W3G500-GD59-01

EC axial fan - HyBlade

sickle-shaped blades (S series)

with square full nozzle

ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

Nominal data

Type	**W3G500-GD59-01**
Motor	**M3G112-GA**

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}	1770
Power consumption	W	1300
Current draw	A	2.1
Max. back pressure	Pa	240
Max. back pressure	inH2O	0.96
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	42.2	34.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		47.8	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.32
09 Air flow q_v	m^3/h	7210
09 Pressure increase p_{fs}	Pa	258
10 Speed (rpm) n	min^{-1}	1760
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

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Technical description

Weight	15.9 kg
Fan size	500 mm
Rotor surface	Painted black
Terminal box material	PP plastic
Electronics housing material	Die-cast aluminum
Blade material	Press-fitted sheet steel blank, sprayed with PP plastic
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
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	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Ambient temperature note	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.
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; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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 61800-5-1; CE

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Approval	C22.2 No.77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730
Comment	Conformity with EN 60335-1 in preparation

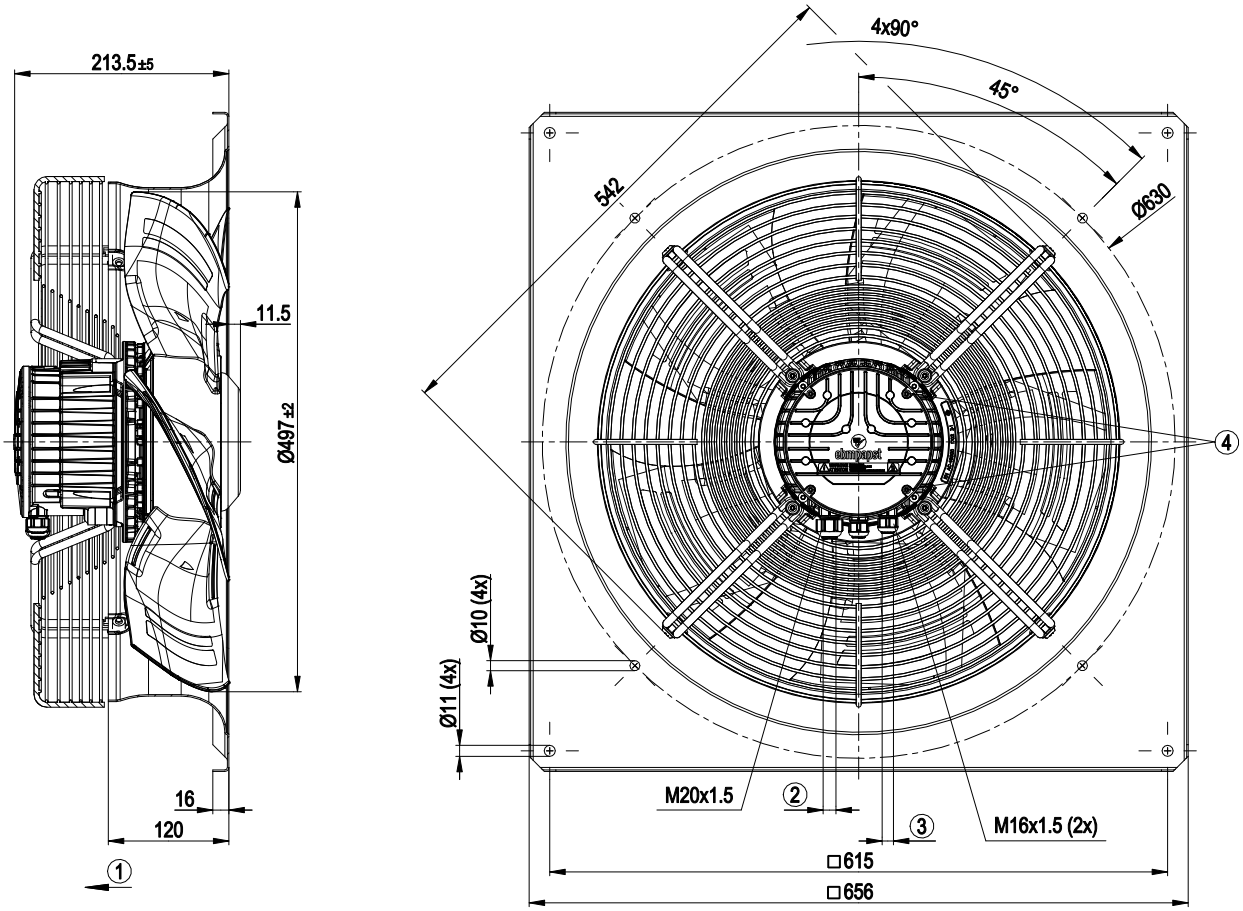
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Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 8 mm, max. 12 mm, tightening torque 2.5 ± 0.4 Nm
3	Cable diameter min. 6 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm Cable diameter min. 4 mm, max. 7 mm, tightening torque 2.5 ± 0.4 Nm (included seal must be used)
4	Tightening torque 1.5 ± 0.2 Nm

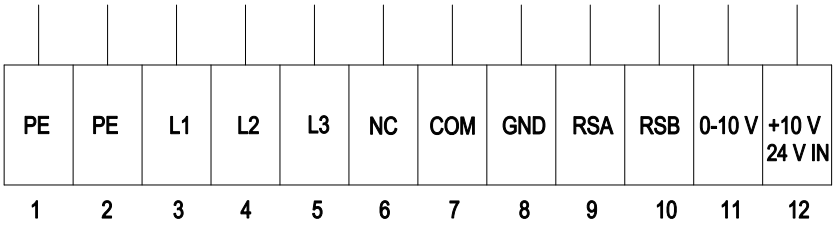
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Connection diagram



No.	Conn.	Designation	Function/assignment
	1	PE	Protective earth
	2	PE	Protective earth
	3	L1	Power supply
	4	L2	Power supply
	5	L3	Power supply
	6	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	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	Reference ground for control interface, SELV
	9	RSA	RS485 interface for MODBUS, RSA; SELV
	10	RSB	RS485 interface for MODBUS, RSB; SELV
	11	0-10 V	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
	12	+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

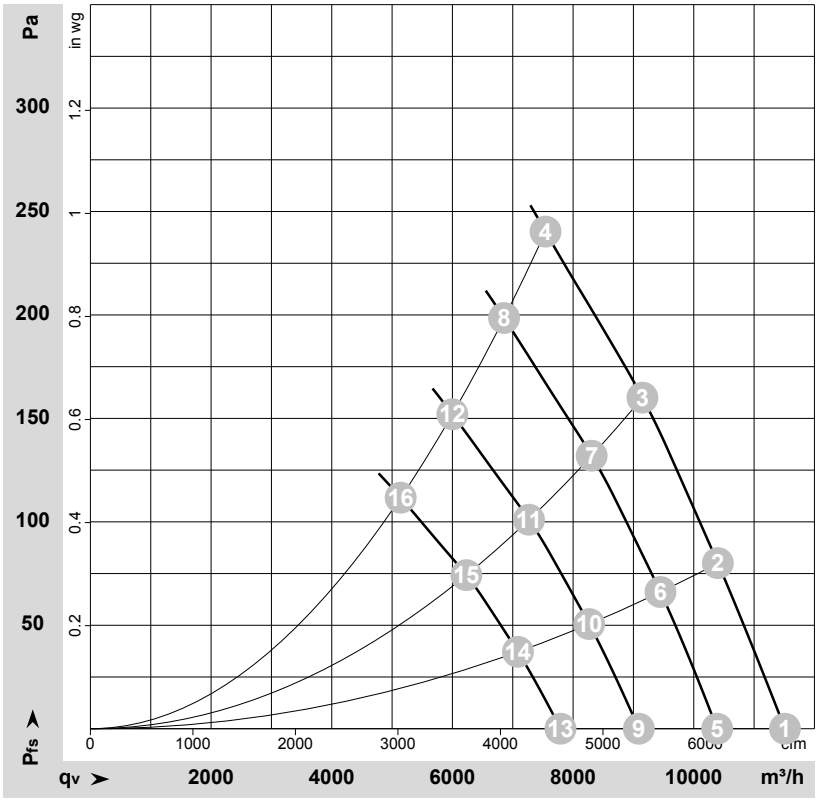
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-157382-1

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}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	400	50	1770	987	1.58	73	80	81	11510	0	6775	0.00
2	400	50	1770	1094	1.75	71	78	78	10400	80	6120	0.32
3	400	50	1770	1213	1.93	69	76	77	9150	160	5385	0.64
4	400	50	1770	1300	2.10	71	78	78	7545	240	4440	0.96
5	400	50	1600	726	1.16	71	78	78	10390	0	6115	0.00
6	400	50	1600	821	1.31	69	76	76	9450	66	5560	0.26
7	400	50	1600	908	1.45	67	74	74	8310	132	4890	0.53
8	400	50	1600	980	1.56	68	76	76	6855	199	4035	0.80
9	400	50	1400	486	0.78	67	74	75	9090	0	5350	0.00
10	400	50	1400	550	0.88	65	72	72	8265	51	4865	0.20
11	400	50	1400	608	0.97	63	71	71	7270	101	4280	0.41
12	400	50	1400	657	1.05	65	73	72	6000	152	3530	0.61
13	400	50	1200	306	0.49	63	71	71	7790	0	4585	0.00
14	400	50	1200	346	0.55	61	69	69	7085	37	4170	0.15
15	400	50	1200	383	0.61	59	67	67	6230	75	3665	0.30
16	400	50	1200	413	0.66	61	69	68	5140	112	3025	0.45

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 · qv = Air flow · p_{fs} = Pressure increase

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