

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for full nozzle

S3G800-CG01-51 ebmpapst Datasheet

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## Nominal data

<b>Type</b>	<b>S3G800-CG01-51</b>	
<b>Motor</b>	<b>M3G112-IA</b>	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min <sup>-1</sup>	700
Power consumption	W	650
Current draw	A	1
Max. back pressure	Pa	100
Max. back pressure	in. wg	0.4
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 (prEN 17166)

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	48.4	32.3	09 Power consumption $P_{ed}$	kW	0.61
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	11690
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	88
04 Efficiency grade N		56.1	40	10 Speed (rpm) n	min <sup>-1</sup>	700
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-178916

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).



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## Technical description

<b>Weight</b>	18.9 kg
<b>Size</b>	800 mm
<b>Motor size</b>	112
<b>Rotor surface</b>	Painted black
<b>Terminal box material</b>	PP plastic
<b>Electronics housing material</b>	Die-cast aluminum, painted black
<b>Blade material</b>	Press-fitted sheet steel blank, sprayed with PP plastic
<b>Guard grille material</b>	Steel, coated with black plastic (RAL 9005)
<b>Number of blades</b>	5
<b>Airflow direction</b>	V
<b>Direction of rotation</b>	Clockwise, viewed toward rotor
<b>Degree of protection</b>	IP55
<b>Insulation class</b>	"F"
<b>Moisture (F) / Environmental (H) protection class</b>	H2
<b>Ambient temperature note</b>	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at temperatures below -25°C (e.g. refrigeration applications) we recommend our fan design with special low-temperature bearings.
<b>Max. permitted ambient temp. for motor (transport/storage)</b>	+80 °C
<b>Min. permitted ambient temp. for motor (transport/storage)</b>	-40 °C
<b>Installation position</b>	Shaft horizontal or rotor on bottom; rotor on top on request
<b>Condensation drainage holes</b>	On rotor side
<b>Mode</b>	S1
<b>Motor bearing</b>	Ball bearing; (sealed)
<b>Technical features</b>	<ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 mA</li> <li>- Operation and alarm display</li> <li>- External 24 V input (parameter setting)</li> <li>- Alarm relay</li> <li>- Integrated PID controller</li> <li>- Motor current limitation</li> <li>- PFC, passive</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- EEPROM write cycles: 100,000 maximum</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> </ul>
<b>EMC immunity to interference</b>	According to EN 61000-6-2 (industrial environment)
<b>EMC circuit feedback</b>	According to EN 61000-3-2/3
<b>EMC interference emission</b>	According to EN 61000-6-3 (household environment)
<b>Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)</b>	<= 3.5 mA
<b>Electrical hookup</b>	Terminal box
<b>Motor protection</b>	Thermal overload protector (TOP) internally connected
<b>Protection class</b>	I (with customer connection of protective earth)



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<b>Conformity with standards</b>	EN 61800-5-1; CE; UKCA
<b>Approval</b>	EAC; UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1
<b>Comment</b>	Conformity with EN 60335-1 in preparation

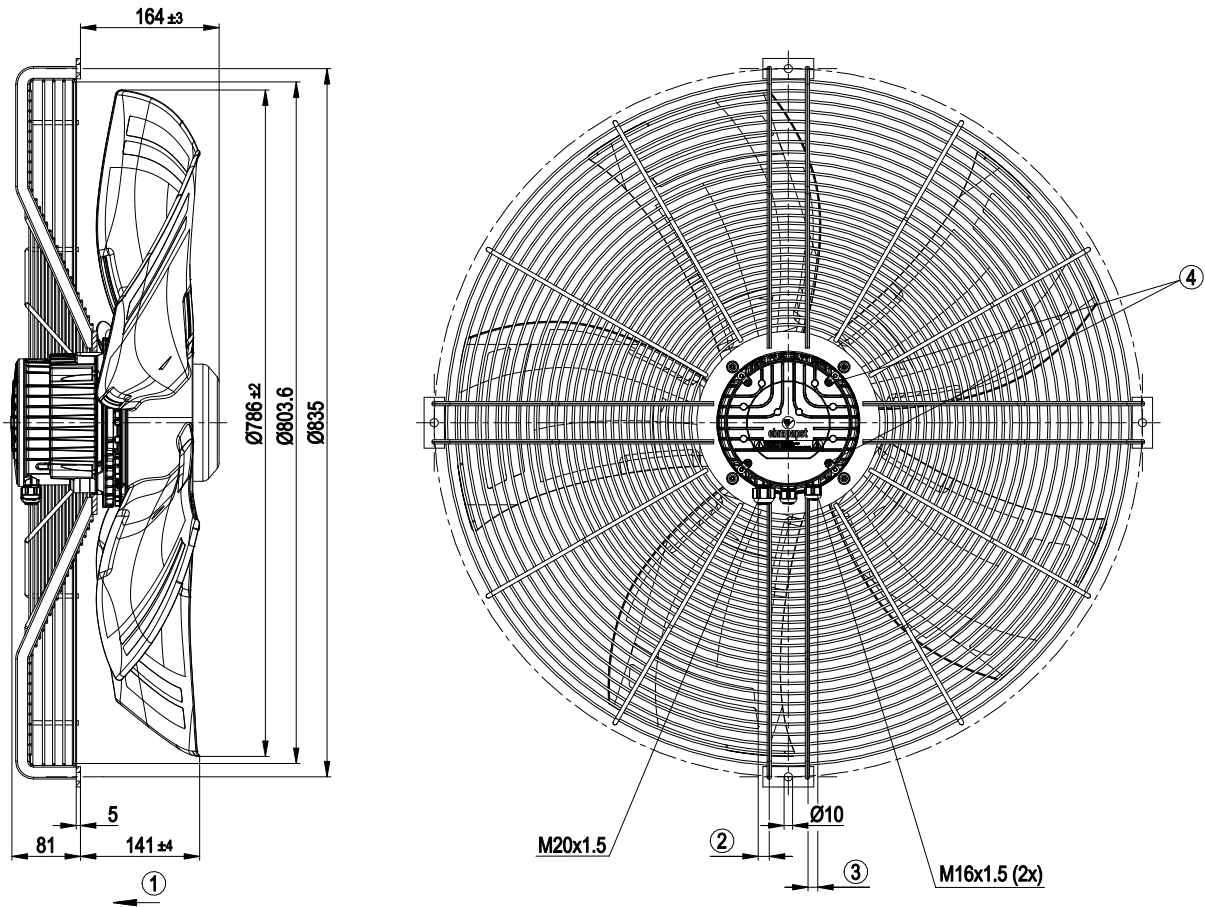


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## Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 8 mm, max. 12 mm, tightening torque 1.8±0.3 Nm (use must be made of seal provided) Cable diameter min. 4 mm, max. 10 mm, tightening torque 1.8±0.3 Nm
3	Cable diameter min. 6 mm, max. 10 mm, tightening torque 1.8±0.3 Nm (use must be made of seal provided) Cable diameter min. 4 mm, max. 7 mm, tightening torque 1.8±0.3 Nm
4	Tightening torque 1.5 ± 0.2 Nm

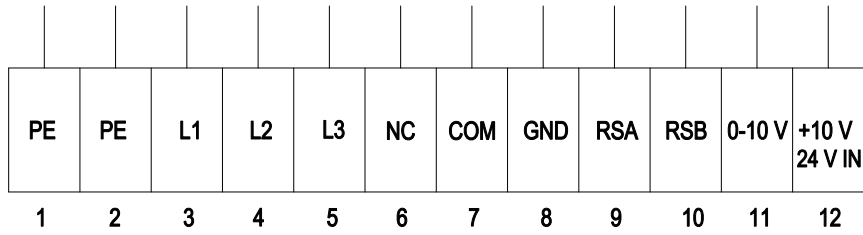


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## Connection diagram



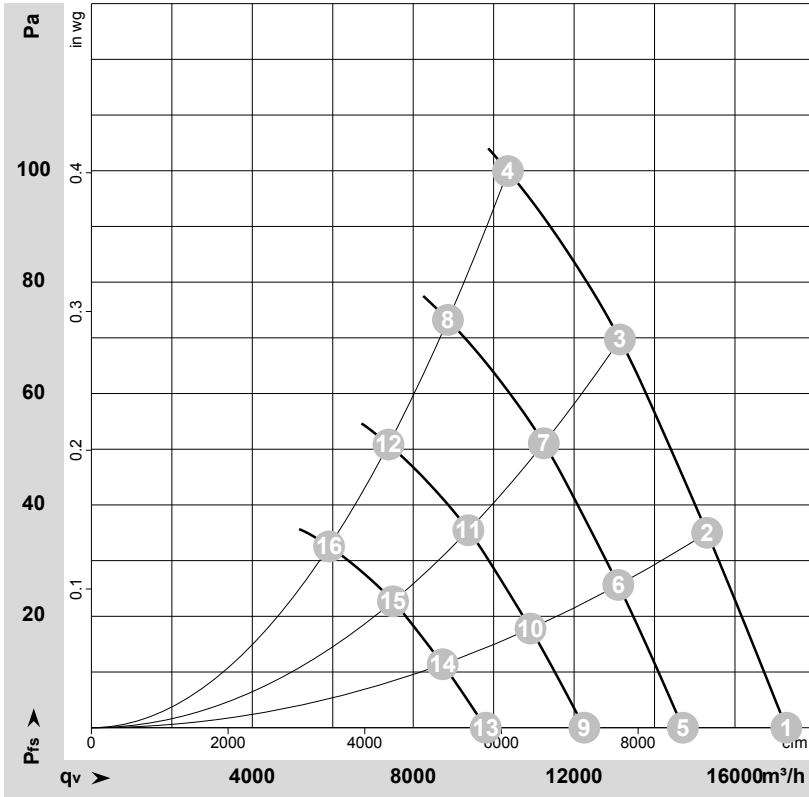
No.	Conn.	Designation	Function/assignment
1	PE	PE	Protective earth
2	PE	PE	Protective earth
3	L1	L1	Power supply
4	L2	L2	Power supply
5	L3	L3	Power supply
6	NC	NC	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; reinforced insulation on supply side and basic insulation on control interface side
7	COM	COM	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; reinforced insulation on supply side and basic insulation on control interface side
8	GND	GND	Reference ground for control interface, SELV
9	RSA	RSA	RS485 interface for MODBUS, RSA; SELV
10	RSB	RSB	RS485 interface for MODBUS, RSB; SELV
11	0-10 V	0-10 V	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
12	+10 V	+10 V	Fixed voltage output 10 VDC, SELV, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); fixed voltage input 24 VDC for setting parameters via MODBUS without line voltage supply

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## Curves: Air performance 50 Hz



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

Measurement: LU-178916-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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

	U	f	n	P <sub>ed</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	400	50	700	426	0.70	62	69	69	17275	0	10170	0.00
2	400	50	700	508	0.81	59	65	65	15305	35	9010	0.14
3	400	50	700	580	0.92	57	64	63	13140	70	7735	0.28
4	400	50	700	650	1.00	60	68	67	10355	100	6095	0.40
5	400	50	600	262	0.43	58	65	65	14705	0	8655	0.00
6	400	50	600	318	0.51	55	61	61	13100	26	7710	0.10
7	400	50	600	363	0.58	53	60	59	11245	52	6620	0.21
8	400	50	600	405	0.64	56	64	63	8865	73	5215	0.29
9	400	50	500	152	0.25	54	61	60	12255	0	7210	0.00
10	400	50	500	184	0.30	50	57	56	10915	18	6425	0.07
11	400	50	500	210	0.33	49	55	54	9370	36	5515	0.14
12	400	50	500	234	0.37	52	59	58	7385	51	4345	0.20
13	400	50	400	78	0.13	48	55	55	9805	0	5770	0.00
14	400	50	400	94	0.15	44	51	50	8735	11	5140	0.04
15	400	50	400	108	0.17	43	50	49	7500	23	4415	0.09
16	400	50	400	120	0.19	46	54	53	5910	33	3480	0.13

U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
 LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

