S4D450-AO14-78

AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

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Nominal data

Type	**S4D450-AO14-78**
Motor	**M4D094-HA**

Phase		3~	3~	3~	3~
Nominal voltage	VAC	380	380	480	480
Wiring		Δ	Y	Δ	Y
Frequency	Hz	60	60	60	60
Method of obtaining data		ml	ml	ml	ml
Valid for approval/standard		CE	CE	CE	CE
Speed (rpm)	min^{-1}	1500	1020	1600	1240
Power consumption	W	670	380	760	520
Current draw	A	1.2	0.71	1.17	0.75
Max. back pressure	Pa	135	60	160	95
Max. back pressure	in. wg	0.54	0.24	0.64	0.38
Min. ambient temperature	°C	-40	-40	-40	-40
Max. ambient temperature	°C	50	50	50	50
Starting current	A			3.9	1.3

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	35.4	31.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		43.9	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.46
09 Air flow q_v	m^3/h	4530
09 Pressure increase p_{fs}	Pa	133
10 Speed (rpm) n	min^{-1}	1365
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-107893

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Technical description

Weight	9.7 kg
Size	450 mm
Motor size	94
Rotor surface	Painted black
Terminal box material	PP plastic
Blade material	Press-fitted sheet steel blank, sprayed with PP plastic
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Airflow direction	V
Direction of rotation	Counterclockwise, 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 (2010); CE
Approval	EAC

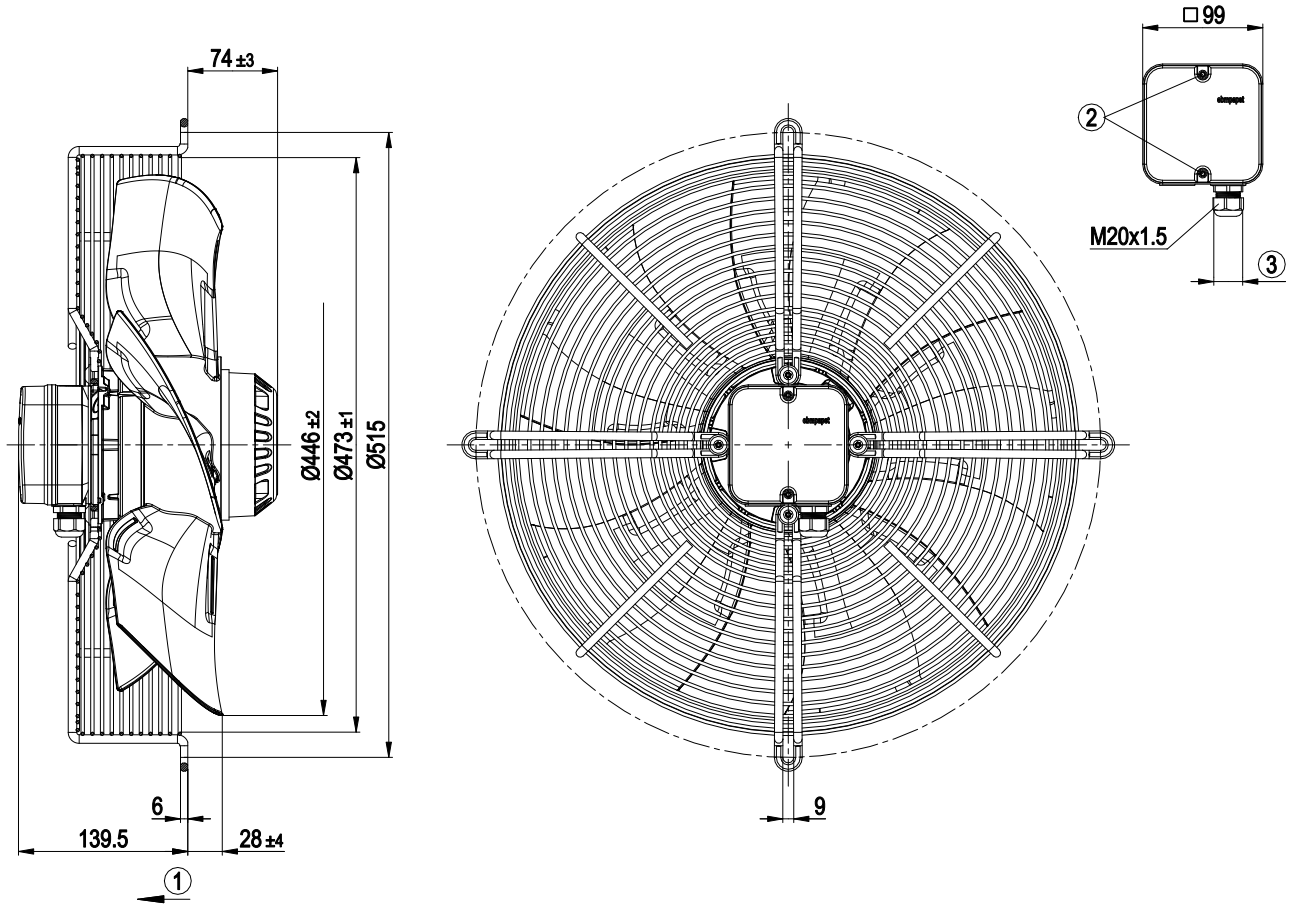
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Product drawing



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

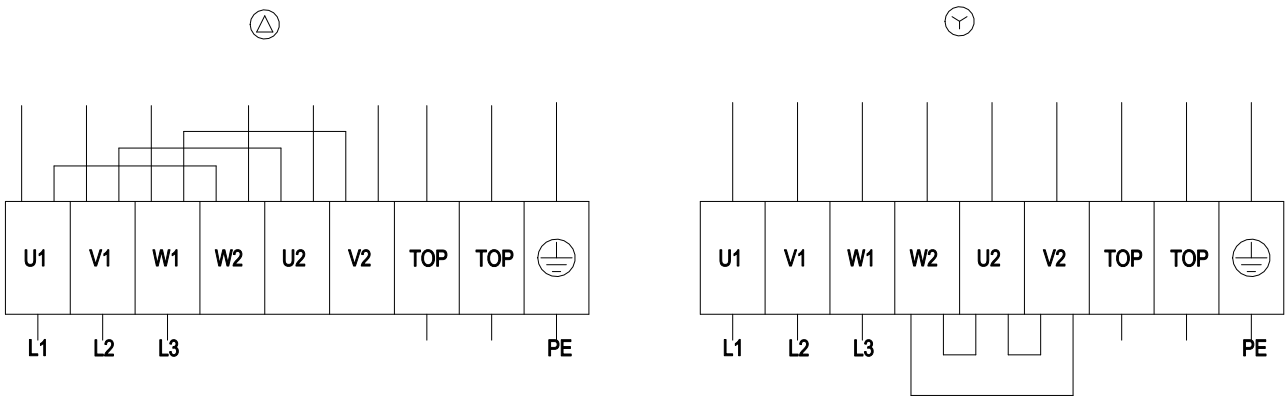
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Connection diagram



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

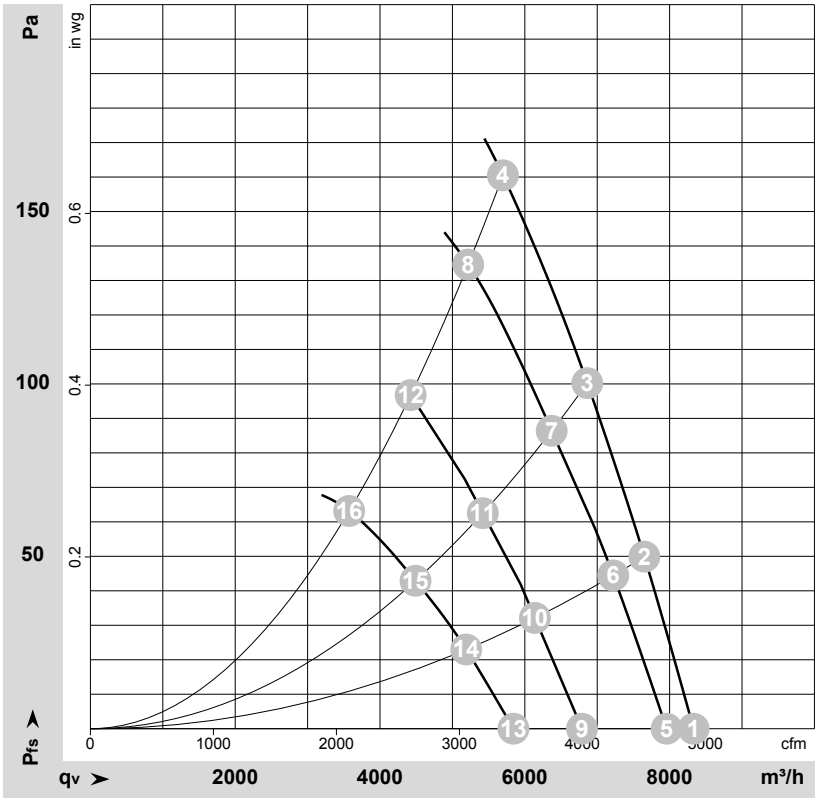
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Curves: Air performance 60 Hz



ρ = 1.19 kg/m³ ± 2 %

Measurement: LU-107898-1
Measurement: LU-173086-1
Measurement: LU-108205-1
Measurement: LU-173083-1

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	1645	628	1.03	68	74	76	8330	0	4905	0.00
2	Δ	480	60	1630	674	1.08	66	72	74	7650	50	4505	0.20
3	Δ	480	60	1615	716	1.12	65	71	73	6865	100	4040	0.40
4	Δ	480	60	1600	760	1.17	65	72	72	5695	160	3355	0.64
5	Δ	380	60	1565	545	0.99				7960	0	4685	0.00
6	Δ	380	60	1540	587	1.06				7220	46	4250	0.18
7	Δ	380	60	1520	624	1.12				6370	86	3750	0.35
8	Δ	380	60	1500	670	1.20				5220	135	3070	0.54
9	Y	480	60	1335	459	0.65	64	70	71	6790	0	3995	0.00
10	Y	480	60	1300	480	0.69	61	67	68	6140	32	3615	0.13
11	Y	480	60	1265	499	0.72	60	66	67	5420	63	3190	0.25
12	Y	480	60	1240	520	0.75	59	65	65	4425	97	2605	0.39
13	Y	380	60	1155	354	0.65				5845	0	3440	0.00
14	Y	380	60	1105	365	0.68				5190	23	3055	0.09
15	Y	380	60	1065	373	0.69				4490	43	2645	0.17
16	Y	380	60	1020	380	0.71				3575	63	2105	0.25

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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