

# EC axial fan

sickled blades (S series)  
with guard grille for short nozzle

S3G450-LA14-71 ebmpapst Datasheet

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## Nominal data

|                          |                   |            |
|--------------------------|-------------------|------------|
| Type                     | S3G450-LA14-71    |            |
| Motor                    | M3G084-FA         |            |
| Phase                    |                   | 1~         |
| Nominal voltage          | VAC               | 230        |
| Nominal voltage range    | VAC               | 200 .. 277 |
| Frequency                | Hz                | 50/60      |
| Type of data definition  |                   | ml         |
| Speed                    | min <sup>-1</sup> | 1220       |
| Power input              | W                 | 310        |
| Current draw             | A                 | 2.0        |
| Max. back pressure       | Pa                | 120        |
| 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

|                       |        |
|-----------------------|--------|
| Installation category | A      |
| Efficiency category   | Static |
| Variable speed drive  | Yes    |
| Specific ratio*       | 1.00   |

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

|                                |                   | Actual | Request 2013 | Request 2015 |
|--------------------------------|-------------------|--------|--------------|--------------|
| Overall efficiency $\eta_{es}$ | %                 | 44.1   | 26.4         | 30.4         |
| Efficiency grade N             |                   | 53.7   | 36           | 40           |
| Power input $P_{ed}$           | kW                | 0.3    |              |              |
| Air flow $q_v$                 | m <sup>3</sup> /h | 3605   |              |              |
| Pressure increase $p_{fs}$     | Pa                | 121    |              |              |
| Speed n                        | min <sup>-1</sup> | 1220   |              |              |

Data definition with optimum efficiency. LU-71846  
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



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## Technical features

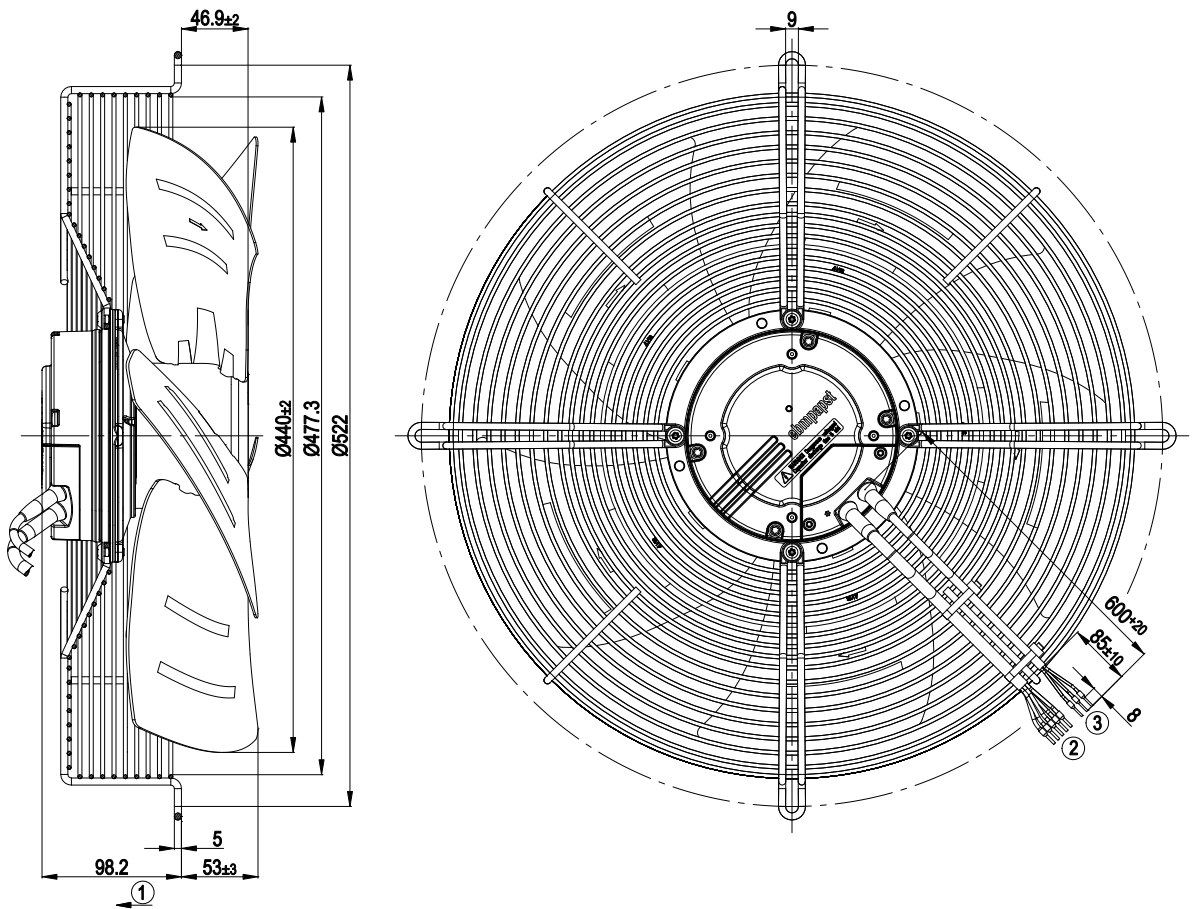
|                                                                    |                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mass                                                               | 7.52 kg                                                                                                                                                                                                                                                                                             |
| Size                                                               | 450 mm                                                                                                                                                                                                                                                                                              |
| Surface of rotor                                                   | Coated in black                                                                                                                                                                                                                                                                                     |
| Material of electronics housing                                    | Die-cast aluminium                                                                                                                                                                                                                                                                                  |
| Material of blades                                                 | Sheet steel, coated in black                                                                                                                                                                                                                                                                        |
| Material of guard grille                                           | Steel, phosphated and coated in black plastic                                                                                                                                                                                                                                                       |
| Number of blades                                                   | 5                                                                                                                                                                                                                                                                                                   |
| Direction of rotation                                              | "V"                                                                                                                                                                                                                                                                                                 |
| Type of protection                                                 | IP 54                                                                                                                                                                                                                                                                                               |
| Insulation class                                                   | "B"                                                                                                                                                                                                                                                                                                 |
| Humidity class                                                     | F3-1                                                                                                                                                                                                                                                                                                |
| Max. permissible ambient motor temp. (transp./ storage)            | +80 °C                                                                                                                                                                                                                                                                                              |
| Min. permissible ambient motor temp. (transp./storage)             | -40 °C                                                                                                                                                                                                                                                                                              |
| Mounting position                                                  | Shaft horizontal or rotor on bottom; rotor on top on request                                                                                                                                                                                                                                        |
| Condensate discharge holes                                         | Rotor-side                                                                                                                                                                                                                                                                                          |
| 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>- Alarm relay</li> <li>- Motor current limit</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</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)                                                                                                                                                                                                                                                        |
| Touch current acc. IEC 60990 (measuring network Fig. 4, TN system) | <= 3.5 mA                                                                                                                                                                                                                                                                                           |
| Motor protection                                                   | Thermal overload protector (TOP) wired internally                                                                                                                                                                                                                                                   |
| Cable exit                                                         | Variable                                                                                                                                                                                                                                                                                            |
| Protection class                                                   | I (if protective earth is connected by customer)                                                                                                                                                                                                                                                    |
| Product conforming to standard                                     | EN 61800-5-1; CE                                                                                                                                                                                                                                                                                    |
| Approval                                                           | CSA C22.2 Nr.77; EAC; UL 2111                                                                                                                                                                                                                                                                       |



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Product drawing



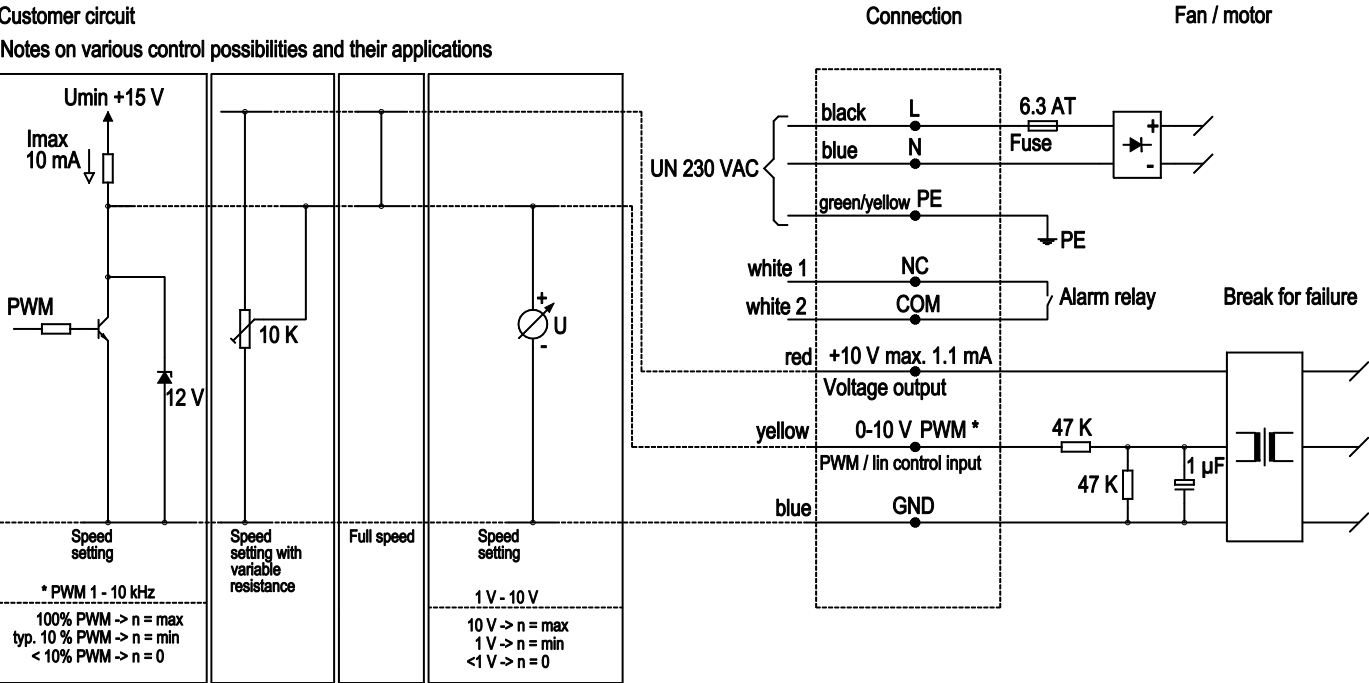
|   |                                                     |
|---|-----------------------------------------------------|
| 1 | Direction of air flow "V"                           |
| 2 | Connection line AWG 18, 5x crimped core-end sleeves |
| 3 | Connection line AWG 22, 3x crimped core-end sleeves |



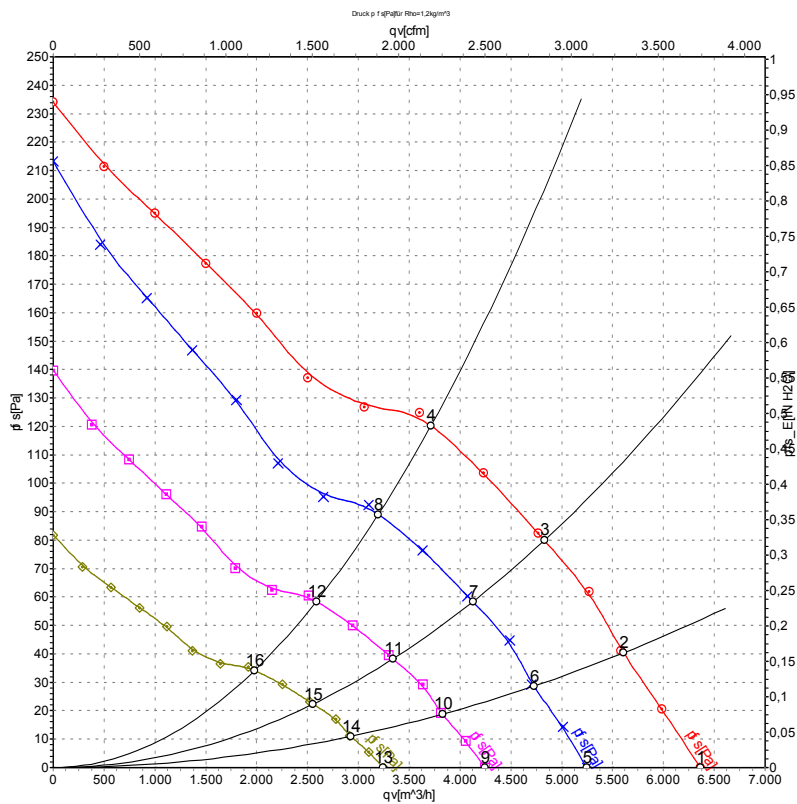
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Connection screen



## Charts: Air flow 50 Hz



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    | qv                | p <sub>fs</sub> |
|----|-----|----|-------------------|-----------------|------|-------------------|-----------------|
|    | V   | Hz | min <sup>-1</sup> | W               | A    | m <sup>3</sup> /h | Pa              |
| 1  | 230 | 50 | 1275              | 267             | 1.68 | 6360              | 0               |
| 2  | 230 | 50 | 1245              | 282             | 1.79 | 5610              | 40              |
| 3  | 230 | 50 | 1230              | 298             | 1.89 | 4830              | 80              |
| 4  | 230 | 50 | 1220              | 310             | 2.00 | 3715              | 120             |
| 5  | 230 | 50 | 1050              | 149             | 0.94 | 5245              | 0               |
| 6  | 230 | 50 | 1050              | 169             | 1.07 | 4730              | 28              |
| 7  | 230 | 50 | 1050              | 186             | 1.18 | 4125              | 58              |
| 8  | 230 | 50 | 1050              | 196             | 1.25 | 3195              | 90              |
| 9  | 230 | 50 | 850               | 79              | 0.50 | 4245              | 0               |
| 10 | 230 | 50 | 850               | 89              | 0.57 | 3830              | 18              |
| 11 | 230 | 50 | 850               | 99              | 0.62 | 3340              | 38              |
| 12 | 230 | 50 | 850               | 104             | 0.66 | 2585              | 59              |
| 13 | 230 | 50 | 650               | 35              | 0.22 | 3245              | 0               |
| 14 | 230 | 50 | 650               | 40              | 0.25 | 2925              | 11              |
| 15 | 230 | 50 | 650               | 44              | 0.28 | 2555              | 22              |
| 16 | 230 | 50 | 650               | 47              | 0.30 | 1980              | 34              |

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