W3G500-KD59-09

EC axial fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes

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Nominal data

Type	**W3G500-KD59-09**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	1890
Power consumption	W	1500
Current draw	A	2.4
Max. back pressure	Pa	340
Max. back pressure	in. wg	1.36
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	45

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	48.3	34.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		53.5	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.52
09 Air flow q_v	m^3/h	7905
09 Pressure increase p_{fs}	Pa	313
10 Speed (rpm) n	min^{-1}	1885
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-190516

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Technical description

Weight	0.001 kg
Size	500 mm
Motor size	112
Rotor surface	Painted black
Terminal box material	PP plastic
Electronics housing material	Die-cast aluminum, painted black
Blade material	Press-fitted sheet steel blank, sprayed with PP plastic
Support plate material	Sheet steel, galvanized and painted black
Fan housing material	PP plastic
Material guide vanes	PP plastic
Number of blades	5
Blade pitch	0°
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 at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a 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	See fitting instructions
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - 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 the mains - 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	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)

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Conformity with standards	EN 61800-5-1; CE
Approval	EAC

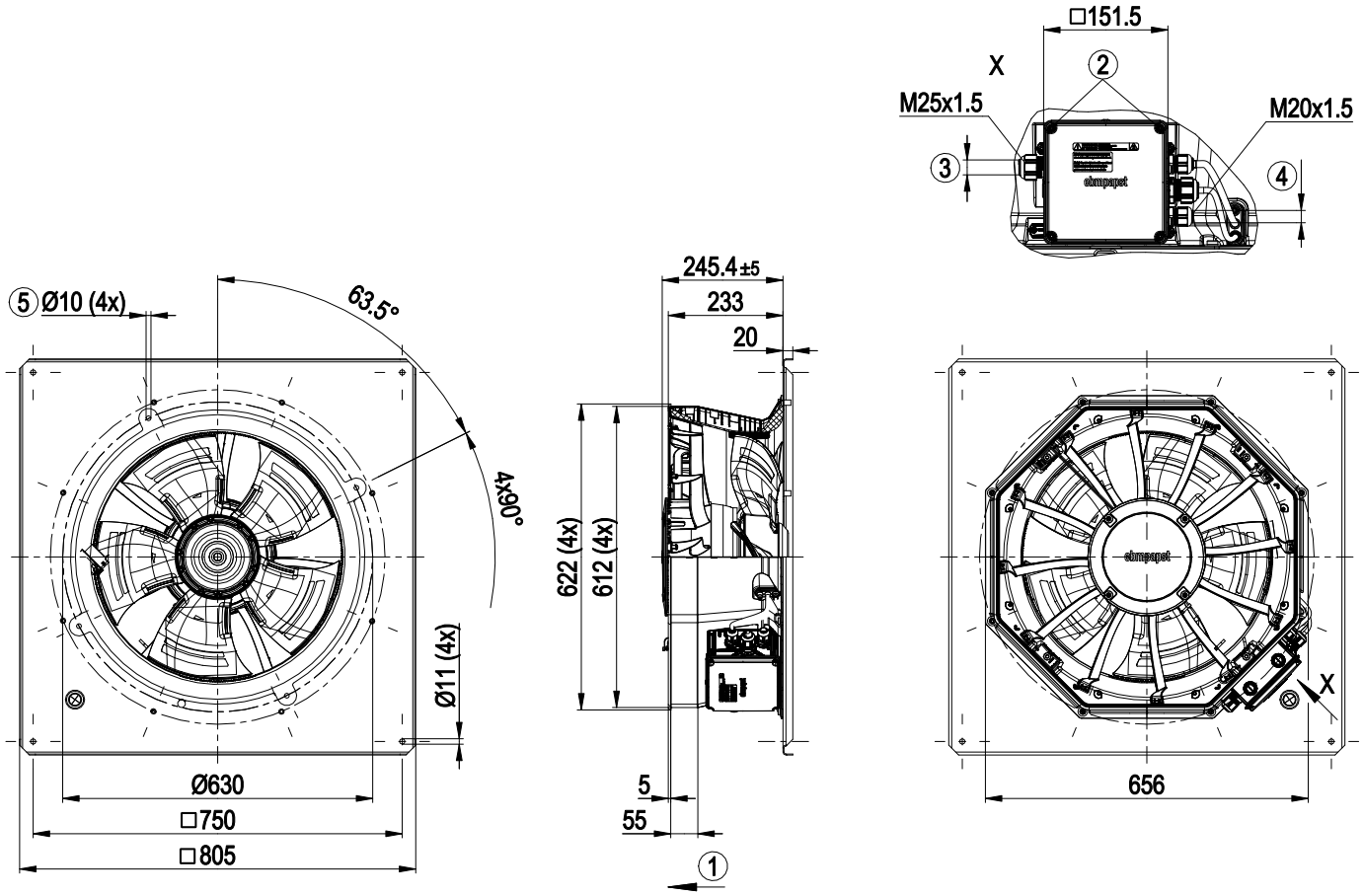
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Product drawing



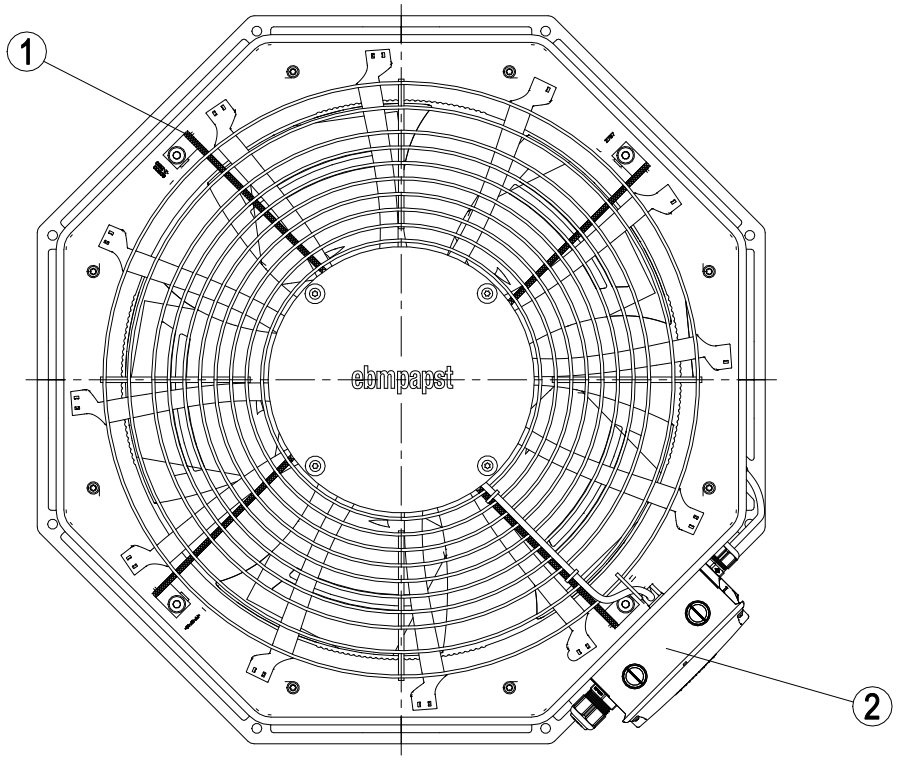
1	Airflow direction "V"
2	Tightening torque 1.8±0.3 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 2.5±0.4 Nm
4	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm
5	Mounting holes for FlowGrid

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1	Installation position: Shaft horizontal (install support struts only in X-position as illustrated) or rotor on bottom
2	For horizontal shaft installation position, the terminal box must be at the bottom right.

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Connection diagram



No.	Conn.	Designation	Function/assignment
KL1		L1	Supply connection, power supply 3-phase 380-480 VAC; 50/60 Hz
KL1		L2	Supply connection, power supply 3-phase 380-480 VAC; 50/60 Hz
KL1		L3	Supply connection, power supply 3-phase 380-480 VAC; 50/60 Hz
KL3		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
KL3		PE	Protective earth
KL3		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
KL2		GND	Reference ground for control interface; SELV
KL2		RSA	RS485 interface for MODBUS, RSA; SELV
KL2		RSB	RS485 interface for MODBUS, RSB; SELV
KL2		0-10 V	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
KL2		+ 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

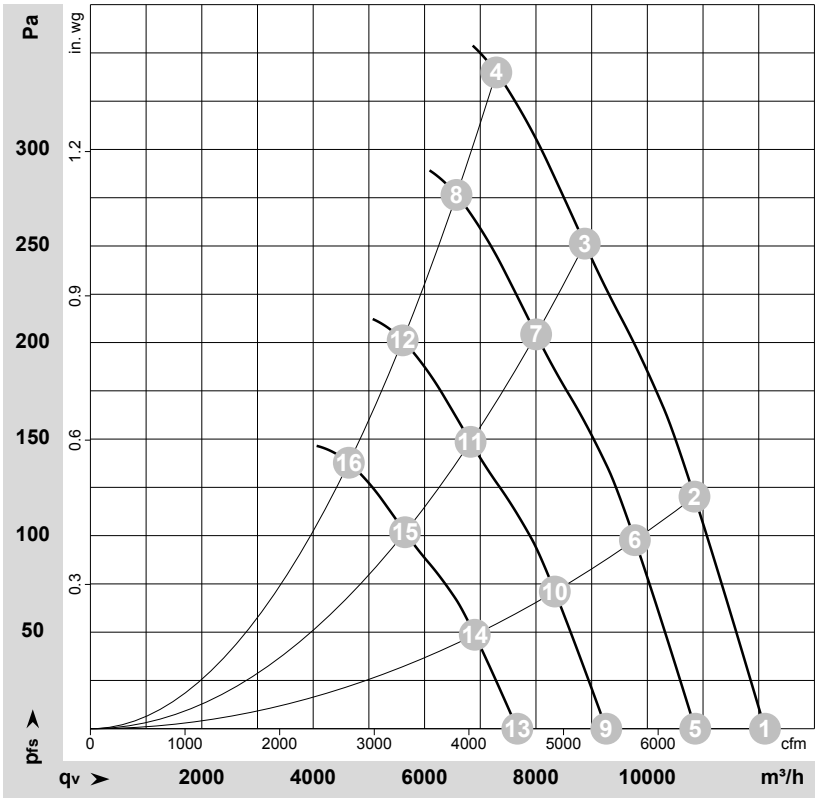
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-190516-1

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

	Wired	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	in. wg
1	3~	400	50	1890	1095	1.68	81	89	90	12110	0	7130	0.00
2	3~	400	50	1890	1267	1.94	80	88	89	10845	120	6385	0.48
3	3~	400	50	1890	1459	2.23	78	87	88	8875	250	5225	1.00
4	3~	400	50	1890	1500	2.40	79	87	88	7290	340	4290	1.36
5	3~	400	50	1700	789	1.21	78	86	87	10860	0	6390	0.00
6	3~	400	50	1700	929	1.42	77	86	86	9775	101	5755	0.41
7	3~	400	50	1700	1069	1.63	76	84	85	8005	204	4710	0.82
8	3~	400	50	1700	1133	1.73	76	85	86	6575	277	3870	1.11
9	3~	400	50	1450	490	0.75	74	82	83	9265	0	5450	0.00
10	3~	400	50	1450	577	0.88	73	82	82	8340	74	4910	0.30
11	3~	400	50	1450	664	1.01	72	80	81	6825	149	4020	0.60
12	3~	400	50	1450	703	1.07	72	81	82	5605	202	3300	0.81
13	3~	400	50	1200	278	0.43	69	77	78	7665	0	4510	0.00
14	3~	400	50	1200	327	0.50	68	77	77	6900	50	4060	0.20
15	3~	400	50	1200	376	0.57	67	75	76	5650	102	3325	0.41
16	3~	400	50	1200	398	0.61	68	76	77	4640	138	2730	0.55

Wired = Wiring · U = Voltage · 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

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