

8300100829
VMA0500CSPHS

EC axial panel fan - AxiEco

with guard grille

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	8300100829	
Motor	E09002-40	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min ⁻¹	1120
Power consumption	W	450
Current draw	A	2.0
Max. back pressure	Pa	180
Max. back pressure	in. wg	0.72
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

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

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

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	43.9	31.4	09 Power consumption P_{ed}	kW	0.43
02 Measurement category		A		09 Air flow q_v	m ³ /h	4830
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	128
04 Efficiency grade N		52.5	40	10 Speed (rpm) n	min ⁻¹	1120
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

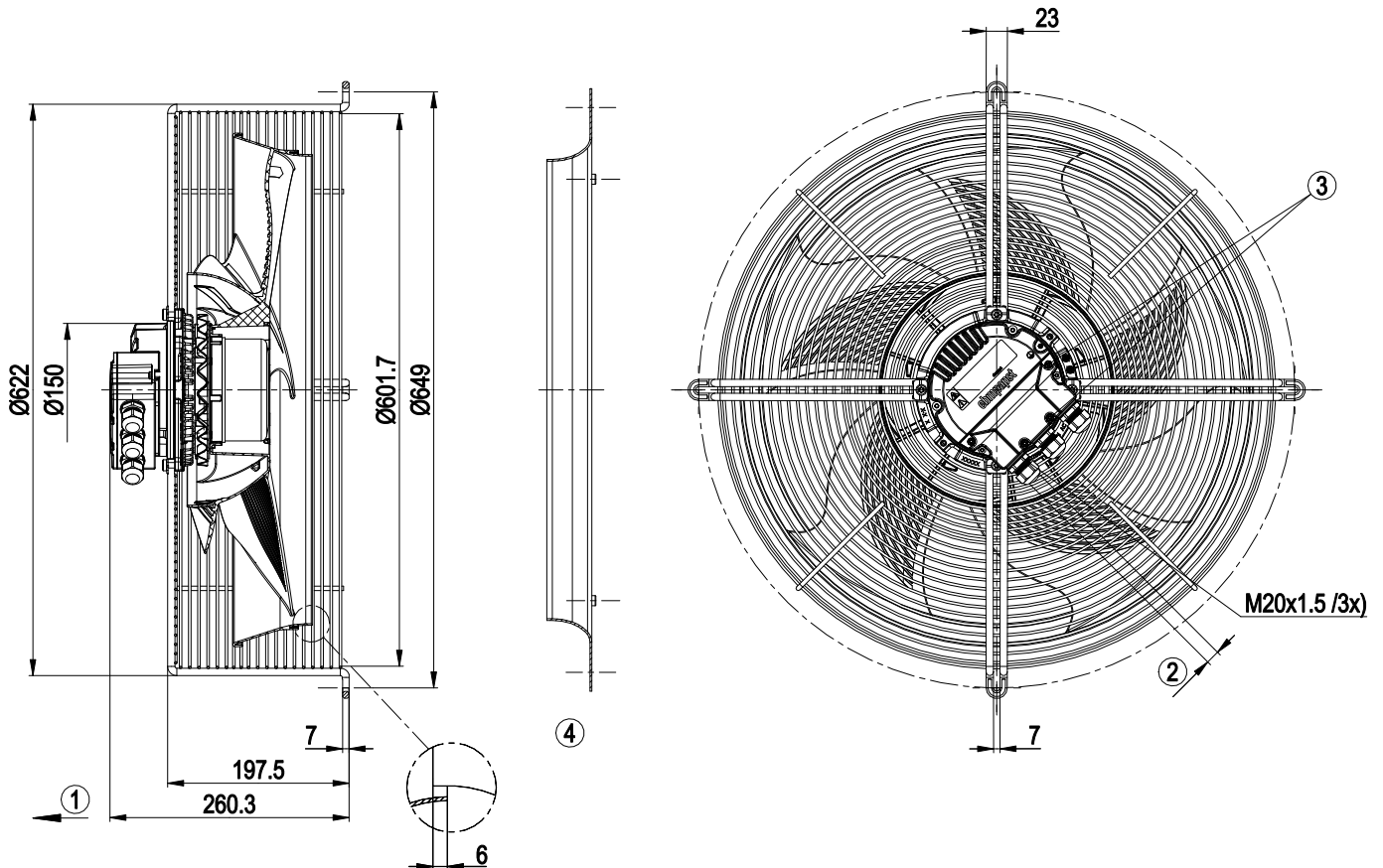
LU-224613

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

Size	500 mm
Motor size	90
Rotor surface	Painted black
Terminal box material	PA plastic
Electronics housing material	Die-cast aluminum, painted gray
Impeller material	PP plastic
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
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; (sealed)
Technical features	- Locked-rotor detection - Speed control - Alarm relay - Power limiter - Motor current limitation - PFC, active - Soft start - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Electronic motor protection
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 60335-1; EN 61800-5-1; CE; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

Product drawing

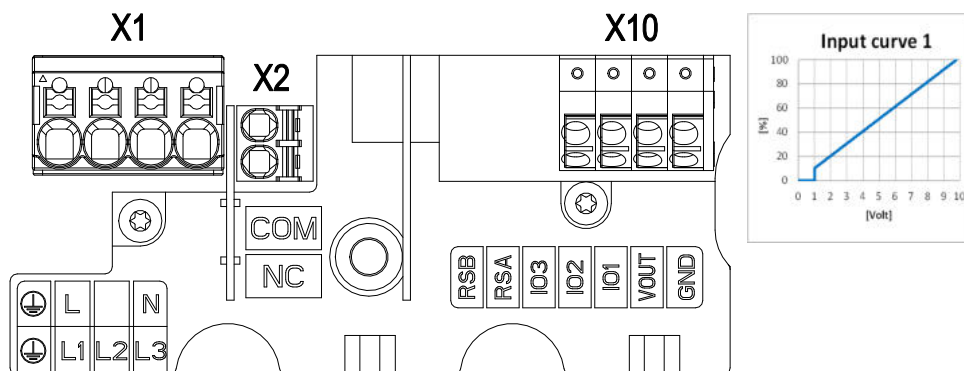


1	Airflow direction "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Tightening torque 2 ± 0.3 Nm
4	Accessory part: Inlet ring 50100-2-4013 not included in scope of delivery.

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Connection diagram



No.	Conn.	Designation	Function/assignment
X1	PWR	PE	Protective earth
X1	PWR	L	Power supply, phase, see nameplate for voltage range
X1	PWR	N	Power supply, neutral conductor, see nameplate for voltage range
X2	CTRL	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
X2	CTRL	NC	Status relay, floating status contact, break for failure
X10	CTRL	GND	Reference ground for control interface, SELV
X10	CTRL	Vout	Voltage output 10 VDC +/-3%, I _{max} =10 mA Short-circuit-proof, power supply for external devices, SELV
X10	CTRL	IO1	Factory setting: Analog input 0-10 V / PWM, R _i =100 kΩ, function: set value Characteristic curve parameterizable (see input characteristic curve "Input curve 1"), SELV Function parameterizable at the factory (see table Optional interface functions)
X10	CTRL	IO2	Factory setting: Open collector output, U _{max} =50 VDC, I _{max} =20 mA, function:Tacho output 1 pulse/revolution, SELV Function parameterizable at factory (see table Optional interface functions)

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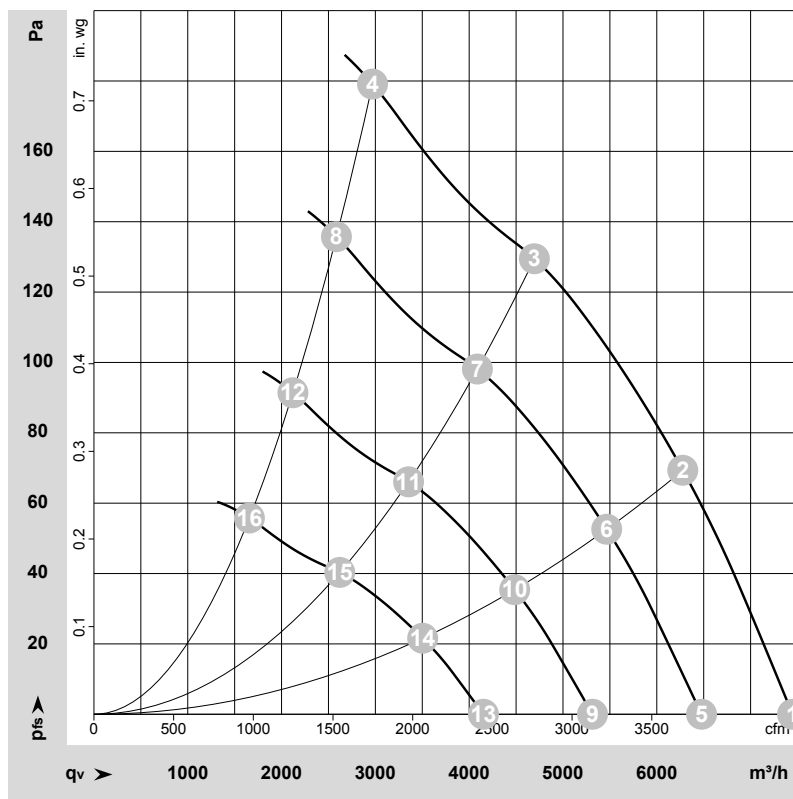
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Factory configuration option upon request

electrical specification

IO1	◦ Din1 (high active): digital input	active: parametrizable voltage x - 30 VDC not active: pin open or parametrizable voltage < x VDC, SELV Rt = 100 kΩ, characteristic curve parameterizable, $f_{PWM} = 1 \text{ k} - 10 \text{ kHz}$, SELV
	◦ Ain1 0-10 V/PWM: analog input	
	◦ Tach out (open collector)	
	◦ Diagnostics out (open collector) ◦ Alarm out (open collector) ◦ Open collector	
COM NC	Relais	250 VAC / 2 A (AC1)
Vout	Voltage output	Voltage 10 VDC, SELV

Curves: Air performance 50 Hz



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

Measurement: LU-224613-1
Date: 2022-12-20
Nozzle: 50100-2-4013

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 _e	I	LpA _{in}	LwA _{in}	LwA _{out}	LwA	q _v	P _{fs}	q _v	P _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	dB	m³/h	Pa	cfm	in. wg
1	1~	230	50	1120	306	1.37	65	72	74	76	7445	0	4385	0.00
2	1~	230	50	1120	383	1.70	61	68	71	73	6275	70	3695	0.28
3	1~	230	50	1120	433	1.91	61	68	72	74	4695	130	2765	0.52
4	1~	230	50	1120	450	2.00	65	73	78	79	2970	180	1750	0.72
5	1~	230	50	975	201	0.90	62	68	71	73	6475	0	3810	0.00
6	1~	230	50	975	253	1.12	58	65	68	69	5465	53	3215	0.21
7	1~	230	50	975	286	1.26	57	65	69	70	4090	98	2405	0.39
8	1~	230	50	975	298	1.32	62	69	74	75	2585	136	1520	0.55
9	1~	230	50	800	111	0.50	57	63	66	68	5315	0	3130	0.00
10	1~	230	50	800	140	0.62	53	60	63	64	4485	35	2640	0.14
11	1~	230	50	800	158	0.70	52	60	64	65	3355	66	1975	0.26
12	1~	230	50	800	165	0.73	57	64	69	70	2120	92	1250	0.37
13	1~	230	50	625	53	0.24	50	57	59	61	4150	0	2445	0.00
14	1~	230	50	625	67	0.30	46	54	56	58	3505	22	2060	0.09
15	1~	230	50	625	75	0.33	46	54	58	59	2620	40	1540	0.16
16	1~	230	50	625	79	0.35	50	58	63	64	1655	56	975	0.22

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = 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