# EC centrifugal fan

backward-curved, single-intake

R3G310-AN43-70 ebmpapst Datasheet
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## Nominal data

| | |
|---|---|
| **Type** | **R3G310-AN43-70** |
| **Motor** | **M3G084-FA** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed (rpm) | $min^{-1}$ | 2435 |
| Power consumption | W | 470 |
| Current draw | A | 3.0 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 45 |

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 $\eta_{es}$ | % | 60.6 | 48 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 74.6 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_{ed}$ | kW | 0.46 |
| 09 Air flow $q_v$ | $m^3/h$ | 1810 |
| 09 Pressure increase $p_{fs}$ | Pa | 507 |
| 10 Speed (rpm) n | $min^{-1}$ | 2455 |
| 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-112311

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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** | - Output 10 VDC, max. 1.1 mA<br>- Alarm relay<br>- Motor current limitation<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from supply<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **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** | UL 2111; CSA C22.2 No. 77 |

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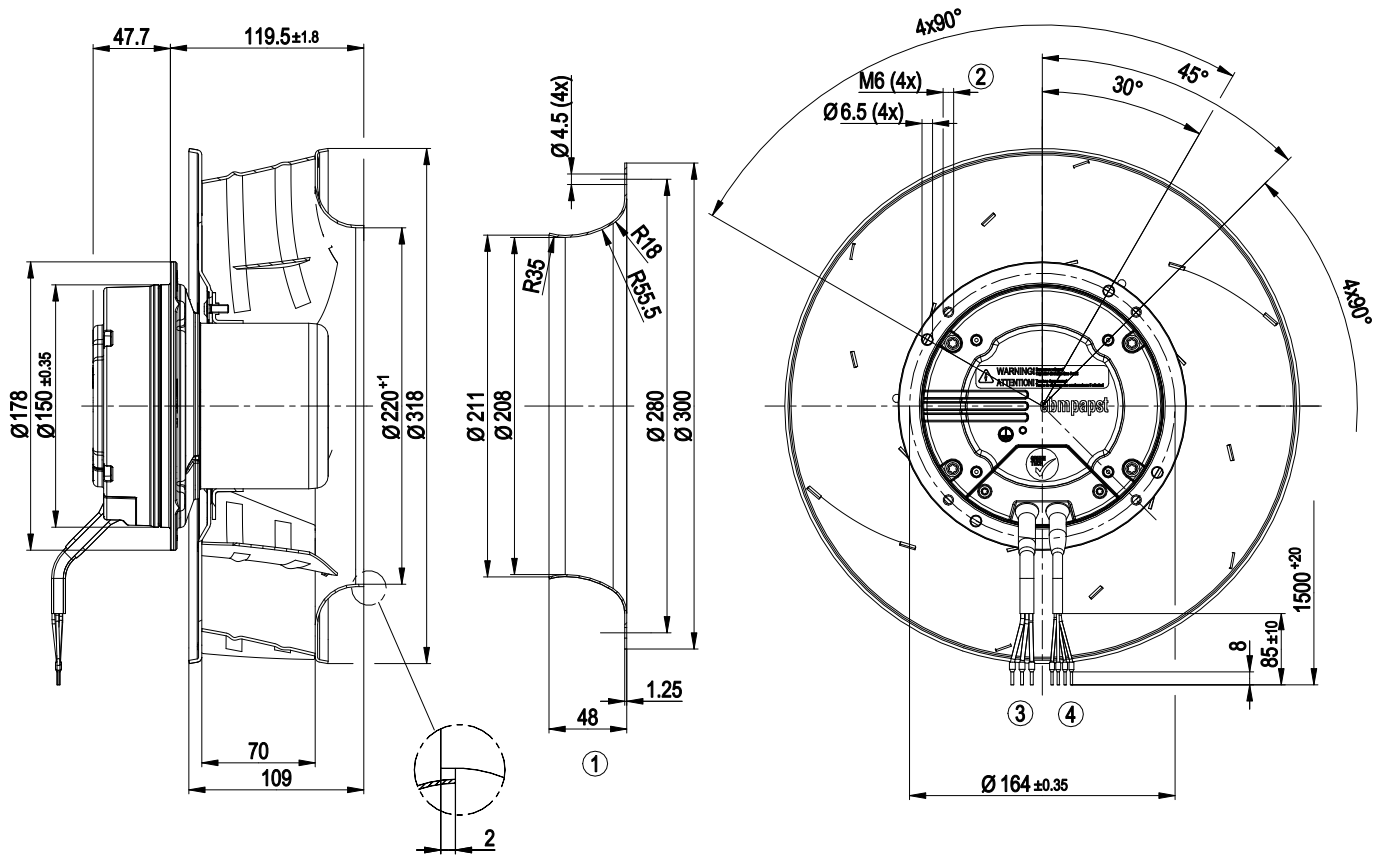
## Product drawing




| | |
|---|---|
| 1 | Accessory part: inlet ring 31050-2-4013 not included in scope of delivery |
| 2 | Clearance for screw 8 - 10 mm |
| 3 | Cable PVC AWG22, 3 x crimped ferrules |
| 4 | Cable PVC AWG18, 4 x crimped ferrules |

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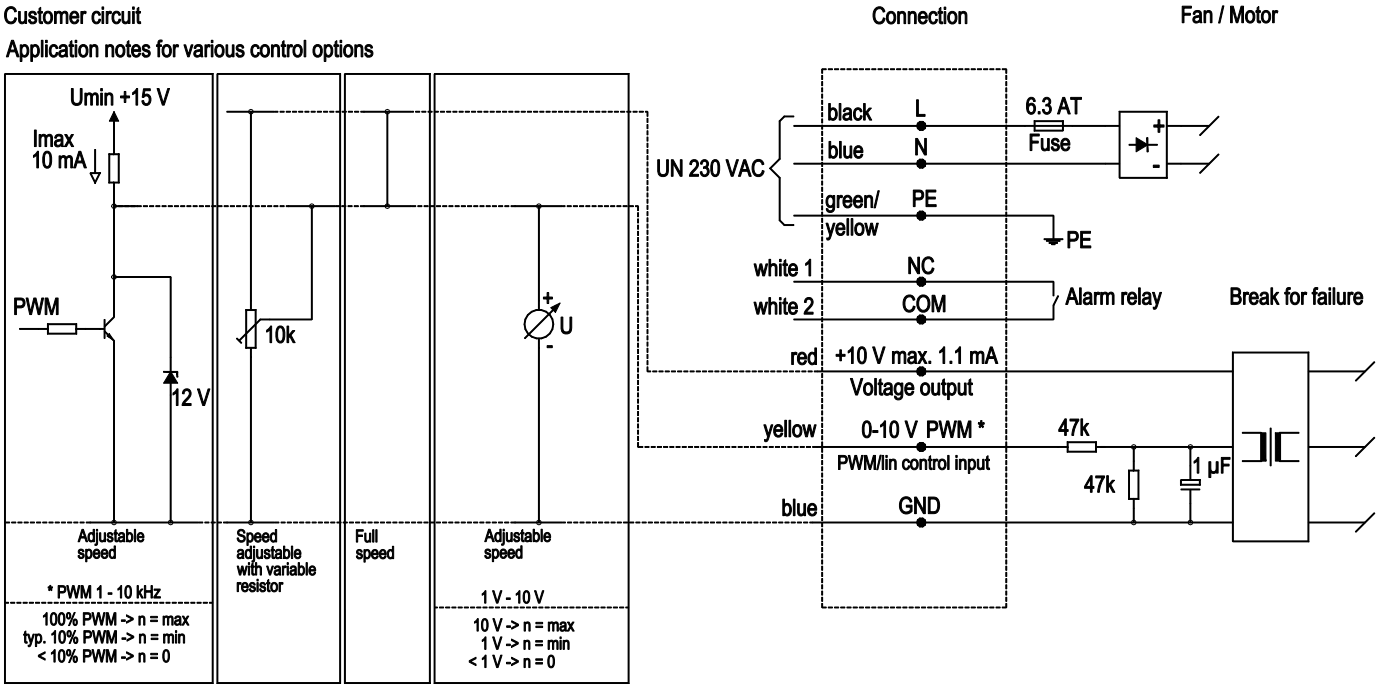
## Connection diagram



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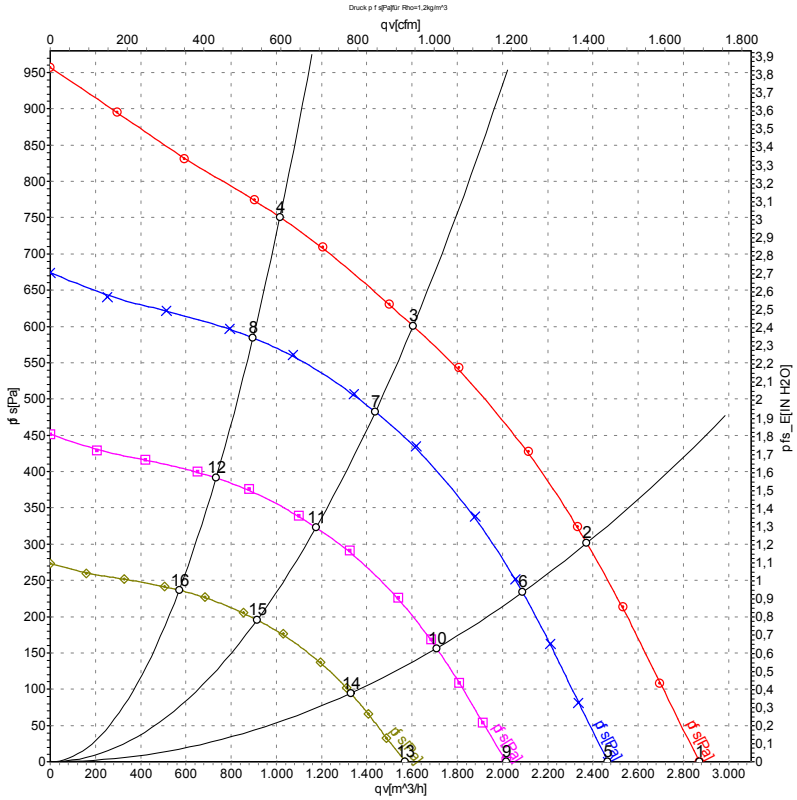
## Curves: Air performance 50 Hz




Measurement: LU-112311-1

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 | 2560 | 356 | 2.31 | 2870 | 0 | 1690 | 0.00 |
| 2 | 230 | 50 | 2500 | 432 | 2.79 | 2375 | 300 | 1395 | 1.20 |
| 3 | 230 | 50 | 2435 | 470 | 3.00 | 1605 | 600 | 945 | 2.41 |
| 4 | 230 | 50 | 2495 | 437 | 2.84 | 1015 | 750 | 600 | 3.01 |
| 5 | 230 | 50 | 2200 | 226 | 1.46 | 2465 | 0 | 1450 | 0.00 |
| 6 | 230 | 50 | 2200 | 295 | 1.91 | 2090 | 234 | 1230 | 0.94 |
| 7 | 230 | 50 | 2200 | 336 | 2.18 | 1440 | 482 | 845 | 1.94 |
| 8 | 230 | 50 | 2200 | 301 | 1.95 | 895 | 584 | 525 | 2.34 |
| 9 | 230 | 50 | 1800 | 124 | 0.80 | 2020 | 0 | 1190 | 0.00 |
| 10 | 230 | 50 | 1800 | 162 | 1.04 | 1710 | 157 | 1005 | 0.63 |
| 11 | 230 | 50 | 1800 | 184 | 1.19 | 1175 | 323 | 690 | 1.30 |
| 12 | 230 | 50 | 1800 | 165 | 1.07 | 735 | 391 | 430 | 1.57 |
| 13 | 230 | 50 | 1400 | 58 | 0.38 | 1570 | 0 | 925 | 0.00 |
| 14 | 230 | 50 | 1400 | 76 | 0.49 | 1330 | 95 | 780 | 0.38 |
| 15 | 230 | 50 | 1400 | 87 | 0.56 | 915 | 195 | 540 | 0.78 |
| 16 | 230 | 50 | 1400 | 77 | 0.50 | 570 | 237 | 335 | 0.95 |

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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