# EC circulation blower for hot air



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** | **R3G180-AI17-11** |
| **Motor** | **M3G055-CF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 240 |
| Method of obtaining data | | ml |
| Status | | prelim. |
| Speed (rpm) | $min^{-1}$ | 3000 |
| Power consumption | W | 77 |
| Current draw | A | 0.73 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 50 |

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

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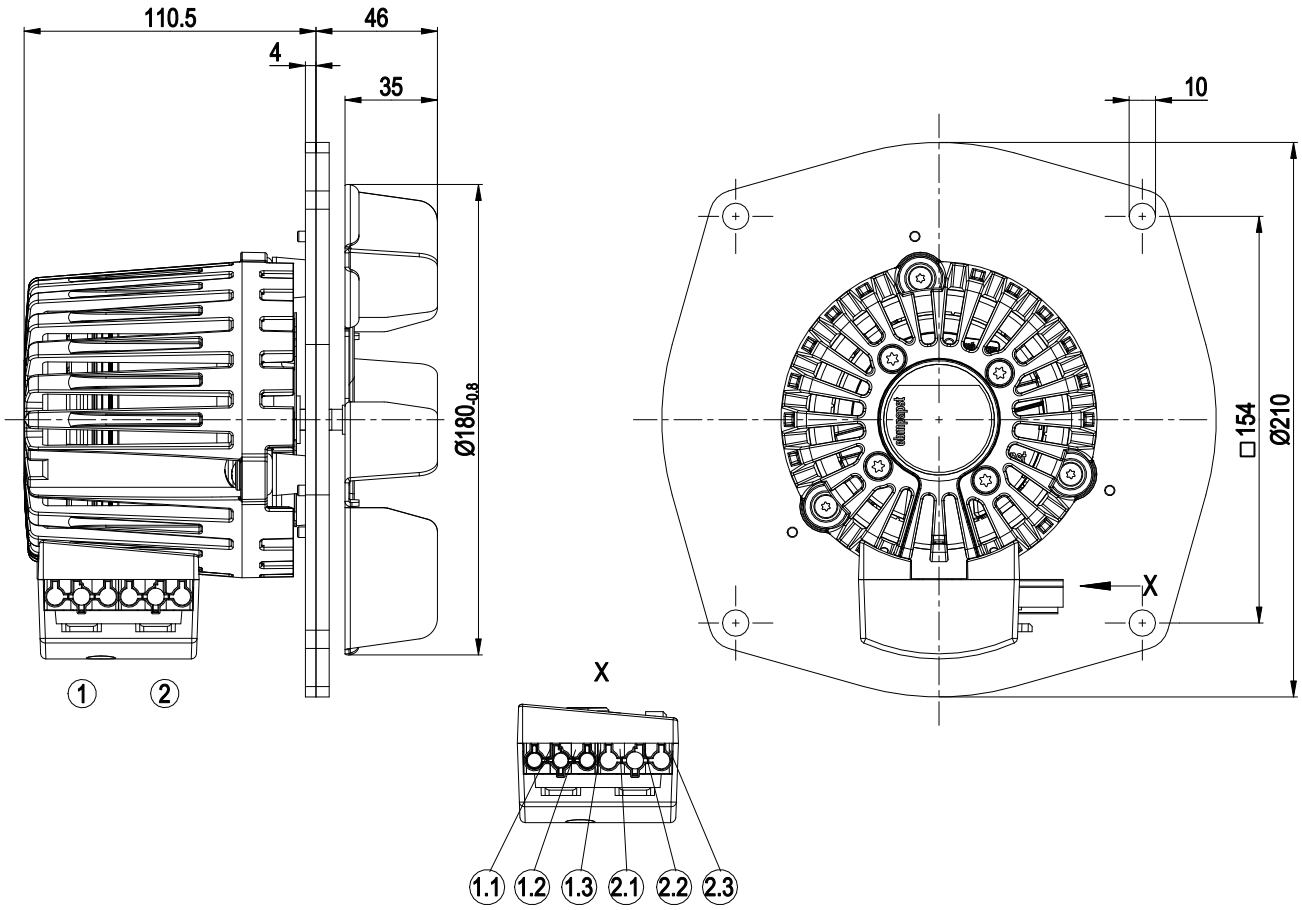
## Technical description

| | |
|---|---|
| **Weight** | 2.65 kg |
| **Fan size** | 180 mm |
| **Rotor surface** | Thick-film passivated |
| **Terminal box material** | PA plastic |
| **Impeller material** | Sheet steel, rust-resistant |
| **Direction of rotation** | Clockwise, viewed toward rotor |
| **Degree of protection** | IP54 |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | H0 - dry environment |
| **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 |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - 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 |
| **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 |
| **Electrical hookup** | With plug |
| **Motor protection** | Locked-rotor protection |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | CE |

# EC circulation blower for hot air

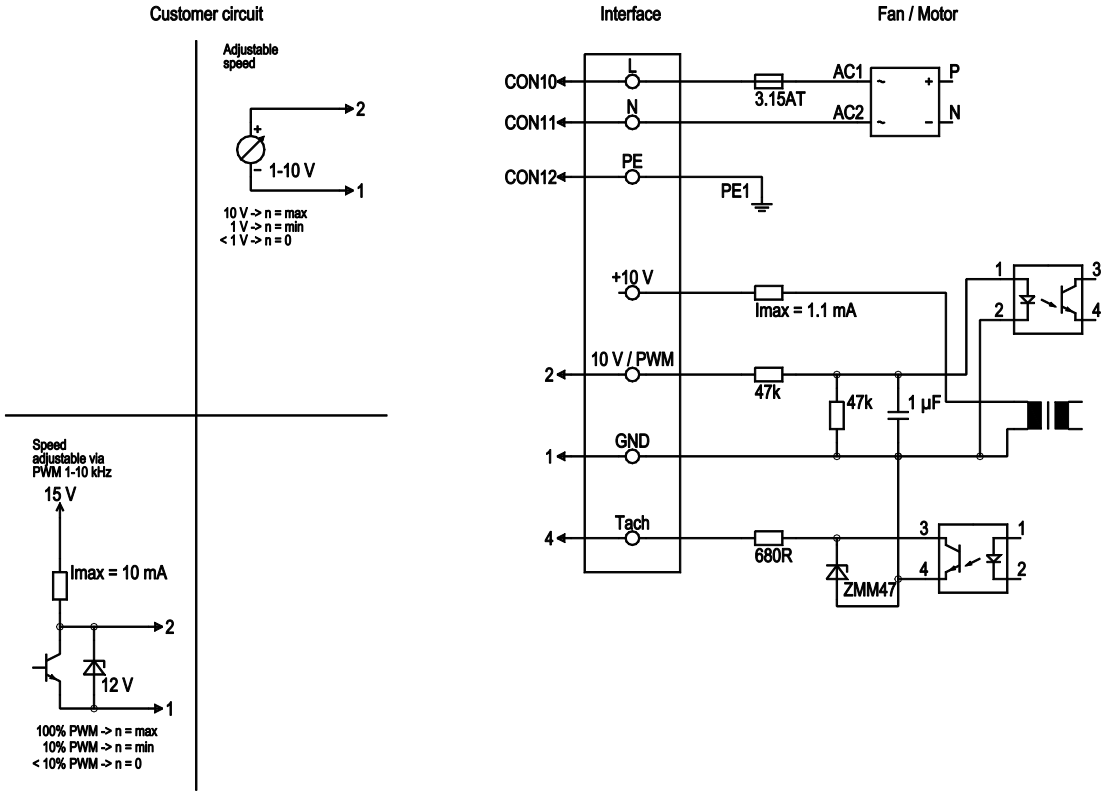
## Product drawing




| | |
|---|---|
| 1 | 3-pole connector housing Wieland 93.031.3757.0 |
| 1.1 | 0-10 V PWM (yellow) |
| 1.2 | GND (blue) |
| 1.3 | Tach (white) |
| 2 | 3-pole connector housing Wieland 93.031.3257.0 |
| 2.1 | N (blue) |
| 2.2 | PE (green/yellow) |
| 2.3 | L (black) |

# EC circulation blower for hot air

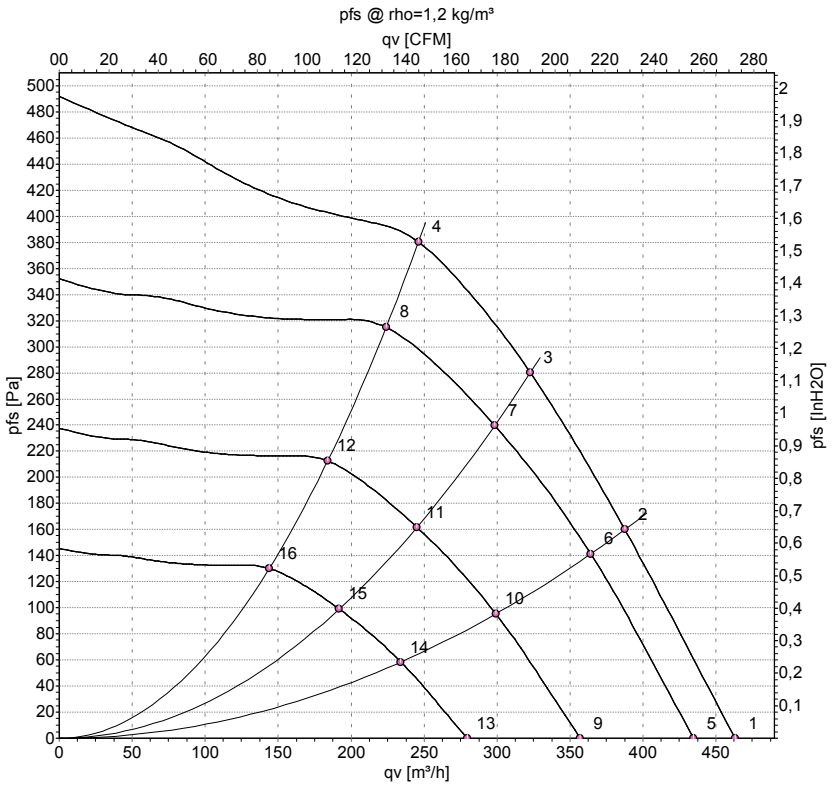
## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| | CON10 | L | black | Power supply 230 VAC, 50-60 Hz, see nameplate for voltage range |
| | CON11 | N | blue | Neutral conductor |
| | CON12 | PE | green/yellow | Protective earth |
| | 1 | GND | blue | GND connection for control interface |
| | 2 | 0-10V PWM | yellow | Control input 0-10 V or PWM, electrically isolated |
| | 4 | Tacho | white | Tach output: Open collector, 1 pulse per revolution, electrically isolated, Isink_max = 10 mA |

# EC circulation blower for hot air

## Curves: Air performance 50 Hz




Measurement: LU-156445-1

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 | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | cfm | inH2O |
| 1 | 230 | 50 | 3000 | 77 | 0.73 | 465 | 0 | 275 | 0.00 |
| 2 | 230 | 50 | 2980 | 77 | 0.73 | 390 | 160 | 230 | 0.64 |
| 3 | 230 | 50 | 3030 | 75 | 0.71 | 325 | 280 | 190 | 1.12 |
| 4 | 230 | 50 | 3075 | 70 | 0.67 | 245 | 380 | 145 | 1.53 |
| 5 | 230 | 50 | 2800 | 64 | 0.60 | 435 | 0 | 255 | 0.00 |
| 6 | 230 | 50 | 2800 | 64 | 0.60 | 365 | 141 | 215 | 0.57 |
| 7 | 230 | 50 | 2800 | 59 | 0.56 | 300 | 240 | 175 | 0.96 |
| 8 | 230 | 50 | 2800 | 53 | 0.51 | 225 | 317 | 130 | 1.27 |
| 9 | 230 | 50 | 2300 | 36 | 0.33 | 355 | 0 | 210 | 0.00 |
| 10 | 230 | 50 | 2300 | 35 | 0.33 | 300 | 95 | 175 | 0.38 |
| 11 | 230 | 50 | 2300 | 33 | 0.31 | 245 | 162 | 145 | 0.65 |
| 12 | 230 | 50 | 2300 | 29 | 0.28 | 185 | 214 | 110 | 0.86 |
| 13 | 230 | 50 | 1800 | 17 | 0.16 | 280 | 0 | 165 | 0.00 |
| 14 | 230 | 50 | 1800 | 17 | 0.16 | 235 | 58 | 140 | 0.23 |
| 15 | 230 | 50 | 1800 | 16 | 0.15 | 190 | 99 | 115 | 0.40 |
| 16 | 230 | 50 | 1800 | 14 | 0.13 | 145 | 131 | 85 | 0.53 |

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