

EC axial panel fan - AxiBlade

sickle-shaped blades (S series)

with square full nozzle

W3G910-KU25-03 ebmpapst Datasheet

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Nominal data

Type	W3G910-KU25-03	
Motor	M3G150-IF	
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	980
Power consumption	W	2550
Current draw	A	3.9
Max. back pressure	Pa	220
Max. back pressure	in. wg	0.88
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = 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.

Data according to Commission Regulation (EU) 327/2011 (prEN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	53.2	36.1	09 Power consumption P_{ed}	kW	2.38
02 Measurement category		A		09 Air flow q_v	m ³ /h	23685
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	182
04 Efficiency grade N		57.1	40	10 Speed (rpm) n	min ⁻¹	980
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

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The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings). The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again. The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

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Technical description

Weight	50.4 kg
Size	910 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Impeller material	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	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	<ul style="list-style-type: none"> - Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Power Factor Correction (PFC)	Passive (through low-capacitance DC link)
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
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

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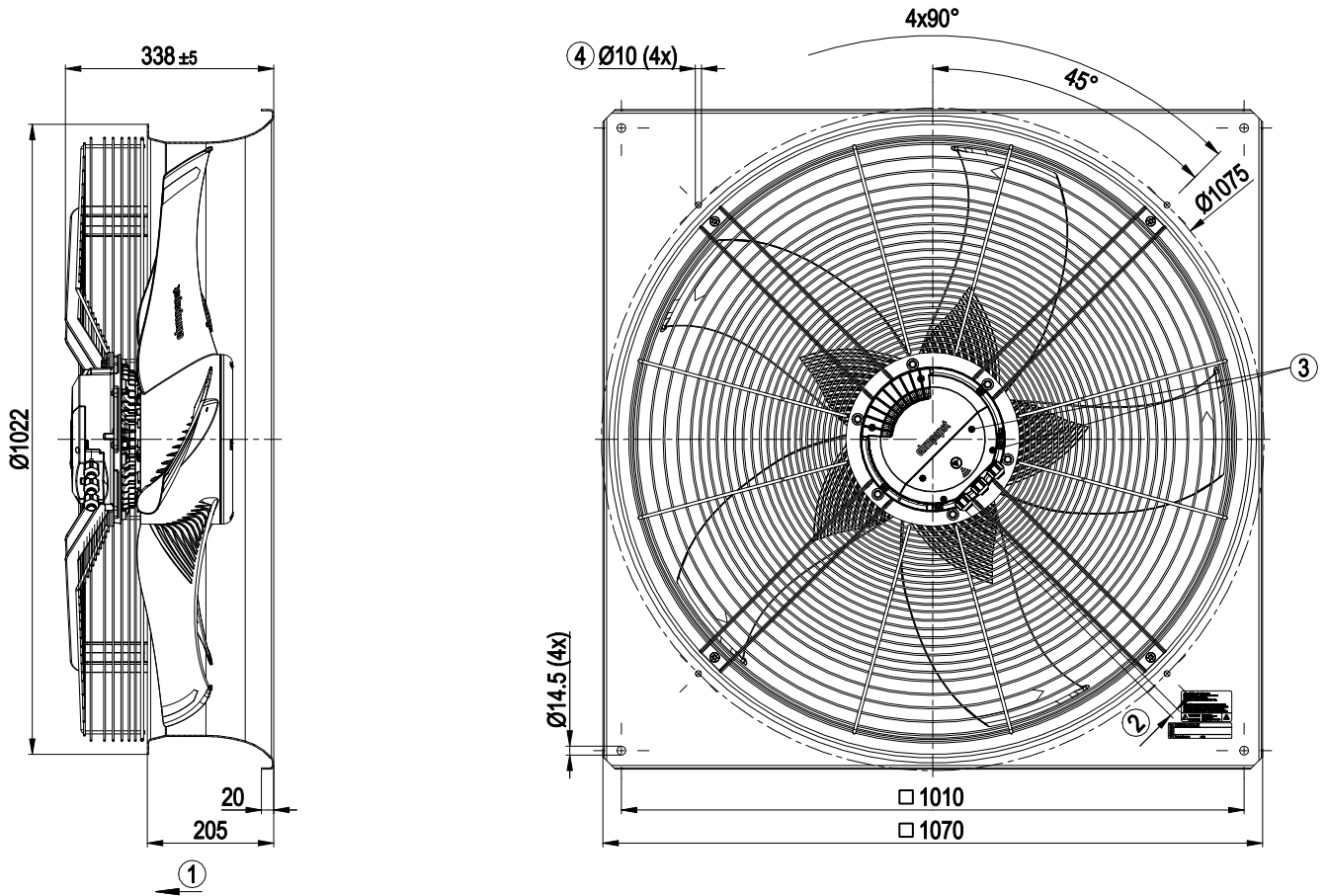
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 61800-5-1; CE; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1
Comment	Maximum permissible operating altitude 4000 m above sea level according to DIN 61800-5-1_2008_Sec. 4.3.6.4.1 overvoltage category II. Up to 2000 m above sea level, overvoltage category III applies.

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Product drawing



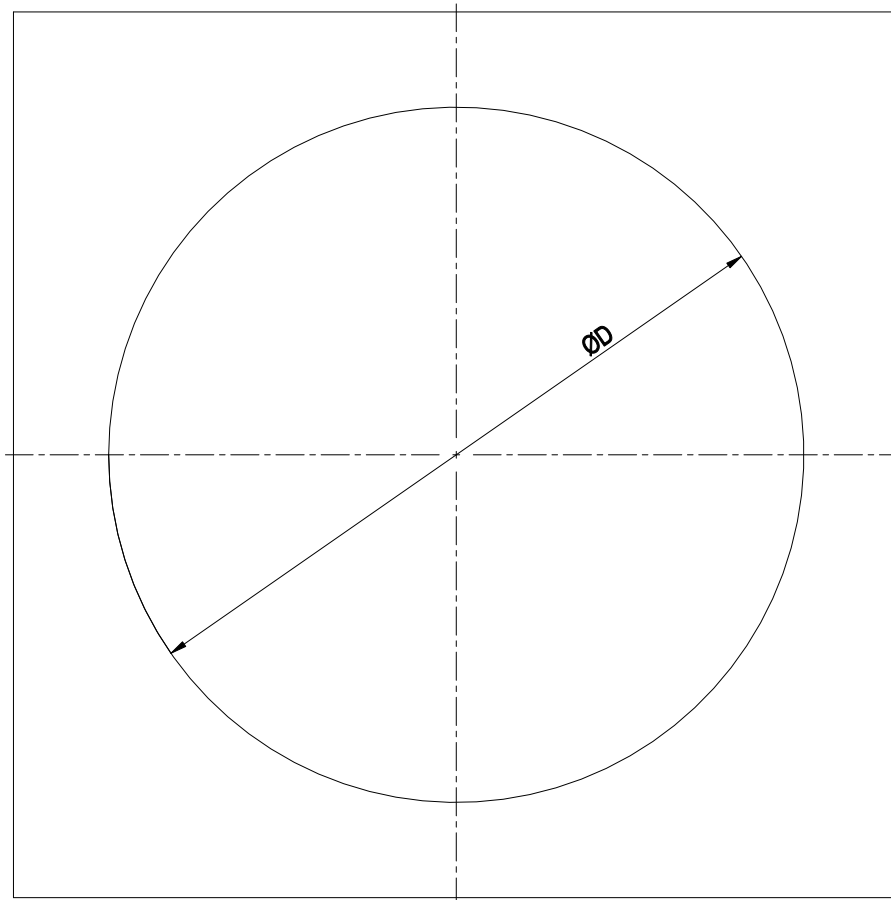
1	Airflow direction "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Tightening torque 1.5 ± 0.2 Nm
4	Attachment holes for FlowGrid (91000-2-2957 not included in scope of delivery)

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Mounting dimensions



Diameter of the necessary recess for mounting the fan housing in the end device

BG630: D = Ø785 mm

BG710: D = Ø830 mm

BG800: D = Ø950 mm

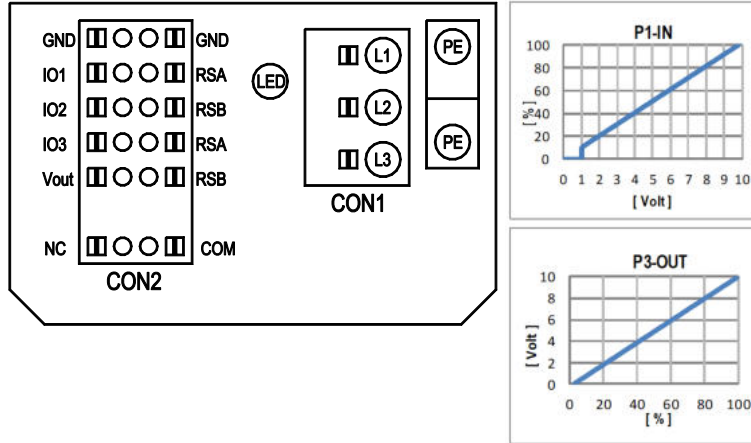
BG910: D = Ø1050 mm

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Connection diagram



No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see "Optional interface functions" table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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Terminal/plug assignment

CON2	configurable IO mode	electrical specification	configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration		INPUT		OUTPUT								
				D158 [0]	D158 [2]	D164 [..]	D165 [..]	D130 [0]	D130 [1]	D130 [2]	D130 [5]	D00C [1]	D130 [4]			
IO1	○ Din1 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		○												
	○ Ain1 0-10V/PWM: analog input	RI = 100k, characteristic curve parameterizable, f _{PWM} = 1k..10kHz, SELV		○												
	○ Tach out (open collector output)	U _{max} = 50VDC, I _{max} = 20mA, SELV		○												
	○ Diagnostics out (open collector output)	U _{max} = 50VDC, I _{max} = 20mA, SELV		○												
IO2	○ Din2 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		○												
	○ Ain2 0-10V/PWM: analog input	RI = 100k, characteristic curve parameterizable, f _{PWM} = 1k..10kHz, SELV		○												
	○ Ain2 4-20mA: analog input	RI = 125R, characteristic curve parameterizable, SELV		○												
IO3	○ Din3 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		○												
	○ Din3 (active low), digital input	active: applied voltage < 1.5VDC, SELV not active: pin open or applied voltage 3.5-50VDC		○												
	○ PWMIn3: digital input, idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3.5-50VDC not active: applied voltage < 1.5VDC, SELV		○												
	○ PWMIn3: digital input, idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3.5-50VDC not active: pin open or applied voltage < 1.5VDC, SELV		○												
RSA RSB	○ Aout3 0-10V: analog output	function parameterizable, max. 5mA max output frequency 300Hz, SELV														
	○ Tacho out (pulses), analog output	0-10V/max. 5mA max output frequency 300Hz, SELV														
	○ Diagnostics out (pulses)	0-10V/max. 5mA max output frequency 300Hz, SELV														
Vout	○ RS485 bus connection,	MODBUS RTU, specification V6.3, SELV														
	○ voltage output alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	voltage parameterizable 3.3..24VDC +/- 5%, P _{max} =800mW, short-circuit-proof, supply for external devices, SELV 15..50VDC														

○ configurable option

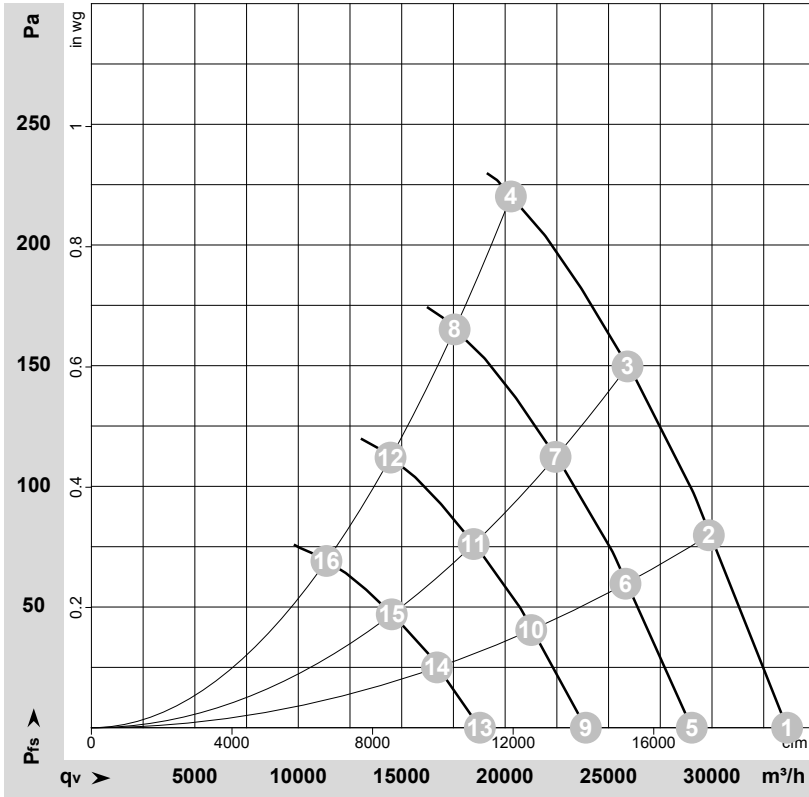
For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3

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Curves: Air performance 50 Hz



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

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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	980	1563	2.50	72	79	80	33630	0	19795	0.00
2	400	50	980	1938	3.04	69	76	77	29845	80	17565	0.32
3	400	50	980	2245	3.49	70	77	77	25915	150	15255	0.60
4	400	50	980	2550	3.90	75	82	82	20280	220	11935	0.88
5	400	50	850	1004	1.60	68	75	76	29025	0	17080	0.00
6	400	50	850	1255	1.97	66	73	74	25820	61	15195	0.24
7	400	50	850	1457	2.27	67	73	74	22440	112	13205	0.45
8	400	50	850	1663	2.57	72	78	79	17560	165	10335	0.66
9	400	50	700	561	0.90	63	70	71	23900	0	14070	0.00
10	400	50	700	701	1.10	61	68	69	21260	41	12515	0.16
11	400	50	700	814	1.27	62	68	69	18480	76	10875	0.31
12	400	50	700	929	1.44	67	74	74	14460	112	8510	0.45
13	400	50	550	272	0.43	57	64	65	18780	0	11055	0.00
14	400	50	550	340	0.53	55	62	63	16705	26	9835	0.10
15	400	50	550	395	0.61	56	62	63	14520	47	8545	0.19
16	400	50	550	451	0.70	61	67	68	11360	69	6685	0.28

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