**R1G220-RD04-03**

# EC centrifugal fan - RadiCal

backward curved, single inlet

Automotive



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## Nominal data

| | | |
|---|---|---|
| **Type** | **R1G220-RD04-03** | |
| **Motor** | **M1G074-BF** | |
| Nominal voltage | VDC | 12 |
| Nominal voltage range | VDC | 8 .. 16 |
| Type of data definition | | fa |
| Speed (rpm) | $min^{-1}$ | 2720 |
| Power input | W | 87 |
| Current draw | A | 8.4 |
| Min. ambient temperature | °C | -40 |
| 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

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## Technical features

| | |
|---|---|
| **Mass** | 1.5 kg |
| **Size** | 220 mm |
| **Motor size** | 74 |
| **Surface of rotor** | Galvanised |
| **Material of electronics housing** | Die-cast aluminium, coated in black |
| **Material of impeller** | PA plastic |
| **Number of blades** | 7 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Protection rating** | IP 24 KM |
| **Type of protection** | Electronics IP 66 / 69 K |
| **Insulation class** | "B" |
| **Humidity (F) / environmental protection class (H)** | H4 |
| **Note ambient temperature** | Occasional start-up between -40°C and -25°C is permissible.<br>For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications) we recommend our fan version with special low-temperature bearings. |
| **Max. permissible ambient motor temp. (transp./ storage)** | +70 °C |
| **Min. permissible ambient motor temp. (transp./storage)** | -40 °C |
| **Mounting position** | Shaft horizontal or rotor on bottom; rotor on top on request |
| **Condensation drainage holes** | Rotor-side |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing; (sealed) |
| **Technical features** | - Tach output<br>- Motor current limit<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Overvoltage detection |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **Cable exit** | Axial |
| **Approval** | EAC |



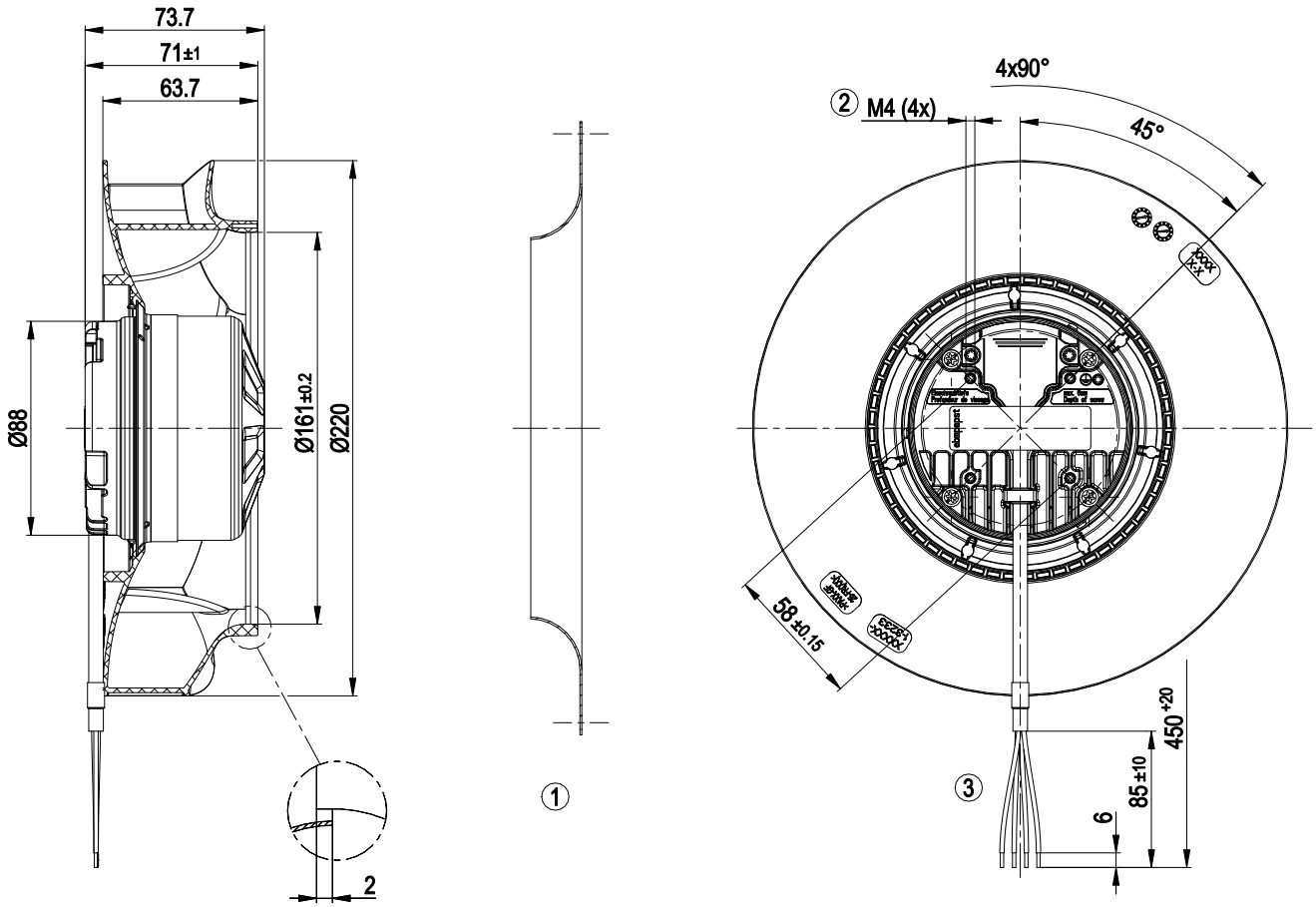
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## Product drawing




| | |
|---|---|
| 1 | Accessory part: Inlet nozzle 09609-2-4013 not included in scope of delivery |
| 2 | Thread reach max. 6 mm |
| 3 | Connection line FLRYW 4x 0.75 mm², 4x lead tip crimped |



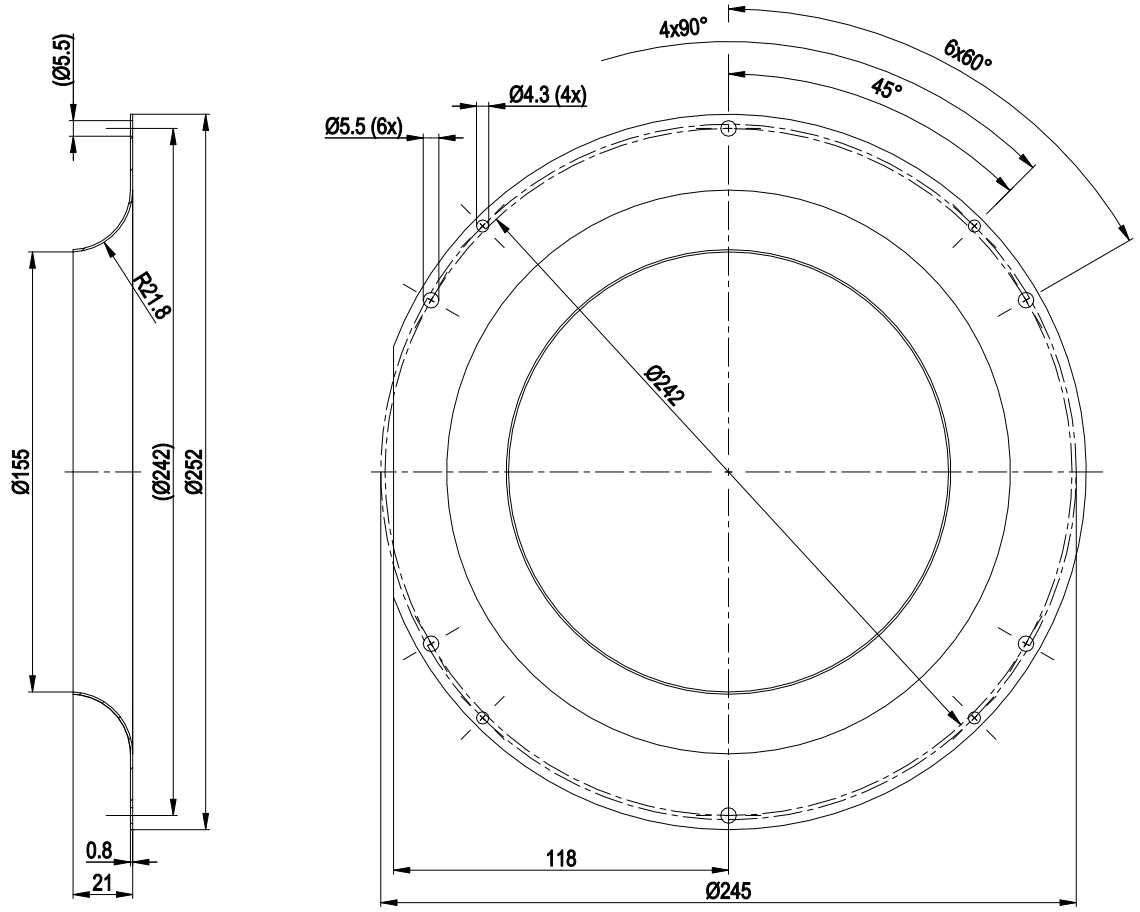
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## Accessory part





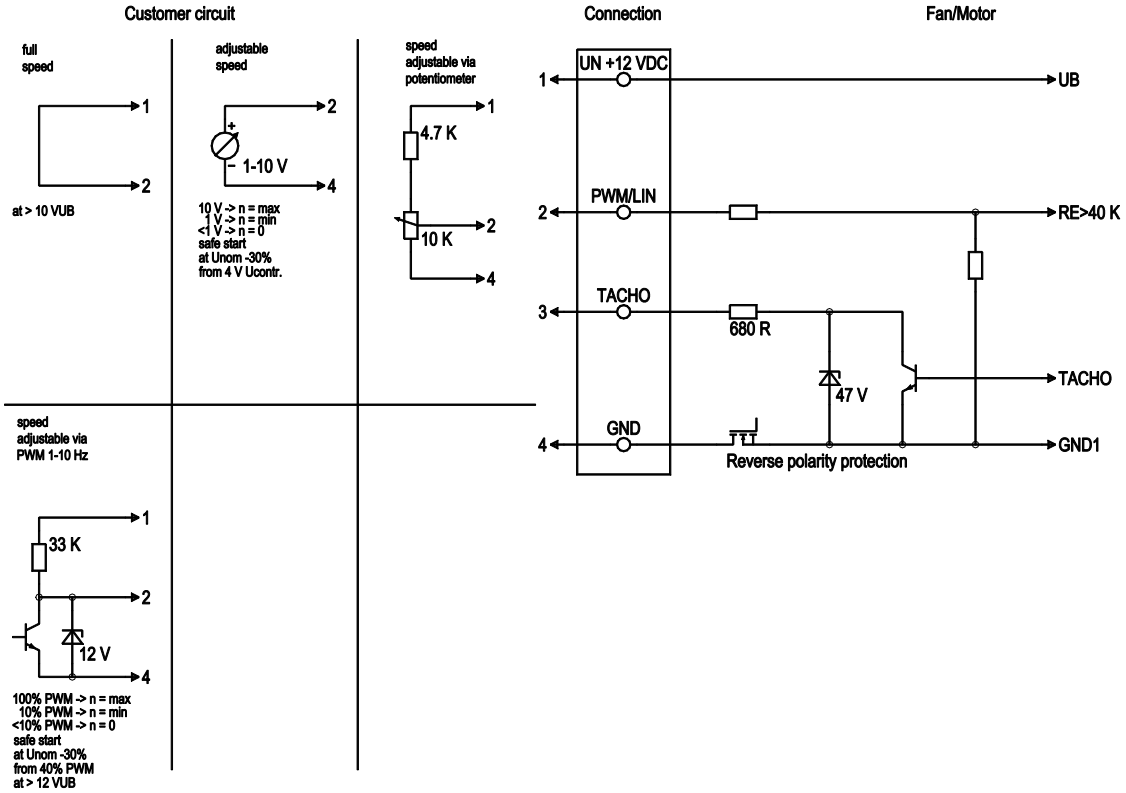

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## Connection screen




| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| | 1 | Un +12VDC | red | Power supply 12 VDC, see type plate for voltage range, residual ripple 3.5% |
| | 2 | PWM/LIN | yellow | Control input Re > 40 k (PWM 1-10 kHz/0-10 V) |
| | 3 | Tacho | white | Speed monitoring output, 3 pulses per revolution, Isink max = 10 mA |
| | 4 | GND | blue | Reference mass |



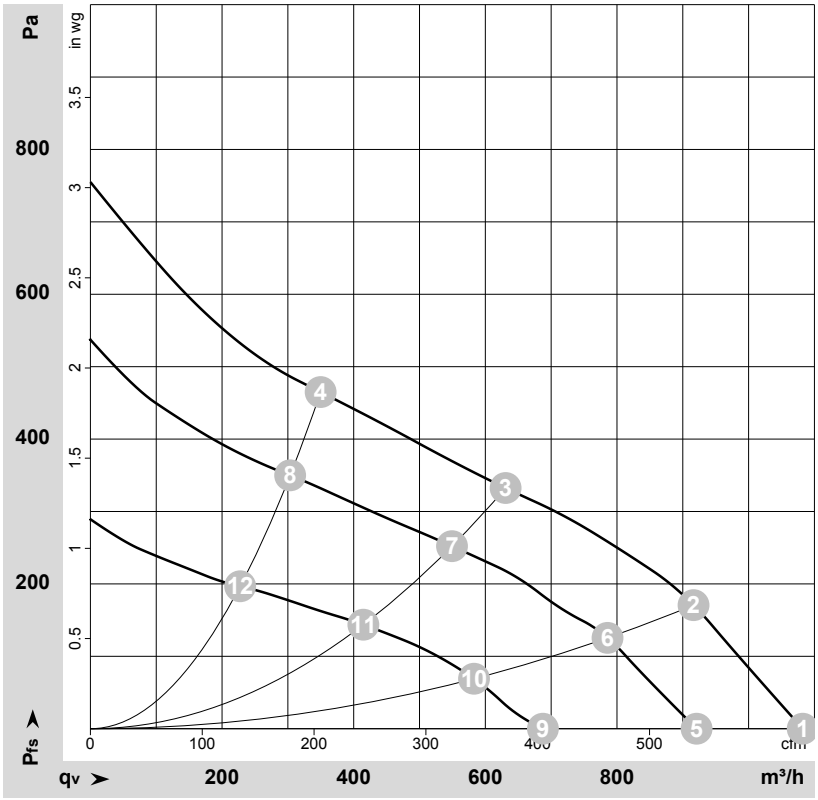
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## Charts: Air flow




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-158847-1
Measurement: LU-158845-1
Measurement: LU-158834-1

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 | $LpA_{in}$ | $LwA_{in}$ | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa | cfm | in. wg |
| 1 | 16 | 3130 | 137 | 10.38 | | | 1080 | 0 | 635 | 0.00 |
| 2 | 16 | 3055 | 140 | 10.69 | | | 915 | 173 | 540 | 0.69 |
| 3 | 16 | 2960 | 144 | 11.17 | | | 630 | 332 | 370 | 1.33 |
| 4 | 16 | 3085 | 138 | 10.54 | | | 350 | 465 | 205 | 1.87 |
| 5 | 12 | 2720 | 87 | 8.40 | 66 | 74 | 920 | 0 | 540 | 0.00 |
| 6 | 12 | 2645 | 87 | 8.53 | 63 | 71 | 785 | 125 | 465 | 0.50 |
| 7 | 12 | 2580 | 91 | 8.98 | 58 | 66 | 550 | 250 | 325 | 1.00 |
| 8 | 12 | 2675 | 87 | 8.44 | 61 | 69 | 305 | 350 | 180 | 1.41 |
| 9 | 8 | 2025 | 36 | 5.36 | | | 685 | 0 | 405 | 0.00 |
| 10 | 8 | 1995 | 38 | 5.55 | | | 585 | 69 | 345 | 0.28 |
| 11 | 8 | 1955 | 40 | 5.86 | | | 415 | 144 | 245 | 0.58 |
| 12 | 8 | 2015 | 37 | 5.48 | | | 230 | 197 | 135 | 0.79 |

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



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