

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with square full nozzle

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## Nominal data

Type	W3G800-GA77-51	
Motor	M3G112-EA	
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>	520
Power consumption	W	275
Current draw	A	0.49
Max. back pressure	Pa	55
Max. back pressure	in. wg	0.22
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 $\eta_{es}$	%	42.1	29.9	09 Power consumption $P_{ed}$	kW	0.25
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	8145
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	43
04 Efficiency grade N		52.2	40	10 Speed (rpm) n	min <sup>-1</sup>	520
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-180316

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

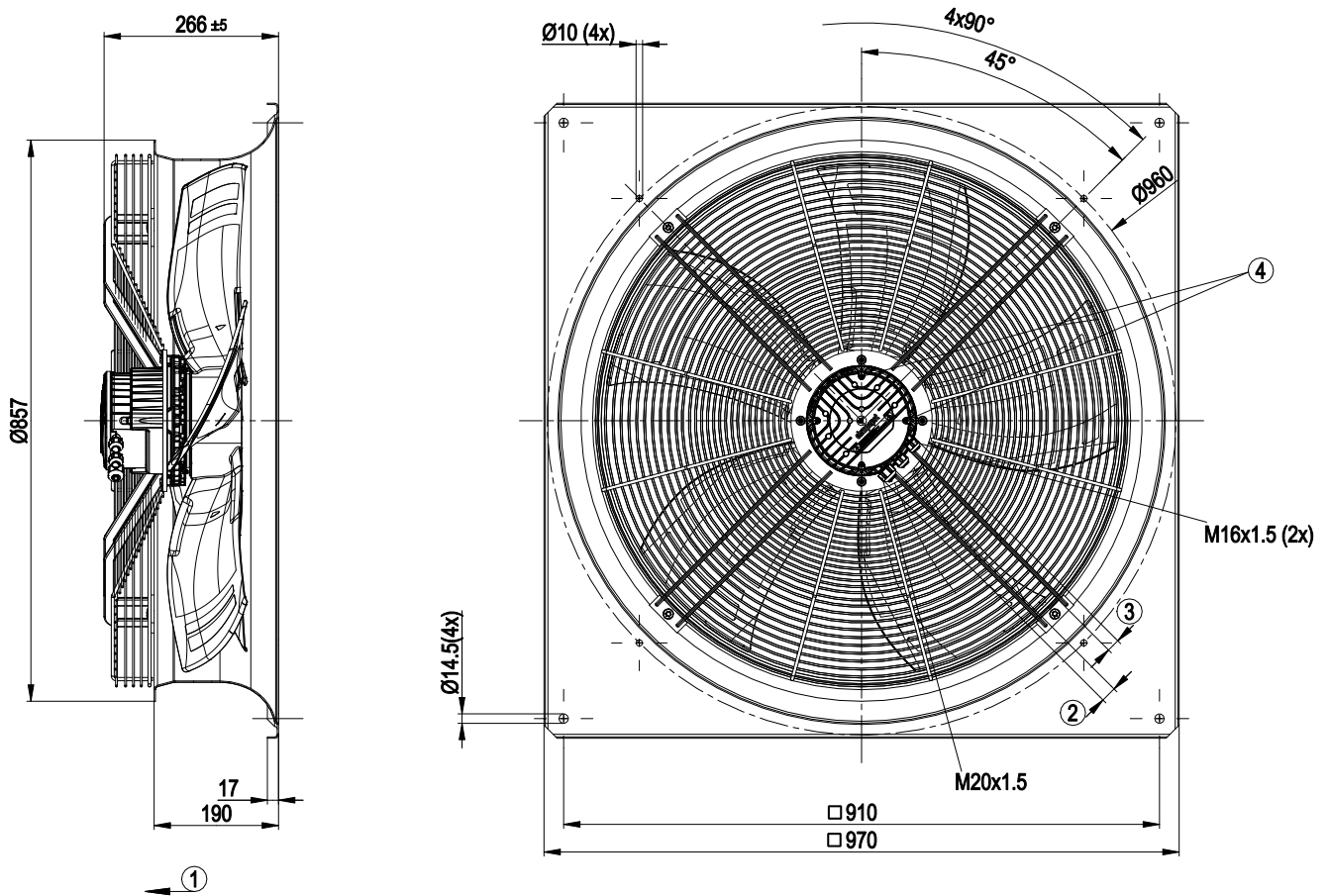
<b>Weight</b>	25.6 kg
<b>Size</b>	800 mm
<b>Motor size</b>	112
<b>Rotor surface</b>	Painted black
<b>Terminal box material</b>	PP plastic
<b>Electronics housing material</b>	Die-cast aluminum, painted black
<b>Blade material</b>	Press-fitted sheet steel blank, sprayed with PP plastic
<b>Fan housing material</b>	Sheet steel, pre-galvanized and coated with black plastic (RAL 9005)
<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>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>- Power limiter</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 supply</li> <li>- Temperature derating</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> </ul>
<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)
<b>Conformity with standards</b>	EN 61800-5-1; UKCA; CE
<b>Approval</b>	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1; CCC
<b>Comment</b>	Conformity with EN 60335-1 in preparation

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## Product drawing



1	Airflow direction "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

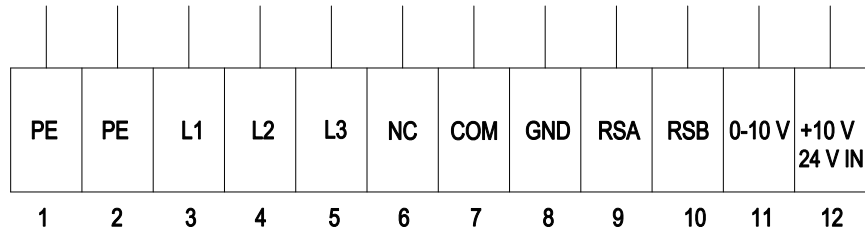


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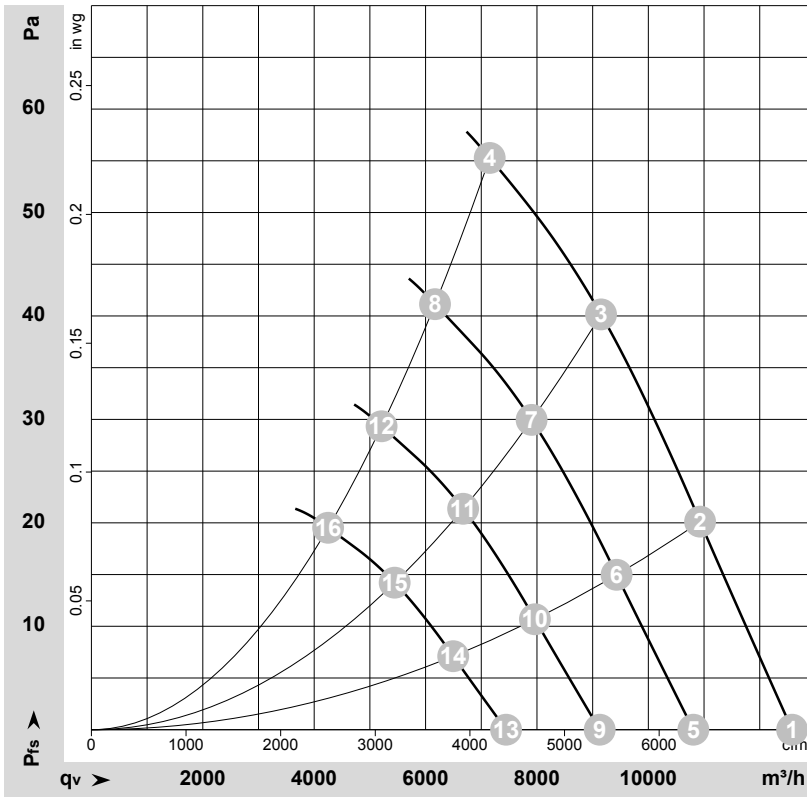
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## Connection diagram



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

## Curves: Air performance 50 Hz



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

Measurement: LU-180191-1

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	520	177	0.37	56	62	62	12580	0	7405	0.00
2	400	50	520	212	0.41	52	59	58	10930	20	6435	0.08
3	400	50	520	242	0.45	51	57	56	9150	40	5385	0.16
4	400	50	520	275	0.49	54	61	61	7150	55	4210	0.22
5	400	50	450	112	0.23	52	59	58	10810	0	6360	0.00
6	400	50	450	136	0.26	49	55	54	9430	15	5550	0.06
7	400	50	450	156	0.29	47	54	53	7905	30	4650	0.12
8	400	50	450	172	0.31	50	57	57	6170	41	3630	0.16
9	400	50	380	68	0.14	48	54	54	9125	0	5370	0.00
10	400	50	380	82	0.16	44	51	50	7965	11	4685	0.04
11	400	50	380	94	0.17	43	49	48	6675	21	3930	0.08
12	400	50	380	104	0.19	46	53	53	5210	29	3065	0.12
13	400	50	310	37	0.08	43	49	48	7445	0	4380	0.00
14	400	50	310	44	0.09	39	46	45	6495	7	3825	0.03
15	400	50	310	51	0.09	38	44	43	5445	14	3205	0.06
16	400	50	310	56	0.10	40	48	48	4250	20	2500	0.08

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

