EC centrifugal fan

K3G250-AT42-A3 ebmpapst Datasheet
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Nominal data

Type	**K3G250-AT42-A3**
Motor	**M3G084-DF**

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}	2970
Power consumption	W	480
Current draw	A	2.1
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

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}	%	59.6	48.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		73.4	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.48
09 Air flow q_v	m^3/h	1755
09 Pressure increase p_{fs}	Pa	532
10 Speed (rpm) n	min^{-1}	2975
11 Specific ratio*		1.01

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-139097

Technical description

Weight	8.9 kg
Fan size	250 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F3-1
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
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Motor current limitation - PFC, active - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - 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 55022 (Class B)
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

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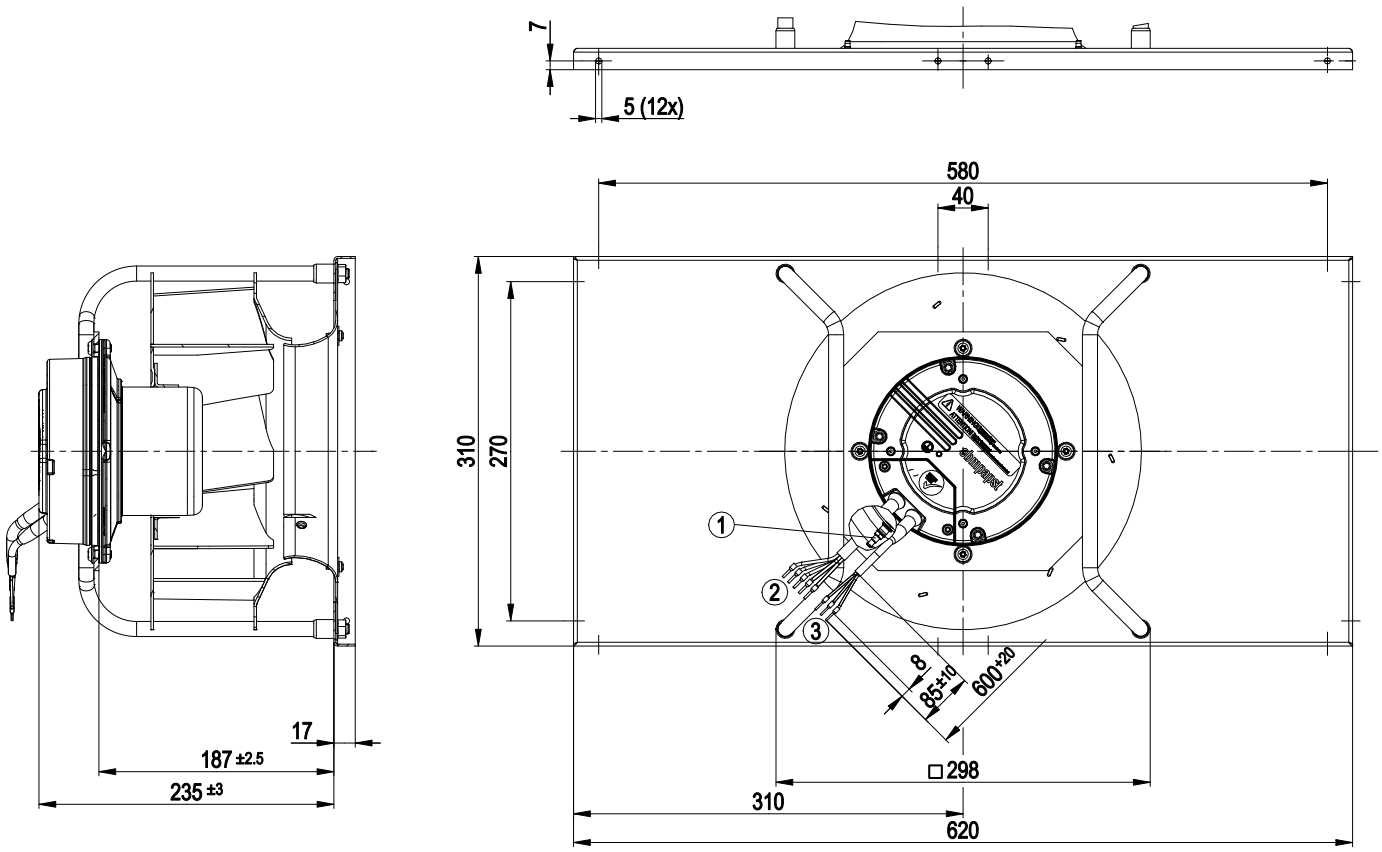
Product drawing



1	Pressure tap (k-factor 70)
2	Cable PVC AWG18, 5 x crimped ferrules
3	Cable PVC AWG22, 3 x crimped ferrules

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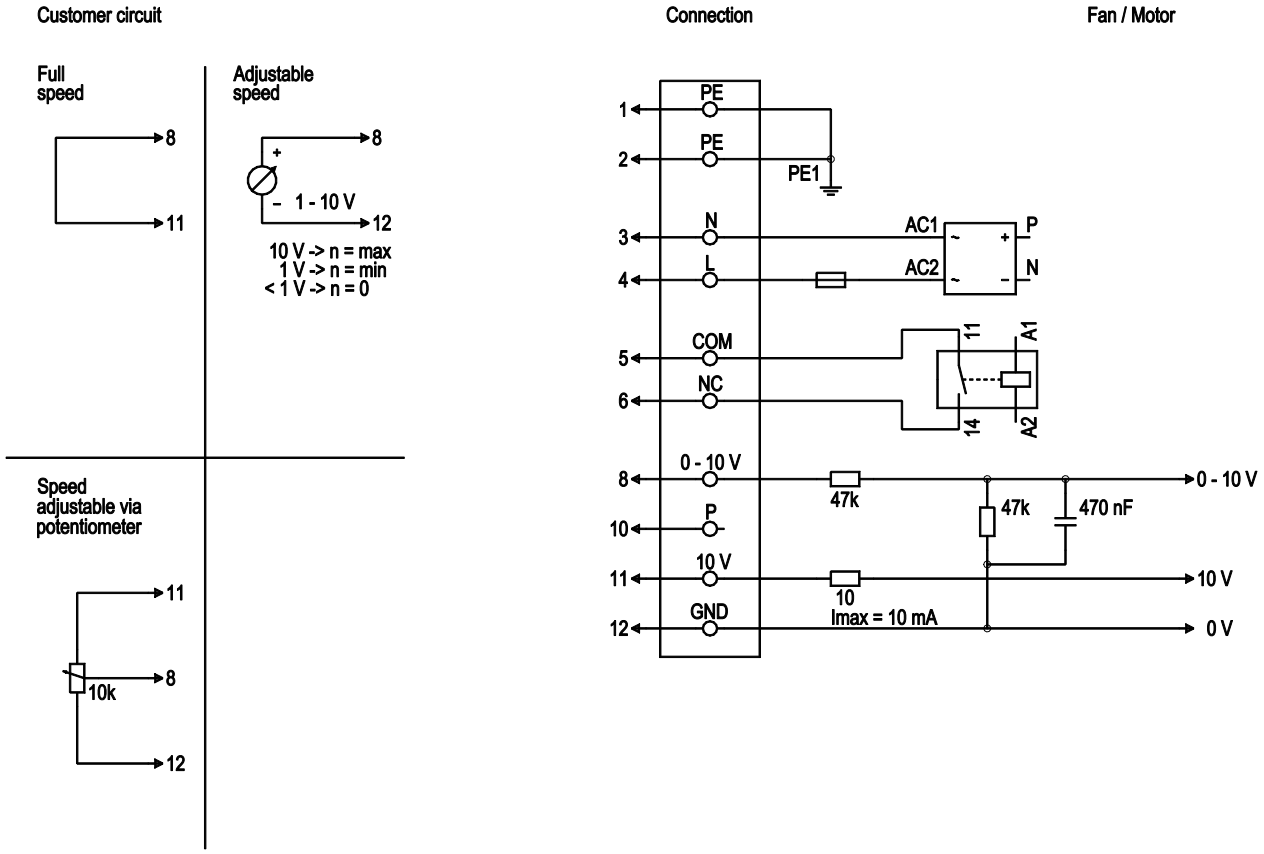
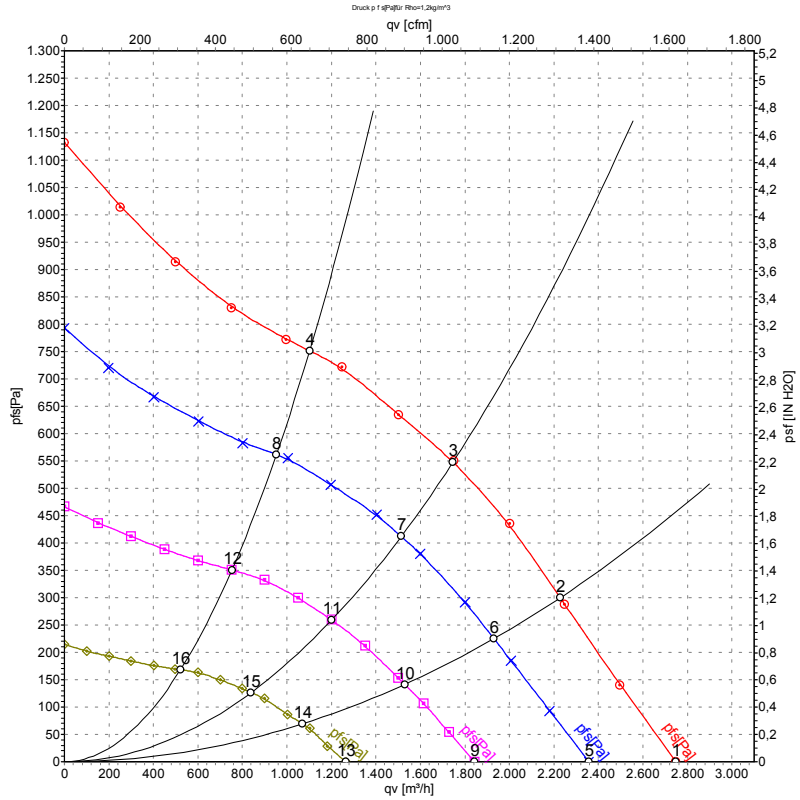
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, see nameplate for voltage range, 50/60 Hz
1	4	L	black	Power supply, phase, see nameplate for voltage range, 50/60 Hz
1	5	COM	white 1	Floating status contact, break for failure (2 A, max. 250 VAC, min. 10 mA)
1	6	NC	white 2	Floating status contact, break for failure
2	8	0 -10 V	yellow	Control input, set value 0-10 VDC, impedance 100 kOhm, SELV
2	10	P	orange	not used
2	11	10 VDC	red	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometers), SELV
2	12	GND	blue	Reference ground for control interface, SELV

Curves: Air performance 50 Hz



Measurement: LU-139097-1
Measurement: LU-139101-1
Measurement: LU-139105-1
Measurement: LU-139106-1

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	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa	CFM	inH2O
1	230	50	3180	416	1.82	2750	0	1620	0.00
2	230	50	3050	462	2.02	2230	300	1310	1.20
3	230	50	2970	480	2.10	1745	550	1030	2.21
4	230	50	3040	463	2.03	1100	750	650	3.01
5	230	50	2730	263	1.18	2360	0	1390	0.00
6	230	50	2630	295	1.31	1930	225	1135	0.90
7	230	50	2580	314	1.39	1515	412	890	1.65
8	230	50	2615	303	1.34	955	562	560	2.26
9	230	50	2140	134	0.64	1840	0	1085	0.00
10	230	50	2080	153	0.71	1530	141	900	0.57
11	230	50	2050	165	0.76	1200	260	705	1.04
12	230	50	2070	156	0.72	755	351	445	1.41
13	230	50	1470	52	0.34	1265	0	745	0.00
14	230	50	1440	60	0.36	1070	69	630	0.28
15	230	50	1430	64	0.37	840	126	495	0.51
16	230	50	1440	61	0.36	520	168	305	0.67

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