W8D990-CE05-80

AC axial fan - HyBlade

sickle-shaped blades (S series)

with round full nozzle, Transformer fan

W8D990-CE05-80 ebmpapst Datasheet
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Nominal data

Type	**W8D990-CE05-80**
Motor	**M8D138-LA**

Phase		3~	3~	3~	3~
Nominal voltage	VAC	230	277	400	480
Wiring		Δ	Δ	Y	Y
Frequency	Hz	50	60	50	60
Method of obtaining data		fa	fa	fa	fa
Valid for approval/standard		CE	CE	CE	CE
Speed (rpm)	min^{-1}	670	780	670	780
Power consumption	W	830	1330	830	1330
Current draw	A	3.8	4.5	2.2	2.6
Max. back pressure	Pa	90	55	90	55
Max. back pressure	in. wg	0.36	0.22	0.36	0.22
Min. ambient temperature	°C	-40	-40	-40	-40
Max. ambient temperature	°C	70	60	70	60
Starting current	A	6.4	7.1	6.4	7.1

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}	%	36.4	33.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		42.7	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	1
09 Air flow q_v	m^3/h	18510
09 Pressure increase p_{fs}	Pa	72
10 Speed (rpm) n	min^{-1}	650
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-200629

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Technical description

Weight	53.1 kg
Size	990 mm
Motor size	138
Rotor surface	Painted black
Terminal box material	Die-cast aluminum, painted black
Blade material	Sheet aluminum insert (painted black), sprayed with PP plastic
Fan housing material	Sheet steel, galvanized and coated with white aluminum plastic (RAL 9006)
Guard grille material	Steel, coated with white-aluminum plastic (RAL 9006)
Number of blades	5
Blade pitch	-5°
Airflow direction	A
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2+T
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 top; rotor on bottom on request
Condensation drainage holes	On stator 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
With cable	Axial
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 60034-1 (2010); CE
Approval	CSA C22.2 No. 100; EAC; UL 1004-1

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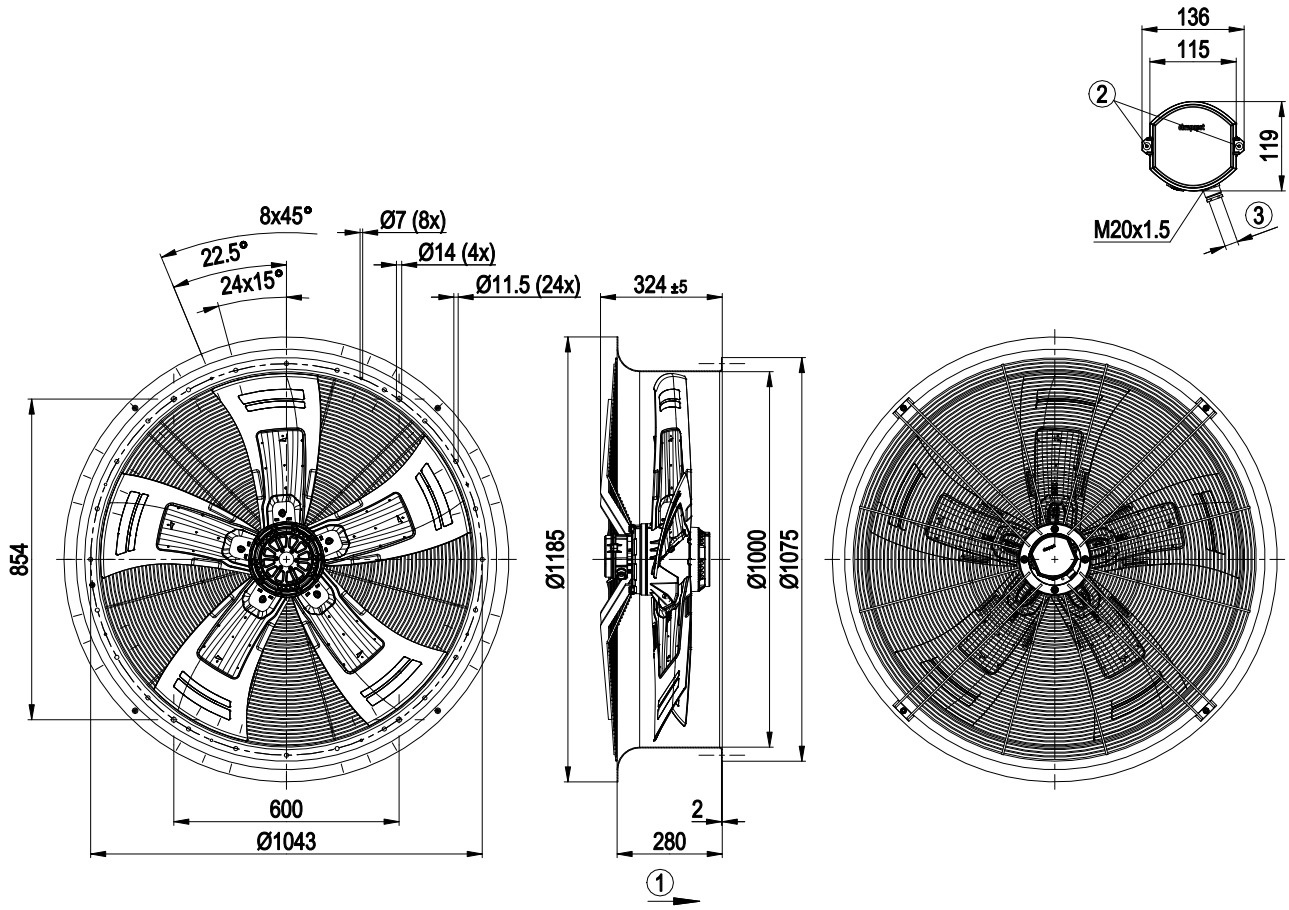
Product drawing



1	Direction of air flow "A"
2	Tightening torque 2.5 ± 0.4 Nm
3	Cable diameter min. 10 mm, max. 12 mm, tightening torque 4±0.6 Nm

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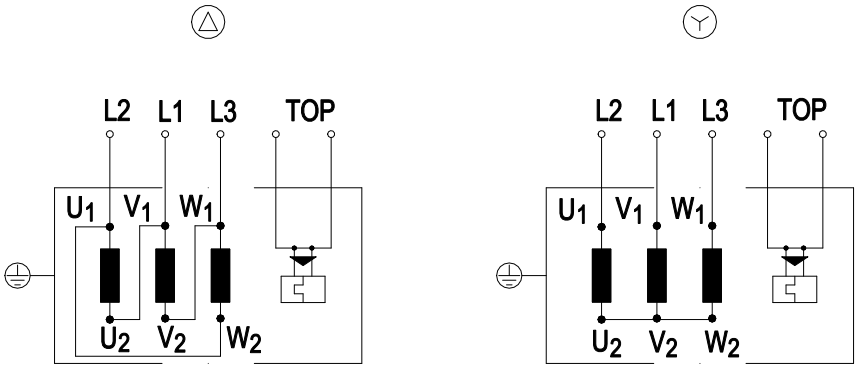
Connection diagram



Change of rotation direction by reversing two phases

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

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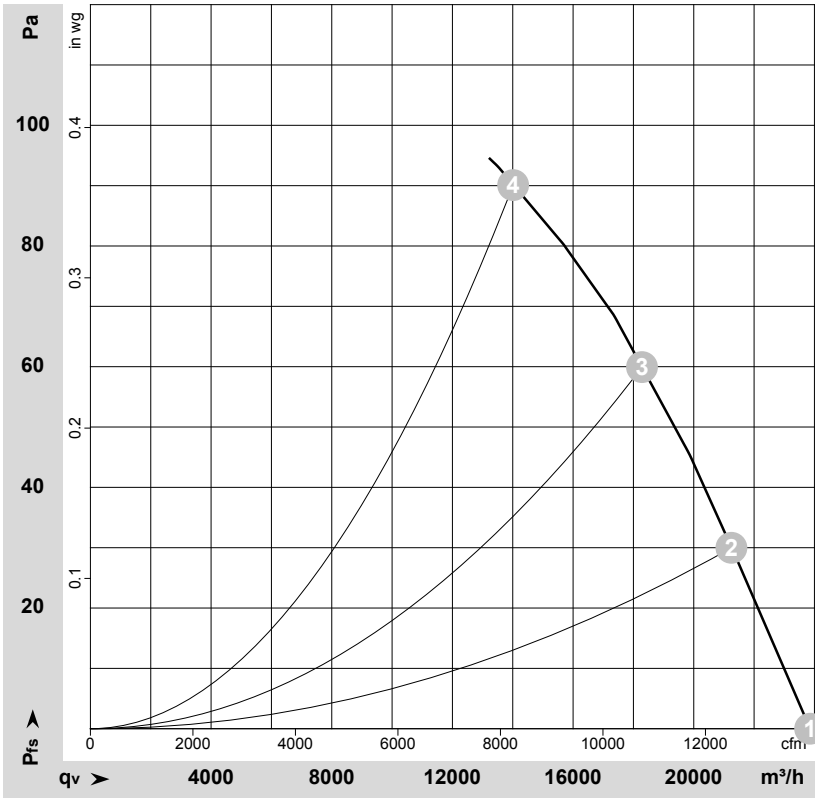
Curves: Air performance 50 Hz Y



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-174099-1

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	Y	400	50	670	830	2.20	69	76	76	23860	0	14045	0.00
2	Y	400	50	655	942	2.32	68	75	74	21250	30	12505	0.12
3	Y	400	50	645	1027	2.45	70	75	75	18285	60	10760	0.24
4	Y	400	50	635	1105	2.56	75	80	80	14015	90	8250	0.36

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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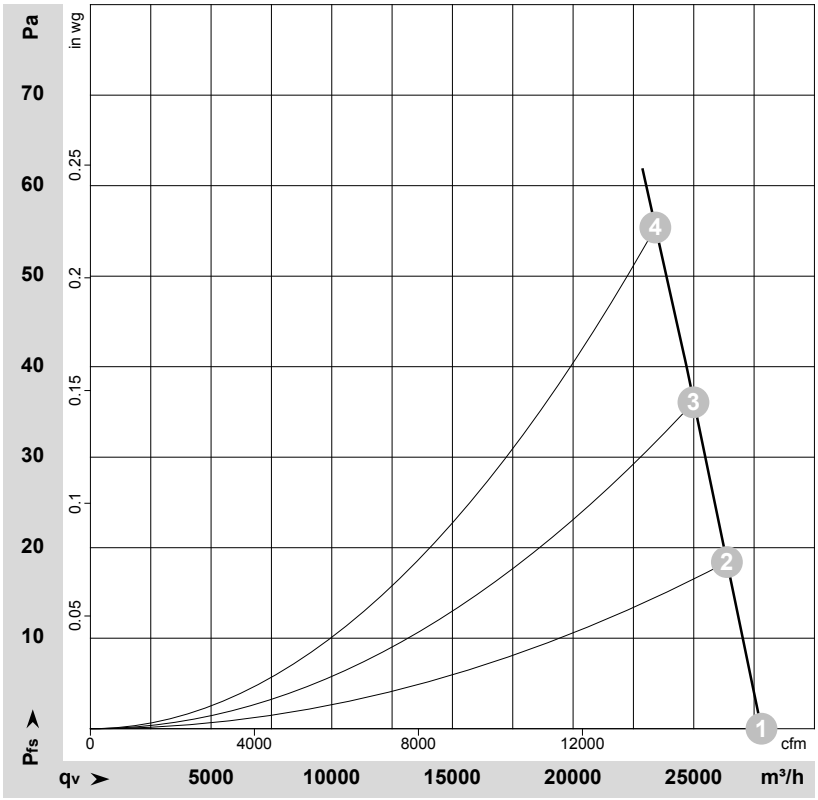
Curves: Air performance 60 Hz Y



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-174097-1

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	Y	480	60	780	1330	2.60	74	81	80	27800	0	16360	0.00
2	Y	480	60	775	1399	2.69	73	80	79	26375	18	15525	0.07
3	Y	480	60	765	1473	2.79	72	79	79	24985	36	14705	0.14
4	Y	480	60	755	1544	2.88	72	78	78	23410	55	13775	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