# EC centrifugal fan - RadiCal

backward curved, single inlet

R3G220-RD19-13 ebmpapst Datasheet
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## Nominal data

| | |
|---|---|
| **Type** | **R3G220-RD19-13** |
| **Motor** | **M3G055-CF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VDC | 380 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed (rpm) | $min^{-1}$ | 3180 |
| Power input | W | 165 |
| Current draw | A | 0.5 |
| Max. ambient temperature | °C | 45 |

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 $\eta_{es}$ | % | 56.7 | 43.1 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 75.6 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power input $P_{ed}$ | kW | 0.16 |
| 09 Air flow $q_v$ | $m^3/h$ | 760 |
| 09 Pressure increase $p_{fs}$ | Pa | 378 |
| 10 Speed (rpm) n | $min^{-1}$ | 3220 |
| 11 Specific ratio* | | 1.00 |

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-163818

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## Technical features

| | |
|---|---|
| **Mass** | 1.5 kg |
| **Size** | 220 mm |
| **Surface of rotor** | Thick layer passivated |
| **Material of impeller** | PA plastic |
| **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** | Any |
| **Condensate discharge holes** | None, open rotor |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 1.1 mA<br>- Output limit<br>- Motor current limit<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Over-temperature protected electronics / motor |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 0.25 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 |

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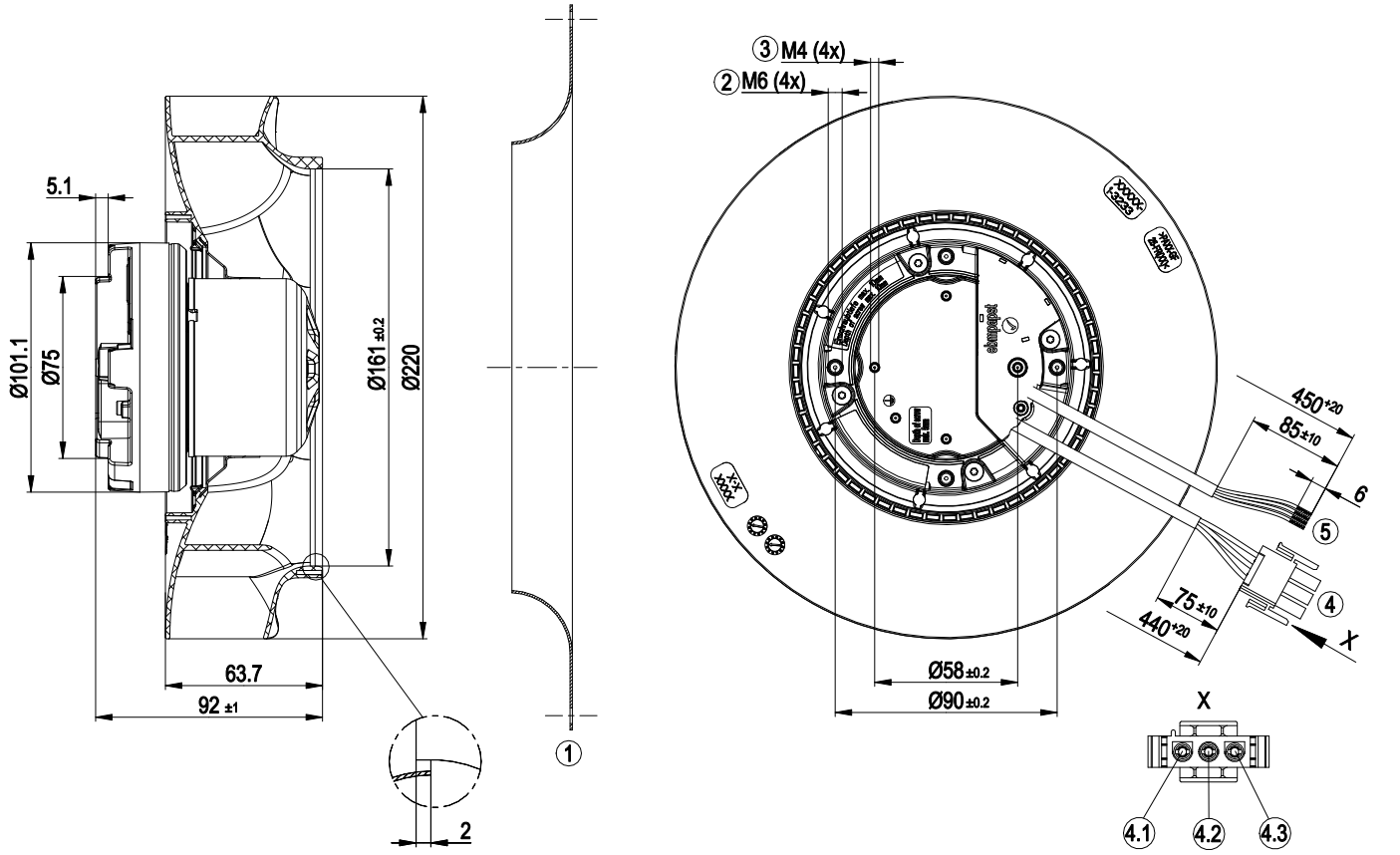
## Product drawing




| | |
|---|---|
| 1 | Accessory part: Inlet nozzle 09609-2-4013 not included in scope of delivery |
| 2 | Thread reach max. 10 mm |
| 3 | Thread reach max. 5 mm |
| 4 | Connection line PVC AWG20, connector housing 3-pole tyco 1241809-2, 3x plug pin tyco 350218-1 |
| 4.1 | N (blue) |
| 4.2 | L (black) |
| 4.3 | PE (green/yellow) |
| 5 | Connection line PVC 4x AWG22, 4x lead tips crimped |

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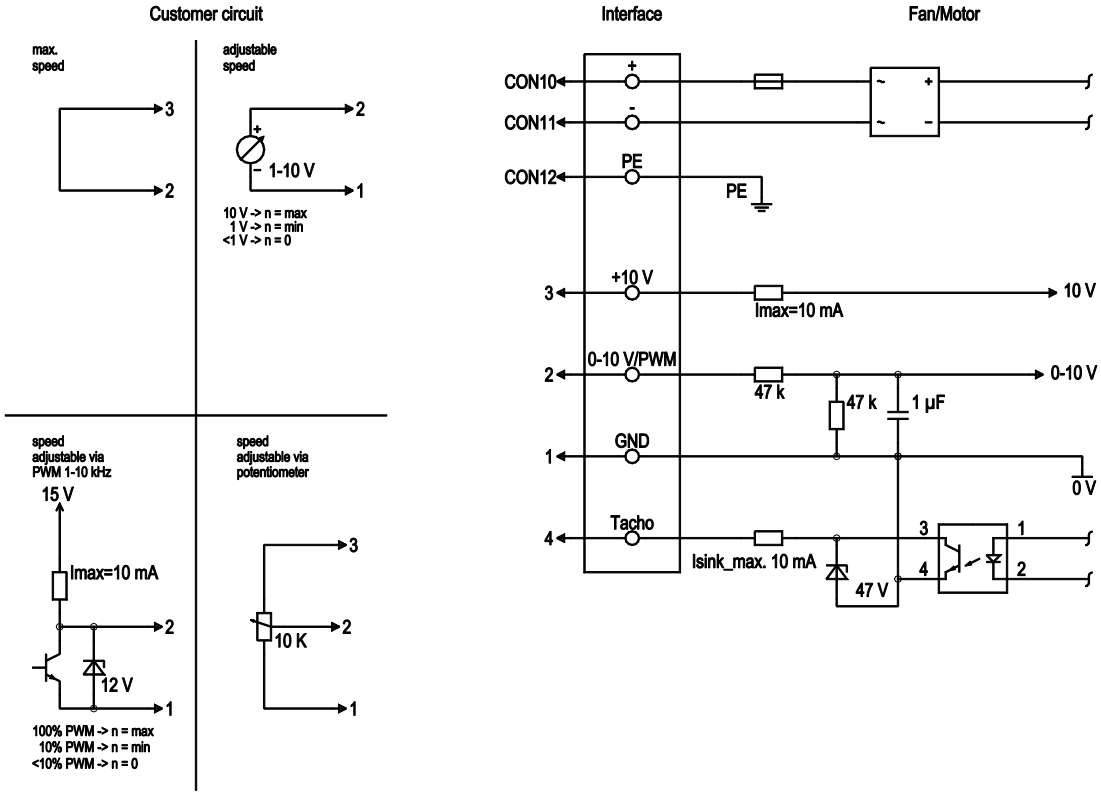
## Connection screen




| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| | CON10 | + | brown | Mains connection, power supply +, voltage range, see type plate |
| | CON11 | - | blue | Mains connection, power supply -, voltage range, see type plate |
| | CON12 | PE | green/yellow | Earth connection |
| | 3 | +10 V | red | Fixed voltage output 10 VDC +/-3 %, Imax. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer), SELV |
| | 2 | 0- 10V PWM | yellow | 0-10 V/PWM control input, Ri=100 kΩ, SELV |
| | 1 | GND | blue | Signal ground for control interface, SELV |
| | 4 | Tach | white | Speed monitoring output, open collector, 1 pulse per revolution, Isink max = 10 mA, SELV |

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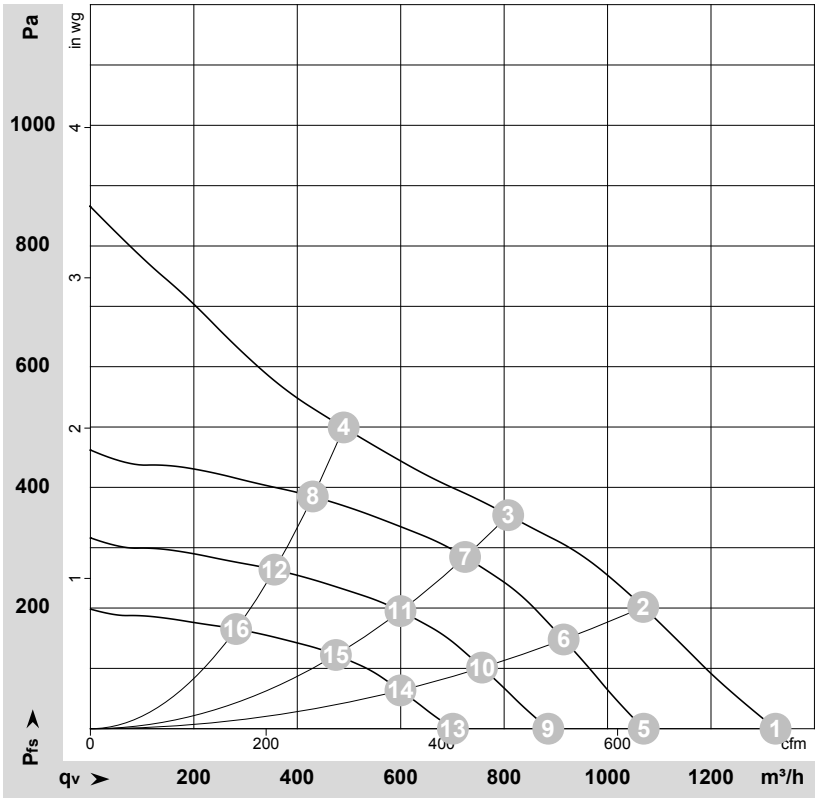
## Charts: Air flow




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-163818-1

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 | n | $P_{ed}$ | I | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|
| | V | $min^{-1}$ | W | A | $m^3/h$ | Pa | cfm | inH2O |
| 1 | 380 | 3590 | 165 | 0.50 | 1325 | 0 | 780 | 0.00 |
| 2 | 380 | 3390 | 165 | 0.50 | 1070 | 200 | 630 | 0.80 |
| 3 | 380 | 3180 | 165 | 0.50 | 810 | 350 | 475 | 1.41 |
| 4 | 380 | 3300 | 165 | 0.50 | 490 | 500 | 290 | 2.01 |
| 5 | 380 | 2900 | 84 | 0.22 | 1070 | 0 | 630 | 0.00 |
| 6 | 380 | 2900 | 101 | 0.27 | 915 | 148 | 540 | 0.59 |
| 7 | 380 | 2900 | 116 | 0.31 | 725 | 285 | 425 | 1.14 |
| 8 | 380 | 2900 | 109 | 0.29 | 430 | 385 | 255 | 1.55 |
| 9 | 380 | 2400 | 48 | 0.13 | 885 | 0 | 520 | 0.00 |
| 10 | 380 | 2400 | 57 | 0.15 | 755 | 101 | 445 | 0.41 |
| 11 | 380 | 2400 | 66 | 0.17 | 600 | 195 | 355 | 0.78 |
| 12 | 380 | 2400 | 62 | 0.16 | 355 | 264 | 210 | 1.06 |
| 13 | 380 | 1900 | 24 | 0.06 | 700 | 0 | 415 | 0.00 |
| 14 | 380 | 1900 | 28 | 0.07 | 600 | 64 | 355 | 0.26 |
| 15 | 380 | 1900 | 33 | 0.09 | 475 | 122 | 280 | 0.49 |
| 16 | 380 | 1900 | 31 | 0.08 | 280 | 165 | 165 | 0.66 |

U = Supply voltage · n = Speed (rpm) · $P_{ed}$ = Power input · I = Current draw · $q_V$ = Air flow · $p_{fs}$ = Pressure increase