

# EC centrifugal fan

forward curved

R3G140-AV05-35 ebmpapst Datasheet  
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## Nominal data

|                          |                   |            |
|--------------------------|-------------------|------------|
| Type                     | R3G140-AV05-35    |            |
| Motor                    | M3G055-CF         |            |
| Phase                    |                   | 1~         |
| Nominal voltage          | VAC               | 230        |
| Nominal voltage range    | VAC               | 200 .. 240 |
| Frequency                | Hz                | 50/60      |
| Type of data definition  |                   | fa         |
| Speed (rpm)              | min <sup>-1</sup> | 1800       |
| Power input              | W                 | 66         |
| Current draw             | A                 | 0.6        |
| Min. ambient temperature | °C                | -25        |
| Max. ambient temperature | °C                | 60         |

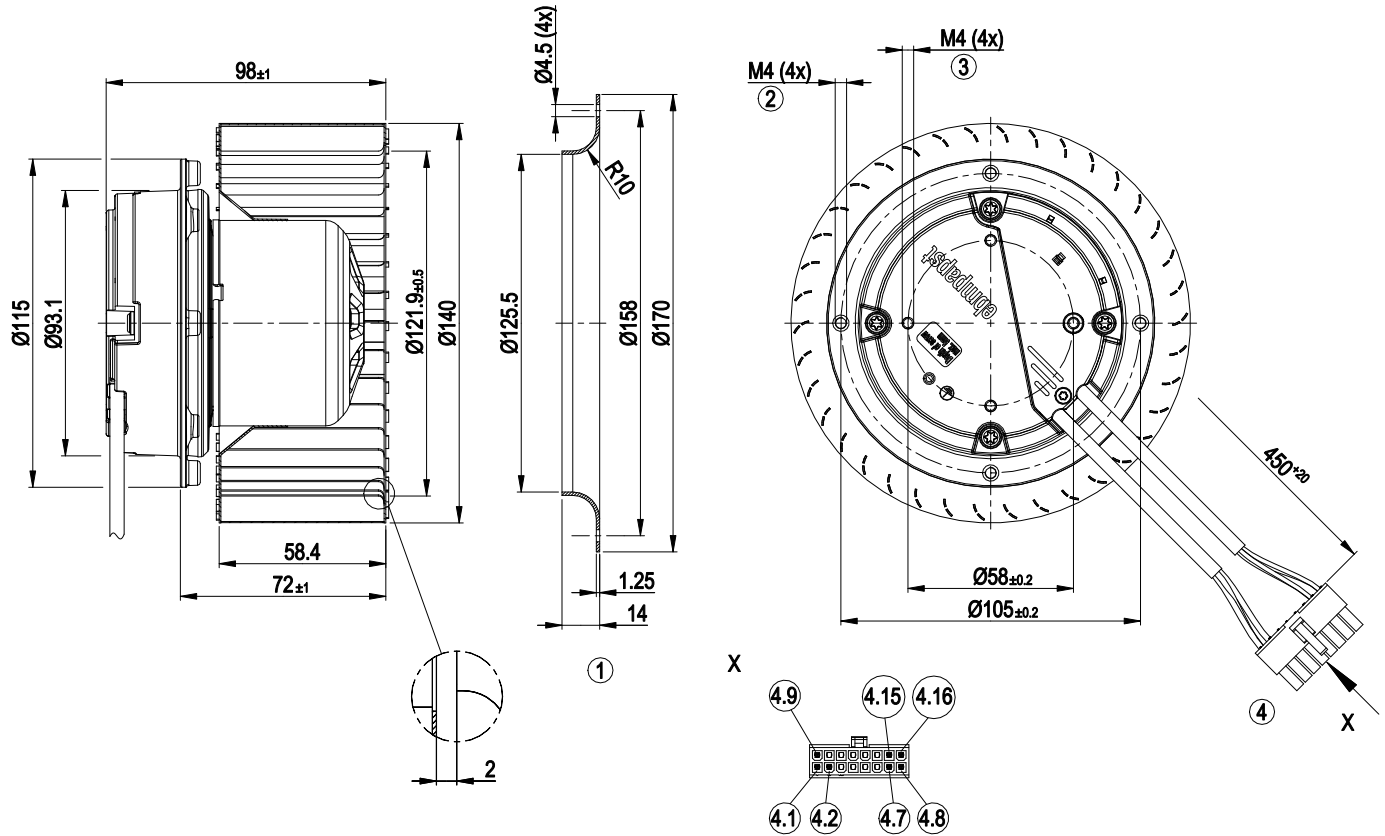
ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit  
Subject to alterations



## Technical features

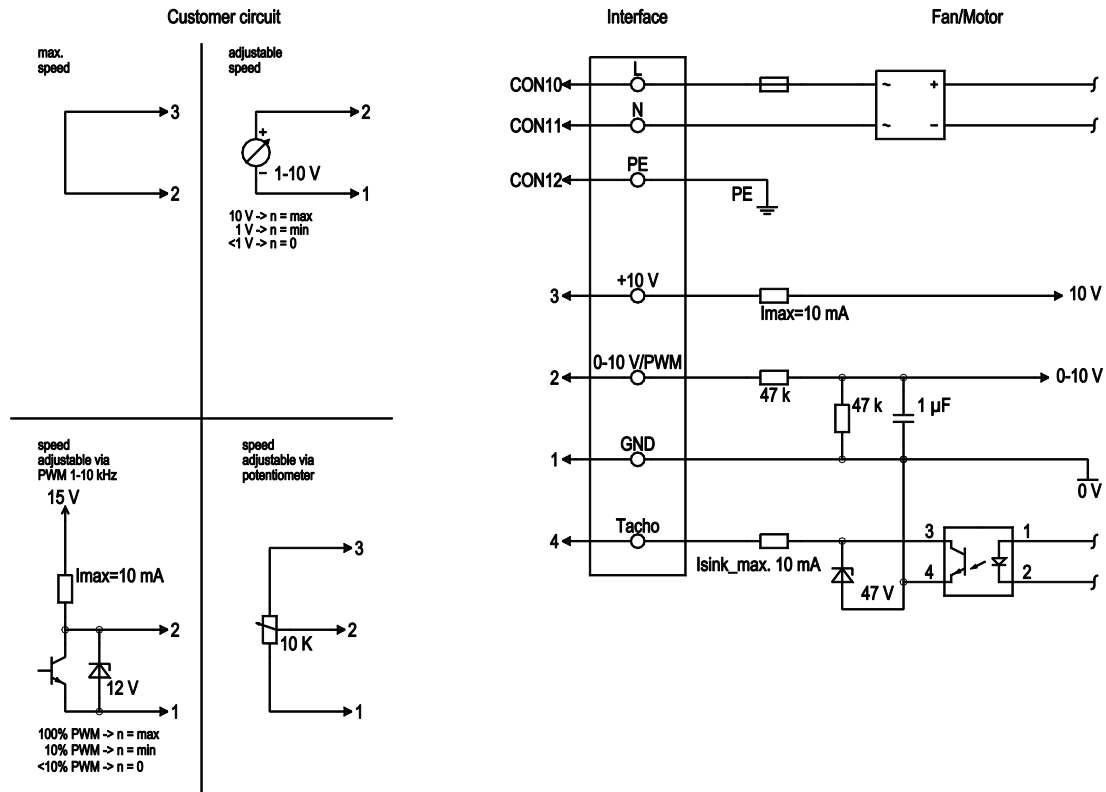
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mass                                                               | 1.3 kg                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Size                                                               | 140 mm                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Surface of rotor                                                   | Thick layer passivated                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Material of electronics housing                                    | Die-cast aluminium                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Material of impeller                                               | Sheet steel, galvanised                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operation mode                                                     | S1                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Motor bearing                                                      | Ball bearing                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Technical features                                                 | <ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 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> |
| 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



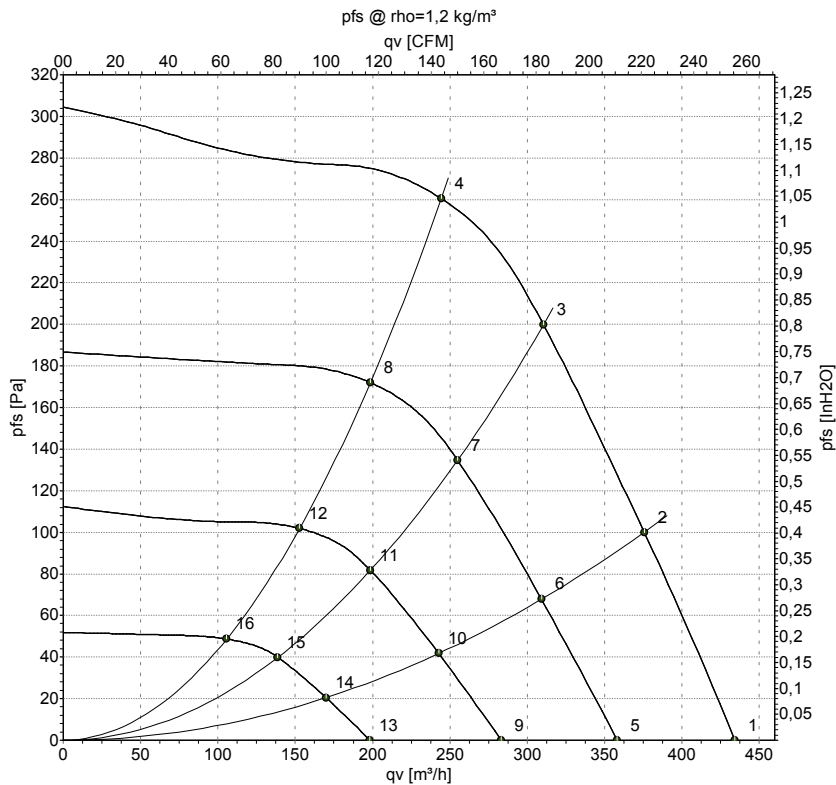
|      |                                                                                                                                                                               |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Accessory part: Inlet nozzle 09576-2-4013 not included in scope of delivery                                                                                                   |
| 2    | Thread reach max. 6 mm                                                                                                                                                        |
| 3    | Thread reach max. 5 mm                                                                                                                                                        |
| 4    | Connection line PVC 3G 0.5 mm <sup>2</sup> , connection line PVC 4x0.25 mm <sup>2</sup> , 1x connector housing 16-pole Molex 39-01-2165, 7x female connector Molex 39-00-0059 |
| 4.1  | N (blue)                                                                                                                                                                      |
| 4.2  | L (brown)                                                                                                                                                                     |
| 4.7  | +10 V (red)                                                                                                                                                                   |
| 4.8  | Tach (white)                                                                                                                                                                  |
| 4.9  | PE (green/yellow)                                                                                                                                                             |
| 4.15 | GND (blue)                                                                                                                                                                    |
| 4.16 | 0-10 V PWM (yellow)                                                                                                                                                           |

## Connection screen



| No. | Conn. | Designation | Colour       | Function / assignment                                                                                                                              |
|-----|-------|-------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|     | CON10 | L           | brown        | Mains connection, power supply, phase, see type plate for voltage range                                                                            |
|     | CON11 | N           | blue         | Mains connection, power supply, neutral conductor, see type plate for voltage range                                                                |
|     | CON12 | PE          | green/yellow | Earth connection                                                                                                                                   |
|     | 2     | 0- 10V PWM  | yellow       | 0-10 V/PWM control input, $R_i = 100 \text{ k}\Omega$ , SELV                                                                                       |
|     | 4     | Tach        | white        | Speed monitoring output, open collector, 1 pulse per revolution, $I_{sink \text{ max}} = 10 \text{ mA}$ , SELV                                     |
|     | 3     | +10 V       | red          | Fixed voltage output 10 VDC $\pm 3 \%$ , $I_{max} = 10 \text{ mA}$ , short-circuit-proof, power supply for ext. devices (e.g. potentiometer), SELV |
|     | 1     | GND         | blue         | Signal ground for control interface, SELV                                                                                                          |

## Charts: Air flow 50 Hz



Measurement: LU-155591-1  
 Measurement: LU-156457-1  
 Measurement: LU-156459-1  
 Measurement: LU-156461-1

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:  $L_{wA}$  measured as per ISO 13347 /  
 $L_{pA}$  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    | $L_{pA_{in}}$ | $L_{wA_{in}}$ | $q_v$             | $p_{fs}$ | $q_v$ | $p_{fs}$           |
|----|-----|----|-------------------|----------|------|---------------|---------------|-------------------|----------|-------|--------------------|
|    | V   | Hz | min <sup>-1</sup> | W        | A    | dB(A)         | dB(A)         | m <sup>3</sup> /h | Pa       | cfm   | inH <sub>2</sub> O |
| 1  | 230 | 50 | 1800              | 66       | 0.60 | 62            | 68            | 435               | 0        | 255   | 0.00               |
| 2  | 230 | 50 | 1845              | 61       | 0.59 | 61            | 67            | 375               | 100      | 220   | 0.40               |
| 3  | 230 | 50 | 1955              | 52       | 0.52 | 59            | 65            | 310               | 200      | 185   | 0.80               |
| 4  | 230 | 50 | 2045              | 45       | 0.45 | 58            | 64            | 245               | 260      | 145   | 1.04               |
| 5  | 230 | 50 | 1445              | 38       | 0.39 | 58            | 64            | 360               | 0        | 210   | 0.00               |
| 6  | 230 | 50 | 1525              | 34       | 0.37 | 56            | 62            | 310               | 70       | 180   | 0.28               |
| 7  | 230 | 50 | 1610              | 29       | 0.33 | 54            | 60            | 255               | 140      | 150   | 0.56               |
| 8  | 230 | 50 | 1690              | 24       | 0.27 | 52            | 59            | 200               | 178      | 115   | 0.71               |
| 9  | 230 | 50 | 1140              | 19       | 0.23 | 51            | 57            | 285               | 0        | 165   | 0.00               |
| 10 | 230 | 50 | 1195              | 18       | 0.21 | 50            | 56            | 245               | 43       | 145   | 0.17               |
| 11 | 230 | 50 | 1250              | 16       | 0.19 | 48            | 54            | 200               | 86       | 115   | 0.35               |
| 12 | 230 | 50 | 1310              | 12       | 0.16 | 46            | 53            | 155               | 105      | 90    | 0.42               |
| 13 | 230 | 50 | 800               | 8.0      | 0.13 | 42            | 48            | 200               | 0        | 115   | 0.00               |
| 14 | 230 | 50 | 840               | 8.0      | 0.11 | 40            | 47            | 170               | 21       | 100   | 0.08               |
| 15 | 230 | 50 | 880               | 7.0      | 0.09 | 38            | 45            | 140               | 42       | 80    | 0.17               |
| 16 | 230 | 50 | 915               | 6.0      | 0.10 | 36            | 44            | 105               | 50       | 60    | 0.20               |

U = Supply voltage · f = Frequency · n = Speed (rpm) ·  $P_{ed}$  = Power input · I = Current draw ·  $L_{pA_{in}}$  = Sound pressure level inlet side ·  $L_{wA_{in}}$  = Sound power level inlet side ·  $q_v$  = Air flow  
 $p_{fs}$  = Pressure increase