K3G450-AQ24-09

EC centrifugal module

backward-curved, single-intake

with support bracket

ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

Nominal data

Type	**K3G450-AQ24-09**
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	2730
Current draw	A	4.2
Min. ambient temperature	°C	-25
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	66.3	56
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		72.3	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	2.7
09 Air flow q_v	m^3/h	7585
09 Pressure increase p_{fs}	Pa	804
10 Speed (rpm) n	min^{-1}	2050
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

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Technical description

Weight	38.3 kg
Fan size	450 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
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 - 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 - 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 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	With plug
Motor protection	Reverse polarity and locked-rotor protection
With cable	Lateral
Protection class	I (with customer connection of protective earth)

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Conformity with standards	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; C22.2 No.77 + CAN/CSA-E60730-1; EAC

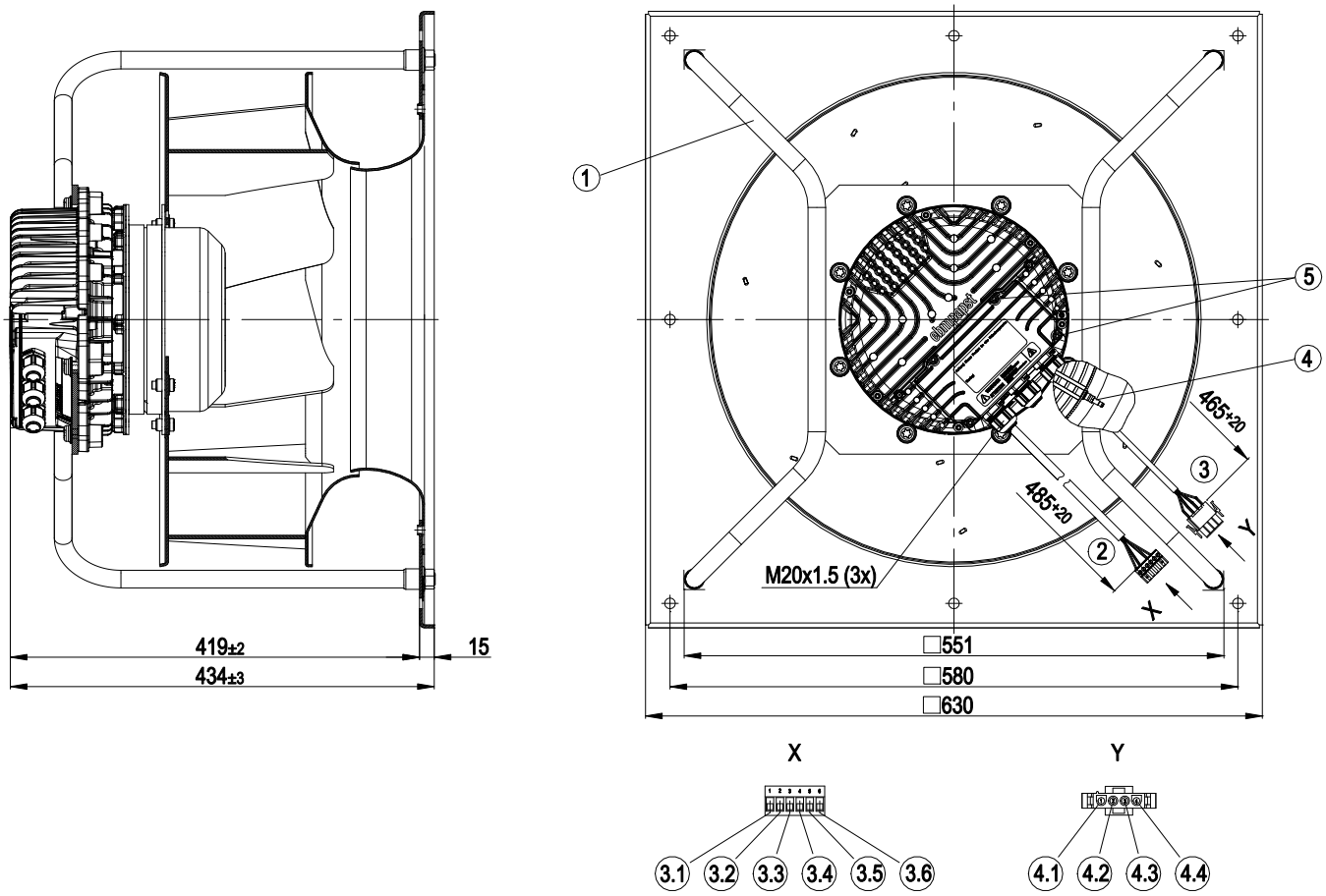
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Product drawing



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Connector housing Phönix 17 57 05 1
2.1	not used
2.2	GND (blue)
2.3	not used
2.4	Ain1U (yellow)
2.5	NC (red)
2.6	COM (orange)
3	Connector housing AMP 1-480 702-0
3.1	PE (yellow/green)
3.2	L3 (black)
3.3	L2 (black)
3.4	L1 (black)
4	Inlet ring with pressure tap (k-factor: 240)
5	Tightening torque 3.5 ± 0.5 Nm

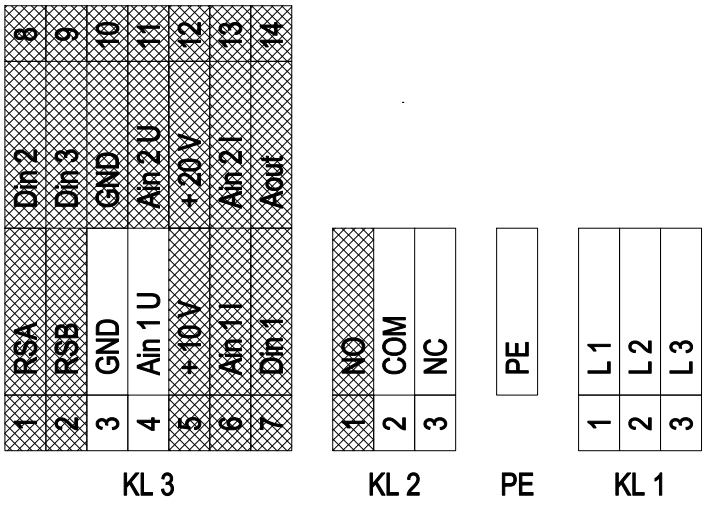
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Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
KL 1	2	L2	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
KL 1	3	L3	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact, make for failure
KL 2	2	COM	Status relay, floating status contact; changeover contact; common connection; contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
KL 2	3	NC	Status relay, floating status contact, break for failure
KL 3	1	RSA	Bus connection RS485, RSA, MODBUS RTU
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS RTU
KL 3	3 / 10	GND	Reference ground for control interface
KL 3	4	Ain1 U	Analog input 1 (set value), 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1I
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. pot)
KL 3	6	Ain1 I	Analog input 1 (set value), 4-20 mA, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1U
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 V (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
KL 3	9	Din3	Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected as normal/inverse via bus or digital input; normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage < 1 VDC
KL 3	11	Ain2 U	Analog input 2 (measured value), 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2I
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)
KL 3	13	Ain2 I	Analog input 2 (measured value), 4-20 mA, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2U
KL 3	14	Aout	Analog output 0-10 V, max. 5 mA, output of current motor modulation level / of the current motor speed. Adjustable curve.

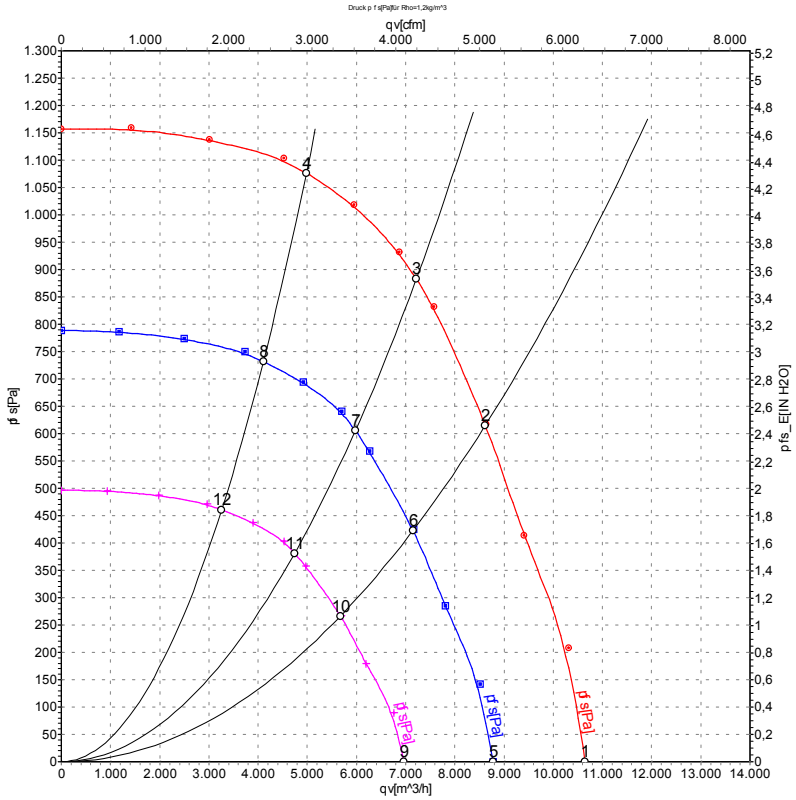
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Curves: Air performance 50 Hz



Measurement: LU-118089-1

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	LwA_{in}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	m^3/h	Pa	CFM	inH2O
1	400	50	2040	1773	2.71	92	10650	0	6270	0.00
2	400	50	2040	2500	3.80	83	8615	620	5070	2.49
3	400	50	2040	2730	4.20	81	7220	885	4250	3.55
4	400	50	2040	2587	3.96	83	4980	1080	2930	4.34
5	400	50	1695	991	1.52	88	8770	0	5165	0.00
6	400	50	1695	1428	2.17	79	7145	428	4205	1.72
7	400	50	1695	1548	2.35	77	5980	605	3520	2.43
8	400	50	1695	1450	2.22	79	4105	732	2415	2.94
9	400	50	1345	495	0.76	83	6960	0	4095	0.00
10	400	50	1345	713	1.09	74	5670	269	3340	1.08
11	400	50	1345	774	1.18	72	4745	381	2790	1.53
12	400	50	1345	725	1.11	74	3260	461	1920	1.85

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · LwA_{in} = Sound power level intake side · qv = Air flow · p_{fs} = Pressure increase

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