**R3G280-RO18-A7**

# EC centrifugal fan - RadiCal

backward-curved, single-intake

**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

ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **R3G280-RO18-A7** |
| **Motor** | **M3G084-DF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed (rpm) | $min^{-1}$ | 2550 |
| Power consumption | W | 460 |
| Current draw | A | 2.0 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 40 |

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

## Data according to ErP Directive

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 64.7 | 47.9 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 78.8 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_{ed}$ | kW | 0.45 |
| 09 Air flow $q_v$ | $m^3/h$ | 2000 |
| 09 Pressure increase $p_{fs}$ | Pa | 480 |
| 10 Speed (rpm) n | $min^{-1}$ | 2535 |
| 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 Pa

LU-136485

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## Technical description

| | |
|---|---|
| **Weight** | 4.3 kg |
| **Fan size** | 280 mm |
| **Rotor surface** | Painted black |
| **Electronics housing material** | Die-cast aluminum |
| **Impeller material** | PP plastic |
| **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** | - Output 10 VDC, max. 10 mA<br>- Alarm relay<br>- Motor current limitation<br>- PFC, active<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC circuit feedback** | According to EN 61000-3-2/3 |
| **EMC interference emission** | According to EN 61000-6-3 (household environment) |
| **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** | Variable |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 61800-5-1; CE |
| **Approval** | CSA C22.2 No. 77; UL 2111 |
| **Comment** | All wires, except protective earth, marked with labeling strips |

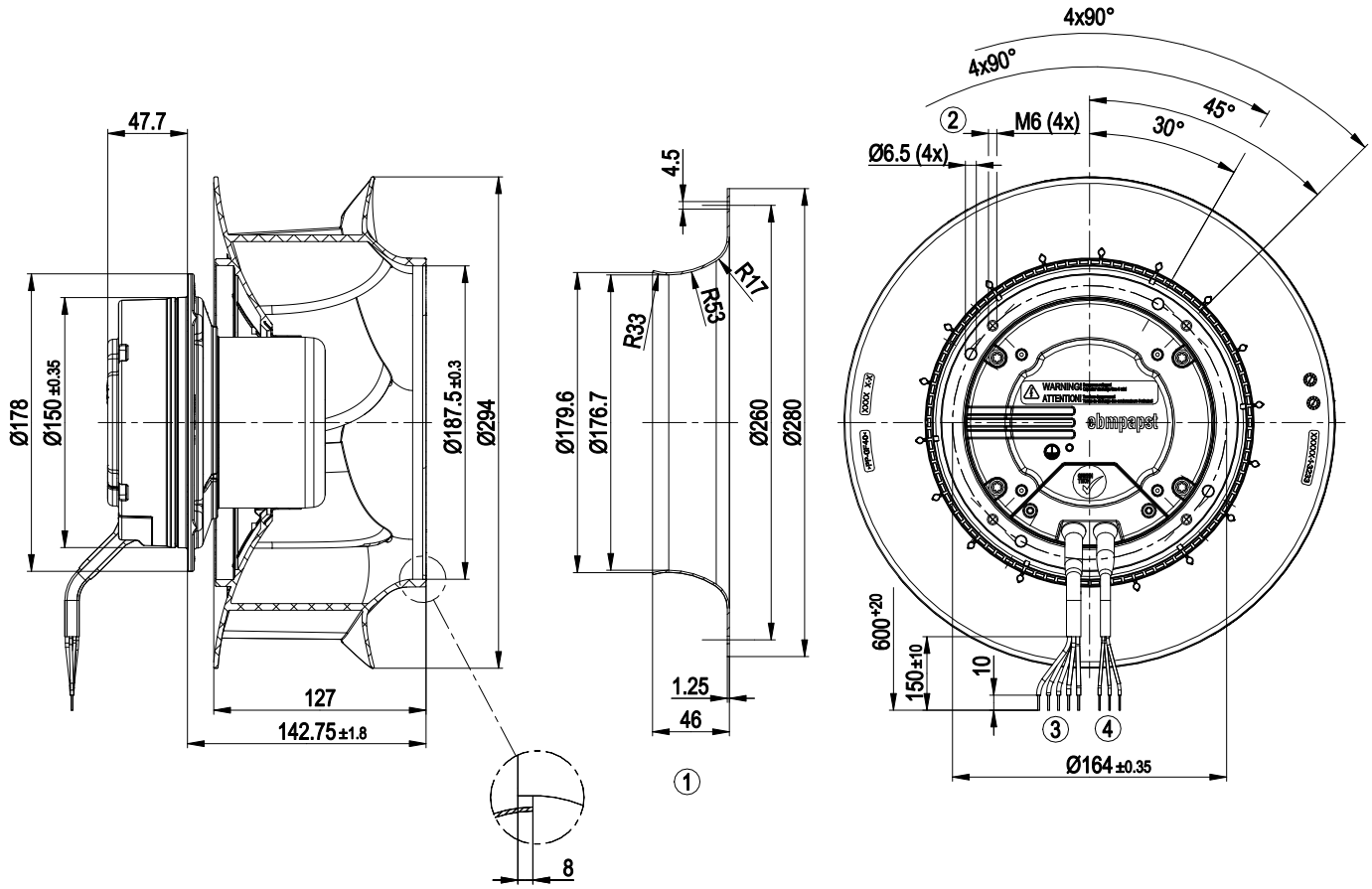


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## Product drawing




| | |
|---|---|
| 1 | Accessory part: inlet ring 28000-2-4013 not included in scope of delivery |
| 2 | Max. clearance for screw 10 mm |
| 3 | Cable PVC AWG18, 5x tin-plated wire ends |
| 4 | Cable PVC AWG22, 3x tin-plated wire ends |

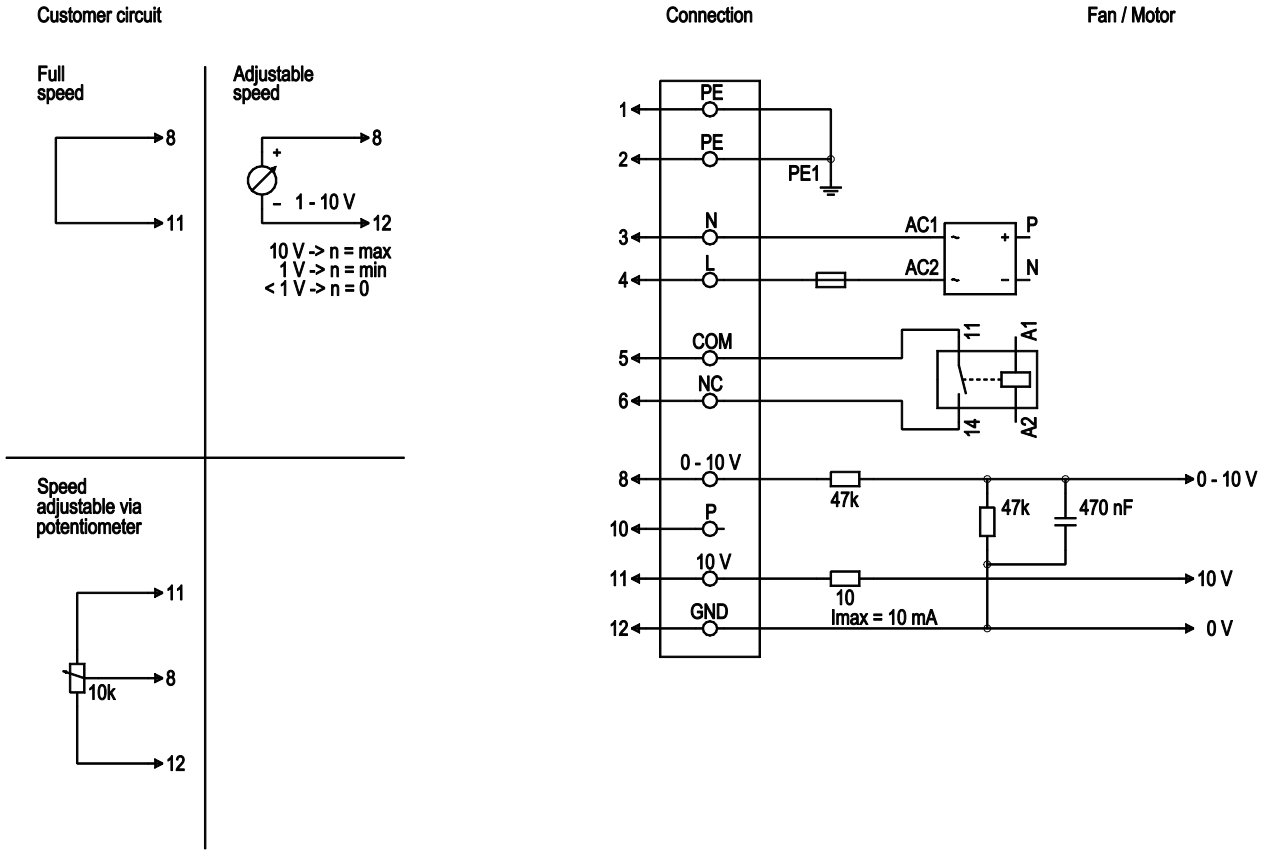


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## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| 1 | 1, 2 | PE | green/yellow | Protective earth |
| 1 | 3 | N | blue | Power supply, neutral conductor, see nameplate for voltage range, 50/60 Hz |
| 1 | 4 | L | black | Power supply, phase, see nameplate for voltage range, 50/60 Hz |
| 1 | 5 | COM | white 1 | Floating status contact, break for failure (2 A, max. 250 VAC, min. 10 mA) |
| 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 kOhm, SELV |
| 2 | 10 | P | orange | not used |
| 2 | 11 | 10 VDC | red | Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometers), SELV |
| 2 | 12 | GND | blue | Reference ground for control interface, SELV |

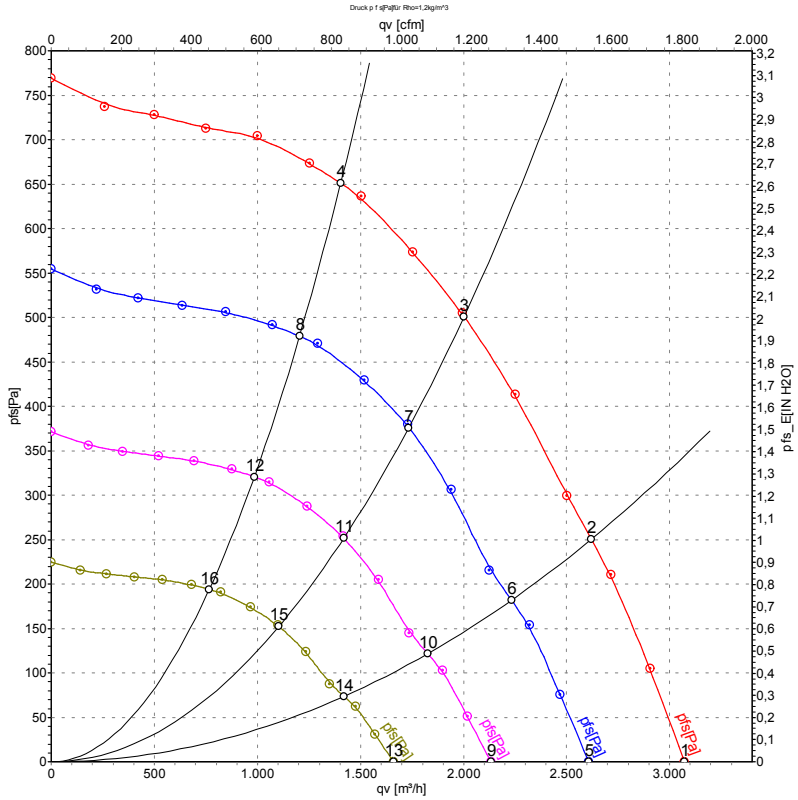


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## Curves: Air performance 50 Hz




Measurement: LU-136485-1

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 | qv | $p_{fs}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | CFM | inH2O |
| 1 | 230 | 50 | 2570 | 353 | 1.56 | 3070 | 0 | 1810 | 0.00 |
| 2 | 230 | 50 | 2570 | 424 | 1.86 | 2620 | 250 | 1540 | 1.00 |
| 3 | 230 | 50 | 2550 | 460 | 2.00 | 2000 | 500 | 1180 | 2.01 |
| 4 | 230 | 50 | 2570 | 437 | 1.91 | 1405 | 650 | 825 | 2.61 |
| 5 | 230 | 50 | 2200 | 216 | 0.95 | 2610 | 0 | 1535 | 0.00 |
| 6 | 230 | 50 | 2200 | 262 | 1.15 | 2235 | 182 | 1315 | 0.73 |
| 7 | 230 | 50 | 2200 | 298 | 1.30 | 1735 | 378 | 1020 | 1.52 |
| 8 | 230 | 50 | 2200 | 276 | 1.21 | 1205 | 479 | 710 | 1.92 |
| 9 | 230 | 50 | 1800 | 118 | 0.52 | 2135 | 0 | 1255 | 0.00 |
| 10 | 230 | 50 | 1800 | 144 | 0.63 | 1825 | 122 | 1075 | 0.49 |
| 11 | 230 | 50 | 1800 | 163 | 0.71 | 1420 | 253 | 835 | 1.02 |
| 12 | 230 | 50 | 1800 | 151 | 0.66 | 985 | 321 | 580 | 1.29 |
| 13 | 230 | 50 | 1400 | 56 | 0.25 | 1660 | 0 | 975 | 0.00 |
| 14 | 230 | 50 | 1400 | 68 | 0.30 | 1420 | 74 | 835 | 0.30 |
| 15 | 230 | 50 | 1400 | 77 | 0.34 | 1105 | 153 | 650 | 0.61 |
| 16 | 230 | 50 | 1400 | 71 | 0.31 | 765 | 194 | 450 | 0.78 |

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



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