

R3G220-RC05-09 ebmpapst Datasheet

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## Nominal data

|                          |                   |            |
|--------------------------|-------------------|------------|
| Type                     | R3G220-RC05-09    |            |
| Motor                    | M3G055-BI         |            |
| Phase                    |                   | 1~         |
| Nominal voltage          | VAC               | 230        |
| Nominal voltage range    | VAC               | 200 .. 240 |
| Frequency                | Hz                | 50/60      |
| Type of data definition  |                   | ml         |
| Speed (rpm)              | min <sup>-1</sup> | 2580       |
| Power input              | W                 | 85         |
| Current draw             | A                 | 0.7        |
| Min. ambient temperature | °C                | -25        |
| Max. ambient temperature | °C                | 60         |

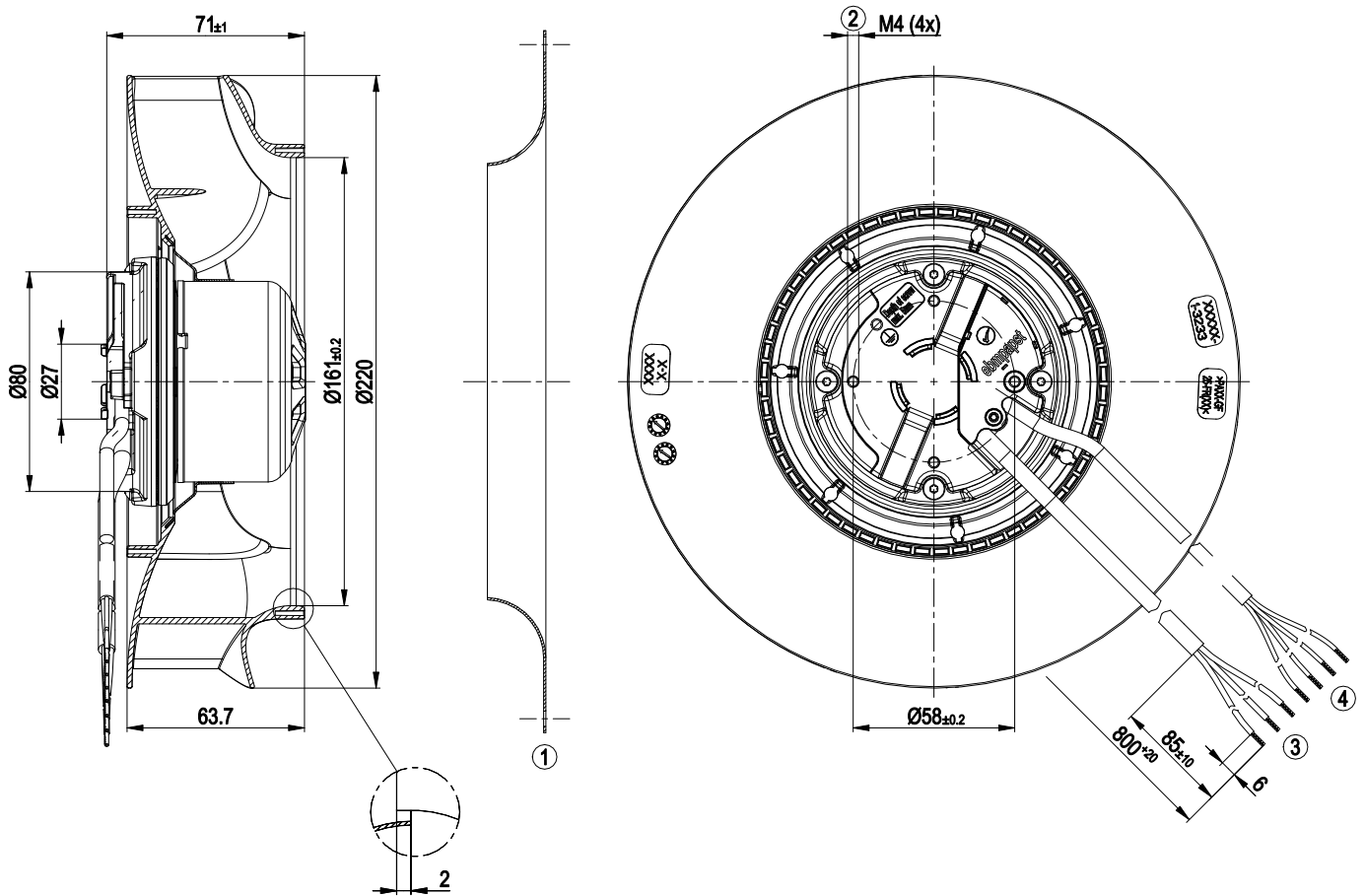
ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit  
Subject to alterations



## Technical features

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mass                                                               | 1.13 kg                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Size                                                               | 220 mm                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Surface of rotor                                                   | Thick layer passivated                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Material of electronics housing                                    | Die-cast aluminium                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Material of impeller                                               | PA plastic                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Number of blades                                                   | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Direction of rotation                                              | Clockwise, seen on rotor                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Type of protection                                                 | IP 54                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Insulation class                                                   | "B"                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Humidity (F)/environmental protection class (H)                    | F3-1                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Operation mode                                                     | S1                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Motor bearing                                                      | Ball bearing                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Technical features                                                 | <ul style="list-style-type: none"> <li>- Output 10 VDC, max. 1.1 mA</li> <li>- Tach output</li> <li>- Output limit</li> <li>- Motor current limit</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Overvoltage detection</li> <li>- Over-temperature protected electronics / motor</li> <li>- Line undervoltage detection</li> </ul> |
| 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), on account of the installation conditions, ferritic damping in the connection line may be required for the application.                                                                                                                                                                                                                                                                            |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Product drawing

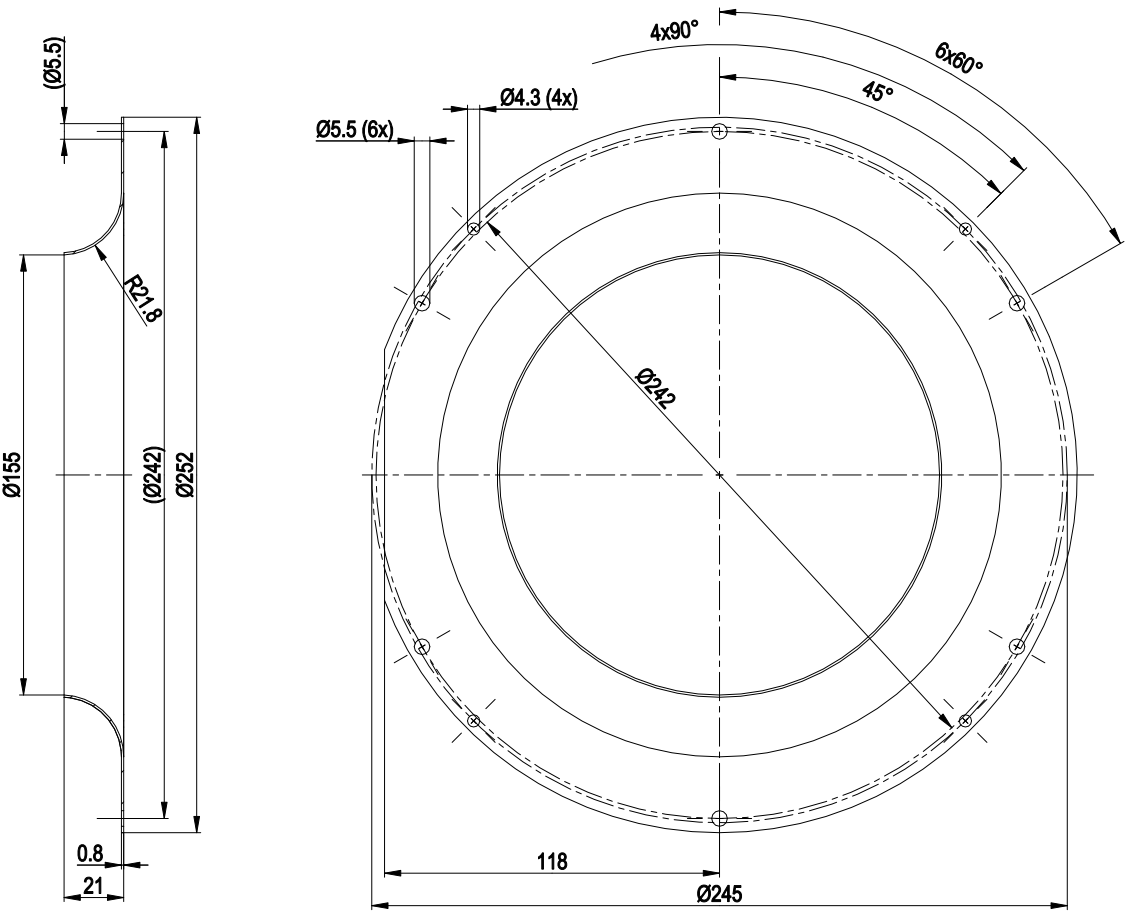


|   |                                                                             |
|---|-----------------------------------------------------------------------------|
| 1 | Accessory part: Inlet nozzle 09609-2-4013 not included in scope of delivery |
| 2 | Depth of screw max. 5 mm                                                    |
| 3 | Connection line PVC AWG20, 3x lead tips crimped                             |
| 4 | Connection line PVC AWG22, 4x lead tips crimped                             |

# EC centrifugal fan

backward curved, single inlet

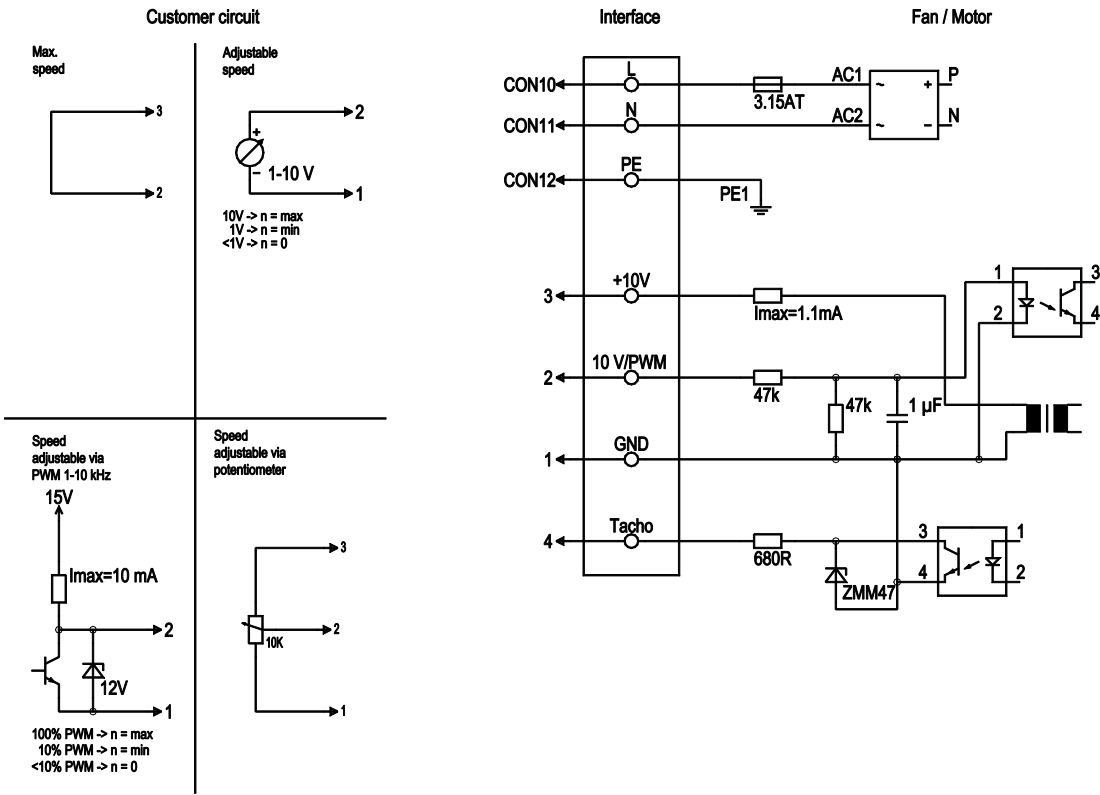
Accessory part



# EC centrifugal fan

backward curved, single inlet

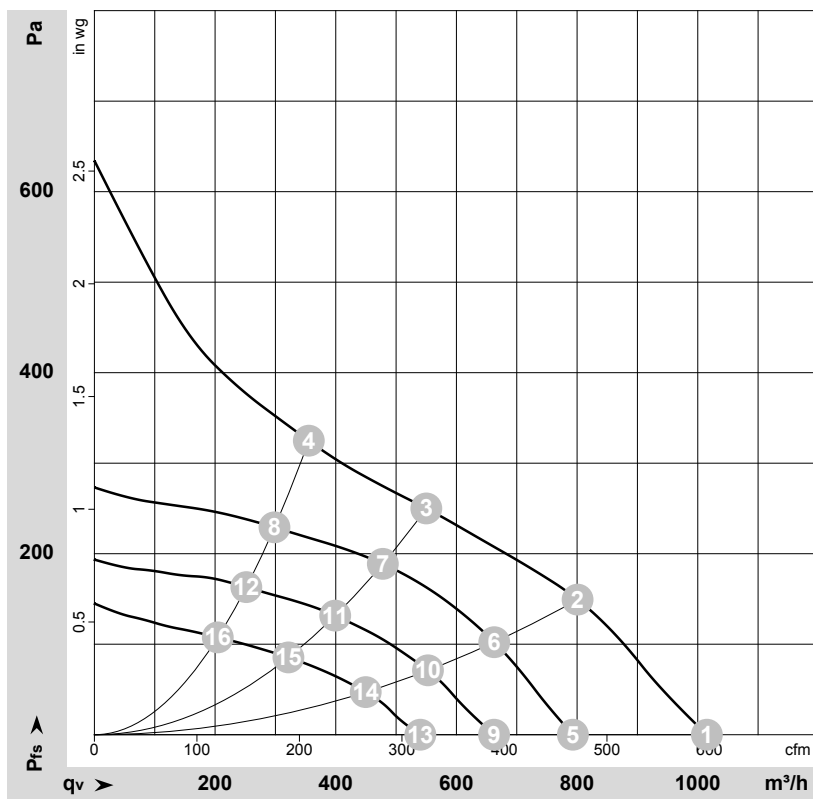
Connection screen



| No. | Conn. | Designation        | Colour       | Function / assignment                                                      |
|-----|-------|--------------------|--------------|----------------------------------------------------------------------------|
|     | CON10 | L                  | black        | Power supply 230 VAC, 50-60 Hz, see type plate for voltage range           |
|     | 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     | 10 V / max. 1,1 mA | red          | Voltage output 10 VDC 1.1 mA, electrically isolated, short-circuit-proof   |
|     | 4     | Tacho              | white        | Tach output: Open collector, 1 pulse per revolution, electrically isolated |



## Charts: Air flow 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2\%$

Measurement: LU-152958-1  
Measurement: LU-167052-1  
Measurement: LU-152961-1

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   | f  | n                 | P <sub>ed</sub> | I    | q <sub>v</sub> | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub>    |
|----|-----|----|-------------------|-----------------|------|----------------|-----------------|----------------|--------------------|
|    | V   | Hz | min <sup>-1</sup> | W               | A    | m³/h           | Pa              | cfm            | inH <sub>2</sub> O |
| 1  | 230 | 50 | 2815              | 85              | 0.70 | 1015           | 0               | 595            | 0.00               |
| 2  | 230 | 50 | 2660              | 85              | 0.70 | 800            | 150             | 470            | 0.60               |
| 3  | 230 | 50 | 2580              | 85              | 0.70 | 550            | 250             | 325            | 1.00               |
| 4  | 230 | 50 | 2620              | 85              | 0.70 | 355            | 325             | 210            | 1.30               |
| 5  | 230 | 50 | 2200              | 40              | 0.37 | 795            | 0               | 465            | 0.00               |
| 6  | 230 | 50 | 2200              | 48              | 0.44 | 665            | 103             | 390            | 0.41               |
| 7  | 230 | 50 | 2200              | 55              | 0.51 | 480            | 189             | 280            | 0.76               |
| 8  | 230 | 50 | 2200              | 50              | 0.46 | 300            | 229             | 175            | 0.92               |
| 9  | 230 | 50 | 1855              | 26              | 0.27 | 660            | 0               | 390            | 0.00               |
| 10 | 230 | 50 | 1850              | 31              | 0.31 | 555            | 71              | 325            | 0.29               |
| 11 | 230 | 50 | 1850              | 34              | 0.34 | 400            | 132             | 235            | 0.53               |
| 12 | 230 | 50 | 1860              | 31              | 0.32 | 250            | 163             | 150            | 0.65               |
| 13 | 230 | 50 | 1550              | 17              | 0.19 | 540            | 0               | 320            | 0.00               |
| 14 | 230 | 50 | 1525              | 18              | 0.20 | 450            | 47              | 265            | 0.19               |
| 15 | 230 | 50 | 1500              | 19              | 0.21 | 320            | 86              | 190            | 0.35               |
| 16 | 230 | 50 | 1520              | 19              | 0.20 | 205            | 108             | 120            | 0.43               |

U = Supply voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power input · I = Current draw · q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase