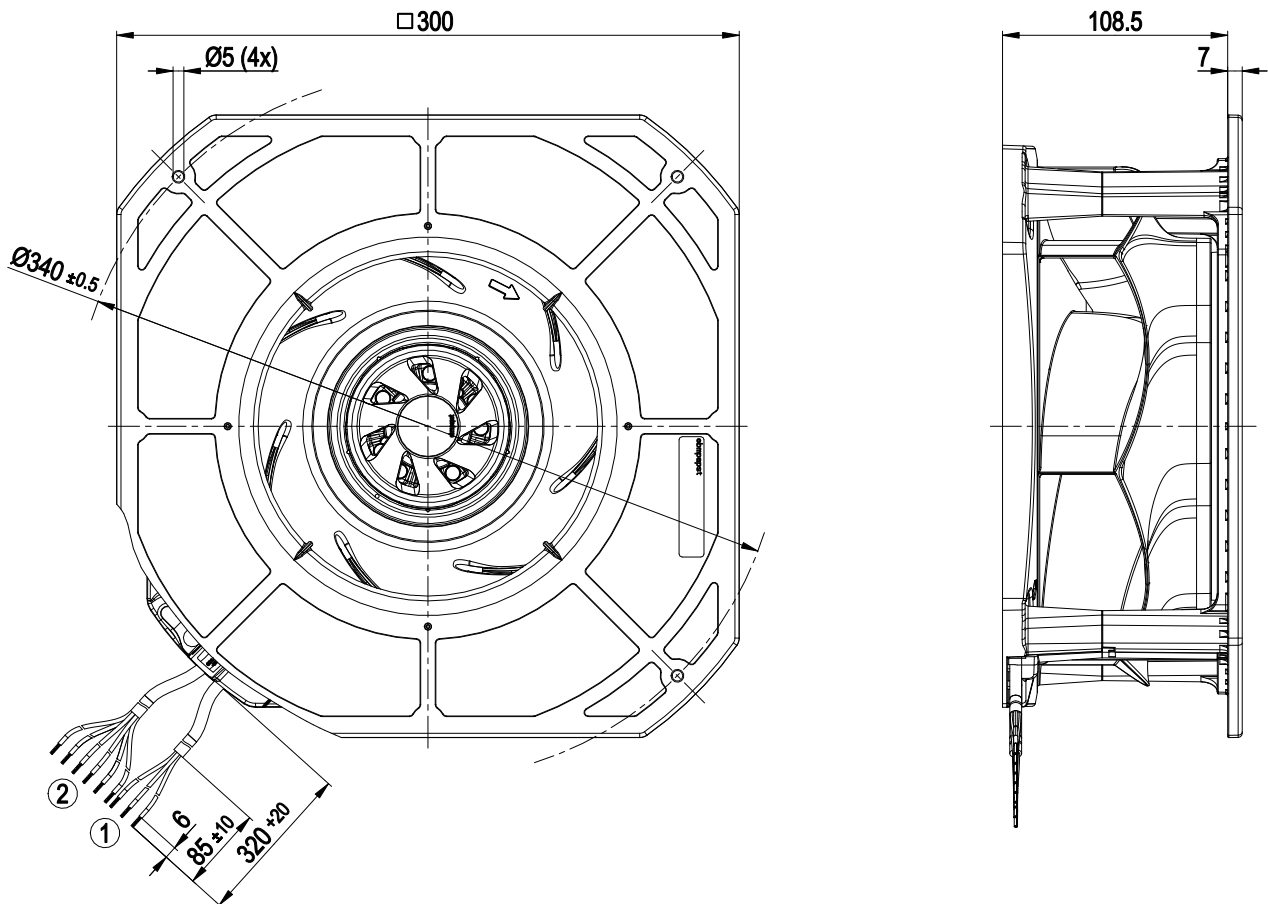


8300100177
VBH0250RSLFS

EC centrifugal module - RadiCal

backward-curved, single-intake
with housing

Product drawing



1	Supply line (PWR) PVC AWG20 3x splice
2	Control wire (CTRL) PVC AWG22 6x splice

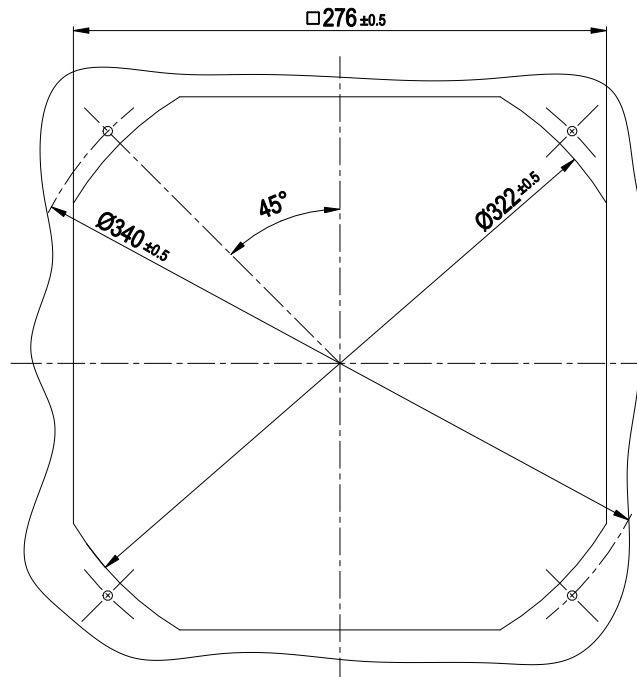


8300100177
VBH0250RSLFS

EC centrifugal module - RadiCal

backward-curved, single-intake
with housing

Mounting dimensions

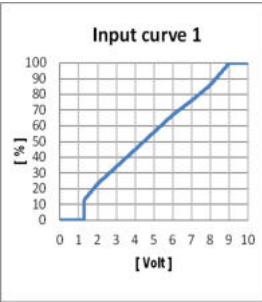


EC centrifugal module - RadiCal

backward-curved, single-intake

with housing

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 curve 1"), SELV Function parameterizable at the factory (see Optional interface functions table)
	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	-	gray	No function
	CTRL	-	brown	No function



8300100177
VBH0250RSLFS

EC centrifugal module - RadiCal

backward-curved, single-intake

with housing

Terminal/plug assignment

		electrical specification		configurable IO mode		INPUT		OUTPUT			
IO1	Din1 (high active): digital input	active: parameterizable voltage x-30 VDC not active: pin open or parameterizable voltage <x VDC, SELV Ri = 100 kΩ, characteristic curve parameterizable, f _{PWM} = 1k..10 kHz, SELV		Ain1 0-10 V/PWM: analog input		switch: parameter set: #1 / #2	○	configurable function	○	signal: tach out	○
						switch: direction of rotation: cw / ccw	○	switch: enable/disable input	○	signal: diagnostics out	○
							○			signal: alarm out	○
										signal: run monitoring	○
										signal: status	○
IO2	Tach out (open collector) Diagnostics out (open collector) Alarm out (open collector) Open collector	U _{max} =50 VDC, I _{max} =10 mA, SELV U _{max} =50 VDC, I _{max} =10 mA, SELV U _{max} =50 VDC, I _{max} =10 mA, SELV U _{max} =50 VDC, I _{max} =10 mA, SELV				source: set value	○	signal: configurable function	○		○
Vout	Voltage output	Voltage 10 VDC, SELV									

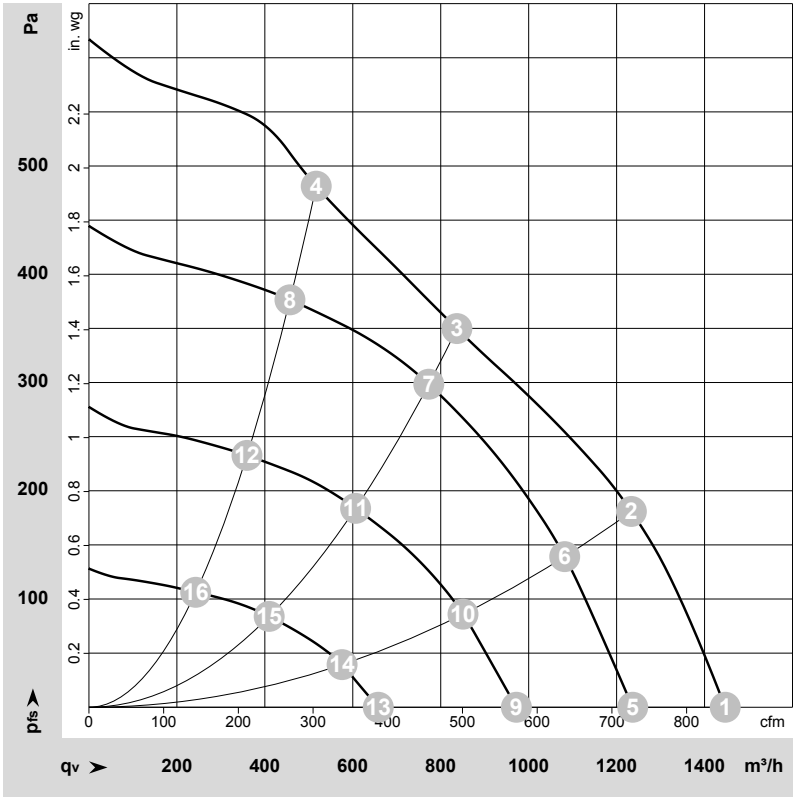
Basic (B4)

Factory configuration option upon request

Factory configuration option



Curves: Air performance 50 Hz



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

Measurement: LU-218123-1

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	2705	149	1.20	69	77	1445	0	850	0.00
2	1~	230	50	2640	170	1.35	64	72	1235	180	725	0.72
3	1~	230	50	2550	170	1.35	60	68	835	350	495	1.41
4	1~	230	50	2615	170	1.35	64	72	515	480	305	1.93
5	1~	230	50	2315	95	0.80			1235	0	730	0.00
6	1~	230	50	2315	116	0.96			1080	141	635	0.57
7	1~	230	50	2315	134	1.10			775	298	455	1.20
8	1~	230	50	2315	118	0.98			455	377	270	1.51
9	1~	230	50	1825	49	0.43			970	0	570	0.00
10	1~	230	50	1825	58	0.50			850	87	500	0.35
11	1~	230	50	1825	66	0.57			605	184	355	0.74
12	1~	230	50	1825	59	0.51			360	233	210	0.94
13	1~	230	50	1240	18	0.17			660	0	385	0.00
14	1~	230	50	1240	21	0.19			575	40	340	0.16
15	1~	230	50	1240	23	0.21			410	84	240	0.34
16	1~	230	50	1240	21	0.20			245	106	145	0.43

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

