EC centrifugal fan - RadiCal

backward curved, single inlet

R3G250-RO40-A7 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

Nominal data

Type	**R3G250-RO40-A7**
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}	3650
Power input	W	480
Current draw	A	2.1
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	45

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}	%	60.4	48.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		74.3	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.47
09 Air flow q_v	m^3/h	1200
09 Pressure increase p_{fs}	Pa	784
10 Speed (rpm) n	min^{-1}	3635
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-131738

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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)	H1
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 - Alarm relay - 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
Electrical leads	With plug
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 61800-5-1; CE
Approval	CSA C22.2 No.77; UL 1004-3; EAC

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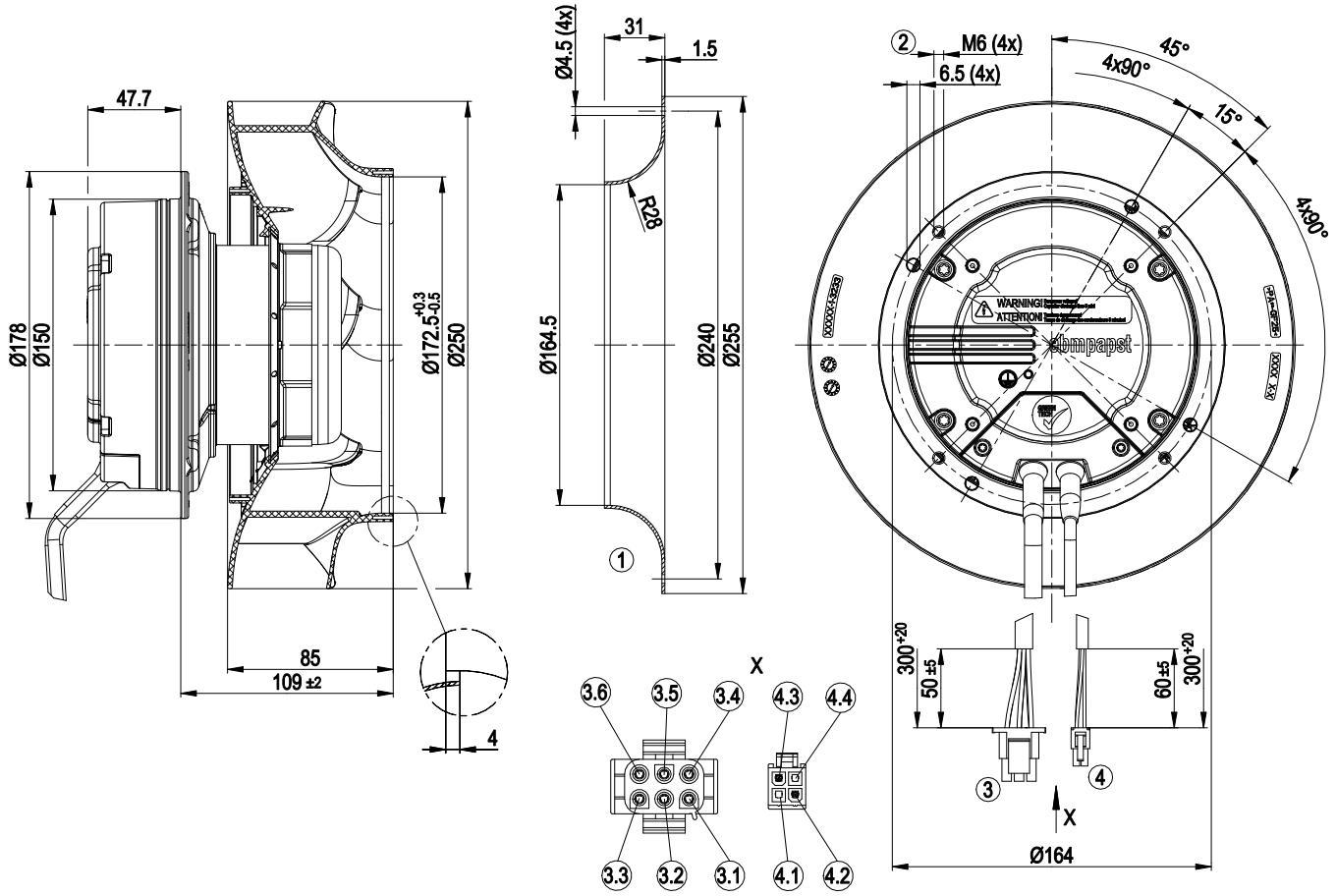
Product drawing



1	Accessory part: Inlet nozzle 96359-2-4013 not included in scope of delivery
2	Thread reach max. 10 mm
3	Connection line AWG18, 6-pole connector housing tyco 1-480704-9, 5x female connector tyco 926882-1 crimped
3.1	PE (green-yellow)
3.2	L (black)
3.3	N (blue)
3.4	not used
3.5	NC (white 1)
3.6	COM (white 2)
4	Connection line AWG22, 4-pole connector housing Molex 46992-0410, 3x female connector Molex 39-00-0038 crimped
4.1	+10 V (red)
4.2	GND (blue)
4.3	0-10 VDC (yellow)
4.4	not used

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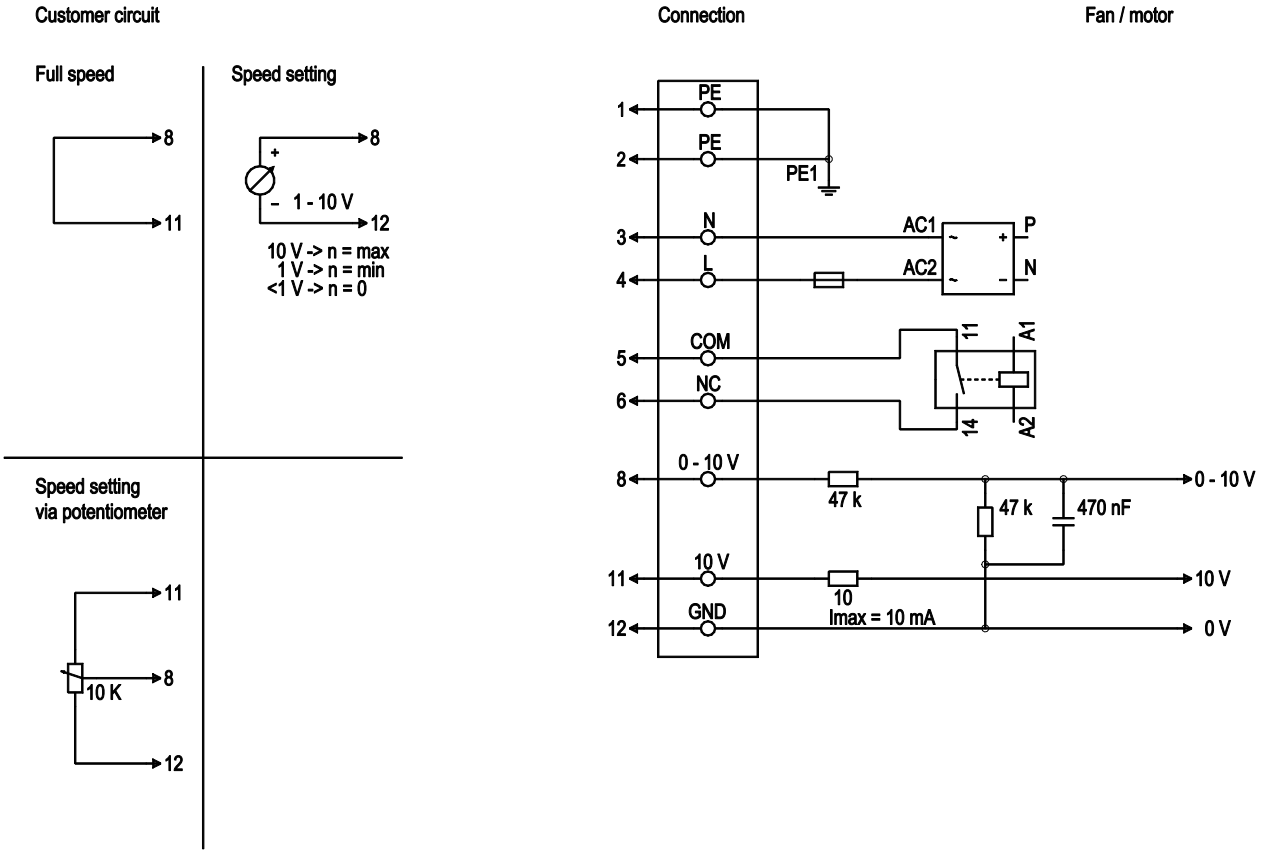
Connection screen



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
1	5	COM	white 1	Floating status message contact, normally closed connection (2 A, max. 250 VAC, min. 10 mA)
1	6	NC	white 2	Floating status message contact, normally closed connection
2	8	0 - 10 V	yellow	Control input, set value 0 - 10 VDC, impedance 100 kOhm, SELV
2	11	10 VDC	red	Voltage output 10 VDC (+/-3%), max. 10 mA, supply voltage for ext. devices (e.g. potentiometer), SELV
2	12	GND	blue	Reference mass for control interface, SELV

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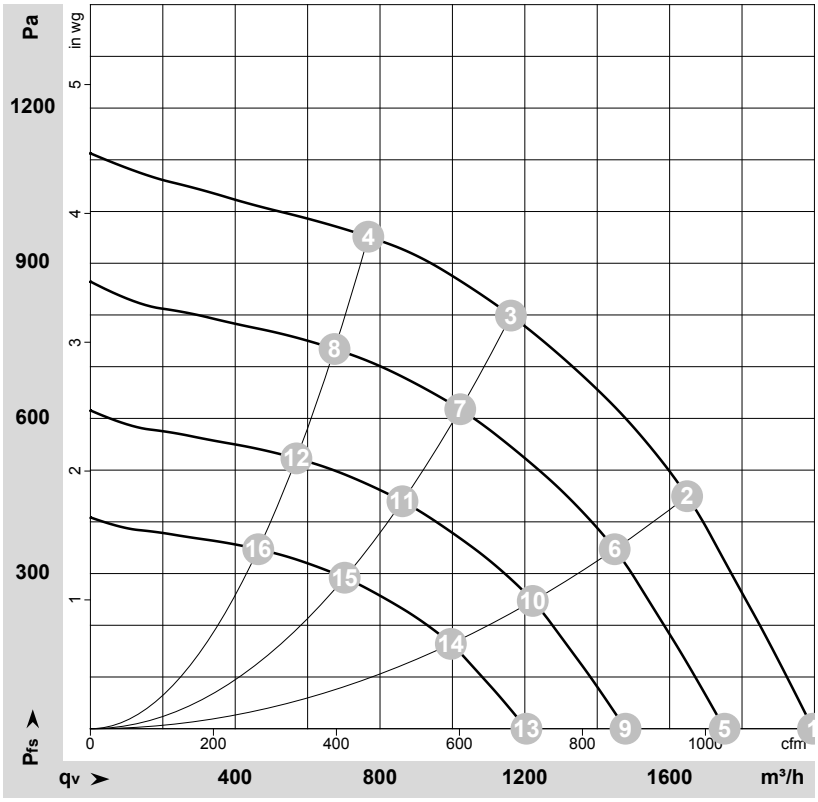
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-131738-1

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	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	inH2O
1	230	50	3650	382	1.68	76	85	1995	0	1175	0.00
2	230	50	3650	447	1.96	71	79	1650	450	970	1.81
3	230	50	3650	480	2.10	69	77	1160	800	685	3.21
4	230	50	3650	432	1.90	73	82	770	950	450	3.81
5	230	50	3200	258	1.14	73	81	1750	0	1030	0.00
6	230	50	3200	303	1.33	68	76	1450	351	850	1.41
7	230	50	3200	324	1.42	65	73	1020	619	600	2.49
8	230	50	3200	293	1.29	70	78	675	735	395	2.95
9	230	50	2700	155	0.68	69	77	1480	0	870	0.00
10	230	50	2700	182	0.80	64	72	1220	250	720	1.00
11	230	50	2700	195	0.85	61	69	860	440	505	1.77
12	230	50	2700	176	0.77	66	74	570	523	335	2.10
13	230	50	2200	84	0.37	64	72	1205	0	710	0.00
14	230	50	2200	99	0.43	59	67	995	166	585	0.67
15	230	50	2200	105	0.46	56	64	700	292	415	1.17
16	230	50	2200	95	0.42	61	69	465	347	275	1.39

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · q_V = Air flow
p_{fs} = Pressure increase