**R3G220-AE50-01**

# EC centrifugal fan

backward curved, single inlet



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ErP2015 EXCEEDS THE NORM

## Nominal data

| | | |
|---|---|---|
| **Type** | **R3G220-AE50-01** | |
| **Motor** | **M3G074-CF** | |
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed | $min^{-1}$ | 3560 |
| Power input | W | 150 |
| Current draw | A | 1.1 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 60 |

ml = max. load · me = max. efficiency · fa = running at free air · cs = customer specs · cu = customer unit
Subject to alterations

## Data according to ErP directive

| | |
|---|---|
| Installation category | A |
| Efficiency category | Static |
| Variable speed drive | Yes |
| Specific ratio* | 1.00 |

* Specific ratio = 1 + $p_{fs}$ / 100 000 Pa

| | | Actual | Request 2013 | Request 2015 |
|---|---|---|---|---|
| Overall efficiency $\eta_{es}$ | | 48.8 | 39.1 | 43.1 |
| Efficiency grade N | | 67.7 | 58 | 62 |
| Power input $P_{ed}$ | kW | 0.16 | | |
| Air flow $q_v$ | $m^3/h$ | 600 | | |
| Pressure increase $p_{fs}$ | Pa | 427 | | |
| Speed n | $min^{-1}$ | 3320 | | |

Data established at point of optimum efficiency



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## Technical features

| | |
|---|---|
| **Mass** | 2.2 kg |
| **Size** | 220 mm |
| **Surface of rotor** | Thick layer passivated |
| **Material of electronics housing** | Die-cast aluminium |
| **Material of impeller** | Plastic PA66, fibreglass-reinforced |
| **Number of blades** | 11 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 44; Depending on installation and position |
| **Insulation class** | "B" |
| **Humidity class** | F3-1 |
| **Max. permissible ambient motor temp. (transp./ storage)** | + 80 °C |
| **Min. permissible ambient motor temp. (transp./storage)** | - 40 °C |
| **Mounting position** | Shaft horizontal or rotor on top; rotor on bottom on request |
| **Condensate discharge holes** | None |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 1.1 mA<br>- Tach output<br>- Motor current limit<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Over-temperature protected electronics / motor |
| **EMC interference immunity** | Acc. to EN 61000-6-2 (industrial environment) |
| **EMC harmonics** | Acc. to EN 61000-3-2/3 |
| **EMC interference emission** | Acc. to EN 61000-6-3 (household environment) |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Thermal overload protector (TOP) wired internally |
| **Cable exit** | Variable |
| **Protection class** | I (if protective earth is connected by customer) |
| **Product conforming to standard** | EN 60335-1; CE |
| **Approval** | CCC; UL 2111; CSA C22.2 Nr.77 |

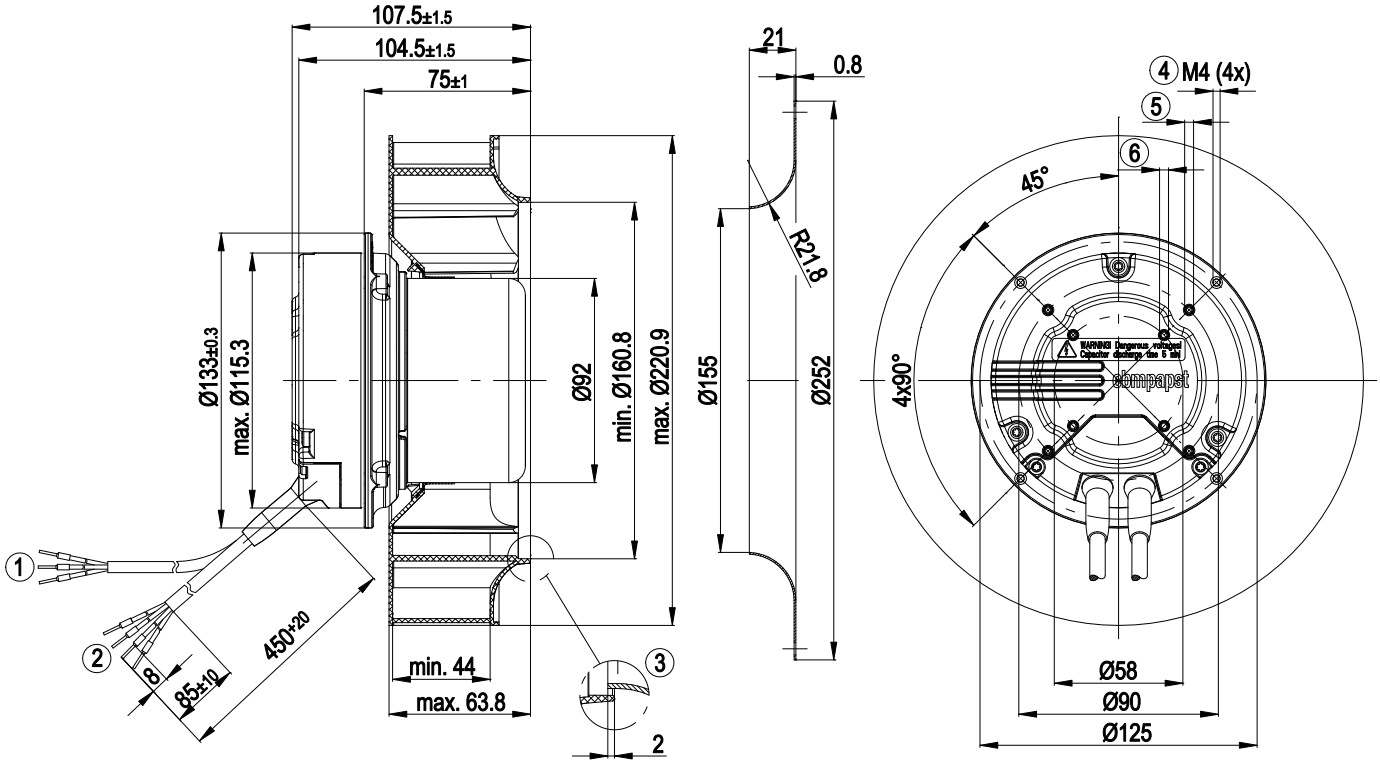


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## Product drawing




| | |
|---|---|
| 1 | Connection line AWG18, 3 x crimped core-end sleeves |
| 2 | Connection line AWG22, 4 x crimped core-end sleeves |
| 3 | Accessory part: Inlet nozzle 09609-2-4013, not included in the standard scope of delivery |
| 4 | Depth of screw 8 -10 mm; tightening torque 2.5±0.2 Nm ; gluing the screws is recommended |
| 5 | Pilot hole prepared for self-tapping screw M4, depth of screw max. 6 mm |
| 6 | Pilot hole prepared for self-tapping screw M4, depth of screw max. 8 mm |

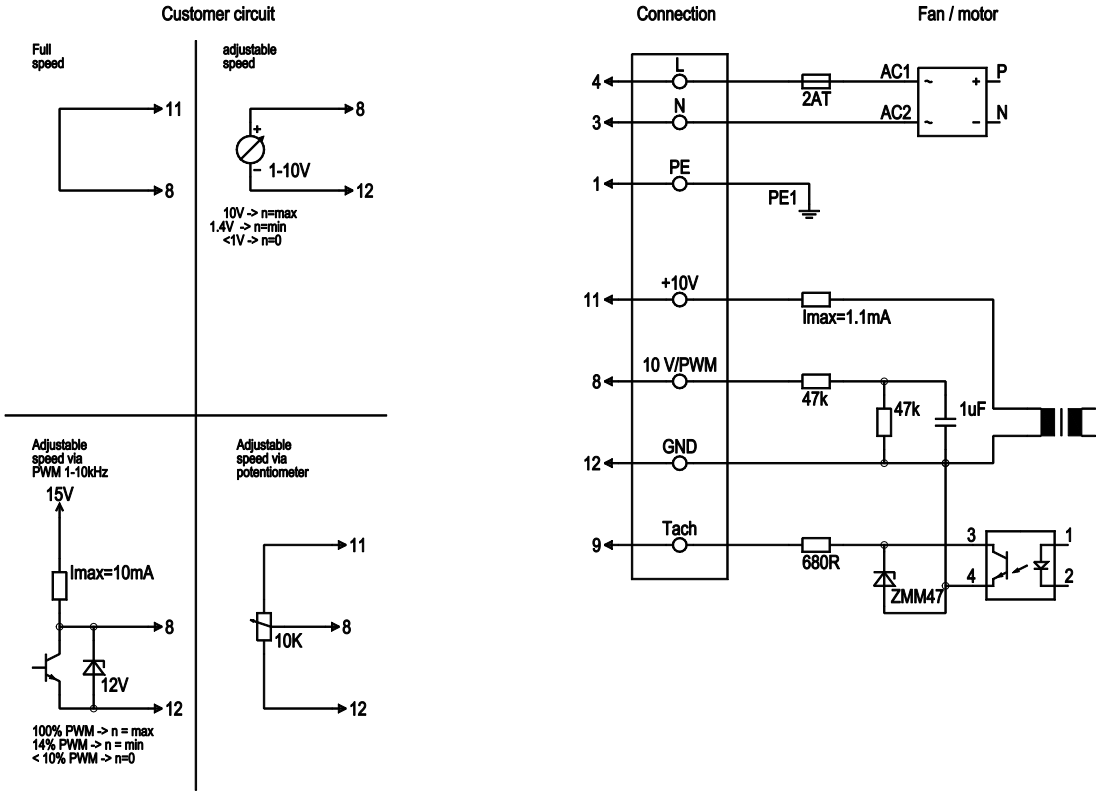


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## Connection screen




| Line | No. | Signal | Colour | Function / assignment |
|---|---|---|---|---|
| | 4 | L | black | Power supply 230 VAC, 50-60 Hz, see type plate for voltage range |
| | 3 | N | blue | Neutral conductor |
| | 1 | PE | green/yellow | Protective earth |
| | 8 | 0-10 V PWM | yellow | Control input 0 - 10 V or PWM, electrically isolated |
| | 9 | Tach | white | Tach output: open collector, 1 pulse per revolution, electrically isolated |
| | 11 | 10V / max 1.1 mA | red | Voltage output 10 V / max. 1.1 mA, electrically isolated |
| | 12 | GND | blue | GND - Connection for control interface |

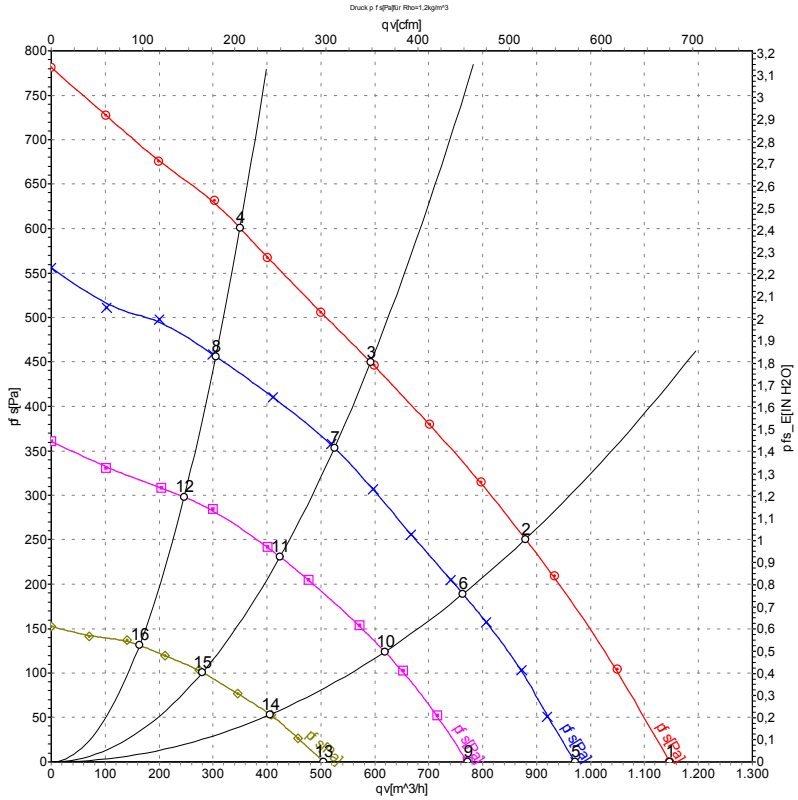


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## Charts: Air flow 50 Hz




Measurement: LU-69105
Measurement: LU-67052
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Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

## Measured values

| | U | f | n | $P_{ed}$ | I | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa |
| 1 | 230 | 50 | 3560 | 150 | 1.10 | 1145 | 0 |
| 2 | 230 | 50 | 3410 | 170 | 1.26 | 880 | 250 |
| 3 | 230 | 50 | 3320 | 170 | 1.21 | 590 | 450 |
| 4 | 230 | 50 | 3455 | 170 | 1.25 | 350 | 600 |
| 5 | 230 | 50 | 3080 | 103 | 0.76 | 970 | 0 |
| 6 | 230 | 50 | 3015 | 120 | 0.88 | 765 | 189 |
| 7 | 230 | 50 | 3000 | 124 | 0.91 | 525 | 355 |
| 8 | 230 | 50 | 3040 | 115 | 0.86 | 305 | 457 |
| 9 | 230 | 50 | 2500 | 62 | 0.46 | 770 | 0 |
| 10 | 230 | 50 | 2430 | 67 | 0.50 | 620 | 124 |
| 11 | 230 | 50 | 2430 | 70 | 0.52 | 425 | 231 |
| 12 | 230 | 50 | 2455 | 69 | 0.51 | 245 | 298 |
| 13 | 230 | 50 | 1625 | 22 | 0.19 | 505 | 0 |
| 14 | 230 | 50 | 1595 | 24 | 0.20 | 405 | 54 |
| 15 | 230 | 50 | 1595 | 26 | 0.21 | 280 | 101 |
| 16 | 230 | 50 | 1605 | 23 | 0.19 | 165 | 131 |

U = Supply voltage · f = Frequency · n = Speed · $P_{ed}$ = Power input · I = Current draw · qv = Air flow · $p_{fs}$ = Pressure increase



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