8300101586

VBH0250SSNDS

EC centrifugal module - RadiCal

backward-curved, single-intake

with housing

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Nominal data

Item	**8300101586**
Motor	**E07433-18**

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}	2600
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}	%	64.6	43.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		83.1	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.17
09 Air flow q_v	m^3/h	1060
09 Pressure increase p_{fs}	Pa	332
10 Speed (rpm) n	min^{-1}	2625
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-231607

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	2.9 kg
Size	250 mm
Motor size	74
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 = 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	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. 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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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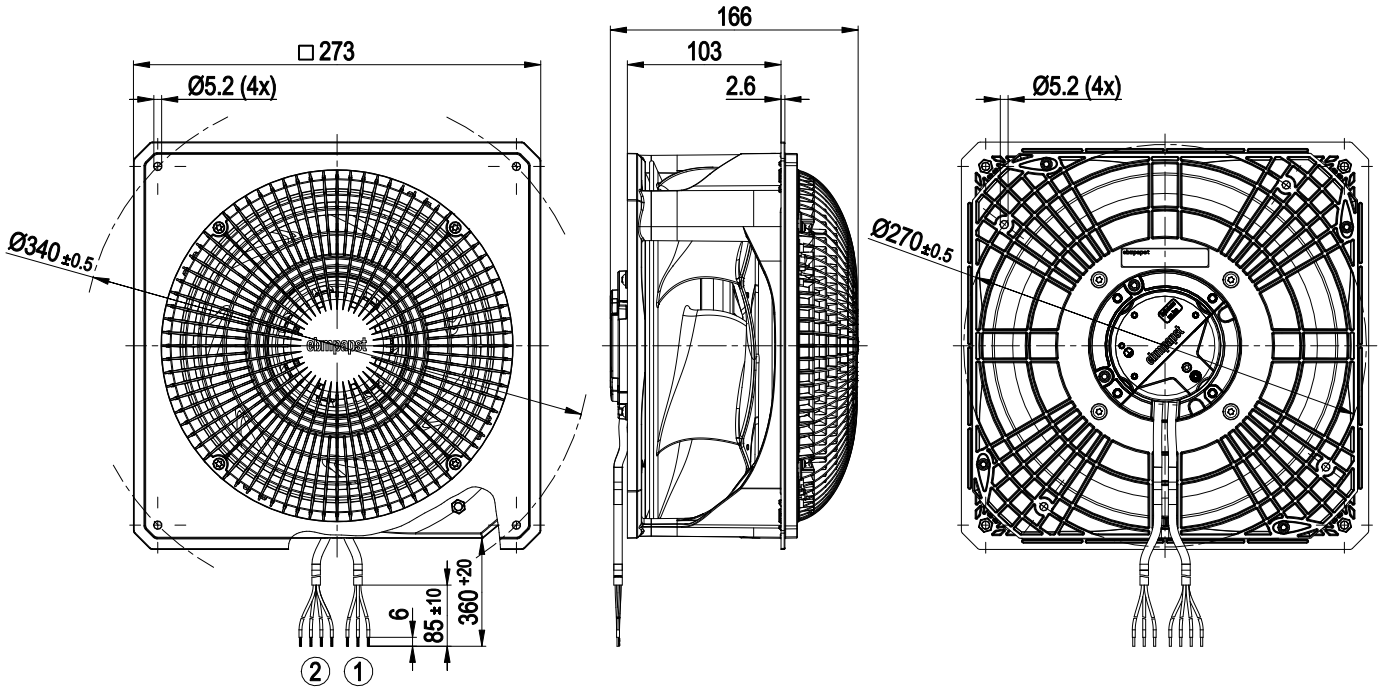
Product drawing



1	Supply line (PWR) PVC AWG20
	3x splice
2	Control wire (CTRL) PVC AWG22
	4x splice

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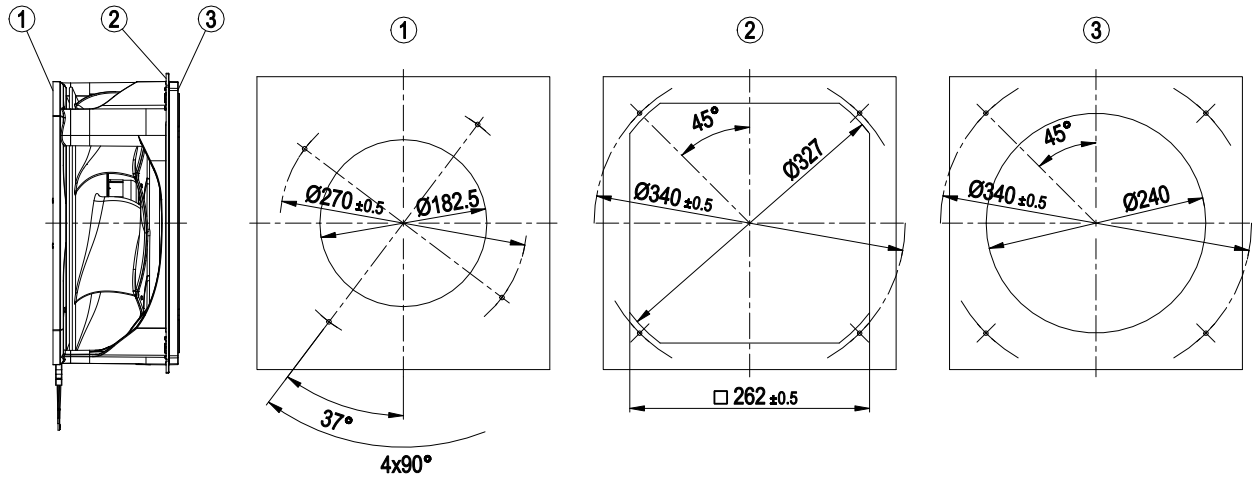
Mounting dimensions



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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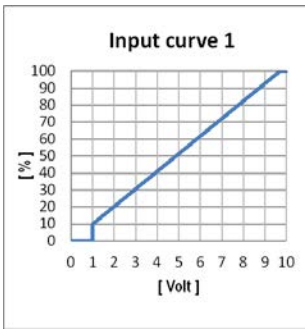
Connection diagram



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 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

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Terminal/plug assignment

Basic (B4)

Factory configuration option upon request

○ *Factory configuration option*

	configurable IO mode	electrical specification	INPUT: source: set value	INPUT: switch: parameter set: #1 / #2	INPUT: switch: direction of rotation: cw / ccw	INPUT: switch: enable/disable input	INPUT: configurable function	OUTPUT: signal: tach out	OUTPUT: signal: diagnostics out	OUTPUT: signal: alarm out	OUTPUT: signal: run monitoring	OUTPUT: signal: status	OUTPUT: signal: configurable function
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_{PWM} = 1k..10 kHz, SELV	○					○					
IO2	○ Tach out (open collector)	Umax=50 VDC, Imax=10 mA, SELV											○
	○ Diagnostics out (open collector)	Umax=50 VDC, Imax=10 mA, SELV							○				○
	○ Alarm out (open collector)	Umax=50 VDC, Imax=10 mA, SELV								○			
	○ Open collector	Umax=50 VDC, Imax=10 mA, SELV											○
Vout	Voltage output	Voltage10 VDC, SELV											

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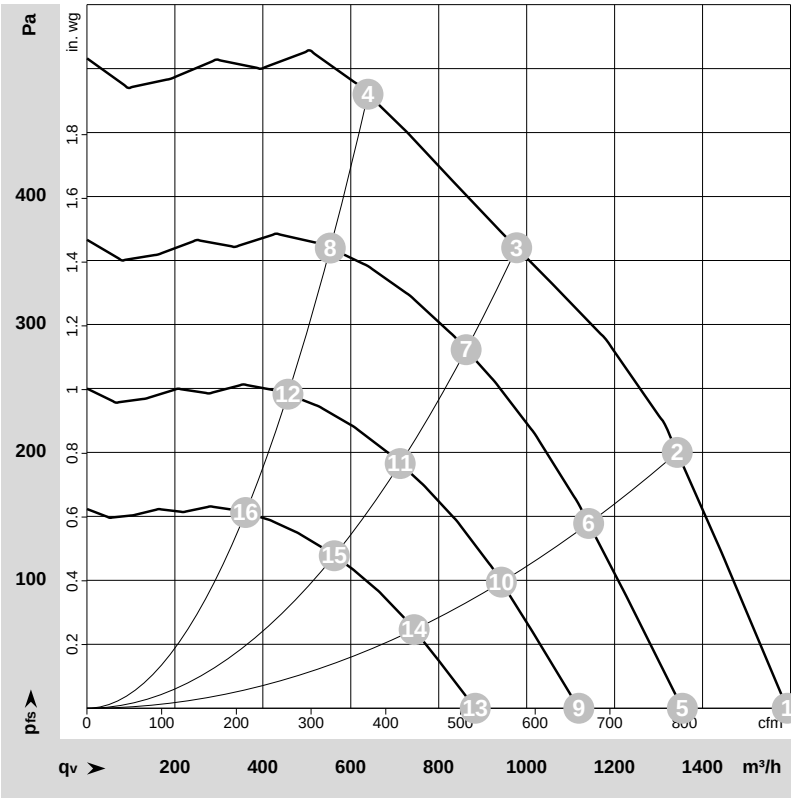
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-231607-1
Date: 2024-03-12
Nozzle: 8217118132

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	131	1.10	67	74	1595	0	940	0.00
2	1~	230	50	2705	164	1.35	63	71	1340	200	790	0.80
3	1~	230	50	2605	172	1.42	61	69	975	360	575	1.45
4	1~	230	50	2655	172	1.42	67	75	640	480	375	1.93
5	1~	230	50	2300	80	0.68	62	70	1355	0	795	0.00
6	1~	230	50	2300	100	0.83	59	67	1140	144	670	0.58
7	1~	230	50	2300	118	0.98	58	65	860	280	505	1.12
8	1~	230	50	2300	111	0.92	63	71	555	360	325	1.45
9	1~	230	50	1900	45	0.38	58	65	1120	0	660	0.00
10	1~	230	50	1900	57	0.47	55	62	945	99	555	0.40
11	1~	230	50	1900	67	0.55	53	61	710	191	420	0.77
12	1~	230	50	1900	63	0.52	58	66	455	245	270	0.98
13	1~	230	50	1500	22	0.19	52	60	885	0	520	0.00
14	1~	230	50	1500	28	0.23	49	56	745	61	440	0.24
15	1~	230	50	1500	33	0.27	47	55	560	119	330	0.48
16	1~	230	50	1500	31	0.26	52	60	360	153	210	0.61

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