EC centrifugal fan

K3G250-RR01-V3 ebmpapst Datasheet
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Nominal data

Type	**K3G250-RR01-V3**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	3740
Power input	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
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 according to ErP directive

		Actual	Request 2015
01 Overall efficiency η_{es}	%	60.1	48.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		73.8	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.5
09 Air flow q_v	m^3/h	1355
09 Pressure increase p_{fs}	Pa	733
10 Speed (rpm) n	min^{-1}	3735
11 Specific ratio*		1.01

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-151690

Technical features

Mass	9 kg
Size	250 mm
Surface of rotor	Coated in black
Material of terminal box	PP plastic
Material of electronics housing	Die-cast aluminium, coated in black
Material of impeller	PA plastic
Material of mounting plate	Sheet steel, galvanised and coated in black
Material of support bracket	Steel, coated in black
Material of inlet nozzle	Sheet steel, galvanised and coated in black
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 55
Insulation class	"F"
Humidity (F)/environmental protection class (H)	H2+
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 - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, active - 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	Thermal overload protector (TOP) wired internally
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1; EAC
Remark	Standard conformity as per EN 60335-1 in preparation

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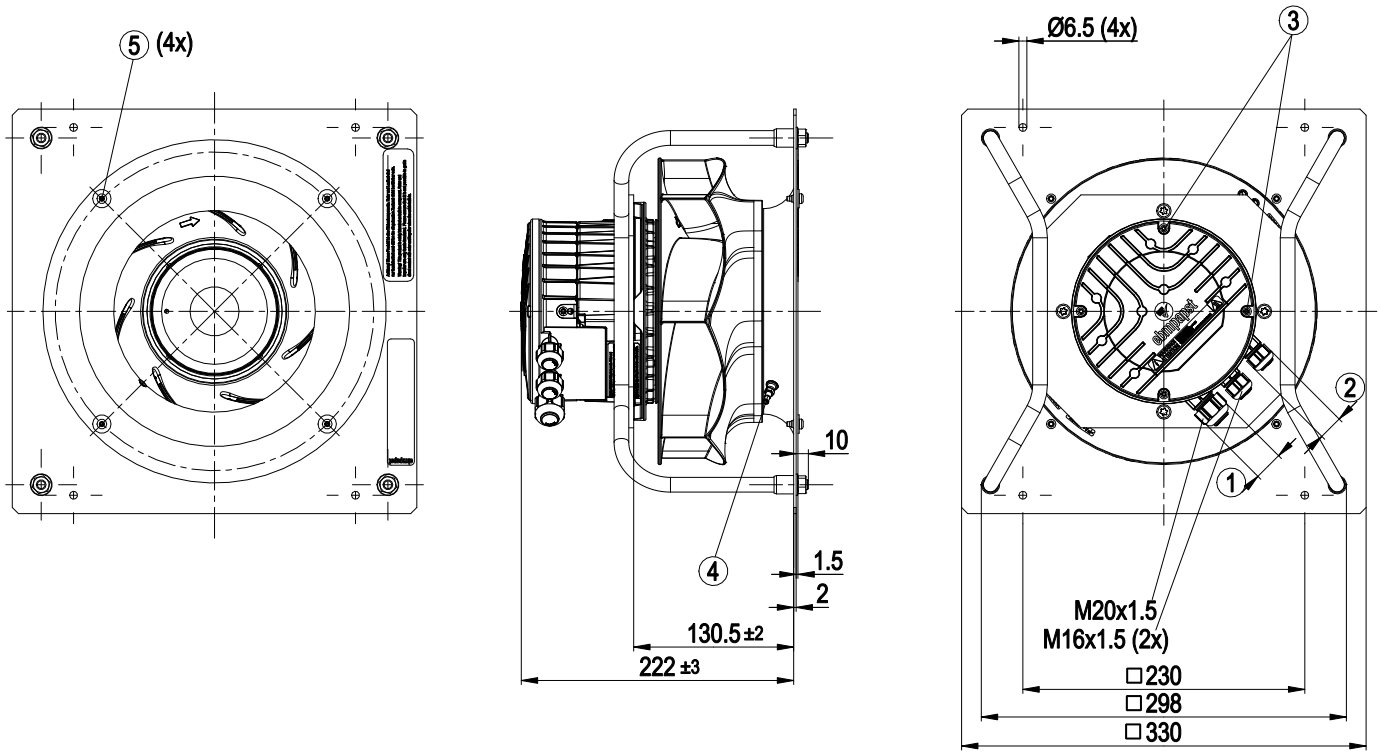
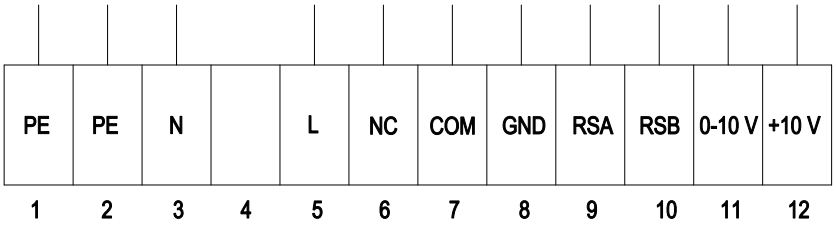
Product drawing



1	Cable diameter min. 8 mm, max. 12 mm, tightening torque 2.5±0.4 Nm
2	Cable diameter min. 6 mm, max. 10 mm, tightening torque 2.5±0,4 Nm Cable diameter min. 4 mm, max. 7 mm, tightening torque 2.5±0.4 Nm (use must be made of sealing ring provided)
3	Tightening torque 1.5±0.2 Nm
4	Inlet nozzle 96355-2-4013 with pressure tap (k-factor: 76)
5	Mounting for inlet nozzle and FlowGrid

Connection screen



No.	Conn.	Designation	Function / assignment
	1	PE	Protective earth
	2	PE	Protective earth
	3	N	Power supply, neutral conductor
	4	-	not used
	5	L	Power supply, phase
	6	NC	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
	7	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
	8	GND	Signal ground for control interface, SELV
	9	RSA	RS-485 interface for MODBUS, RSA; SELV
	10	RSB	RS-485 interface for MODBUS, RSB; SELV
	11	0-10 V	Analogue input (set value) SELV, 0-10 V, Ri=100kΩ, parametrisable curve
	12	+10 V	Fixed voltage output 10 VDC, SELV, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometer)

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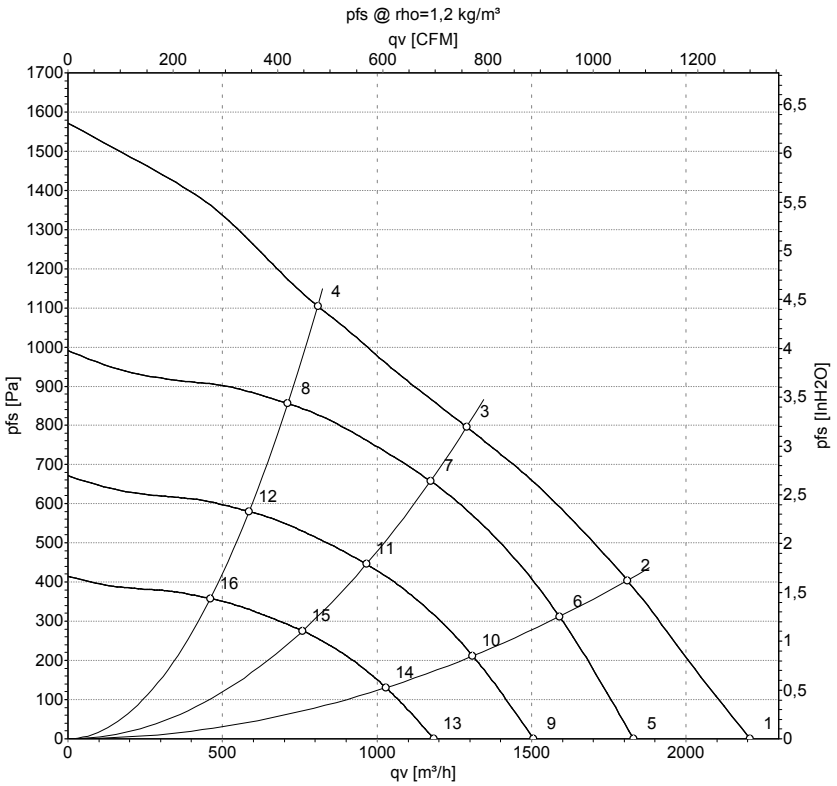
Charts: Air flow 50 Hz



Measurement: LU-151690-1

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}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	inH2O
1	230	50	4100	500	2.20	81	89	2210	0	1300	0.00
2	230	50	3870	500	2.20	75	83	1810	400	1065	1.61
3	230	50	3740	500	2.20	70	78	1290	800	760	3.21
4	230	50	3860	500	2.20	77	84	810	1100	475	4.42
5	230	50	3400	292	1.27	76	84	1830	0	1075	0.00
6	230	50	3400	346	1.51	72	80	1590	313	935	1.26
7	230	50	3400	383	1.67	68	75	1175	658	690	2.64
8	230	50	3400	348	1.52	74	81	710	856	420	3.44
9	230	50	2800	163	0.71	71	79	1505	0	885	0.00
10	230	50	2800	193	0.84	67	75	1310	212	770	0.85
11	230	50	2800	214	0.93	63	71	965	446	570	1.79
12	230	50	2800	194	0.85	69	76	585	580	345	2.33
13	230	50	2200	79	0.35	65	73	1185	0	695	0.00
14	230	50	2200	94	0.41	61	69	1030	131	605	0.53
15	230	50	2200	104	0.45	57	65	760	276	445	1.11
16	230	50	2200	94	0.41	63	70	460	358	270	1.44

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 · q_V = Air flow p_{fs} = Pressure increase