**R3G310-BK02-11**

# EC centrifugal fan

backward-curved, single-intake

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## Nominal data

| | |
|---|---|
| **Type** | **R3G310-BK02-11** |
| **Motor** | **M3G074-CF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Status | | prelim. |
| Speed (rpm) | $min^{-1}$ | 1700 |
| Power consumption | W | 160 |
| Current draw | A | 1.4 |
| 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

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 64.6 | 43.2 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 83.4 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_{ed}$ | kW | 0.16 |
| 09 Air flow $q_v$ | $m^3/h$ | 1405 |
| 09 Pressure increase $p_{fs}$ | Pa | 234 |
| 10 Speed (rpm) n | $min^{-1}$ | 1705 |
| 11 Specific ratio* | | 1.00 |

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-195081

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## Technical description

| | |
|---|---|
| **Weight** | 1.9 kg |
| **Size** | 310 mm |
| **Motor size** | 74 |
| **Rotor surface** | Thick-film passivated |
| **Impeller material** | Sheet aluminum |
| **Number of blades** | 7 |
| **Direction of rotation** | Clockwise, viewed toward rotor |
| **Degree of protection** | IP54 |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | H1+ |
| **Max. permitted ambient temp. for motor (transport/storage)** | + 80 °C |
| **Min. permitted ambient temp. for motor (transport/storage)** | - 40 °C |
| **Installation position** | Any |
| **Condensation drainage holes** | None, open rotor |
| **Cooling hole/opening** | On rotor side |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 10 mA<br>- Tach output<br>- Power limiter<br>- Motor current limitation<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Overvoltage detection<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage detection |
| **Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Electronic motor protection |
| **With cable** | Variable |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 60335-1; CE |
| **Approval** | VDE; CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1 |

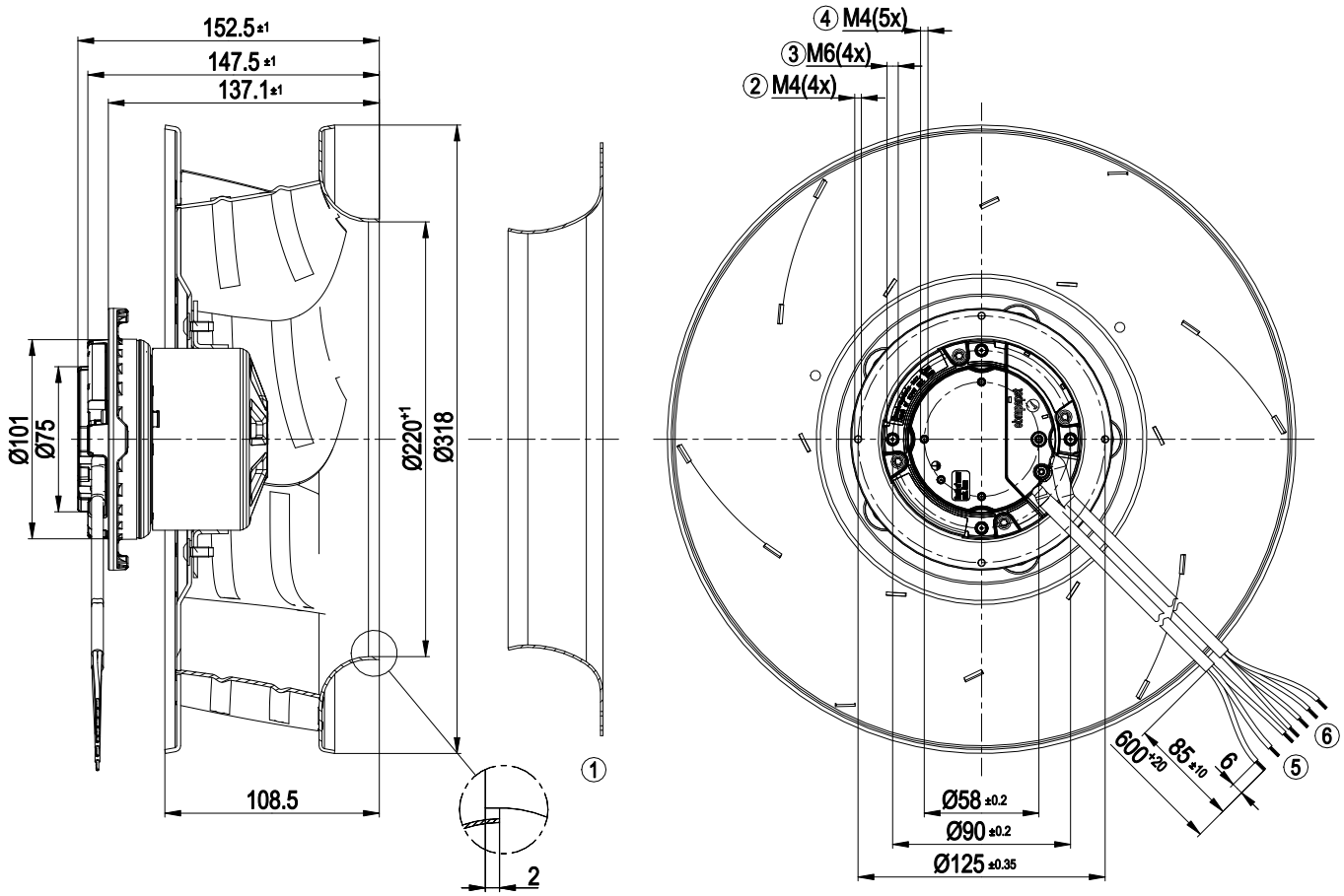


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## Product drawing




| | |
|---|---|
| 1 | Accessory part: inlet ring 31050-2-4013 not included in scope of delivery |
| 2 | Clearance for screw 8-10 mm |
| 3 | Max. clearance for screw 10 mm |
| 4 | Max. clearance for screw 5 mm |
| 5 | Cable PVC AWG20 |
| | 3x splice |
| 6 | Cable PVC AWG22 |
| | 4x splice |

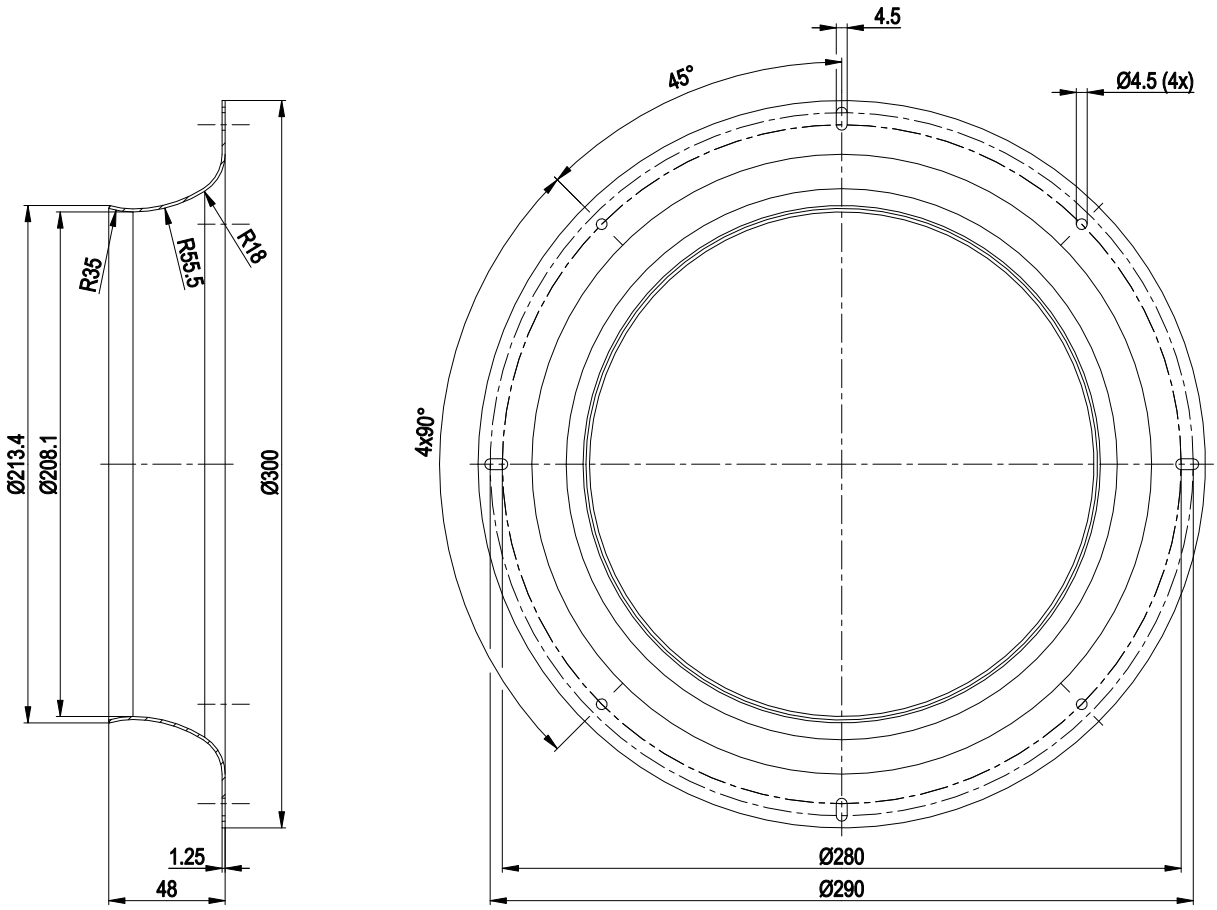


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## Accessory part




inlet ring 31050-2-4013 not included in scope of delivery

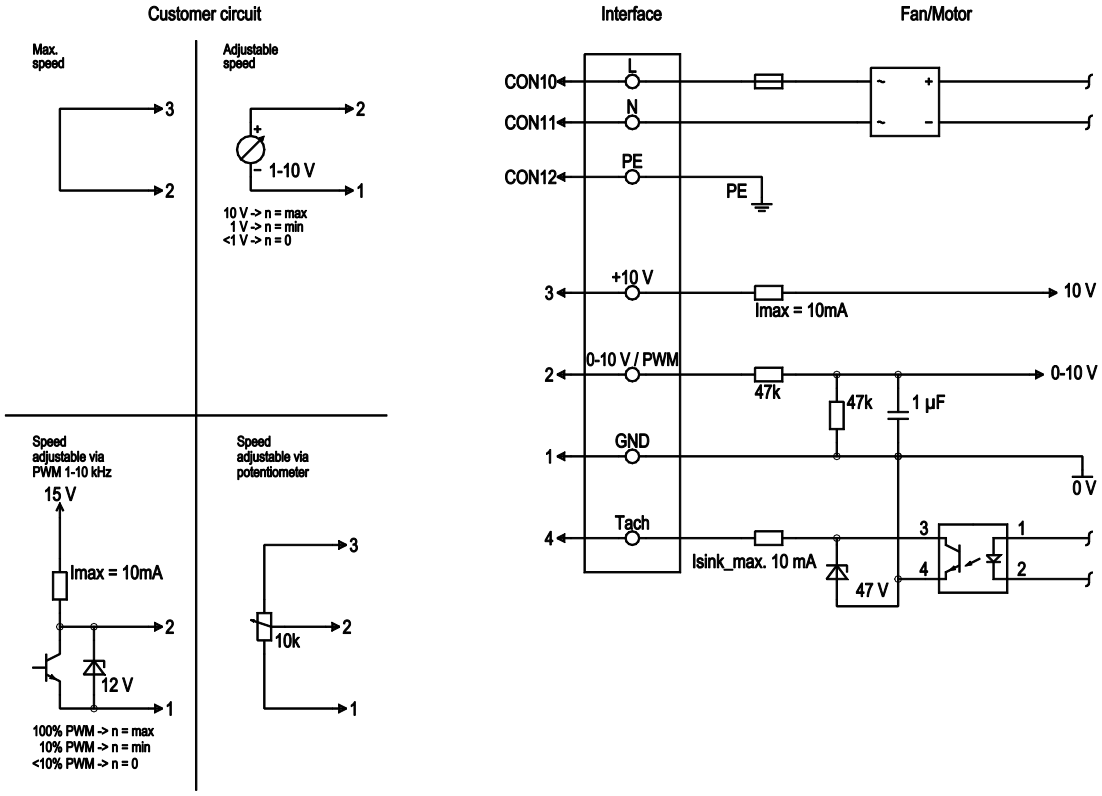


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## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| | CON10 | L | black | Supply connection, power supply, phase, see nameplate for voltage range |
| | CON11 | N | blue | Supply connection, power supply, neutral conductor, see nameplate for voltage range |
| | CON12 | PE | green/yellow | Ground connection |
| | 2 | 0- 10V PWM | yellow | 0-10 V / PWM control input, Ri=100 kΩ, SELV |
| | 4 | Tach | white | Tach output, open collector, 1 pulse per revolution, Isink max = 10 mA, SELV |
| | 3 | +10 V | red | Fixed voltage output 10 VDC +/-3 %, Imax. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. pot), SELV |
| | 1 | GND | blue | Reference ground for control interface, SELV |

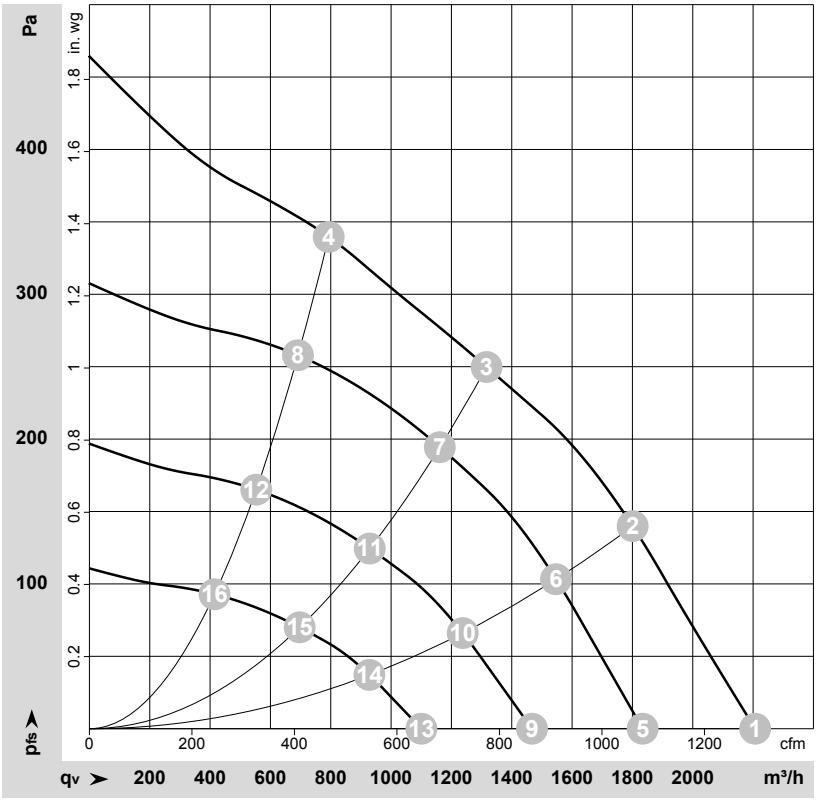


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## Curves: Air performance 50 Hz




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-195081-1

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

| | Wired | U | f | n | $P_{ed}$ | I | $LpA_{in}$ | $LwA_{in}$ | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa | cfm | in. wg |
| 1 | 1~ | 230 | 50 | 1805 | 121 | 1.08 | 67 | 75 | 2205 | 0 | 1300 | 0.00 |
| 2 | 1~ | 230 | 50 | 1745 | 150 | 1.32 | 63 | 70 | 1800 | 140 | 1060 | 0.56 |
| 3 | 1~ | 230 | 50 | 1700 | 160 | 1.40 | 60 | 67 | 1315 | 250 | 775 | 1.00 |
| 4 | 1~ | 230 | 50 | 1720 | 160 | 1.40 | 61 | 68 | 795 | 340 | 465 | 1.36 |
| 5 | 1~ | 230 | 50 | 1500 | 69 | 0.62 | 63 | 70 | 1835 | 0 | 1080 | 0.00 |
| 6 | 1~ | 230 | 50 | 1500 | 95 | 0.84 | 59 | 66 | 1545 | 105 | 910 | 0.42 |
| 7 | 1~ | 230 | 50 | 1500 | 111 | 0.98 | 57 | 64 | 1160 | 194 | 685 | 0.78 |
| 8 | 1~ | 230 | 50 | 1500 | 106 | 0.93 | 58 | 65 | 690 | 259 | 405 | 1.04 |
| 9 | 1~ | 230 | 50 | 1200 | 35 | 0.32 | 57 | 65 | 1465 | 0 | 865 | 0.00 |
| 10 | 1~ | 230 | 50 | 1200 | 49 | 0.43 | 53 | 60 | 1235 | 67 | 730 | 0.27 |
| 11 | 1~ | 230 | 50 | 1200 | 57 | 0.50 | 51 | 58 | 930 | 124 | 545 | 0.50 |
| 12 | 1~ | 230 | 50 | 1200 | 54 | 0.48 | 52 | 59 | 555 | 166 | 325 | 0.67 |
| 13 | 1~ | 230 | 50 | 900 | 15 | 0.13 | 50 | 57 | 1100 | 0 | 645 | 0.00 |
| 14 | 1~ | 230 | 50 | 900 | 20 | 0.18 | 46 | 53 | 930 | 38 | 545 | 0.15 |
| 15 | 1~ | 230 | 50 | 900 | 24 | 0.21 | 44 | 51 | 695 | 70 | 410 | 0.28 |
| 16 | 1~ | 230 | 50 | 900 | 23 | 0.20 | 45 | 52 | 415 | 93 | 245 | 0.37 |

Wired = Wiring · U = Voltage · f = Frequency · 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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