EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**R3G250-RR01-V6**
Motor	**M3G084-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}	3740
Power consumption	W	500
Current draw	A	2.2
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

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Technical description

Weight	4.22 kg
Size	250 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic, sheet-metal plate painted black
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H3
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; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Tach output - Alarm relay - Integrated PID controller - Run monitoring - 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 regulations	According to EN 50121-3-2
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal switch auto reset, internally connected
With cable	Variable
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013 + A1:2015; EN 61373, Cat. 1B: 2010
Comment on CE	Ecodesign Directive 2009/125/EC + Fan Regulation (EC) No. 327/2011 does not apply, as use only in means of transport for transporting persons or goods.
Approval	EAC

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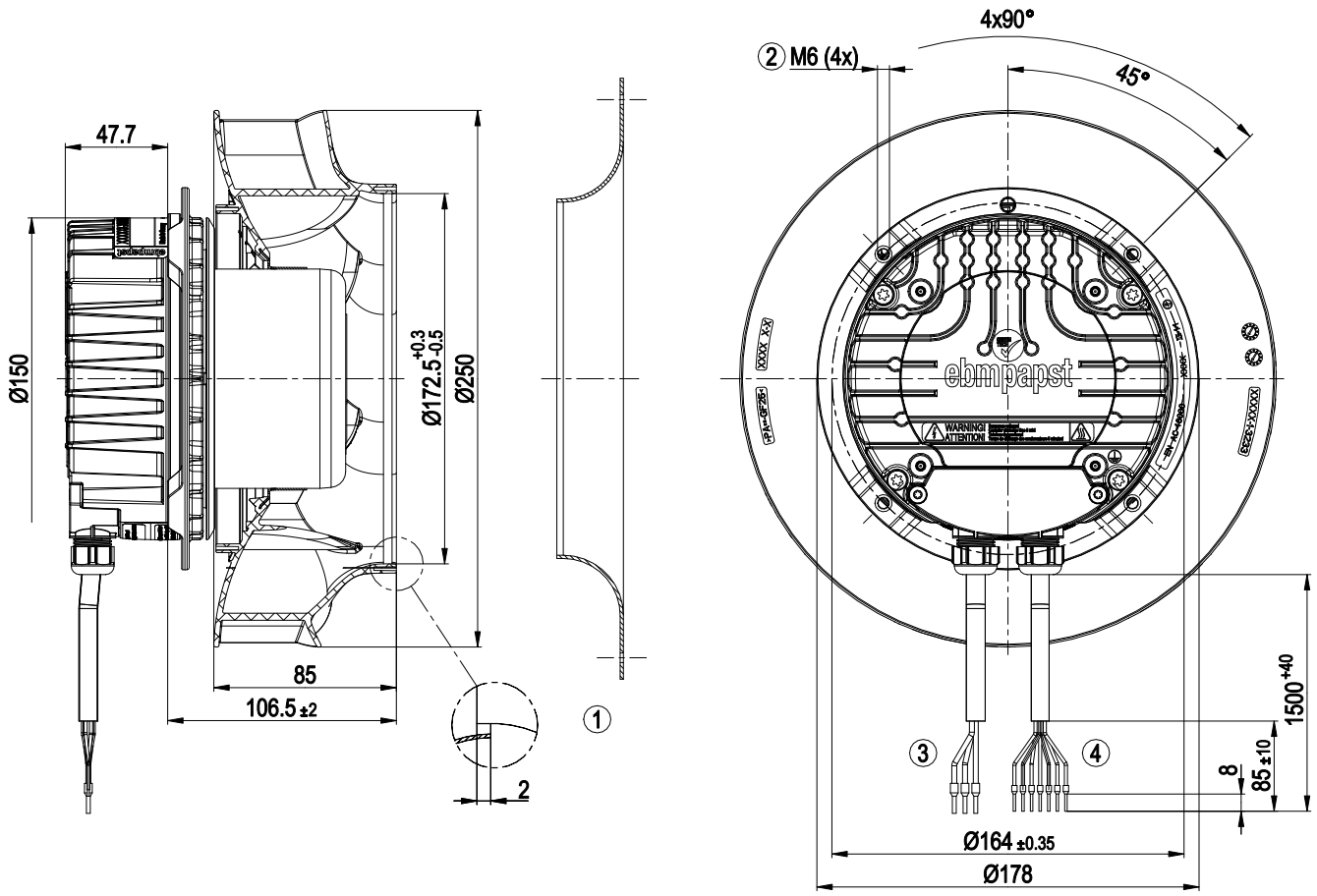
Product drawing



1	Accessory part: Inlet ring 96420-2-4013 (not included in scope of delivery)
2	Max. clearance for screw 16 mm
3	Cable, halogen-free, railway application EN 45545, 4G 1.5 mm²
	3x wire-end ferrule
4	Cable, halogen-free, railway application EN 45545, 7x 0.5 mm²
	7x wire-end ferrule

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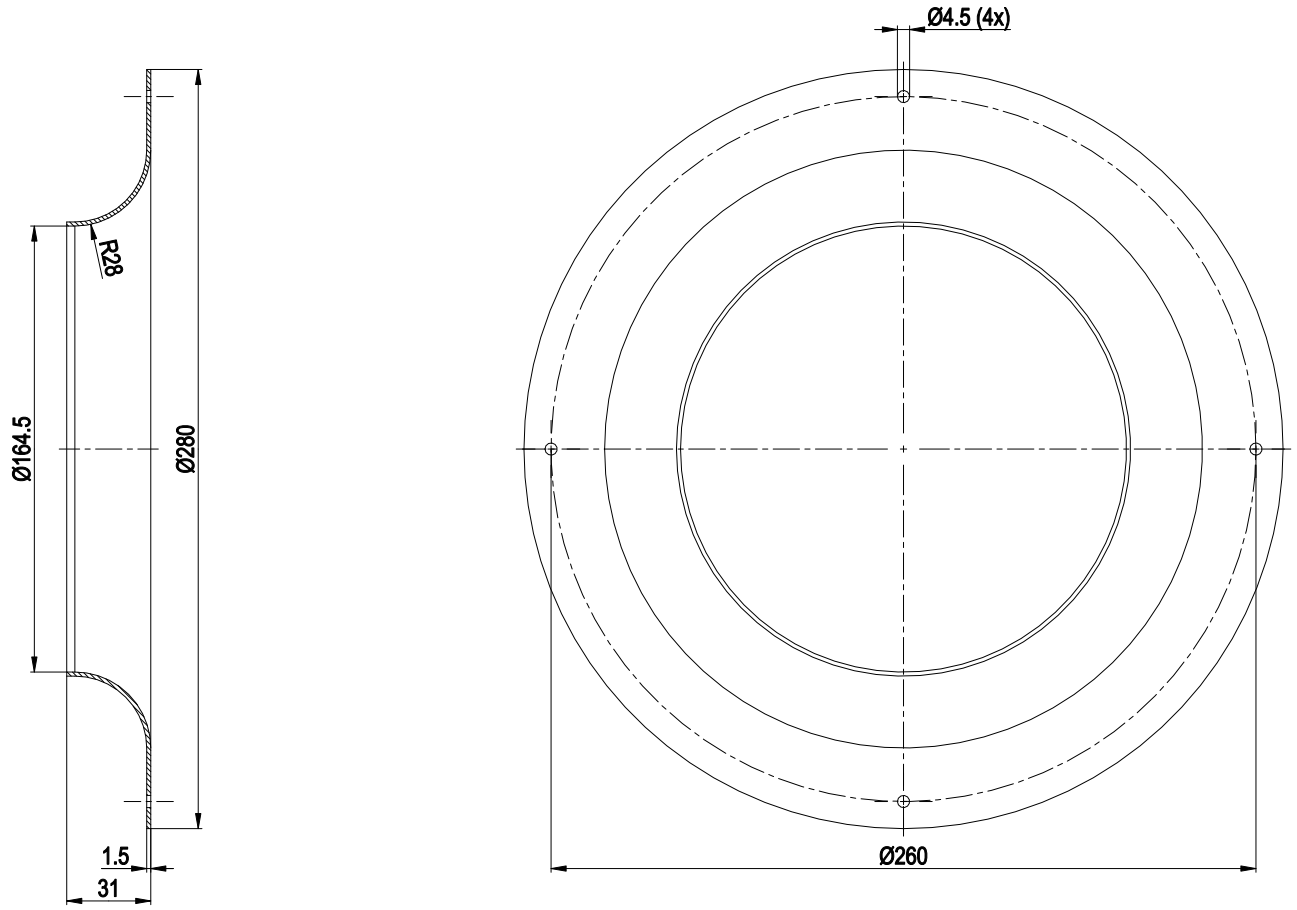
Accessory part



	Inlet ring 96420-2-4013

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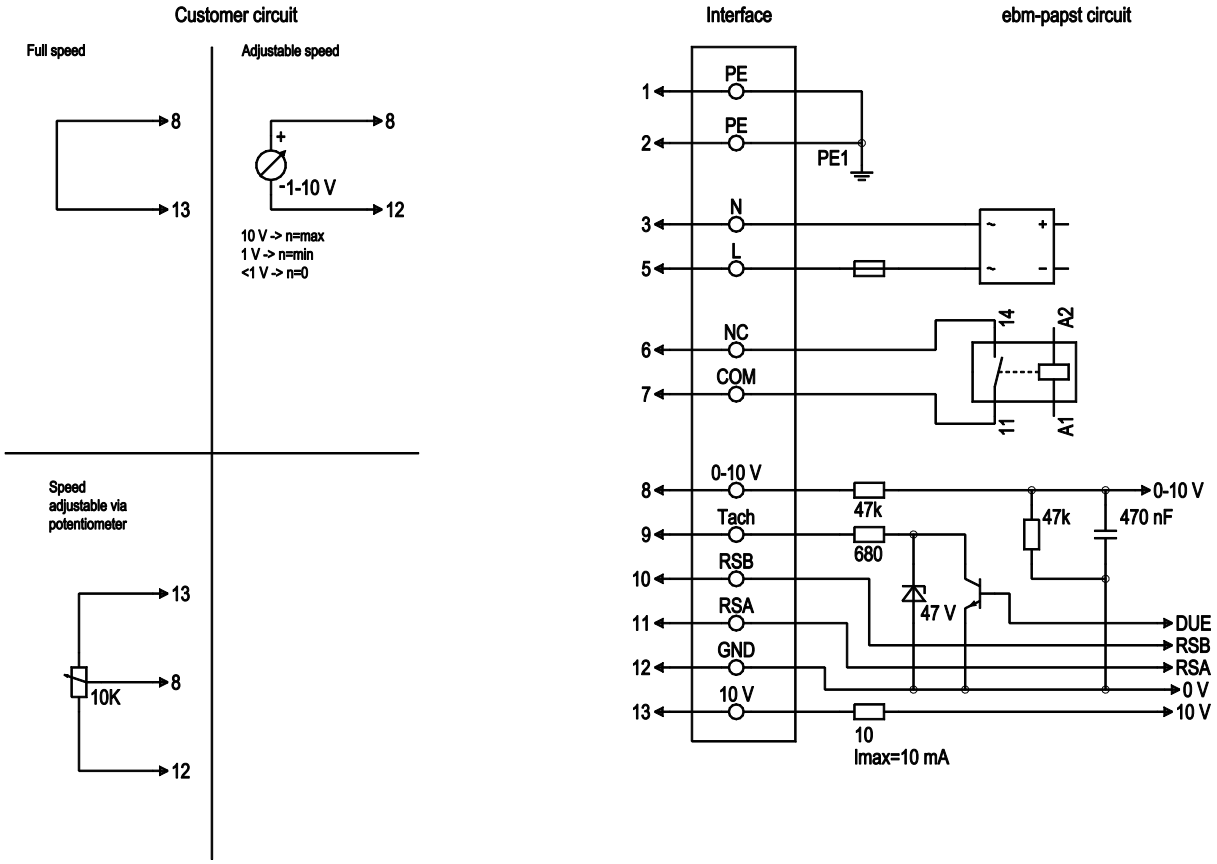
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	black	Power supply, neutral conductor, see nameplate for voltage range
1	5	L	brown	Power supply, phase, see nameplate for voltage range
2	6	NC	orange	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 1 mA; basic insulation on supply side and reinforced insulation on control interface side
2	7	COM	gray	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 1 mA; basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	9	Tacho	-	not brought out via wire
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10 V	red	Fixed voltage output 10 VDC, +10 V ± 3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); SELV

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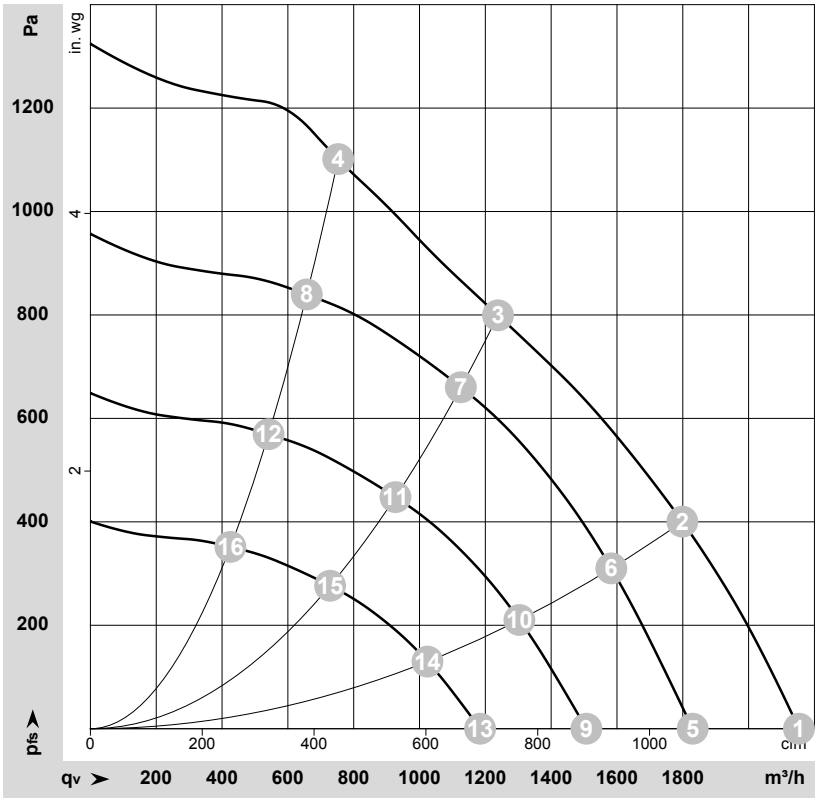
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

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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	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	in. wg
1	1~	230	50	4000	475	2.08	80	88	2155	0	1265	0.00
2	1~	230	50	3865	500	2.20	75	83	1800	400	1060	1.61
3	1~	230	50	3740	500	2.20	70	78	1240	800	730	3.21
4	1~	230	50	3890	500	2.20	78	85	755	1100	445	4.42
5	1~	230	50	3400	292	1.28	76	84	1830	0	1075	0.00
6	1~	230	50	3400	347	1.51	72	80	1585	310	930	1.24
7	1~	230	50	3400	383	1.67	67	75	1125	660	665	2.65
8	1~	230	50	3400	341	1.49	75	81	655	840	385	3.37
9	1~	230	50	2800	163	0.71	71	79	1505	0	885	0.00
10	1~	230	50	2800	194	0.85	67	75	1305	211	765	0.85
11	1~	230	50	2800	214	0.93	63	70	925	448	545	1.80
12	1~	230	50	2800	190	0.83	70	77	540	570	320	2.29
13	1~	230	50	2200	79	0.35	65	73	1185	0	695	0.00
14	1~	230	50	2200	94	0.41	61	69	1025	130	605	0.52
15	1~	230	50	2200	104	0.45	56	64	730	277	430	1.11
16	1~	230	50	2200	92	0.40	64	70	425	352	250	1.41

Wired = Wiring · U = Voltage · f = Frequency · 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