**R3G250-AK44-69**

# EC centrifugal fan

backward-curved, single-intake



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ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **R3G250-AK44-69** |
| **Motor** | **M3G084-DF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed (rpm) | $min^{-1}$ | 3150 |
| Power consumption | W | 380 |
| Current draw | A | 1.65 |
| 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 $\eta_{es}$ | % | 53.9 | 46.8 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 69.1 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_{ed}$ | kW | 0.36 |
| 09 Air flow $q_v$ | $m^3/h$ | 1055 |
| 09 Pressure increase $p_{fs}$ | Pa | 606 |
| 10 Speed (rpm) n | $min^{-1}$ | 3165 |
| 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-78471

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## Technical description

| | |
|---|---|
| **Weight** | 4.9 kg |
| **Fan size** | 250 mm |
| **Rotor surface** | Painted black |
| **Electronics housing material** | Die-cast aluminum |
| **Impeller material** | Sheet steel, galvanized |
| **Number of blades** | 11 |
| **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** | - Power limiter<br>- Motor current limitation<br>- Emergency operation, standstill on cable break<br>- PFC, active<br>- RS-485 MODBUS-RTU, 38,400 baud, no parity<br>- Soft start<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)** | <= 3.5 mA |
| **Electrical hookup** | With plug |
| **Motor protection** | Thermal overload protector (TOP) internally connected |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 61800-5-1 |

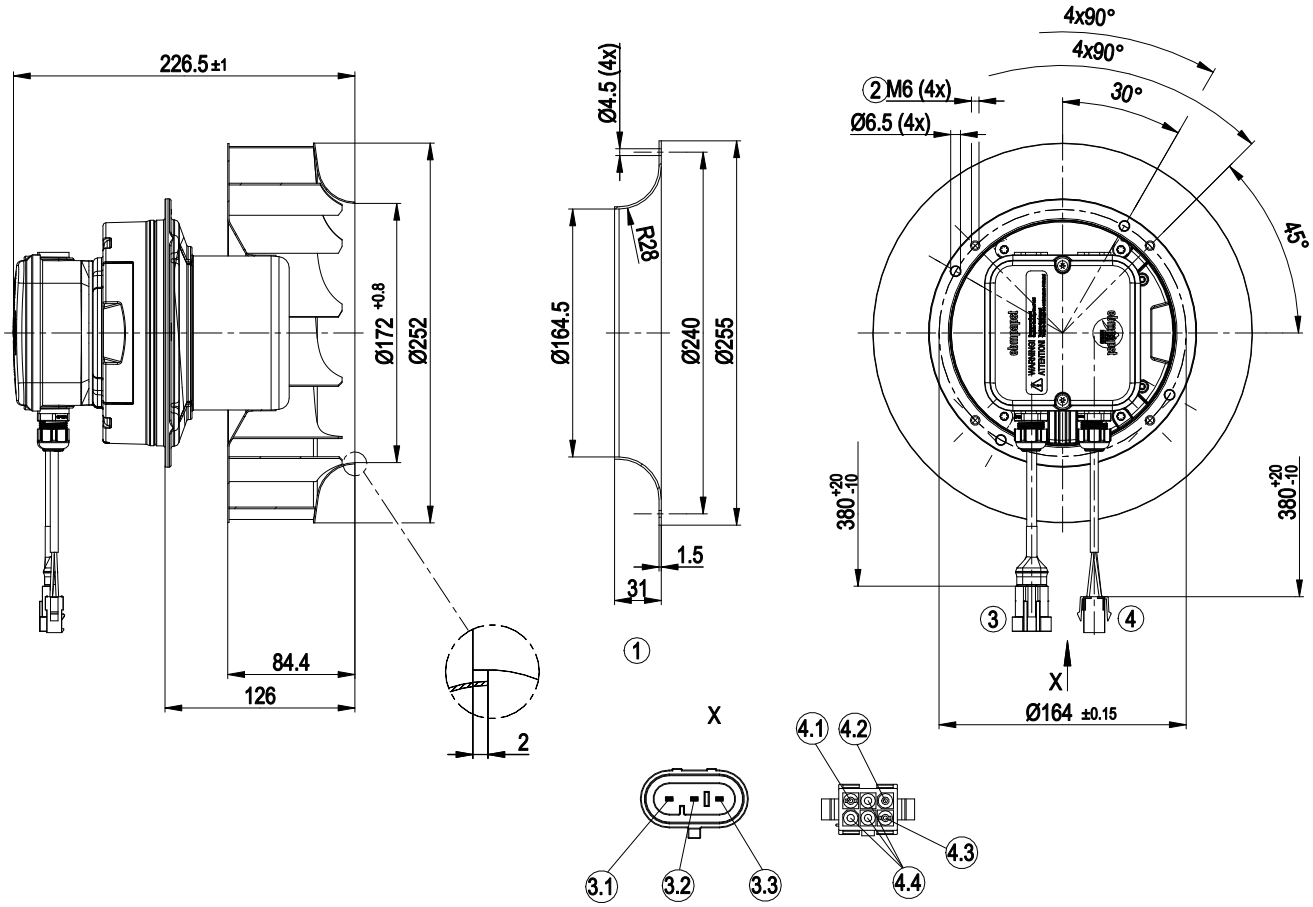


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## Product drawing




| No. | Conn. | Designation | Function/assignment |
|---|---|---|---|
| | | 1 | Accessory part: Inlet ring 96359-2-4013, not included in scope of delivery |
| | | 2 | Max. clearance for screw 10 mm |
| | | 3 | Cable PVC AWG18, connector housing AMP 282105-1 and 3x flat plug 282109-1 with seal 281934-2 crimped. |
| | | 3.1 | L |
| | | 3.2 | N (blue) |
| | | 3.3 | PE (green/yellow) |
| | | 4 | Cable PVC AWG22, connector housing AMP 794940-1, 3x plug pin 170360-3 with seal 794758-1 and 3x dummy plug 794995-1 crimped. |
| | | 4.1 | RSA (yellow) |
| | | 4.2 | GND (blue) |
| | | 4.3 | RSB (red) |
| | | 4.4 | Dummy plug |

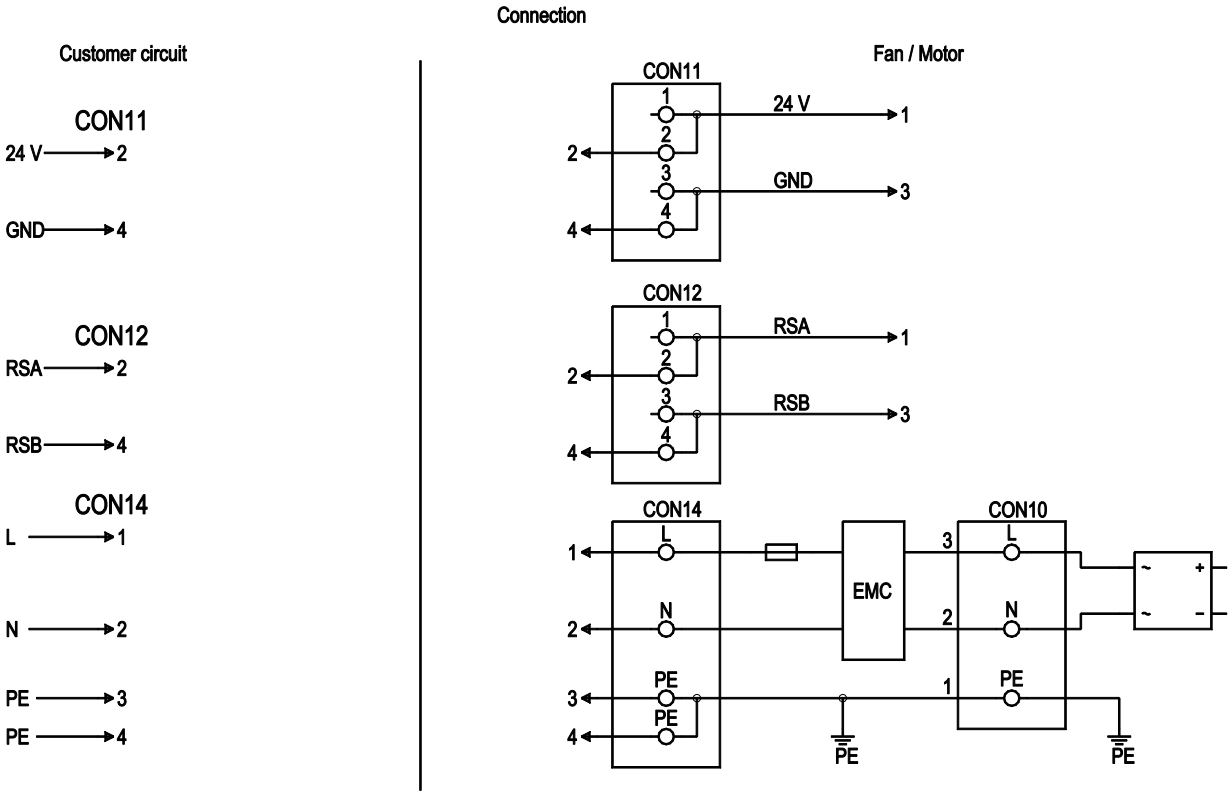


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## Connection diagram




| No. | Conn. | Designation | Function/assignment |
|---|---|---|---|
| CON 14 | 1, 2 | L, N | Power supply 50/60 Hz |
| CON 14 | 3, 4 | PE | Protective earth terminal |
| CON 12 | 2 | RSA | RS485 interface for MODBUS, RSA |
| CON 12 | 4 | RSB | RS485 interface for MODBUS, RSB |
| CON 11 | 2 | +24 V | Parameter-setting input 24 VDC ±15%, Isink max. 40 mA, external feed |
| CON 11 | 4 | GND | Reference ground for interface, SELV |

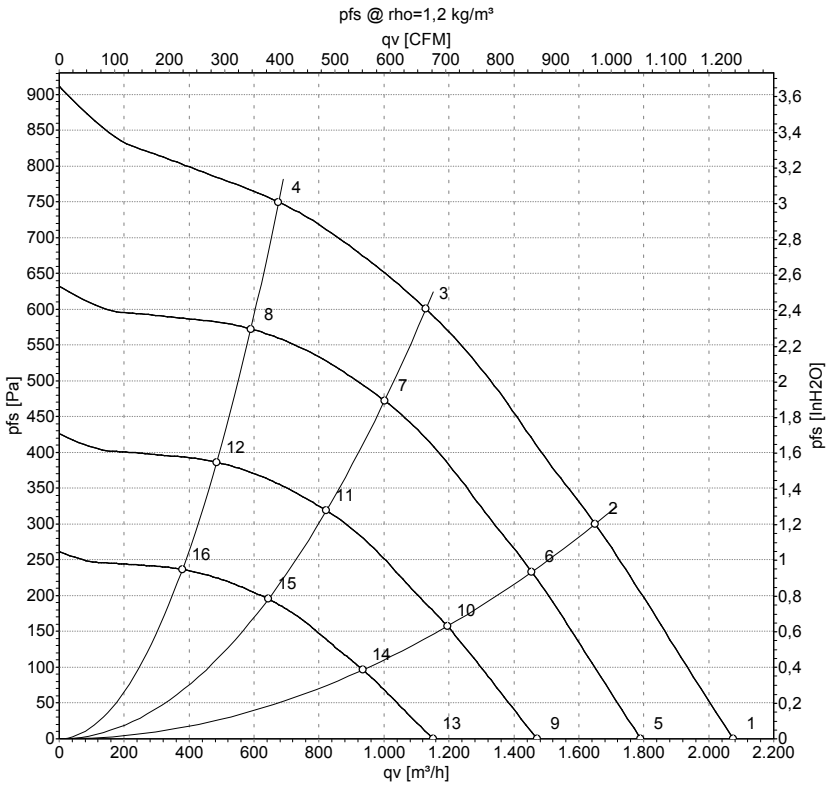


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## Curves: Air performance 50 Hz




Measurement: LU-78471-1

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 | 3245 | 259 | 1.13 | 2075 | 0 | 1220 | 0.00 |
| 2 | 230 | 50 | 3175 | 335 | 1.46 | 1650 | 300 | 970 | 1.20 |
| 3 | 230 | 50 | 3150 | 380 | 1.65 | 1130 | 600 | 665 | 2.41 |
| 4 | 230 | 50 | 3205 | 330 | 1.44 | 675 | 750 | 395 | 3.01 |
| 5 | 230 | 50 | 2800 | 166 | 0.73 | 1790 | 0 | 1055 | 0.00 |
| 6 | 230 | 50 | 2800 | 230 | 1.00 | 1455 | 234 | 855 | 0.94 |
| 7 | 230 | 50 | 2800 | 260 | 1.13 | 1000 | 472 | 590 | 1.89 |
| 8 | 230 | 50 | 2800 | 220 | 0.96 | 590 | 572 | 345 | 2.30 |
| 9 | 230 | 50 | 2300 | 92 | 0.40 | 1470 | 0 | 865 | 0.00 |
| 10 | 230 | 50 | 2300 | 127 | 0.56 | 1195 | 158 | 705 | 0.63 |
| 11 | 230 | 50 | 2300 | 144 | 0.63 | 825 | 319 | 485 | 1.28 |
| 12 | 230 | 50 | 2300 | 122 | 0.53 | 485 | 386 | 285 | 1.55 |
| 13 | 230 | 50 | 1800 | 44 | 0.19 | 1150 | 0 | 675 | 0.00 |
| 14 | 230 | 50 | 1800 | 61 | 0.27 | 935 | 97 | 550 | 0.39 |
| 15 | 230 | 50 | 1800 | 69 | 0.30 | 645 | 195 | 380 | 0.78 |
| 16 | 230 | 50 | 1800 | 59 | 0.25 | 380 | 237 | 225 | 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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