**R3G310-AJ33-93**

# EC centrifugal fan

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** | **R3G310-AJ33-93** |
| **Motor** | **M3G084-DF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VDC | 110 |
| Nominal voltage range | VDC | 77 .. 138 |
| Method of obtaining data | | fa |
| Speed (rpm) | $min^{-1}$ | 2425 |
| Power consumption | W | 340 |
| Current draw | A | 3 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 40 |
| Starting current | A | 4.0 |

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** | 5.3 kg |
| **Fan size** | 310 mm |
| **Rotor surface** | Painted black |
| **Electronics housing material** | Die-cast aluminum |
| **Impeller material** | Sheet aluminum |
| **Number of blades** | 6 |
| **Direction of rotation** | Clockwise, viewed toward rotor |
| **Degree of protection** | IP54 |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | F3-1 |
| **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 top; rotor on bottom on request |
| **Condensation drainage holes** | None |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Alarm relay<br>- Cable break detection with control line<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from supply<br>- Overvoltage detection<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage detection |
| **Motor protection** | Thermal overload protector (TOP) internally connected |
| **With cable** | Variable |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 61800-5-1 |



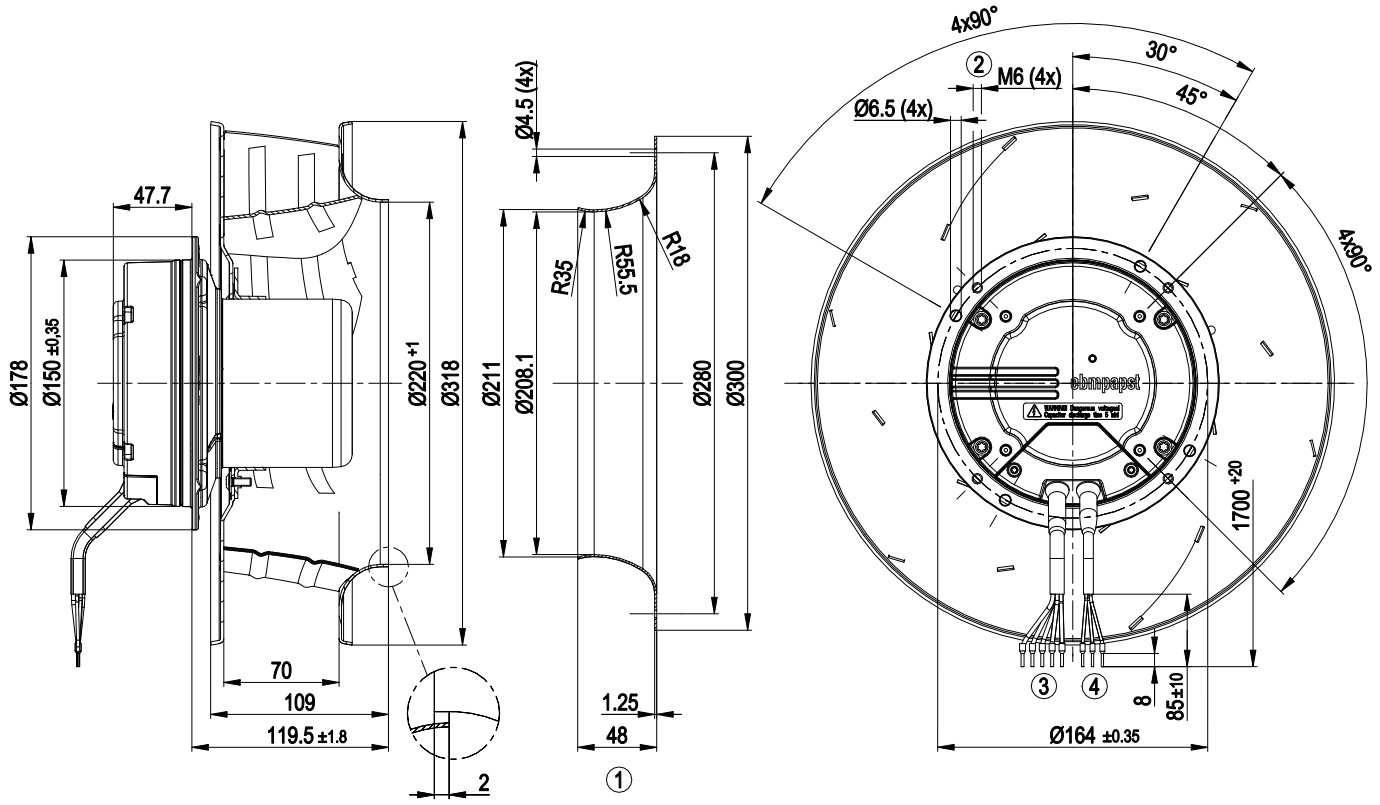
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## Product drawing




| | |
|---|---|
| 1 | Accessory part: inlet ring 31050-2-4013 not included in scope of delivery |
| 2 | Clearance for screw 8 - 10 mm |
| 3 | Cable XLPO 5G 1.0 mm², 5x crimped ferrules |
| 4 | Cable XLPO 3x 0.33 mm², 3x crimped ferrules |



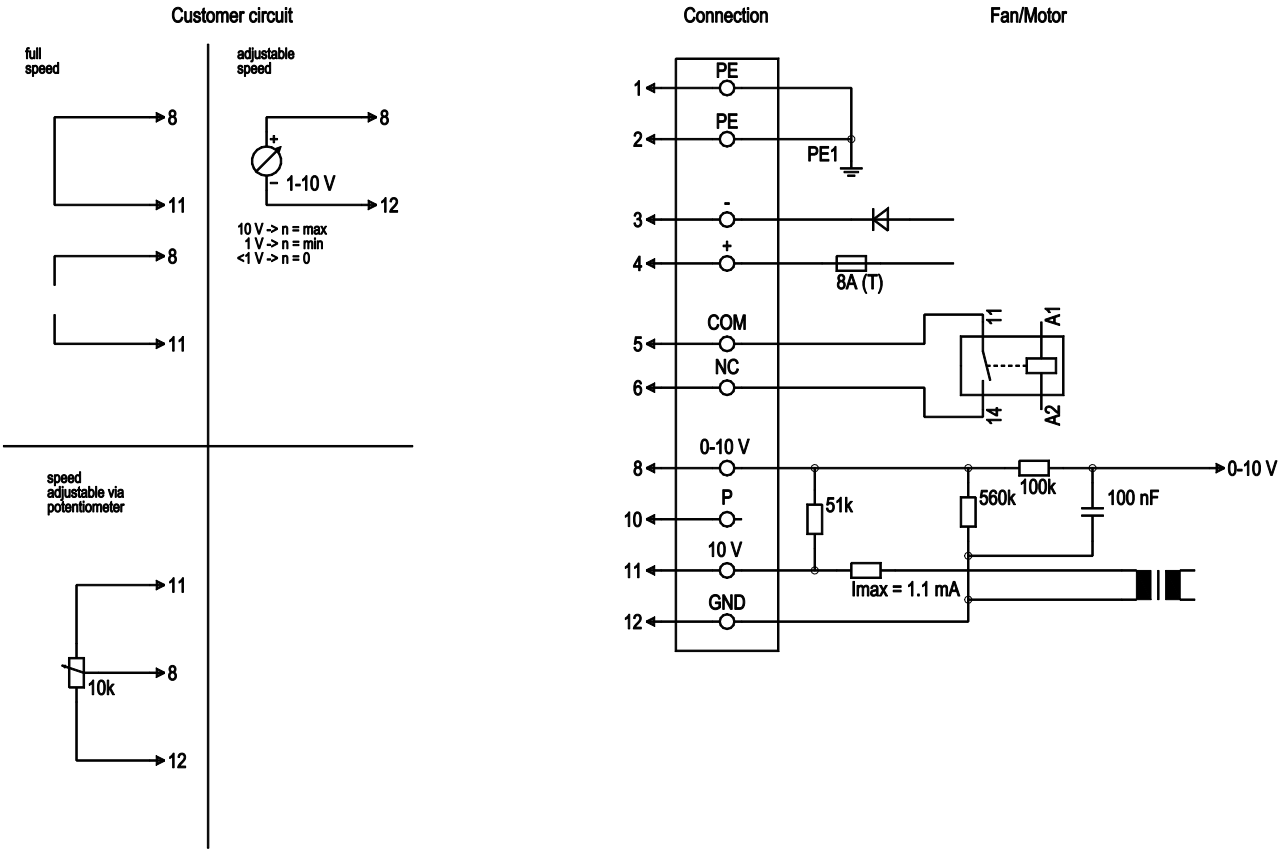
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## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| 1 | 1, 2 | PE | green/yellow | Protective earth |
| 1 | 3 | - | blue | Power supply, GND (110 VDC) |
| 1 | 4 | + | red | Power supply, 110 VDC |
| 1 | 5 | COM | white 1 | Floating status contact, break for failure<br>(0.6 A-110 VDC, 1 A-80 VDC, 3 A-30 VDC) |
| 1 | 6 | NC | white 2 | Floating status contact, break for failure |
| 2 | 8 | 0-10 V | yellow | Control input, set value 0-10 VDC, impedance 100 kΩ, SELV |
| 2 | 10 | P | orange | not used |
| 2 | 11 | 10 VDC | red | Voltage output 10 VDC (+/-3%), max. 1.1 mA,<br>power supply for external devices (e.g. potentiometers), SELV |
| 2 | 12 | GND | blue | Reference ground for control interface, SELV |



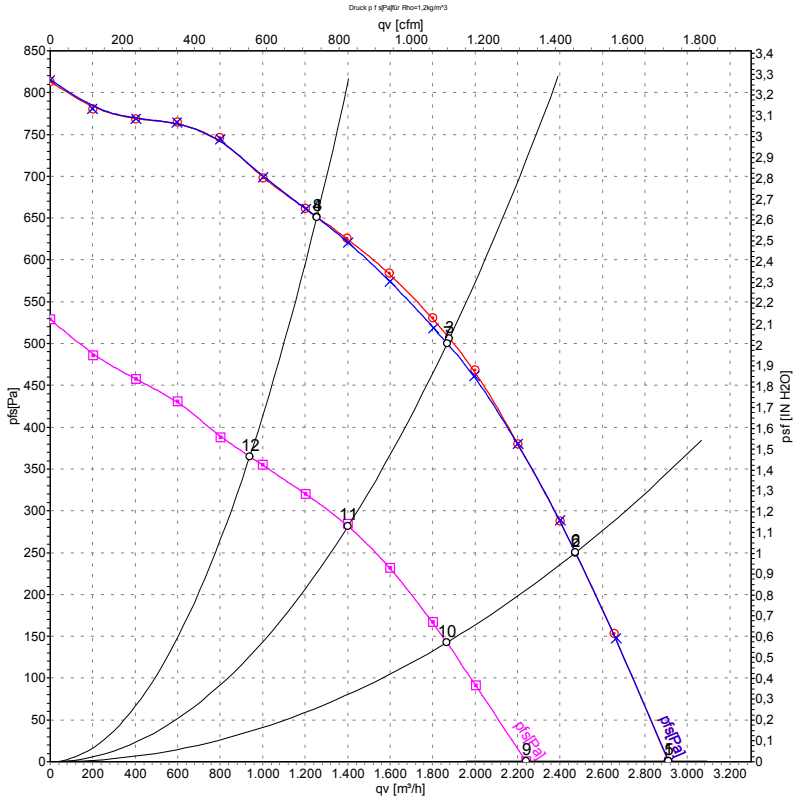
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## Curves: Air performance




Measurement: LU-141311-1
Measurement: LU-141306-1
Measurement: LU-141310-1

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 | qv | $p_{fs}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|
| | V | $min^{-1}$ | W | A | $m^3/h$ | Pa | CFM | inH2O |
| 1 | 138 | 2425 | 340 | 2.44 | 2910 | 0 | 1710 | 0.00 |
| 2 | 138 | 2420 | 430 | 3.12 | 2475 | 250 | 1455 | 1.00 |
| 3 | 138 | 2420 | 497 | 3.61 | 1880 | 506 | 1105 | 2.03 |
| 4 | 138 | 2420 | 476 | 3.45 | 1255 | 650 | 740 | 2.61 |
| 5 | 110 | 2425 | 340 | 3.00 | 2910 | 0 | 1715 | 0.00 |
| 6 | 110 | 2420 | 430 | 3.90 | 2475 | 250 | 1455 | 1.00 |
| 7 | 110 | 2410 | 488 | 4.43 | 1870 | 500 | 1100 | 2.01 |
| 8 | 110 | 2420 | 475 | 4.31 | 1255 | 650 | 740 | 2.61 |
| 9 | 77 | 1870 | 159 | 2.06 | 2240 | 0 | 1320 | 0.00 |
| 10 | 77 | 1830 | 187 | 2.43 | 1865 | 143 | 1100 | 0.57 |
| 11 | 77 | 1805 | 208 | 2.69 | 1400 | 284 | 825 | 1.14 |
| 12 | 77 | 1805 | 202 | 2.62 | 940 | 365 | 555 | 1.47 |

U = Power supply · n = Speed (rpm) · $P_{ed}$ = Power consumption · I = Current draw · qv = Air flow · $p_{fs}$ = Pressure increase



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