W3G450-ZZ97-S4

EC axial fan - AxiEco

Double-flange fan housing, for rail applications

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Nominal data

Type	**W3G450-ZZ97-S4**
Motor	**M3G112-EA**

Nominal voltage	VDC	110
Nominal voltage range	VDC	77 .. 138
Frequency	Hz	DC
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	1800
Power consumption	W	880
Current draw	A	8.2
Max. back pressure	Pa	360
Max. back pressure	in. wg	1.45
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	70

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

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Technical description

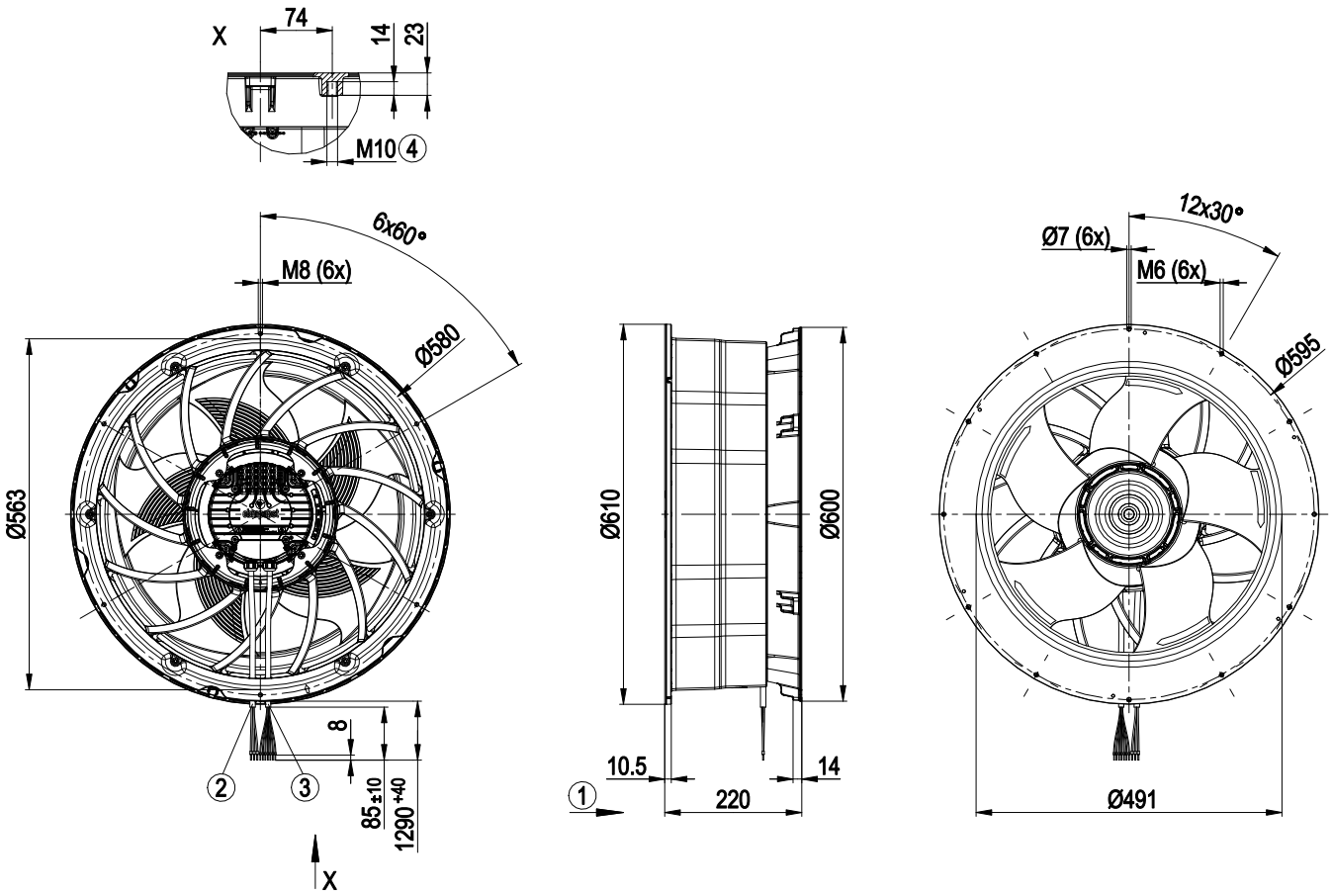
Size	450 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PA plastic, sheet-metal plate painted black
Fan housing material	Die-cast aluminum, painted black
Inlet ring material	Sheet aluminum, painted black
Number of blades	5
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP56
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H3
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 top; rotor on bottom on request
Condensation drainage holes	None
Mode	S1
Motor bearing	Ball bearing; (sealed, without air gap)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Motor current limitation - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - Thermal overload protection for electronics/motor - Line undervoltage detection
EMC regulations	According to EN 50121-3-2
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Lateral
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 15085-1+A1:2013, CPC3; EN 45545-2:2020, HL3; EN 50155:2017; EN 61373:2010, Cat.1B
Approval	EAC
Comment	If voltage (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their property of reinforced insulation, meaning they then have only basic insulation The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.

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Product drawing



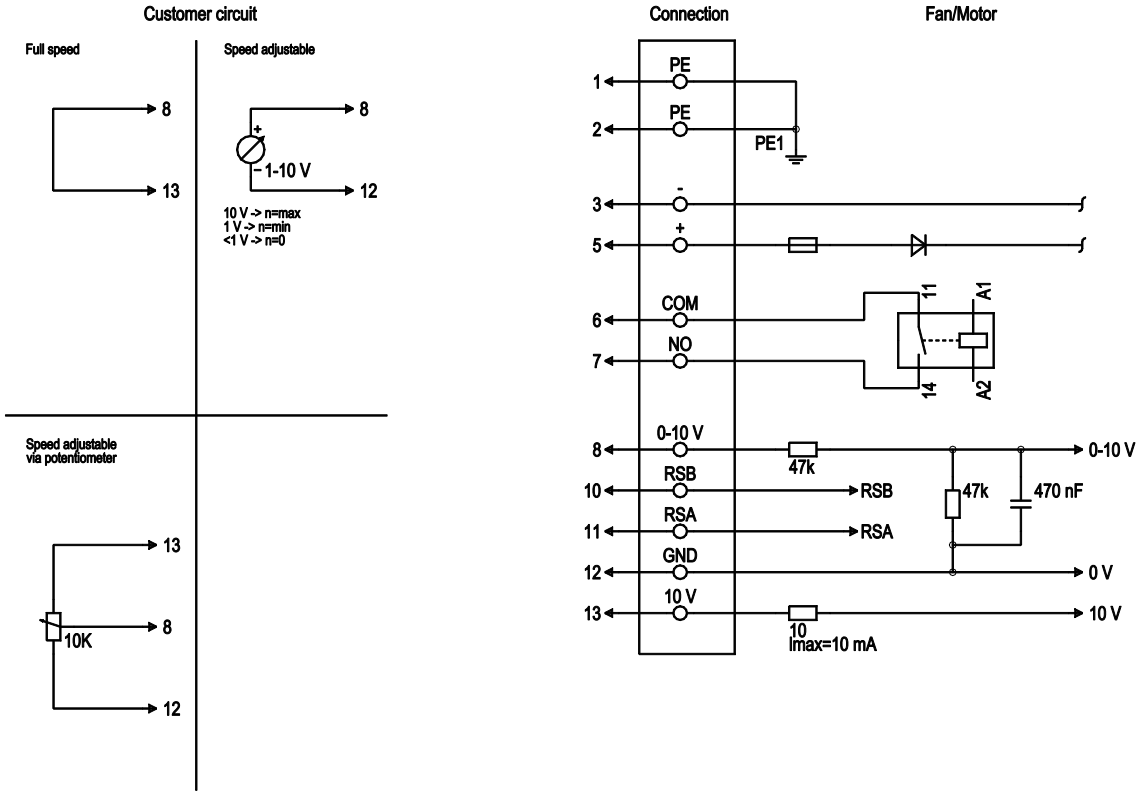
1	Airflow direction "V"
2	Cable, halogen-free, railway application EN 45545, 4G 1.5 mm²
	3x wire-end ferrule, 1x wire not routed externally
3	Cable, halogen-free, railway application EN 45545, 7x 0.5 mm²
	7x wire-end ferrule
4	Ground connection point

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Connection diagram



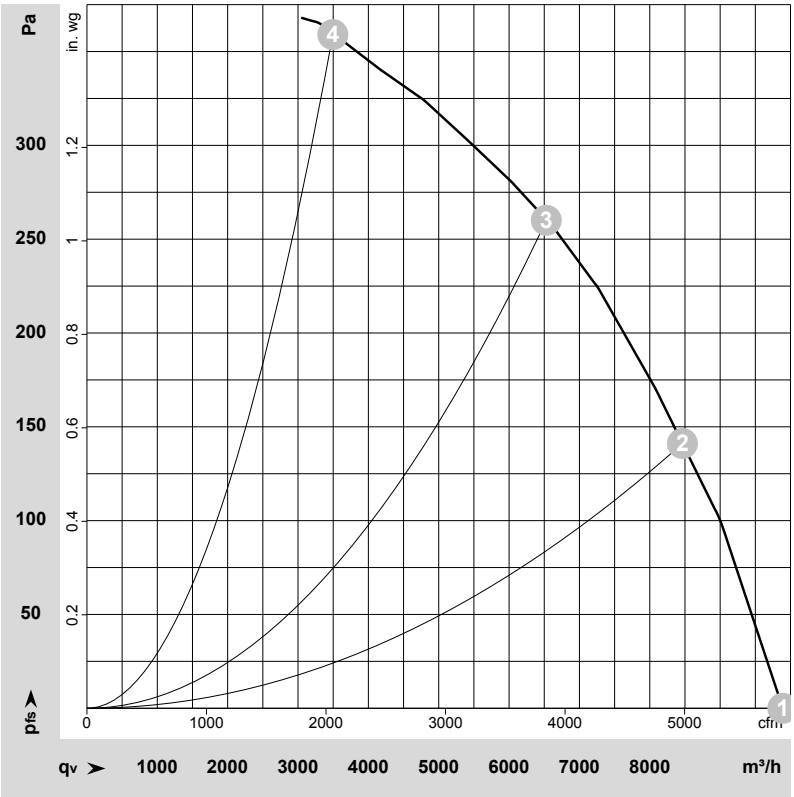
No.	Conn.	Designation	Color	Function/assignment
1	1	PE	green/yellow	Protective earth
1	2	PE	-	not brought out via wire
1	3	-	black	Power supply, GND, voltage range see nameplate
1	5	+	brown	Power supply, see nameplate for voltage range
2	6	COM	gray	Status relay, floating status contact, common connection, contact rating 250 VAC/30 VDC max. 2 A (AC1), min. 1 mA/5 VDC, reinforced insulation on control interface side, basic insulation on supply side in accordance with EN 50124-1
2	7	NO	orange	Status relay, floating status contact, normally open contact, contact rating 250 VAC/30 VDC max. 2 A (AC1), min. 1 mA/5 VDC, reinforced insulation on control interface side, basic insulation on supply side in accordance with EN 50124-1
2	8	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	brown	RS-485 interface for MODBUS, RSB; SELV, bus termination resistor provided by customer
2	11	RSA	white	RS-485 interface for MODBUS, RSA; SELV, bus termination resistor provided by customer
2	12	GND	blue	Reference ground for control interface; SELV
2	13	+10 V	red	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)

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Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-214396-1

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

	U	n	P_{ed}	I	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	110	2000	817	7.43	77	85	88	9890	0	5820	0.00
2	110	1935	880	8.20	75	82	85	8465	140	4980	0.56
3	110	1840	880	8.20	70	78	81	6530	260	3845	1.04
4	110	1800	880	8.20	74	81	85	3495	360	2055	1.45

U = Voltage · 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

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