R3G250-RV83-01

EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications



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Nominal data

Type	**R3G250-RV83-01**	
Motor	**M3G074-CF**	
Nominal voltage	VDC	110
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2485
Power consumption	W	160
Current draw	A	1.5
Min. ambient temperature	°C	-40
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}	%	58.3	42.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		77.5	62
05 Variable speed drive		Yes	

09 Power consumption P_e	kW	0.15
09 Air flow q_v	m^3/h	905
09 Pressure increase p_{fs}	Pa	316
10 Speed (rpm) n	min^{-1}	2485
11 Specific ratio*		1.00

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

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Technical description

Weight	2.5 kg
Fan size	250 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic UL94 V0
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP44; installation- and position-dependent as per EN 60034-5
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F3-1
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
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Run monitoring - Power limiter - Motor current limitation - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics
EMC regulations	According to EN 50121-3-2
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 15085-1, CPC3: 2007; EN 45545-2, HL3: 2013; EN 50155: 2008; EN 61373, Cat. 1B: 2010
Approval	EAC
Comment	Only suitable for indoor use

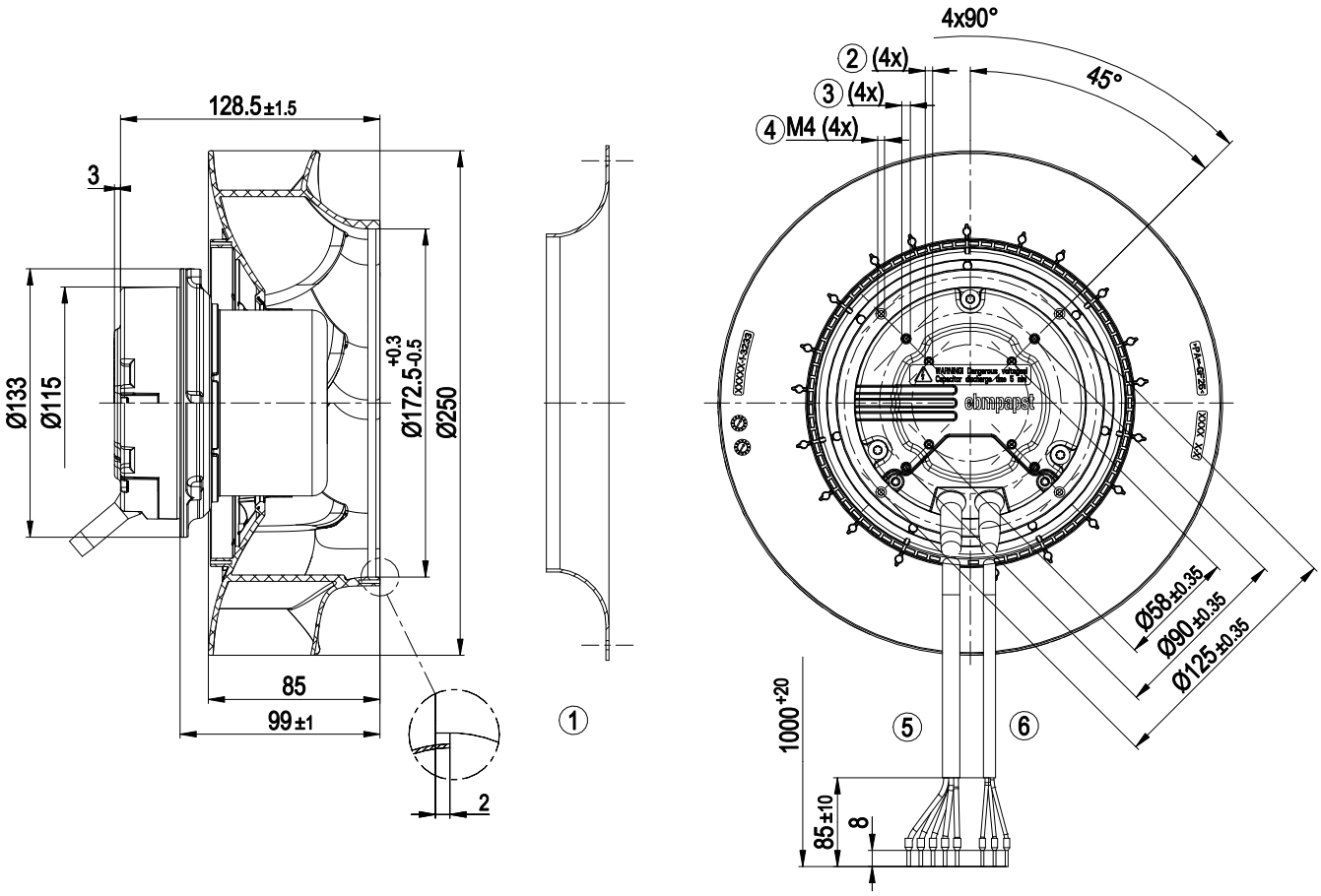
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Product drawing



1	Accessory part: inlet ring 96359-2-4013 not included in scope of delivery
2	Tapping hole prepared for self-tapping M4 screw, max. clearance for screw 8 mm
3	Tapping hole prepared for self-tapping M4 screw, max. clearance for screw 6 mm
4	Max. clearance for screw 10 mm
5	Cable halogen-free, BETAtrans® 3 GKW flex, 5G 1.0 mm², 5x crimped ferrules
6	Cable halogen-free, BETAtrans® 3 GKW flex, 3x 0.33 mm², 3x crimped ferrules

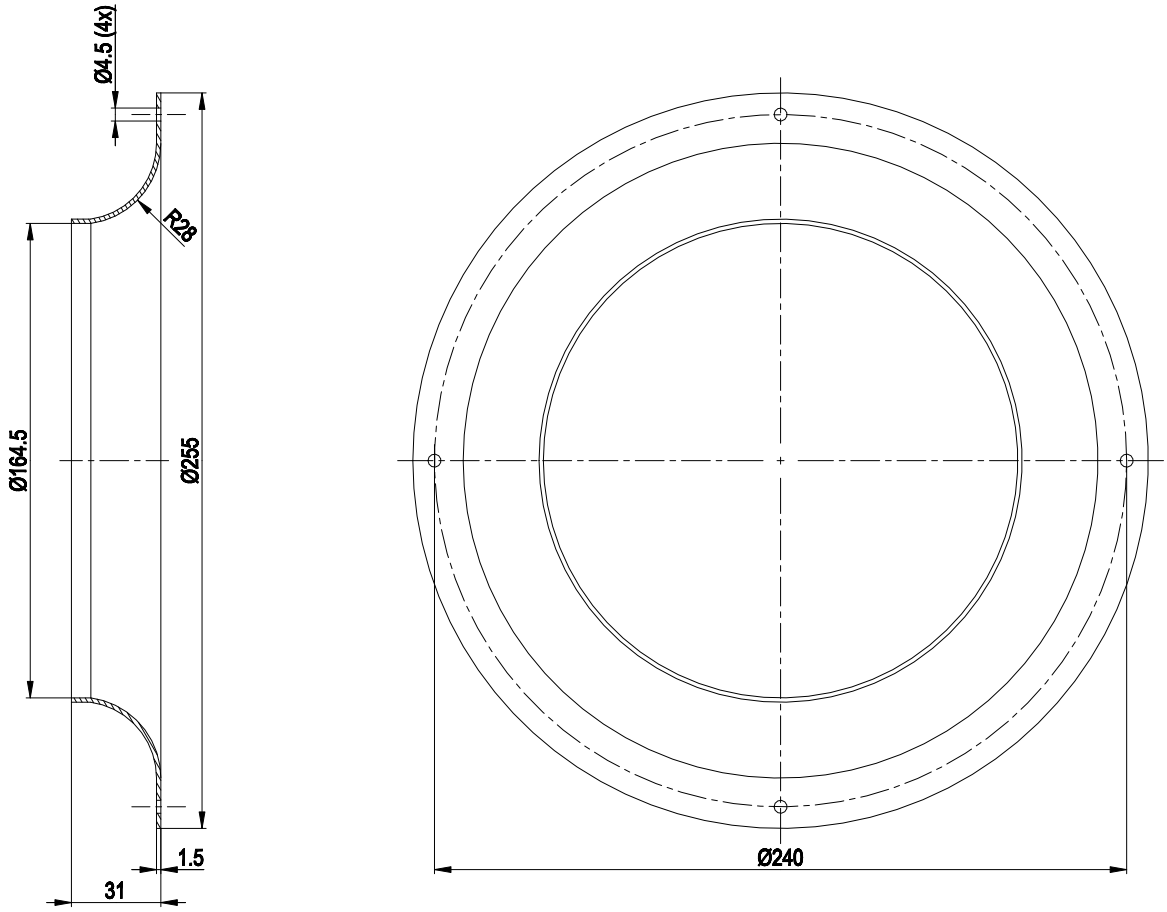
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Accessory part



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

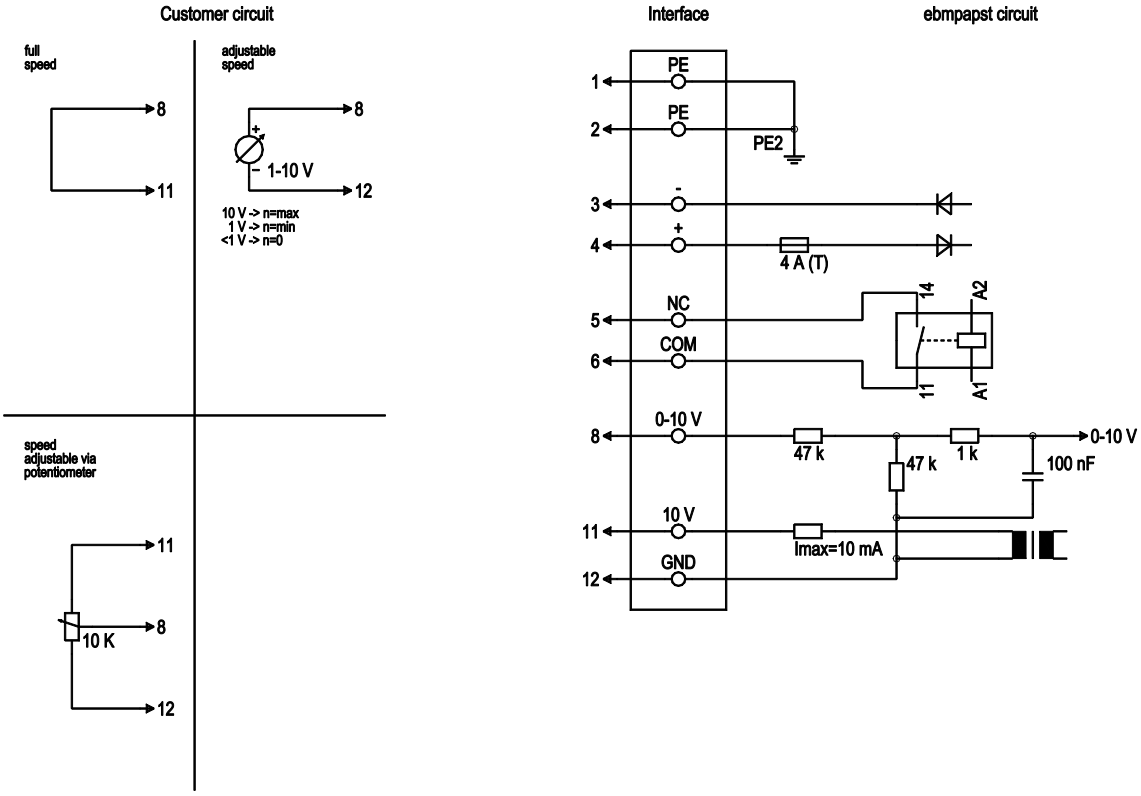
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	-	blue	Power supply, GND (110 VDC)
1	4	+	red	Power supply, 110 VDC
1	5	NC	white 2	Floating status contact (0.3 A - 110 VDC, 1 A - 60 VDC, 3 A - 30 VDC), closed at n >= 100 rpm, break for failure
1	6	COM	white 1	Floating status contact, closed at n >= 100 rpm, break for failure
2	8	0-10 V	yellow	Control input, set value 0-10 VDC, impedance 100 kΩ, SELV
2	11	10 VDC	red	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV
2	12	GND	blue	Reference ground for control interface (SELV)

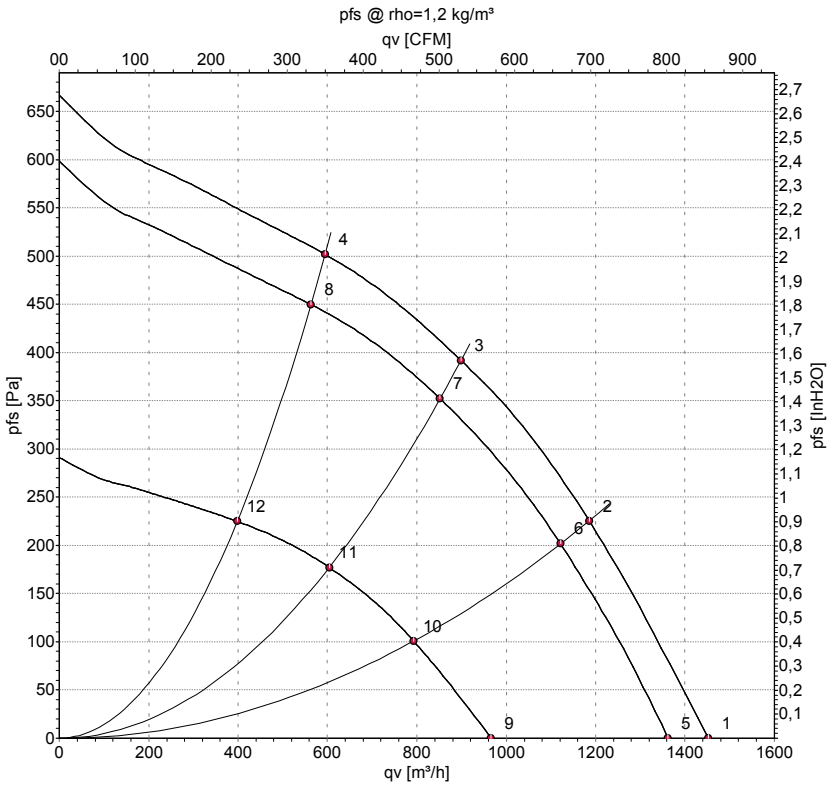
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Curves: Air performance



Measurement: LU-158399-1
Measurement: LU-158263-1
Measurement: LU-158396-1

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	n	P_{ed}	I	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	inH2O
1	138	2690	155	1.12			1450	0	855	0.00
2	138	2640	181	1.31			1185	226	700	0.91
3	138	2620	189	1.37			900	392	530	1.57
4	138	2650	175	1.27			595	502	350	2.02
5	110	2525	131	1.19	66	74	1360	0	800	0.00
6	110	2490	155	1.41	62	70	1120	200	660	0.80
7	110	2485	160	1.50	60	67	850	350	500	1.41
8	110	2505	152	1.38	64	71	565	450	330	1.81
9	77	1790	52	0.68			965	0	570	0.00
10	77	1770	60	0.78			795	101	465	0.41
11	77	1765	62	0.81			605	177	355	0.71
12	77	1775	59	0.77			400	225	235	0.90

U = Power supply · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side · q_V = Air flow
p_{fs} = Pressure increase

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