K3G450-PI86-33

EC centrifugal fan - RadiPac

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Nominal data

Type	**K3G450-PI86-33**
Motor	**M3G112-IA**

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}	1790
Power consumption	W	1740
Current draw	A	2.7
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	50

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}	%	69.2	54
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		77.2	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.74
09 Air flow q_v	m^3/h	6460
09 Pressure increase p_{fs}	Pa	632
10 Speed (rpm) n	min^{-1}	1800
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-176047

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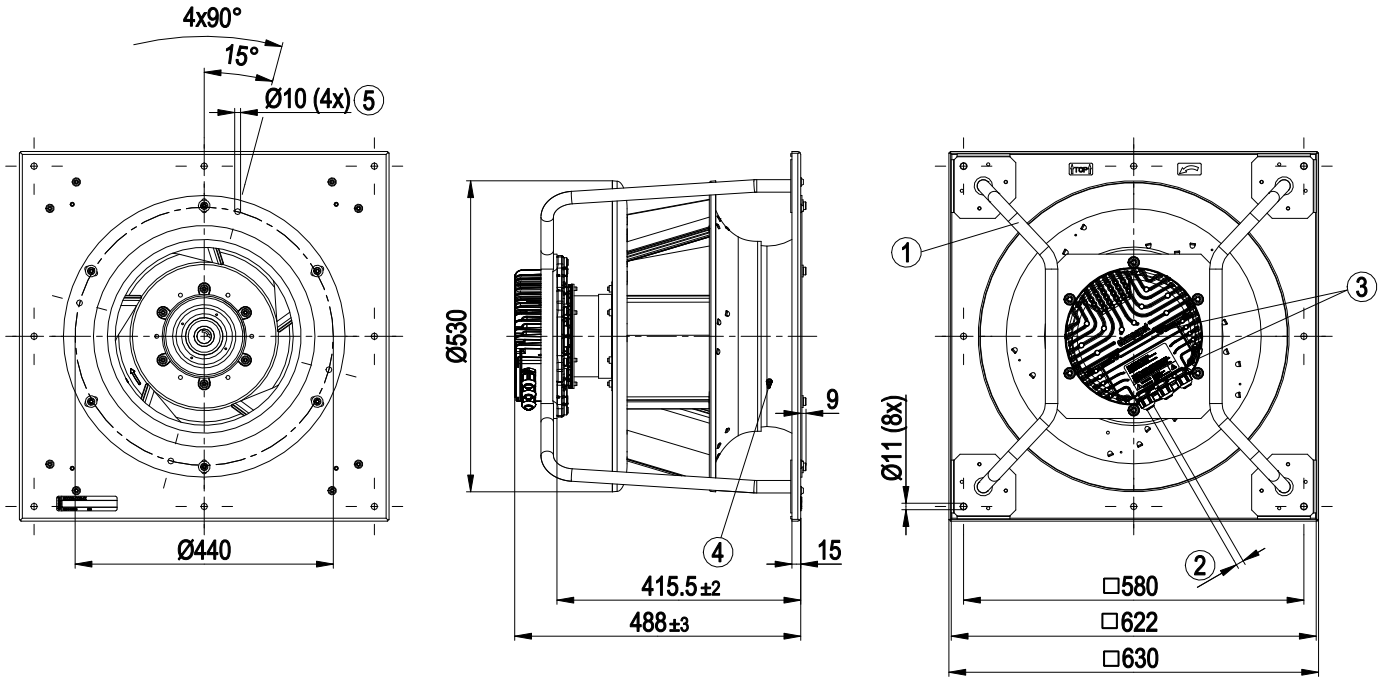
Technical description

Weight	33 kg
Size	450 mm
Motor size	112
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
Support bracket material	Steel, galvanized and 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	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H2+S
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
Condensation drainage holes	On rotor side
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 (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - 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
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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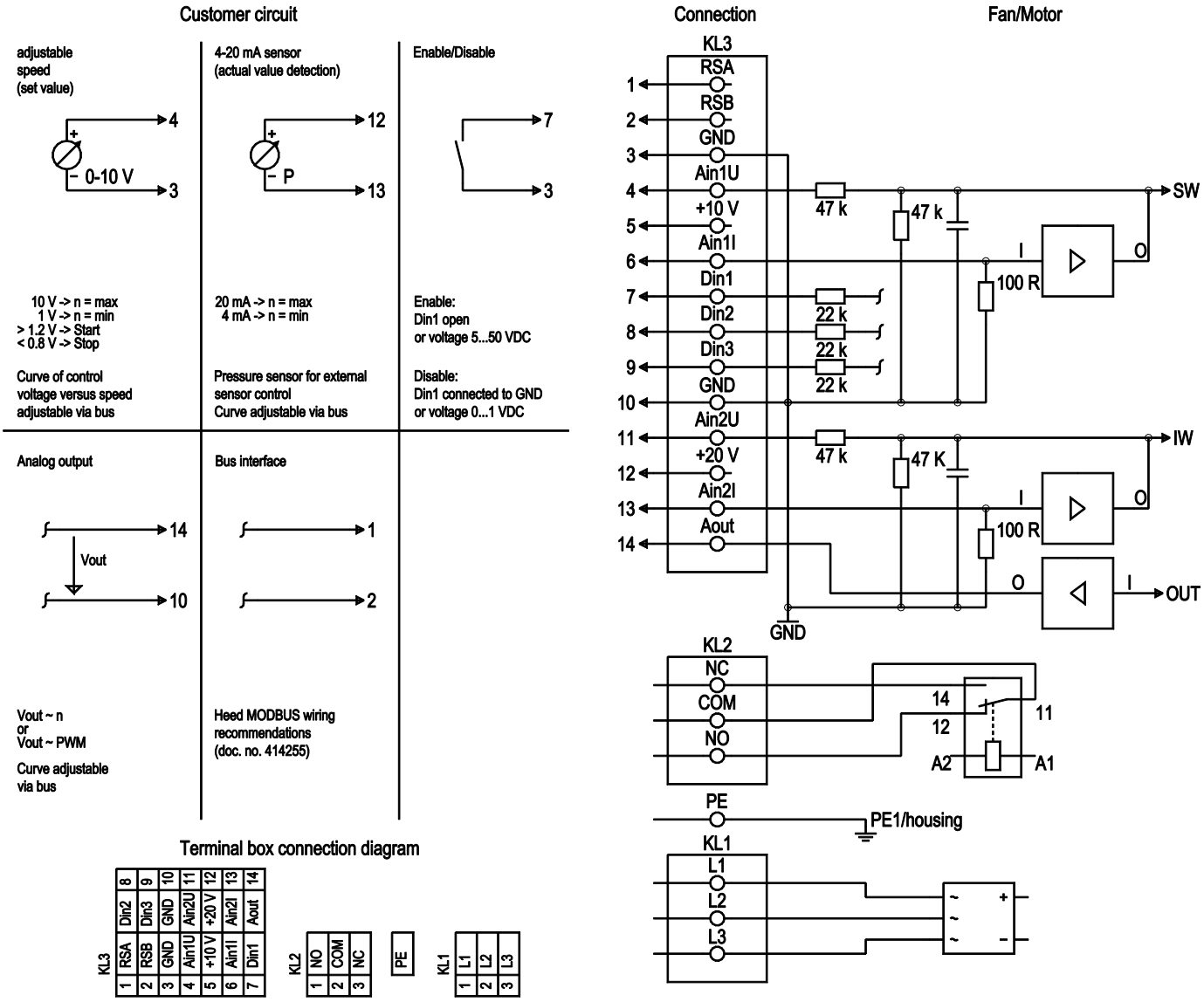
Product drawing



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) 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	Tightening torque 3.5 ± 0.5 Nm
4	Inlet ring with pressure tap (k-factor: 240)
5	Mounting holes for FlowGrid

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Connection diagram



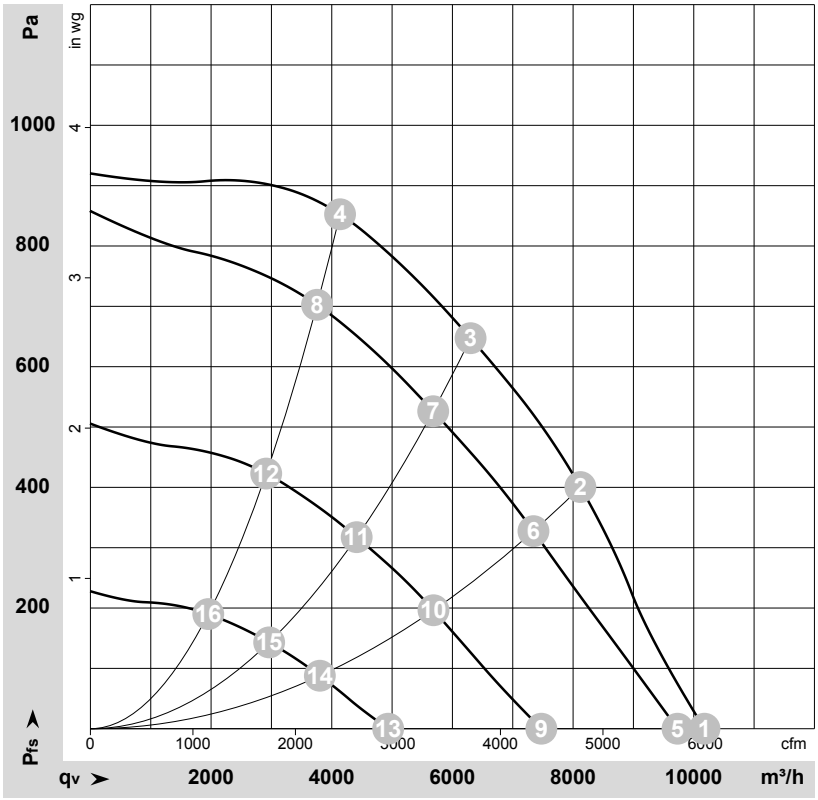
No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply; for nominal voltage range see technical data
KL 1	2	L2	Supply connection, power supply; for nominal voltage range see technical data
KL 1	3	L3	Supply connection, power supply; for nominal voltage range see technical 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 30 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

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No.	Conn.	Designation	Function/assignment
KL 3	5	+ 10 V	Fixed voltage output 10 VDC, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometer); 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
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 external 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

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-176047-1

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

	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	1790	1001	1.61	84	91	92	10175	0	5990	0.00
2	400	50	1790	1532	2.38	74	82	85	8120	400	4780	1.61
3	400	50	1790	1740	2.70	69	77	82	6300	650	3710	2.61
4	400	50	1790	1662	2.57	74	82	86	4140	850	2435	3.41
5	400	50	1710	859	1.41	84	92	93	9730	0	5725	0.00
6	400	50	1645	1191	1.88	72	81	84	7345	328	4320	1.32
7	400	50	1625	1290	2.03	67	75	80	5680	527	3345	2.12
8	400	50	1630	1251	1.97	71	79	83	3755	705	2210	2.83
9	400	50	1310	415	0.79	78	85	87	7475	0	4400	0.00
10	400	50	1275	570	1.03	67	74	78	5685	196	3345	0.79
11	400	50	1265	624	1.10	62	69	74	4415	318	2595	1.28
12	400	50	1265	601	1.07	65	72	77	2915	425	1715	1.71
13	400	50	880	156	0.37	64	74	74	4935	0	2905	0.00
14	400	50	855	202	0.45	56	64	68	3805	88	2240	0.35
15	400	50	850	219	0.47	53	60	65	2965	143	1745	0.57
16	400	50	850	213	0.46	54	61	66	1955	190	1150	0.76

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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