K3G400-AQ23-90

II 2G Ex db eb ib IIB T3 Gb

IBExU14ATEX1122 X /01

EC centrifugal module - RadiPac

backward-curved, single-intake

with cube design

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Nominal data

Type	**K3G400-AQ23-90**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 440
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2550
Power consumption	W	3100
Current draw	A	4.7
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	50

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Occasional start-up at temperatures between -40 °C and -25 °C is permitted. For continuous operation at ambient temperatures below -25 °C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.

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Technical description

Weight	50 kg
Size	400 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	Sheet aluminum
Inlet nozzle material	Sheet aluminum
Support structure material	Sheet steel, galvanized
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP44
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40/-55 °C
Installation position	Shaft horizontal (base mounting only) or rotor on bottom; rotor on top not permitted
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Operation and alarm display - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-4 (industrial environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Reverse polarity and locked-rotor protection

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Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 14986; EN 60079-0; EN 60079-1; EN 60079-7; EN 60079-11; EN 61800-5-1; CE
Approval	II 2G; EAC

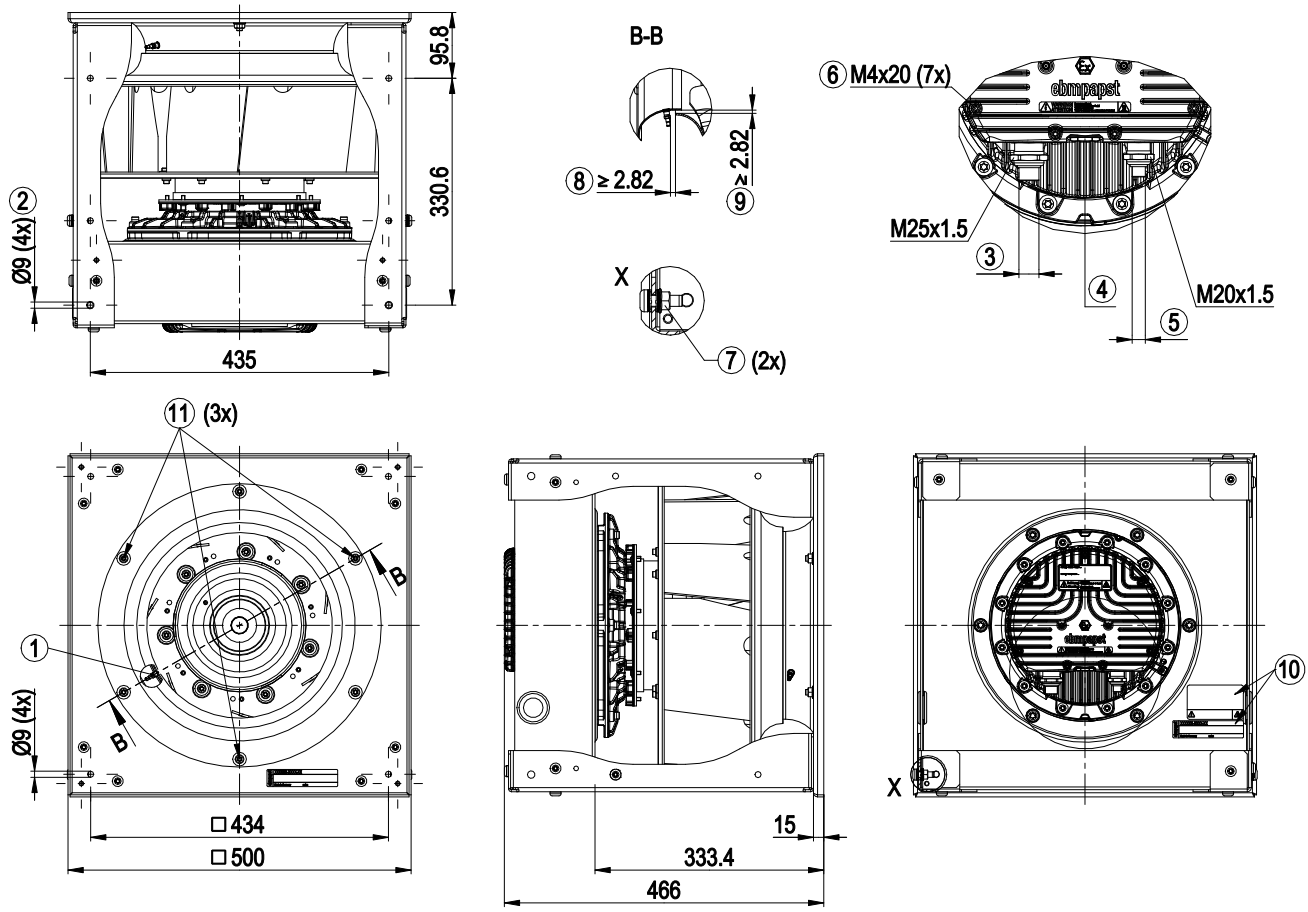
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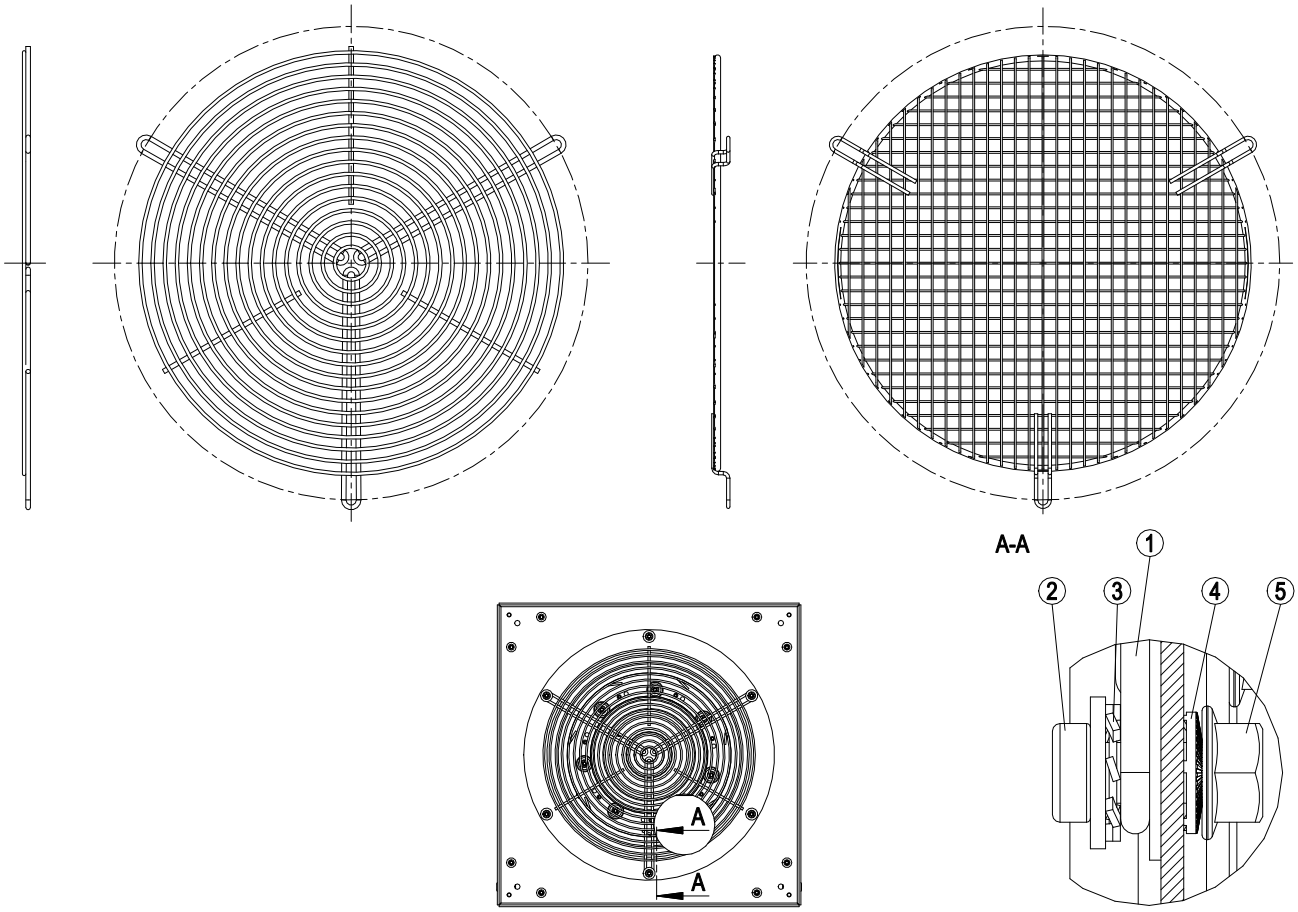
Product drawing



1	Inlet ring with pressure tap
2	Mounting position for vibration-absorbing elements
3	Cable diameter min. 10 mm, max. 16 mm, tightening torque 6 ± 0.6 Nm; standard value depending on cable
4	Screw plug M20 x 1.5
5	Cable diameter min. 10 mm, max. 14 mm, tightening torque 6 ± 0.6 Nm; standard value depending on cable
6	Terminal box fastening screws, tightening torque 3.5 ± 0.5 Nm
7	Ground connection point M8 (functional ground for electrostatic discharge, no protective earth), do not unfasten the nut provided, contact is established by way of another nut.
8	Axial gap dimension
9	Radial gap dimension
10	Additional nameplate and warning sticker in Russian
11	Fastening points for the optionally available guard grill (78133-2-4039 (guard grill); 79400-2-4039 (mesh guard grill))

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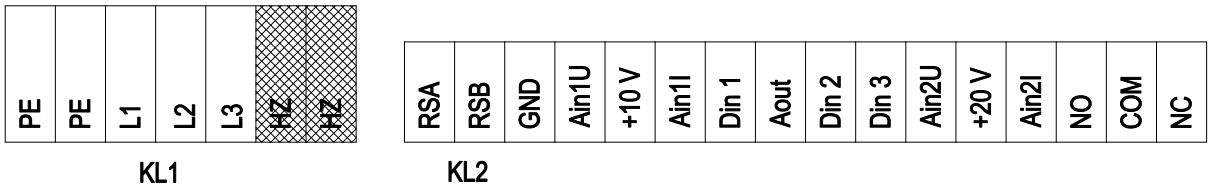
Accessory part



	This drawing shows how to install the guard grille with the article numbers specified in the product drawing. The necessary bolts, nuts and washers are available from ebm-papst.
1	Guard grill for protection against accidental contact (ring- or mesh guard grill version, depending on scope of delivery)
2	Bolt M8x18 micro-encapsulated
3	Toothed lock washer
4	Contact washer (only necessary on one screw, only with painted housing)
5	Nut M8
	Attention! To mount the guard grill, only loosen and unscrew the three screws marked in the product drawing.
	The other bolts must not be loosened!
	Used screws and nuts must be disposed of.
	Use the fastening components available from ebm-papst for assembly.
	If the housing is painted, the contact washer (4) must also be inserted between the housing and the nut for one screw.
	Tighten the bolts to a torque of 20 Nm ± 3 Nm.
	If a guard grille other than that specified in the product drawing is installed, the operator must ensure proper installation according to the ATEX directive. In particular, it must be ensured that the necessary distance from rotating parts is observed and that static charge that arises is safely dissipated. If you have any questions, please contact ebm-papst.

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Connection diagram



Shaded => terminals not used

No.	Conn.	Designation	Function/assignment
1		PE	Ground connection, PE connection
1		L1	Supply connection, power supply 3-phase 380-440 VAC, 50/60 Hz
1		L2	Supply connection, power supply 3-phase 380-440 VAC, 50/60 Hz
1		L3	Supply connection, power supply 3-phase 380-440 VAC, 50/60 Hz
1		HZ	not used (optional: internal heating element)
2		RSA	Bus connection RS485, RSA, MODBUS RTU; double terminal point (SELV)
2		RSB	Bus connection RS485, RSB, MODBUS RTU; double terminal point (SELV)
2		GND	Reference ground for control interface (SELV)
2		Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV
2		+10 V	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot); SELV
2		Ain1 I	Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV
2		Din 1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
2		Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV
2		Din 2	Digital input 2: Switching parameter sets 1/2, according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
2		Din 3	Digital input 3: Direction of action of integrated controller, according to EEPROM setting, the direction of action of the integrated controller can be selected as normal/inverse via bus or digital input Normal: Pin open or applied voltage 5-50 VDC Inverse: Bridge to GND or applied voltage < 1 VDC; SELV
2		Ain2 U	Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV
2		+20 V	Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors); SELV or: +24 VDC input for parameter setting via MODBUS without line voltage
2		Ain2 I	Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV
2		NO	Status relay, floating status contact; make for failure
2		COM	Status relay, floating status contact, common connection, contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA

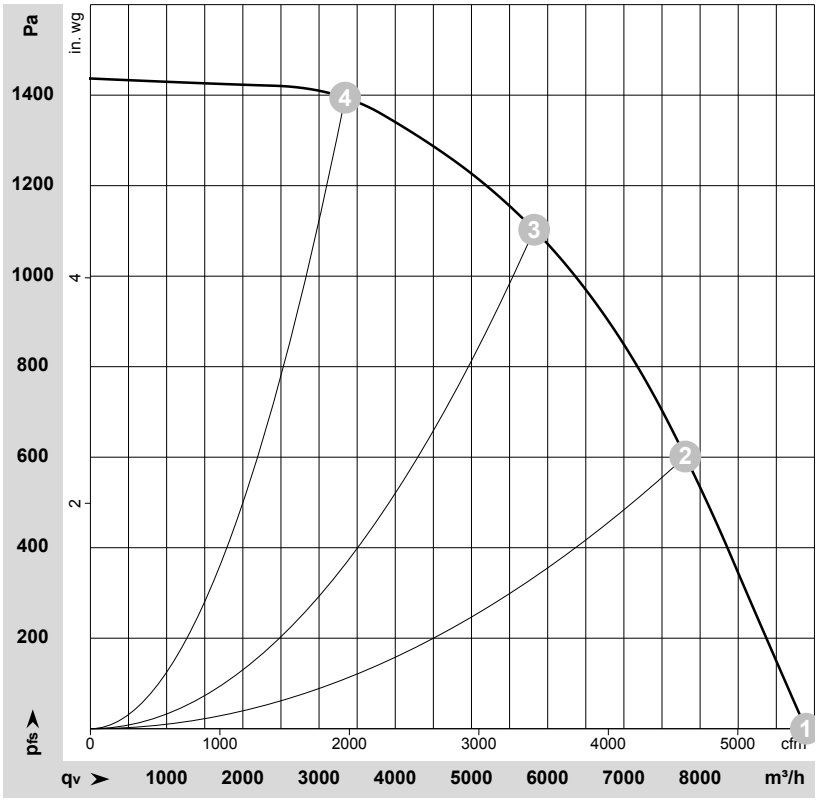
No.	Conn.	Designation	Function/assignment
2		NC	Status relay; floating status contact, break for failure

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-161843-1

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

	Wired	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	3~	400	50	2550	2033	3.11	83	92	97	9390	0	5525	0.00
2	3~	400	50	2550	2749	4.19	80	87	94	7805	600	4595	2.41
3	3~	400	50	2550	3100	4.70	79	87	93	5825	1100	3425	4.42
4	3~	400	50	2550	2745	4.17	81	89	95	3345	1400	1970	5.62

Wired = Wiring · U = Voltage · 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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