EC centrifugal fan - RadiCal

backward curved, single inlet

R3G250-RO40-A6 ebmpapst Datasheet
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Nominal data

Type	**R3G250-RO40-A6**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	3700
Power input	W	490
Current draw	A	2.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data according to ErP directive

		Actual	Request 2015
01 Overall efficiency η_{es}	%	57.2	48.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		71	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.48
09 Air flow q_v	m^3/h	1205
09 Pressure increase p_{fs}	Pa	754
10 Speed (rpm) n	min^{-1}	3670
11 Specific ratio*		1.01

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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

LU-140418

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Technical features

Mass	3.9 kg
Size	250 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PA plastic
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"B"
Humidity (F)/environmental protection class (H)	F3-1
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on top; rotor on bottom on request
Condensate discharge holes	None
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Tach output - Motor current limit - PFC, active - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 60335-1; CE
Approval	5C; C22.2 Nr.77 + CAN/CSA-E60730-1; EAC

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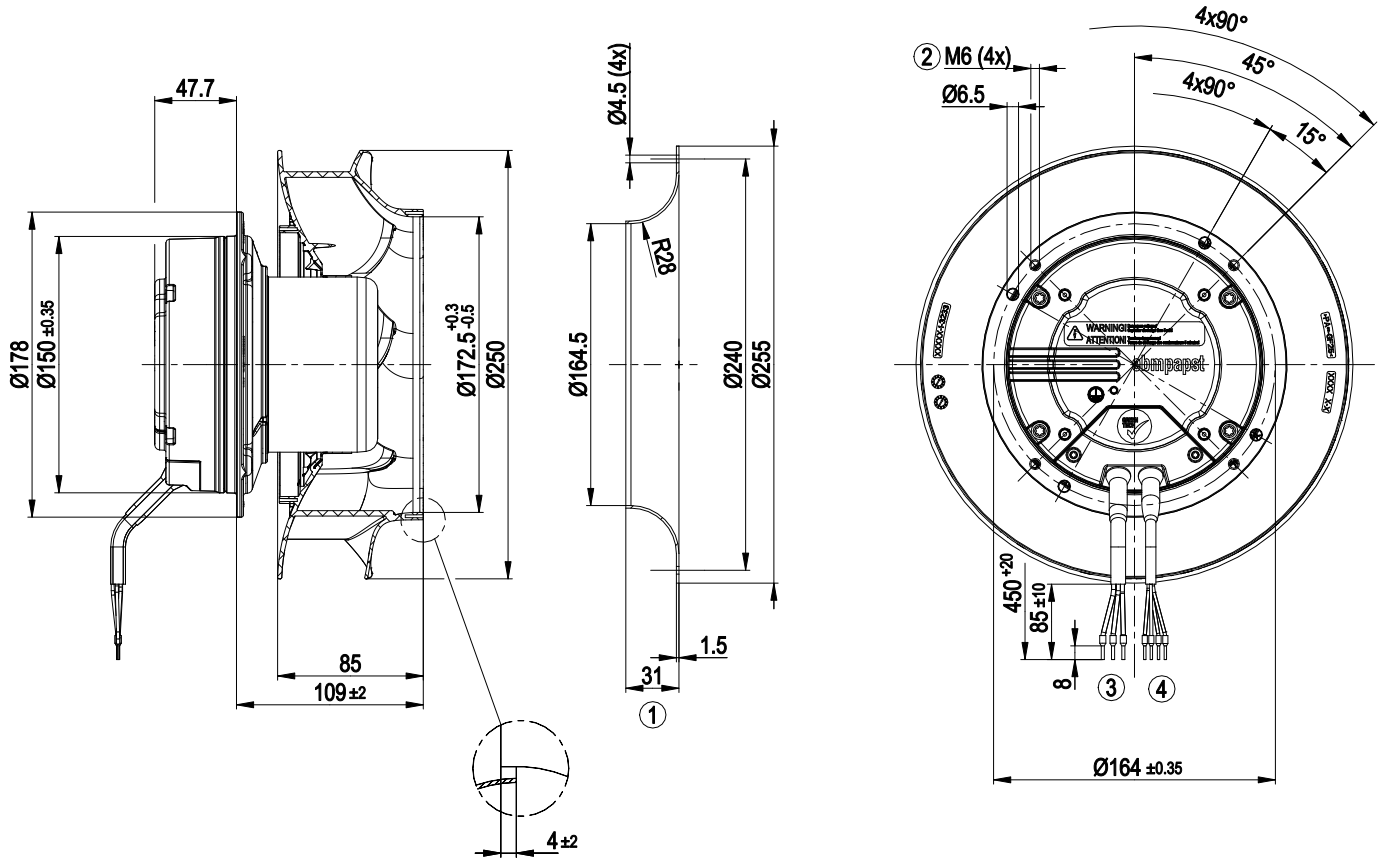
Product drawing



1	Accessory part: Inlet nozzle 96359-2-4013 not included in scope of delivery
2	Thread reach max. 10 mm
3	Connection line PVC AWG18, 3x crimped core-end sleeves
4	Connection line PVC AWG22, 4x crimped core-end sleeves

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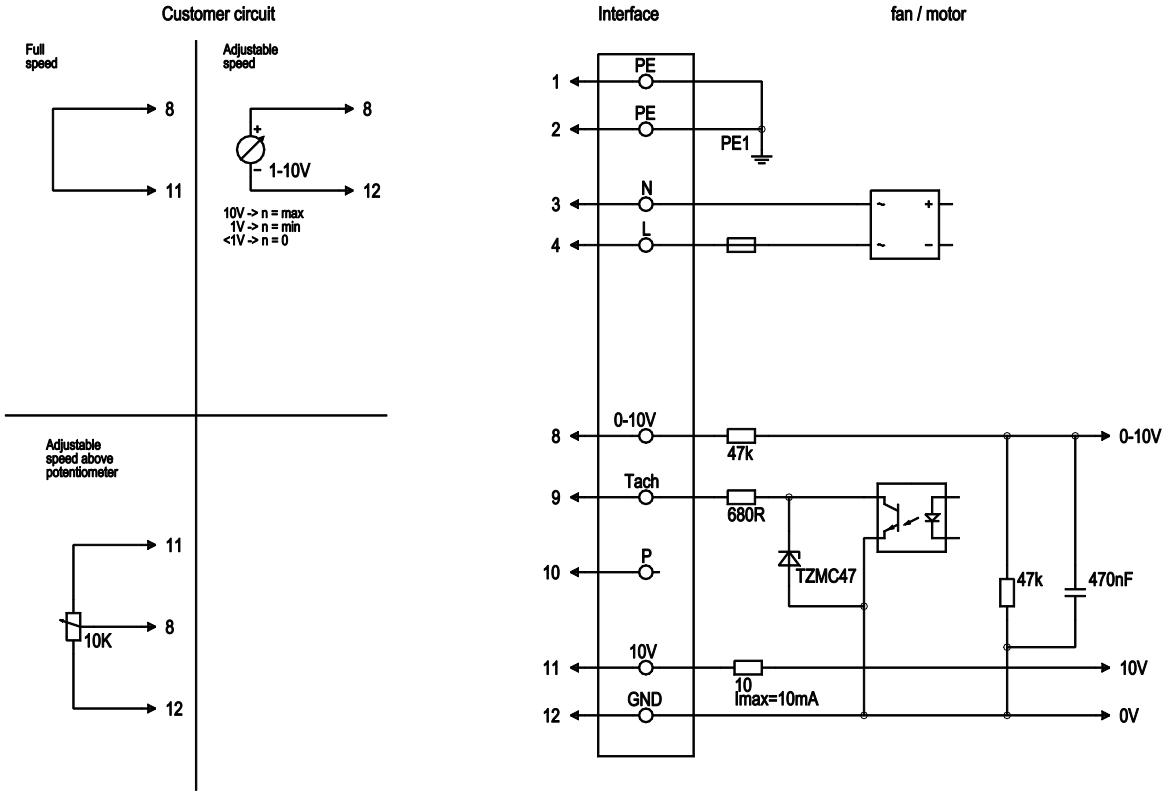
Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Supply voltage, neutral conductor, 50/60 Hz
1	4	L	black	Supply voltage, phase, 50/60 Hz
2	8	0-10V	yellow	Control input, set value 0-10 VDC, impedance 100 kOhm, SELV
2	9	Tach	white	Tach output: open collector, 1 pulse per revolution, electrically isolated, Isink max. 10mA
2	10	P		Not assigned
2	11	10 VDC	red	Voltage output 10 VDC (+/-3%), max. 10 mA, power supply for ext. devices (e.g. potentiometer), SELV
2	12	GND	blue	Signal ground for control interface, SELV

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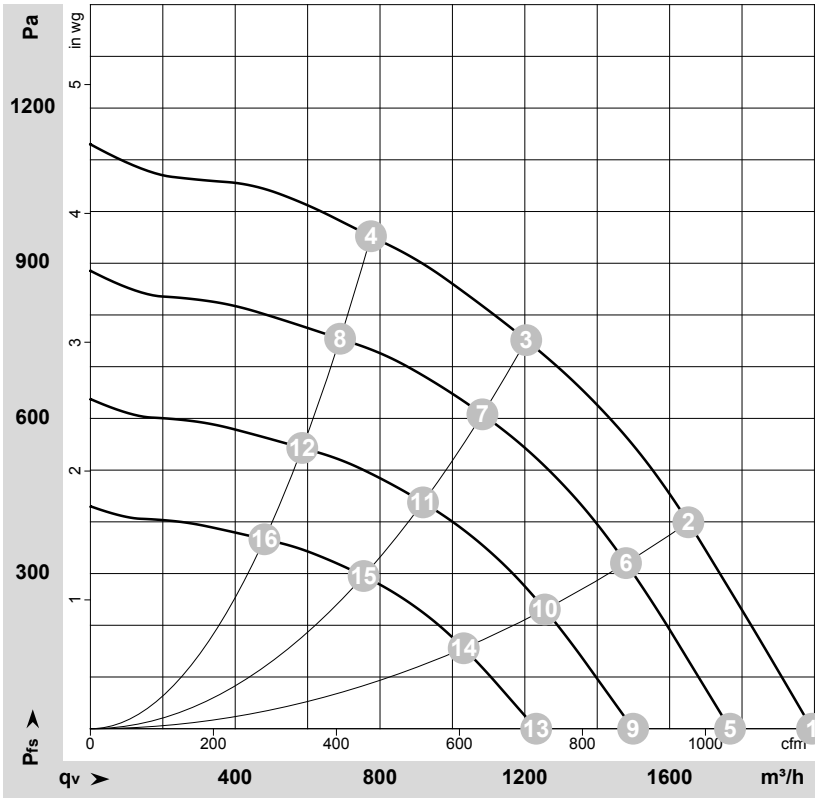
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-140418-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

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	inH2O
1	230	50	3700	407	1.79	1995	0	1175	0.00
2	230	50	3700	463	2.03	1650	400	970	1.61
3	230	50	3700	490	2.20	1205	750	710	3.01
4	230	50	3700	459	2.01	775	950	455	3.81
5	230	50	3300	283	1.25	1765	0	1040	0.00
6	230	50	3300	332	1.46	1480	321	870	1.29
7	230	50	3300	355	1.56	1085	609	635	2.44
8	230	50	3300	323	1.42	690	754	405	3.03
9	230	50	2800	173	0.76	1500	0	880	0.00
10	230	50	2800	203	0.89	1255	231	740	0.93
11	230	50	2800	217	0.95	920	439	540	1.76
12	230	50	2800	198	0.86	585	543	345	2.18
13	230	50	2300	96	0.42	1230	0	725	0.00
14	230	50	2300	113	0.49	1030	156	605	0.63
15	230	50	2300	120	0.53	755	296	445	1.19
16	230	50	2300	109	0.48	480	366	285	1.47

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