AC axial fan

sickle-shaped blades (S series)

A4D420-AP02-12 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**A4D420-AP02-12**
Motor	**M4D074-GA**

Phase		3~	3~	3~
Nominal voltage	VAC	400	460	460
Wiring		Y	Y	Y
Frequency	Hz	50	60	60
Method of obtaining data		fa	fa	fa
Valid for approval/standard		CE	CE	UL
Speed (rpm)	min^{-1}	1430	1680	1680
Power consumption	W	160	265	275
Current draw	A	0.44	0.52	0.52
Max. back pressure	Pa	160	120	120
Max. back pressure	inH2O	0.64	0.48	0.48
Min. ambient temperature	°C	-25	-25	-25
Max. ambient temperature	°C	85	60	60

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	34.5	29.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		45	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.22
09 Air flow q_v	m^3/h	3540
09 Pressure increase p_{fs}	Pa	81
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-29817

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Technical description

Weight	4.89 kg
Fan size	420 mm
Rotor surface	Painted black
Blade material	Sheet steel, painted black
Number of blades	5
Airflow direction	"V"
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP44
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F2-2
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)	< 0.75 mA
Motor protection	Thermal overload protector (TOP) with basic insulation
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE
Approval	UL 1004-1; CSA C22.2 No. 100

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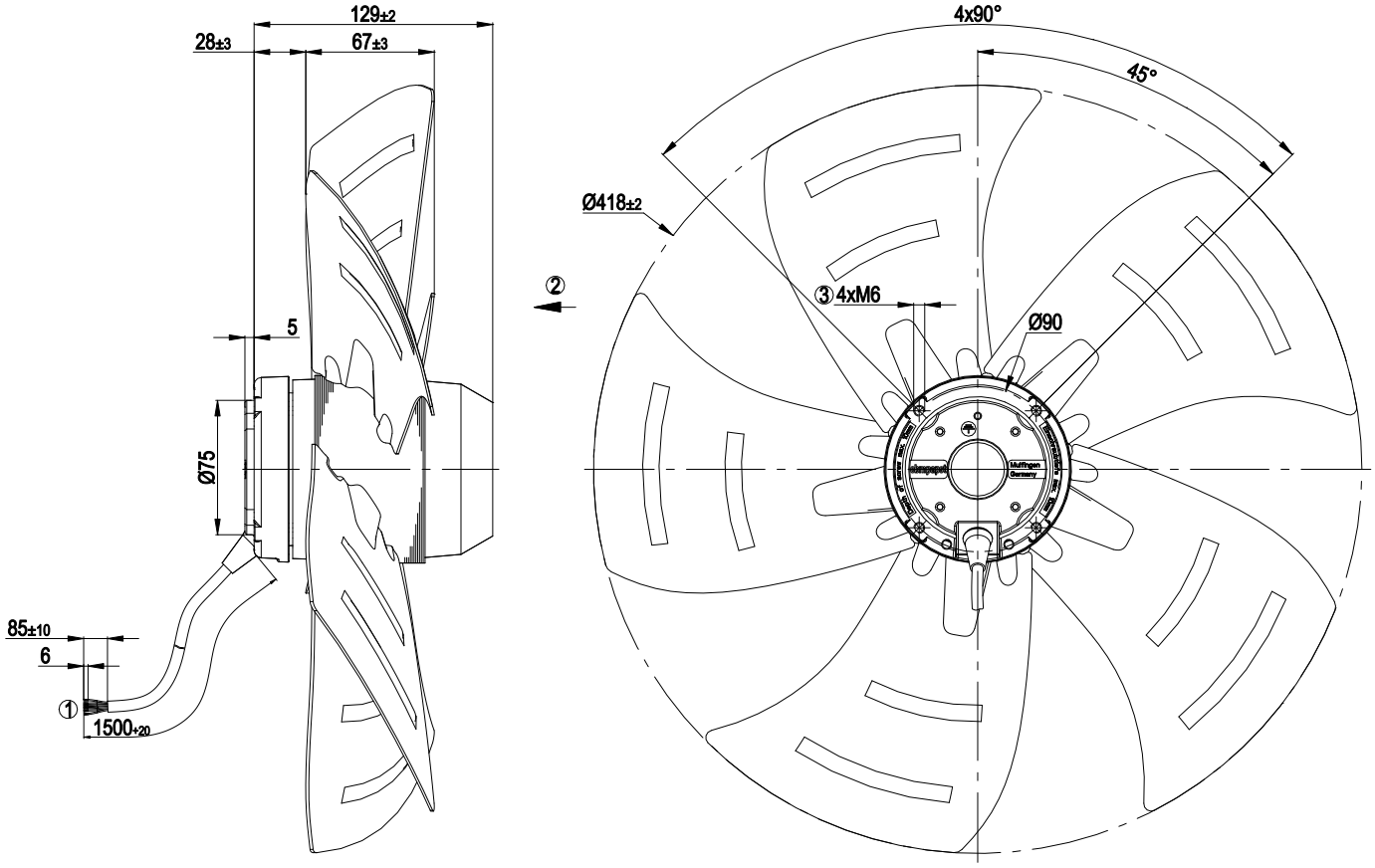
Product drawing



1	Cable PFA, 6x crimped splices
2	Direction of air flow "V"
3	Max. clearance for screw 10 mm

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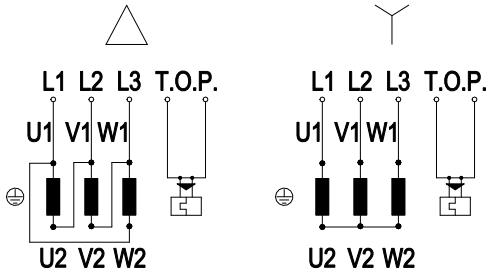
Connection diagram



Note: Change of rotation direction by reversing two phases

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

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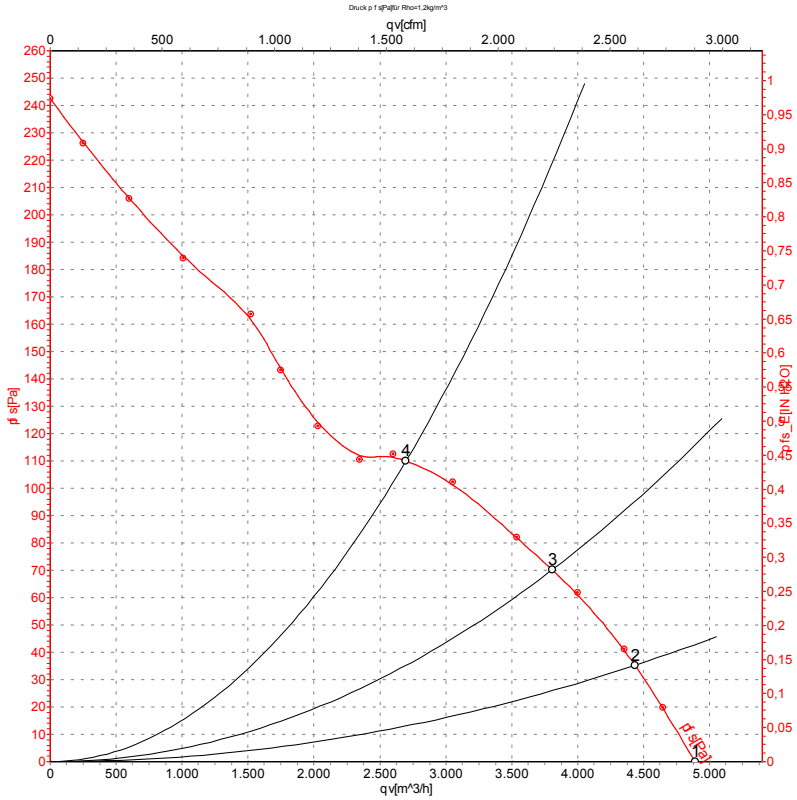
Curves: Air performance 50 Hz



Measurement: LU-29817-1

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

	U	f	n	P_e	I	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa	CFM	inH2O
1	400	50	1430	160	0.44	4890	0	2880	0.00
2	400	50	1420	188	0.48	4435	35	2610	0.14
3	400	50	1400	218	0.51	3805	70	2240	0.28
4	400	50	1375	256	0.55	2700	110	1590	0.44

U = Power supply · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · qv = Air flow · p_{fs} = Pressure increase

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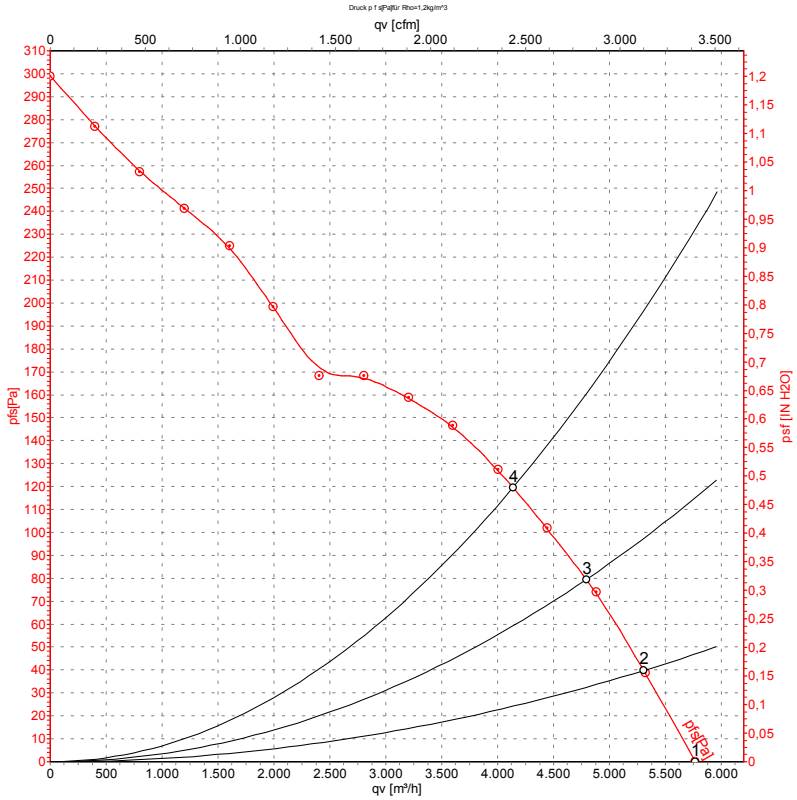
Curves: Air performance 60 Hz



Measurement: LU-141005-1

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	qv	p_{fs}	qv	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	CFM	inH2O
1	Y. AUS	460	60	1680	275	0.52	5770	0	3395	0.00
2	Y. AUS	460	60	1640	302	0.53	5305	40	3125	0.16
3	Y. AUS	460	60	1600	340	0.61	4790	80	2820	0.32
4	Y. AUS	460	60	1590	371	0.62	4135	120	2435	0.48

Wired = Wiring · U = Power supply · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · qv = Air flow · p_{fs} = Pressure increase