

EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short nozzle

S3G630-AR85-07 ebmpapst Datasheet

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Limited partnership · Headquarters Muldingen

Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Muldingen GmbH · Headquarters Muldingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

| | | |
|--------------------------|-------------------|------------|
| Type | S3G630-AR85-07 | |
| Motor | M3G112-IA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 400 |
| Nominal voltage range | VAC | 380 .. 480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed (rpm) | min ⁻¹ | 1140 |
| Power consumption | W | 970 |
| Current draw | A | 1.6 |
| Max. back pressure | Pa | 170 |
| Max. back pressure | in. wg | 0.68 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 60 |

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to Commission Regulation (EU) 327/2011 (EN 17166)

| | | Actual | Req. 2015 | | | |
|-----------------------------------|---|--------|-----------|-------------------------------|-------------------|------|
| 01 Overall efficiency η_{es} | % | 43.8 | 33.6 | 09 Power consumption P_{ed} | kW | 0.97 |
| 02 Measurement category | | A | | 09 Air flow q_v | m ³ /h | 8935 |
| 03 Efficiency category | | Static | | 09 Pressure increase p_{fs} | Pa | 163 |
| 04 Efficiency grade N | | 50.2 | 40 | 10 Speed (rpm) n | min ⁻¹ | 1155 |
| 05 Variable speed drive | | Yes | | 11 Specific ratio* | | 1.00 |

Data obtained at optimum efficiency level.

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

LU-115687

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.
The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).



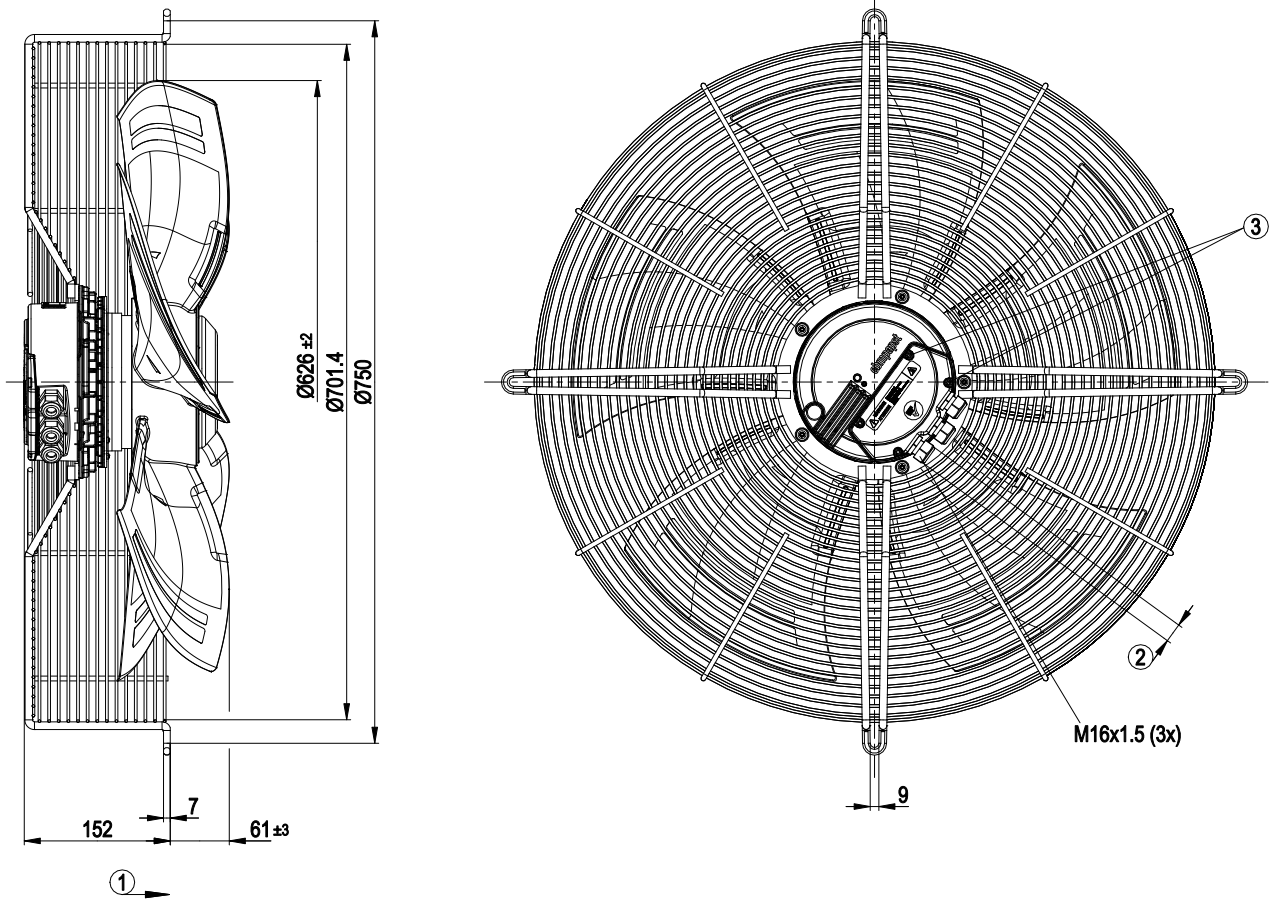
Technical description

| | |
|--|--|
| Weight | 16.9 kg |
| Size | 630 mm |
| Motor size | 112 |
| Rotor surface | Painted black |
| Electronics housing material | Die-cast aluminum, painted black |
| Blade material | Press-fitted sheet steel blank, sprayed with PP plastic |
| Guard grille material | Steel, coated with black plastic (RAL 9005) |
| Number of blades | 5 |
| Airflow direction | A |
| Direction of rotation | Clockwise, viewed toward rotor |
| Degree of protection | IP54 |
| Insulation class | "B" |
| Moisture (F) / Environmental (H) protection class | H2 |
| Max. permitted ambient temp. for motor (transport/storage) | + 80 °C |
| Min. permitted ambient temp. for motor (transport/storage) | - 40 °C |
| Installation position | Shaft horizontal or rotor on top |
| Condensation drainage holes | On stator side |
| Mode | S1 |
| Motor bearing | Ball bearing |
| Technical features | <ul style="list-style-type: none"> - Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 ebmBUS - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection |
| EMC immunity to interference | According to EN 61000-6-2 (industrial environment) |
| EMC circuit feedback | According to EN 61000-3-2/3 |
| EMC interference emission | According to EN 61000-6-3 (household environment) |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA |
| Electrical hookup | Terminal box |
| Motor protection | Thermal overload protector (TOP) internally connected |
| Protection class | I (with customer connection of protective earth) |
| Conformity with standards | EN 61800-5-1; CE; UKCA |
| Approval | UL 1004-7 + 60730-1 |

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Product drawing



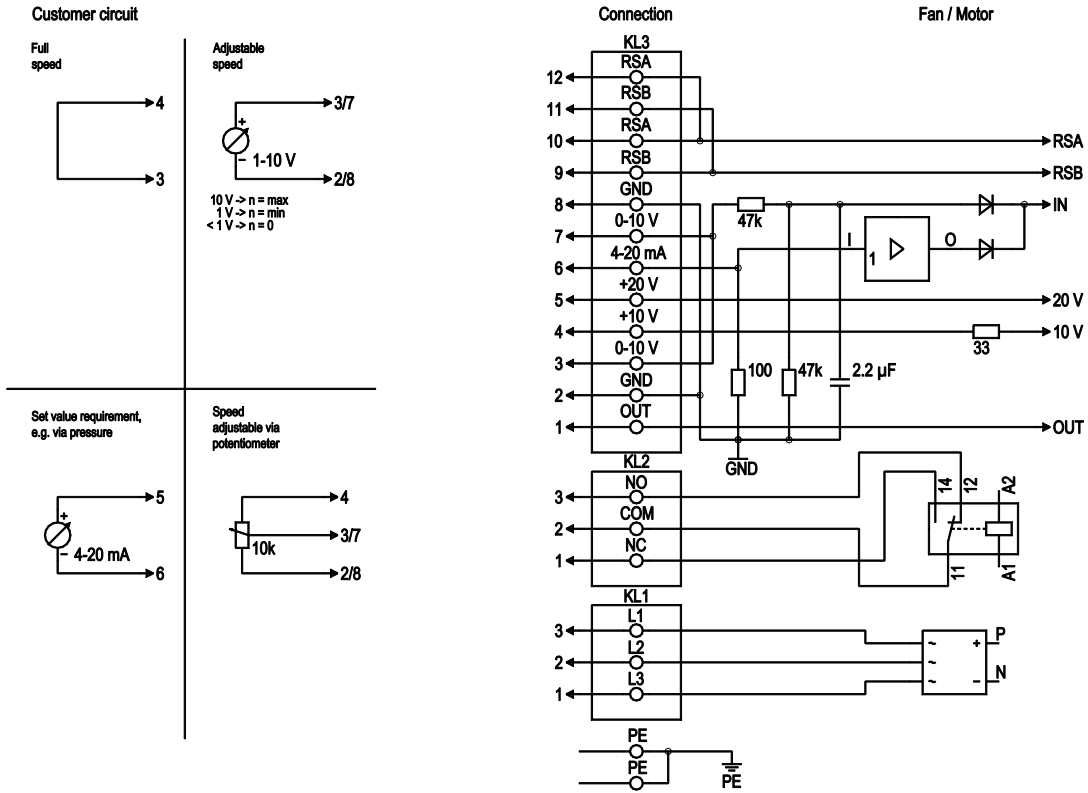
| | |
|---|--|
| 1 | Direction of air flow "A" |
| 2 | Cable diameter min. 4 mm, max. 10 mm; tightening torque 2.5±0.4 Nm |
| 3 | Tightening torque 3.5 ± 0.5 Nm |



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Connection diagram



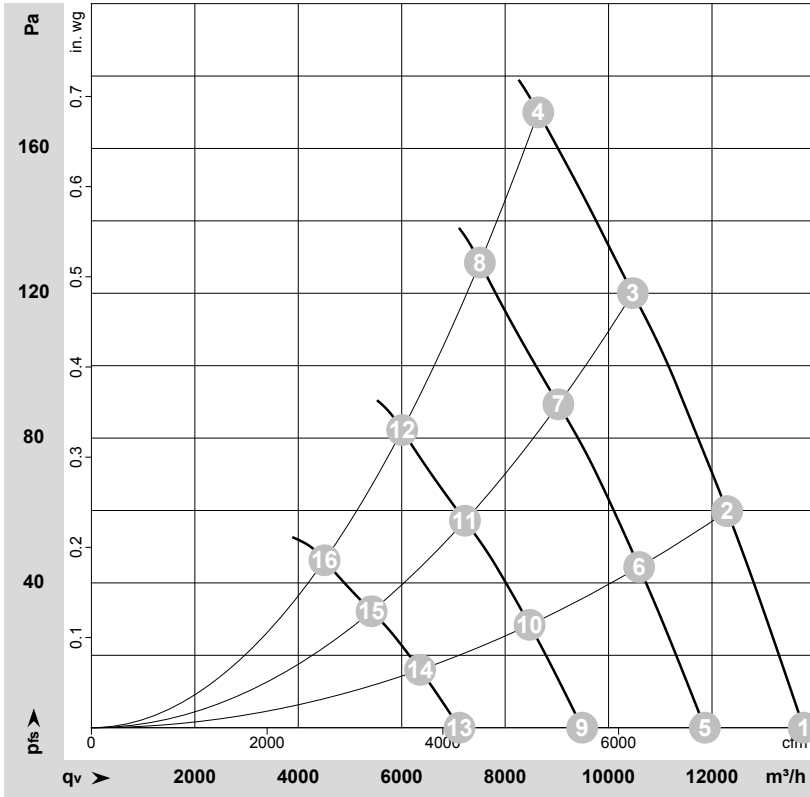
| No. | Conn. | Designation | Function/assignment |
|-----|---------|-------------|---|
| PE | | PE | Protective earth terminal |
| KL1 | 1, 2, 3 | L1, L2, L3 | Power supply, voltage range (see nameplate), 50/60 Hz |
| KL2 | 1 | NC | Floating status contact, break for failure |
| KL2 | 2 | COM | floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1) |
| KL2 | 3 | NO | Floating status contact, make for failure |
| KL3 | 1 | OUT | Analog output, 0-10 VDC, max. 3 mA, SELV, output of current motor modulation level: 1 V corresponds to 10% modulation level. 10 V corresponds to 100% modulation level. |
| KL3 | 2, 8 | GND | Reference ground for control interface, SELV |
| KL3 | 3, 7 | 0-10 V | Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV |
| KL3 | 4 | +10 V | Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV |
| KL3 | 5 | +20 V | Voltage output 20 VDC (+25%/-10%), max. 50 mA, power supply for external devices (e.g. sensors), SELV |
| KL3 | 6 | 4-20 mA | Use control / current sensor value input 4-20 mA, impedance 100 Ω only as alternative to 0-10 V input, SELV |
| KL3 | 9, 11 | RSB | RS485 interface for MODBUS, RSB |
| KL3 | 10, 12 | RSA | RS485 interface for MODBUS, RSA |



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Curves: Air performance 50 Hz



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

Measurement: LU-115687-1

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.

Measured values

| | Wired | U | f | n | P _{ed} | I | LpA _{in} | LwA _{in} | LwA _{out} | q _v | P _{fs} | q _v | P _{fs} |
|----|-------|-----|----|-------------------|-----------------|------|-------------------|-------------------|--------------------|-------------------|-----------------|----------------|-----------------|
| | | V | Hz | min ⁻¹ | W | A | dB(A) | dB(A) | dB(A) | m ³ /h | Pa | cfm | in. wg |
| 1 | 3~ | 400 | 50 | 1140 | 642 | 1.02 | 67 | 74 | 74 | 13775 | 0 | 8105 | 0.00 |
| 2 | 3~ | 400 | 50 | 1140 | 781 | 1.26 | 64 | 71 | 71 | 12295 | 60 | 7235 | 0.24 |
| 3 | 3~ | 400 | 50 | 1140 | 902 | 1.44 | 66 | 73 | 72 | 10470 | 120 | 6160 | 0.48 |
| 4 | 3~ | 400 | 50 | 1140 | 970 | 1.60 | 68 | 74 | 74 | 8640 | 170 | 5085 | 0.68 |
| 5 | 3~ | 400 | 50 | 1000 | 410 | 0.65 | 64 | 70 | 70 | 11865 | 0 | 6980 | 0.00 |
| 6 | 3~ | 400 | 50 | 1000 | 499 | 0.80 | 60 | 67 | 67 | 10590 | 45 | 6235 | 0.18 |
| 7 | 3~ | 400 | 50 | 1000 | 579 | 0.92 | 63 | 69 | 68 | 9030 | 89 | 5315 | 0.36 |
| 8 | 3~ | 400 | 50 | 1000 | 646 | 1.04 | 64 | 71 | 70 | 7510 | 128 | 4420 | 0.51 |
| 9 | 3~ | 400 | 50 | 800 | 210 | 0.33 | 58 | 65 | 65 | 9490 | 0 | 5585 | 0.00 |
| 10 | 3~ | 400 | 50 | 800 | 255 | 0.41 | 55 | 62 | 61 | 8475 | 29 | 4985 | 0.12 |
| 11 | 3~ | 400 | 50 | 800 | 297 | 0.47 | 57 | 63 | 62 | 7225 | 57 | 4250 | 0.23 |
| 12 | 3~ | 400 | 50 | 800 | 331 | 0.53 | 59 | 65 | 64 | 6010 | 82 | 3535 | 0.33 |
| 13 | 3~ | 400 | 50 | 600 | 89 | 0.14 | 51 | 57 | 57 | 7120 | 0 | 4190 | 0.00 |
| 14 | 3~ | 400 | 50 | 600 | 108 | 0.17 | 47 | 54 | 54 | 6355 | 16 | 3740 | 0.06 |
| 15 | 3~ | 400 | 50 | 600 | 125 | 0.20 | 50 | 56 | 55 | 5420 | 32 | 3190 | 0.13 |
| 16 | 3~ | 400 | 50 | 600 | 140 | 0.22 | 52 | 58 | 57 | 4505 | 46 | 2655 | 0.18 |

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_v = Air flow · P_{fs} = Pressure increase

