**R3G355-RG56-01**

# EC centrifugal fan - RadiCal

backward curved, single inlet

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ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **R3G355-RG56-01** |
| **Motor** | **M3G112-EA** |

| | | |
|---|---|---|
| Phase | | 3~ |
| Nominal voltage | VAC | 400 |
| Nominal voltage range | VAC | 380 .. 480 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed | $min^{-1}$ | 2240 |
| Power input | W | 930 |
| Current draw | A | 1.7 |
| 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

| | | Actual | Request 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 66.9 | 51.1 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 77.8 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power input $P_{ed}$ | kW | 0.92 |
| 09 Air flow $q_v$ | $m^3/h$ | 3205 |
| 09 Pressure increase $p_{fs}$ | Pa | 640 |
| 10 Speed n | $min^{-1}$ | 2240 |
| 11 Specific ratio* | | 1.01 |

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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

LU-140167

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## Technical features

| | |
|---|---|
| **Mass** | 8.4 kg |
| **Size** | 355 mm |
| **Surface of rotor** | Coated in black |
| **Material of electronics housing** | Die-cast aluminium |
| **Material of impeller** | PP plastic |
| **Number of blades** | 6 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 54 |
| **Insulation class** | "B" |
| **Humidity class** | F4-1 |
| **Max. permissible ambient motor temp. (transp./ storage)** | +80 °C |
| **Min. permissible ambient motor temp. (transp./storage)** | -40 °C |
| **Mounting position** | Refer to product drawing |
| **Condensate discharge holes** | Rotor-side |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 10 mA<br>- Output 20 VDC, max. 50 mA<br>- Output for slave 0-10 V<br>- Input for sensor 0-10 V or 4-20 mA<br>- External 24 V input (programming)<br>- Alarm relay<br>- Integrated PID controller<br>- Motor current limit<br>- PFC, passive<br>- RS485 MODBUS RTU<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Over-temperature protected electronics / motor<br>- Line undervoltage / phase failure detection |
| **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 |
| **Electrical leads** | Via terminal box |
| **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 61800-5-1; CE |
| **Approval** | CCC; EAC; UL 1004-7 + 60730 |

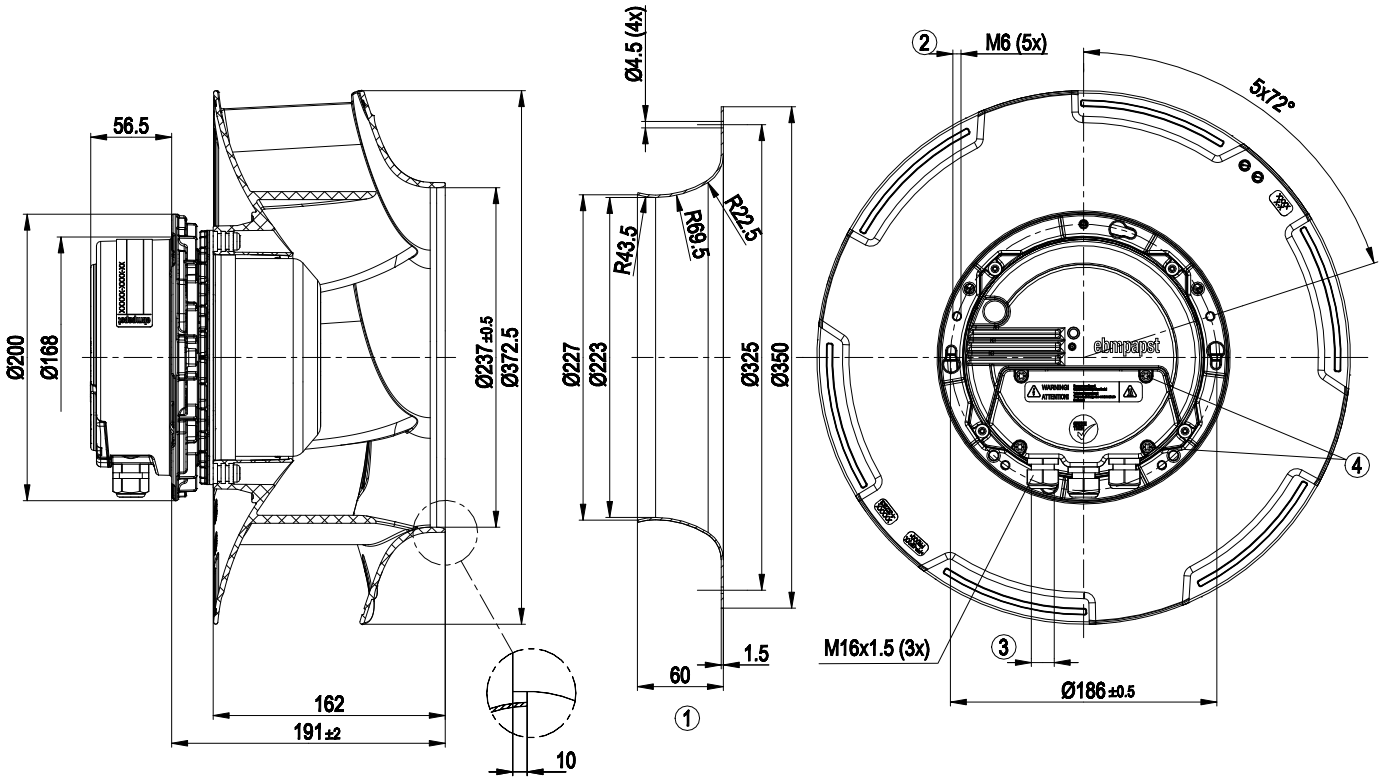


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## Product drawing




| | |
|---|---|
| 1 | Inlet nozzle accessory part 35500-2-4013, not included in the standard scope of delivery |
| 2 | Depth of screw max. 16 mm |
| 3 | Cable diameter: min. 4 mm, max. 10 mm; tightening torque: 4±0.6 Nm |
| 4 | Tightening torque 3.5±0.5 Nm |

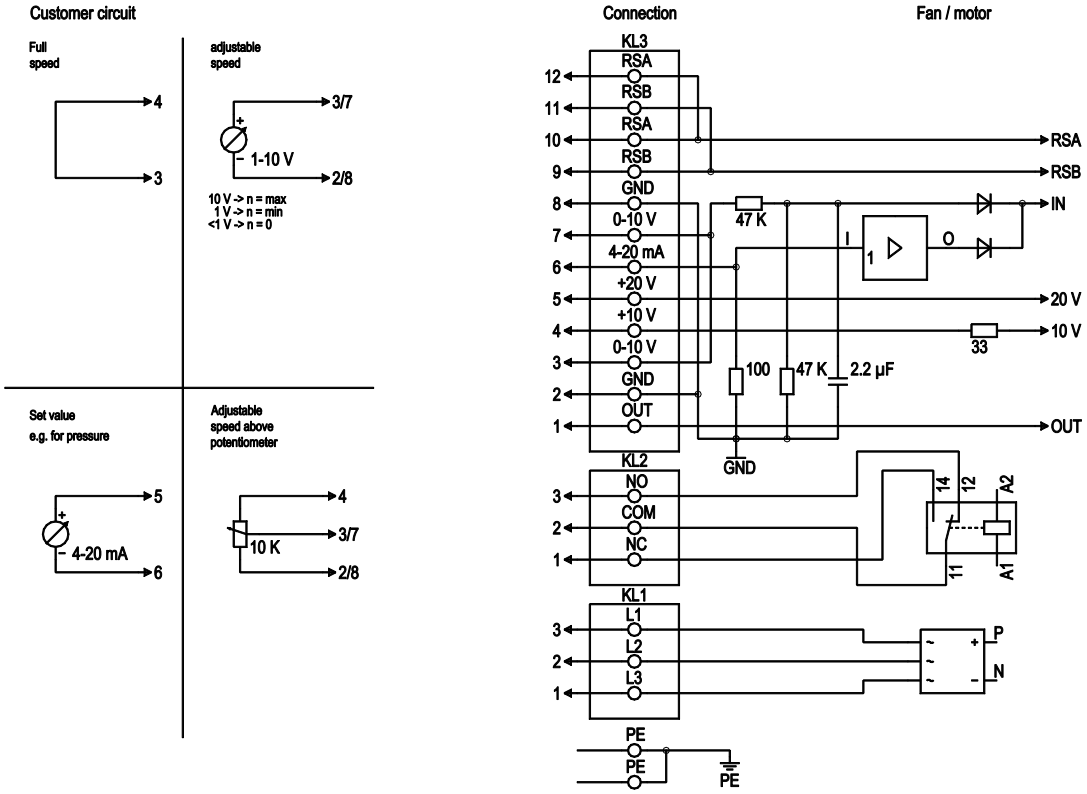


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## Connection screen




| No. | Conn. | Designation | Function / assignment |
|---|---|---|---|
| PE | | PE | Protective earth connection |
| KL1 | 1, 2, 3 | L1, L2, L3 | Supply voltage, voltage range (see type plate), 50/60 Hz |
| KL2 | 1 | NC | Floating status contact, break with error |
| KL2 | 2 | COM | Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1) |
| KL2 | 3 | NO | Floating status contact, close with error |
| KL3 | 1 | OUT | Analogue output, 0-10 VDC, max. 3 mA, SELV, Output of the actual motor duty cycle (PWM): 1 V corresponds to 10% PWM, 10 V correspond to 100% PWM. |
| KL3 | 2, 8 | GND | Signal ground for control interface, SELV |
| KL3 | 3, 7 | 0-10 V | Set value / actual sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV |
| KL3 | 4 | +10 V | Voltage output 10 VDC (+/-3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV |
| KL3 | 5 | +20 V | Voltage output 20 VDC (+25%/-10%), max. 50 mA, supply voltage for external devices (e.g. sensors), SELV |
| KL3 | 6 | 4-20 mA | Set value / actual sensor value input 4-20 mA, impedance 100 Ω, only as alternative to 0-10 V input, SELV |
| KL3 | 9, 11 | RSB | RS485 interface for MODBUS, RSB |
| KL3 | 10, 12 | RSA | RS485 interface for MODBUS, RSA |

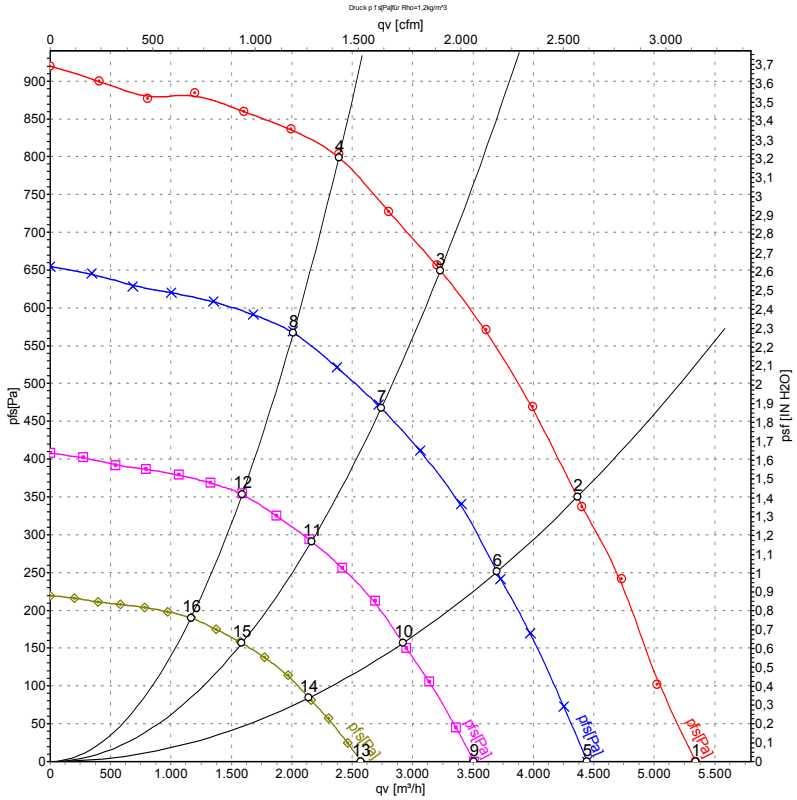


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## Charts: Air flow 50 Hz




Measurement: LU-140167

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 | $LpA_{in}$ | $LwA_{in}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa |
| 1 | 400 | 50 | 2280 | 670 | 1.30 | 83 | 90 | 5340 | 0 |
| 2 | 400 | 50 | 2240 | 810 | 1.60 | 75 | 82 | 4365 | 350 |
| 3 | 400 | 50 | 2240 | 930 | 1.70 | 67 | 75 | 3230 | 650 |
| 4 | 400 | 50 | 2255 | 890 | 1.70 | 68 | 76 | 2390 | 800 |
| 5 | 400 | 50 | 1900 | 387 | 0.77 | 78 | 85 | 4445 | 0 |
| 6 | 400 | 50 | 1900 | 495 | 0.96 | 71 | 78 | 3700 | 251 |
| 7 | 400 | 50 | 1900 | 566 | 1.08 | 63 | 71 | 2740 | 468 |
| 8 | 400 | 50 | 1900 | 530 | 1.02 | 64 | 72 | 2010 | 570 |
| 9 | 400 | 50 | 1500 | 190 | 0.38 | 72 | 79 | 3510 | 0 |
| 10 | 400 | 50 | 1500 | 244 | 0.47 | 65 | 72 | 2920 | 156 |
| 11 | 400 | 50 | 1500 | 278 | 0.53 | 57 | 65 | 2165 | 292 |
| 12 | 400 | 50 | 1500 | 261 | 0.50 | 58 | 66 | 1590 | 355 |
| 13 | 400 | 50 | 1100 | 75 | 0.15 | 64 | 71 | 2575 | 0 |
| 14 | 400 | 50 | 1100 | 96 | 0.19 | 57 | 64 | 2140 | 84 |
| 15 | 400 | 50 | 1100 | 110 | 0.21 | 50 | 57 | 1585 | 157 |
| 16 | 400 | 50 | 1100 | 103 | 0.20 | 50 | 58 | 1165 | 191 |

U = Supply voltage · f = Frequency · n = Speed · $P_{ed}$ = Power input · I = Current draw · $LpA_{in}$ = Sound pressure level inlet side · $LwA_{in}$ = Sound power level inlet side · qv = Air flow
$p_{fs}$ = Pressure increase



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