S3G500-BF48-53

EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for full nozzle

S3G500-BF48-53 ebmpapst Datasheet
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Nominal data

Type	**S3G500-BF48-53**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	870
Power consumption	W	180
Current draw	A	1.2
Max. back pressure	Pa	70
Max. back pressure	inH2O	0.28
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	65

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

Data according to ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	39	29
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		50	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.18
09 Air flow q_v	m^3/h	3880
09 Pressure increase p_{fs}	Pa	58
10 Speed (rpm) n	min^{-1}	880
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-118060

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Technical description

Weight	5.5 kg
Fan size	500 mm
Rotor surface	Painted black
Terminal box material	PC/ABS plastic
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	"V"
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F3-1
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 bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - Thermal overload protection for electronics/motor
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	Via terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE
Approval	EAC

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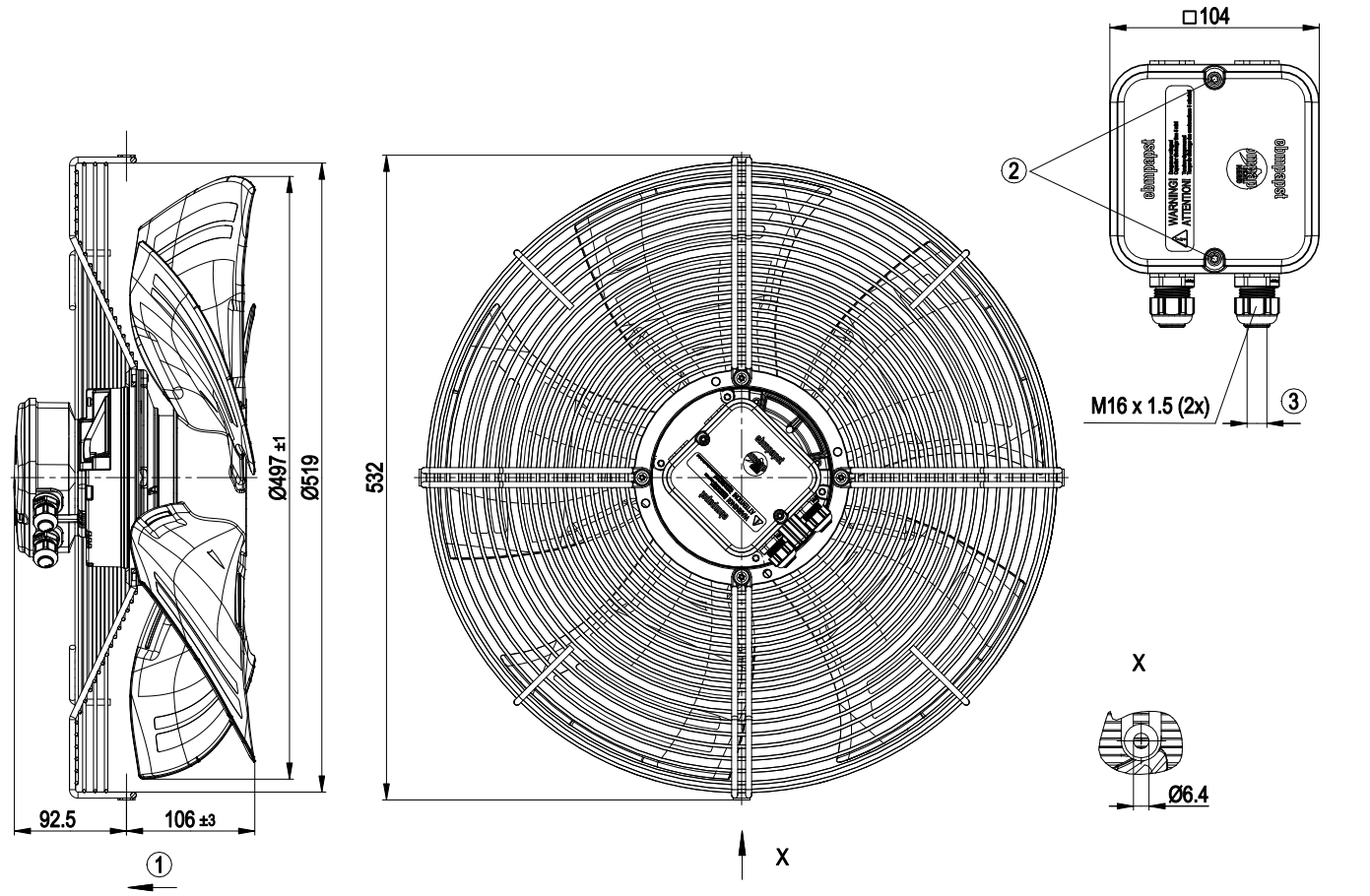
Product drawing



1	Direction of air flow "V"
2	Tightening torque 1.5±0.2 Nm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2.5±0.4 Nm

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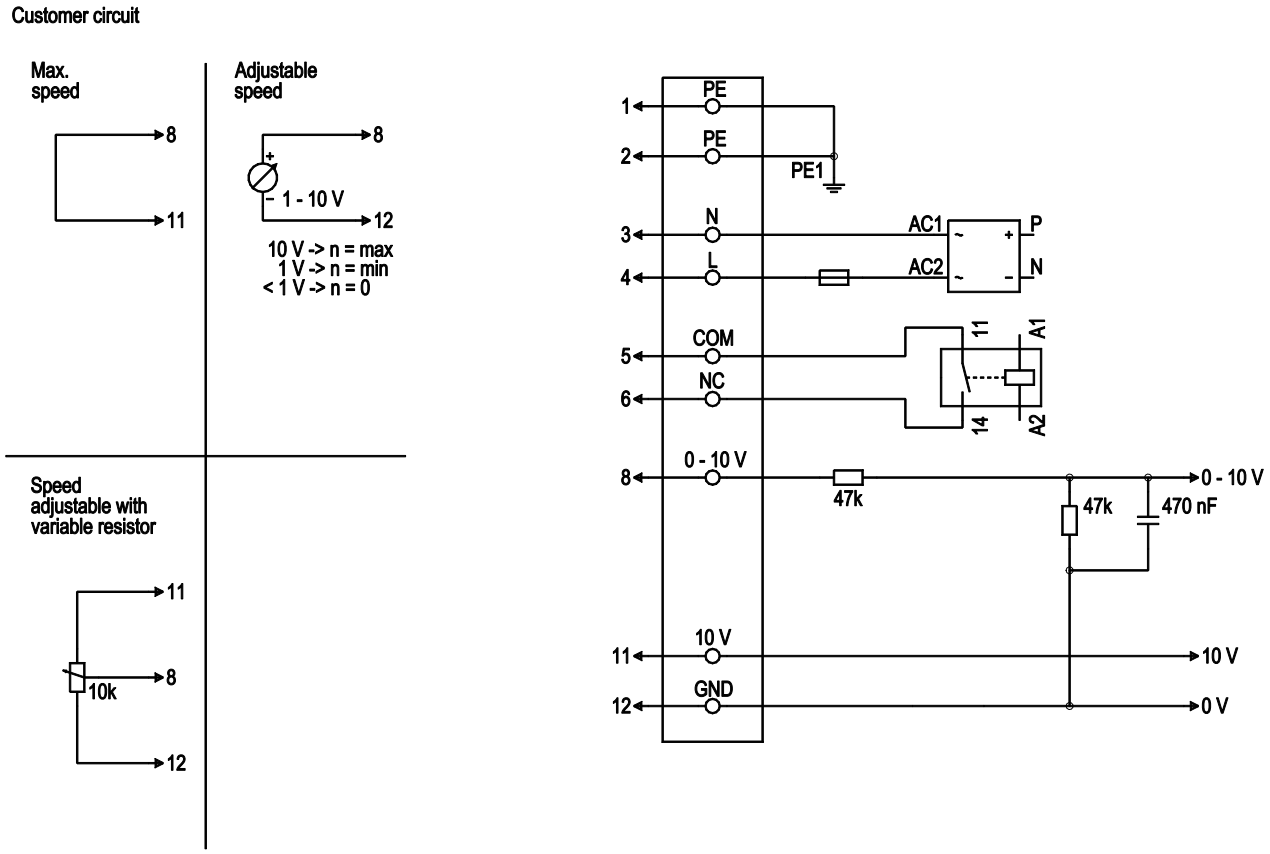
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1,2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	4	L	black	Power supply, phase, 50/60 Hz
1	5	COM	white 1	Floating status contact, break for failure (2 A, max. 250 VAC, min. 10 mA, AC1)
1	6	NC	white 2	Floating status contact, break for failure
2	8	0 - 10 V	yellow	Control input, set value 0-10 VDC, impedance 100 kOhm, SELV
2	11	10 VDC	red	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometers), SELV
2	12	GND	blue	Reference ground for control interface, SELV

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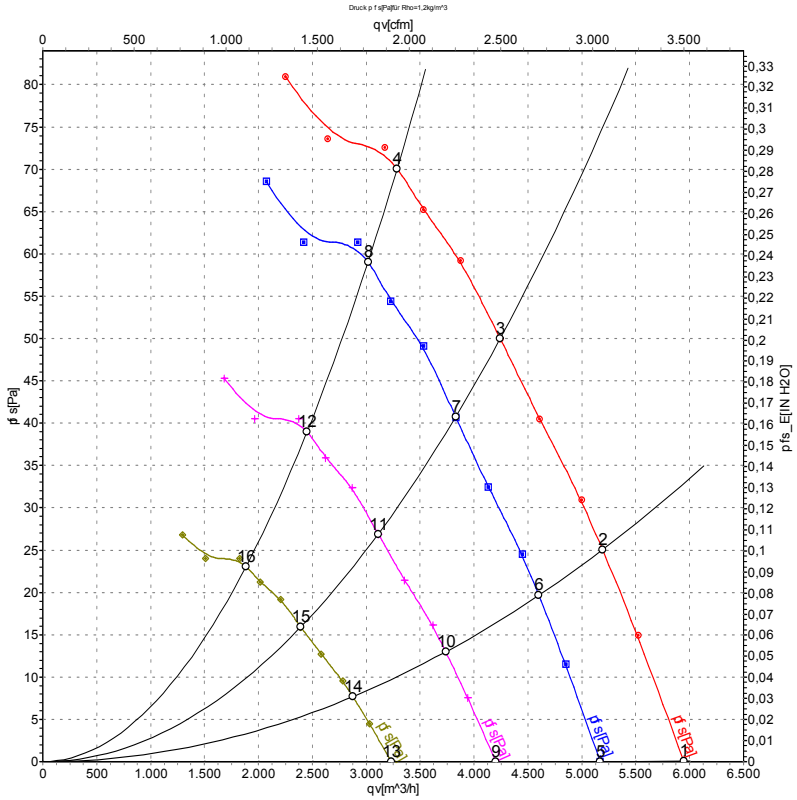
Curves: Air performance 50 Hz



Measurement: LU-118060-1

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

	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	inH2O
1	230	50	920	152	0.97	61	68	67	5945	0	3500	0.00
2	230	50	905	166	1.05	57	64	63	5190	25	3055	0.10
3	230	50	885	175	1.10	53	60	60	4240	50	2495	0.20
4	230	50	870	180	1.20	54	61	61	3285	70	1935	0.28
5	230	50	800	100	0.64	58	65	64	5170	0	3040	0.00
6	230	50	800	115	0.73	54	61	60	4600	20	2705	0.08
7	230	50	800	129	0.82	51	58	57	3830	41	2255	0.16
8	230	50	800	143	0.90	52	60	59	3015	59	1775	0.24
9	230	50	650	54	0.34	53	60	59	4200	0	2470	0.00
10	230	50	650	62	0.39	50	57	56	3740	13	2200	0.05
11	230	50	650	69	0.44	47	53	53	3110	27	1830	0.11
12	230	50	650	77	0.48	48	55	55	2450	39	1445	0.16
13	230	50	500	24	0.16	48	54	54	3230	0	1900	0.00
14	230	50	500	28	0.18	44	51	50	2875	8	1690	0.03
15	230	50	500	31	0.20	41	48	47	2395	16	1410	0.06
16	230	50	500	35	0.22	42	49	49	1885	23	1110	0.09

U = Power supply · 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