A3G500-BA74-N1

EC axial fan - HyBlade

sickled blades (S series)

for railway applications



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Nominal data

Type	**A3G500-BA74-N1**
Motor	**M3G112-EA**

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}	1600
Power input	W	1000
Current draw	A	1.6
Max. back pressure	Pa	235
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data in accordance with ecodesign regulation EU 327/2011

		Actual	Request 2015
01 Overall efficiency η_{es}	%	45.2	33.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		51.5	40
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	1
09 Air flow q_v	m^3/h	6690
09 Pressure increase p_{fs}	Pa	224
10 Speed (rpm) n	min^{-1}	1600
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-182232

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Technical features

Mass	7.4 kg
Size	500 mm
Motor size	112
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, coated in black
Material of impeller	Plastic PA, round sheet-metal plate coated in black
Number of blades	5
Direction of air flow	A
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP55
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H3
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), a fan version with special low-temperature bearings must be used.
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 top; rotor on bottom on request
Condensation drainage holes	None
Operation mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Integrated PID controller - Run monitoring - Output limit - Motor current limit - Emergency operation - PFC, passive - RS485 MODBUS RTU - Soft start -Maximum EEPROM write cycles 100,000 - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Overvoltage detection - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC directives	According to EN 50121-3-2
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Lateral
Protection class	I (if protective earth is connected by customer)

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Product conforming to standard	EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2008; EN 61373, Cat. 1B: 2010; CE
Approval	EAC
Remark	A prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533; if voltage (e.g. 230 VAC) is passed through the alarm relay, the reinforced insulation property of the SELV signal wires will be lost and they will then only have basic insulation The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.

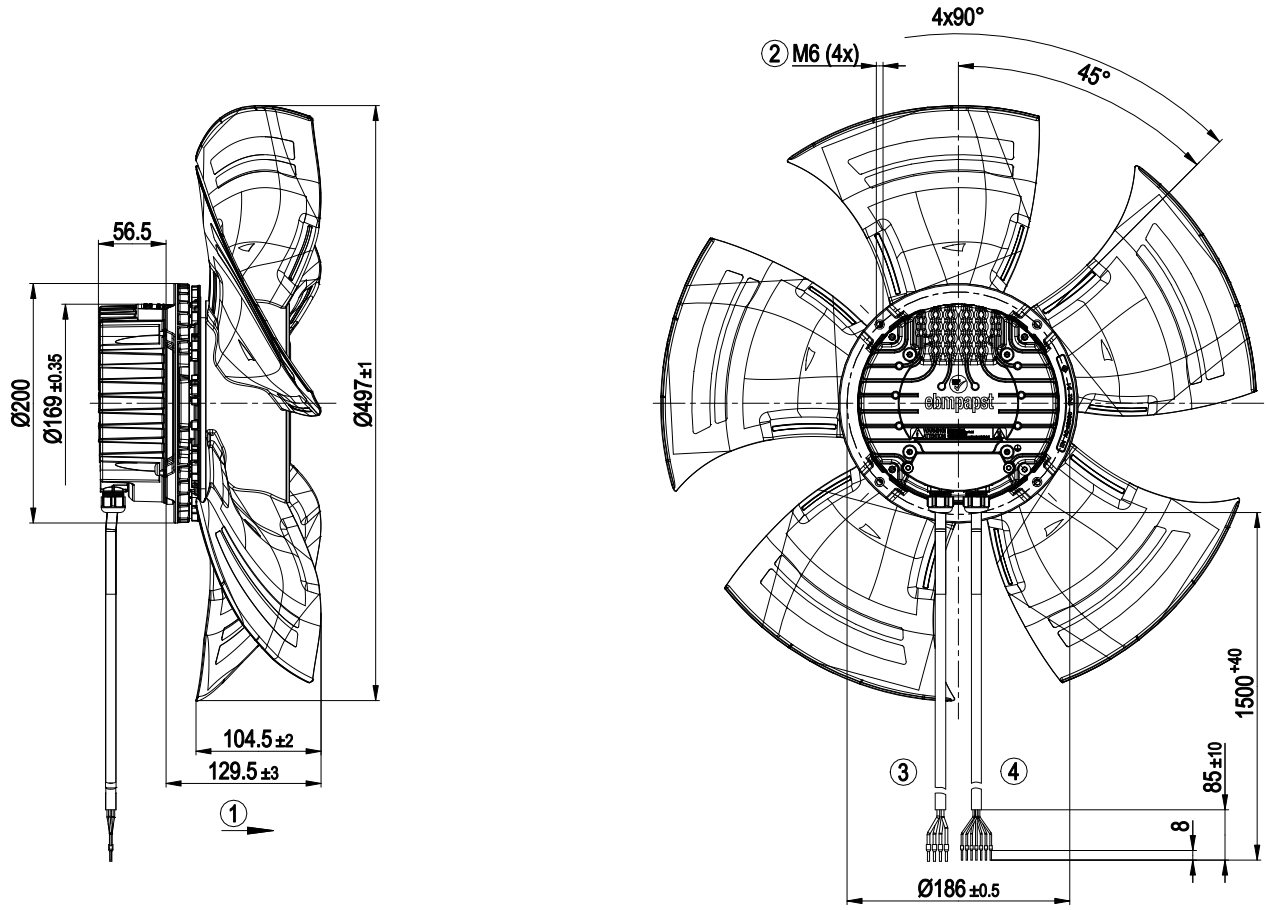
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Product drawing



1	Direction of air flow "A"
2	Thread reach max. 16 mm
3	Connection line halogen-free, BETAtrans® 3 GKW flex, 4G 1.5 mm²
	4x core-end sleeve
4	Connection line halogen-free, BETAtrans® 3 GKW flex, 7x 0.5 mm²
	7x core-end sleeve

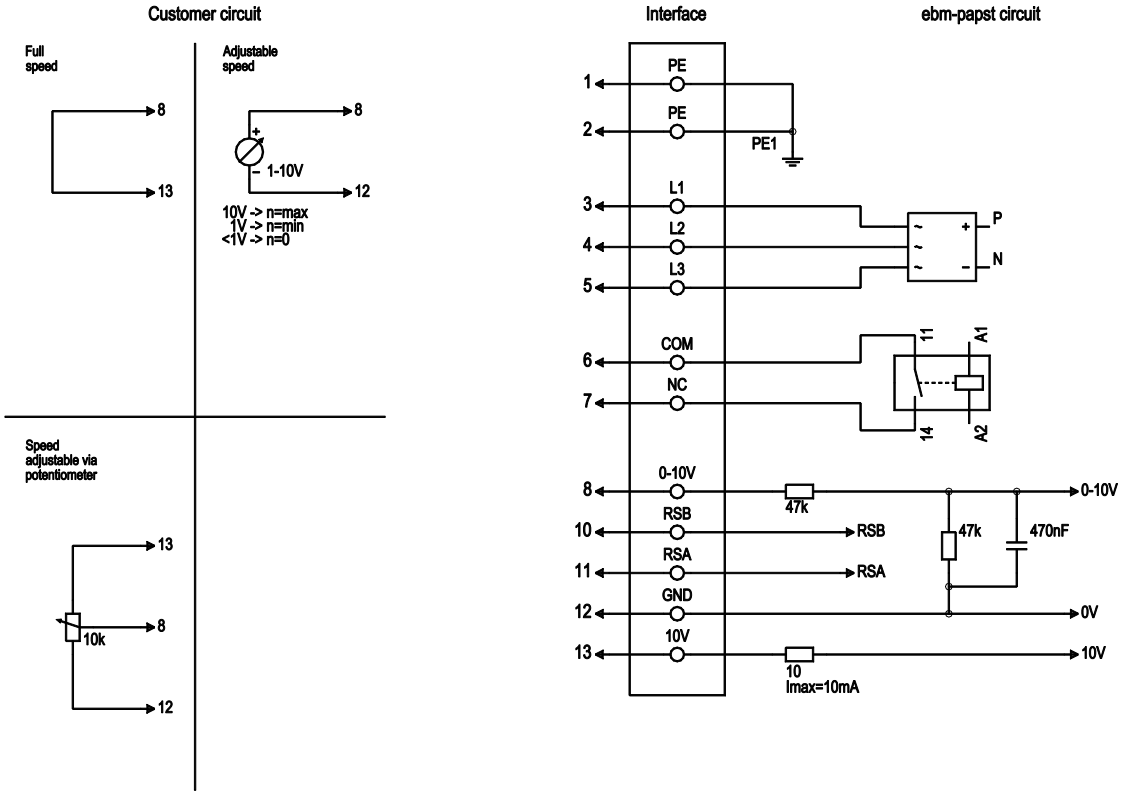
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Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	L1	black	Power supply, phase, 50/60 Hz
1	4	L2	blue	Power supply, phase, 50/60 Hz
1	5	L3	brown	Power supply, phase, 50/60 Hz
2	6	COM	grey	Status relay, floating status contact, common connection, contact rating 250 VAC / 30 VDC 5 A minimum contact gap 1 mA / 5 VDC, reinforced insulation with respect to mains, basic insulation with respect to control interface
2	7	NC	orange	Status relay, floating status contact, break for failure, contact rating 250 VAC / 30 VDC 5 A minimum contact gap 1 mA / 5 VDC, reinforced insulation with respect to mains, basic insulation with respect to control interface
2	8	0-10V	yellow	Analogue input (set value) SELV, 0-10 V, Ri=100kΩ, parametrisable curve
2	10	RSB	brown	RS-485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS-485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Signal ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V +/-3 %, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer); SELV

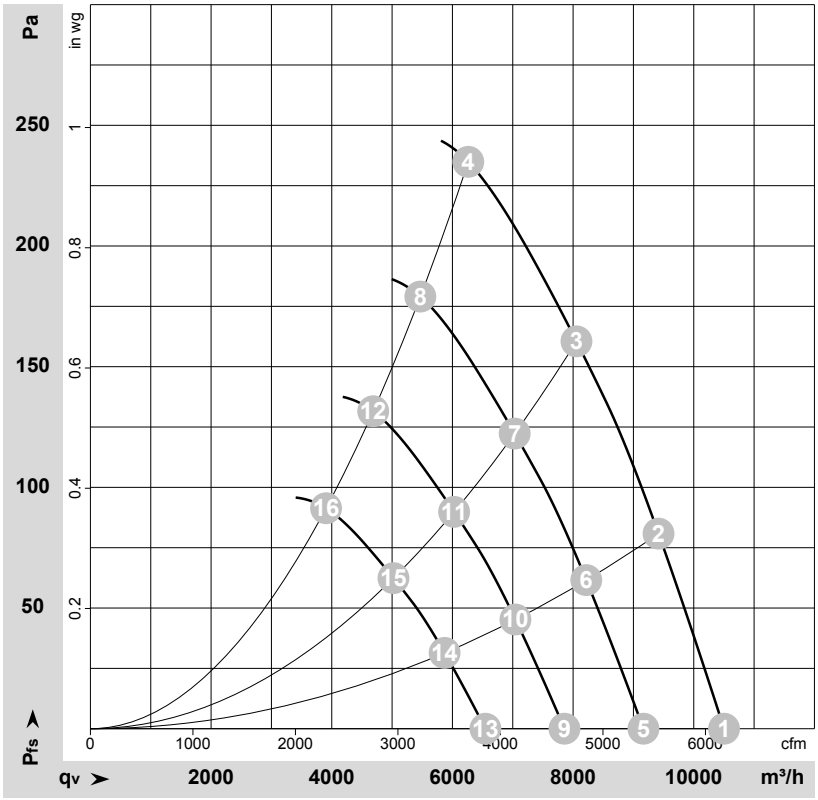
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Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-182232-1

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	in. wg
1	400	50	1600	718	1.12	74	82	82	10500	0	6180	0.00
2	400	50	1600	847	1.31	71	79	79	9415	80	5540	0.32
3	400	50	1600	942	1.45	71	79	79	8055	160	4740	0.64
4	400	50	1600	1000	1.60	73	81	81	6265	235	3685	0.94
5	400	50	1400	478	0.74	71	78	79	9165	0	5395	0.00
6	400	50	1400	563	0.87	68	75	76	8220	64	4840	0.26
7	400	50	1400	626	0.96	68	76	76	7030	123	4140	0.49
8	400	50	1400	664	1.02	70	78	78	5470	179	3220	0.72
9	400	50	1200	301	0.47	67	74	75	7855	0	4625	0.00
10	400	50	1200	355	0.55	64	71	72	7045	47	4145	0.19
11	400	50	1200	394	0.61	64	72	72	6025	90	3545	0.36
12	400	50	1200	418	0.64	66	74	74	4685	132	2760	0.53
13	400	50	1000	174	0.27	62	70	70	6545	0	3855	0.00
14	400	50	1000	205	0.32	59	67	67	5870	33	3455	0.13
15	400	50	1000	228	0.35	59	67	67	5025	63	2955	0.25
16	400	50	1000	242	0.37	61	69	69	3905	91	2300	0.37

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

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