

EC centrifugal module - RadiPac

backward-curved, single-intake

with cube design

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Nominal data

Type	K3G710-PV05-02	
Motor	M3G200-LA	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min ⁻¹	1430
Power consumption	W	7050
Current draw	A	10.7
Min. ambient temperature	°C	-40
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 Commission Regulation (EU) 327/2011 (prEN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	69.7	60.4	09 Power consumption P_{ed}	kW	7.01
02 Measurement category		A		09 Air flow q_v	m ³ /h	18280
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	930
04 Efficiency grade N		71.3	62	10 Speed (rpm) n	min ⁻¹	1430
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

* Specific ratio = $1 + p_b / 100\,000\text{ Pa}$

LU-186827

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings). The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again. The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).



Technical description

Weight	120.7 kg
Size	710 mm
Motor size	200
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	Sheet aluminum, painted black
Support plate material	Sheet steel, galvanized and painted black
Spacer material	Aluminum, painted black
Inlet nozzle material	Sheet steel, galvanized and painted black
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2+S
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 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing; (sealed)
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 - MODBUS V5.1 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - 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 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



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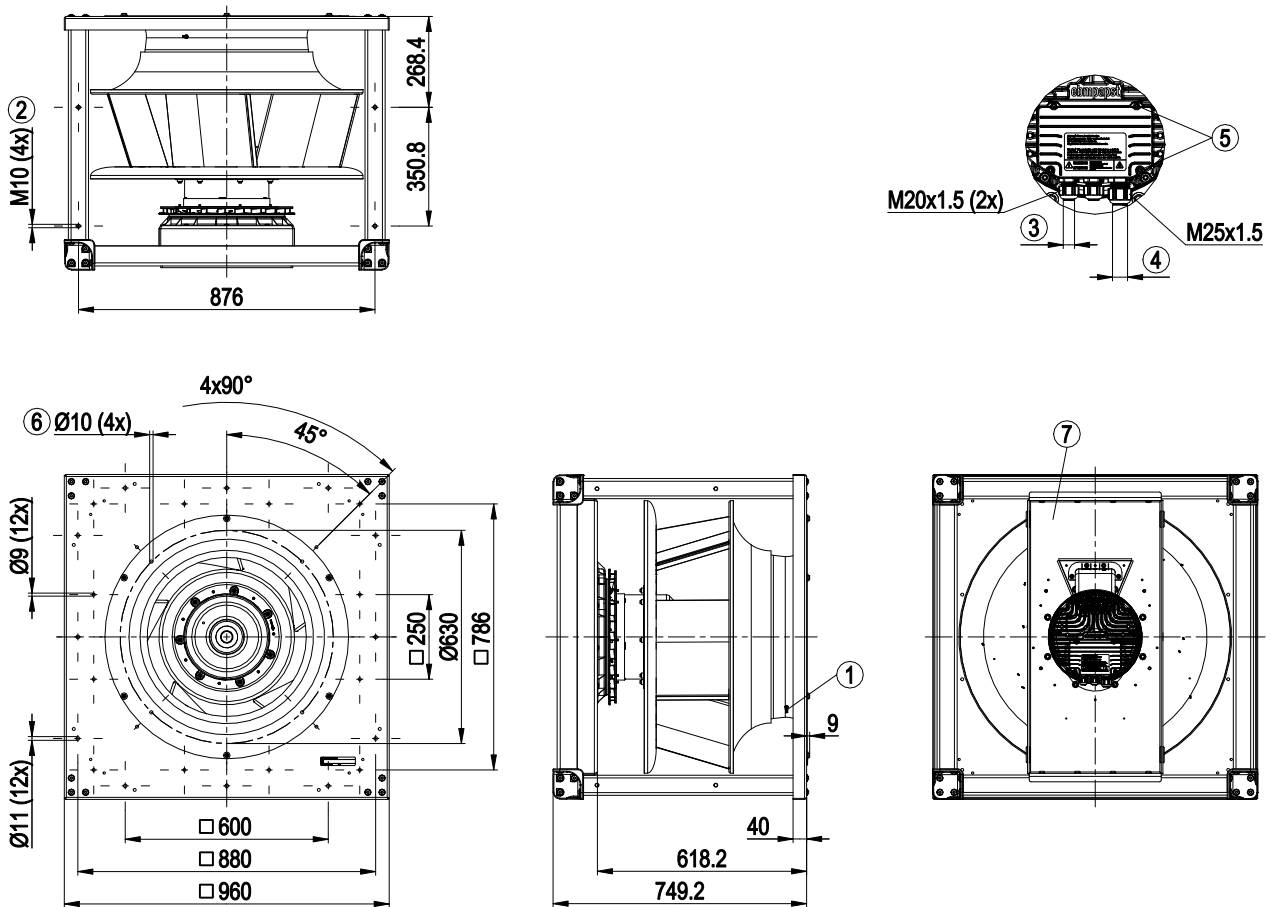
Motor protection	Reverse polarity and locked-rotor protection
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 61800-5-1; CE; UKCA
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1



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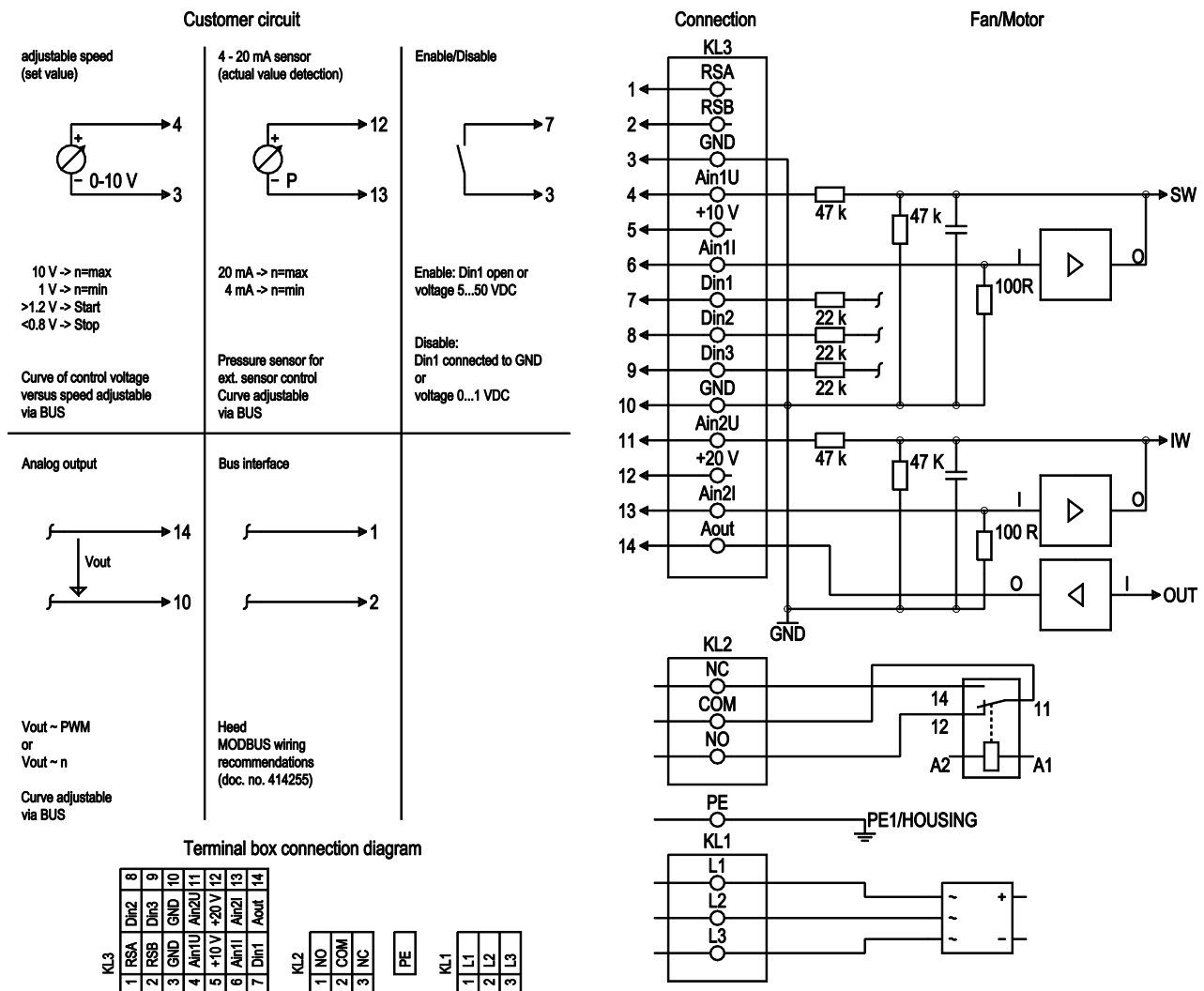
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Product drawing



1	Inlet ring with pressure tap (k-factor: 545)
2	Mounting position for vibration-absorbing elements, tightening torque max. 40 Nm
3	Cable diameter min. 5 mm, max. 13 mm, tightening torque 4 ± 0.6 Nm
4	Cable diameter min. 16 mm, max. 20.5 mm, tightening torque 6 ± 0.9 Nm
5	Tightening torque 3.5 ± 0.5 Nm
6	Attachment holes for FlowGrid 50710-2-2957 (not included in scope of delivery)
7	Motor support plate
Installation position: Only base mounting, shaft horizontal (motor support plate must be vertical!).	
Rotor on top or rotor on bottom on request	
The drawing shows the dimensions only and does not represent the installation position	

Connection diagram



No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply; for nominal voltage range see technical data
KL 1	2	L2	Supply connection, power supply; for nominal voltage range see technical data
KL 1	3	L3	Supply connection, power supply; for nominal voltage range see technical data
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact, make for failure
KL2	2	COM	Status relay, floating status contact, changeover contact, common connection, contact rating 250 VAC/ max. 2 A (AC1)/min. 10 mA
KL2	3	NC	Status relay, floating status contact, break for failure
KL 3	1	RSA	Bus connection RS485, RSA, MODBUS-RTU; SELV
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS-RTU; SELV
KL 3	3 / 10	GND	Reference ground for control interface; SELV
KL 3	4	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV
KL 3	5	+ 10 V	Fixed voltage output 10 VDC, + 10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometers); SELV
KL 3	6	Ain1 I	Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV

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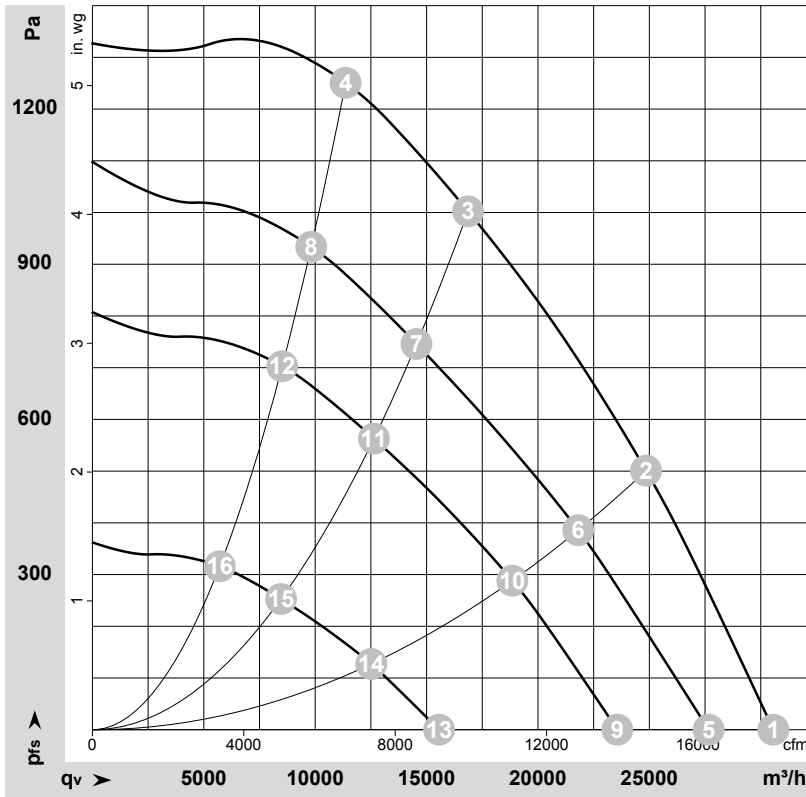
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No.	Conn.	Designation	Function/assignment
KL 3	7	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
KL 3	8	Din2	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
KL 3	9	Din3	Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected via bus or digital input Din3; normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage < 1 VDC; SELV
KL 3	11	Ain2 U	Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV
KL 3	12	+ 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 VDC input for parameterization without line voltage
KL 3	13	Ain2 I	Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV
KL 3	14	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV



Curves: Air performance 50 Hz



$$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$$

Measurement: LU-186827-1
Measurement: LU-185017-1

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	1430	3730	5.88	81	89	91	30565	0	17990	0.00
2	3~	400	50	1430	5785	8.90	78	86	88	24850	500	14625	2.01
3	3~	400	50	1430	7050	10.70	76	84	87	16865	1000	9925	4.01
4	3~	400	50	1430	6767	10.35	79	86	89	11365	1250	6690	5.02
5	3~	400	50	1290	2875	4.65	78	85	88	27660	0	16280	0.00
6	3~	400	50	1245	3969	6.24	74	81	83	21805	389	12835	1.56
7	3~	400	50	1220	4502	7.02	73	79	83	14545	746	8560	2.99
8	3~	400	50	1230	4331	6.77	75	82	85	9820	941	5780	3.78
9	3~	400	50	1110	1872	3.25	74	82	84	23565	0	13870	0.00
10	3~	400	50	1080	2611	4.28	70	78	80	18850	290	11095	1.16
11	3~	400	50	1065	2993	4.83	70	76	79	12635	563	7435	2.26
12	3~	400	50	1065	2870	4.65	71	78	82	8520	709	5015	2.85
13	3~	400	50	740	647	1.53	65	73	75	15560	0	9160	0.00
14	3~	400	50	720	877	1.90	61	69	71	12515	128	7365	0.51
15	3~	400	50	715	1002	2.09	61	68	70	8470	253	4985	1.02
16	3~	400	50	715	963	2.03	62	69	72	5715	319	3365	1.28

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

