

8300101670
VBH0250SSNFS

EC centrifugal module - RadiCal

backward-curved, single-intake
with support bracket

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	8300101670	
Motor	E07434-29	

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml/ce
Status		prelim.
Speed (rpm)	min ⁻¹	3850
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	45

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}	%	65.8	48.4	09 Power consumption P_{ed}	kW	0.5
02 Measurement category		A		09 Air flow q_v	m³/h	1555
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	702
04 Efficiency grade N		79.4	62	10 Speed (rpm) n	min ⁻¹	3865
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

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

LU-233072

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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Technical description

Weight	7.12 kg
Size	250 mm
Motor size	74
Rotor surface	Thick-film passivated
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
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	- Locked-rotor detection - Speed control - Alarm relay - Power limiter - Motor current limitation - PFC, active - 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
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 60034-1; EN 60204-1; EN 60335-1; UKCA; CE

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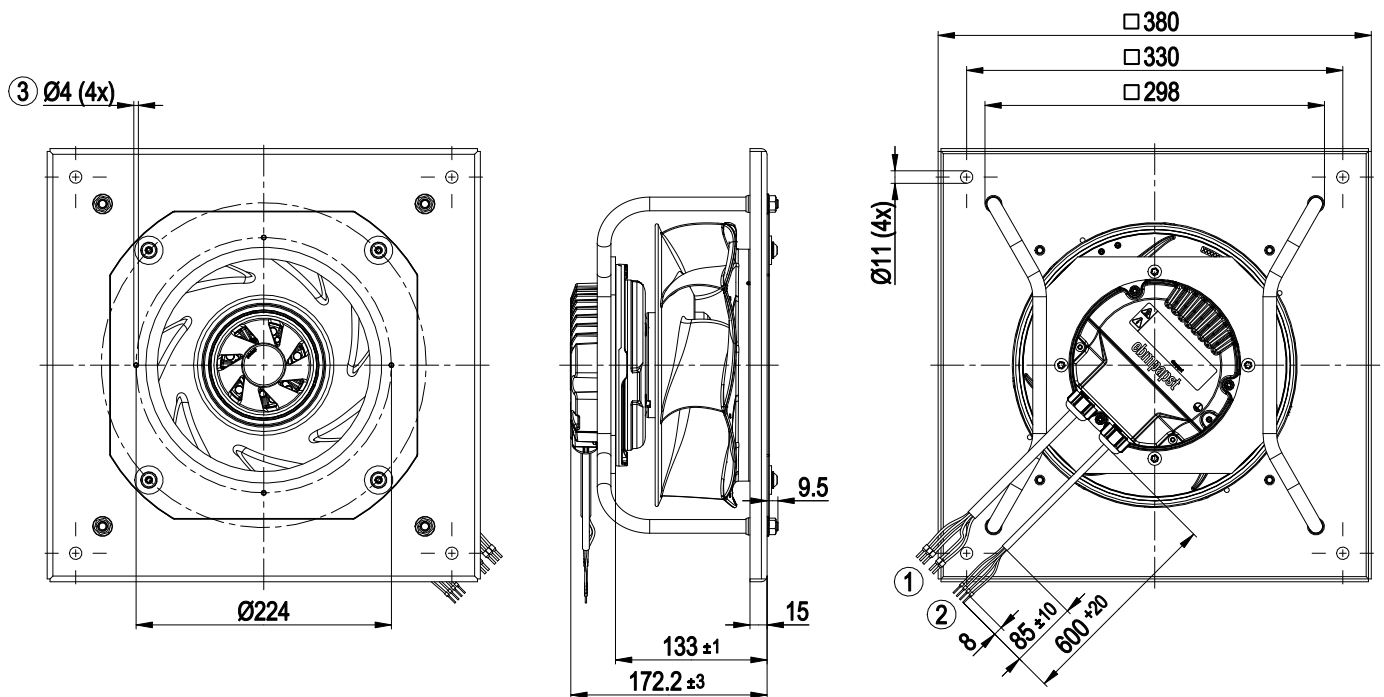
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Product drawing



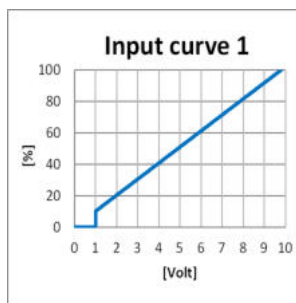
1	Supply line (PWR) PVC AWG18 5x wire-end ferrule
2	Control wire (CTRL) PVC AWG22 4x wire-end ferrule
3	Fastening holes are provided and must be opened subsequently if necessary

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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%, I _{max} =10 mA Short-circuit-proof, power supply for external devices, SELV
	CTRL	IO1	yellow	Factory setting: Analog input 0-10 V / PWM, R _i =100 kΩ, function: set value Characteristic curve parameterizable (see input characteristic curve "Input curve 1"), SELV Function parameterizable at the factory (see table Optional interface functions)
	CTRL	IO2	white	Factory setting: Open collector output, U _{max} =50 VDC, I _{max} =20 mA, function:Tacho output 1 pulse/revolution, SELV Function parameterizable at factory (see table Optional interface functions)

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[illegible]

Factory configuration option upon request

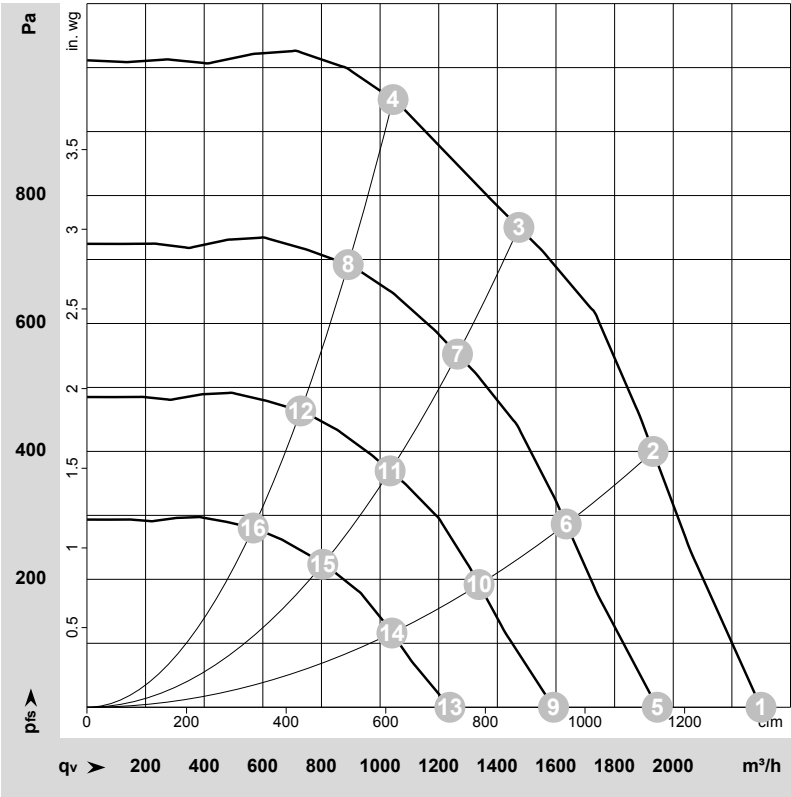
- *factory configuration option*

	configurable IO mode	electrical specification
IO1	- Din1 (high active): digital input - Ain1 0-10 V/PWM: analog input	active: parametrizable voltage x - 30 VDC not active: pin open or parametrizable voltage < x VDC, SELV $R_i = 100\text{ k}\Omega$, characteristic curve parametrizable, $f_{\text{PWM}} = 1\text{ k} - 10\text{ kHz}$, SELV
IO2	- Tach out (open collector) - Diagnostics out (open collector) - Alarm out (open collector) - Open collector	Umax = 50 VDC, Imax = 20 mA, SELV Umax = 50 VDC, Imax = 20 mA, SELV Umax = 50 VDC, Imax = 20 mA, SELV Umax = 50 VDC, Imax = 20 mA, SELV
COM NC	Relais	250 VAC / 2 A (AC1)
Vout	Voltage output	Voltage 10 VDC, SELV

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Curves: Air performance 50 Hz



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

Measurement: LU-231605-1
Date: 2024-04-17
Nozzle: 821711842

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	3900	371	1.64	74	81	2300	0	1355	0.00
2	1~	230	50	3900	472	2.08	71	79	1930	400	1135	1.61
3	1~	230	50	3845	507	2.23	68	76	1475	750	870	3.01
4	1~	230	50	3865	506	2.22	71	79	1045	950	615	3.81
5	1~	230	50	3300	225	1.00	69	77	1945	0	1145	0.00
6	1~	230	50	3300	287	1.26	67	75	1635	287	960	1.15
7	1~	230	50	3300	320	1.41	64	72	1265	552	745	2.22
8	1~	230	50	3300	315	1.38	67	75	890	692	525	2.78
9	1~	230	50	2700	123	0.55	64	72	1590	0	935	0.00
10	1~	230	50	2700	157	0.69	62	70	1340	192	790	0.77
11	1~	230	50	2700	175	0.77	59	67	1035	370	610	1.49
12	1~	230	50	2700	172	0.76	62	70	730	463	430	1.86
13	1~	230	50	2100	58	0.26	58	65	1240	0	730	0.00
14	1~	230	50	2100	74	0.32	56	64	1040	116	610	0.47
15	1~	230	50	2100	83	0.36	53	60	805	224	475	0.90
16	1~	230	50	2100	81	0.36	56	64	565	280	335	1.12

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