

8300102121
VBH0280SSNJS

EC centrifugal module - RadiCal

backward-curved, single-intake
with support bracket

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Nominal data

Item	8300102121	
Motor	E07434-43	
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	2950
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}	%	71.1	48.4	09 Power consumption P_{ed}	kW	0.5
02 Measurement category		A		09 Air flow q_v	m ³ /h	2120
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	551
04 Efficiency grade N		84.7	62	10 Speed (rpm) n	min ⁻¹	2920
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-232336

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	280 mm
Motor size	74
Rotor surface	Galvanized
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	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H1 = Moist – occasional or constantly high level of humidity
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	None, open rotor
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
Power Factor Correction (PFC)	Active
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; CE; UKCA

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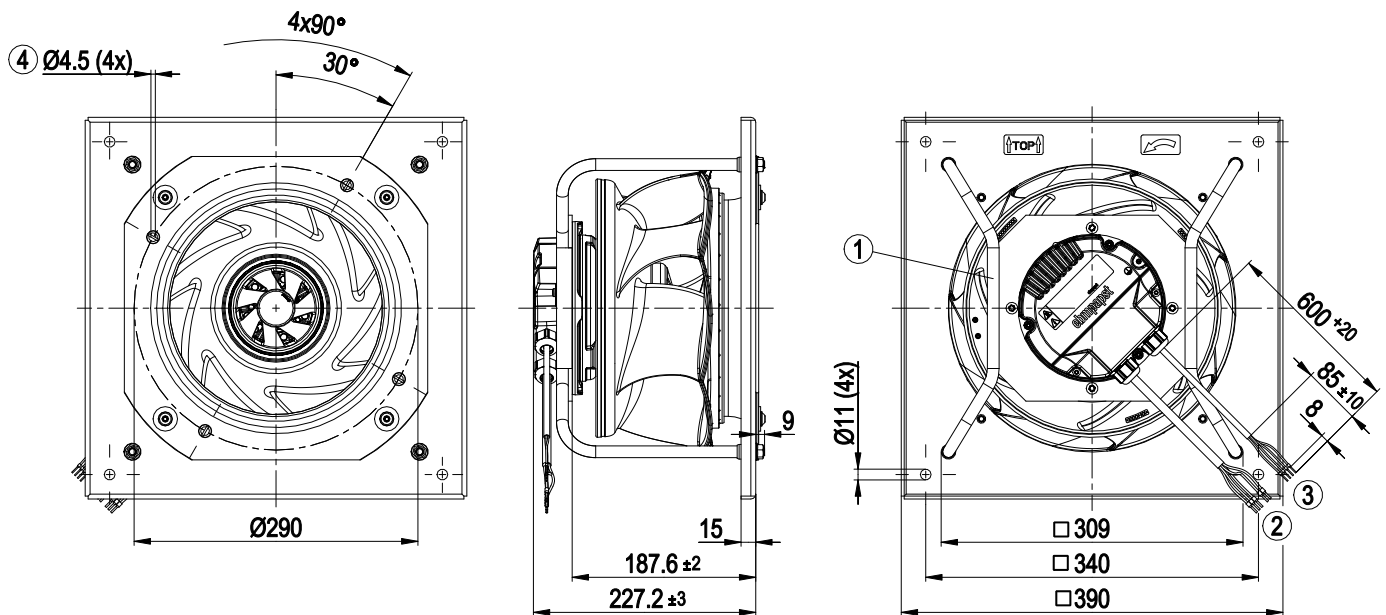
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Product drawing

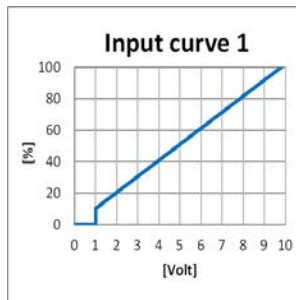


1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Supply line (PWR) PVC AWG18 5x wire-end ferrule
3	Control wire (CTRL) PVC AWG22 4x wire-end ferrule
5	Fastening holes for FlowGrid 25310-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required

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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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Terminal/plug assignment

		electrical specification		INPUT		OUTPUT			
IO1	configurable IO mode	active: parametrizable voltage x - 30 VDC		source: set value		switch: parameter set: #1 / #2		switch: enable/disable input	configurable function
	Din1 (high active): digital input	not active: pin open or parametrizable voltage < x VDC, SELV		switch: direction of rotation: cw / ccw		signal: tach out		signal: diagnostics out	signal: alarm out
	Ain1 0-10 V/PWM: analog input	Ri = 100 kΩ, characteristic curve parameterizable, f _{PWM} = 1 k - 10 kHz, SELV				signal: run monitoring		signal: status	signal: configurable function
	Tach out (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV							
	Diagnostics out (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV							
IO2	Alarm out (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV							
	Open collector	Umax = 50 VDC, Imax = 20 mA, SELV							
COM	Relais	250 VAC / 2 A (AC1)							
NC									
Vout	Voltage output	Voltage 10 VDC, SELV							

Basic (B5)

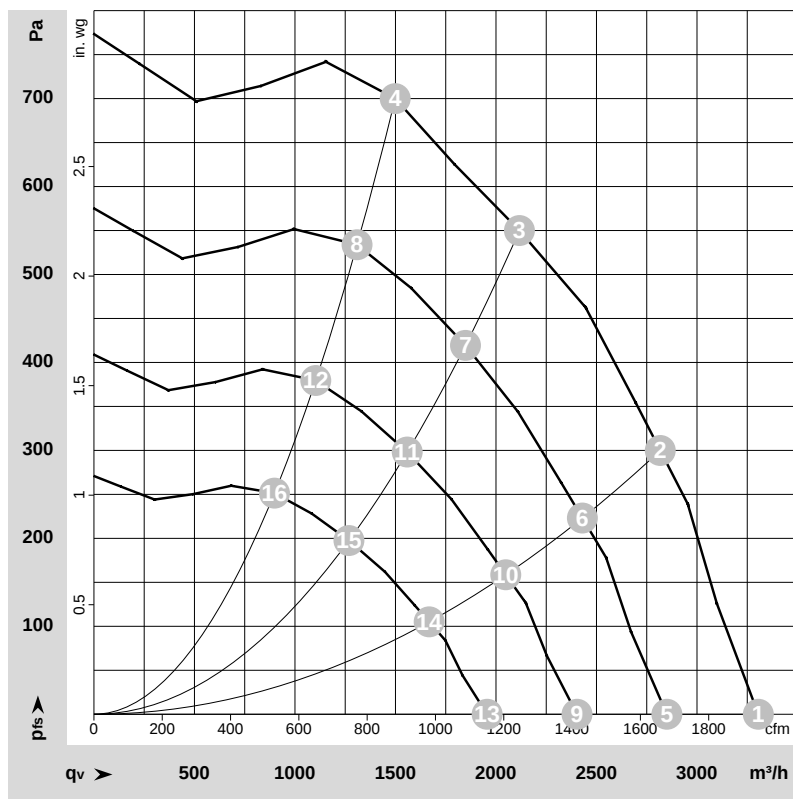
Factory configuration option upon request

o factory configuration option

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Curves: Air performance 50 Hz



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

Measurement: LU-232336-1
Date: 2024-06-12
Nozzle: 8217101930

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 _{st}	q _v	P _{st}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	m ³ /h	Pa	cfm	in. wg
1	1~	230	50	2955	299	1.33	75	83	3305	0	1945	0.00
2	1~	230	50	2955	460	2.02	71	79	2815	300	1660	1.20
3	1~	230	50	2920	503	2.21	65	72	2115	550	1245	2.21
4	1~	230	50	2920	503	2.21	67	75	1500	700	880	2.81
5	1~	230	50	2550	192	0.85	72	79	2850	0	1675	0.00
6	1~	230	50	2550	295	1.30	67	75	2430	223	1430	0.90
7	1~	230	50	2550	335	1.47	61	69	1850	419	1090	1.68
8	1~	230	50	2550	335	1.47	64	72	1310	534	770	2.14
9	1~	230	50	2150	115	0.51	67	75	2405	0	1415	0.00
10	1~	230	50	2150	177	0.78	63	71	2050	159	1205	0.64
11	1~	230	50	2150	201	0.88	57	64	1560	298	915	1.20
12	1~	230	50	2150	201	0.88	59	67	1105	379	650	1.52
13	1~	230	50	1750	62	0.28	62	69	1955	0	1150	0.00
14	1~	230	50	1750	95	0.42	58	65	1670	105	980	0.42
15	1~	230	50	1750	108	0.48	52	59	1270	198	745	0.79
16	1~	230	50	1750	108	0.48	54	62	900	251	530	1.01

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_{st} = Pressure increase