K3G450-RK56-05

EC centrifugal module - RadiCal

backward curved, single inlet

with support bracket

K3G450-RK56-05 ebmpapst Datasheet
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Nominal data

Type	**K3G450-RK56-05**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	1550
Power input	W	950
Current draw	A	1.5
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 in accordance with ecodesign regulation EU 327/2011

		Actual	Request 2015
01 Overall efficiency η_{es}	%	64.8	51.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		75.6	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.94
09 Air flow q_v	m^3/h	4445
09 Pressure increase p_{fs}	Pa	455
10 Speed (rpm) n	min^{-1}	1555
11 Specific ratio*		1.00

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-152167

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Technical features

Mass	19 kg
Size	450 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PP plastic
Material of mounting plate	Sheet steel, galvanised
Material of support bracket	Steel, coated in black
Material of inlet nozzle	ABS plastic
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)	F4-1
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) we recommend our fan version with special low-temperature bearings.
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Refer to product drawing
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (programming) - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start -Maximum EEPROM write cycles 100,000 - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC harmonics	Acc. to EN 61000-3-2/3
EMC interference emission	Acc. to EN 61000-6-3 (household environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Variable

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Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; EN 60335-1; CE
Approval	UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1; EAC

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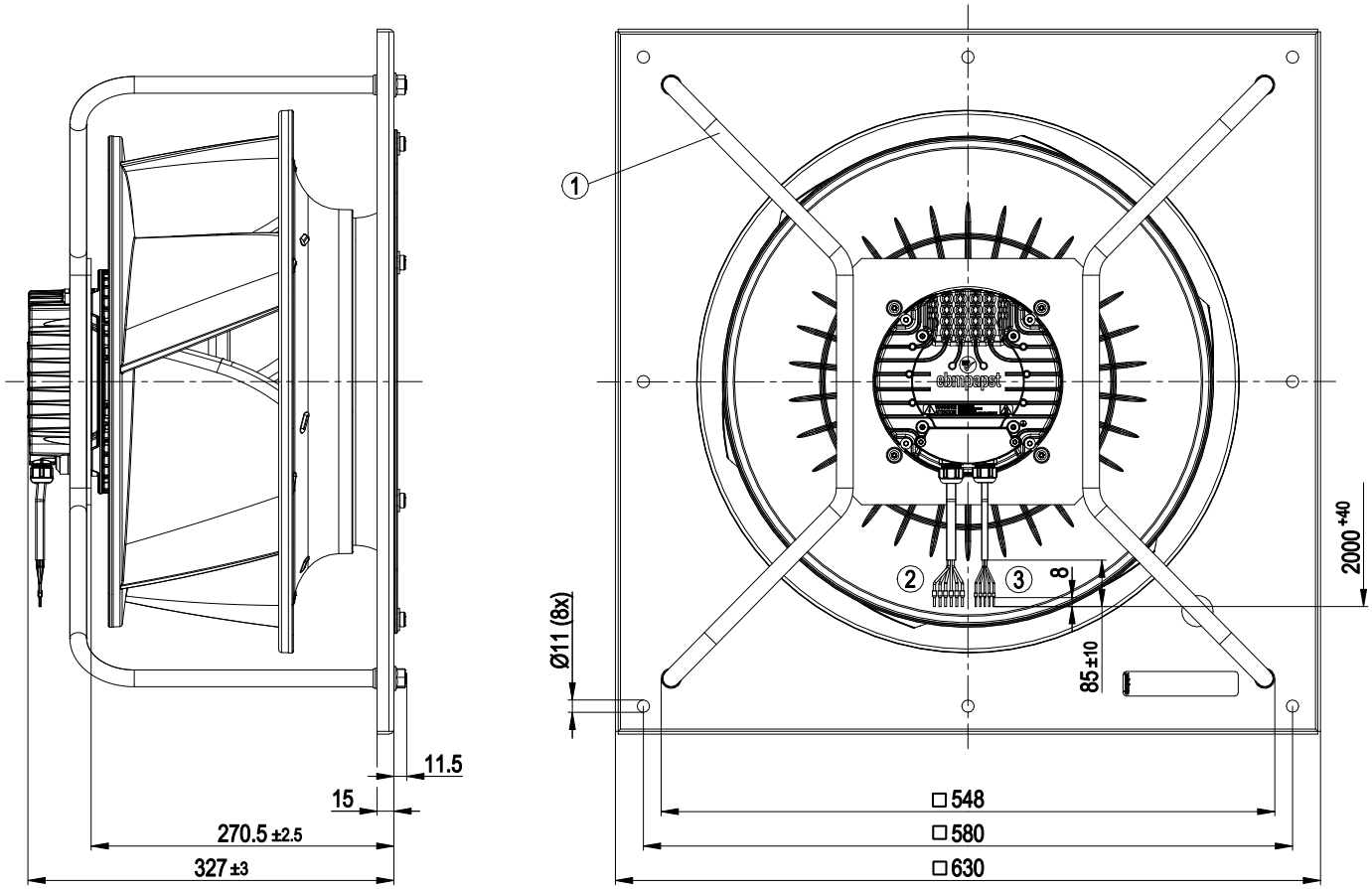
Product drawing



1	Installation position: shaft horizontal (install the support struts only vertically as shown in the illustration!) or rotor on bottom
2	Connection line PVC AWG18, 6x crimped core-end sleeves
3	Connection line PVC AWG22, 5x crimped core-end sleeves

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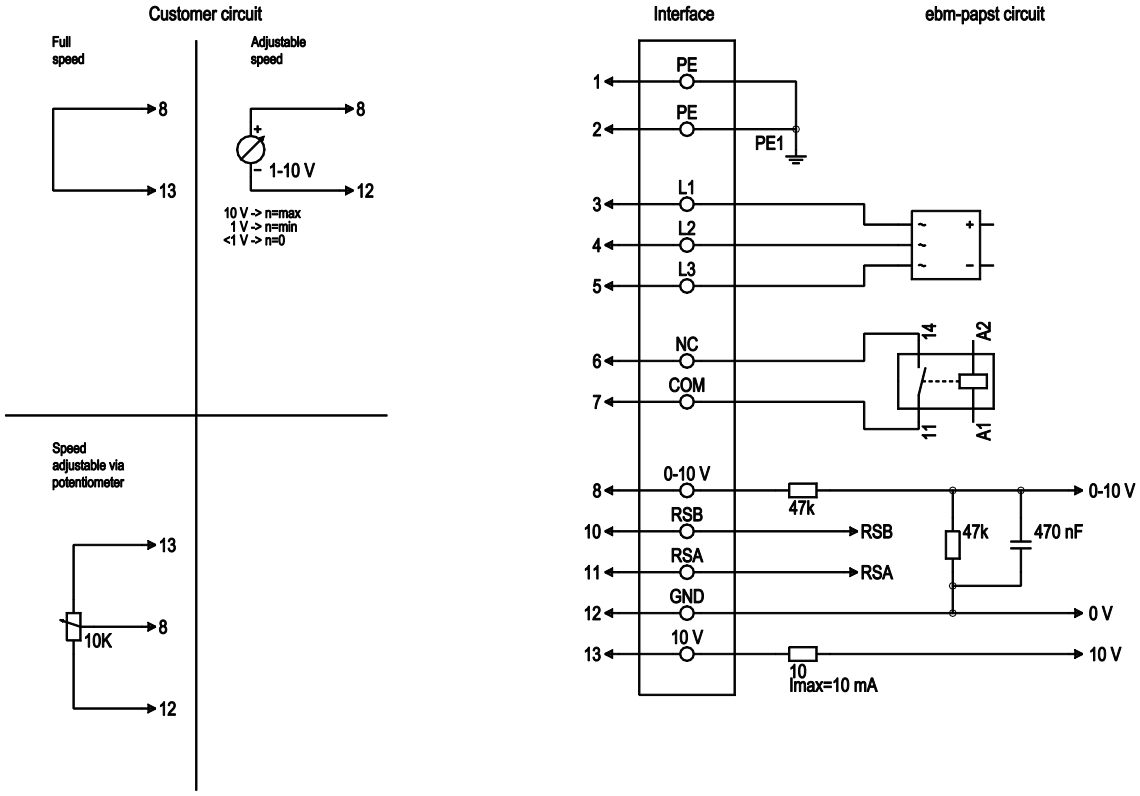
Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	L1	black	Power supply
1	4	L2	black	Power supply
1	5	L3	black	Power supply
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 mains side and basic insulation on control interface side
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 mains side and basic insulation on control interface side
2	8	0-10V	yellow	Analogue input (set value), 0-10 V, Ri=100 kΩ; parametrisable curve, SELV
2	10	RSB	brown	RS-485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS-485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Signal ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometer); SELV Fixed voltage input 24 VDC for parameter setting via MODBUS without mains power supply

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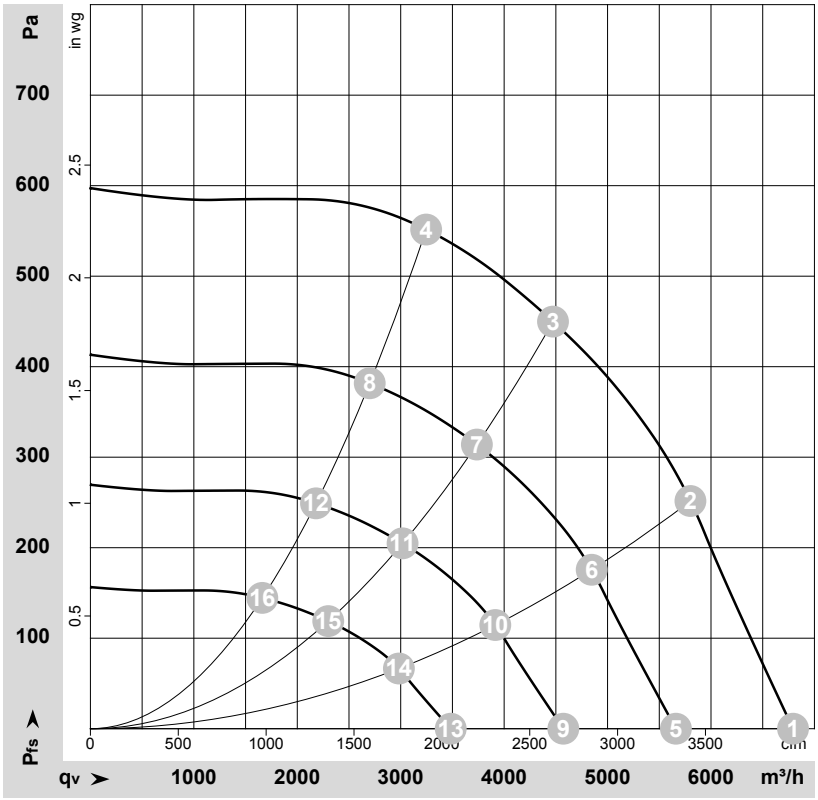
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-152167-1

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	inH2O
1	400	50	1550	597	0.99	71	79	86	6795	0	4000	0.00
2	400	50	1550	836	1.35	70	78	85	5800	250	3415	1.00
3	400	50	1550	950	1.50	66	74	80	4470	450	2630	1.81
4	400	50	1550	883	1.42	66	75	81	3245	550	1910	2.21
5	400	50	1300	346	0.57	66	75	82	5660	0	3330	0.00
6	400	50	1300	487	0.79	65	73	80	4845	178	2855	0.71
7	400	50	1300	551	0.89	61	69	76	3735	316	2200	1.27
8	400	50	1300	508	0.82	62	70	76	2700	382	1590	1.53
9	400	50	1050	182	0.30	61	69	76	4570	0	2690	0.00
10	400	50	1050	257	0.42	60	68	75	3915	116	2305	0.47
11	400	50	1050	291	0.47	56	64	70	3020	206	1775	0.83
12	400	50	1050	268	0.43	56	65	71	2180	249	1285	1.00
13	400	50	800	81	0.13	54	63	69	3485	0	2050	0.00
14	400	50	800	114	0.18	53	61	68	2980	67	1755	0.27
15	400	50	800	129	0.21	49	57	64	2300	120	1355	0.48
16	400	50	800	118	0.19	49	58	64	1660	145	980	0.58

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