K3G450-AQ23-K1

EC centrifugal module - RadiPac

backward-curved, single-intake

with housing

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Nominal data

Type	**K3G450-AQ23-K1**
Motor	**M3G150-FF**

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}	2040
Power consumption	W	2780
Current draw	A	4.3
Min. back pressure	Pa	200
Min. back pressure	in. wg	0.8
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	65	56.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		70.9	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	2.74
09 Air flow q_v	m^3/h	7605
09 Pressure increase p_{fs}	Pa	802
10 Speed (rpm) n	min^{-1}	2040
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-193701

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Technical description

Weight	56 kg
Size	450 mm
Motor size	150
Impeller material	Sheet aluminum
Housing material	Sheet steel, painted black
Support plate material	Sheet steel, galvanized
Spacer material	Aluminum
Inlet nozzle material	Sheet steel, galvanized
Number of blades	7
Direction of rotation	Clockwise, viewed toward shaft
Degree of protection	IP54
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 °C
Installation position	See product drawing
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - 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 - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; EN 61800-5-1; CE
Approval	EAC

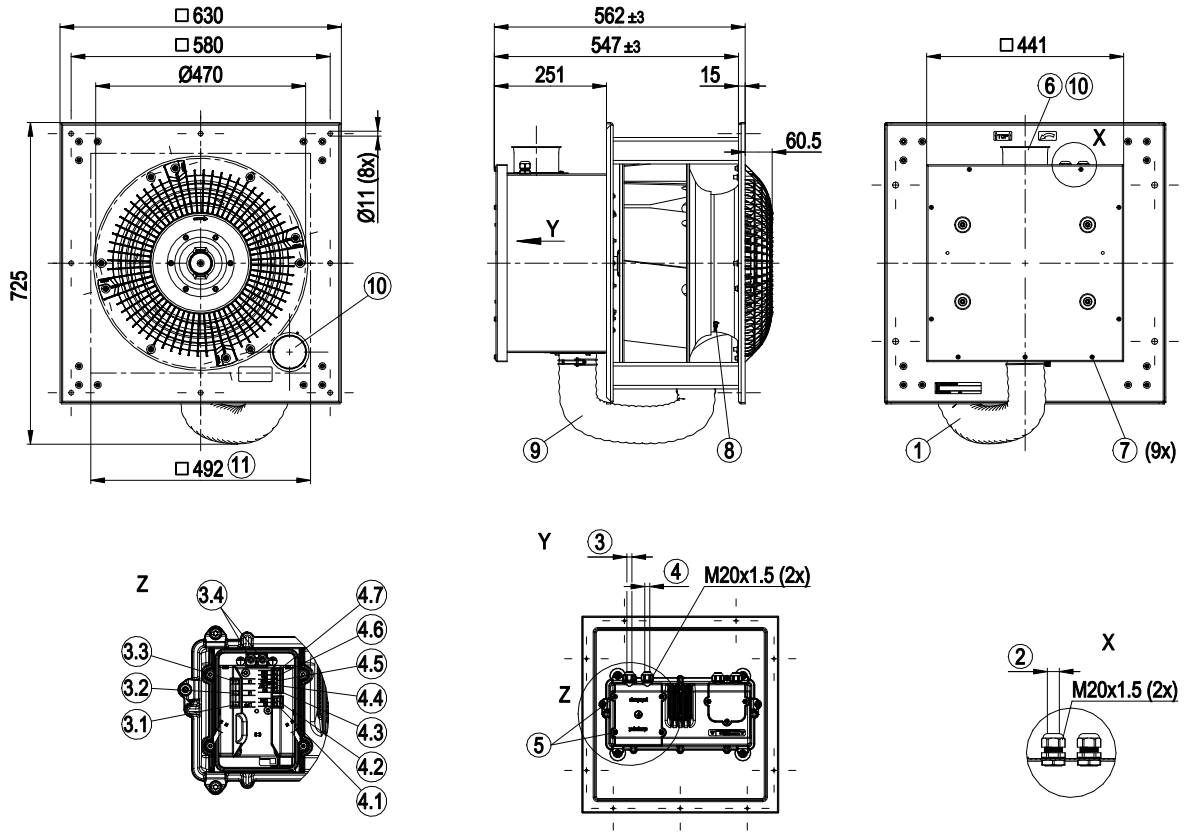
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Product drawing



Y	Housing opened
1	Installation position: Shaft horizontal (only fit air hose at bottom as illustrated) or rotor on bottom
2	Cable diameter min. 8 mm, max. 12 mm, tightening torque 2.5 ± 0.4 Nm
3	Tightening torque 3 ± 0.5 Nm
3.1	L1
3.2	L2
3.3	L3
3.4	PE
4	Cable diameter min. 8 mm, max. 12 mm, tightening torque 1.8±0.3 Nm
4.1	NC
4.2	COM
4.3	+10 V
4.4	0-10 V
4.5	GND
4.6	RSA
4.7	RSB
5	Tightening torque 3 ± 0.5 Nm
6	Customer ventilation port DN 100
7	Tightening torque 3.5 ± 0.5 Nm
8	Inlet ring with pressure tap (k-factor: 240)
9	Spiral hose dia. 80 mm, PVC – coated polyester fabric (self-extinguishing)
10	Remove caps prior to start-up
11	Installation aperture

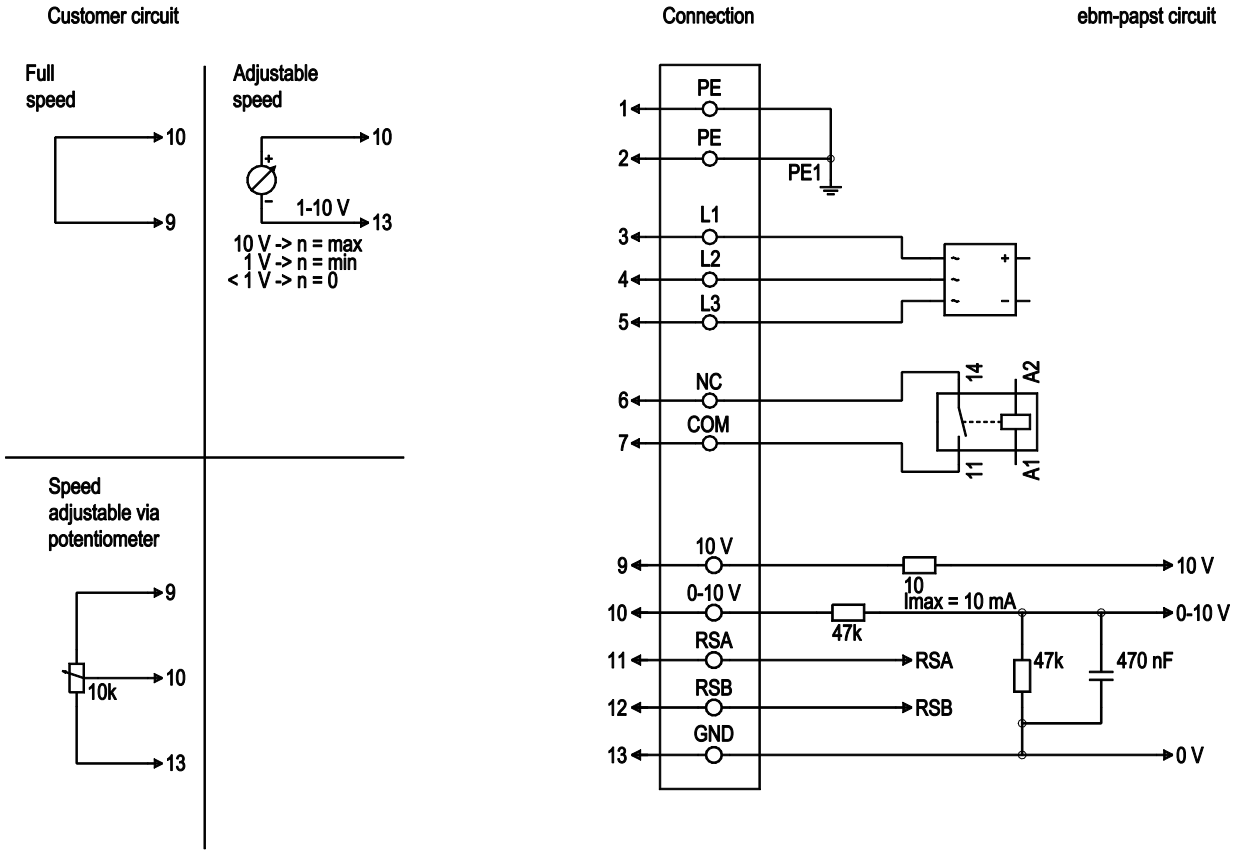
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply 50 / 60 Hz
1	6	NC	white 1	Status relay, floating status contact, break for failure; contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and basic insulation on control interface side (or reinforced insulation on control interface side up to 250 VAC potential difference)
1	7	COM	white 2	Status relay, floating status contact, break for failure; contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and basic insulation on control interface side (or reinforced insulation on control interface side up to 250 VAC potential difference)
2	9	+10 V	red	Fixed voltage output 10 VDC, SELV, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); fixed voltage input 24 VDC for setting parameters via MODBUS without line voltage supply
2	10	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	13	GND	blue	Reference ground for control interface, SELV

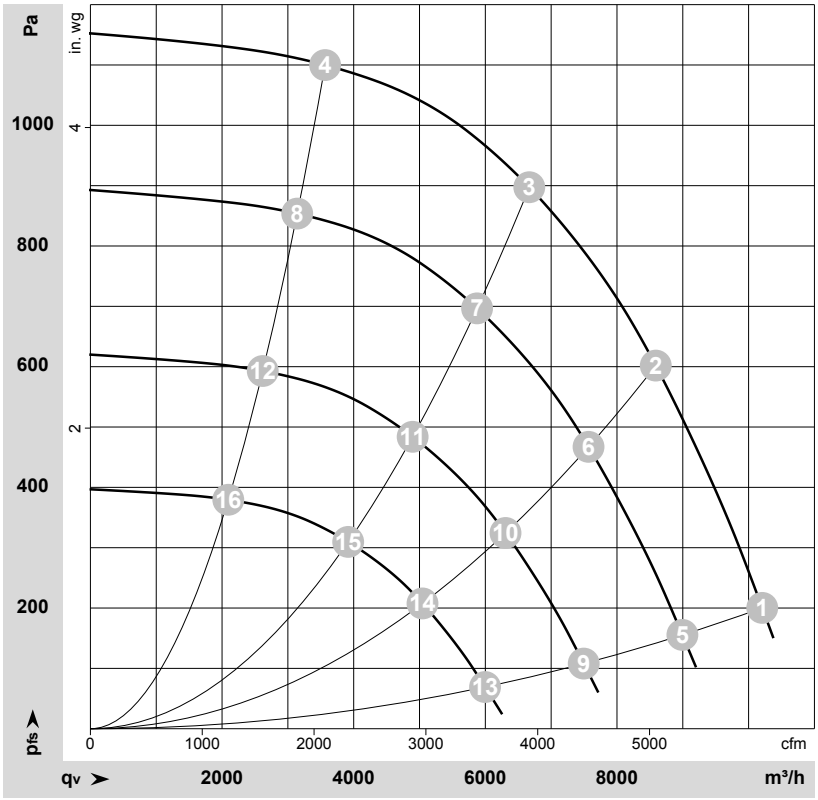
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-197512-1

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	2040	2011	3.16	80	88	92	10205	200	6010	0.80
2	3~	400	50	2040	2557	3.96	76	85	88	8590	600	5055	2.41
3	3~	400	50	2040	2780	4.30	76	84	88	6670	900	3925	3.61
4	3~	400	50	2040	2293	3.57	78	86	90	3565	1100	2100	4.42
5	3~	400	50	1800	1375	2.16	77	85	89	8995	157	5295	0.63
6	3~	400	50	1800	1749	2.71	73	81	85	7570	470	4455	1.89
7	3~	400	50	1800	1895	2.92	73	81	85	5875	698	3460	2.80
8	3~	400	50	1800	1569	2.44	75	83	87	3140	856	1850	3.44
9	3~	400	50	1500	796	1.25	72	81	84	7495	109	4410	0.44
10	3~	400	50	1500	1012	1.57	69	77	80	6305	326	3710	1.31
11	3~	400	50	1500	1097	1.69	68	76	80	4895	485	2880	1.95
12	3~	400	50	1500	908	1.41	70	79	83	2620	595	1540	2.39
13	3~	400	50	1200	407	0.64	67	75	79	5995	70	3530	0.28
14	3~	400	50	1200	518	0.80	63	71	75	5045	209	2970	0.84
15	3~	400	50	1200	562	0.87	62	71	75	3915	310	2305	1.24
16	3~	400	50	1200	465	0.72	65	73	77	2095	381	1235	1.53

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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