

8317082558  
VBS0225RSLFS

Sample

# EC centrifugal fan

backward-curved, single-intake

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## Nominal data

|                          |                      |            |
|--------------------------|----------------------|------------|
| Type                     | 8317082558           |            |
| Motor                    | E06005-30(M3G060-DA) |            |
| 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>    | 2800       |
| Power input              | W                    | 170        |
| Current draw             | A                    | 1.3        |
| 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

|                                   |   | Actual | Request 2020 |
|-----------------------------------|---|--------|--------------|
| 01 Overall efficiency $\eta_{es}$ | % | 54.8   | 45.4         |
| 02 Measurement category           |   | A      |              |
| 03 Efficiency category            |   | Static |              |
| 04 Efficiency grade N             |   | 73.4   | 64           |
| 05 Variable speed drive           |   | Yes    |              |

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

|                               |                   |      |
|-------------------------------|-------------------|------|
| 09 Power input $P_{ed}$       | kW                | 0.17 |
| 09 Air flow $q_v$             | m <sup>3</sup> /h | 724  |
| 09 Pressure increase $p_{fs}$ | Pa                | 405  |
| 10 Speed (rpm) n              | min <sup>-1</sup> | 2850 |
| 11 Specific ratio*            |                   | 1.00 |

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

ID14744



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## EC centrifugal fan

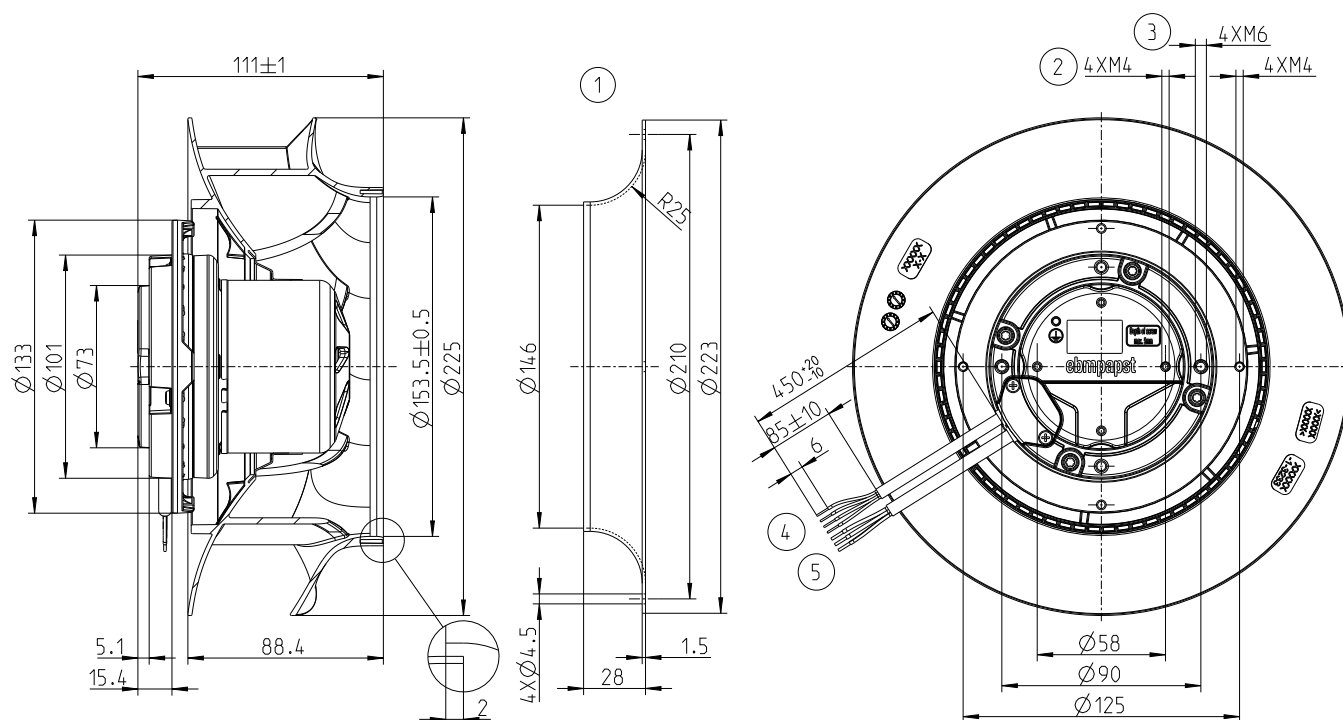
backward-curved, single-intake

### Technical description

|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                     | 1.75 kg                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Size                                                       | 225 mm                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Motor size                                                 | 60                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Rotor surface                                              | Thick-film passivated                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Electronics housing material                               | Die-cast aluminum                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Impeller material                                          | Plastic                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Number of blades                                           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Balancing grade according to DIN ISO 1940-1                | G 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Direction of rotation                                      | Clockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Degree of protection                                       | IP54                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Insulation class                                           | "B"                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Moisture (F) / Environmental (H) protection class          | H1                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Max. permitted ambient temp. for motor (transport/storage) | + 80 °C                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Min. permitted ambient temp. for motor (transport/storage) | - 40 °C                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Installation position                                      | Any                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Condensation drainage holes                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Cooling hole/opening                                       | On rotor side                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Mode                                                       | S1                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Motor mounting                                             | Ball bearing                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Technical features                                         | <ul style="list-style-type: none"><li>- Output 10VDC, max. 10 mA</li><li>- Tach output</li><li>- Power limiter</li><li>- Motor current limitation</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 protection</li><li>- Thermal overload protection for electronics / motor</li><li>- Line undervoltage detection</li></ul> |
| EMC immunity to interference                               | According to EN 61000-6-2(industrial environment)                                                                                                                                                                                                                                                                                                                                                                                               |
| EMC interference emission                                  | According to EN 61000-6-3(household environment)                                                                                                                                                                                                                                                                                                                                                                                                |
| Touch current acc.IEC 60990                                | <=3.5 mA                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Motor protection                                           | Reverse polarity and locked-rotor protection                                                                                                                                                                                                                                                                                                                                                                                                    |
| Cable exit                                                 | Variable                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Protection class                                           | I (if protective earth is connected by customer)                                                                                                                                                                                                                                                                                                                                                                                                |
| Product conforming to standard                             | GB12350, EN60034-1, EN60335-1                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Approval                                                   | -                                                                                                                                                                                                                                                                                                                                                                                                                                               |

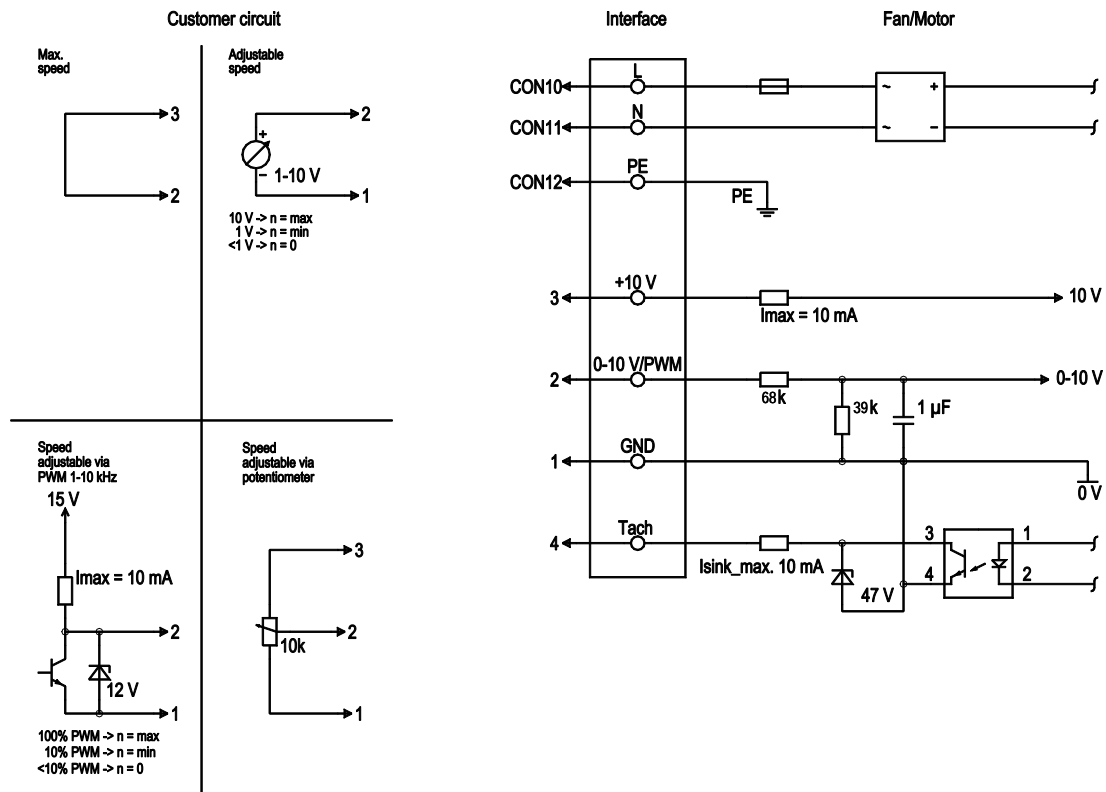


Product drawing



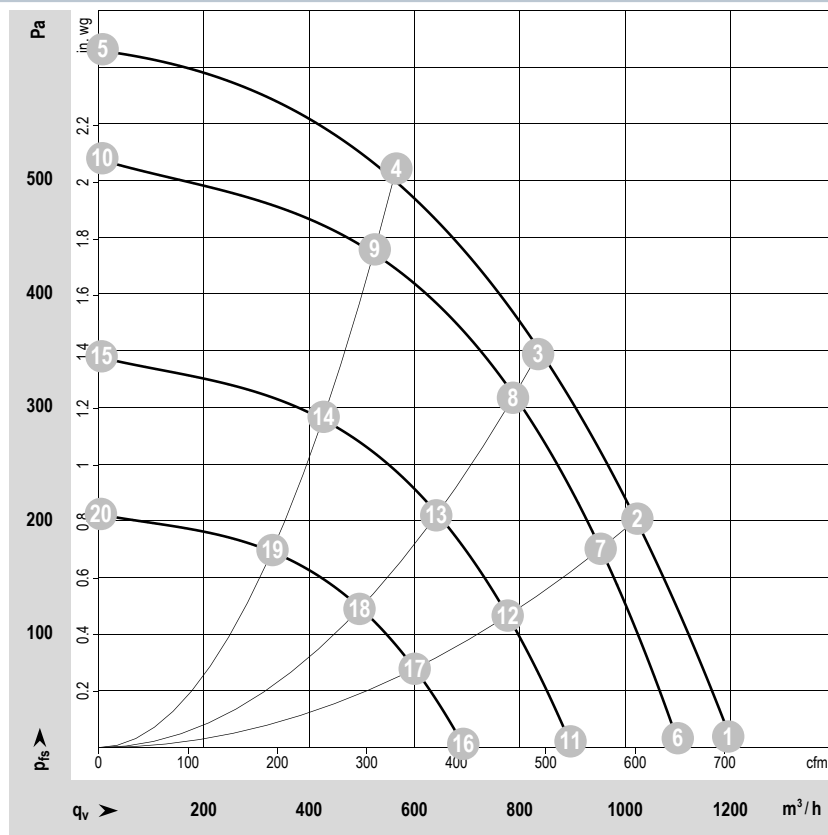
|   |                                                                           |
|---|---------------------------------------------------------------------------|
| 1 | Accessory part: inlet ring 96358-2-4013 not included in scope of delivery |
| 2 | Max. clearance for screw 6 mm                                             |
| 3 | Max. clearance for screw 10 mm                                            |
| 4 | Cable PVC 4x0.25 mm <sup>2</sup>                                          |
| 5 | Cable PVC 3x0.5 mm <sup>2</sup>                                           |

## Connection diagram



| No. | Conn. | Designation | Color        | Function/assignment                                                                                                               |
|-----|-------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------|
|     | CON10 | L           | black        | Supply connection, power supply, phase, see nameplate for voltage range                                                           |
|     | CON11 | N           | blue         | Supply connection, power supply, neutral conductor, see nameplate for voltage range                                               |
|     | CON12 | PE          | green/yellow | Ground connection                                                                                                                 |
|     | 3     | +10 V       | red          | Fixed voltage output 10 VDC +/-3 %, I <sub>max</sub> . 10 mA, short-circuit-proof, power supply for ext. devices (e.g. pot), SELV |
|     | 2     | 0-10 V PWM  | yellow       | 0-10 V / PWM control input, R <sub>i</sub> =100 kΩ, SELV                                                                          |
|     | 1     | GND         | blue         | Reference ground for control interface, SELV                                                                                      |
|     | 4     | Tach        | white        | Tach output, open collector, 1 pulse per revolution, I <sub>sink</sub> max = 10 mA, SELV                                          |

## Curves: Air performance

 $\rho = 1.2 \text{ kg/m}^3 \pm 2 \%$ 

Measurement: ID 14744

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Fan performance

| Index | U<br>v | f<br>Hz | n<br>min-1 | Ped<br>W | I<br>A | LpAin<br>dB(A) | LwAin<br>dB(A) | qv<br>m3/h | pfs<br>Pa | qv<br>cfm | Pfs<br>in.wg |
|-------|--------|---------|------------|----------|--------|----------------|----------------|------------|-----------|-----------|--------------|
| 01    | 230    | 50      | 2935       | 155.2    | 1.18   | 71             | 79             | 1196       | 10        | 704       | 0.04         |
| 02    | 230    | 50      | 2897       | 171.6    | 1.28   | 67             | 75             | 1023       | 202       | 602       | 0.81         |
| 03    | 230    | 50      | 2864       | 171.6    | 1.27   | 62             | 70             | 835        | 347       | 491       | 1.39         |
| 04    | 230    | 50      | 2913       | 172.0    | 1.29   | 63             | 71             | 566        | 513       | 333       | 2.06         |
| 05    | 230    | 50      | 2939       | 75.9     | 0.62   |                |                | 7.8        | 616       | 5         | 2.47         |
| 06    | 230    | 50      | 2700       | 120.8    | 0.91   | 69             | 77             | 1100       | 8         | 647       | 0.03         |
| 07    | 230    | 50      | 2700       | 139.0    | 1.03   | 65             | 73             | 954        | 175       | 561       | 0.70         |
| 08    | 230    | 50      | 2700       | 143.8    | 1.06   | 61             | 69             | 787        | 308       | 463       | 1.24         |
| 09    | 230    | 50      | 2700       | 137.1    | 1.03   | 61             | 69             | 525        | 441       | 309       | 1.77         |
| 10    | 230    | 50      | 2700       | 58.9     | 0.48   |                |                | 7.1        | 520       | 4         | 2.09         |
| 11    | 230    | 50      | 2200       | 65.3     | 0.49   | 64             | 72             | 896        | 5         | 527       | 0.02         |
| 12    | 230    | 50      | 2200       | 75.2     | 0.56   | 60             | 68             | 777        | 116       | 457       | 0.47         |
| 13    | 230    | 50      | 2200       | 77.8     | 0.58   | 56             | 64             | 641        | 205       | 377       | 0.82         |
| 14    | 230    | 50      | 2200       | 74.1     | 0.56   | 56             | 64             | 427        | 293       | 251       | 1.18         |
| 15    | 230    | 50      | 2200       | 31.8     | 0.26   |                |                | 5.8        | 345       | 3         | 1.39         |
| 16    | 230    | 50      | 1700       | 30.1     | 0.23   | 57             | 65             | 693        | 3         | 408       | 0.01         |
| 17    | 230    | 50      | 1700       | 34.7     | 0.26   | 53             | 61             | 600        | 69        | 353       | 0.28         |
| 18    | 230    | 50      | 1700       | 35.9     | 0.27   | 49             | 57             | 496        | 122       | 292       | 0.49         |
| 19    | 230    | 50      | 1700       | 34.2     | 0.26   | 49             | 58             | 330        | 175       | 194       | 0.70         |
| 20    | 230    | 50      | 1700       | 14.7     | 0.12   |                |                | 4.5        | 206       | 3         | 0.83         |

U = Power supply · n = Speed (rpm) · Ped = Power consumption · I = Current draw · LpAin = Sound pressure level intake side · LwAin = Sound power level intake side · qv = Air flow  
Pfs = Pressure increase