EC centrifugal fan - RadiCal

backward-curved, single-intake

R3G250-RI51-11 ebmpapst Datasheet
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Nominal data

Type	**R3G250-RI51-11**
Motor	**M3G074-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}	3800
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	55

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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	60.3	48.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		73.9	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.5
09 Air flow q_v	m^3/h	1200
09 Pressure increase p_{fs}	Pa	836
10 Speed (rpm) n	min^{-1}	3795
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-195668

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Technical description

Weight	3.4 kg
Size	250 mm
Motor size	74
Rotor surface	Thick-film passivated
Impeller material	PA plastic, galvanized sheet-metal plate
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	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	None, open rotor
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - 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
Electrical hookup	Connector with cable
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60034-1; EN 60204-1; EN 60335-1; CE

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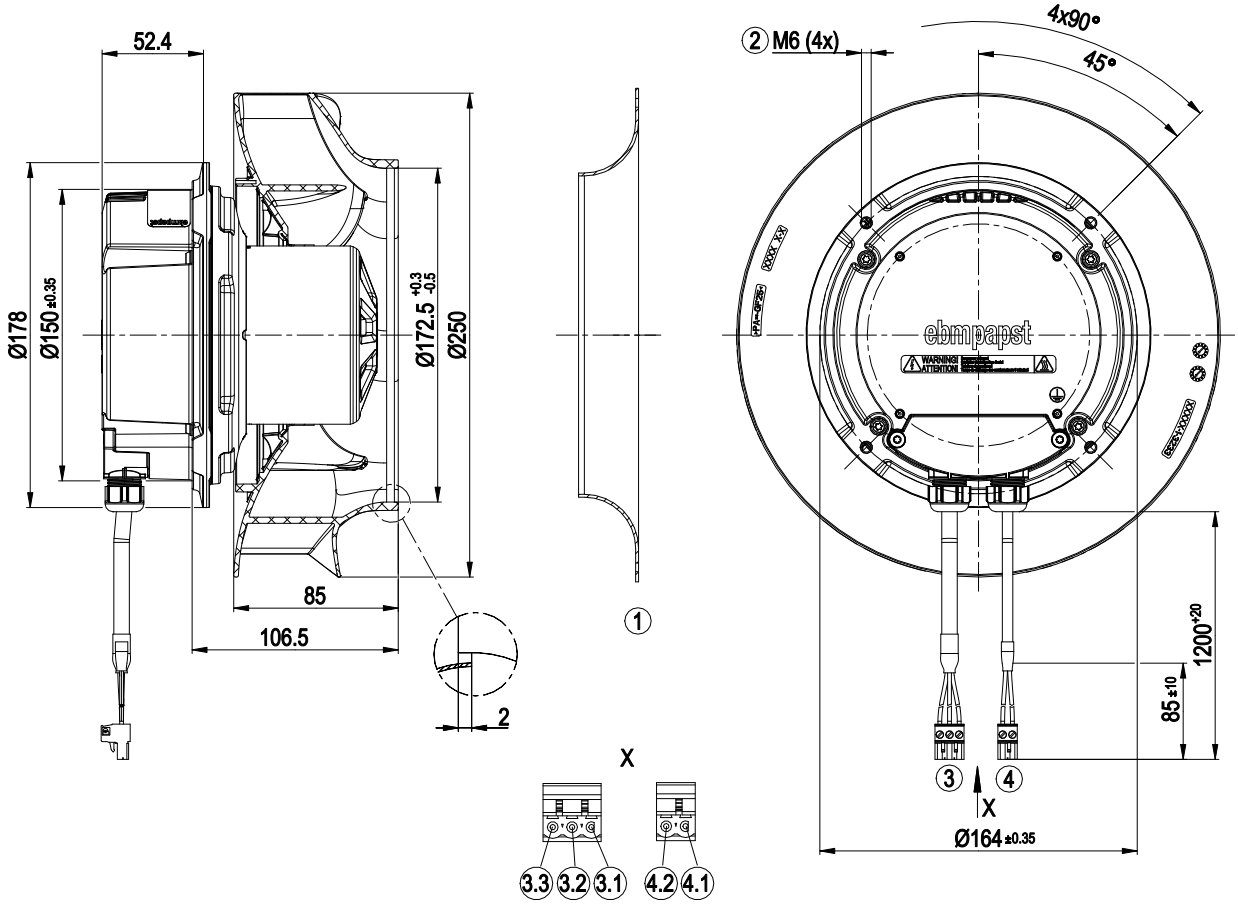
Product drawing



1	Accessory part: inlet ring 96359-2-4013 not included in scope of delivery
2	Max. clearance for screw 10 mm
3	Cable PVC AWG18
	3-pole connector housing Phoenix MSTB 2.5/3-ST
3.1	PE (green/yellow)
3.2	L (black)
3.3	N (blue)
4	Cable PVC AWG22
	2-pole connector housing Phoenix MSTB 2.5/2-ST
4.1	0-10 VDC (yellow)
4.2	GND (blue)

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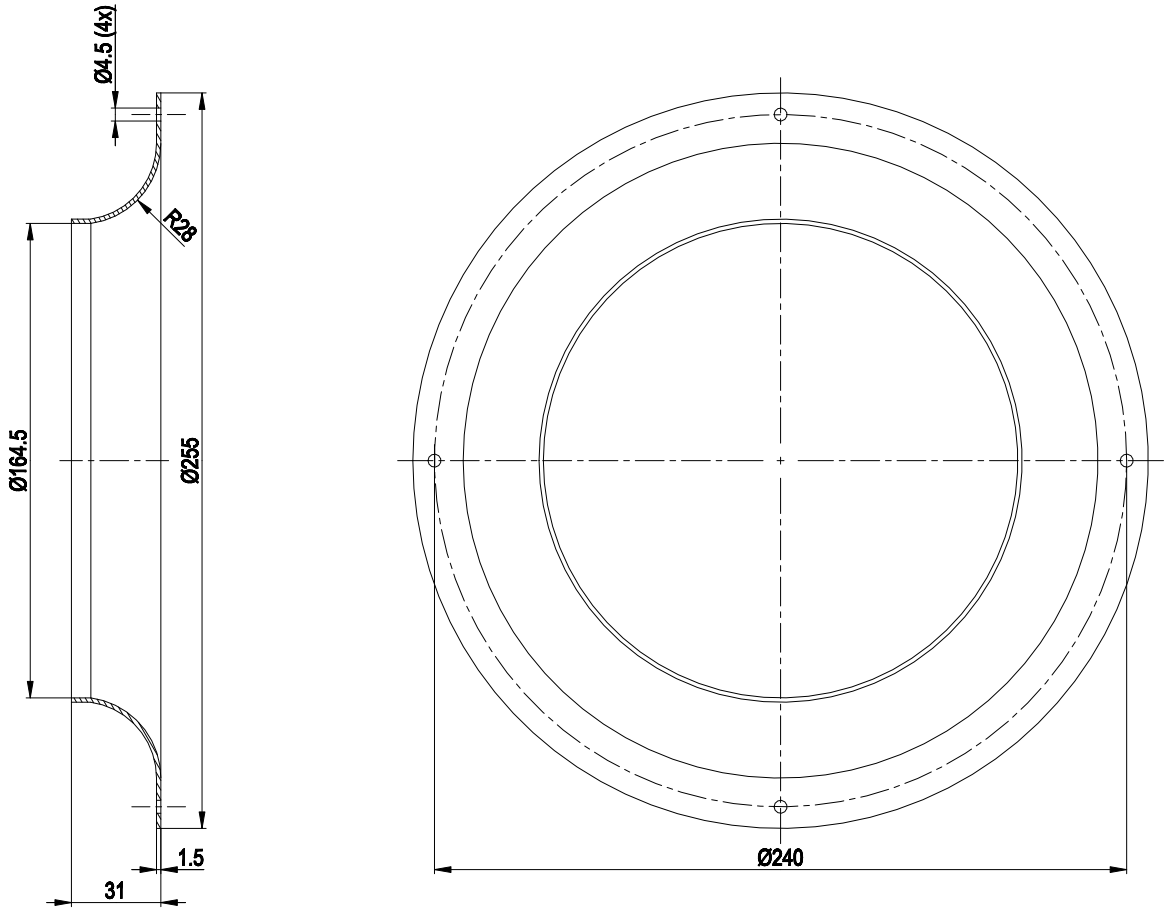
Accessory part



Accessory part: inlet ring 96359-2-4013 not included in scope of delivery

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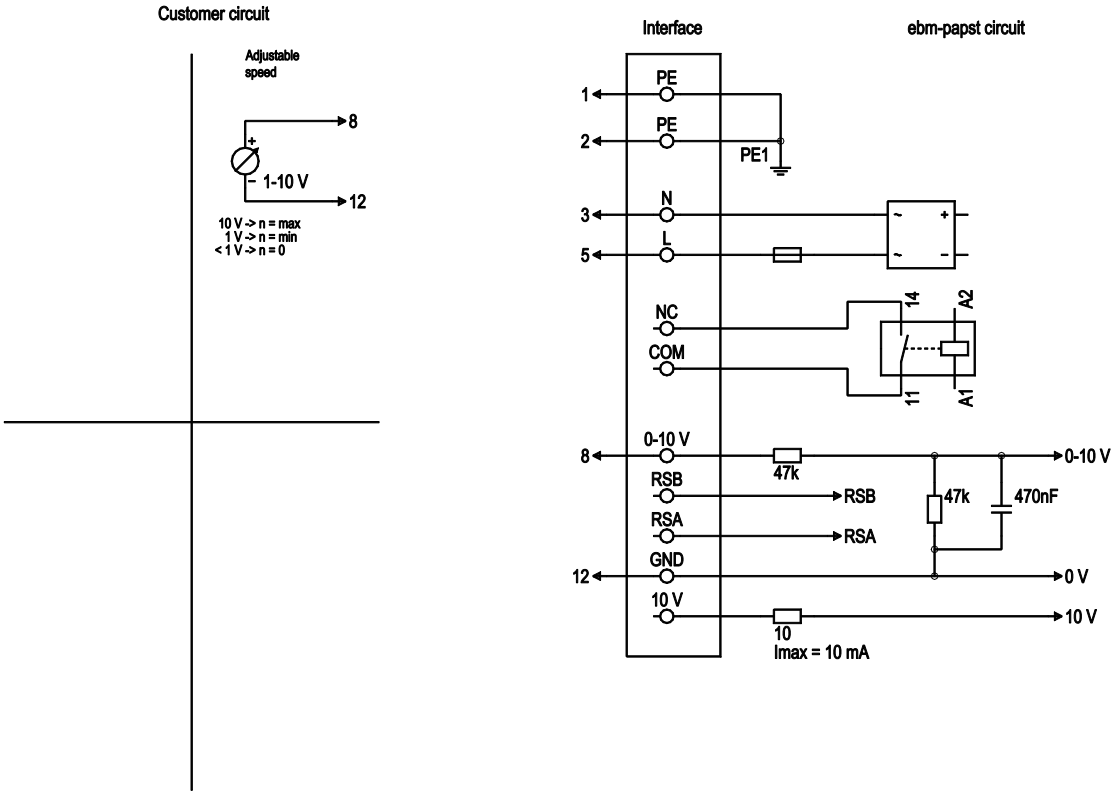
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Supply connection, power supply, neutral conductor, voltage range see nameplate, 50/60 Hz
1	5	L	black	Supply connection, power supply, phase, voltage range see nameplate, 50/60 Hz
1	6	NC	-	not brought out via wire
1	7	COM	-	not brought out via wire
2	8	0-10V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	-	not brought out via wire
2	11	RSA	-	not brought out via wire
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	-	not brought out via wire

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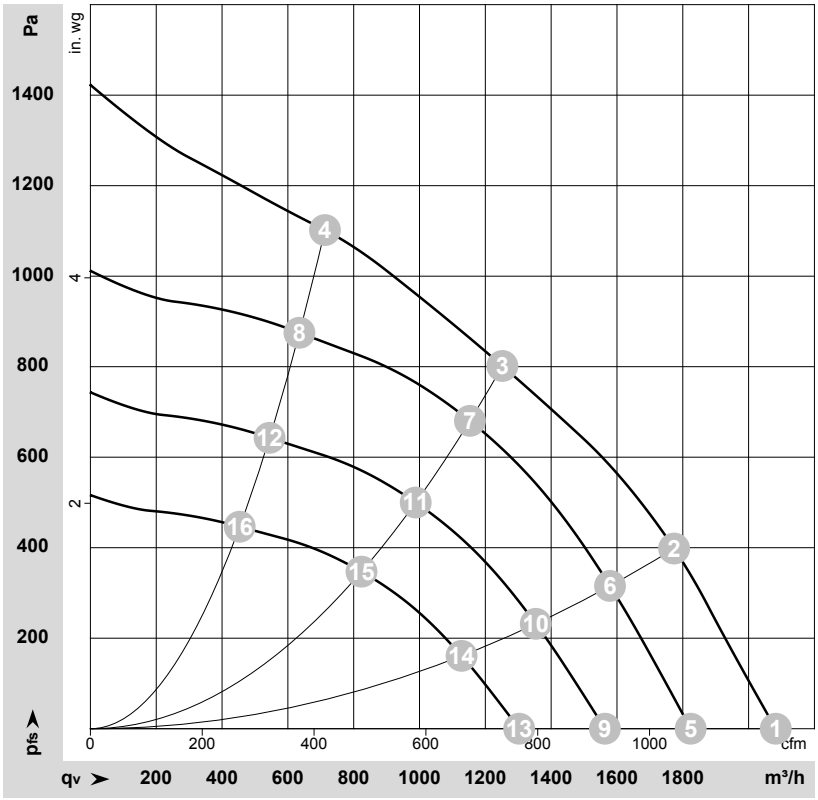
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-195668-1

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

	Wired	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	1~	230	50	4000	451	1.97	2080	0	1225	0.00
2	1~	230	50	3935	500	2.20	1775	400	1045	1.61
3	1~	230	50	3800	500	2.20	1250	800	735	3.21
4	1~	230	50	3930	500	2.20	715	1100	420	4.42
5	1~	230	50	3500	303	1.33	1825	0	1075	0.00
6	1~	230	50	3500	351	1.53	1580	317	930	1.27
7	1~	230	50	3500	399	1.74	1155	681	680	2.73
8	1~	230	50	3500	353	1.54	635	875	375	3.51
9	1~	230	50	3000	191	0.83	1565	0	920	0.00
10	1~	230	50	3000	221	0.97	1355	233	795	0.94
11	1~	230	50	3000	251	1.10	990	500	580	2.01
12	1~	230	50	3000	222	0.97	545	643	320	2.58
13	1~	230	50	2500	110	0.48	1305	0	765	0.00
14	1~	230	50	2500	128	0.56	1130	162	665	0.65
15	1~	230	50	2500	145	0.64	825	348	485	1.40
16	1~	230	50	2500	129	0.56	455	446	265	1.79

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