EC axial fan

sickle-shaped blades (S series)

A3G650-BL06-G3 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Nominal data

Type	**A3G650-BL06-G3**
Motor	**M3G084-FA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	750
Power consumption	W	250
Current draw	A	1.1
Max. back pressure	Pa	65
Max. back pressure	inH2O	0.26
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	42.7	29.6
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		53.1	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.23
09 Air flow q_v	m^3/h	6135
09 Pressure increase p_{fs}	Pa	52
10 Speed (rpm) n	min^{-1}	750
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-155953

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Technical description

Weight	5.1 kg
Fan size	450 mm
Rotor surface	Painted black
Terminal box material	PP plastic
Electronics housing material	Die-cast aluminum, painted black
Blade material	Press-fitted sheet steel blank, sprayed with PP plastic
Number of blades	5
Airflow direction	"V"
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
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; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730; VDE
Comment	Conformity with EN 60335-1 in preparation

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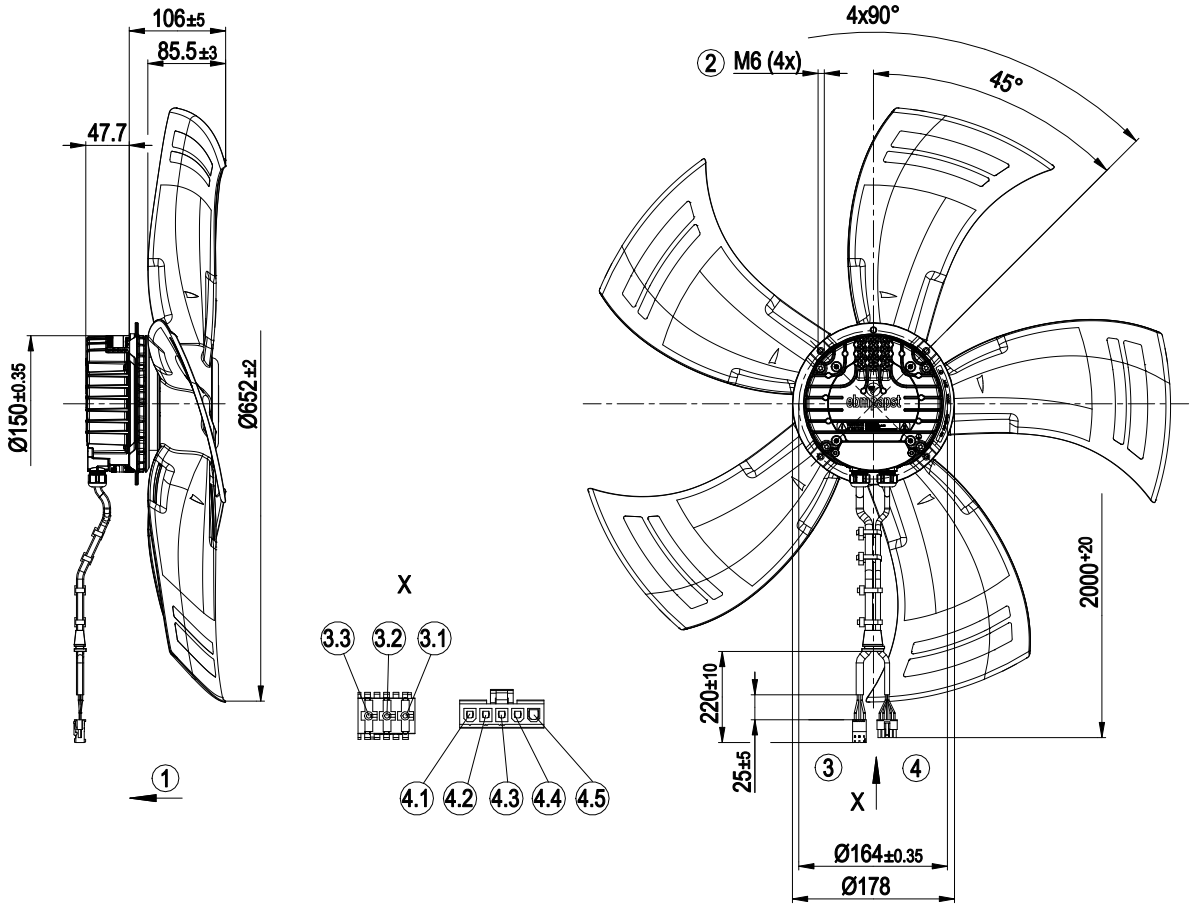
Product drawing



1	Airflow direction "V"
2	Max. clearance for screw 16 mm
3	Cable H03VV-F 3G 0.75 mm², connector housing Stocko EH-688-003-00D-512-G (S85) with 3x flat push-on receptacle RSB 8178.108
3.1	PE (green/yellow)
3.2	N (blue)
3.3	L (brown)
4	Cable PVC AWG22 with 5-pole connector housing Stocko EH 705-005-003-960, 5x socket RBB 8230.020
4.1	GND (blue)
4.2	+10 V (red)
4.3	0-10 VDC (yellow)
4.4	RSA (white)
4.5	RSB (brown)

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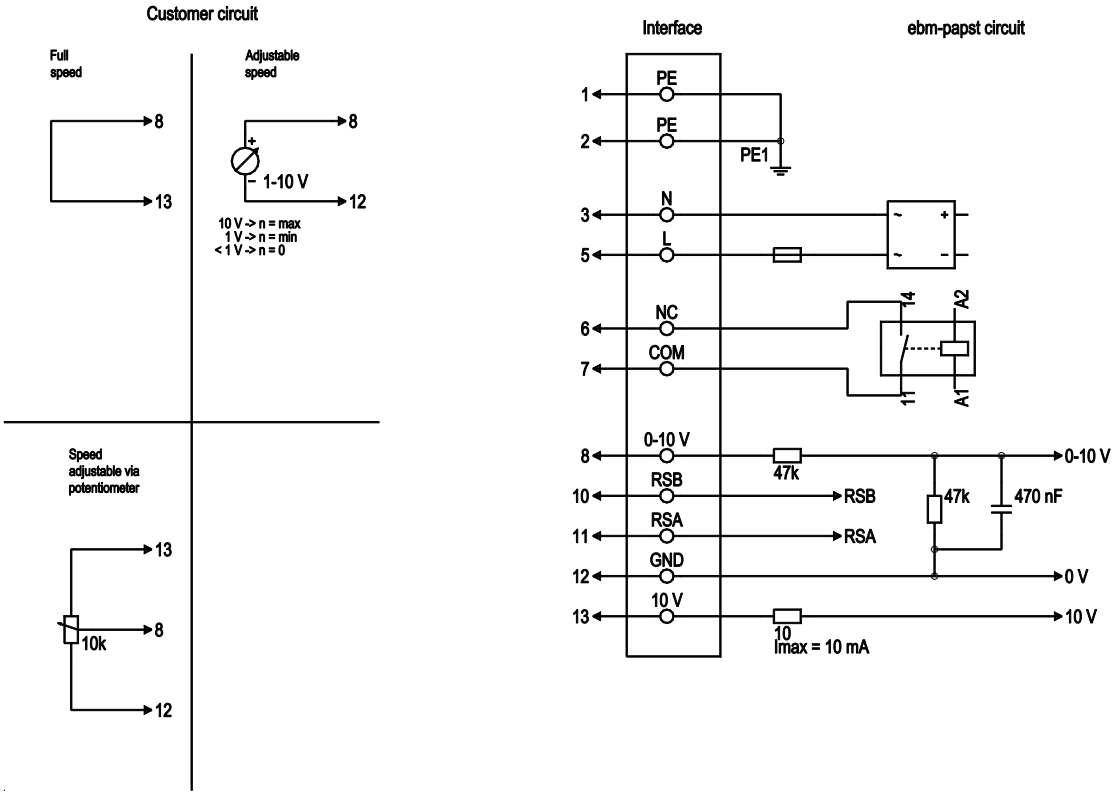
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10V	yellow	Analog input (set value); 0-10 V; Ri = 100 kΩ; adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB
2	11	RSA	white	RS485 interface for MODBUS, RSA
2	12	GND	blue	Reference 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 external devices (e.g. pot)

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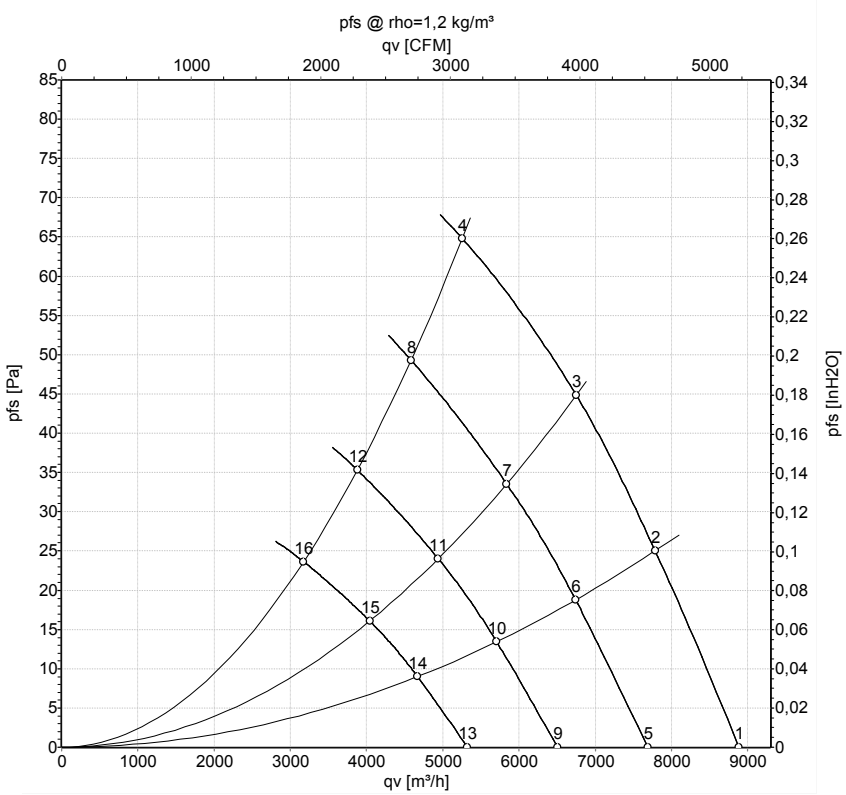
Curves: Air performance 50 Hz



Measurement: LU-155953-1

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_{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	230	50	750	160	0.73	56	62	61	8885	0	5230	0.00
2	230	50	750	196	0.87	56	62	61	7785	25	4580	0.10
3	230	50	750	223	0.99	56	62	61	6750	45	3975	0.18
4	230	50	750	250	1.10	57	64	64	5255	65	3095	0.26
5	230	50	650	104	0.47	52	58	58	7690	0	4525	0.00
6	230	50	650	127	0.57	53	58	57	6745	19	3970	0.08
7	230	50	650	144	0.64	52	58	57	5840	34	3435	0.14
8	230	50	650	163	0.72	54	60	60	4585	49	2700	0.20
9	230	50	550	63	0.29	48	54	53	6505	0	3830	0.00
10	230	50	550	77	0.34	48	54	53	5705	13	3360	0.05
11	230	50	550	87	0.39	48	54	53	4940	24	2910	0.10
12	230	50	550	98	0.43	49	56	56	3880	35	2285	0.14
13	230	50	450	35	0.16	43	49	48	5325	0	3135	0.00
14	230	50	450	42	0.19	43	49	48	4670	9	2750	0.04
15	230	50	450	48	0.21	43	49	48	4040	16	2380	0.06
16	230	50	450	54	0.24	44	51	51	3175	24	1870	0.10

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = 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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