K3G450-PB30-09

EC centrifugal module - RadiPac

backward curved, single inlet

with support bracket

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

Nominal data

Type	**K3G450-PB30-09**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
State		prelim.
Speed (rpm)	min^{-1}	2600
Power input	W	5050
Current draw	A	7.8
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

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

Data according to ErP directive

		Actual	Request 2015
01 Overall efficiency η_{es}	%	68.4	58.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		71.6	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	4.95
09 Air flow q_v	m^3/h	7965
09 Pressure increase p_{fs}	Pa	1485
10 Speed (rpm) n	min^{-1}	2605
11 Specific ratio*		1.02

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-176837

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Technical features

Mass	47 kg
Size	450 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Material of mounting plate	Sheet steel, galvanised
Material of support bracket	Steel, coated in black
Material of inlet nozzle	Sheet steel, galvanised
Number of blades	5
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 55
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) 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 - External 24 V input (programming) - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC - Control interface with SELV potential safely disconnected from the mains - 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 leads	Via terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	C22.2 Nr.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730; EAC

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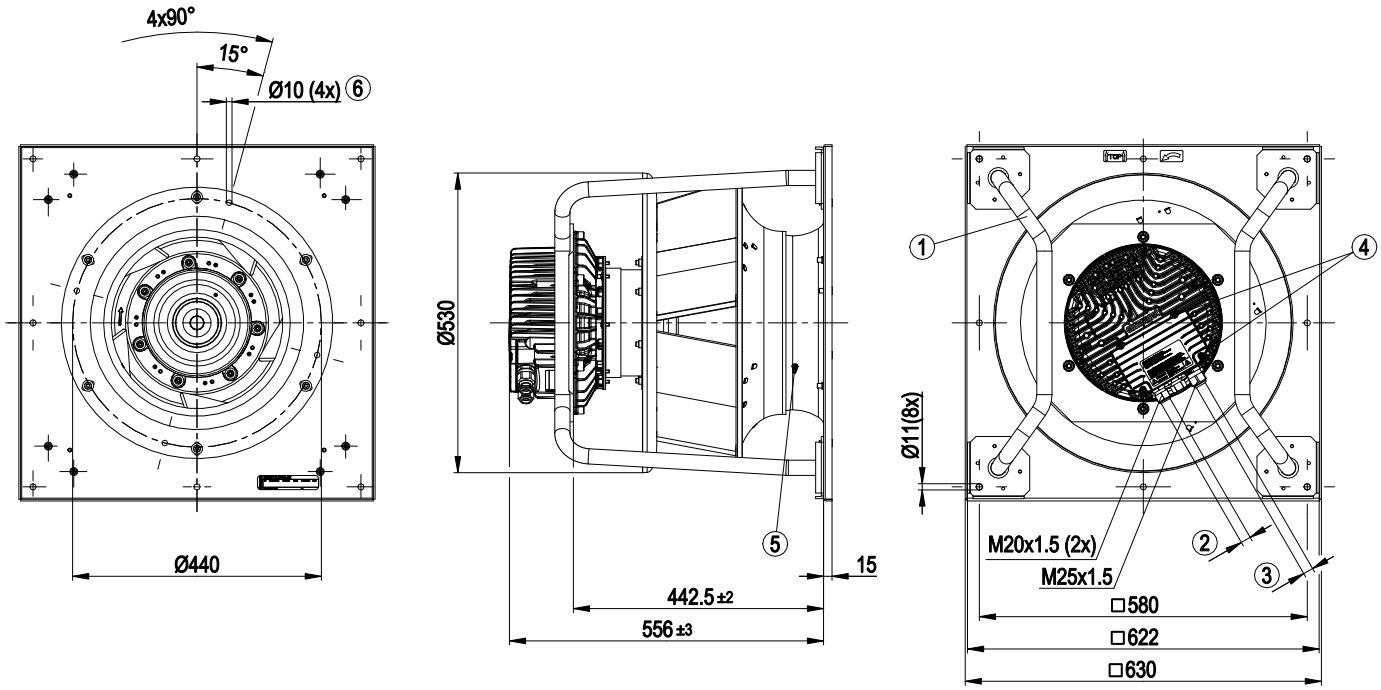
Product drawing



1	Installation position: Shaft horizontal (install the support struts only vertically as shown in the illustration!) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6±0.9 Nm
4	Tightening torque 3.5±0.5 Nm
5	Inlet nozzle with pressure tap (k-factor: 240)
6	Mounting holes for FlowGrid

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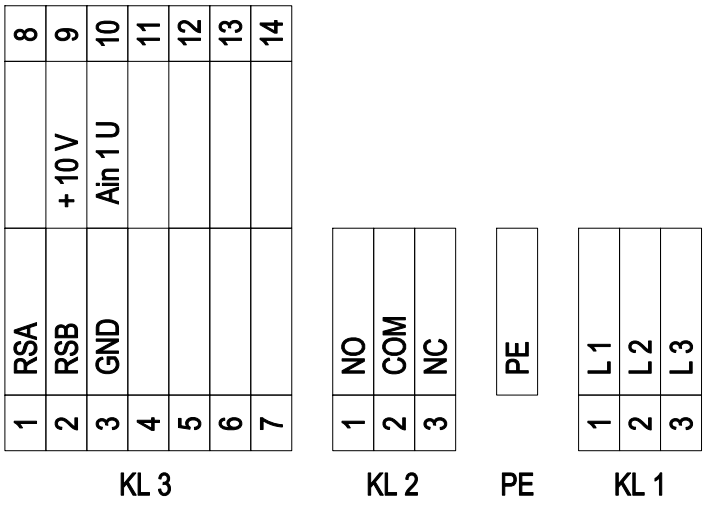
Connection screen



No.	Conn.	Designation	Function / assignment
1	1	L1	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
1	2	L2	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
1	3	L3	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
PE	-	PE	Protective earth connection
2	1	NO	Floating status contact, closes on error
2	2	COM	Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
2	3	NC	Floating status contact, break for failure
3	1	RSA	RS-485 interface for MODBUS, RSA; SELV
3	2	RSB	RS-485 interface for MODBUS, RSB; SELV
3	3	GND	Signal ground for control interface; SELV
3	4		not used
3	5		not used
3	6		not used
3	7		not used
3	8		not used
3	9	+10V	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer); SELV
3	10	Ain1 U	Control input / current sensor value input 0-10 VDC, impedance 100 kΩ; SELV
3	11		not used
3	12		not used
3	13		not used
3	14		not used

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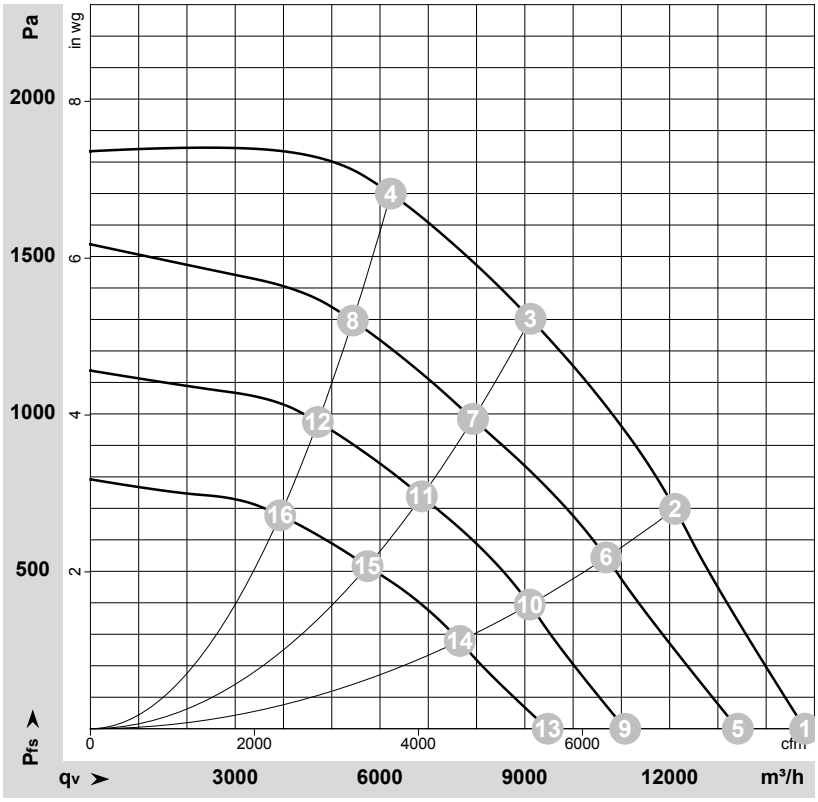
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-176837-1

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	2600	2853	4.48	95	101	101	14805	0	8715	0.00
2	400	50	2600	4271	6.58	86	93	97	12110	700	7130	2.81
3	400	50	2600	5050	7.80	79	86	95	9120	1300	5365	5.22
4	400	50	2600	4858	7.47	84	90	96	6225	1700	3665	6.82
5	400	50	2360	2170	3.49	90	98	98	13415	0	7895	0.00
6	400	50	2300	2968	4.64	82	89	95	10690	546	6290	2.19
7	400	50	2265	3331	5.18	76	83	93	7925	984	4665	3.95
8	400	50	2275	3260	5.08	80	86	93	5435	1300	3200	5.22
9	400	50	1980	1330	2.32	87	93	95	11080	0	6520	0.00
10	400	50	1960	1888	3.08	77	85	91	9100	396	5355	1.59
11	400	50	1955	2202	3.53	73	79	90	6865	739	4040	2.97
12	400	50	1965	2158	3.47	76	83	90	4710	977	2775	3.92
13	400	50	1685	867	1.64	84	90	92	9475	0	5575	0.00
14	400	50	1655	1202	2.15	74	81	87	7650	280	4505	1.12
15	400	50	1645	1366	2.37	68	75	85	5740	516	3380	2.07
16	400	50	1645	1326	2.32	71	78	85	3930	680	2315	2.73

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