

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short nozzle

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## Nominal data

Type	S3G450-AO02-52	
Motor	M3G074-DF	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min <sup>-1</sup>	980
Power consumption	W	163
Current draw	A	1.34
Max. back pressure	Pa	74
Max. back pressure	in. wg	0.3
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 $\eta_{es}$	%	37.9	28.8	09 Power consumption $P_{ed}$	kW	0.16
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	3505
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	61
04 Efficiency grade N		49.1	40	10 Speed (rpm) n	min <sup>-1</sup>	1000
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-138244

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

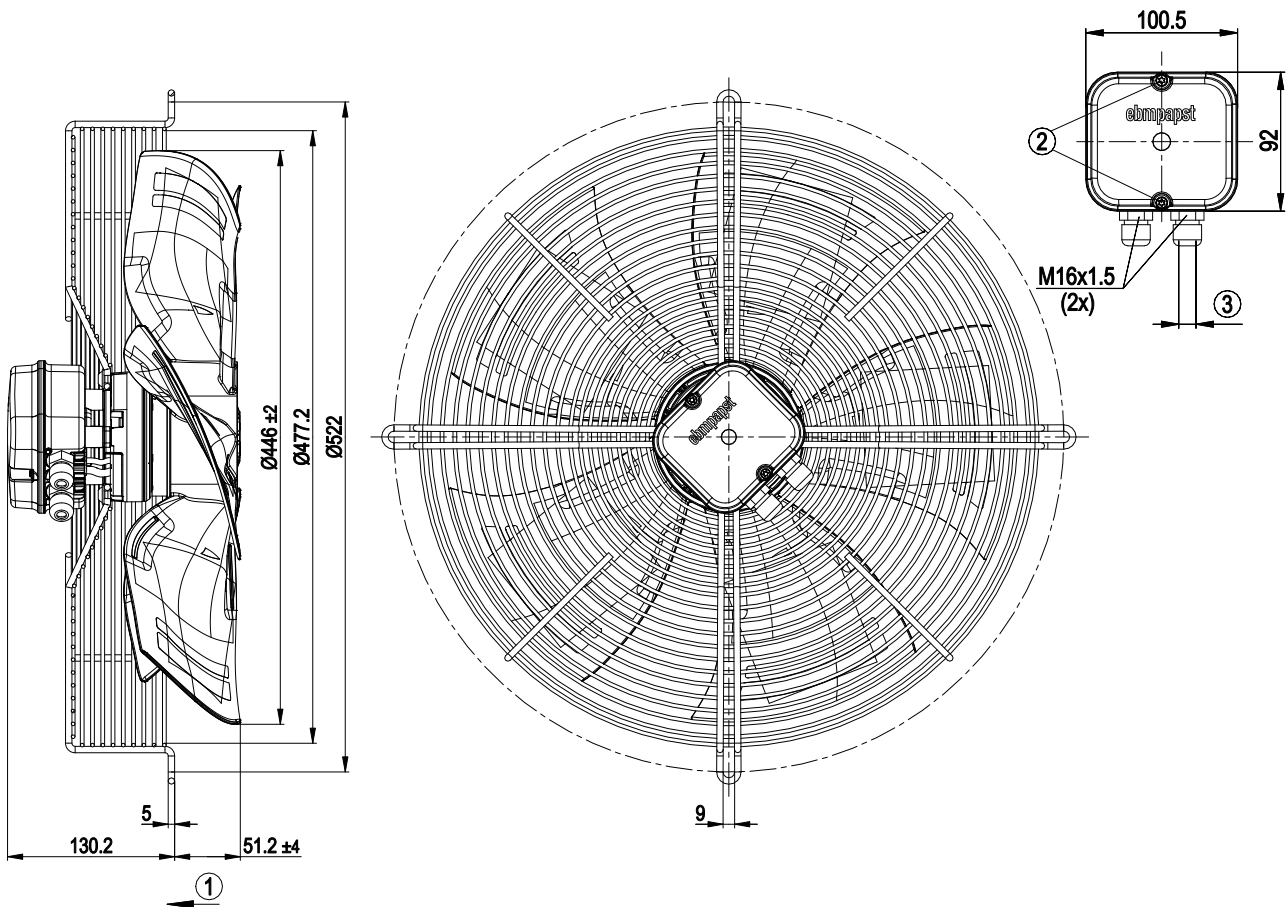
<b>Weight</b>	4.9 kg
<b>Size</b>	450 mm
<b>Motor size</b>	74
<b>Terminal box material</b>	PP plastic
<b>Blade material</b>	Press-fitted sheet steel blank, sprayed with PP plastic
<b>Guard grille material</b>	Steel, coated with black plastic (RAL 9005)
<b>Number of blades</b>	5
<b>Airflow direction</b>	V
<b>Direction of rotation</b>	Counterclockwise, viewed toward rotor
<b>Degree of protection</b>	IP54
<b>Insulation class</b>	"B"
<b>Moisture (F) / Environmental (H) protection class</b>	H1
<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>	Any
<b>Condensation drainage holes</b>	None, open rotor
<b>Cooling hole/opening</b>	On rotor side
<b>Mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Technical features</b>	<ul style="list-style-type: none"> <li>- Output 10 VDC, 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 detection</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage detection</li> </ul>
<b>EMC immunity to interference</b>	According to EN 61000-6-2 (industrial environment)
<b>EMC interference emission</b>	According to EN 61000-6-4 (industrial 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>	Electronic motor protection
<b>With cable</b>	Variable
<b>Protection class</b>	I (with customer connection of protective earth)
<b>Conformity with standards</b>	EN 60034-1; EN 60204-1; EN 60335-1; CE
<b>Approval</b>	EAC; CCC



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## Product drawing



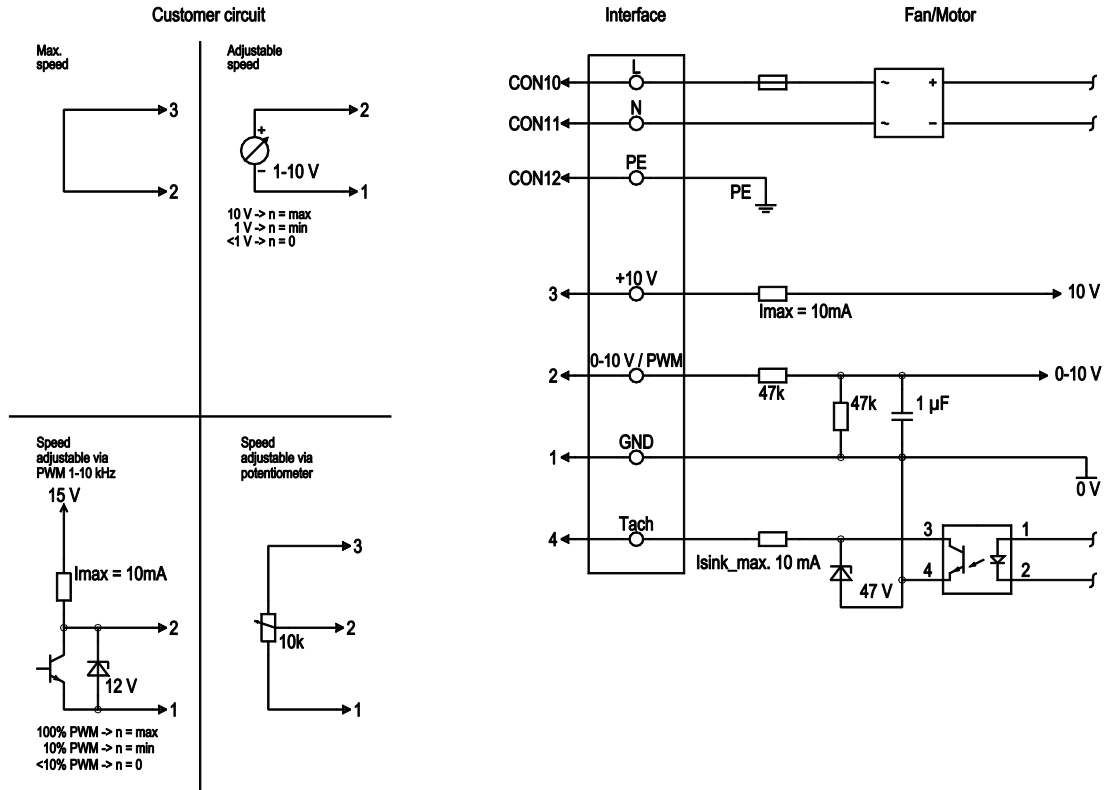
1	Direction of air flow "V"
2	Tightening torque 1.5 ± 0.2 Nm
3	Cable diameter max. 7.5 mm, tightening torque 1.3 ± 0.2 Nm



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## Connection diagram



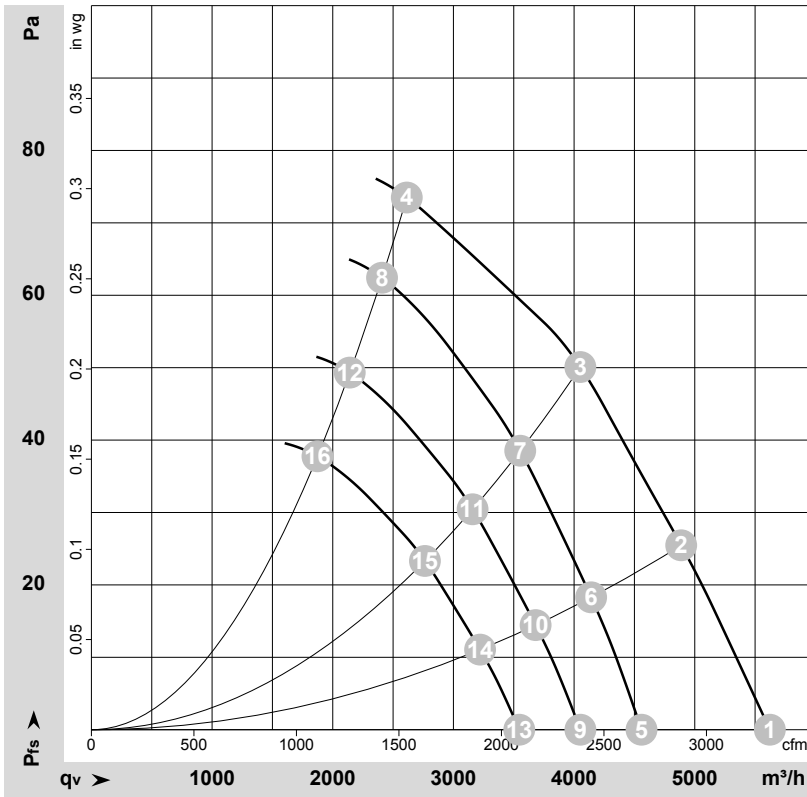
No.	Conn.	Designation	Color	Function/assignment
	CON10	L	black	Supply connection, power supply, phase, see nameplate for voltage range
	CON11	N	blue	Supply connection, power supply, neutral conductor, see nameplate for voltage range
	CON12	PE	green/yellow	Ground connection
	2	0- 10V PWM	yellow	0-10 V / PWM control input, R <sub>i</sub> =100 kΩ, SELV
	4	Tach	white	Tach output, open collector, 1 pulse per revolution, I <sub>sink_max</sub> = 10 mA, SELV
	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
	1	GND	blue	Reference ground for control interface, SELV



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## Curves: Air performance 50 Hz



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

Measurement: LU-138244-1

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>	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)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	230	50	1110	163	1.34	59	66	5620	0	3310	0.00
2	230	50	1060	163	1.34	57	64	4890	25	2875	0.10
3	230	50	1025	163	1.34	54	61	4050	50	2385	0.20
4	230	50	980	163	1.34	61	68	2615	74	1540	0.30
5	230	50	900	89	0.72	54	60	4560	0	2685	0.00
6	230	50	900	102	0.83	53	60	4140	18	2435	0.07
7	230	50	900	113	0.93	51	58	3555	39	2090	0.16
8	230	50	900	131	1.09	59	66	2410	63	1415	0.25
9	230	50	800	63	0.51	51	57	4050	0	2385	0.00
10	230	50	800	72	0.58	50	57	3680	14	2165	0.06
11	230	50	800	80	0.65	48	55	3160	31	1860	0.12
12	230	50	800	92	0.76	56	63	2140	49	1260	0.20
13	230	50	700	42	0.34	48	54	3545	0	2085	0.00
14	230	50	700	48	0.39	47	53	3220	11	1895	0.04
15	230	50	700	53	0.44	45	51	2765	23	1625	0.09
16	230	50	700	62	0.51	52	60	1875	38	1100	0.15

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  
q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

