EC axial fan - HyBlade

sickled blades (S series)

A3G990-AV01-71 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

Nominal data

Type	**A3G990-AV01-71**
Motor	**M3G150-NA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
State		prelim.
Speed (rpm)	min^{-1}	860
Power input	W	2540
Current draw	A	3.9
Max. back pressure	Pa	160
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	65

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

		Actual	Request 2015
01 Overall efficiency η_{es}	%	47.1	36.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		50.8	40
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	2.61
09 Air flow q_v	m^3/h	23190
09 Pressure increase p_{fs}	Pa	181
10 Speed (rpm) n	min^{-1}	860
11 Specific ratio*		1.00

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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

LU-173446

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Technical features

Mass	32 kg
Size	990 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, coated in black
Material of blades	Aluminium sheet insert, sprayed with PP plastic
Number of blades	5
Blade angle	0°
Direction of air flow	"V"
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 55
Insulation class	"F"
Humidity (F)/environmental protection class (H)	H2
Note ambient temperature	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications) we recommend our fan version with special low-temperature bearings.
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
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (programming) - External release input - Alarm relay - Integrated PID controller - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical leads	Via terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	EAC

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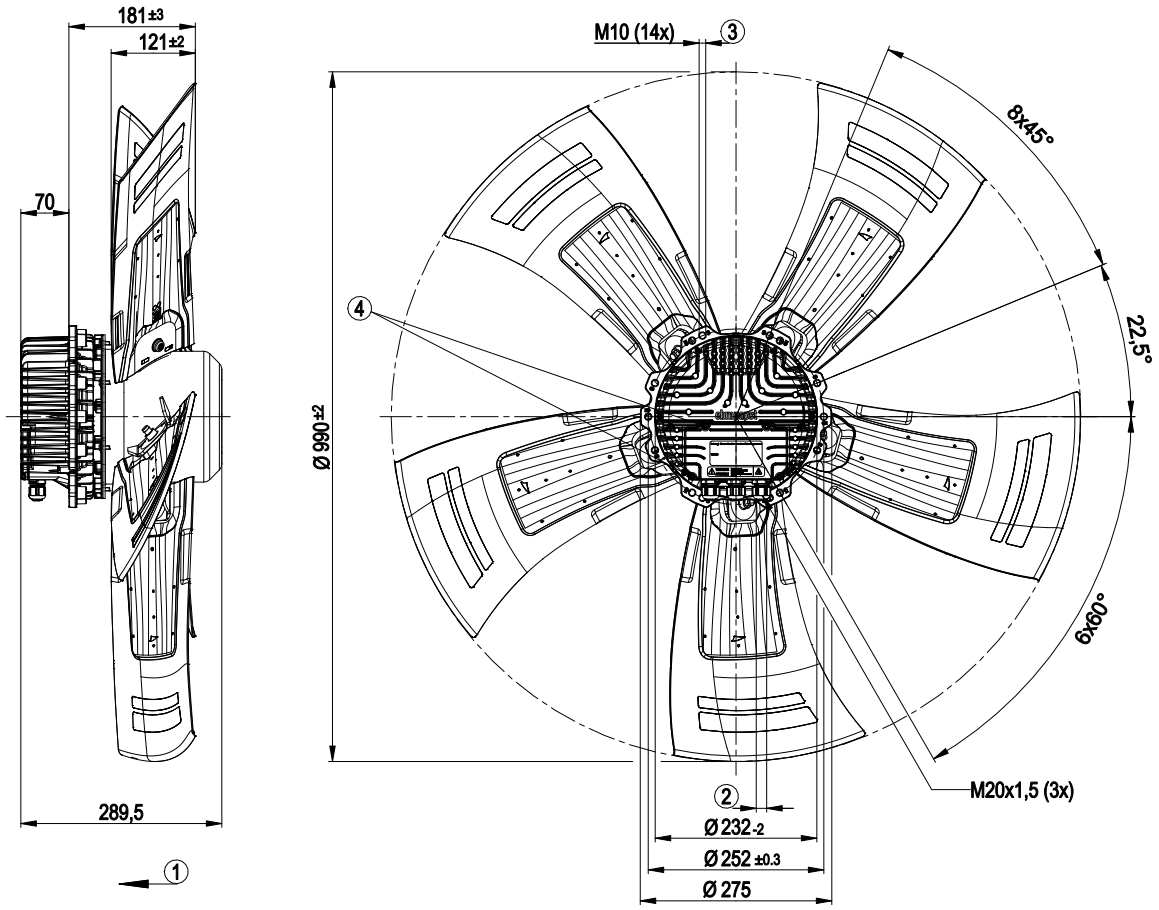
Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
3	Thread reach max. 25 mm
4	Tightening torque 3.5±0.5 Nm

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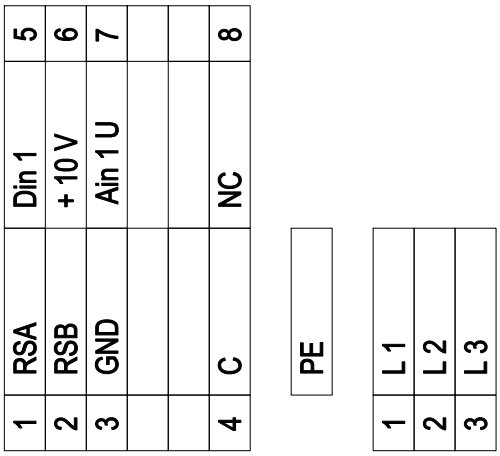
Connection screen



No.	Conn.	Designation	Function / assignment
KL 1	1	L1	Mains supply connection, supply voltage 3~380-480 VAC; 50/60 Hz
KL 1	2	L2	Mains supply connection, supply voltage 3~380-480 VAC; 50/60 Hz
KL 1	3	L3	Mains supply connection, supply voltage 3~380-480 VAC; 50/60 Hz
PE		PE	Earth connection, PE connection
KL 2	1	RSA	Bus connection RS-485, RSA, MODBUS RTU; SELV
KL 2	2	RSB	Bus connection RS-485, RSB, MODBUS RTU; SELV
KL 2	3	GND	Signal ground for control interface; SELV
KL2	4	C	Status relay; floating status contact; changeover contact; common connection; contact rating 250 VAC / 2 A (AC1)
KL 2	5	Din1	Digital input 1 enabling of electronics, enabling: open pin or applied voltage 5-50 VDC disabling: bridge to GND or applied voltage <1 VDC reset function: triggers software reset after a level change to <1 V; SELV
KL 2	6	+ 10 V	Fixed voltage output 10 VDC; +10 V -3 %, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometer); SELV Alternative: +24 VDC input for parametrisation via MODBUS without mains power
KL 2	7	Ain1 U	Analogue input 1 (set value) 0-10 V, Ri=100 kΩ, parametrisable curve; SELV
KL2	8	NC	Status relay, floating status contact; break for failure

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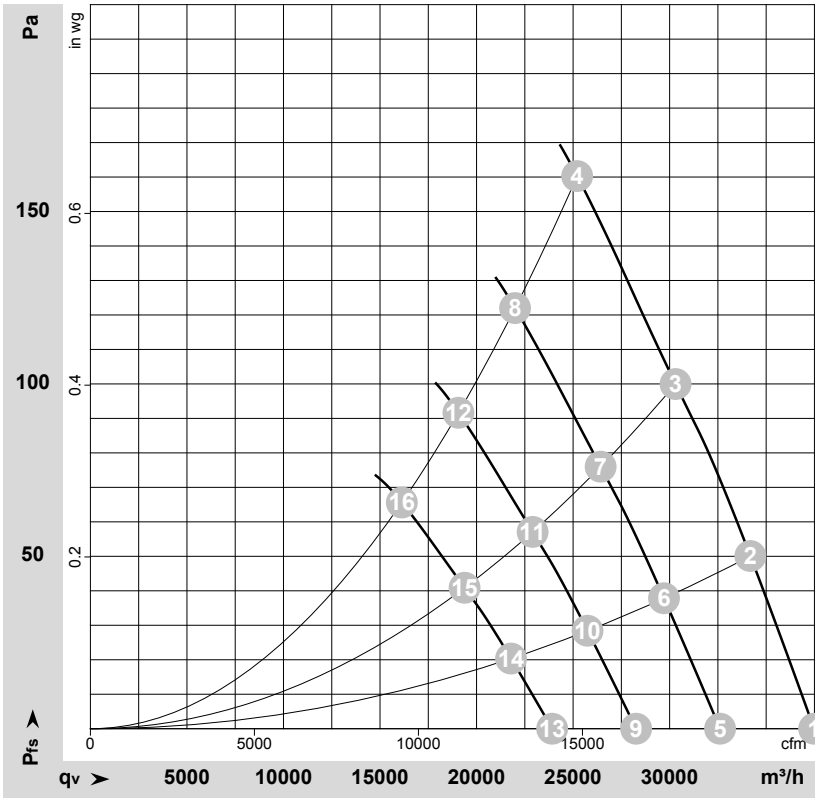
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-173446-1

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

	U	f	n	P_{ed}	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	inH2O
1	400	50	860	1655	2.62	72	80	81	37485	0	22060	0.00
2	400	50	860	1972	3.08	71	79	79	34180	50	20120	0.20
3	400	50	860	2226	3.46	70	78	78	30310	100	17840	0.40
4	400	50	860	2540	3.90	72	80	79	25210	160	14840	0.64
5	400	50	750	1090	1.73	69	77	77	32615	0	19195	0.00
6	400	50	750	1290	2.02	68	76	76	29710	39	17485	0.16
7	400	50	750	1478	2.30	67	74	75	26425	76	15555	0.31
8	400	50	750	1686	2.60	69	76	76	21995	122	12945	0.49
9	400	50	650	710	1.12	65	73	73	28265	0	16635	0.00
10	400	50	650	840	1.31	64	72	72	25750	29	15155	0.12
11	400	50	650	962	1.49	63	71	71	22905	57	13480	0.23
12	400	50	650	1097	1.69	65	73	72	19060	92	11220	0.37
13	400	50	550	430	0.68	61	69	69	23915	0	14075	0.00
14	400	50	550	509	0.80	60	68	68	21785	21	12825	0.08
15	400	50	550	583	0.91	59	66	67	19380	41	11405	0.16
16	400	50	550	665	1.03	61	69	68	16130	66	9495	0.26

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · LwA_{out} = Sound power level outlet side
q_V = Air flow · p_{fs} = Pressure increase