EC centrifugal fan - RadiCal

backward curved, single inlet

R3G280-RO44-51 ebmpapst Datasheet
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Nominal data

Type	**R3G280-RO44-51**
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}	2210
Power input	W	290
Current draw	A	1.9
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	55

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}	%	67.5	45.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		83.6	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.29
09 Air flow q_v	m^3/h	1505
09 Pressure increase p_{fs}	Pa	425
10 Speed (rpm) n	min^{-1}	2230
11 Specific ratio*		1.00

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

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Technical features

Mass	4.1 kg
Size	280 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PP plastic
Number of blades	6
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 - Alarm relay - Motor current limit - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC harmonics	Acc. to EN 61000-3-2/3
EMC interference emission	Acc. to EN 61000-6-3 (household environment)
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 61800-5-1; CE
Approval	EAC

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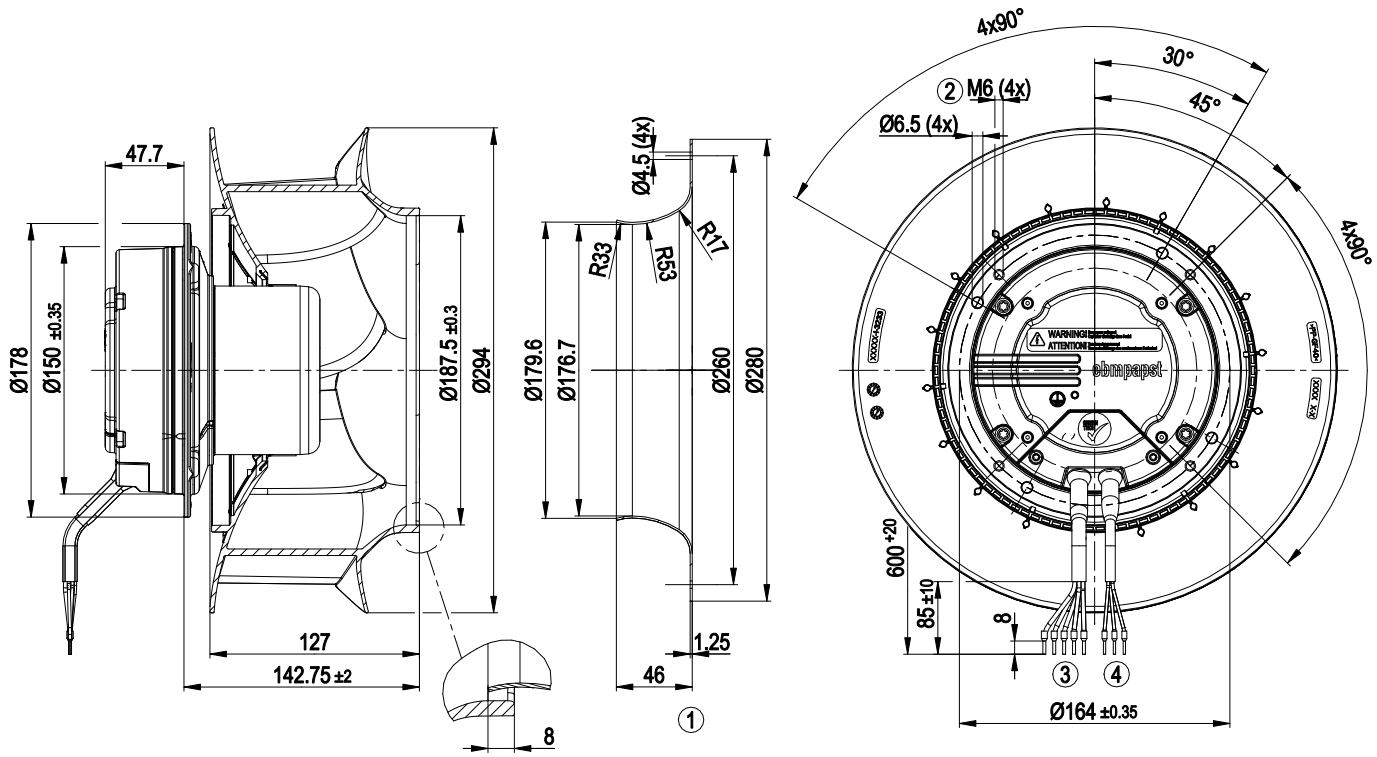
Product drawing



1	Accessory part: Inlet nozzle 28000-2-4013 not included in scope of delivery
2	Thread reach max. 10 mm
3	Connection line PVC AWG18, 5x crimped core-end sleeves
4	Connection line PVC AWG22, 3x crimped core-end sleeves

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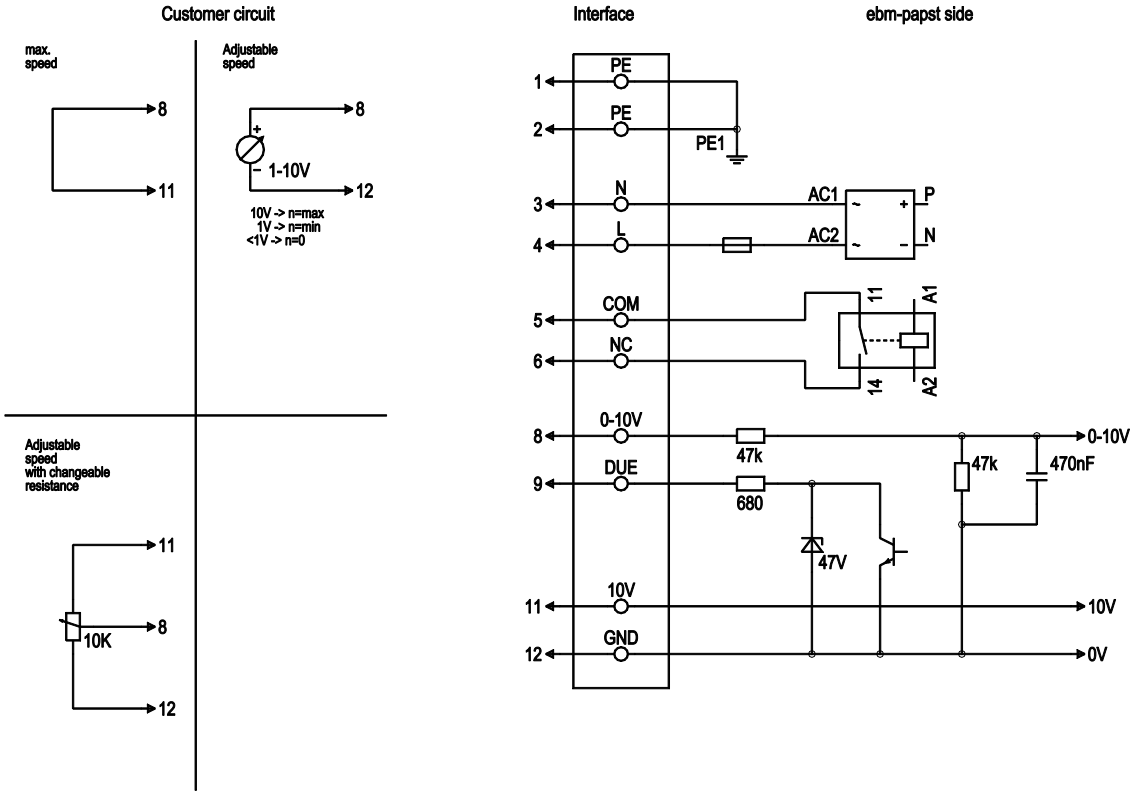
Connection screen



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
1	5	COM	white 1	Floating status contact, break for failure (2 A, max. 250 VAC, min. 10 mA, AC1)
1	6	NC	white 2	Floating status contact, break for failure
2	8	0 - 10 V	yellow	Control input, set value 0 - 10 VDC, impedance 100 kOhm, SELV
2	9	Tach	white	Speed monitoring, 1 pulse per revolution, Isink max. 5 mA
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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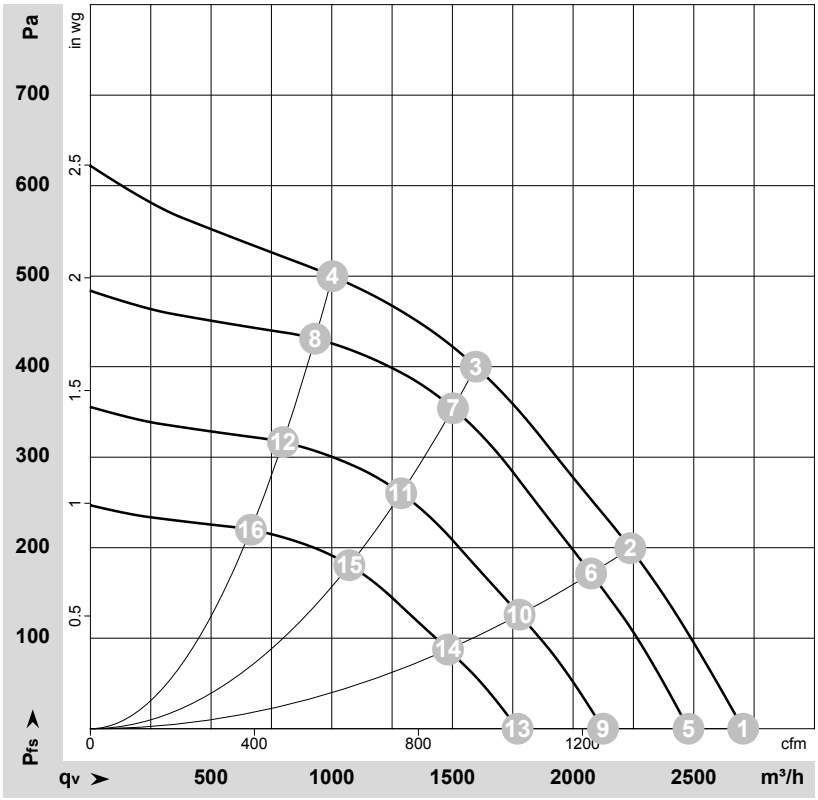
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-168398-1

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	2290	239	1.60	2705	0	1590	0.00
2	230	50	2265	269	1.78	2235	200	1315	0.80
3	230	50	2210	290	1.90	1595	400	940	1.61
4	230	50	2260	276	1.83	1005	500	590	2.01
5	230	50	2100	184	1.23	2480	0	1460	0.00
6	230	50	2100	214	1.42	2075	172	1220	0.69
7	230	50	2100	246	1.62	1500	354	885	1.42
8	230	50	2100	222	1.47	930	433	550	1.74
9	230	50	1800	116	0.77	2125	0	1250	0.00
10	230	50	1800	135	0.89	1780	126	1045	0.51
11	230	50	1800	155	1.02	1290	260	760	1.04
12	230	50	1800	140	0.92	800	318	470	1.28
13	230	50	1500	67	0.45	1770	0	1040	0.00
14	230	50	1500	78	0.52	1480	88	870	0.35
15	230	50	1500	90	0.59	1075	181	630	0.73
16	230	50	1500	81	0.54	665	221	390	0.89

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