

EC axial fan - HyBlade

sickle-shaped blades (S series)
with square full nozzle with AxiTop diffuser

ebm-papst Mulfingen GmbH & Co. KG

Bachmühle 2 · D-74673 Mulfingen

Phone +49 7938 81-0

Fax +49 7938 81-110

info1@de.fansco.com

www.fansco.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

Nominal data

Type	W3G910-HG02-51	
Motor	M3G112-IA	
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	640
Power consumption	W	700
Current draw	A	1.1
Max. back pressure	Pa	85
Max. back pressure	in. wg	0.34
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 Commission Regulation (EU) 327/2011 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	50.1	32.5	09 Power consumption P_{ed}	kW	0.66
02 Measurement category		A		09 Air flow q_v	m ³ /h	14995
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	73
04 Efficiency grade N		57.6	40	10 Speed (rpm) n	min ⁻¹	640
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 = $1 + p_{fs} / 100\,000\text{ Pa}$

LU-171112



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Technical description

Weight	38 kg
Size	910 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 ring material	Steel, coated with black plastic (RAL 9005)
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
Guard grille material	Steel, coated with black plastic (RAL 9005)
Outer diffuser material	PP plastic
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
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 - 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
Electrical hookup	Terminal box



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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	EAC
Comment	Conformity with standard EN 60335-1 on request

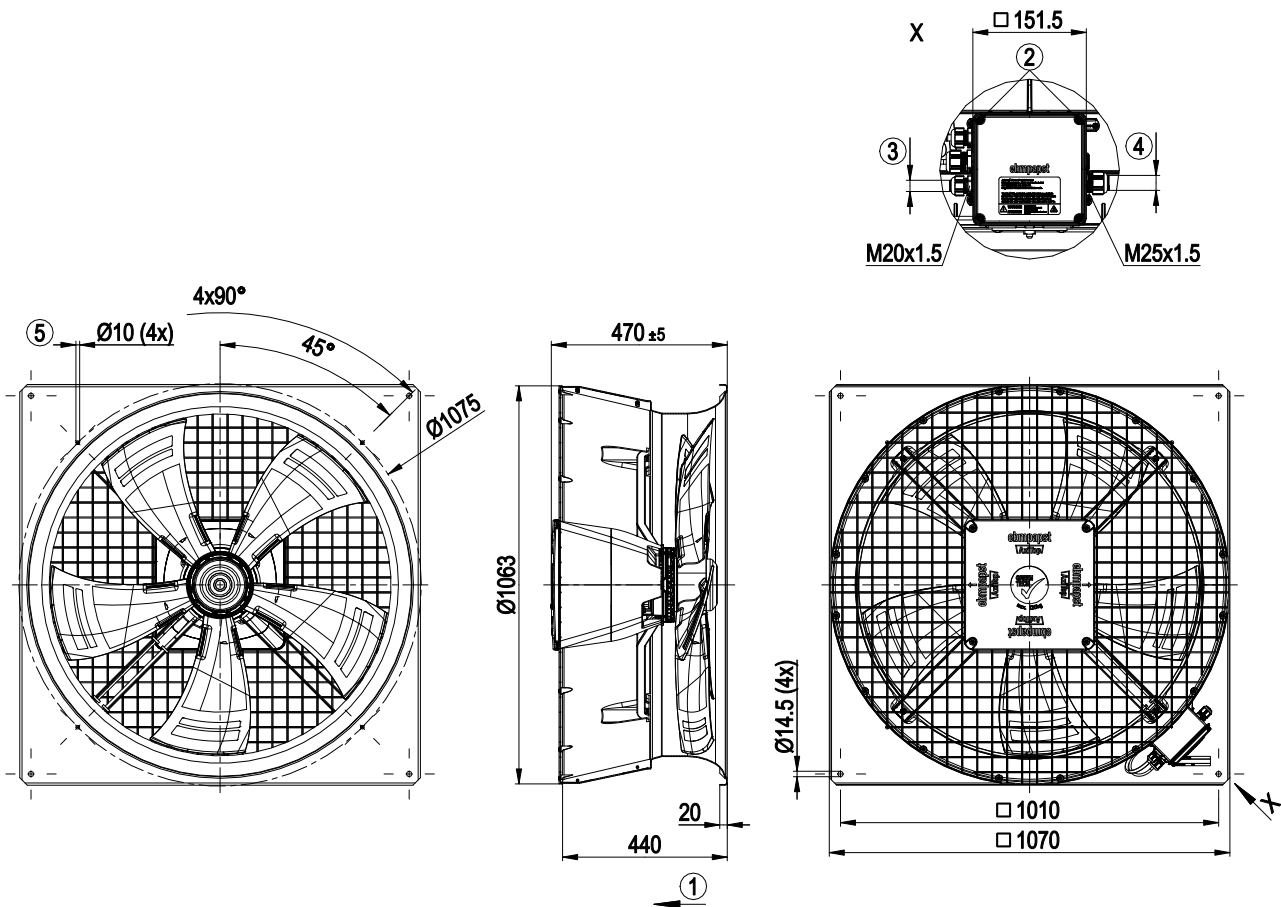


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Product drawing



1	Airflow direction "V"
2	Tightening torque 1.8±0.3 Nm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm
4	Cable diameter min. 9 mm, max. 16 mm, tightening torque 2.5±0.4 Nm
5	Attachment holes for FlowGrid (91000-2-2957 not included in scope of delivery)



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Connection diagram

0-10V	+10 V	RSB	RSA	GND			NC	COM
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KL 2

L1	L2	L3	PE
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KL 1

No.	Conn.	Designation	Color	Function/assignment
KL1		L1	black 1	Power supply, phase, see nameplate for voltage range
KL1		L2	black 2	Power supply, phase, see nameplate for voltage range
KL1		L3	black	Power supply, phase, see nameplate for voltage range
KL1		PE	green/yellow	Protective earth
KL2		0-10 V	yellow	Control input / current sensor value input 0-10 VDC, impedance 100 kΩ; SELV
KL2		+10 V	red	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer); SELV
KL2		RSB	brown	RS-485 interface for MODBUS, RSB; SELV
KL2		RSA	white	RS-485 interface for MODBUS, RSA; SELV
KL2		GND	blue	Reference ground for control interface, SELV
KL2				not used
KL2				not used
KL2		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
KL2		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

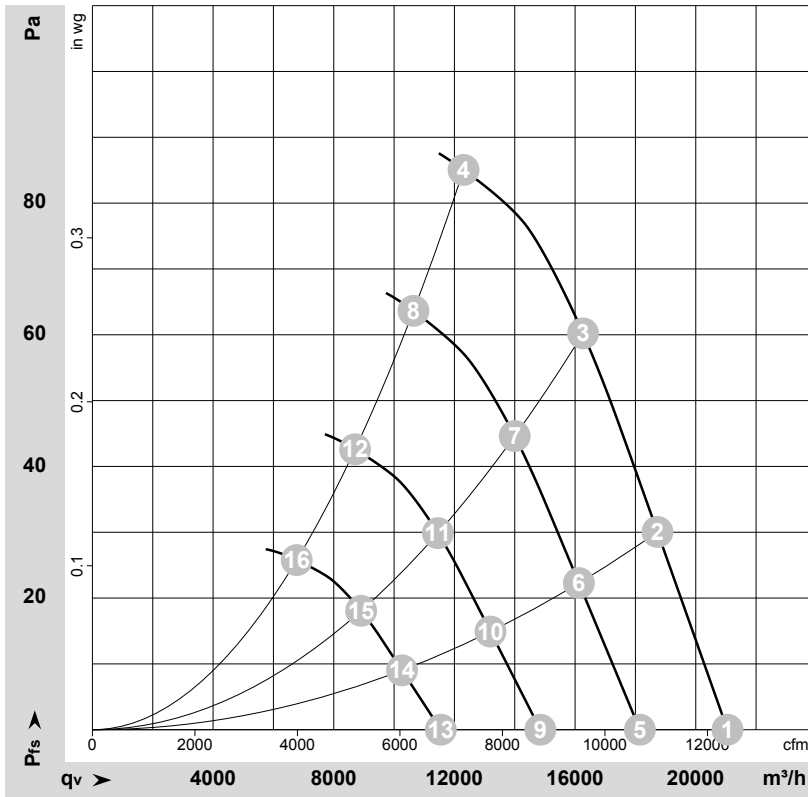


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Curves: Air performance 50 Hz



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

Measurement: LU-171112-1

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	in. wg
1	400	50	640	436	0.71	62	69	69	21050	0	12390	0.00
2	400	50	640	538	0.86	60	67	67	18730	30	11025	0.12
3	400	50	640	629	0.99	59	66	66	16265	60	9570	0.24
4	400	50	640	700	1.10	66	74	74	12305	85	7240	0.34
5	400	50	550	279	0.45	59	66	65	18150	0	10680	0.00
6	400	50	550	343	0.55	56	64	63	16125	22	9490	0.09
7	400	50	550	401	0.63	55	63	63	14000	45	8240	0.18
8	400	50	550	448	0.70	62	70	71	10640	64	6265	0.26
9	400	50	450	153	0.25	53	61	60	14850	0	8740	0.00
10	400	50	450	188	0.30	51	58	58	13195	15	7765	0.06
11	400	50	450	220	0.35	50	57	58	11455	30	6740	0.12
12	400	50	450	245	0.38	57	65	65	8705	43	5125	0.17
13	400	50	350	72	0.12	47	54	54	11550	0	6795	0.00
14	400	50	350	88	0.14	45	52	52	10260	9	6040	0.04
15	400	50	350	103	0.16	43	51	51	8910	18	5245	0.07
16	400	50	350	115	0.18	51	59	59	6770	26	3985	0.10

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

