R3G310-RT02-N5

EC centrifugal fan - RadiCal

backward curved, single inlet

for railway applications

R3G310-RT02-N5 ebmpapst Datasheet
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Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

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

Nominal data

Type	**R3G310-RT02-N5**
Motor	**M3G084-GF**

Phase		3~
Nominal voltage	VAC	480
Nominal voltage range	VAC	380 .. 510
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	2650
Power input	W	740
Current draw	A	1.0
Min. ambient temperature	°C	-40
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

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Technical features

Mass	6.96 kg
Size	310 mm
Motor size	84
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PA UL94 V0 plastic
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP55
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H3
Max. permissible ambient motor temp. (transp./ storage)	+60 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Rotor on top
Condensation drainage holes	None
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - Run monitoring - Output limit - Motor current limit - Emergency operation - PFC, passive - RS485 MODBUS RTU - Soft start -Maximum EEPROM write cycles 100,000 - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC directives	According to EN 50121-3-2
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Lateral
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 15085-1, CPC3: 2007; EN 45545-2, HL3: 2013; EN 50155: 2008; EN 61373, Cat. 1B: 2010
Approval	EAC

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Remark	Prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533; if voltage (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their increased insulation, meaning they only have basic insulation The SELV property (increased insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.

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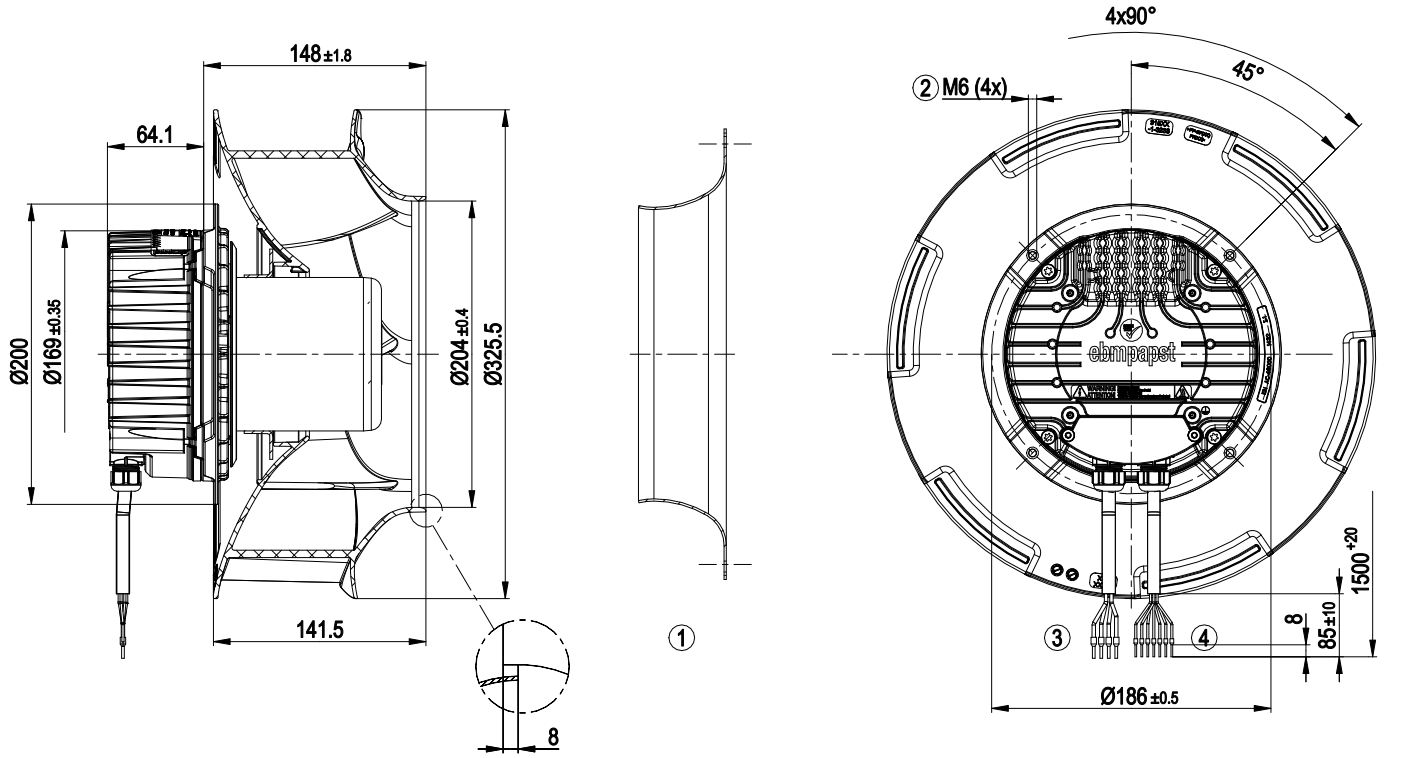
Product drawing



1	Accessory part: Inlet nozzle 31000-2-4013 not included in scope of delivery
2	Thread reach max. 16 mm
3	Connection line, halogen-free, railway application EN 45545, 4G 1.5 mm²
	4x core-end sleeve
4	Connection line, halogen-free, railway application EN 45545, 7x 0.5 mm²
	7x core-end sleeve

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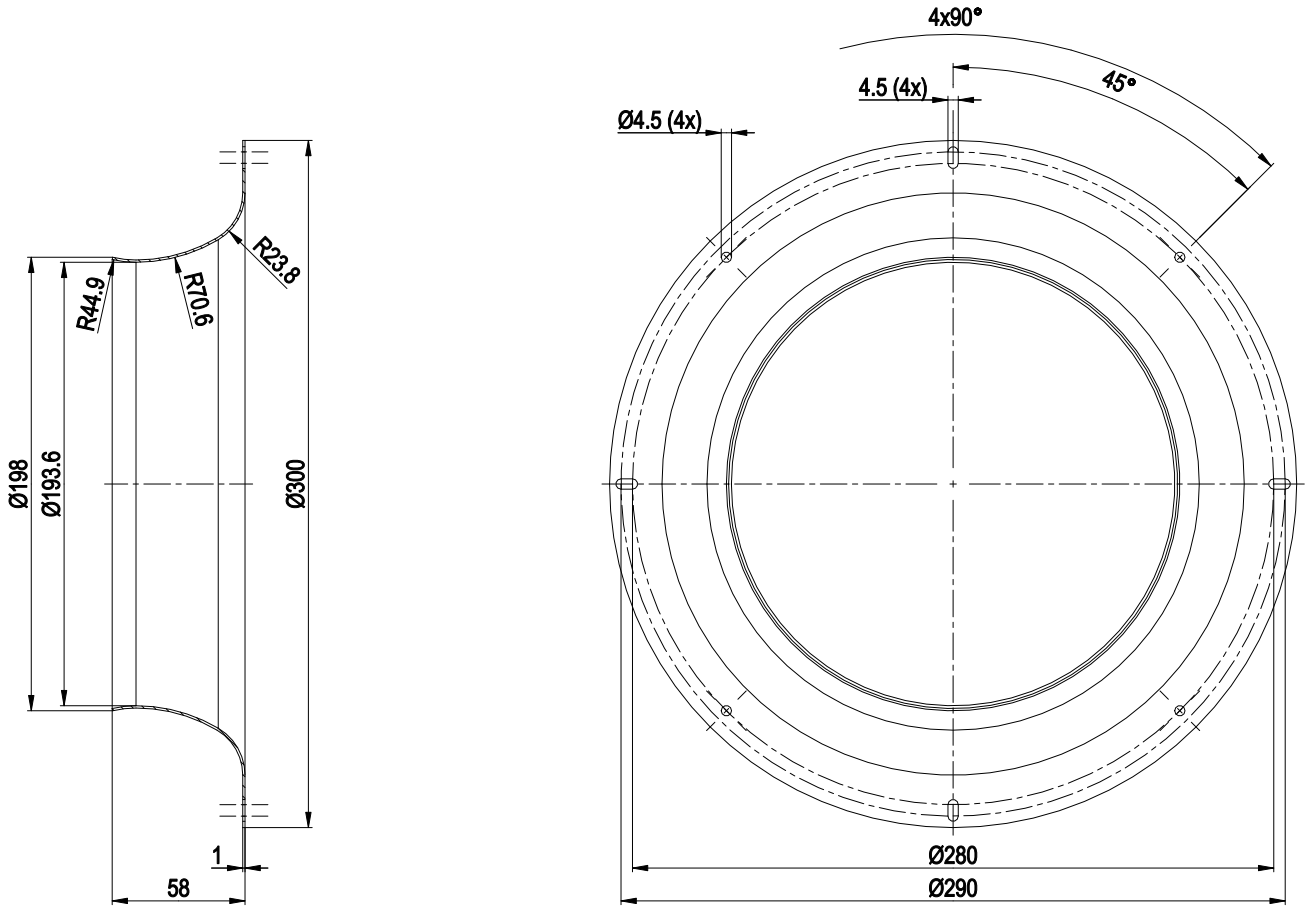
Accessory part



Inlet nozzle 31000-2-4013

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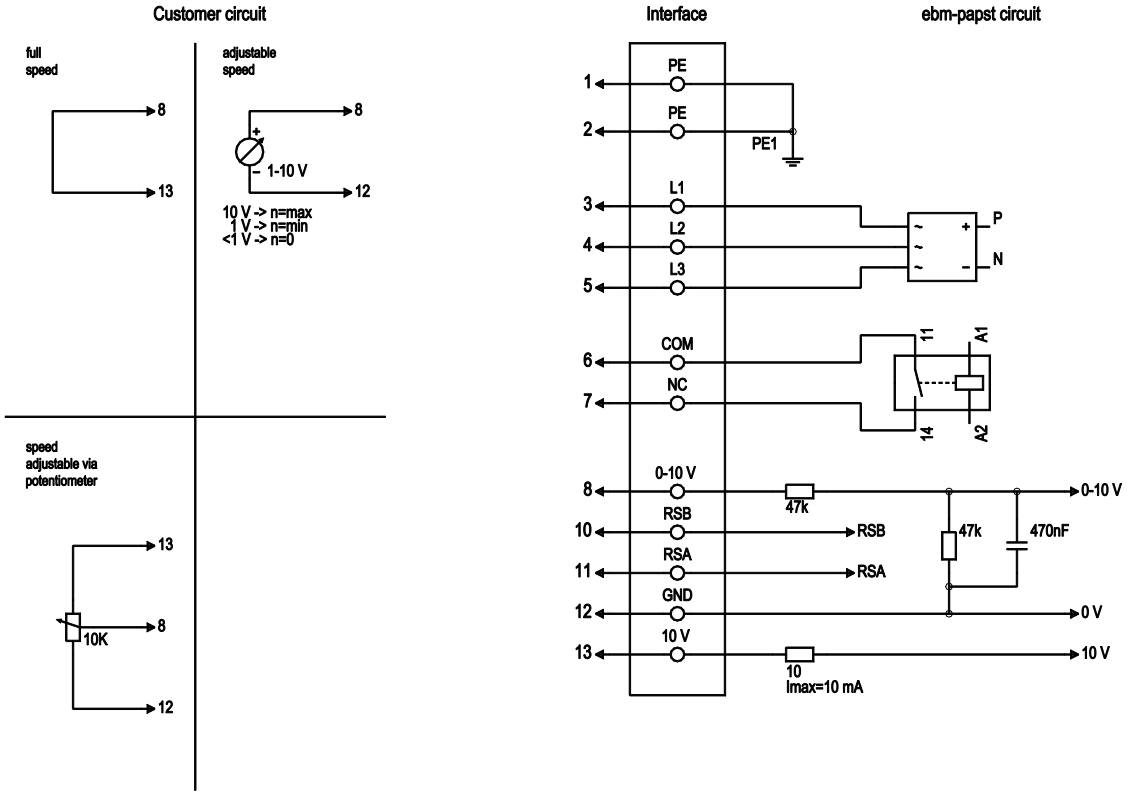
Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1	PE	green/yellow	Protective earth
1	2	PE	-	not brought out via lead
1	3	L1	black	Power supply, phase, 50/60 Hz
1	4	L2	blue	Power supply, phase, 50/60 Hz
1	5	L3	brown	Power supply, phase, 50/60 Hz
2	6	COM	grey	Status relay, floating status contact, common connection, contact rating, 250 VAC / max. 2 A (AC1), min. 1 mA / 5 VDC, reinforced insulation with respect to control interface, basic insulation on mains side according to EN 50124-1
2	7	NC	orange	Status relay, floating status contact, break for failure, contact rating 250 VAC / max. 2 A (AC1), min. 1 mA / 5 VDC, reinforced insulation on control interface side, basic insulation on supply side according to EN 50124-1
2	8	0-10V	yellow	Analogue input (set value) SELV, 0-10 V, Ri=100kΩ, parametrisable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Signal ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V +/-3 %, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer); SELV

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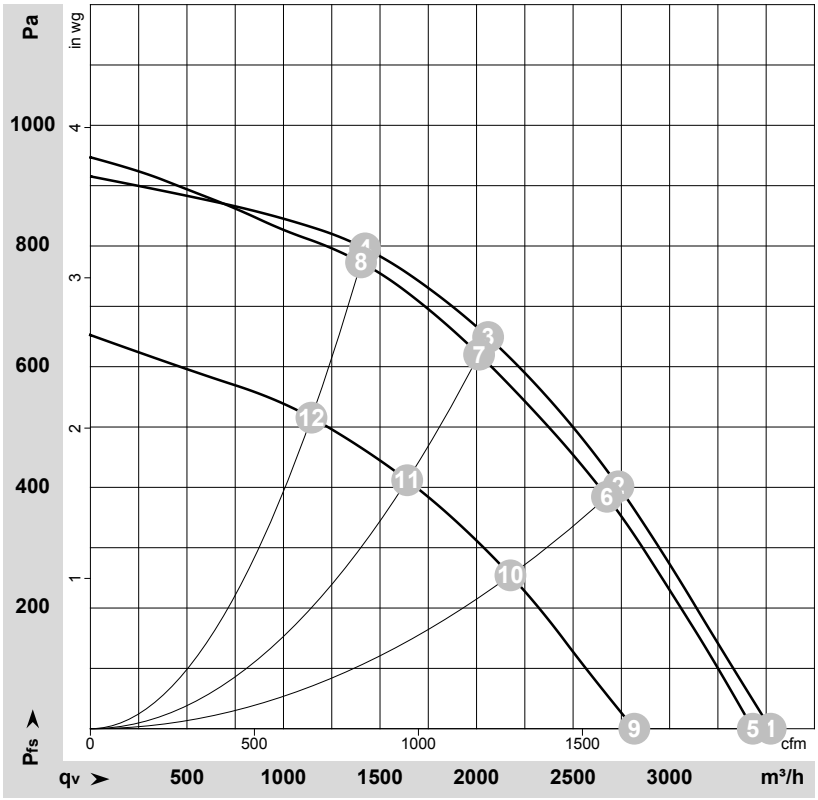
Charts: Air flow



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-164558-1
Measurement: LU-168374-1
Measurement: LU-157375-1

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}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	480	60	2650	633	0.85	77	85	91	3525	0	2075	0.00
2	480	60	2650	719	0.95	72	80	87	2735	400	1610	1.61
3	480	60	2650	740	1.00	69	77	83	2060	650	1210	2.61
4	480	60	2650	688	0.92	69	77	82	1425	800	840	3.21
5	400	60	2575	577	0.93				3430	0	2020	0.00
6	400	60	2560	644	1.02				2675	385	1575	1.55
7	400	60	2555	657	1.05				2015	621	1185	2.49
8	400	60	2580	619	0.98				1400	773	825	3.10
9	330	60	2155	335	0.67				2815	0	1660	0.00
10	330	60	2145	381	0.76				2175	254	1280	1.02
11	330	60	2145	394	0.77				1640	413	965	1.66
12	330	60	2160	368	0.73				1145	516	675	2.07

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 · LwA_{out} = Sound power level outlet side
q_V = Air flow · p_{fs} = Pressure increase

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