**R3G190-RV65-02**

# EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications



**ebm-papst Mulfingen GmbH & Co. KG**
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

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** | **R3G190-RV65-02** |
| **Motor** | **M3G074-BF** |

| | | |
|---|---|---|
| Nominal voltage | VDC | 110 |
| Method of obtaining data | | ml |
| Speed (rpm) | $min^{-1}$ | 3950 |
| Power consumption | W | 155 |
| Current draw | A | 1.4 |
| 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** | 1.87 kg |
| **Size** | 190 mm |
| **Motor size** | 74 |
| **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 |
| **Insulation class** | "B" |
| **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<br>- Alarm relay<br>- Run monitoring<br>- Power limiter<br>- Motor current limitation<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Thermal overload protection for electronics/motor<br>- Reverse polarity protection |
| **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; CE |
| **Approval** | EAC |
| **Comment** | Only suitable for indoor use |



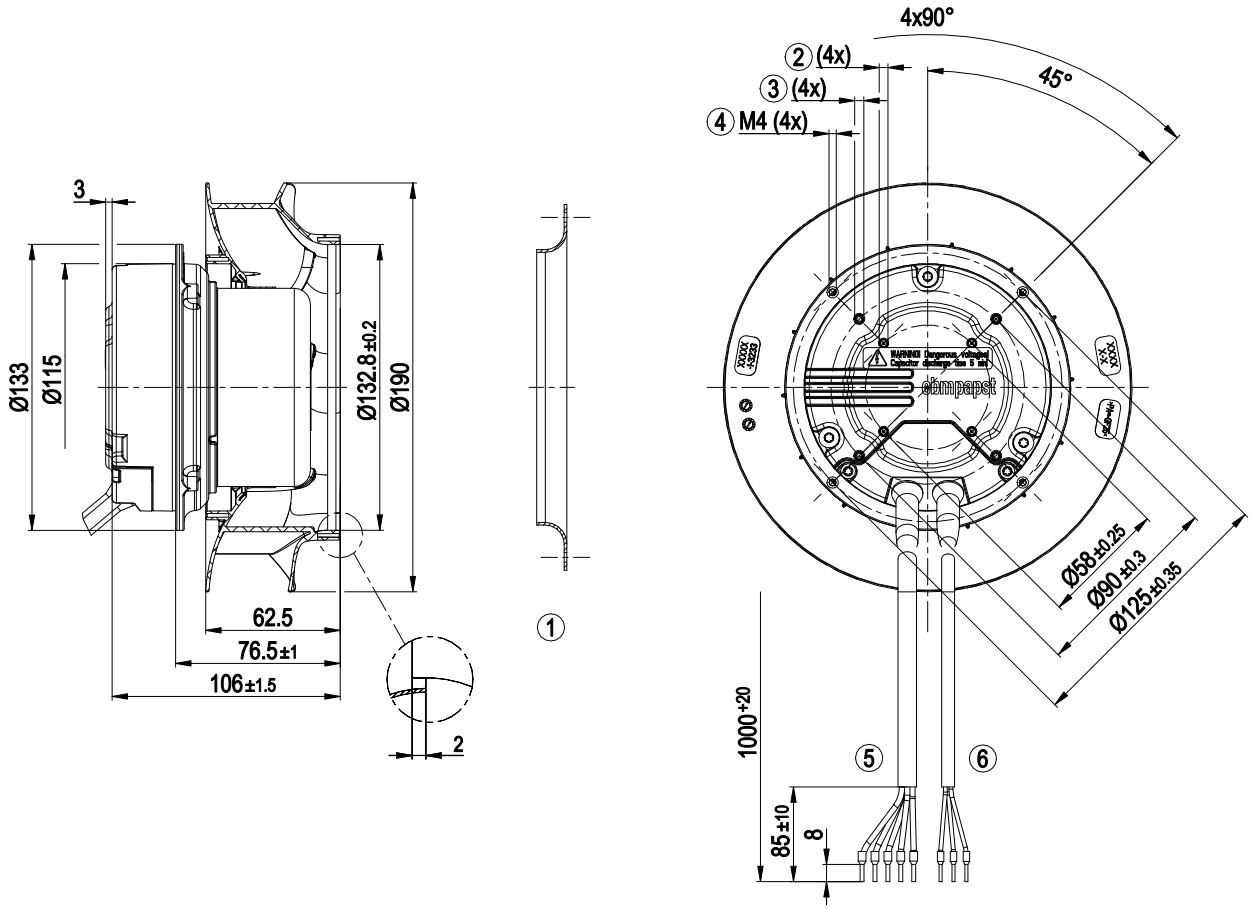
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## Product drawing




| | |
|---|---|
| 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 6 mm |
| 4 | Max. clearance for screw 10 mm |
| 5 | Cable, halogen-free, railway application EN 45545, 5G 1.0 mm² |
| | 5x wire-end ferrule |
| 6 | Cable, halogen-free, railway application EN 45545, 3x 0.33 mm² |
| | 3x wire-end ferrule |



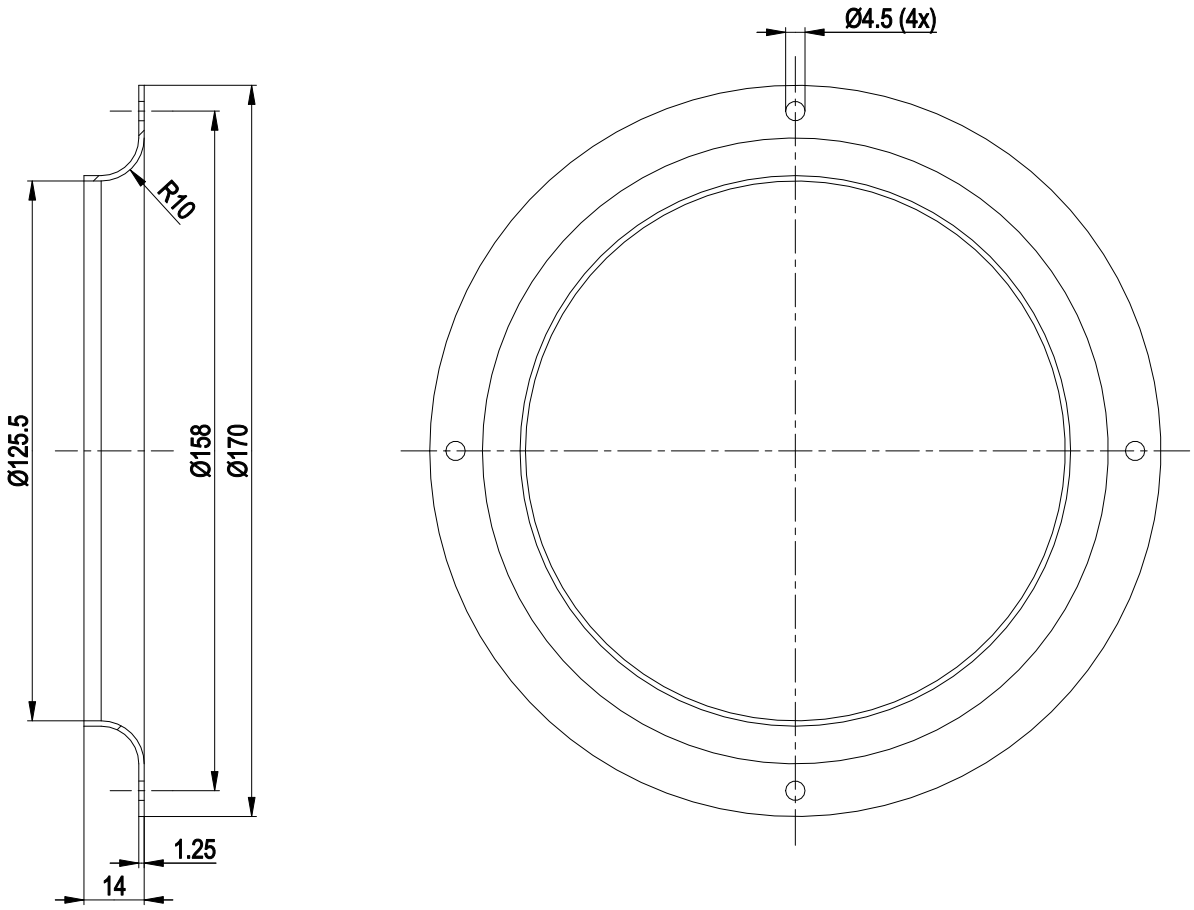
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## Accessory part




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



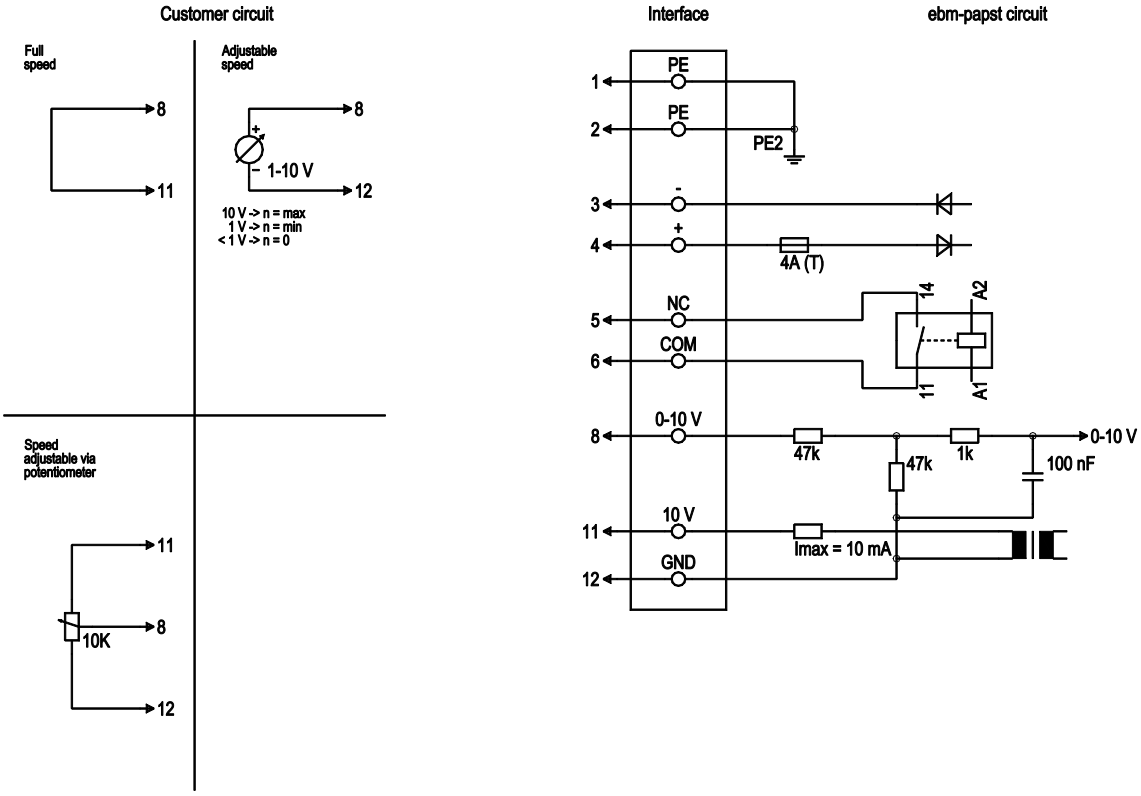
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## Connection diagram




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



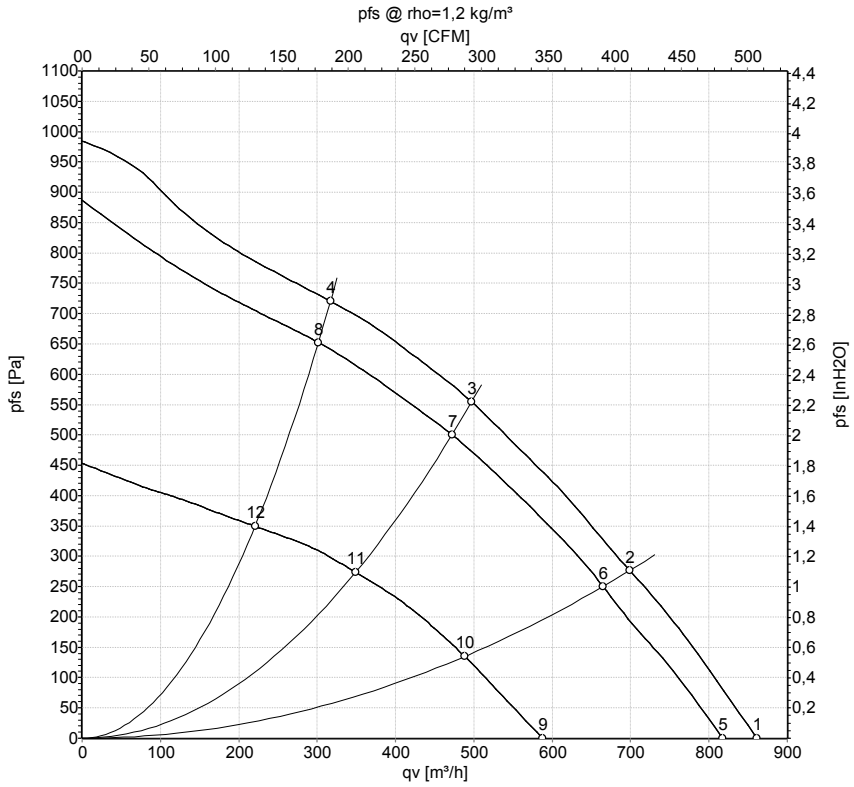
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## Curves: Air performance




Measurement: LU-159693-1
Measurement: LU-159560-1
Measurement: LU-159692-1

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 | in. wg |
| 1 | 138 | 4330 | 151 | 1.10 | | | 860 | 0 | 505 | 0.00 |
| 2 | 138 | 4220 | 165 | 1.20 | | | 700 | 276 | 410 | 1.11 |
| 3 | 138 | 4150 | 173 | 1.26 | | | 495 | 557 | 295 | 2.24 |
| 4 | 138 | 4250 | 164 | 1.19 | | | 315 | 721 | 185 | 2.89 |
| 5 | 110 | 4130 | 131 | 1.19 | 69 | 77 | 815 | 0 | 480 | 0.00 |
| 6 | 110 | 4015 | 146 | 1.33 | 67 | 74 | 665 | 250 | 390 | 1.00 |
| 7 | 110 | 3950 | 155 | 1.40 | 66 | 73 | 470 | 500 | 280 | 2.01 |
| 8 | 110 | 4025 | 144 | 1.32 | 68 | 75 | 300 | 650 | 180 | 2.61 |
| 9 | 77 | 3010 | 55 | 0.71 | | | 590 | 0 | 345 | 0.00 |
| 10 | 77 | 2970 | 61 | 0.79 | | | 490 | 135 | 285 | 0.54 |
| 11 | 77 | 2935 | 68 | 0.88 | | | 350 | 274 | 205 | 1.10 |
| 12 | 77 | 2965 | 61 | 0.79 | | | 220 | 349 | 130 | 1.40 |

U = Voltage · 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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