

R3G190-RY85-P1 ebmpapst Datasheet

sales@fansco.com

www.fansco.com

## Nominal data

Type	R3G190-RY85-P1	
Motor	M3G074-CF	
Nominal voltage	VDC	110
Nominal voltage range	VDC	77 .. 138
Frequency	Hz	DC
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min <sup>-1</sup>	5000
Power consumption	W	270
Current draw	A	2.5
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 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	47.6	45.6	09 Power consumption $P_e$	kW	0.27
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	565
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	742
04 Efficiency grade N		64	62	10 Speed (rpm) n	min <sup>-1</sup>	4975
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

\* Specific ratio =  $1 + p_{fs} / 100\,000\text{ Pa}$

LU-194610



## Technical description

<b>Weight</b>	2.08 kg
<b>Size</b>	190 mm
<b>Motor size</b>	74
<b>Electronics housing material</b>	Die-cast aluminum, painted black
<b>Impeller material</b>	PA plastic, sheet-metal plate painted black
<b>Number of blades</b>	7
<b>Direction of rotation</b>	Clockwise, viewed toward rotor
<b>Degree of protection</b>	Customer-specific; IP 6K9K
<b>Insulation class</b>	"B"
<b>Moisture (F) / Environmental (H) protection class</b>	H3
<b>Max. permitted ambient temp. for motor (transport/storage)</b>	+80 °C
<b>Min. permitted ambient temp. for motor (transport/storage)</b>	-40 °C
<b>Installation position</b>	Any
<b>Condensation drainage holes</b>	None, open rotor
<b>Mode</b>	S1
<b>Motor bearing</b>	Ball bearing; (sealed)
<b>Technical features</b>	<ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 mA</li> <li>- Alarm relay</li> <li>- Power limiter</li> <li>- Motor current limitation</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- EEPROM write cycles: 100,000 maximum</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Overvoltage detection</li> <li>- Thermal overload protection for electronics</li> <li>- Line undervoltage detection</li> <li>- Reverse polarity protection</li> </ul>
<b>EMC regulations</b>	According to EN 50121-3-2
<b>Motor protection</b>	Electronic motor protection
<b>With cable</b>	Lateral
<b>Protection class</b>	I (with customer connection of protective earth)
<b>Conformity with standards</b>	EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2008; EN 61373, Cat. 1B: 2010; CE
<b>Approval</b>	EAC
<b>Comment</b>	<p>A prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533; if supply potential (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their property of reinforced insulation and they then have only basic insulation</p> <p>The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.</p>

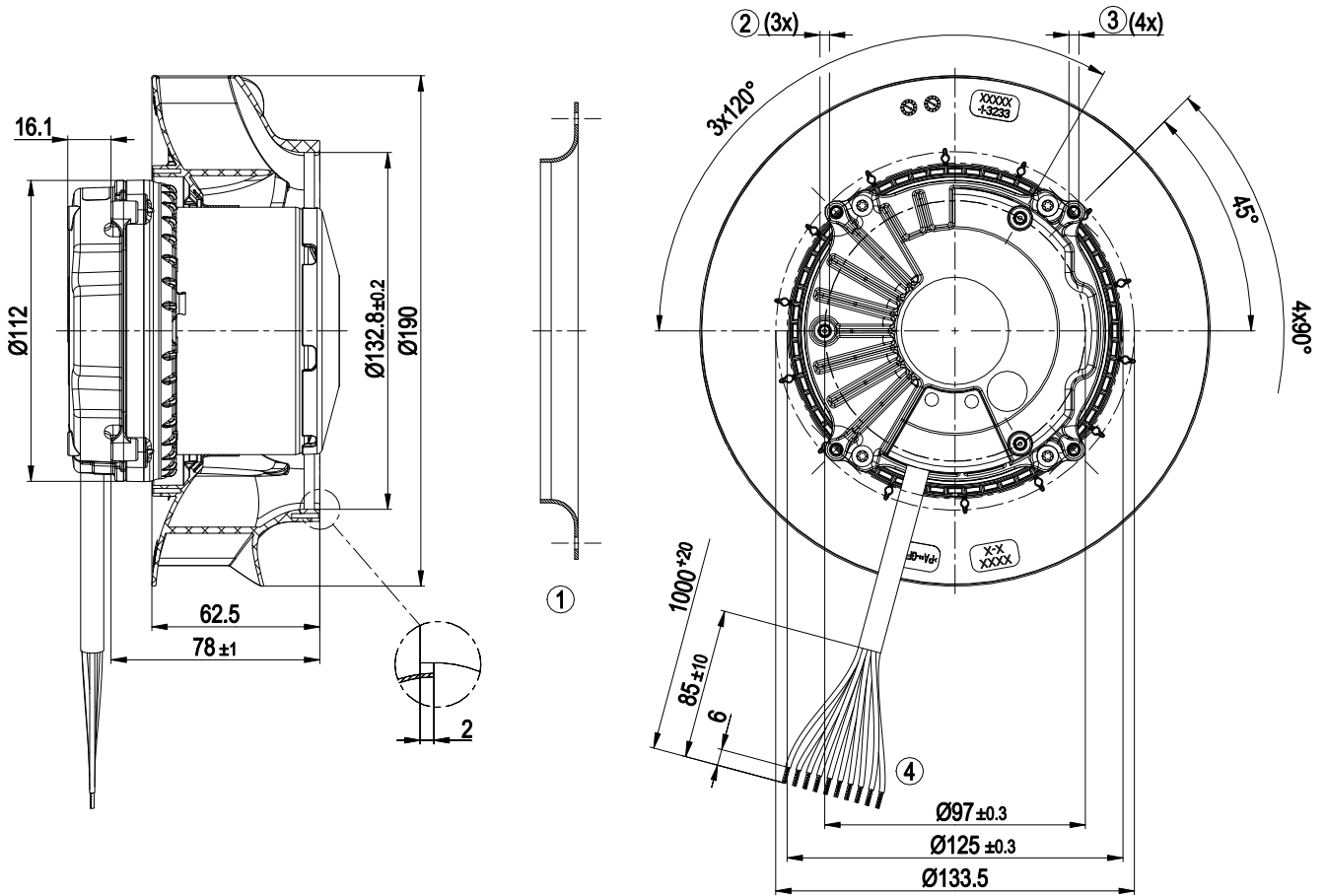


# EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications

## Product drawing



- |   |  |
|---|--|
| 1 | Accessory part: inlet ring 09576-2-4013 not included in scope of delivery  |
| 2 | Tapping hole prepared for self-tapping M4 screw, max. screw-in depth 8 mm  |
| 3 | Tapping hole prepared for self-tapping M4 screw, max. screw-in depth 10 mm |
| 4 | Cable, halogen-free, railway application EN 45545, 10G 1.0 mm <sup>2</sup> |
|   | 10x lead tip   |

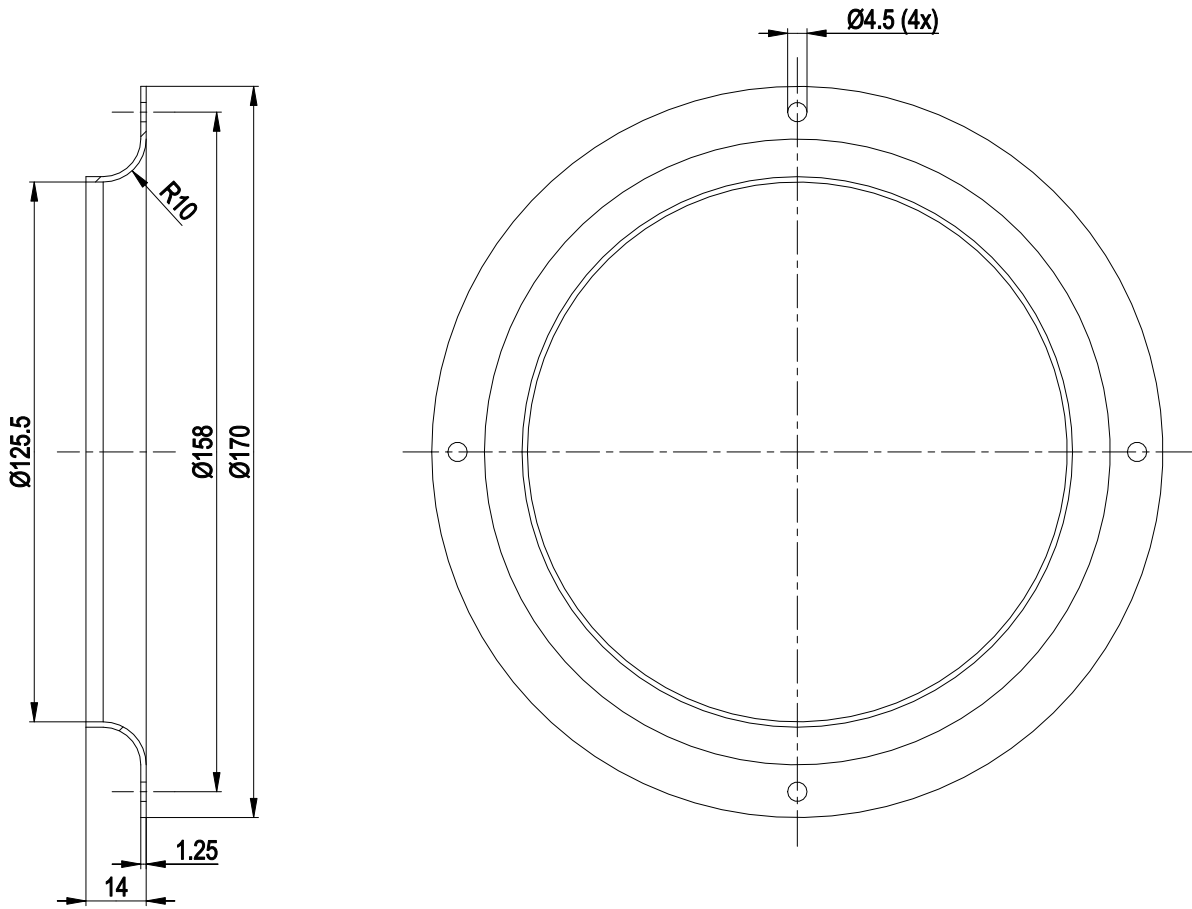


# EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications

## Accessory part



1 Accessory part: inlet ring 09576-2-4013 not included in scope of delivery

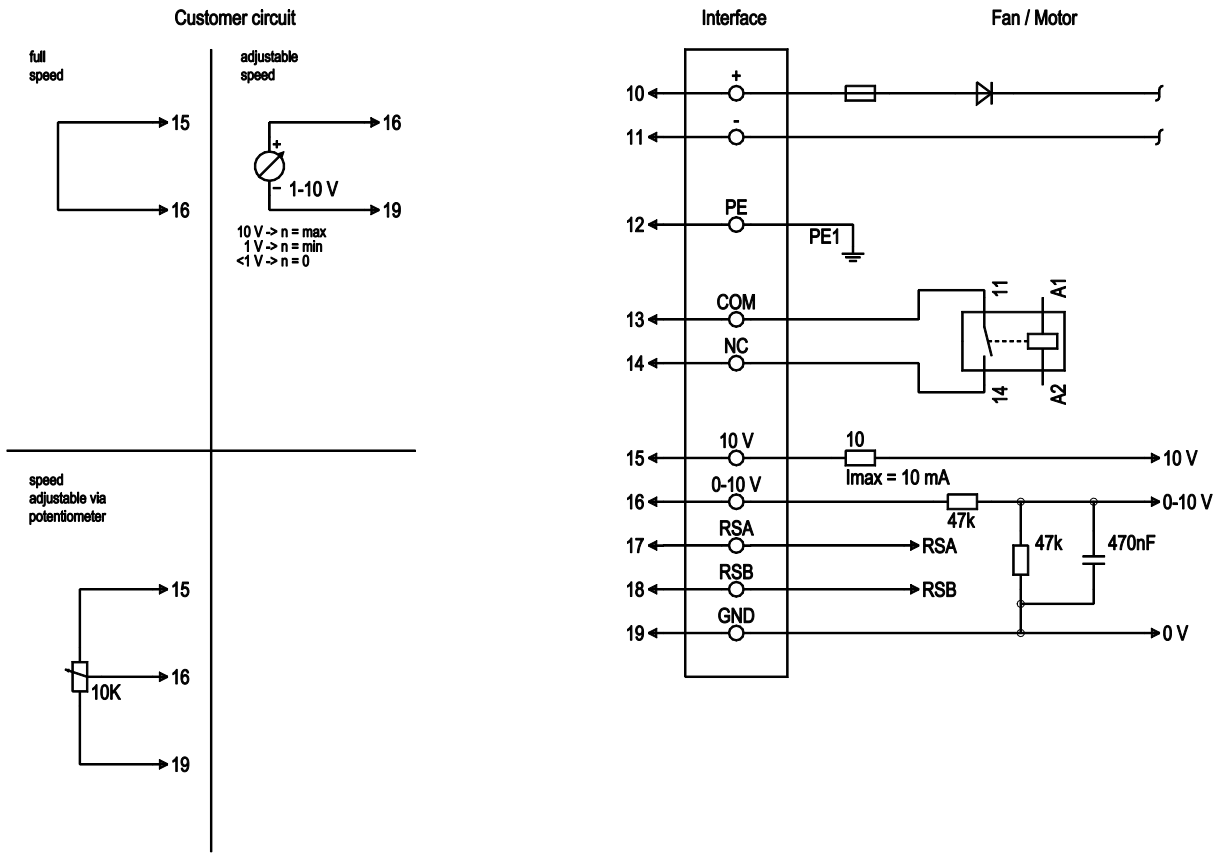


# EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications

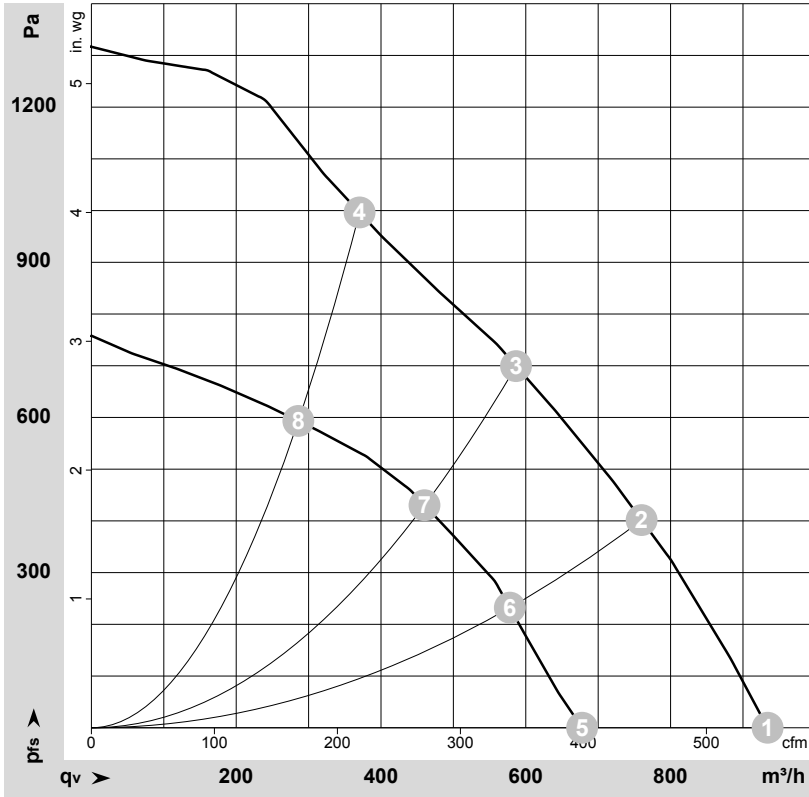
## Connection diagram



No.	Conn.	Designation	Color	Function/assignment
10	+		brown	Power supply, see nameplate for voltage range
11	-		black	Power supply, see nameplate for voltage range
12	PE		green/yellow	Protective earth
13	COM		gray	Status relay, floating status contact, common connection, contact rating 250 VAC/2 A (AC1)/min. 10 mA/5 V; Reinforced insulation in accordance with EN 50124-1 for switching voltages up to 110 VDC
14	NC		purple	Status relay, floating status contact, break for failure, contact rating 250 VAC/2 A (AC1)/min. 10 mA/5 V; Reinforced insulation in accordance with EN 50124-1 for switching voltages up to 110 VDC
15	+10 V		red	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
16	0-10 V		yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
17	RSA		white	RS-485 interface for MODBUS, RSA; SELV
18	RSB		orange	RS-485 interface for MODBUS, RSB; SELV
19	GND		blue	Reference ground for control interface, SELV



## Curves: Air performance



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-194610-1  
Measurement: LU-194685-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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 <sub>ed</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
	V	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	110-138	5420	270	2.50*	81	88	935	0	550	0.00
2	110-138	5165	270	2.50*	76	84	760	400	445	1.61
3	110-138	5000	270	2.50*	72	80	585	700	345	2.81
4	110-138	5160	270	2.50*	73	81	370	1000	220	4.01
5	77	4010	125	1.62			680	0	400	0.00
6	77	3995	131	1.70			580	232	340	0.93
7	77	3965	140	1.82			460	431	270	1.73
8	77	3995	132	1.71			285	593	170	2.38

U = Voltage · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · \* = Current measured at nominal voltage · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

