8300100835

VMA0450CSPHS

EC axial panel fan - AxiEco

with guard grille

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General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	**8300100835**
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}	1410
Power consumption	W	500
Current draw	A	2.2
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}	%	44.4	31.6
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		52.8	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.46
09 Air flow q_v	m^3/h	4415
09 Pressure increase p_{fs}	Pa	153
10 Speed (rpm) n	min^{-1}	1410
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-222598

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).

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Technical description

Weight	0.001 kg
Size	450 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

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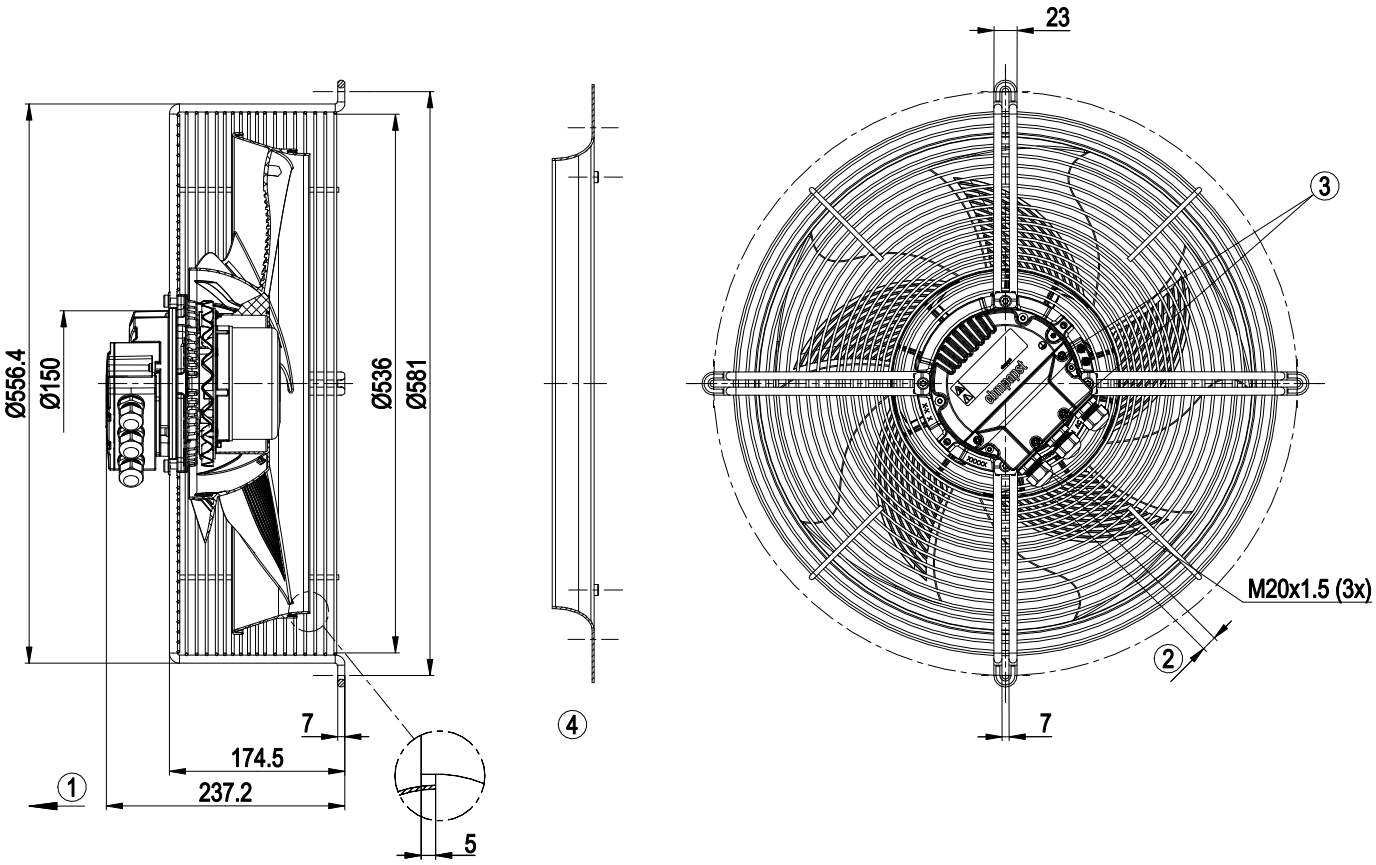
Product drawing



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 45100-2-4013 not included in scope of delivery.

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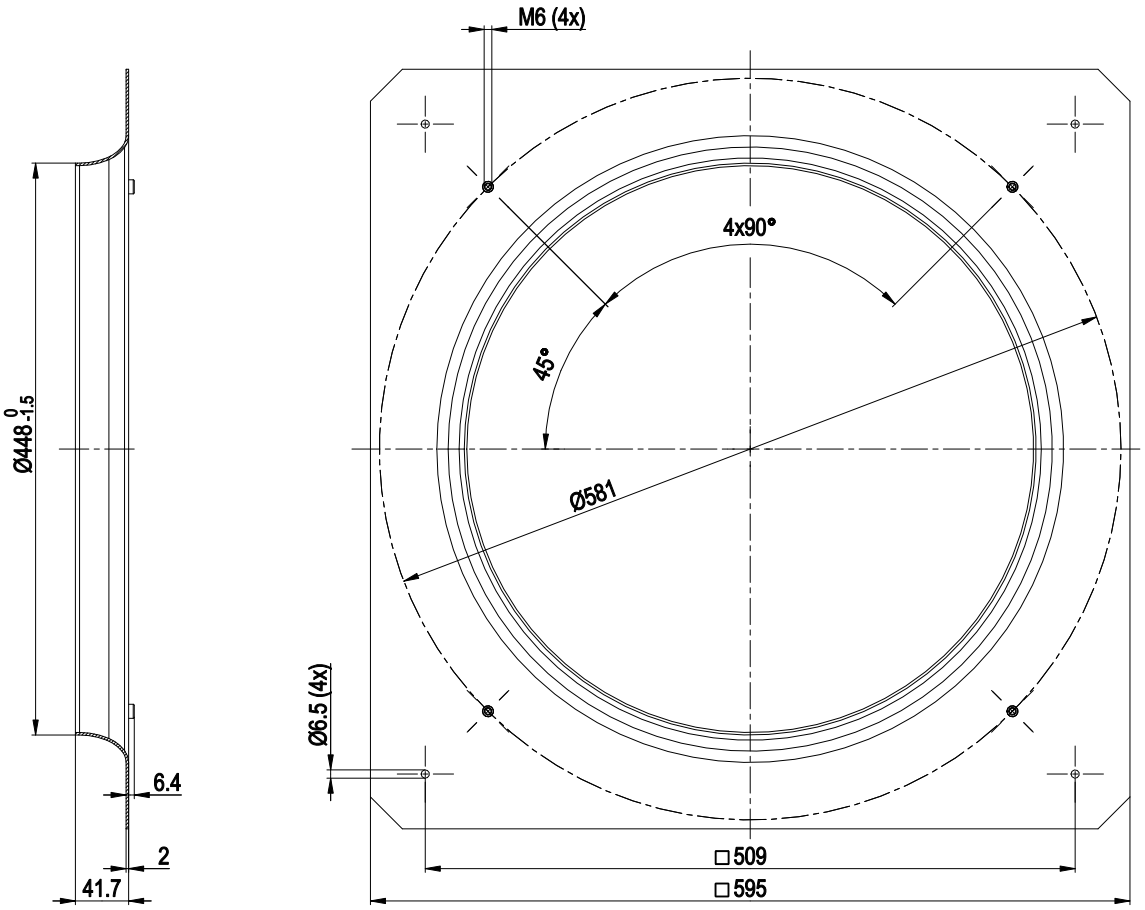
Accessory part



Inlet ring 45100-2-4013

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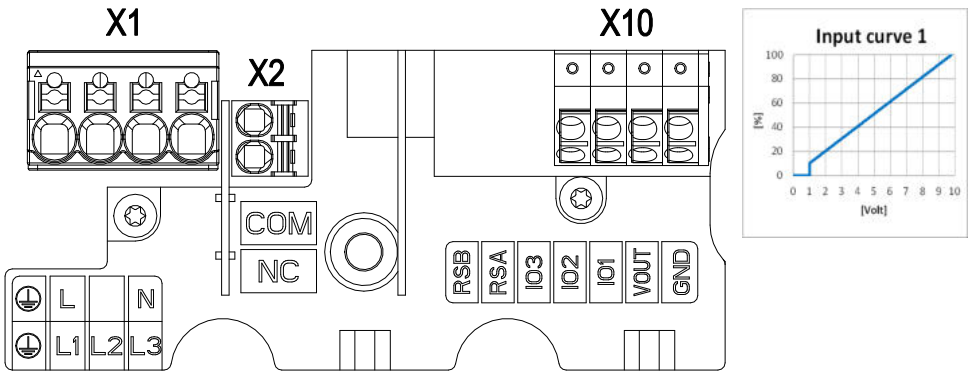
Connection diagram



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%, Imax=10 mA Short-circuit-proof, power supply for external devices, SELV
X10	CTRL	IO1	Factory setting: Analog input 0-10 V / PWM, Ri=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, Umax=50 VDC, Imax=20 mA, function:Tacho output 1 pulse/revolution, SELV Function parameterizable at factory (see table Optional interface functions)

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Terminal/plug assignment

Basic (B5)

Factory configuration option upon request

○ *factory configuration option*

	configurable IO mode	electrical specification	INPUT: source: set value	INPUT: switch: parameter set: #1 / #2	INPUT: switch: direction of rotation: cw / ccw	INPUT: switch: enable/disable input	INPUT: configurable function	OUTPUT: signal: tach out	OUTPUT: signal: diagnostics out	OUTPUT: signal: alarm out	OUTPUT: signal: run monitoring	OUTPUT: signal: status	OUTPUT: signal: configurable function
IO1	○ Din1 (high active): digital input	active: parametrizable voltage x - 30 VDC not active: pin open or parametrizable voltage < x VDC, SELV		○	○	○	○						
	○ **Ain1 0-10 V/PWM:** analog input	Ri = 100 kΩ, characteristic curve parameterizable, f_{PWM} = 1 k - 10 kHz, SELV	○										
IO2	○ **Tach out** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV						○					
	○ **Diagnostics out** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV							○				
	○ **Alarm out** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV								○			
	○ **Open collector**	Umax = 50 VDC, Imax = 20 mA, SELV									○	○	○
COM NC	**Relais**	250 VAC / 2 A (AC1)											
Vout	**Voltage output**	Voltage 10 VDC, SELV											

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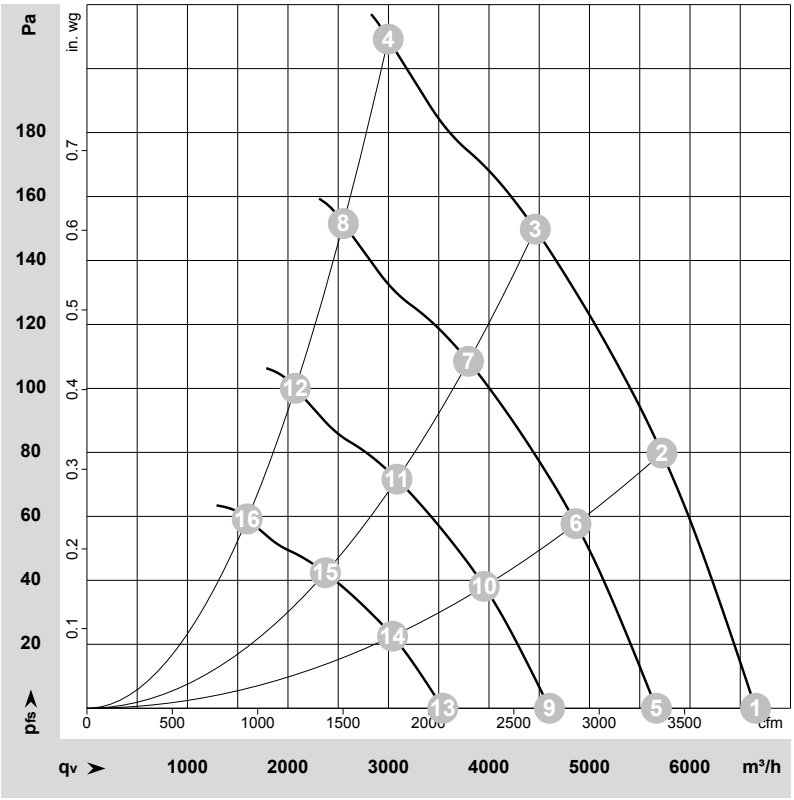
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-222598-1
Date: 2023-01-17

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	m^3/h	Pa	cfm	in. wg
1	1~	230	50	1410	344	1.54	68	74	78	79	6650	0	3915	0.00
2	1~	230	50	1410	417	1.84	63	70	74	76	5720	80	3365	0.32
3	1~	230	50	1410	465	2.05	62	70	74	76	4460	150	2625	0.60
4	1~	230	50	1410	500	2.20	66	74	79	80	2995	210	1765	0.84
5	1~	230	50	1200	213	0.95	64	70	73	75	5665	0	3335	0.00
6	1~	230	50	1200	256	1.13	59	66	70	71	4865	58	2865	0.23
7	1~	230	50	1200	286	1.26	58	66	70	72	3795	109	2235	0.44
8	1~	230	50	1200	299	1.32	62	70	75	76	2550	152	1500	0.61
9	1~	230	50	975	114	0.51	58	65	68	70	4605	0	2710	0.00
10	1~	230	50	975	138	0.61	54	61	65	66	3955	38	2325	0.15
11	1~	230	50	975	154	0.68	53	60	65	66	3085	72	1815	0.29
12	1~	230	50	975	160	0.71	57	64	70	71	2075	100	1220	0.40
13	1~	230	50	750	52	0.23	52	58	62	63	3540	0	2085	0.00
14	1~	230	50	750	63	0.28	47	54	58	60	3040	23	1790	0.09
15	1~	230	50	750	70	0.31	46	54	58	60	2375	42	1395	0.17
16	1~	230	50	750	73	0.32	51	58	63	65	1595	59	940	0.24

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

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