EC centrifugal fan - RadiPac

backward-curved, single-intake

R3G250-BB01-J9 ebmpapst Datasheet
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Amtsgericht (court of registration) Stuttgart · HRA 590344

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**R3G250-BB01-J9**
Motor	**M3G084-DF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	4000
Power consumption	W	1090
Current draw	A	1.73
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	63.6	51.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		73.8	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.07
09 Air flow q_v	m^3/h	2405
09 Pressure increase p_{fs}	Pa	948
10 Speed (rpm) n	min^{-1}	4010
11 Specific ratio*		1.01

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-176493

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Technical description

Weight	4.6 kg
Fan size	250 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
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	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1
Approval	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730; EAC

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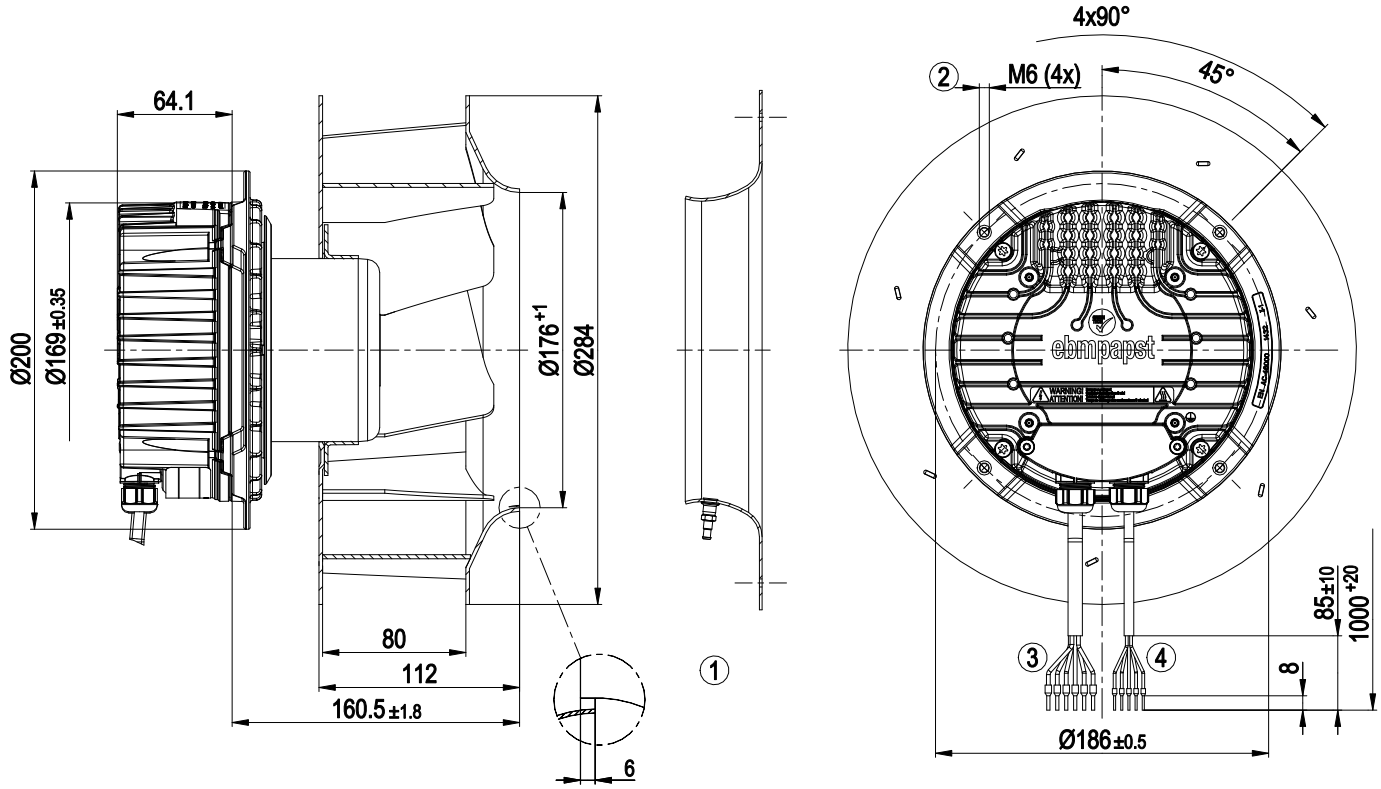
Product drawing



1	Accessory part: inlet ring 25075-2-4013 with pressure tap (k-factor: 70) not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18, 6x crimped ferrules
4	Cable PVC AWG22, 5x crimped ferrules

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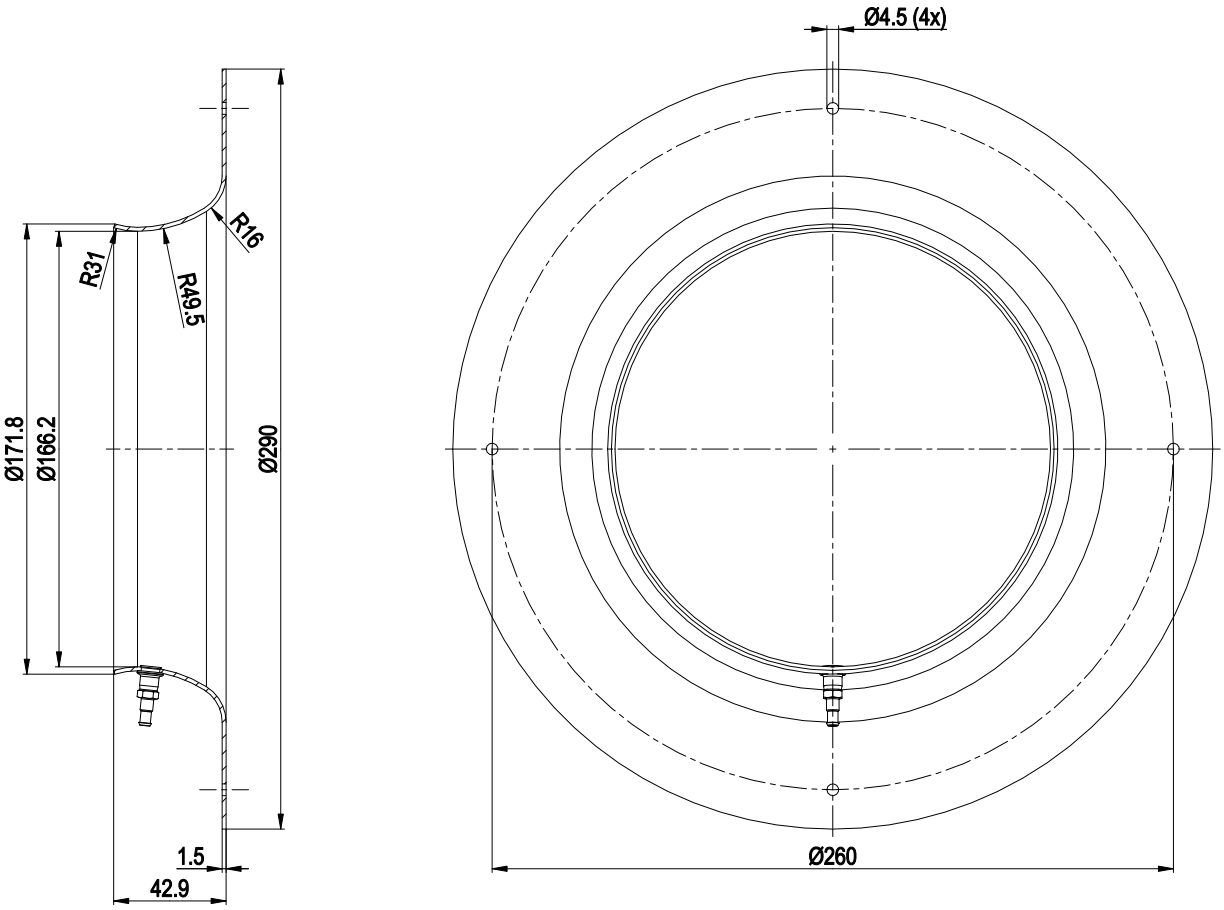
Accessory part



Inlet ring 25075-2-4013 with pressure tap not included in scope of delivery

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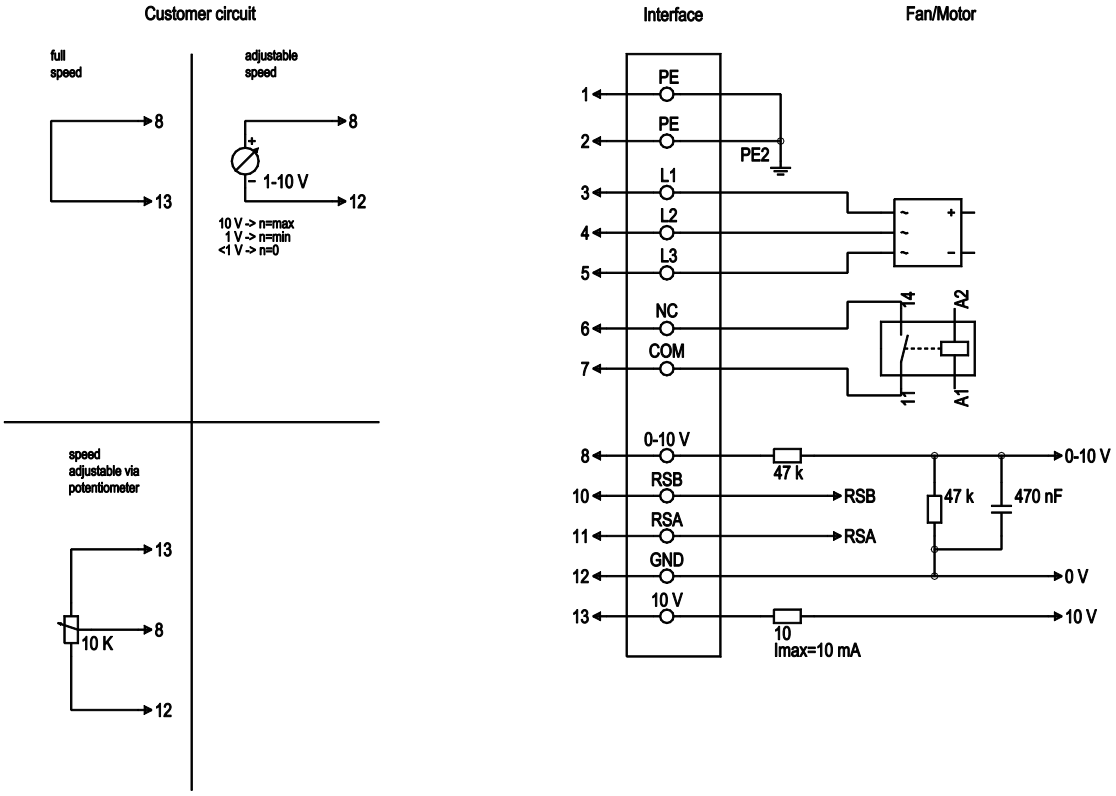
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact, break for failure, contact rating 250 VAC / 30 VDC 5 A minimum contact separation 1 mA / 5 VDC, reinforced insulation on supply side, basic insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact, common connection, contact rating 250 VAC / 30 VDC 5 A minimum contact separation 1 mA / 5 VDC, reinforced insulation on supply side, basic insulation on control interface side
2	8	0-10V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)

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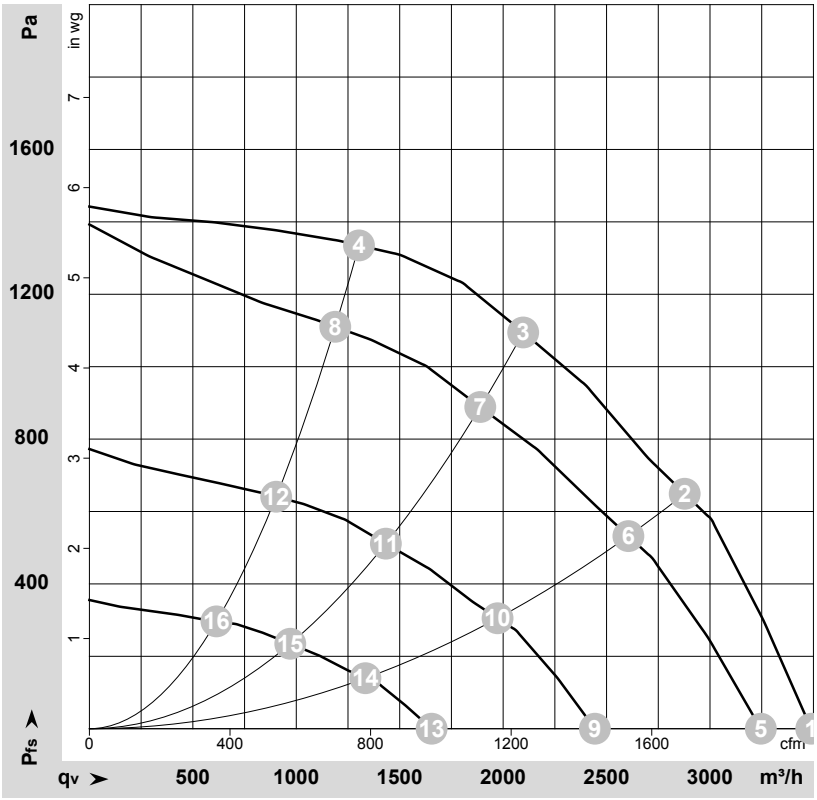
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-176493-1

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

	U	f	n	P_{ed}	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	400	50	4000	804	1.28	80	88	3490	0	2055	0.00
2	400	50	4000	1042	1.65	77	84	2880	650	1695	2.61
3	400	50	4000	1090	1.73	75	83	2100	1095	1235	4.40
4	400	50	4000	1001	1.58	81	89	1305	1335	765	5.36
5	400	50	3750	669	1.09			3245	0	1910	0.00
6	400	50	3645	795	1.27			2605	532	1535	2.14
7	400	50	3625	807	1.29			1890	888	1110	3.56
8	400	50	3665	768	1.24			1190	1110	700	4.46
9	400	50	2830	316	0.59			2445	0	1440	0.00
10	400	50	2785	373	0.66			1975	305	1160	1.22
11	400	50	2770	378	0.68			1435	511	845	2.05
12	400	50	2785	360	0.65			905	641	530	2.57
13	400	50	1935	119	0.31			1655	0	975	0.00
14	400	50	1910	139	0.32			1335	140	785	0.56
15	400	50	1905	142	0.33			970	235	570	0.94
16	400	50	1915	136	0.32			615	296	360	1.19

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = 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