K3G450-AQ24-90

II 2G Ex db eb ib IIB T3 Gb

IBExU14ATEX1122 X /02

EC centrifugal module - RadiPac

backward curved, single inlet

in cube design

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Nominal data

Type	**K3G450-AQ24-90**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 440
Frequency	Hz	50/60
Type of data definition		ml
State		prelim.
Speed (rpm)	min^{-1}	2040
Power input	W	2950
Current draw	A	4.5
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	50

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

Occasional start-up between -40 °C and -25 °C is permissible. 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 features

Mass	57.5 kg
Size	450 mm
Motor size	150
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, coated in black
Material of impeller	Aluminium sheet
Material of inlet nozzle	Aluminium sheet
Material of support structure	Sheet steel, galvanised
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP44
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H1
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)	Transport -40 °C / Storage -55 °C °C
Mounting position	Shaft horizontal (base mounting only) or rotor on bottom; rotor on top not permissible
Condensation drainage holes	Rotor-side
Operation 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 (programming) - External release input - Alarm relay - Integrated PID controller - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC / PWM - Temperature derating - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC interference emission	Acc. to EN 61000-6-4 (industrial environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical connection	Terminal box
Motor protection	Reverse polarity and locked-rotor protection

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Safety classification	I; If a protective earth is connected by the customer This component to be built-in can have several local protection class ratings. The specification refers to the basic design of this component. The final protection class is based on the intended installation and connection of the component.
Product conforming to standard	EN 14986; EN 60079-0; EN 60079-1; EN 60079-7; EN 60079-11; EN 61800-5-1; CE
Approval	EAC; II 2G

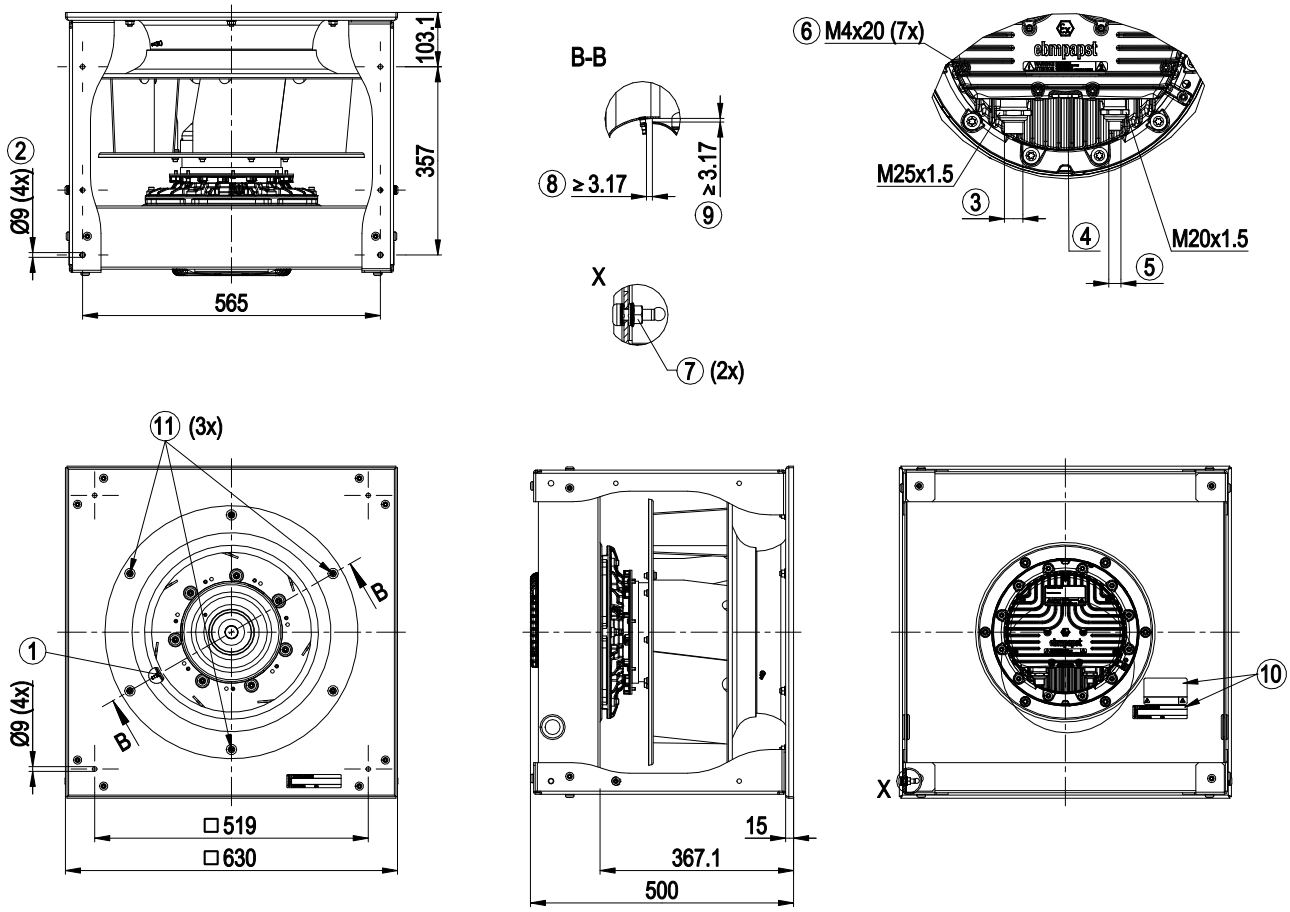
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Product drawing



1	Inlet nozzle with pressure tap
2	Screw-on 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 M20x1.5
5	Cable diameter min. 10 mm, max. 14 mm, tightening torque 6±0.6 Nm; standard value depending on cable
6	Attachment screws for terminal box cover, tightening torque 3.5±0.5 Nm
7	Earth connection point M8 (functional earth to dissipate electrostatic charge, no protective earth), do not unfasten the existing nut, contact is established with another nut.
8	Axial gap dimension
9	Radial gap dimension
10	Additional type plate and warning sticker in Russian
11	Fastening points for the optionally available guard grill (78139-2-4039 (guard grill); 79500-2-4039 (mesh guard grill))

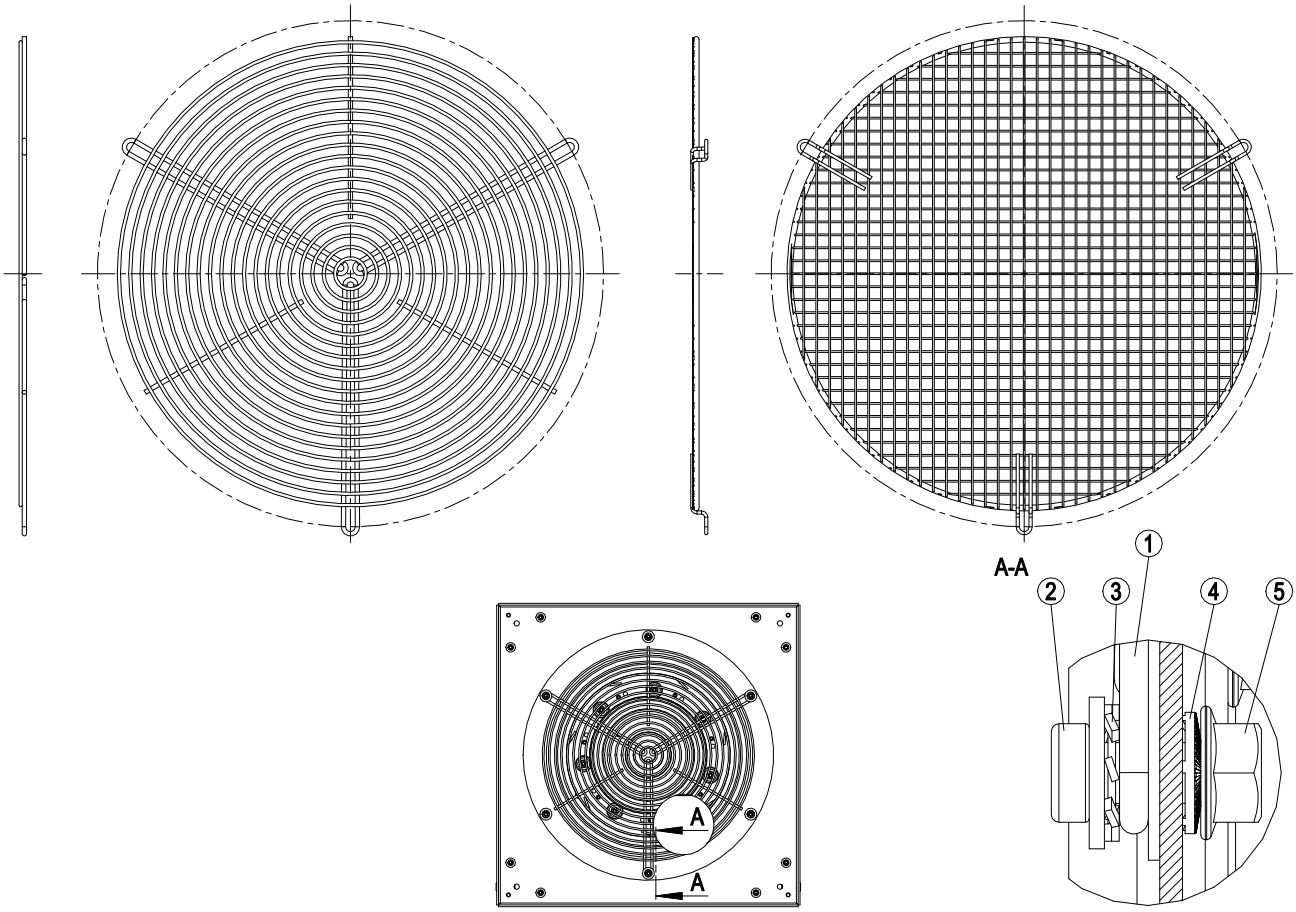
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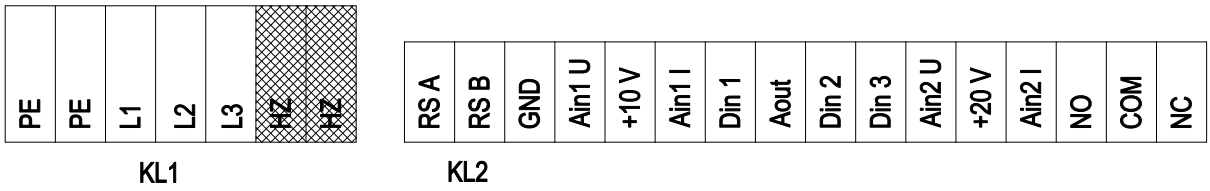
Accessory part



	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 grille as protection against contact (design as ring or mesh guard grille, depending on scope of delivery)
2	Screw M8x18 microencapsulated
3	Toothed lock washer
4	Contact disc (only necessary at one screw, only with painted housing)
5	Nut M8
	Attention! To fasten the guard grille, only loosen and unscrew the three screws marked in the product drawing.
	The other bolts must not be loosened!
	The 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 disc (4) must also be inserted between the housing and the nut at one screw.
	Tighten the bolts to a torque of 20 Nm ± 3 Nm.
	If a guard grille other than the one specified in the product drawing is installed, the operator must ensure proper installation in accordance with the ATEX directive. In particular, it is essential to ensure the necessary distance from rotating parts and the safe dissipation of any static charge that arises. If you have any questions, please contact ebm-papst.

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Connection screen



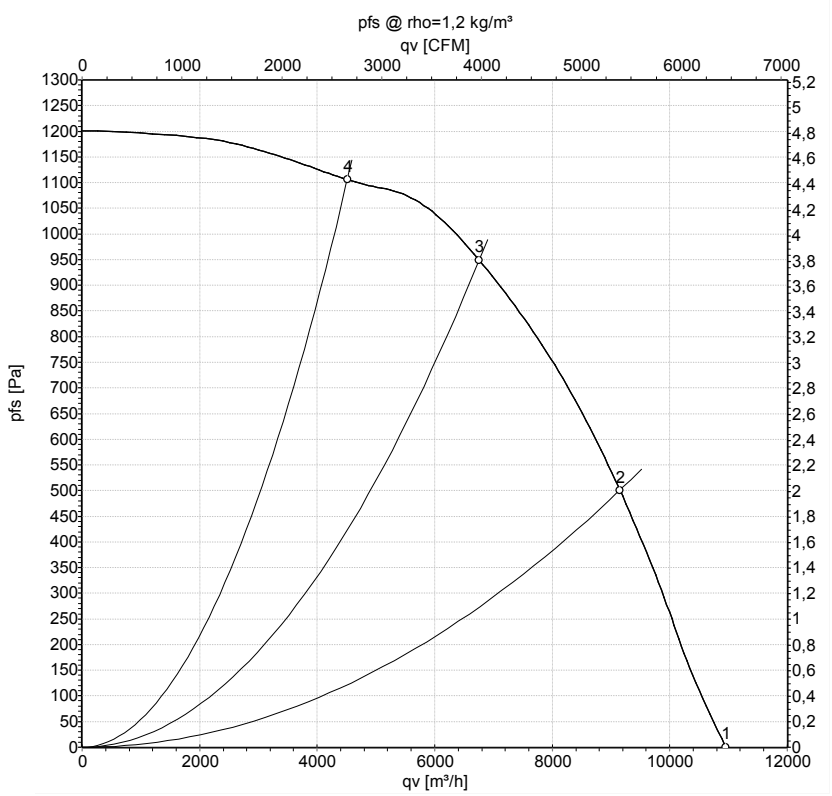
Shading => terminals not assigned

No.	Conn.	Designation	Function / assignment
1		PE	Earth connection, PE connection
1		L1	Mains supply connection, supply voltage 3-phase, 380- 440 VAC, 50/60 Hz
1		L2	Mains supply connection, supply voltage 3-phase, 380- 440 VAC, 50/60 Hz
1		L3	Mains supply connection, supply voltage 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 (SELV)
2		RSB	Bus connection RS485; RSB; MODBUS RTU; double terminal (SELV)
2		GND	Signal ground for control interface (SELV)
2		Ain1 U	Analogue input 1, set value: 0-10 V, Ri = 100 kΩ, parametrisable curve, only for use as alternative to input Ain1; SELV
2		+10 V	Fixed voltage output 10 VDC, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer); SELV
2		Ain1 I	Analogue input 1, set value: 4-20 mA; Ri = 100 Ω, parametrisable curve, only for use as alternative to input Ain1 U; SELV
2		Din 1	Digital input 1: Enabling of electronics, Enabling: Pin open or applied voltage 5-50 VDC Disabling: Bridge to GND or applied voltage <1 VDC Reset function: Triggers software reset after a level change to <1 VDC; SELV
2		Aout	Analogue output 0-10 VDC, max. 5 mA, output of the current motor level control coefficient / motor speed parametrisable curve; SELV
2		Din 2	Digital input 2: Parameter set 1/2 switching, depending on EEPROM setting, the valid/used parameter set can be selected via the bus or via the 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: Controller function of integrated controller; depending on EEPROM setting, normal / inverse can be selected for the controller function of the integrated controller via the bus or the digital input Normal: Pin open or applied voltage 5-50 VDC Inverse: bridge to GND or applied voltage <1 VDC; SELV
2		Ain2 U	Analogue input 2, actual value: 0-10 V, Ri = 100 kΩ, parametrisable curve, only usable as alternative to input Ain2; SELV
2		+20 V	Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof, power supply for ext. devices (e.g. sensors); SELV Alternatively: +24 V DC input for parametrisation via MODBUS without mains power
2		Ain2 I	Analogue input 2, actual value: 4-20 mA, Ri = 100 Ω, parametrisable curve, only for use 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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Charts: Air flow 50 Hz



Measurement: LU-161863-1

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	2040	1868	2.82	84	92	96	10955	0	6450	0.00
2	400	50	2040	2585	3.92	80	88	93	9150	500	5385	2.01
3	400	50	2040	2950	4.50	79	86	92	6755	950	3975	3.81
4	400	50	2040	2604	3.93	79	87	92	4515	1100	2655	4.42

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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