

EC axial fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guard grille

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General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	W3G800-NH94-03	
Motor	M3G112-IA	
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	780
Power consumption	W	830
Current draw	A	1.29
Max. back pressure	Pa	135
Max. back pressure	in. wg	0.54
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

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}	%	54.8	33	09 Power consumption P_{ed}	kW 0.77
02 Measurement category		A		09 Air flow q_v	m ³ /h 12840
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa 109
04 Efficiency grade N		61.8	40	10 Speed (rpm) n	min ⁻¹ 780
05 Variable speed drive		Yes		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 = $1 + p_g / 100\,000\text{ Pa}$

LU-183296



Technical description

Weight	0.001 kg
Size	800 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PP plastic
Fan housing material	PP plastic
Material guide vanes	PP plastic
Guard grille material	Steel, coated with black plastic (RAL 9005)
Internal diffuser material including cover	PP plastic
Number of blades	5
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Ambient temperature note	If there is a risk of ice formation, the fan is only to be operated with a heating tape in the fan housing. Further information can be obtained from ebm-papst. As fan only suitable for use with industrial evaporators
Max. permitted ambient temp. for motor (transport/storage)	+70 °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 with low-temperature lubricant
Technical features	<ul style="list-style-type: none"> - 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
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

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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	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1; EAC

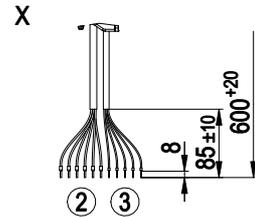
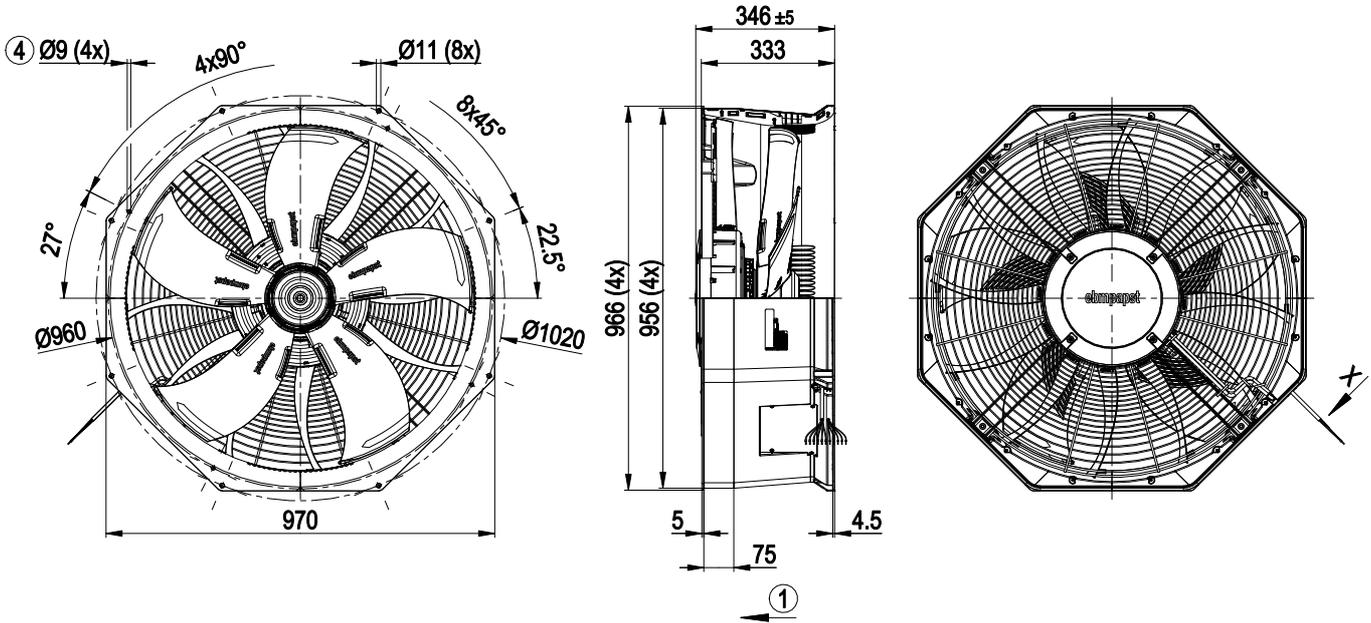


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Product drawing



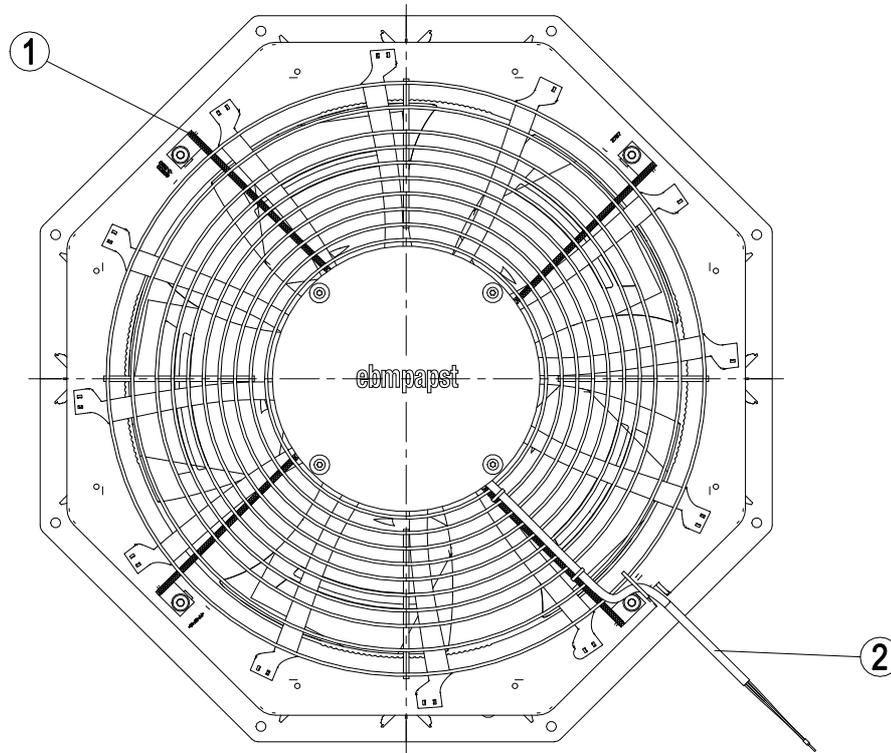
1	Airflow direction "V"
2	Cable PVC AWG18 6x wire-end ferrule
3	Cable PVC AWG22 5x wire-end ferrule
4	Mounting holes for FlowGrid



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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 cable exit must be at the bottom right. |

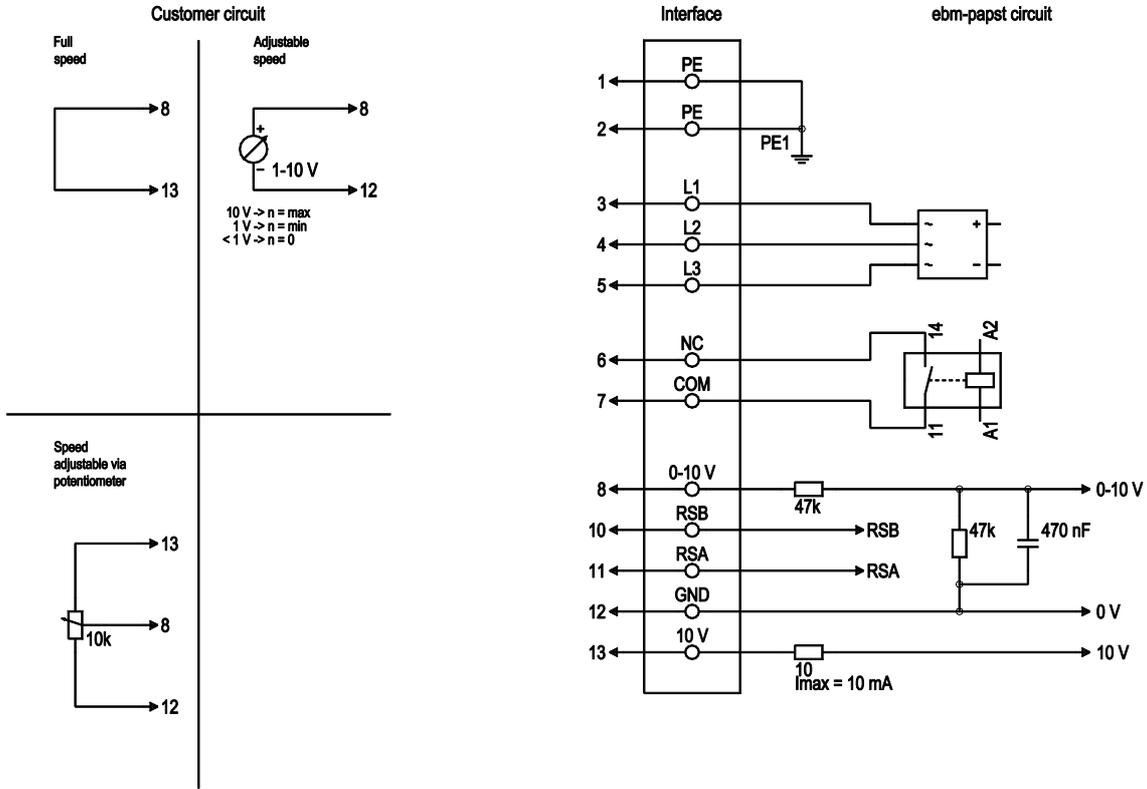


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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	L1	black	Power supply
1	4	L2	black	Power supply
1	5	L3	black	Power supply
1	6	NC	white 1	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
1	7	COM	white 2	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
2	8	0-10V	yellow	Analog input (set value), 0-10 V, $R_i = 100\text{ k}\Omega$, adjustable curve, SELV
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, $+10\text{ V} \pm 3\%$, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot), SELV fixed voltage input 24 VDC for setting parameters via MODBUS without line voltage supply

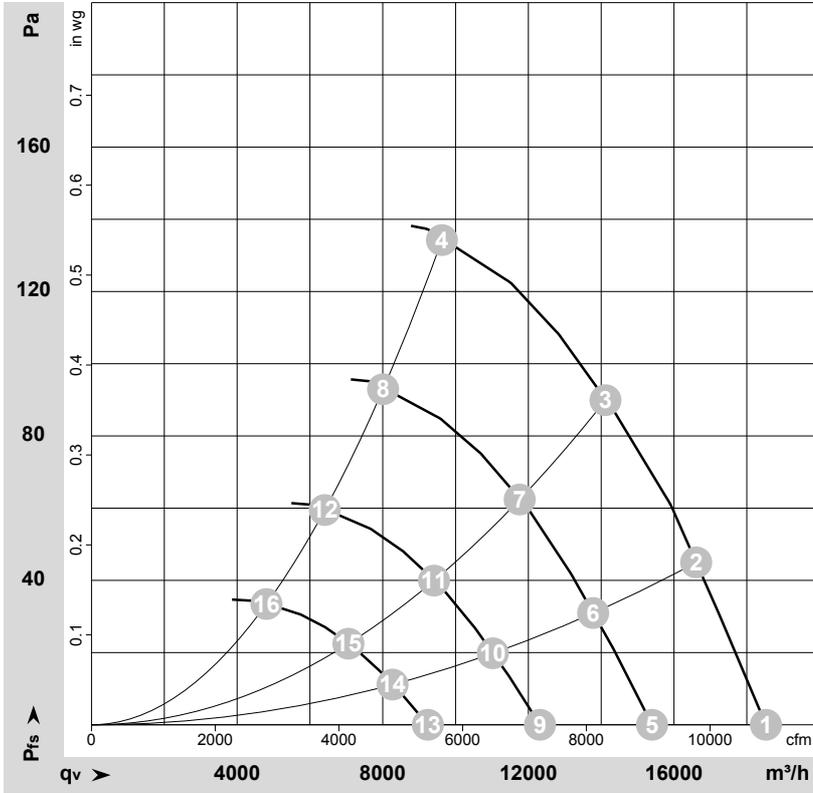


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Curves: Air performance 50 Hz



$\rho = 1.178 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-183296-1

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 _{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	400	50	780	537	0.86	64	71	71	18525	0	10905	0.00
2	400	50	780	653	1.03	63	70	69	16610	45	9775	0.18
3	400	50	780	744	1.16	64	70	70	14120	90	8310	0.36
4	400	50	780	830	1.29	75	83	83	9625	135	5665	0.54
5	400	50	650	308	0.50	59	66	66	15400	0	9065	0.00
6	400	50	650	373	0.59	58	65	65	13780	31	8110	0.12
7	400	50	650	431	0.67	59	66	65	11760	63	6920	0.25
8	400	50	650	480	0.75	71	78	78	8010	93	4715	0.37
9	400	50	520	158	0.25	53	61	60	12320	0	7250	0.00
10	400	50	520	191	0.30	52	59	59	11025	20	6490	0.08
11	400	50	520	220	0.34	53	60	60	9410	40	5540	0.16
12	400	50	520	246	0.38	65	72	73	6405	60	3770	0.24
13	400	50	390	67	0.11	46	53	53	9240	0	5440	0.00
14	400	50	390	81	0.13	45	52	52	8270	11	4865	0.04
15	400	50	390	93	0.15	46	53	53	7055	23	4155	0.09
16	400	50	390	104	0.16	58	65	65	4805	34	2830	0.14

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

