EC centrifugal fan

backward-curved, single-intake

R3G250-RR04-H5 ebmpapst Datasheet
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Nominal data

Type	**R3G250-RR04-H5**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3370
Power consumption	W	370
Current draw	A	1.6
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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	56.3	46.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		71.5	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.36
09 Air flow q_v	m^3/h	1050
09 Pressure increase p_{fs}	Pa	639
10 Speed (rpm) n	min^{-1}	3380
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-178626

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Technical description

Weight	3.9 kg
Fan size	250 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Blade material	Press-fitted sheet steel blank, sprayed with PA plastic
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; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Tach output - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-3 (household environment)
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 60335-1; EN 61800-5-1; CE
Approval	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730; EAC

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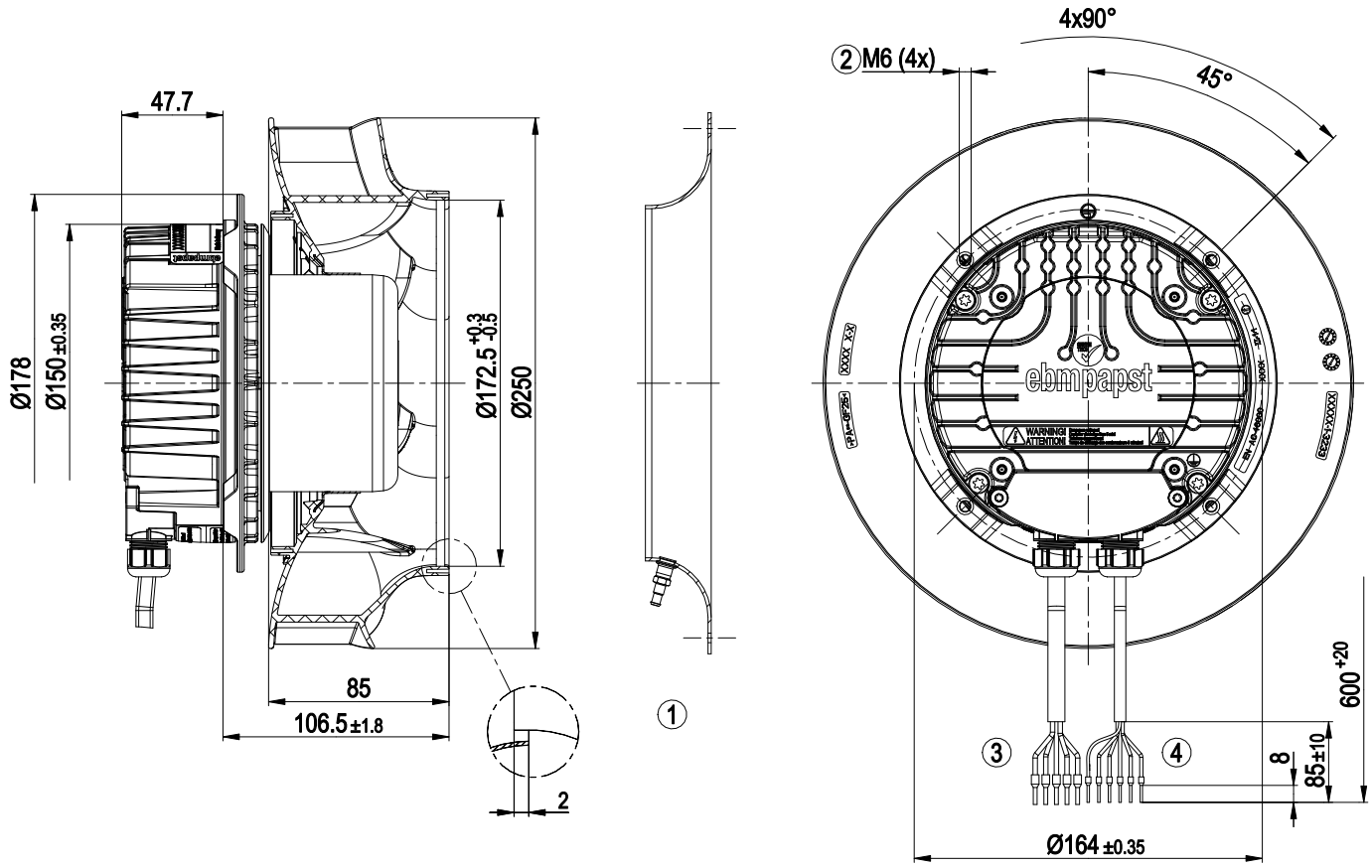
Product drawing



1	Accessory part: Inlet ring 96416-2-4013 with pressure tap (k-factor: 60) not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18, 5x crimped ferrules
4	Cable PVC AWG22, 6x crimped ferrules

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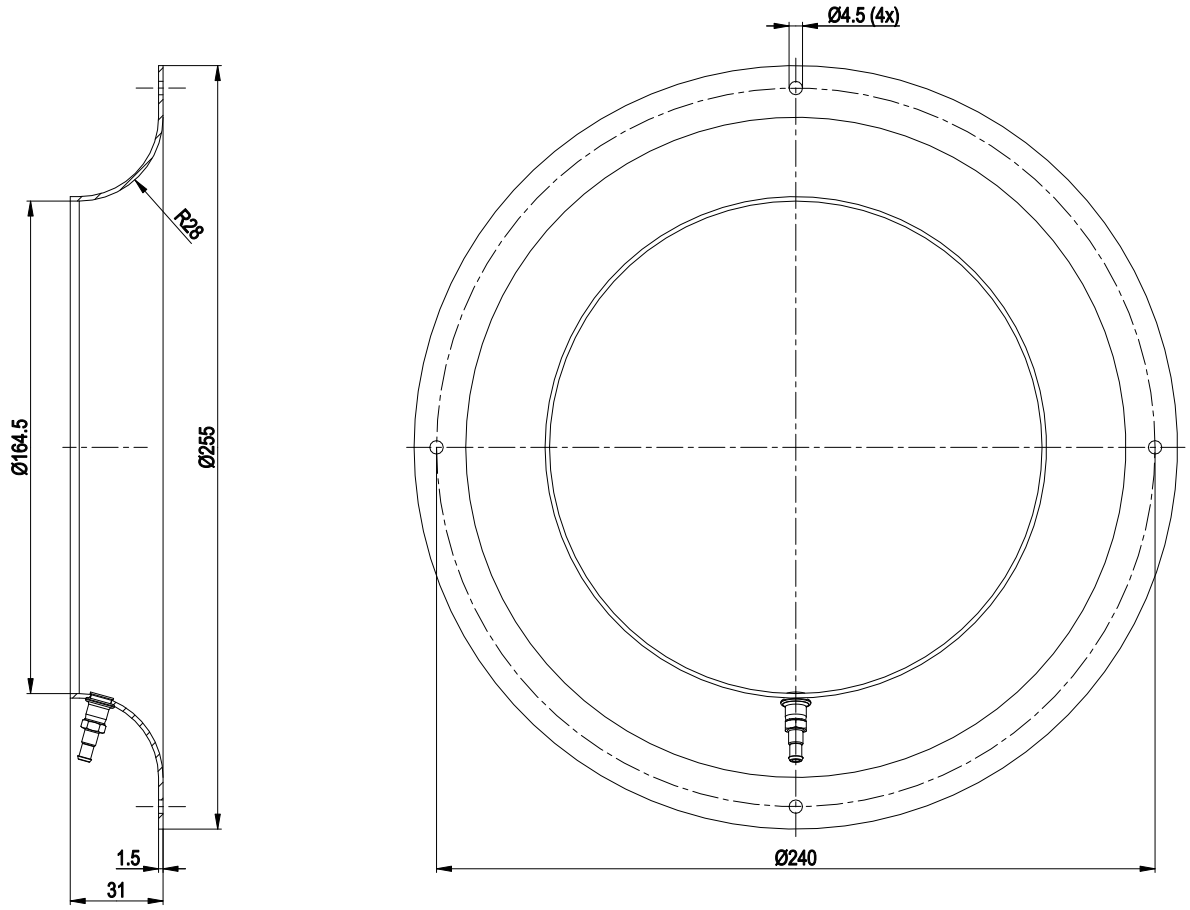
Accessory part



Inlet ring 96416-2-4013 with pressure tap not included in scope of delivery

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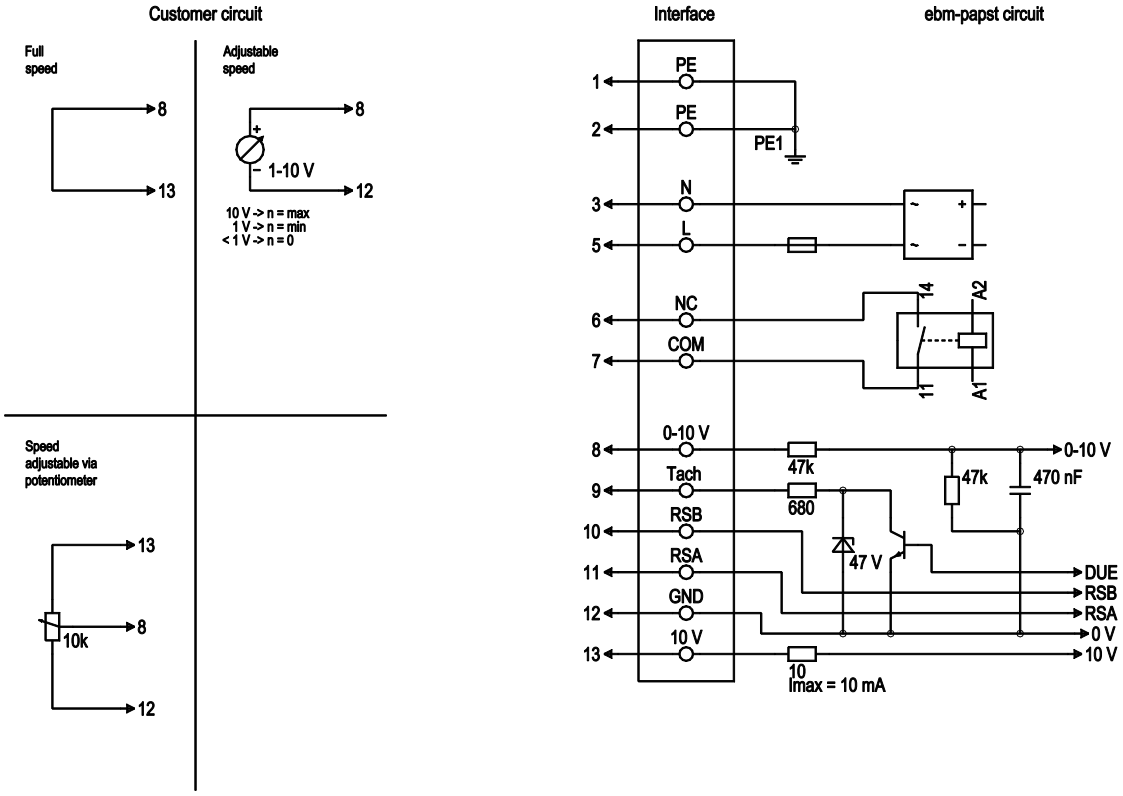
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	9	Tacho	gray	Tach output: open collector, 1 pulse per revolution, Isink max = 10 mA, SELV
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	+10 V	red	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot); SELV

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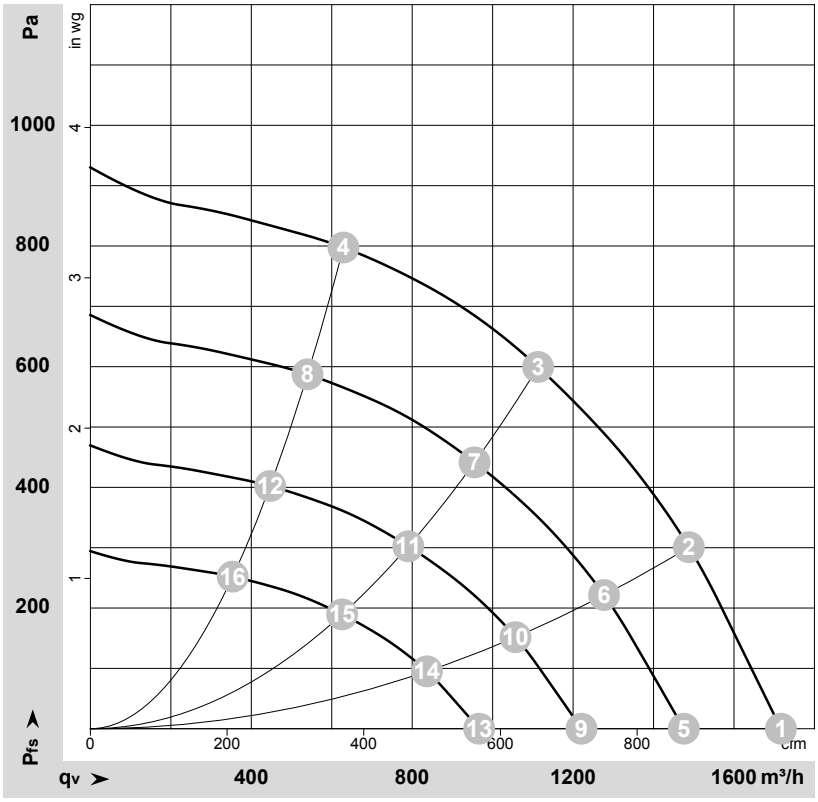
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-178626-1

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	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	230	50	3370	305	1.35	1715	0	1010	0.00
2	230	50	3370	336	1.48	1490	300	875	1.20
3	230	50	3370	370	1.60	1115	600	655	2.41
4	230	50	3370	330	1.46	630	800	370	3.21
5	230	50	2900	194	0.86	1475	0	870	0.00
6	230	50	2900	213	0.94	1275	225	750	0.90
7	230	50	2900	233	1.03	955	441	560	1.77
8	230	50	2900	209	0.92	540	588	320	2.36
9	230	50	2400	110	0.49	1220	0	720	0.00
10	230	50	2400	120	0.53	1055	154	620	0.62
11	230	50	2400	132	0.58	790	302	465	1.21
12	230	50	2400	118	0.52	445	403	265	1.62
13	230	50	1900	55	0.24	965	0	570	0.00
14	230	50	1900	60	0.26	835	96	495	0.39
15	230	50	1900	66	0.29	625	190	370	0.76
16	230	50	1900	59	0.26	355	252	210	1.01

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase