**R3G190-RD45-03**

# EC centrifugal fan - RadiCal®

backward curved



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ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **R3G190-RD45-03** |
| **Motor** | **M3G055-CF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 240 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed | $min^{-1}$ | 4120 |
| Power input | W | 169 |
| Current draw | A | 1.35 |
| 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* | 1.01 |

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

| | | Actual | Request 2013 | Request 2015 |
|---|---|---|---|---|
| Overall efficiency $\eta_{es}$ | % | 56 | 39.1 | 43.1 |
| Efficiency grade N | | 74.9 | 58 | 62 |
| Power input $P_{ed}$ | kW | 0.16 | | |
| Air flow $q_v$ | $m^3/h$ | 565 | | |
| Pressure increase $p_{fs}$ | Pa | 524 | | |
| Speed n | $min^{-1}$ | 4055 | | |

Data definition with optimum efficiency. LU-132500
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



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## Technical features

| | |
|---|---|
| **Mass** | 1.38 kg |
| **Size** | 190 mm |
| **Surface of rotor** | Thick layer passivated |
| **Material of electronics housing** | Die-cast aluminium |
| **Material of impeller** | Plastic PA6, fibreglass-reinforced |
| **Number of blades** | 7 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 54 |
| **Insulation class** | "B" |
| **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 bottom; rotor on top on request |
| **Condensate discharge holes** | None, open rotor |
| **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<br>- Line undervoltage detection |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Locked-rotor protection |
| **Cable exit** | Variable |
| **Protection class** | I (if protective earth is connected by customer) |
| **Product conforming to standard** | EN 60335-1; CE |
| **Approval** | CCC; CSA C22.2 Nr.77; EAC; UL 2111 |

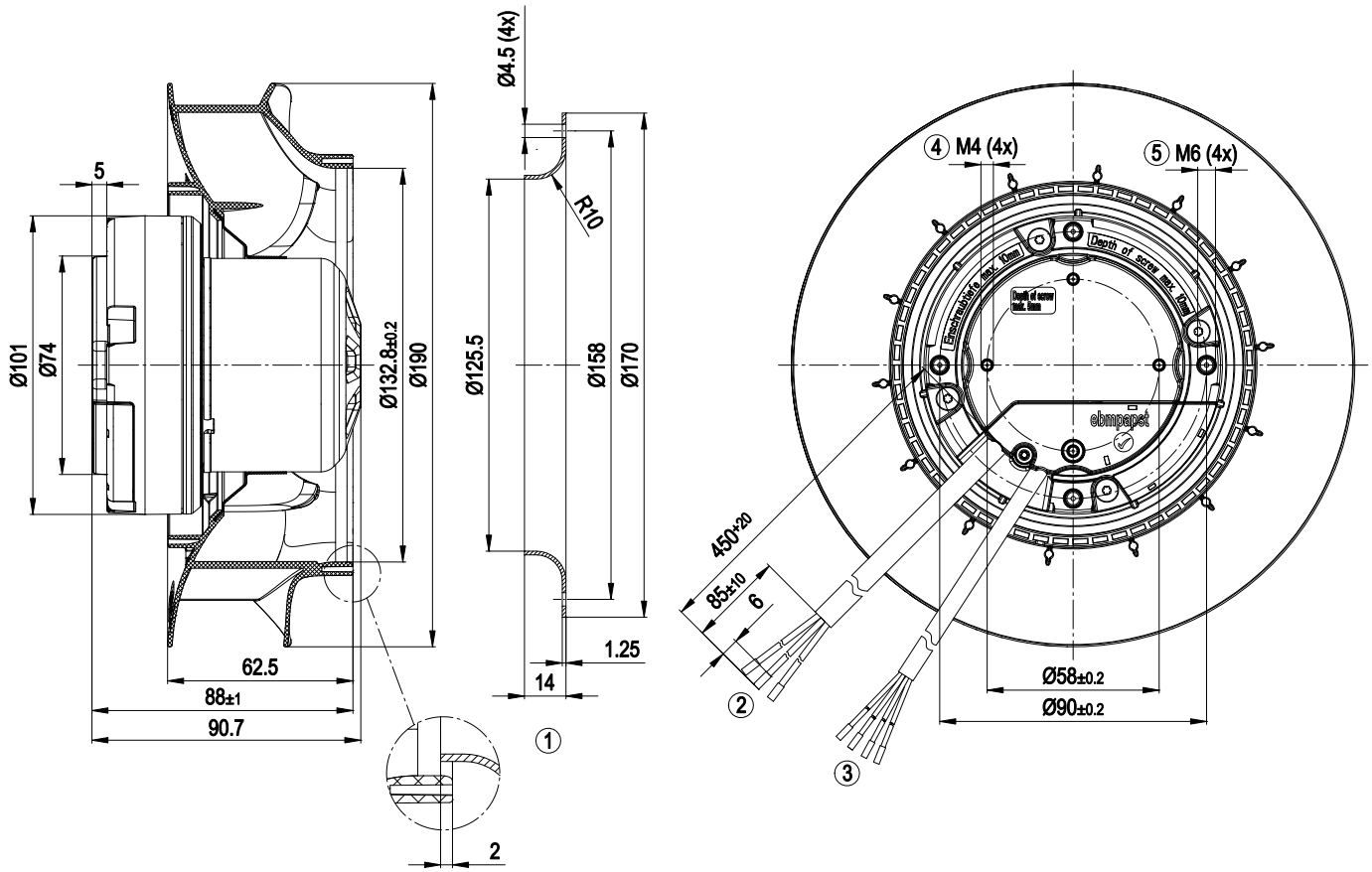


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## Product drawing




| | |
|---|---|
| 1 | Accessory part: Inlet nozzle 09576-2-4013, not included in the standard scope of delivery |
| 2 | Connection line PVC 3G AWG20; 3 x brass lead tips crimped |
| 3 | Control line PVC 4X AWG22; 4 x brass lead tips crimped |
| 4 | Depth of screw max. 5 mm |
| 5 | Depth of screw max. 10 mm |

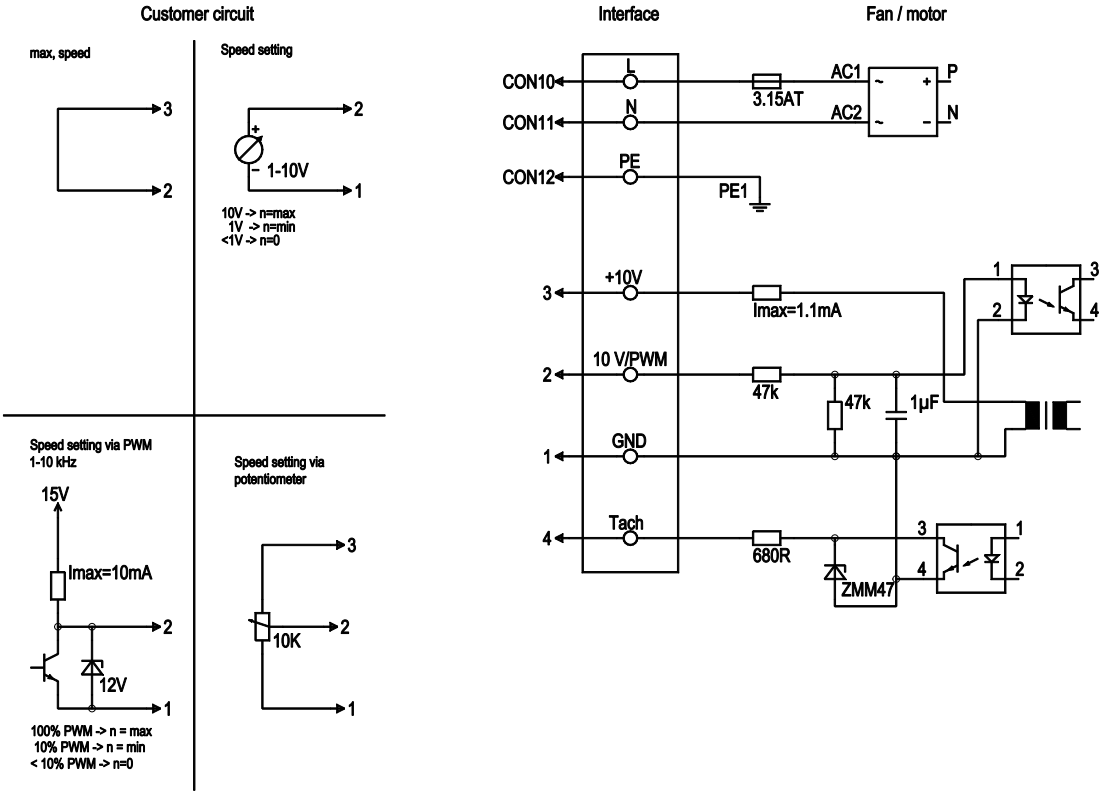


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## Connection screen




| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| | CON10 | L | black | Power supply 230 VAC, 50-60 Hz, for voltage range refer to rating plate |
| | 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 |
| | 3 | 10V/ max 1.1mA | red | Voltage output 10V/ 1.1mA, electrically isolated, not short-circuit-proof. |
| | 4 | Tach | white | Tach output: open collector, 1 pulse per revolution, electrically isolated |

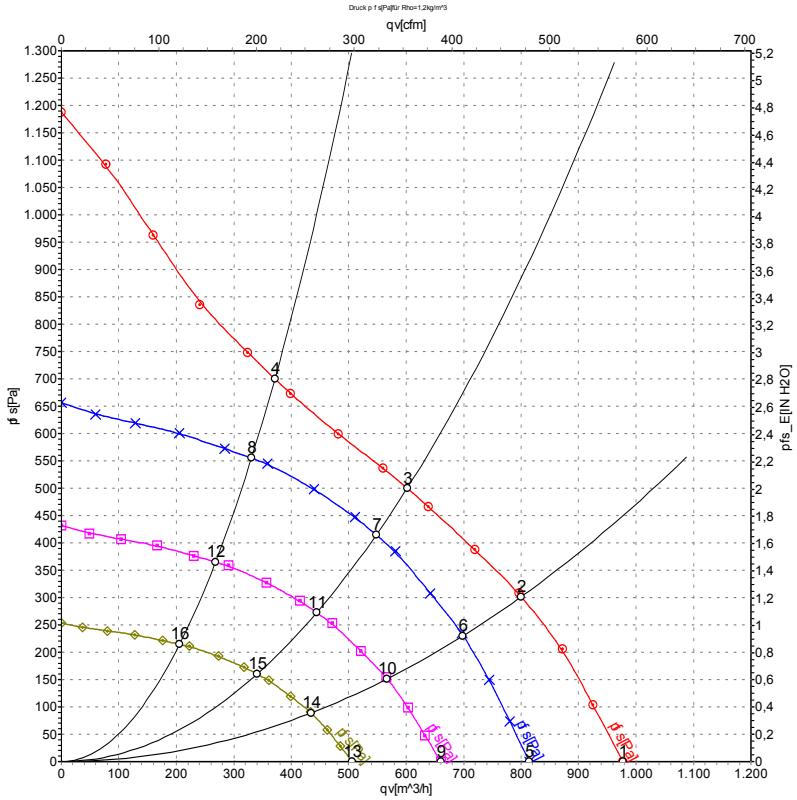


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## Charts: Air flow 50 Hz




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 | 230 | 50 | 4440 | 161 | 1.35 | 72 | 81 | 975 | 0 |
| 2 | 230 | 50 | 4235 | 165 | 1.35 | 67 | 75 | 800 | 300 |
| 3 | 230 | 50 | 4120 | 169 | 1.35 | 63 | 72 | 600 | 500 |
| 4 | 230 | 50 | 4150 | 160 | 1.35 | 66 | 74 | 370 | 700 |
| 5 | 230 | 50 | 3700 | 93 | 0.81 | 69 | 77 | 815 | 0 |
| 6 | 230 | 50 | 3700 | 110 | 0.93 | 64 | 72 | 700 | 233 |
| 7 | 230 | 50 | 3700 | 125 | 1.06 | 61 | 70 | 550 | 415 |
| 8 | 230 | 50 | 3700 | 114 | 0.97 | 64 | 72 | 330 | 556 |
| 9 | 230 | 50 | 3000 | 50 | 0.43 | 64 | 73 | 660 | 0 |
| 10 | 230 | 50 | 3000 | 59 | 0.50 | 59 | 68 | 565 | 153 |
| 11 | 230 | 50 | 3000 | 67 | 0.57 | 56 | 65 | 445 | 273 |
| 12 | 230 | 50 | 3000 | 61 | 0.52 | 59 | 67 | 270 | 365 |
| 13 | 230 | 50 | 2300 | 22 | 0.19 | 58 | 67 | 505 | 0 |
| 14 | 230 | 50 | 2300 | 26 | 0.22 | 53 | 62 | 435 | 90 |
| 15 | 230 | 50 | 2300 | 30 | 0.26 | 51 | 59 | 340 | 160 |
| 16 | 230 | 50 | 2300 | 27 | 0.23 | 54 | 61 | 205 | 215 |

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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