S4D450-ZU22-01

AC axial fan - AxiEco

with guard grille

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**S4D450-ZU22-01**
Motor	**M4D094-HA**

Phase		3~	3~	3~	3~	3~	3~
Nominal voltage	VAC	400	400	400	400	480	480
Wiring		Δ	Y	Δ	Y	Δ	Y
Frequency	Hz	50	50	60	60	60	60
Method of obtaining data		ml	ml	ml	ml	ml	ml
Valid for approval/standard		CE	CE	CE	CE	CE	CE
Speed (rpm)	min^{-1}	1400	1170	1570	1100	1630	1280
Power consumption	W	540	400	795	485	865	605
Current draw	A	1.3	0.68	1.45	0.85	1.5	0.9
Max. back pressure	Pa	175	125	220	110	240	145
Max. back pressure	in. wg	0.7	0.5	0.88	0.44	0.96	0.58
Min. ambient temperature	°C	-40	-40	-40	-40	-40	-40
Max. ambient temperature	°C	65	65	65	55	60	55
Starting current	A	4.7	1.6	4.3	1.45	5.2	1.8

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}	%	37.8	31.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		45.9	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.51
09 Air flow q_v	m^3/h	4580
09 Pressure increase p_{fs}	Pa	161
10 Speed (rpm) n	min^{-1}	1395
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-208947

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Technical description

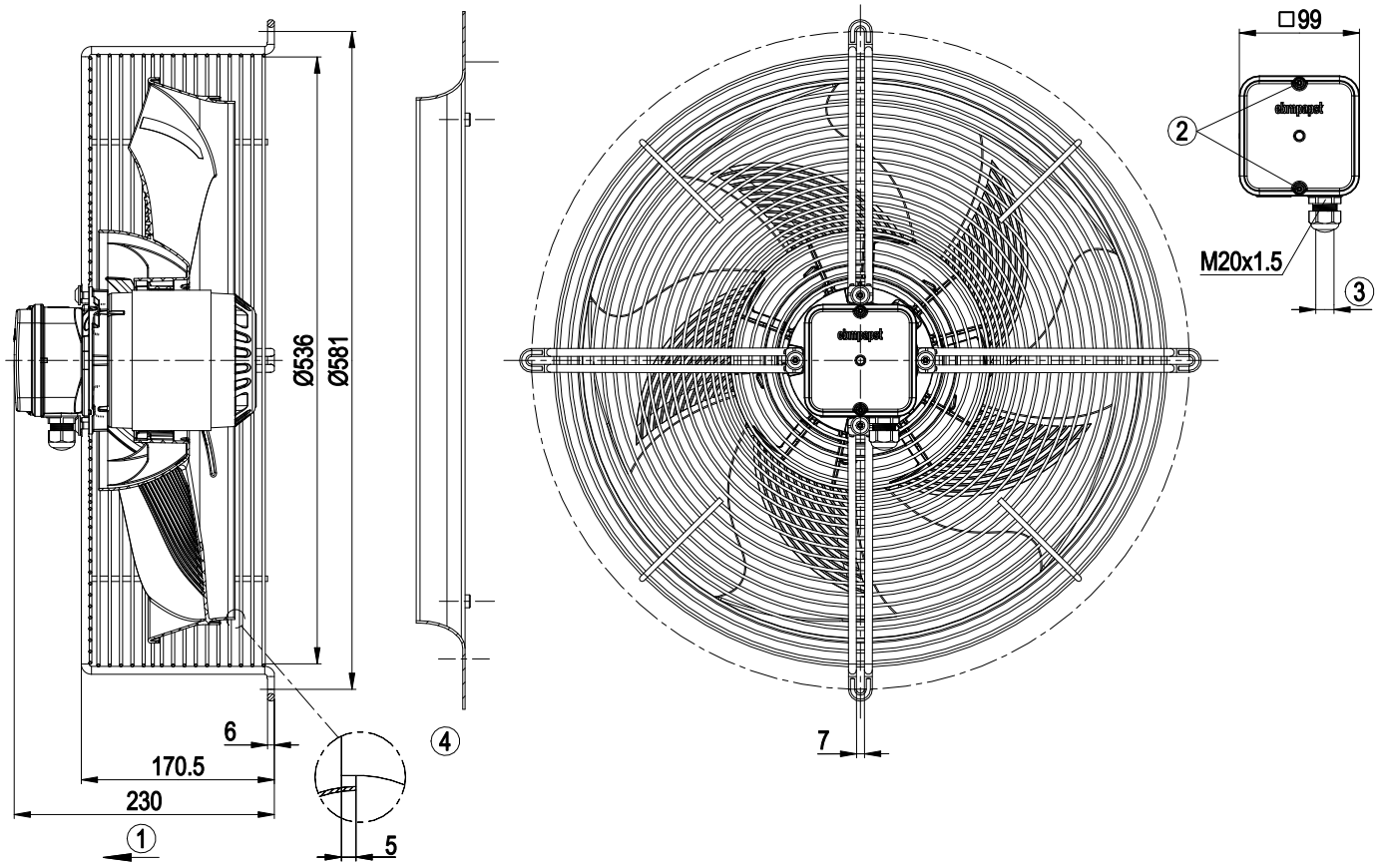
Weight	11.4 kg
Size	450 mm
Motor size	94
Rotor surface	Painted black
Terminal box material	PP plastic
Impeller material	PP plastic, galvanized sheet-metal plate
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
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
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) with basic insulation
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60034-1; CE
Approval	EAC; UL 1004-1; CSA C22.2 No. 100

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Product drawing



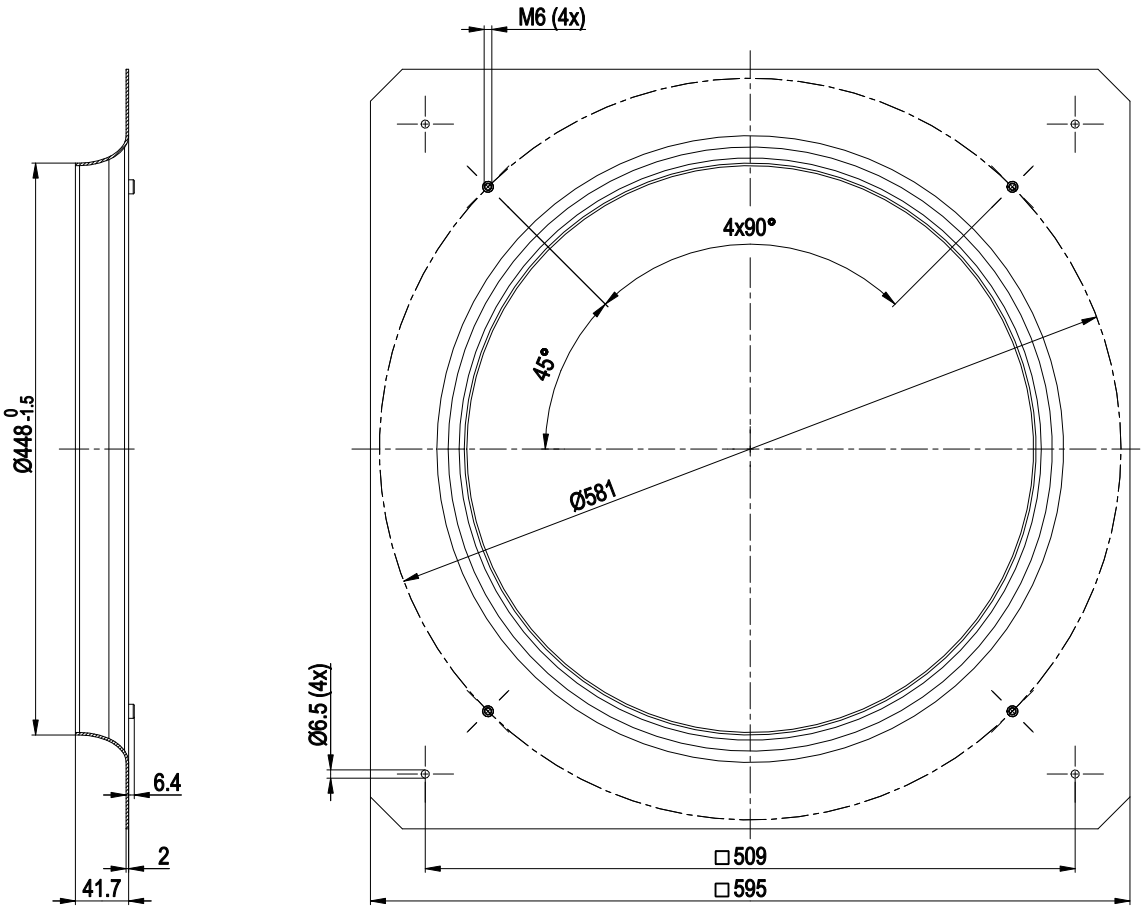
1	Airflow direction "V"
2	Tightening torque 1.5 ± 0.2 Nm
3	Cable diameter min. 6 mm, max. 12 mm, tightening torque 2 ± 0.3 Nm
4	Accessory part: Inlet ring 45100-2-4013 not included in scope of delivery

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Accessory part



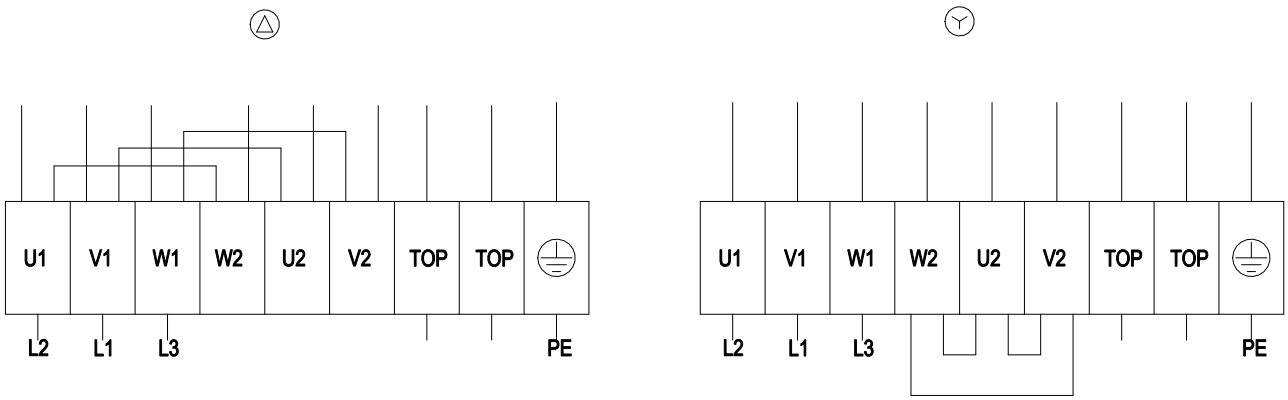
Inlet ring 45100-2-4013

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Connection diagram



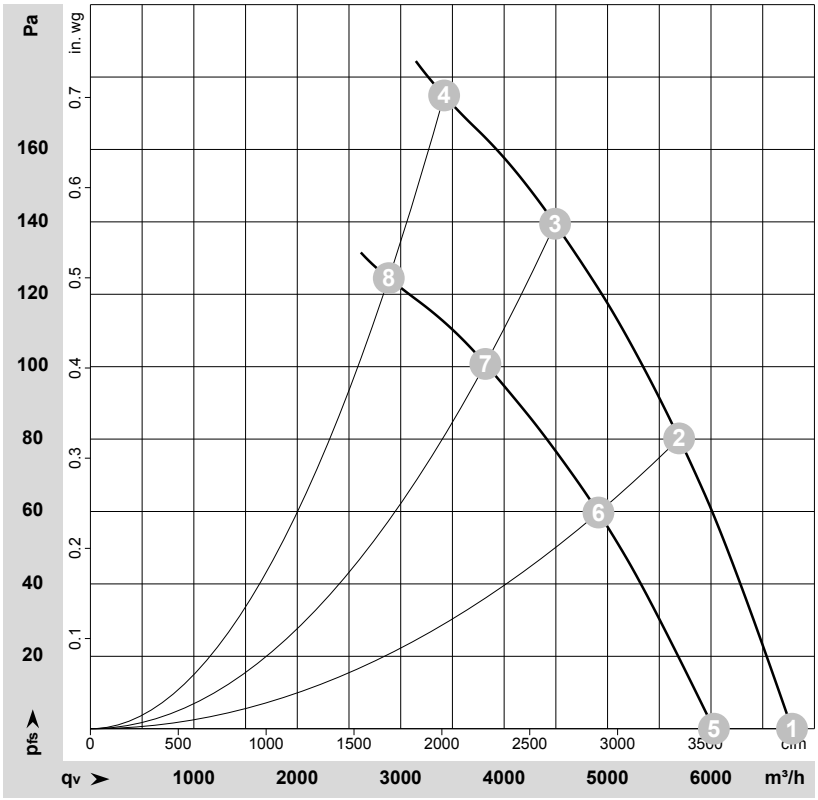
Δ	Delta connection	Y	Star connection	L1	= V1 = blue
L2	= U1 = black	L3	= W1 = brown	W2	yellow
U2	green	V2	white	TOP	2x gray
PE	green/yellow				

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-209306-1
Measurement: LU-209398-1

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_e	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	Δ	400	50	1420	432	1.23	68	74	78	6785	0	3990	0.00
2	Δ	400	50	1400	495	1.26	64	70	74	5690	80	3350	0.32
3	Δ	400	50	1395	530	1.29	63	70	75	4495	140	2645	0.56
4	Δ	400	50	1400	540	1.30	65	73	77	3420	175	2015	0.70
5	Y	400	50	1265	330	0.59	65	71	75	6030	0	3550	0.00
6	Y	400	50	1215	371	0.65	61	67	71	4910	60	2890	0.24
7	Y	400	50	1185	392	0.68	59	66	71	3820	101	2250	0.41
8	Y	400	50	1170	400	0.68	61	68	73	2885	125	1700	0.50

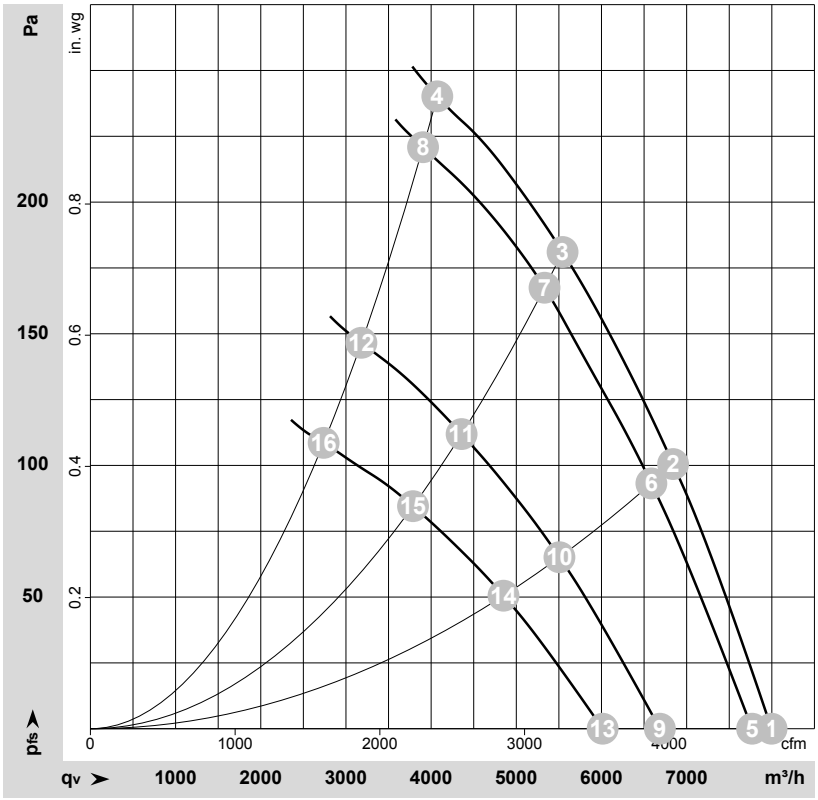
Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase

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Curves: Air performance 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-209395-1
Measurement: LU-209391-1
Measurement: LU-209403-1
Measurement: LU-209401-1

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_e	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	Δ	480	60	1675	693	1.35	71	78	82	7995	0	4705	0.00
2	Δ	480	60	1655	788	1.44	68	74	79	6840	100	4025	0.40
3	Δ	480	60	1640	849	1.50	67	73	79	5545	180	3260	0.72
4	Δ	480	60	1630	865	1.50	70	77	81	4070	240	2395	0.96
5	Δ	400	60	1625	635	1.25	71	77	81	7770	0	4570	0.00
6	Δ	400	60	1590	723	1.37	67	73	78	6585	93	3875	0.37
7	Δ	400	60	1580	775	1.46	66	73	78	5330	168	3140	0.67
8	Δ	400	60	1570	795	1.45	68	76	80	3905	220	2300	0.88
9	Y	480	60	1400	516	0.75	67	74	77	6685	0	3935	0.00
10	Y	480	60	1335	567	0.82	63	69	73	5505	65	3240	0.26
11	Y	480	60	1295	596	0.86	61	68	72	4360	112	2565	0.45
12	Y	480	60	1280	605	0.90	63	70	75	3180	145	1870	0.58
13	Y	400	60	1260	442	0.78	65	71	75	6015	0	3540	0.00
14	Y	400	60	1175	470	0.83	60	67	70	4850	51	2855	0.20
15	Y	400	60	1125	484	0.86	57	65	69	3785	85	2230	0.34
16	Y	400	60	1100	485	0.85	59	67	71	2740	110	1610	0.44

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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