

W3G990-GZ02-91

II 2G Ex db eb ib IIB T3 Gb
IBExU14ATEX1123 X /05

EC axial panel fan - HyBlade

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



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General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	W3G990-GZ02-91	
Motor	M3G150-NA	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 440
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min ⁻¹	960
Power consumption	W	2450
Current draw	A	3.7
Max. back pressure	Pa	180
Max. back pressure	in. wg	0.72
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · oe = Customer equipment
Subject to change

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), a fan design with special low-temperature bearings must be used.

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Technical description

Weight	65.46 kg
Size	990 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Blade material	Sheet aluminum insert, 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
Blade pitch	0°
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP44
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 / -55 °C
Installation position	Shaft horizontal with cable exit ±45° or rotor at bottom; rotor at top not permissible
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Operation and alarm display - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Power Factor Correction (PFC)	Passive
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-4 (industrial environment)

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Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 14986; EN 60079-0; EN 60079-1; EN 60079-7; EN 60079-11; EN 61800-5-1; CE
Comment on CE	Ecodesign Directive 2009/125/EC + Fan Directive (EC) No. 327/2011 does not apply, as the product is specially designed for operation in potentially explosive atmospheres within the meaning of Directive 94/9/EC.
Approval	EAC; II 2G

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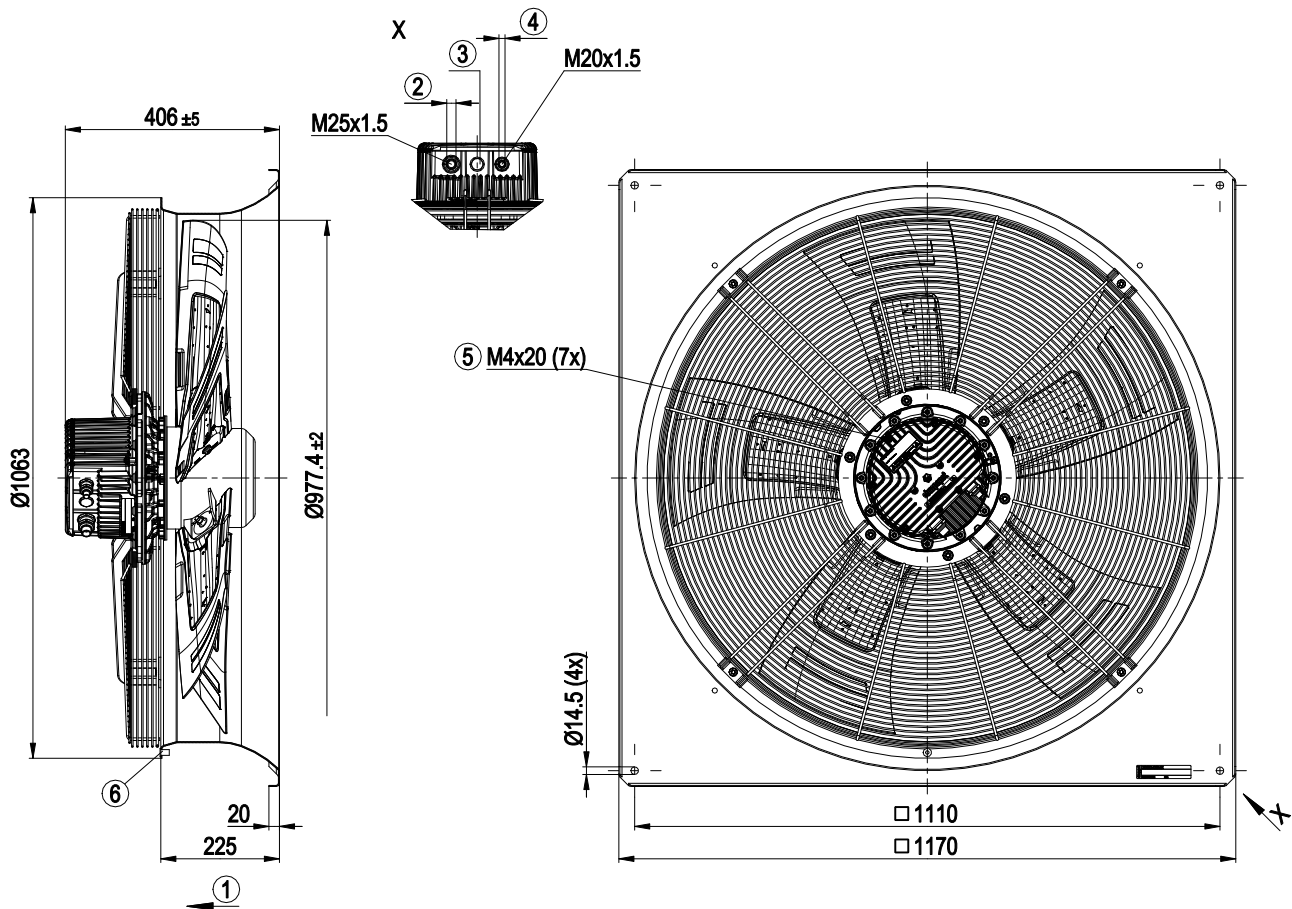
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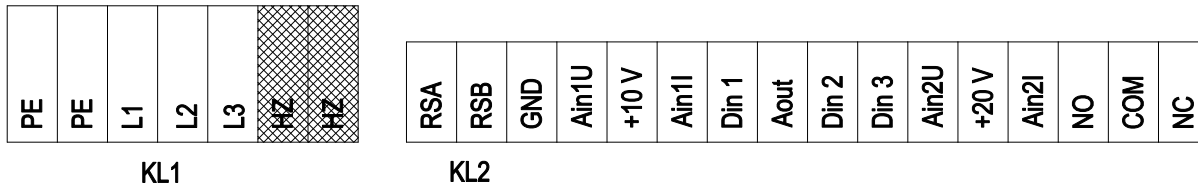


Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 10 mm, max. 16 mm, tightening torque 6 ± 0.6 Nm; standard value depending on cable
3	Screw plug M20 x 1.5
4	Cable diameter min. 10 mm, max. 14 mm, tightening torque 6 ± 0.6 Nm; standard value depending on cable
5	Terminal box fastening screws, M4 x 20, tightening torque 3.5 ± 0.5 Nm
6	Ground connection point M8 (functional ground for discharge of electrostatic charges, no protective earth)

Connection diagram



Shaded => terminals not used

No.	Conn.	Designation	Function/assignment
1		PE	Ground connection, PE connection
1		L1	Supply connection, power supply 3-phase 380-440 VAC, 50/60 Hz
1		L2	Supply connection, power supply 3-phase 380-440 VAC, 50/60 Hz
1		L3	Supply connection, power supply 3-phase 380-440 VAC, 50/60 Hz
1		HZ	not used (optional: internal heating element)
2		RSA	Bus connection RS485, RSA, MODBUS RTU; double terminal point (SELV)
2		RSB	Bus connection RS485, RSB, MODBUS RTU; double terminal point (SELV)
2		GND	Reference ground for control interface (SELV)
2		Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV
2		+10 V	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot); SELV
2		Ain1 I	Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV
2		Din 1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
2		Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV
2		Din 2	Digital input 2: Switching parameter sets 1/2, according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
2		Din 3	Digital input 3: Direction of action of integrated controller, according to EEPROM setting, the direction of action of the integrated controller can be selected as normal/inverse via bus or digital input Normal: Pin open or applied voltage 5-50 VDC Inverse: Bridge to GND or applied voltage < 1 VDC; SELV
2		Ain2 U	Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV
2		+20 V	Fixed voltage output 20 VDC, +20 V ±25/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors); SELV or: +24 VDC input for parameter setting via MODBUS without line voltage
2		Ain2 I	Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV
2		NO	Status relay, floating status contact; make for failure
2		COM	Status relay, floating status contact, common connection, contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA

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No.	Conn.	Designation	Function/assignment
2		NC	Status relay; floating status contact, break for failure

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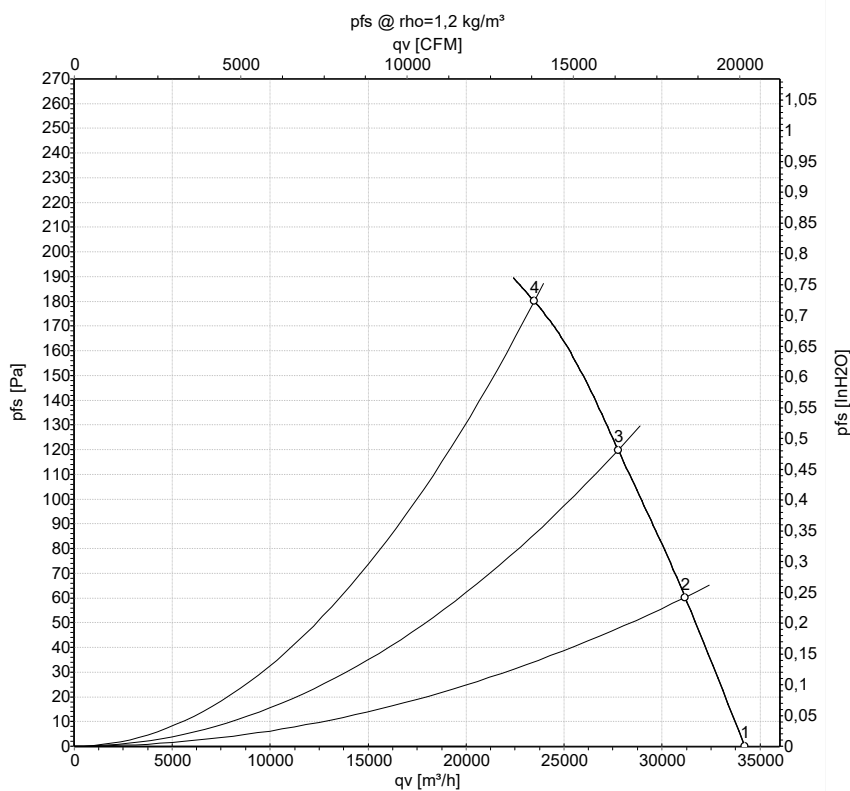
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Curves: Air performance 50 Hz



Measurement: LU-161779-1
Date: 2014-03-05
Housing: 38998-2-4037

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)	m³/h	Pa	cfm	in. wg
1	400	50	960	1505	2.28	76	84	83	34220	0	20140	0.00
2	400	50	960	1879	2.83	76	83	83	31175	60	18350	0.24
3	400	50	960	2207	3.34	78	86	85	27765	120	16340	0.48
4	400	50	960	2450	3.70	83	91	91	23470	180	13815	0.72

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