

EC axial fan - HyBlade

sickle-shaped blades (S series)

Duct fan

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Nominal data

Type	W3G500-IA74-27	
Motor	M3G112-EA	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min ⁻¹	1440
Power consumption	W	750
Current draw	A	3.3
Max. back pressure	Pa	200
Max. back pressure	in. wg	0.8
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 η_{es}	%	39.3	32.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		46.6	40
05 Variable speed drive		Yes	

Data obtained at optimum efficiency level.

The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

09 Power consumption P_{ed}	kW	0.7
09 Air flow q_v	m ³ /h	5660
09 Pressure increase p_{fs}	Pa	162
10 Speed (rpm) n	min ⁻¹	1440
11 Specific ratio*		1.00

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

LU-193545



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Technical description

Weight	14.4 kg
Size	500 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PP plastic
Support ring material	Steel, coated with black plastic (RAL 9005)
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
Number of blades	5
Blade pitch	0°
Airflow direction	A
Direction of rotation	Clockwise, 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	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 - Operation and alarm display - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - 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
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)
Electrical hookup	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
Approval	UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

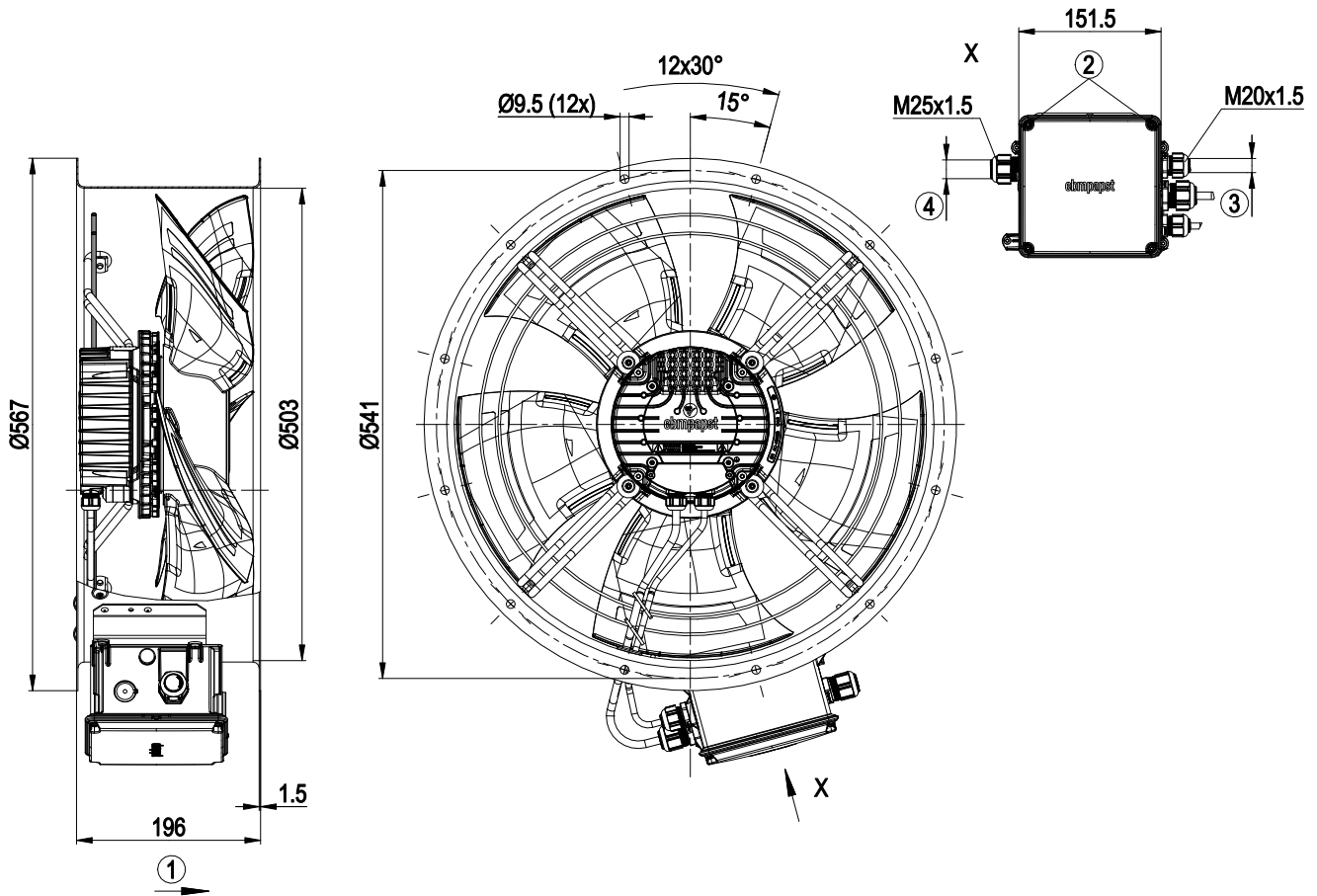


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Product drawing



1	Direction of air flow "A"
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



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Connection diagram

KL 1

PE	L3	L2/L	L1/N
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KL 2

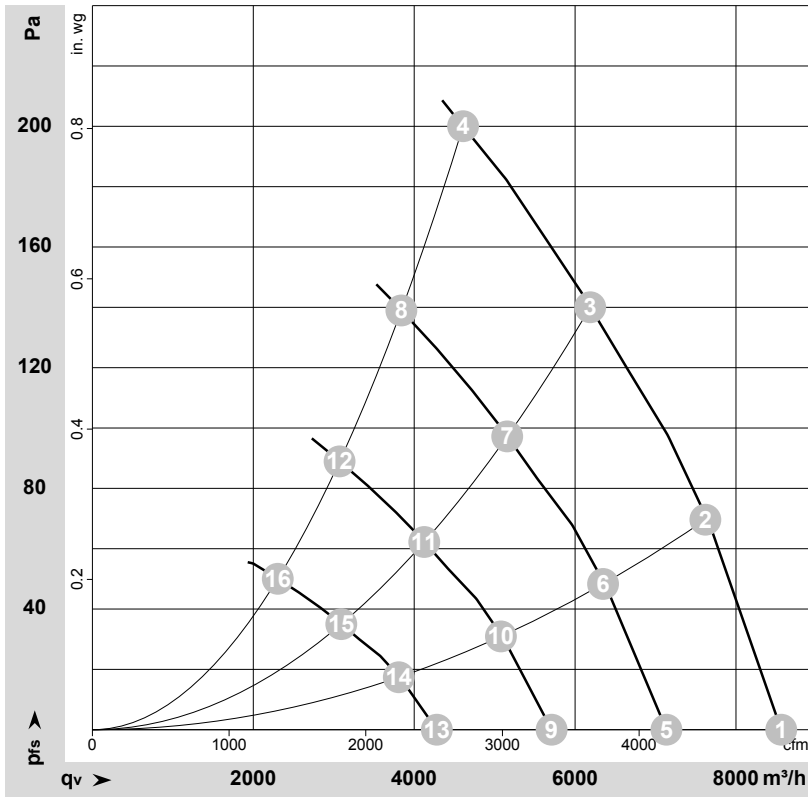
COM	NC	-	-	GND	RSA	RSB	0-10 V	+10 V
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— shaded gray => terminals not used

No.	Conn.	Designation	Color	Function/assignment
1		PE	green/yellow	Protective earth
1		L3	-	not used
1		L2/L	blue	Power supply, phase
1		L1/N	black 1	Power supply, neutral conductor
2		COM	white 2	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side
2		NC	white 1	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side
2		-	-	not used
2		-	-	not used
2		GND	blue	Reference ground for control interface, SELV
2		RSA	white	RS485 interface for MODBUS, RSA; SELV
2		RSB	brown	RS485 interface for MODBUS, RSB; SELV
2		0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2		+10 V	red	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)



Curves: Air performance 50 Hz



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

Measurement: LU-193545-1

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	1~	230	50	1440	542	2.39	80	88	89	8560	0	5040	0.00
2	1~	230	50	1440	616	2.70	78	86	87	7620	70	4485	0.28
3	1~	230	50	1440	690	3.02	77	84	86	6190	140	3640	0.56
4	1~	230	50	1440	750	3.30	76	83	85	4610	200	2710	0.80
5	1~	230	50	1200	314	1.38	75	83	84	7135	0	4200	0.00
6	1~	230	50	1200	356	1.56	74	81	83	6350	49	3735	0.20
7	1~	230	50	1200	399	1.75	72	79	81	5155	97	3035	0.39
8	1~	230	50	1200	433	1.89	72	79	80	3840	139	2260	0.56
9	1~	230	50	960	161	0.71	70	77	79	5710	0	3360	0.00
10	1~	230	50	960	182	0.80	68	76	77	5080	32	2990	0.13
11	1~	230	50	960	204	0.89	67	74	76	4125	62	2430	0.25
12	1~	230	50	960	222	0.97	66	73	75	3070	89	1810	0.36
13	1~	230	50	720	68	0.30	62	70	72	4280	0	2520	0.00
14	1~	230	50	720	77	0.34	61	69	70	3810	18	2240	0.07
15	1~	230	50	720	86	0.38	59	66	68	3095	35	1820	0.14
16	1~	230	50	720	93	0.41	59	66	67	2305	50	1355	0.20

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

