

8300101050  
VBS0206SSLFS

# EC centrifugal fan - RadiCal

backward-curved, single-intake

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## Nominal data

Item	8300101050	
Motor	E06003-30	
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 <sup>-1</sup>	3800
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 $\eta_{es}$	%	64.9	43.5	09 Power consumption $P_{ed}$	kW	0.17
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	860
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	412
04 Efficiency grade N		83.4	62	10 Speed (rpm) n	min <sup>-1</sup>	3865
05 Variable speed drive		Yes		11 Specific ratio <sup>*</sup>		1.00

Data obtained at optimum efficiency level.

<sup>\*</sup> Specific ratio =  $1 + p_{fs} / 100\,000\text{ Pa}$

LU-225329

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).



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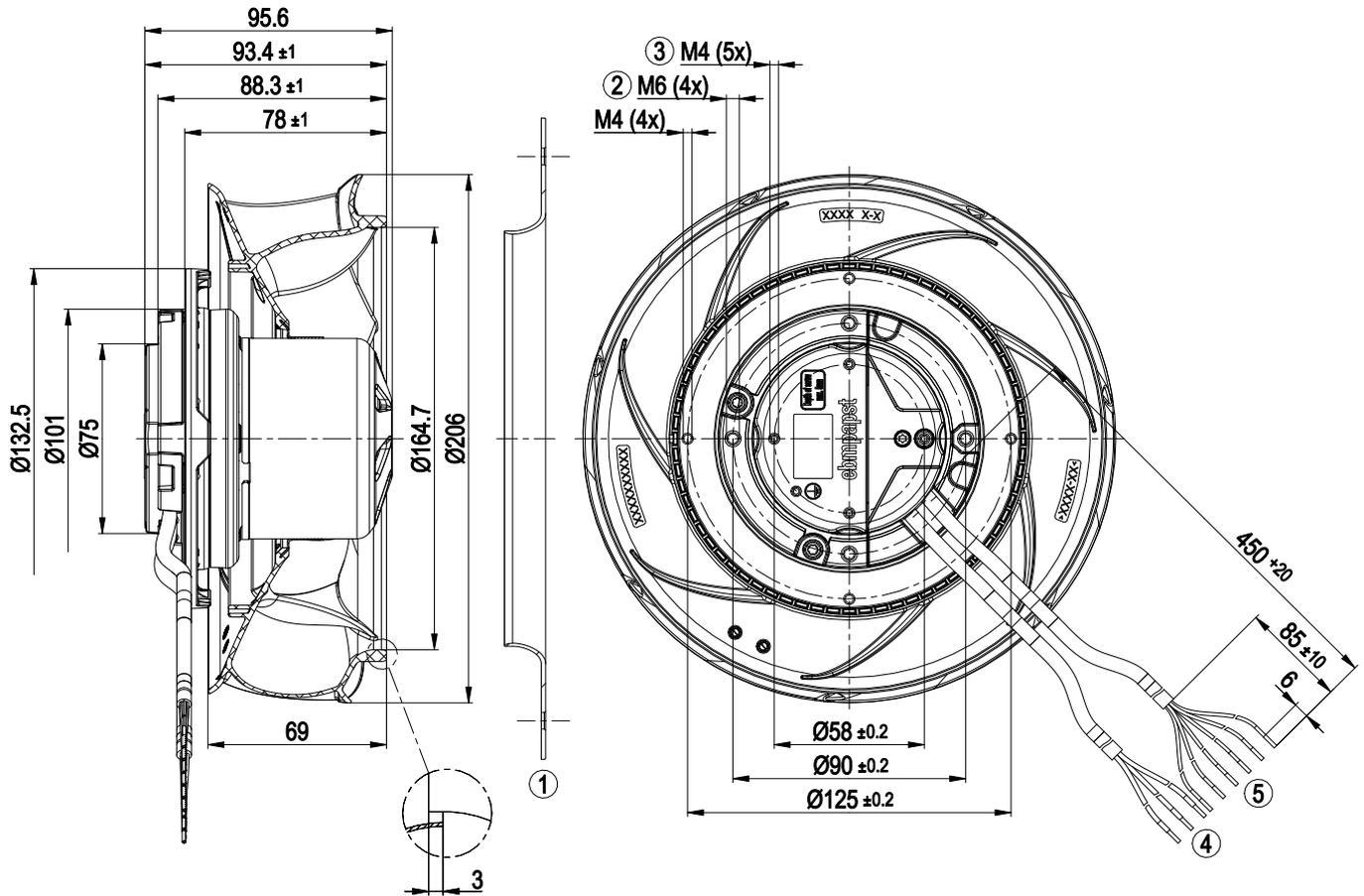
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## Technical description

Weight	0.001 kg
Size	206 mm
Motor size	60
Rotor surface	Thick-film passivated
Electronics housing material	Die-cast aluminum
Impeller 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	<ul style="list-style-type: none"><li>- Output 10 VDC, max. 10 mA</li><li>- Locked-rotor detection</li><li>- Tach output</li><li>- Speed control</li><li>- Power limiter</li><li>- Motor current limitation</li><li>- Soft start</li><li>- Control input 0-10 VDC / PWM</li><li>- Control interface with SELV potential safely disconnected from the mains</li><li>- Overvoltage detection</li><li>- Thermal overload protection for electronics/motor</li><li>- Line undervoltage detection</li></ul>
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; CE; UKCA
Approval	UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1

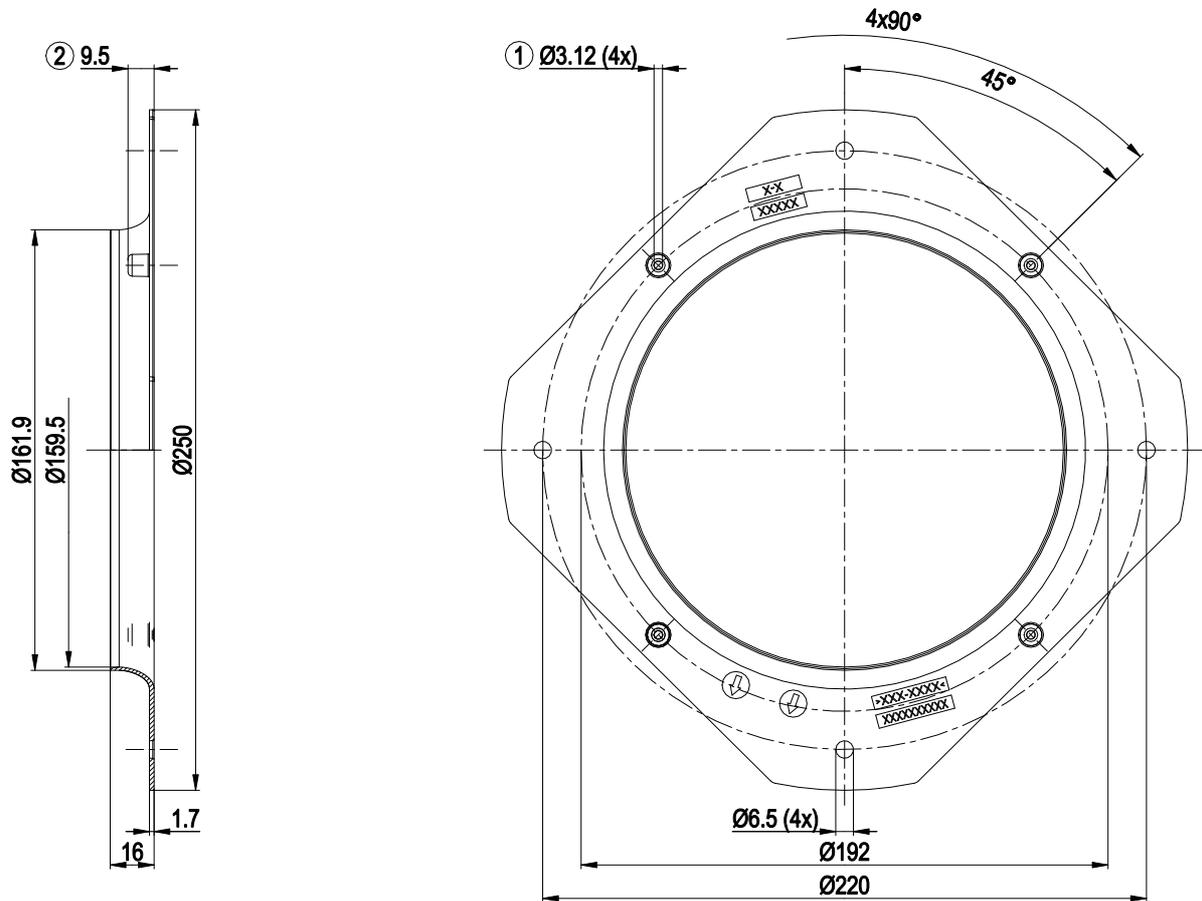


## Product drawing



1	Inlet ring 8217118486 not included in scope of delivery
2	Max. clearance for screw 10 mm
3	Max. clearance for screw 5 mm
4	Supply line (PWR) PVC AWG20 3x splice
5	Control wire (CTRL) PVC AWG22 6x splice

## Accessory part

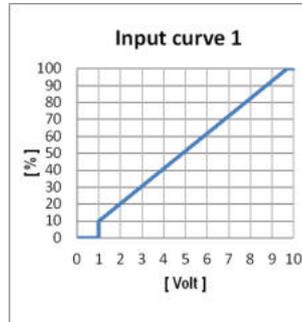


-	Inlet ring 8217118486
1	Fastening holes for FlowGrid 8217118542 (not included in scope of delivery) are provided and must be subsequently opened as required
2	Screw-on domes are only permissible for Flowgrid!

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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 curve 1"), SELV Function parameterizable at the factory (see Optional interface functions table)
	CTRL	IO2	white	Factory setting: Open collector output, Umax=50 VDC, I <sub>max</sub> = 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%, I <sub>max</sub> =10 mA Short-circuit-proof, power supply for external devices, SELV
	CTRL	-	gray	No function
	CTRL	-	brown	No function



## Terminal/plug assignment

	configurable IO mode	electrical specification						
IO1	◦ Din1 (high active): digital input	active: parameterizable voltage x-30 VDC not active: pin open or parameterizable voltage <x VDC, SELV						
	◦ Ain1 0-10 V/PWM: analog input	RI = 100 kΩ, characteristic curve parameterizable, $f_{\text{PWM}} = 1\text{k}..10\text{ kHz}$ , SELV						
	◦ Tach out (open collector)	Umax=50 VDC, Imax=10 mA, SELV						
	◦ Diagnostics out (open collector)	Umax=50 VDC, Imax=10 mA, SELV						
IO2	◦ Alarm out (open collector)	Umax=50 VDC, Imax=10 mA, SELV						
	◦ Open collector	Umax=50 VDC, Imax=10 mA, SELV						
Vout	Voltage output	Voltage 10 VDC, SELV						

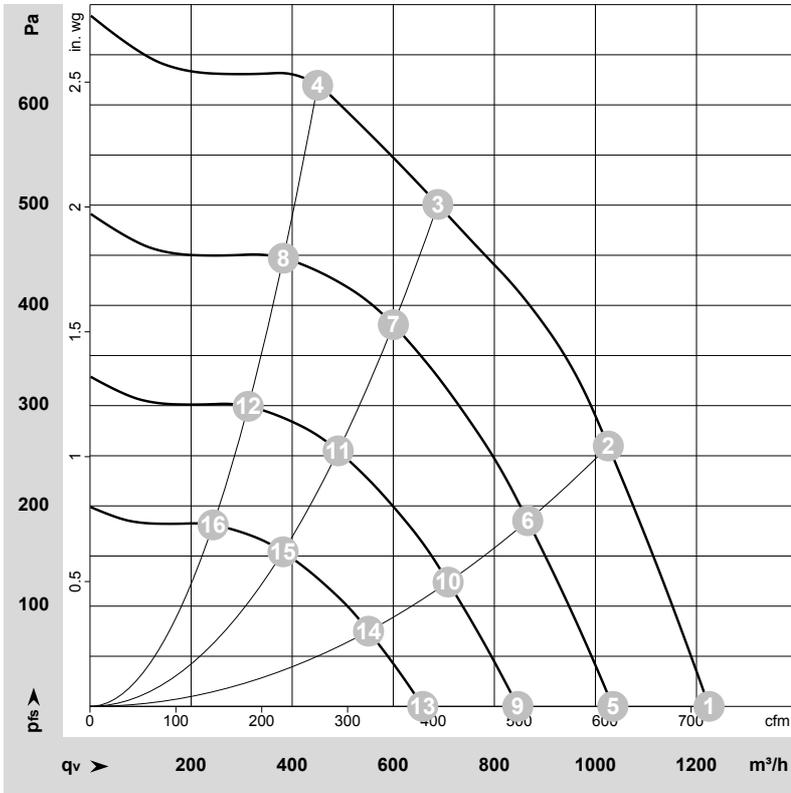
	INPUT	OUTPUT
source: set value	◦	
switch: parameter set: #1 / #2	◦	
switch: direction of rotation: cw / ccw	◦	
switch: enable/disable input	◦	
configurable function	◦	
signal: tach out		◦
signal: diagnostics out		◦
signal: alarm out		◦
signal: run monitoring		◦
signal: status		◦
signal: configurable function		◦

### 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-225329-1

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 <sub>e</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	1~	230	50	3905	123	1.04	70	78	1225	0	720	0.00
2	1~	230	50	3910	165	1.37	67	75	1025	260	605	1.04
3	1~	230	50	3800	170	1.40	64	72	690	500	405	2.01
4	1~	230	50	3890	170	1.40	68	77	450	620	265	2.49
5	1~	230	50	3300	74	0.63	66	73	1035	0	610	0.00
6	1~	230	50	3300	100	0.83	63	71	865	185	510	0.74
7	1~	230	50	3300	114	0.94	61	68	600	381	355	1.53
8	1~	230	50	3300	105	0.87	64	73	385	448	225	1.80
9	1~	230	50	2700	41	0.34	61	68	845	0	500	0.00
10	1~	230	50	2700	55	0.45	58	66	710	124	415	0.50
11	1~	230	50	2700	62	0.52	56	63	490	255	290	1.02
12	1~	230	50	2700	58	0.48	59	67	315	300	185	1.20
13	1~	230	50	2100	19	0.16	54	62	660	0	385	0.00
14	1~	230	50	2100	26	0.21	52	59	550	75	325	0.30
15	1~	230	50	2100	29	0.24	49	57	380	154	225	0.62
16	1~	230	50	2100	27	0.22	53	61	245	181	145	0.73

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

