

A3G910-AU27-03

EC axial panel fan - HyBlade

sickle-shaped blades (S series)

ebm-papst Mulfingen GmbH & Co. KGaA & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
info1@de.ebmpapst.com
www.ebmpapst.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	A3G910-AU27-03	
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	970
Power consumption	W	2700
Current draw	A	4.1
Max. back pressure	Pa	210
Max. back pressure	in. wg	0.84
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

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

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	49.7	36.3	09 Power consumption P_{ed}	kW	2.65
02 Measurement category		A		09 Air flow q_v	m ³ /h	22155
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	203
04 Efficiency grade N		53.4	40	10 Speed (rpm) n	min ⁻¹	965
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.
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).

* Specific ratio = $1 + p_{fs} / 100\,000\text{ Pa}$ LU-202155

Technical description

Weight	25 kg
Size	910 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Blade material	Sheet aluminum insert, sprayed with PP plastic
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	- 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

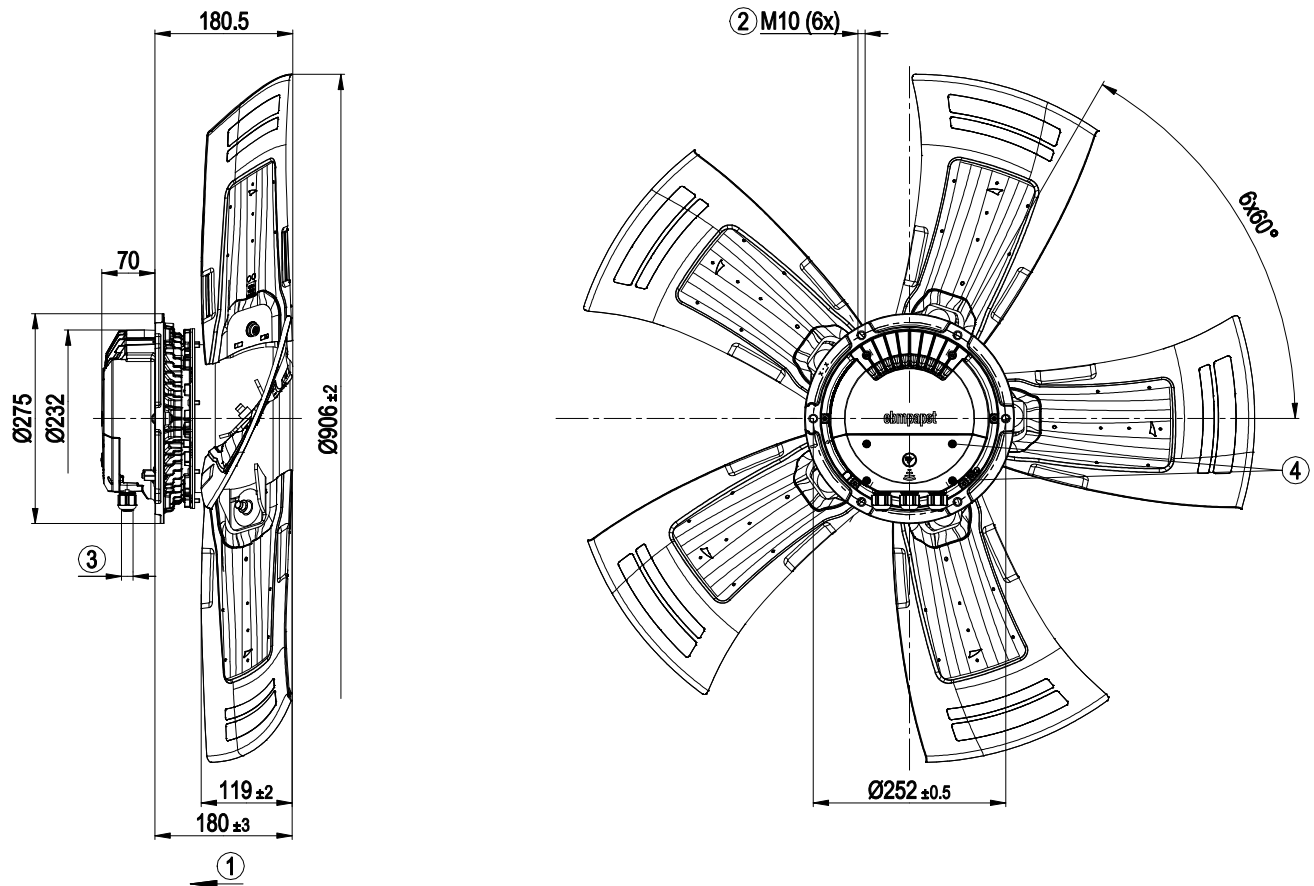
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Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 61800-5-1; CE
Approval	EAC; UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1

Product drawing

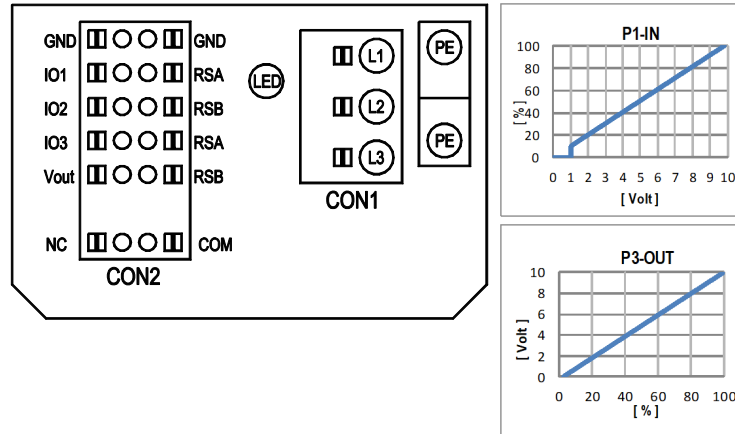


1	Airflow direction "V"
2	Max. clearance for screw 20 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
4	Tightening torque 1.5 ± 0.2 Nm

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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

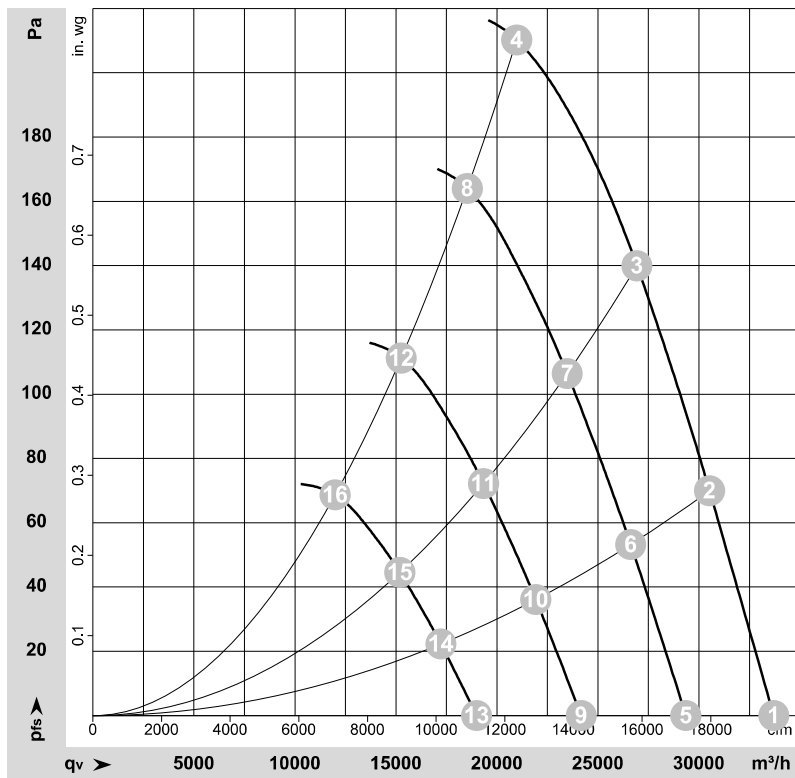
Terminal/plug assignment

○ configurable option		For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3		configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	electrical specification																
						electrical specification																
CON2	configurable IO mode		Din1 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		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]																	
IO1	Din2 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D159 [0]																	
	Ain2 0-10V/PWM: analog input		RI = 100k, characteristic curve parameterizable, f _{PWM} = 1k..10kHz, SELV		D159 [2]																	
	Ain2 4-20mA: analog input		RI = 125R, characteristic curve parameterizable, SELV		D159 [3]																	
	Din3 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D15A [0]																	
IO3	Din3 (active low): digital input		active: applied voltage < 1.5VDC, SELV not active: pin open or applied voltage 3.5-50VDC		D15A [1]																	
	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		D15A [7]																	
	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		D15A [8]																	
	Aout3 0-10V: analog output		function parameterizable, max. 5mA, max output frequency 300Hz, SELV		D15A [4]																	
RSA RSB	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]																	
	RS485 bus connection,		MODBUS RTU, specification V6.3, SELV																			
	voltage output		voltage parameterizable 3.3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV		D16E [...]																	
Vout	alternatively: Input auxiliary power supply for parameterization 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 V6.3

Curves: Air performance 50 Hz



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

Measurement: LU-202155-1
Date: 2019-10-07
Housing: 38913-2-4037

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

	Wired	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	3~	400	50	970	1826	2.87	70	77	78	33705	0	19835	0.00
2	3~	400	50	970	2146	3.34	69	76	76	30525	70	17965	0.28
3	3~	400	50	970	2460	3.80	69	76	76	26930	140	15850	0.56
4	3~	400	50	970	2700	4.10	75	82	82	20980	210	12350	0.84
5	3~	400	50	850	1206	1.90	67	74	74	29350	0	17275	0.00
6	3~	400	50	850	1424	2.22	65	72	73	26620	53	15670	0.21
7	3~	400	50	850	1629	2.52	66	73	73	23480	107	13820	0.43
8	3~	400	50	850	1845	2.84	72	79	79	18530	164	10905	0.66
9	3~	400	50	700	674	1.06	62	69	69	24170	0	14225	0.00
10	3~	400	50	700	795	1.24	60	67	68	21925	36	12905	0.14
11	3~	400	50	700	910	1.41	61	68	68	19335	72	11380	0.29
12	3~	400	50	700	1030	1.59	67	74	74	15260	111	8980	0.45
13	3~	400	50	550	327	0.51	56	63	63	18995	0	11180	0.00
14	3~	400	50	550	386	0.60	54	61	62	17225	22	10140	0.09
15	3~	400	50	550	441	0.68	55	62	62	15190	45	8940	0.18
16	3~	400	50	550	500	0.77	61	68	68	11990	69	7060	0.28

Wired = Wiring · 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