R3G310-RT02-N3

Siemens AG

EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications

R3G310-RT02-N3 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Nominal data

Type	**R3G310-RT02-N3**
Motor	**M3G084-GF**

Phase		3~
Nominal voltage	VAC	480
Nominal voltage range	VAC	380 .. 510
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2650
Power consumption	W	740
Current draw	A	1.0
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	7 kg
Fan size	310 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic UL94 V0
Number of blades	6
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)	+60 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Rotor on top
Condensation drainage holes	None
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - Run monitoring - Power limiter - Motor current limitation - Emergency operation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - 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 overload protector (TOP) internally connected
With cable	Lateral
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

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Comment	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 property of reinforced insulation, meaning they then have only basic insulation. The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.

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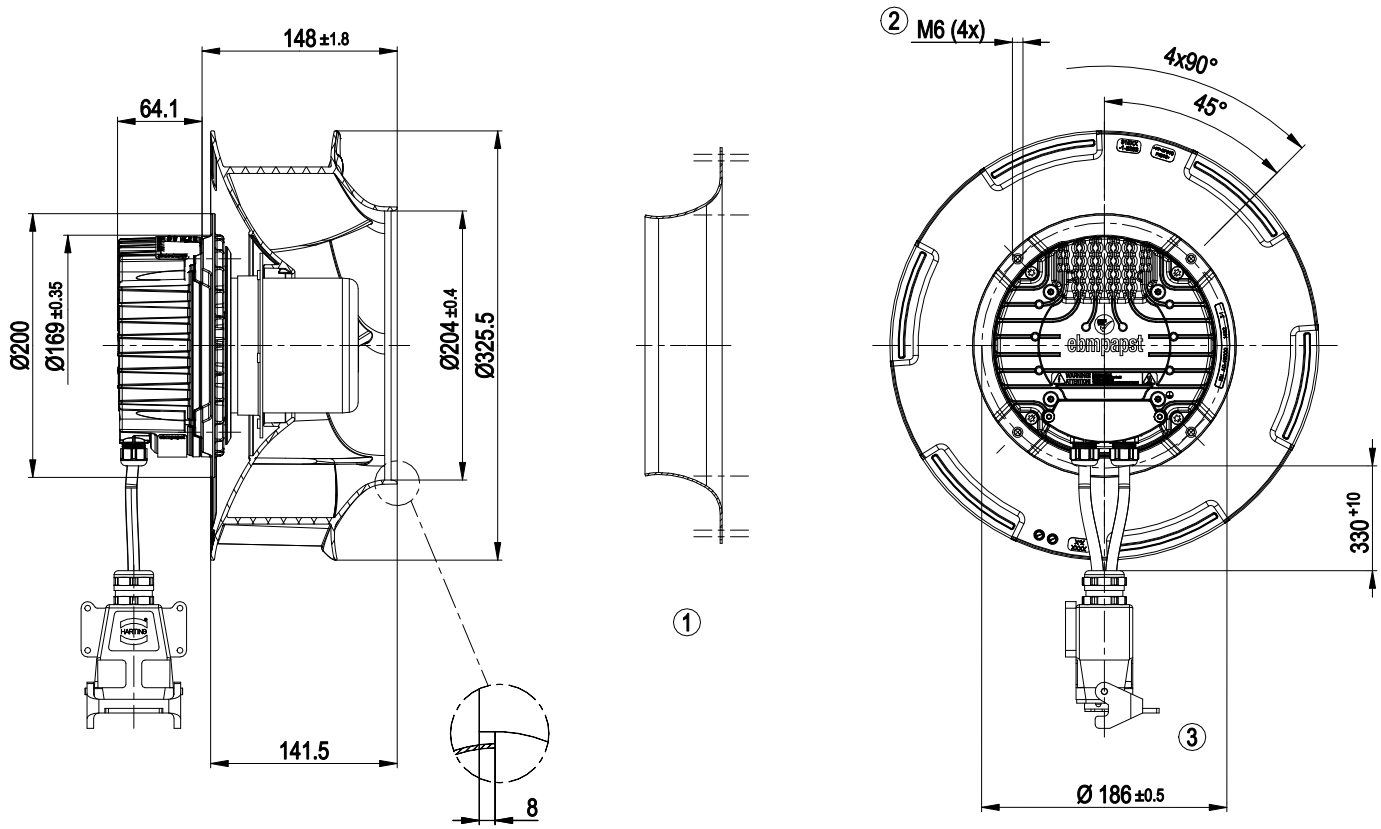
Product drawing



1	Accessory part: inlet ring 31000-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Connector housing Harting HAN Modular TWIN 09 14 002 0301 with Han E Protected Modul 9140063041 and Han DD Modul 9140123001

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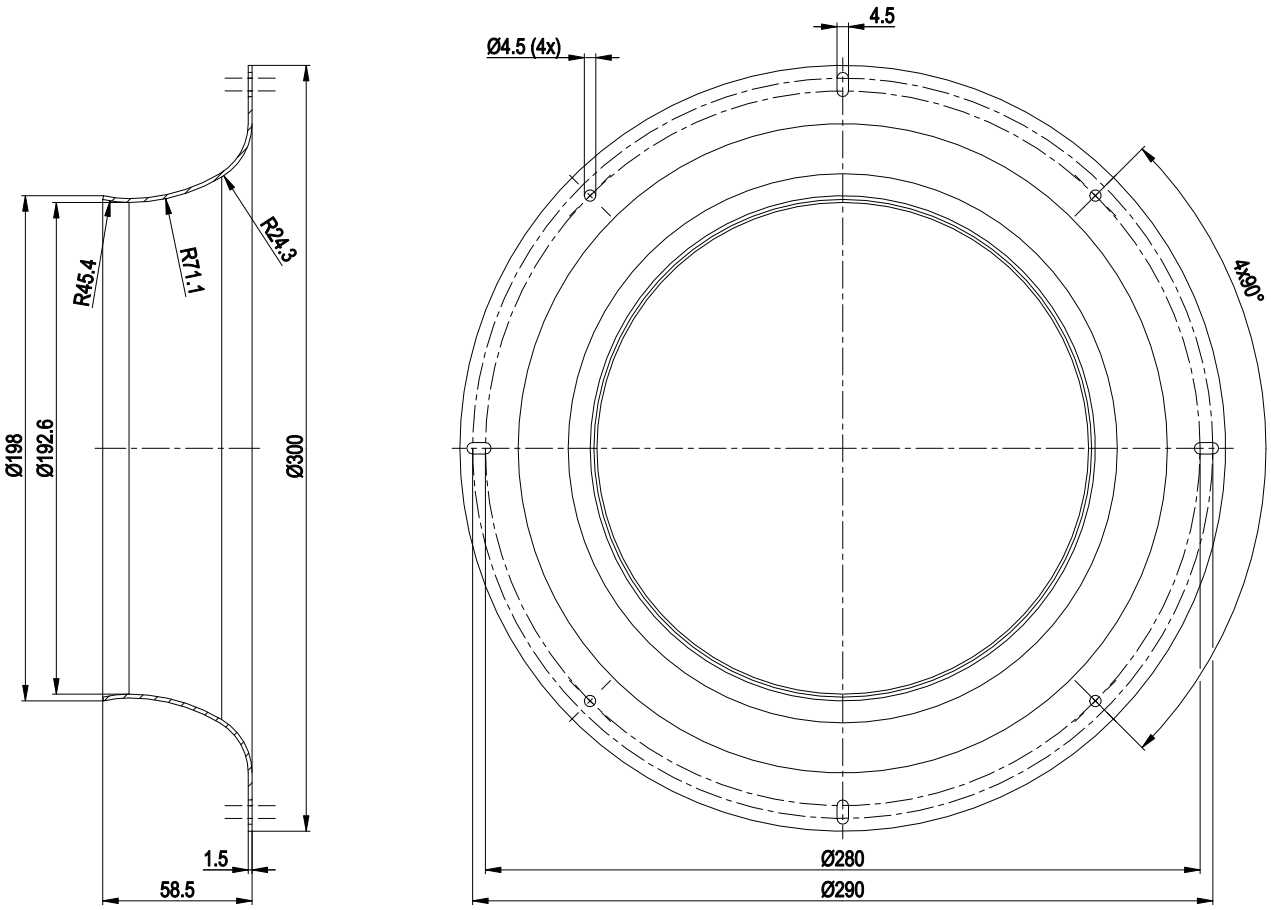
Accessory part



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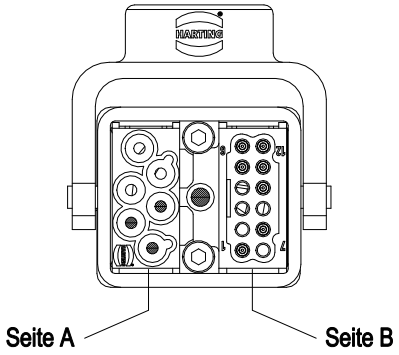

Motorseite					
Versorgung (Seite A)			Signale (Seite B)		
BETAtrans 3 GKW flex sw 4G 1,5 mm²			BETAtrans 3 GKW C-flex 7x 0,5 mm²		
Pin-Nr.	Ader-Nr. / Farbe	Funktion	Pin-Nr.	Ader-Nr. / Farbe	Funktion
1	1 / sw	3~480 V L1	1	1 / gr	Fehlermelderelais (COM)
2	2 / bl	3~480 V L2	2		Reserve
3	3 / br	3~480 V L3	3		Reserve
4		Reserve	4		Reserve
5		Reserve	5	2 /ws	RSA (MODBUS)
6		Reserve	6	3 / br	RSB (MODBUS)
Gehäuse	4 / gn/ge	PE	7		Reserve
			8	4 / or	Fehlermelderelais (NC)
			9		Reserve
			10	5 / bl	GND (SELV)
			11	6 / ge	PWM/LIN
			12	7 / rt	P+10 V / 10 mA (SELV)

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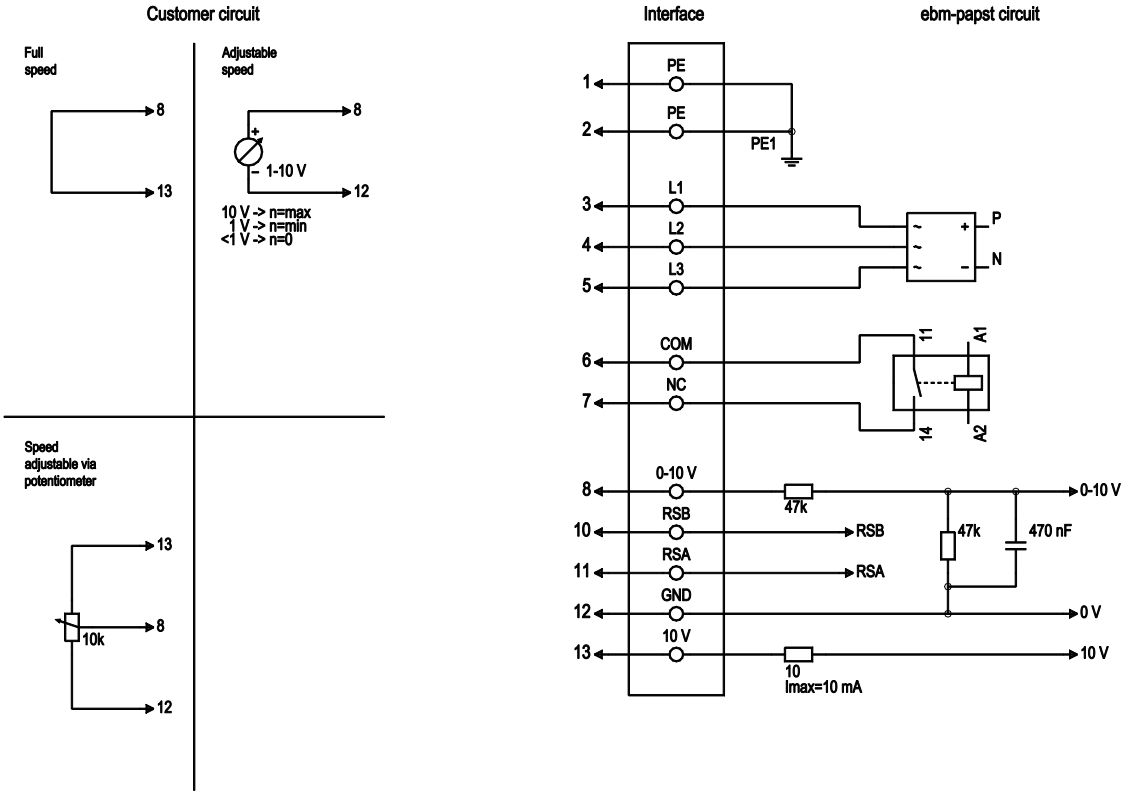
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
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	gray	Status relay, floating status contact, common connection, contact rating 250 VAC / 30 VDC 5 A minimum contact separation 1 mA / 5 VDC, reinforced insulation on supply side, basic insulation on control interface side
2	7	NC	orange	Status relay, floating status contact, break for failure, contact rating 250 VAC / 30 VDC 5 A minimum contact separation 1 mA / 5 VDC, reinforced insulation on supply side, basic insulation on control interface side
2	8	0-10V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable 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	Reference 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 external devices (e.g. pot); SELV

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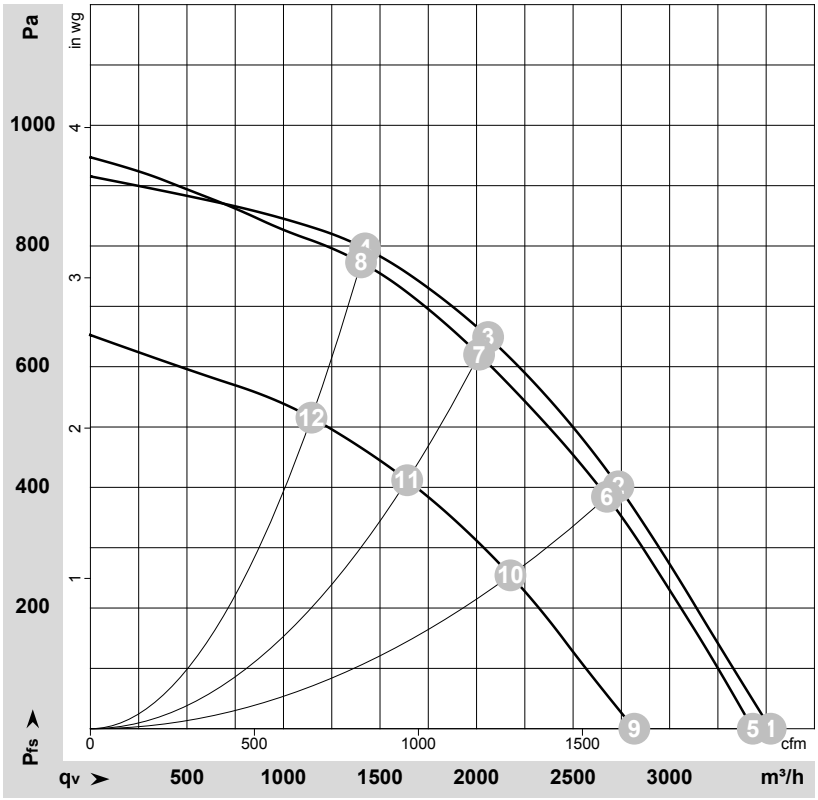
Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

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

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	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	inH2O
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 = Power supply · 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
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase