W4D450-HA10-09

AC axial fan

sickled blades (S series)

with full square nozzle

W4D450-HA10-09 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**W4D450-HA10-09**
Motor	**M4D094-HA**

Phase		3~	3~	3~	3~
Nominal voltage	VAC	230	230	400	400
Connection		Δ	Δ	Y	Y
Frequency	Hz	50	60	50	60
Type of data definition		ml	ml	ml	ml
Valid for approval / standard		CE	CE	CE	CE
Speed	min^{-1}	1330	1540	1330	1540
Power input	W	585	660	585	660
Current draw	A	1.91	2	1.1	1.16
Max. back pressure	Pa	200	110	200	110
Max. ambient temperature	°C	75	55	75	55
Starting current	A	7.0	6.4	4	3.7

ml = max. load · me = max. efficiency · fa = running at free air · cs = customer specs · cu = customer unit
Subject to alterations

Data according to ErP directive

Installation category	A
Efficiency category	Static
Variable speed drive	No
Specific ratio*	1.00

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

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}		34.2	27.5	31.5
Efficiency grade N		42.7	36	40
Power input P_e	kW	0.45		
Air flow q_v	m^3/h	4675		
Pressure increase p_{fs}	Pa	120		
Speed n	min^{-1}	1385		

Data established at point of optimum efficiency

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Technical features

Mass	14 kg
Size	450 mm
Surface of rotor	Coated in black
Material of terminal box	ABS plastic, black
Material of blades	Sheet steel, coated in black
Material of wall ring	Sheet steel, pre-galvanised and coated in black plastic
Material of guard grille	Steel, phosphated and coated in black plastic
Number of blades	5
Direction of air flow	"A"
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F3-1
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical leads	Via terminal box
Motor protection	Thermal overload protector (TOP) brought out
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 60034-1 (2004)

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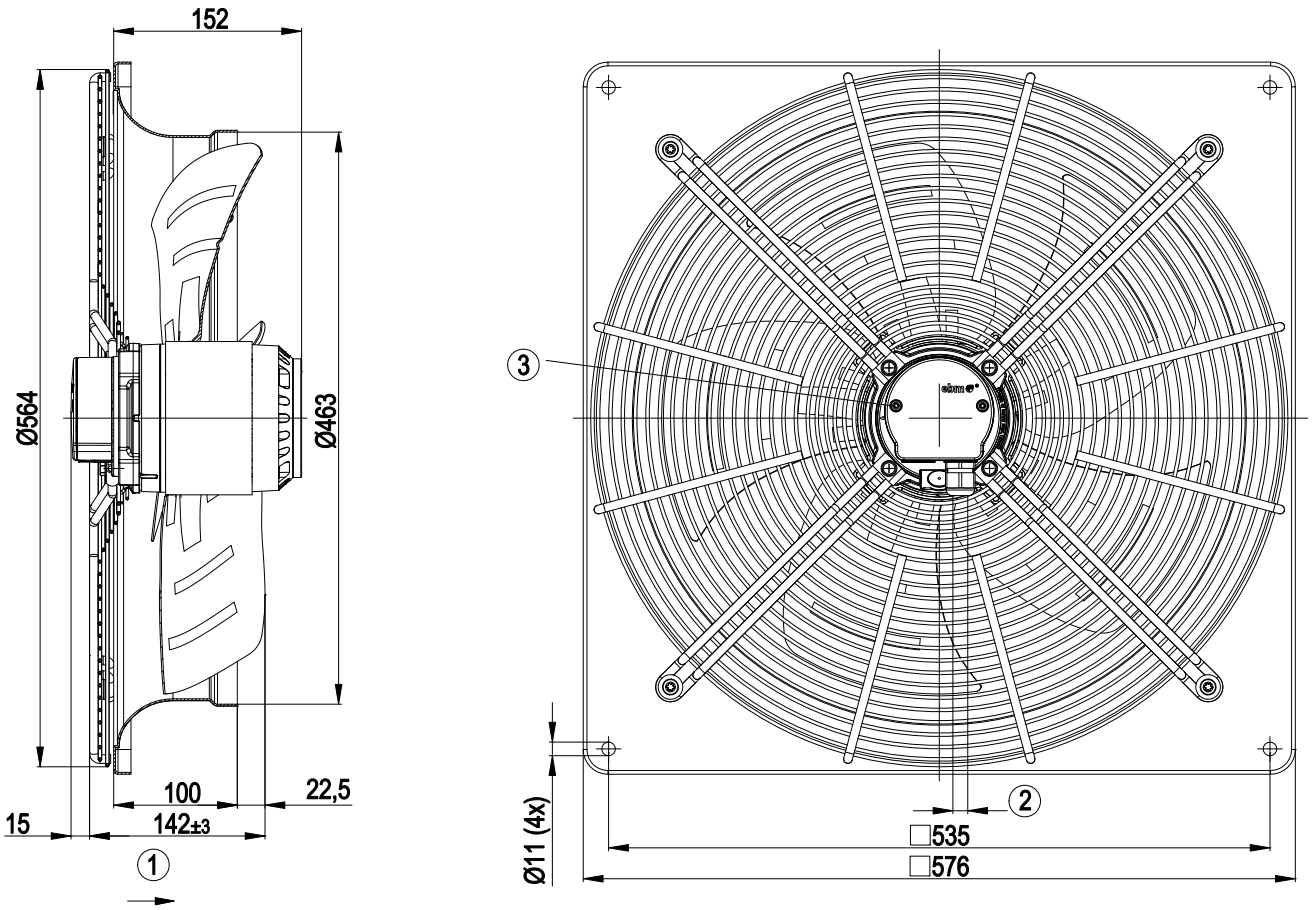
Product drawing



1	Direction of air flow "A"
2	Cable diameter: min. 6 mm, max. 12 mm, tightening torque: 2 Nm
3	Tightening torque 1.0 ± 0.15 Nm

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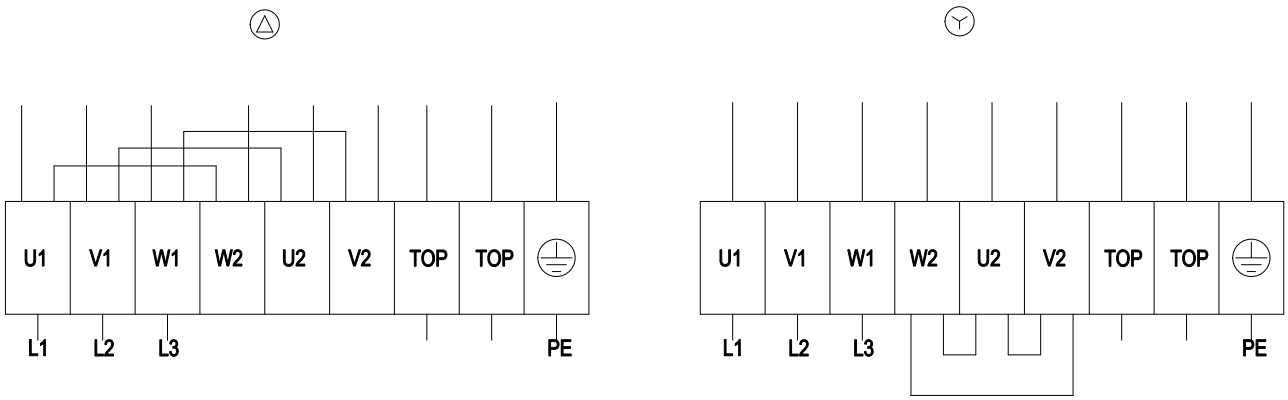
Connection screen



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

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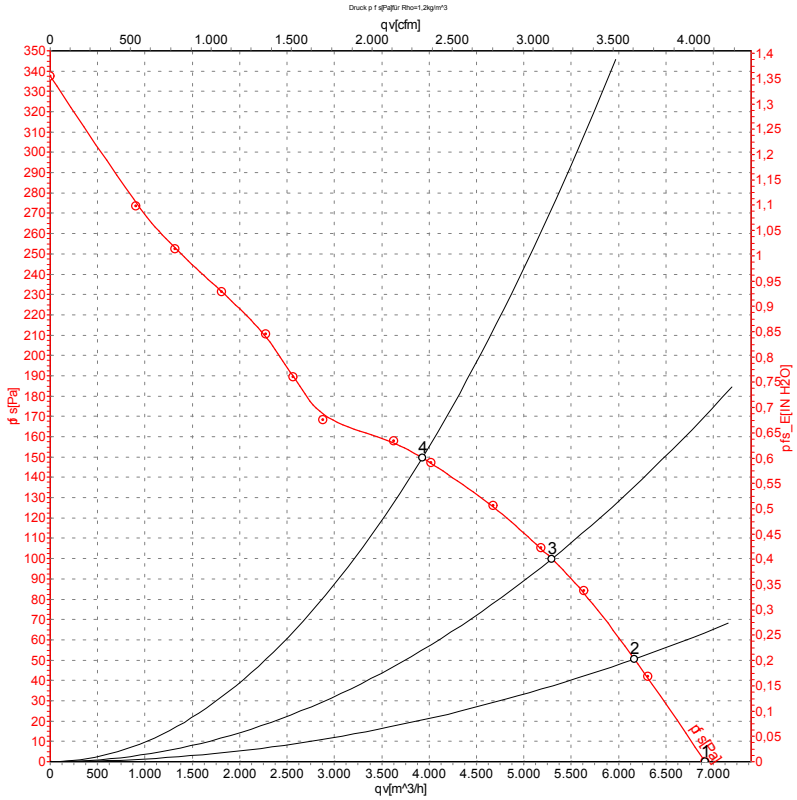
Charts: Air flow 50 Hz Y



Measurement: LU-56075

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	Conn.	U	f	n	P_e	I	qv	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa
1	Y	400	50	1410	350	0.88	6915	0
2	Y	400	50	1405	388	0.89	6170	50
3	Y	400	50	1390	431	0.94	5295	100
4	Y	400	50	1375	478	0.99	3925	150

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_e = Power input · I = Current draw · qv = Air flow · p_{fs} = Pressure increase

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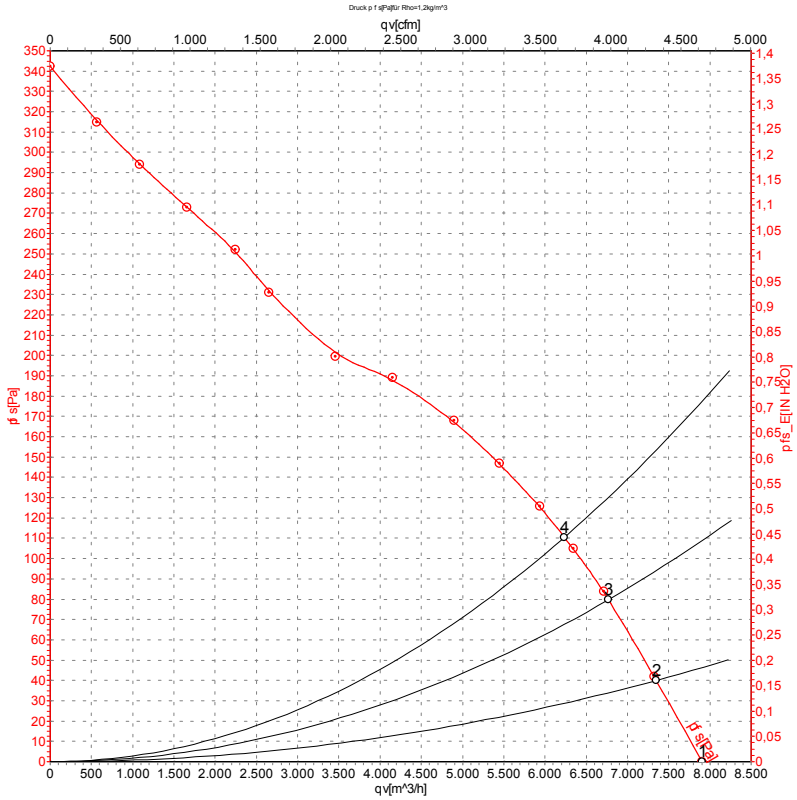
Charts: Air flow 60 Hz Y



Measurement: LU-56076

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	Conn.	U	f	n	P_e	I	qv	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa
1	Y	400	60	1610	525	1.00	7905	0
2	Y	400	60	1600	570	1.01	7345	40
3	Y	400	60	1580	609	1.07	6770	80
4	Y	400	60	1540	660	1.16	6235	110

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_e = Power input · I = Current draw · qv = Air flow · p_{fs} = Pressure increase