W3G910-KU25-03

EC axial fan - AxiBlade

sickled blades (S series)

with full square nozzle

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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
Type of data definition		ml
Speed (rpm)	min^{-1}	980
Power input	W	2550
Current draw	A	3.9
Max. back pressure	Pa	220
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data in accordance with ecodesign regulation EU 327/2011

		Actual	Request 2015
01 Overall efficiency η_{es}	%	53.2	36.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		57.1	40
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	2.38
09 Air flow q_v	m^3/h	23685
09 Pressure increase p_{fs}	Pa	182
10 Speed (rpm) n	min^{-1}	980
11 Specific ratio*		1.00

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-184391

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Technical features

Mass	48 kg
Size	910 mm
Motor size	150
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, painted grey
Material of impeller	PP plastic
Material of wall ring	Sheet steel, galvanised and coated in black plastic (RAL 9005)
Material of guard grille	Steel, coated in black plastic (RAL9005)
Number of blades	5
Blade angle	0°
Direction of air flow	V
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP55
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H2
Note ambient temperature	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications) we recommend our fan version with special low-temperature bearings.
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display via LED - External 15-50 VDC input (parametrisation) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limit - RFID - ISO 15693 compatible - RS485 MODBUS RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Excess temperature protection for electronics/motor - Undervoltage/phase failure detection
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical connection	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	CSA C22.2 no. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730

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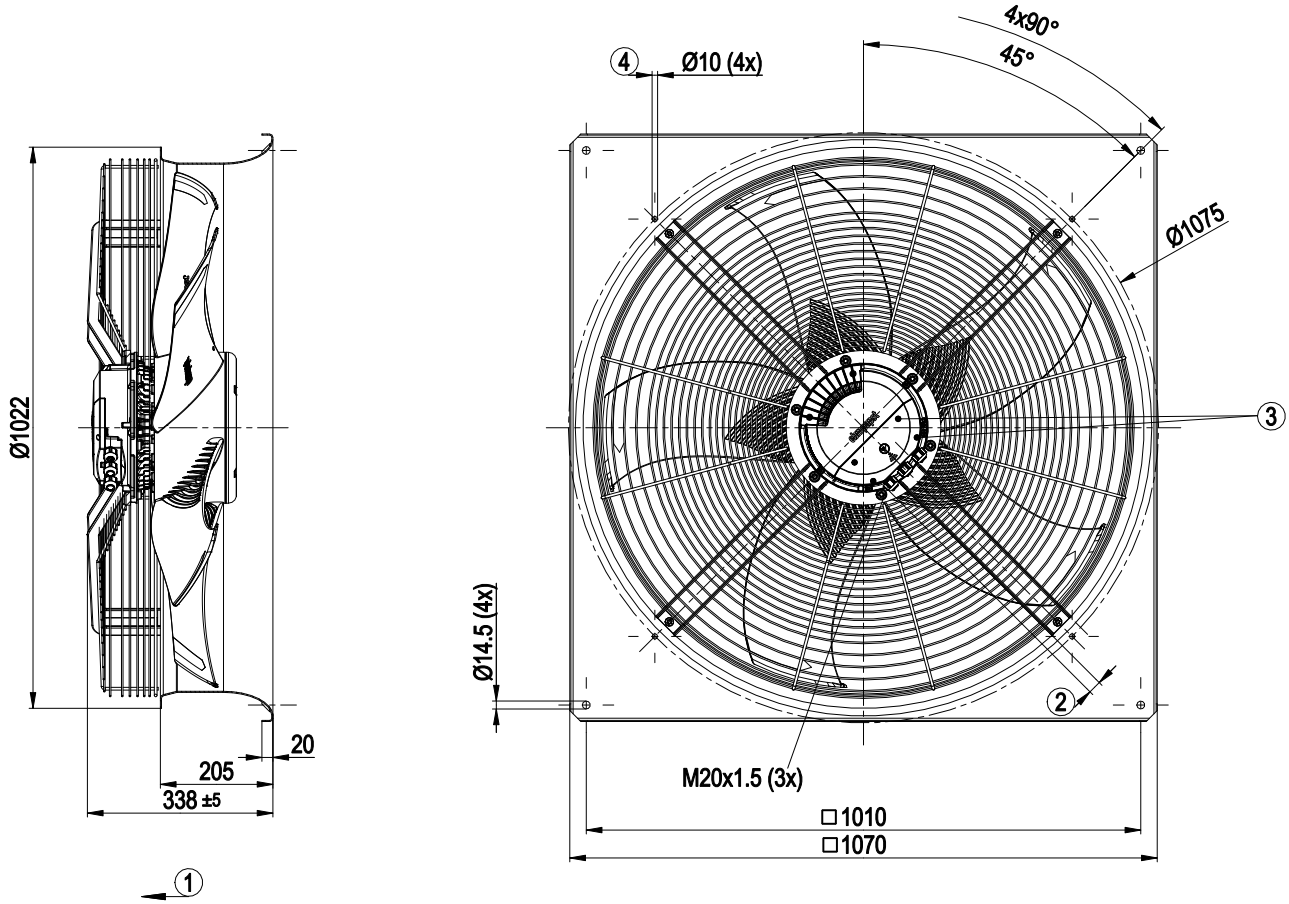
Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2±0.3 Nm
3	Tightening torque 1.5±0.2 Nm
4	Mounting holes for FlowGrid

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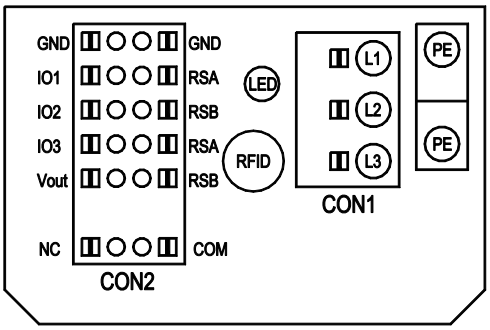
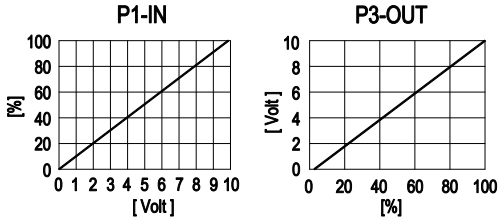
Connection screen





No.	Conn.	Designation	Function / assignment
	CON1	L1, L2, L3	Power supply, phase, see type plate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS-485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS-485 interface for MODBUS, RSB; SELV
	CON2	GND	Signal ground for control interface, SELV
	CON2	IO1	Function parametrisable (see table Optional interface functions) 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
	CON2	IO2	Function parametrisable (see table Optional interface functions) Factory setting: Analogue input 0-10 V / PWM, Ri=100 kΩ, Function: Set value Curve parametrisable (see input curve P1-IN), SELV
	CON2	IO3	Function parametrisable (see table Optional interface functions) Factory setting: Analogue output 0-10 V, max. 5 mA, Function: Fan modulation level Curve parametrisable (see output curve P3-OUT), SELV
	CON2	V out	Voltage output 3.3-24 VDC +/-5%, Pmax=800 mW, voltage parametrisable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parametrisation via MODBUS without mains power
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC/max. 2 A (AC1) min. 10 mA, reinforced insulation with respect to mains and control interface
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green = OK status, ready for operation orange = Warning status red = Error status
		P1-IN	Input curve
		P3-OUT	Output curve

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Terminal/pin assignment

CON2	configurable IO mode	electrical specification	MODBUS Register for IO mode configuration	INPUT: source: set value	INPUT: source: sensor value	INPUT: switch: parameter set: #1 / #2	INPUT: switch: control function: heating (pos.) / cooling (neg.)	INPUT: switch: direction of rotation: cw / ccw	INPUT: switch: set value source	INPUT: switch: fan enable / disable	OUTPUT: signal: tach out (selected directly via IO mode)	OUTPUT: signal: diagnostics out (selected directly via IO mode)	OUTPUT: signal: fan modulation level %	OUTPUT: signal: actual speed	OUTPUT: signal: system modulation level %	OUTPUT: signal: remote control output 0-10V	pulse input for auto-adressing	pulse output for auto-adressing
		configurable IO functions: normal / inverse		D101 [...]	D147 [...]	D104 [...]	D12E [...]	D148 [...]	D16C [...]	D16A [...]			D130 [0]	D130 [1]	D130 [2]	D130 [5]	D00C [1]	D130 [4]
IO1	○ **Din1 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D158 [0]			○	○	○	○	○								
	○ **Ain1 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, f_{PWM}=1k..10KHz, SELV	D158 [2]	○														
	○ **Tach out** (open collector output)	Umax=50VDC, Imax=20mA SELV	D158 [5]								○							
	○ **Diagnostics out** (open collector output)	Umax=50VDC, Imax=20mA SELV	D158 [6]									○						
IO2	○ **Din2 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]			○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]	○														
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]															
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]															
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **Aout3 0-10V**: analog output	function parameterizable, max. 5mA, max output frequency 300Hz, SELV	D15A [4]										○		○	○		○
	○ **Tacho out** (pulses), analog output	0-10V max. 5mA, max output frequency 300Hz, SELV	D15A [5]								○							
	○ **Diagnostics out** (pulses)	0-10V max. 5mA, max output frequency 300Hz, SELV	D15A [6]									○						
RSA RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV		○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]															
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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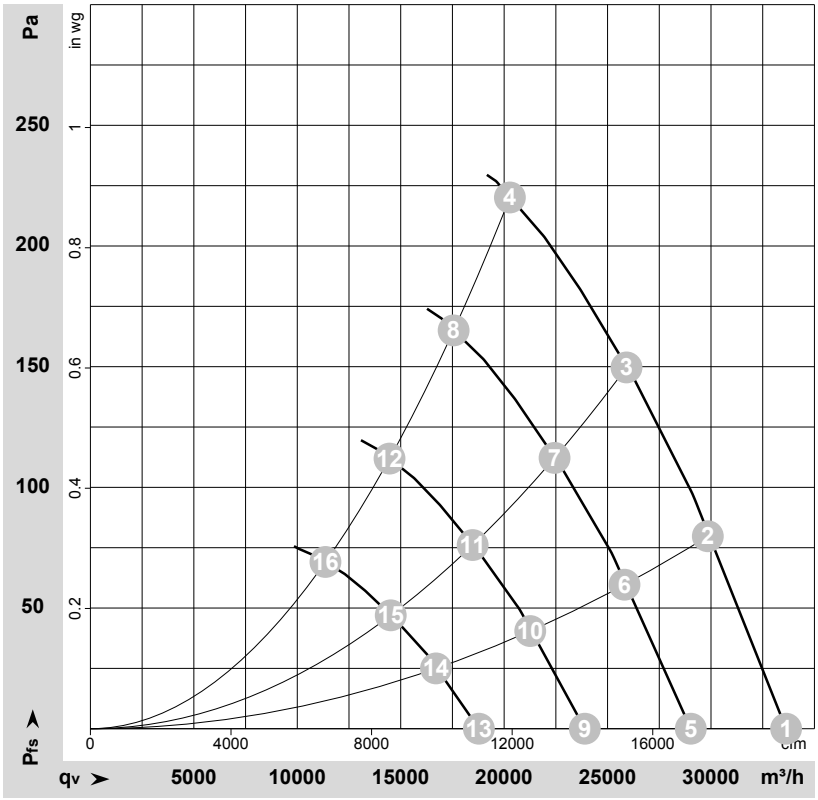
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-184391-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

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 = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · LwA_{out} = Sound power level outlet side
q_V = Air flow · p_{fs} = Pressure increase

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