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General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	A3G910-AV12-03	
Motor	M3G150-NA	

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	1020
Power consumption	W	3100
Current draw	A	4.7
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

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

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	49.2	36.8	09 Power consumption P_{ed}	kW	3.1
02 Measurement category		A		09 Air flow q_v	m ³ /h	23440
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	224
04 Efficiency grade N		52.4	40	10 Speed (rpm) n	min ⁻¹	1025
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-201996

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).

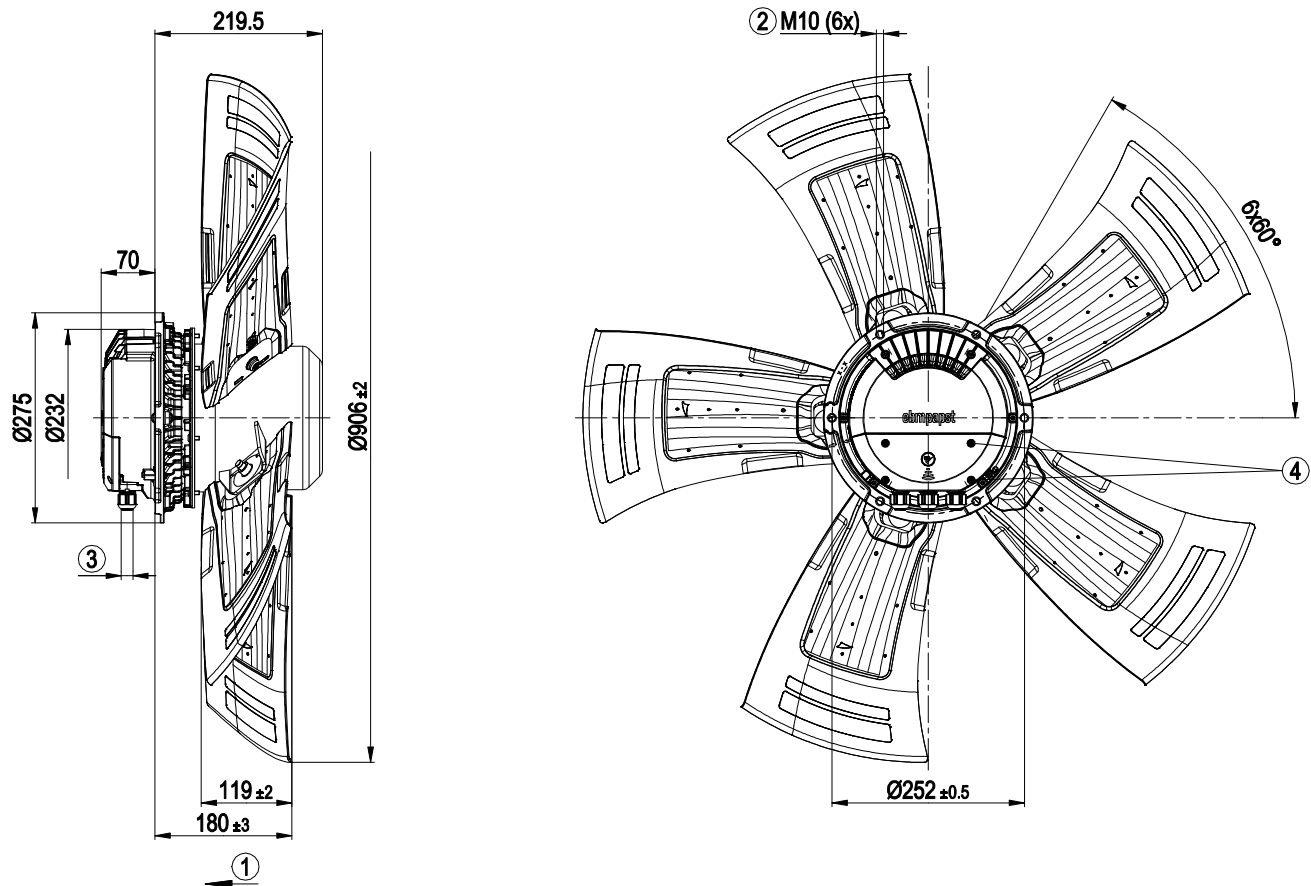


Technical description

Weight	30.02 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
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
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1



Product drawing

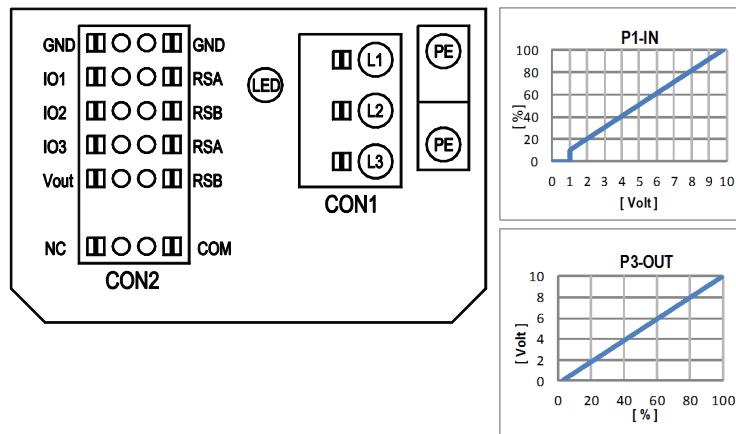


1	Airflow direction "V"
2	Max. clearance for screw 20 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
4	Tightening torque 1.5 ± 0.2 Nm

EC axial fan - HyBlade

sickle-shaped blades (S series)

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

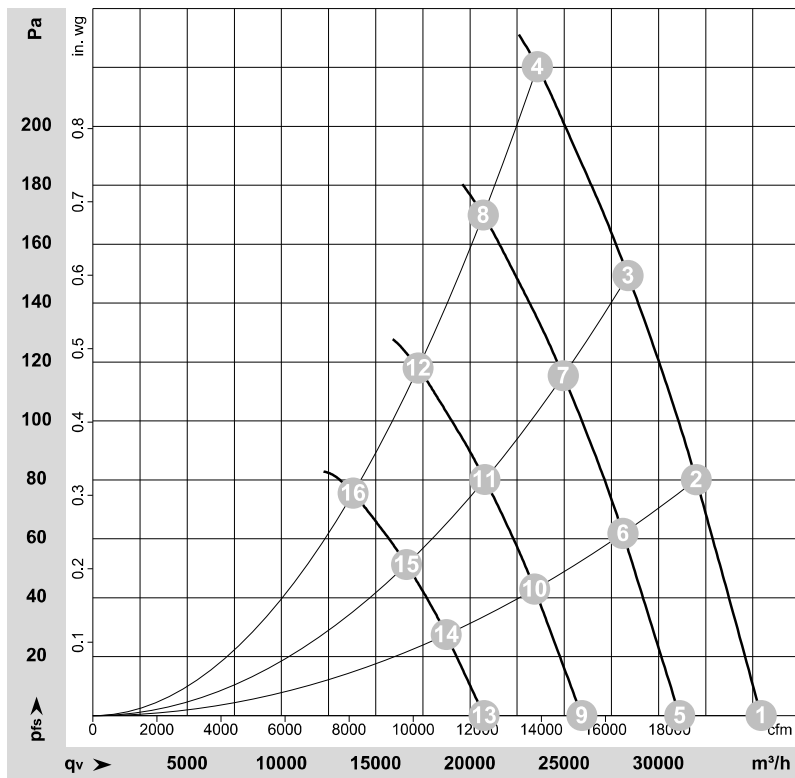
configurable IO functions: normal/inverse		MODBUS Register for IO mode configuration		electrical specification															
				source: set value															
CON2	configurable IO mode		source: set value																
	Din1 (active high): digital input		source: sensor value																
	Ain1 0-10V/PWM: analog input		switch: parameter set: #1 / #2																
	Tach out (open collector output)		switch: control function: heating (pos.) / cooling (neg.)																
IO1	Diagnostics out (open collector output)		switch: direction of rotation: cw / ccw																
			switch: set value source																
			switch: fan enable / disable																
			signal: tach out																
IO2	Din2 (active high): digital input		signal: fan modulation level %																
	Ain2 0-10V/PWM: analog input		signal: actual speed																
	Ain2 4-20mA: analog input		signal: system modulation level %																
			signal: remote control output 0-10V																
IO3	Din3 (active high): digital input		pulse input for auto-addressing																
	Din3 (active low): digital input		pulse output for auto-addressing																
	PWMIn3: digital input, idle level high																		
	PWMIn3: digital input, idle level low																		
IO3	Aout3 0-10V: analog output																		
	Tacho out (pulses): analog output																		
	Diagnostics out (pulses)																		
RSA	RS485 bus connection,																		
RSB	voltage output																		
Vout	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage																		

○ 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-201996-1

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

	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)	m³/h	Pa	cfm	in. wg
1	3~	400	50	1020	2052	3.21	71	78	80	35445	0	20860	0.00
2	3~	400	50	1020	2462	3.81	70	77	77	32000	80	18835	0.32
3	3~	400	50	1020	2759	4.25	70	77	77	28380	150	16705	0.60
4	3~	400	50	1020	3100	4.70	75	81	81	23570	220	13875	0.88
5	3~	400	50	900	1389	2.17	68	75	76	31120	0	18315	0.00
6	3~	400	50	900	1669	2.58	67	74	74	28110	62	16545	0.25
7	3~	400	50	900	1873	2.89	67	74	74	24945	116	14680	0.47
8	3~	400	50	900	2097	3.22	71	78	77	20700	171	12185	0.69
9	3~	400	50	750	804	1.26	63	70	72	25935	0	15265	0.00
10	3~	400	50	750	966	1.49	62	69	69	23425	43	13790	0.17
11	3~	400	50	750	1084	1.67	62	69	69	20785	80	12235	0.32
12	3~	400	50	750	1214	1.86	67	73	73	17250	118	10155	0.47
13	3~	400	50	600	412	0.64	57	64	66	20745	0	12210	0.00
14	3~	400	50	600	495	0.77	56	63	64	18740	27	11030	0.11
15	3~	400	50	600	555	0.85	57	64	64	16630	51	9790	0.20
16	3~	400	50	600	621	0.95	61	68	67	13800	76	8125	0.31

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

