K3G355-AY43-22

EC centrifugal module - RadiPac

backward-curved, single-intake

with support bracket

K3G355-AY43-22 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**K3G355-AY43-22**
Motor	**M3G112-GA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed	min^{-1}	2450
Power consumption	W	1400
Current draw	A	6.0
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	63.5	53
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		72.5	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.4
09 Air flow q_v	m^3/h	3755
09 Pressure increase p_{fs}	Pa	794
10 Speed n	min^{-1}	2380
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-131069

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Technical description

Weight	23.5 kg
Fan size	355 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	IP54
Insulation class	"B"
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 storage	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Tach output - 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 limit - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - 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	Via 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	EAC; UL 1004-7 + 60730

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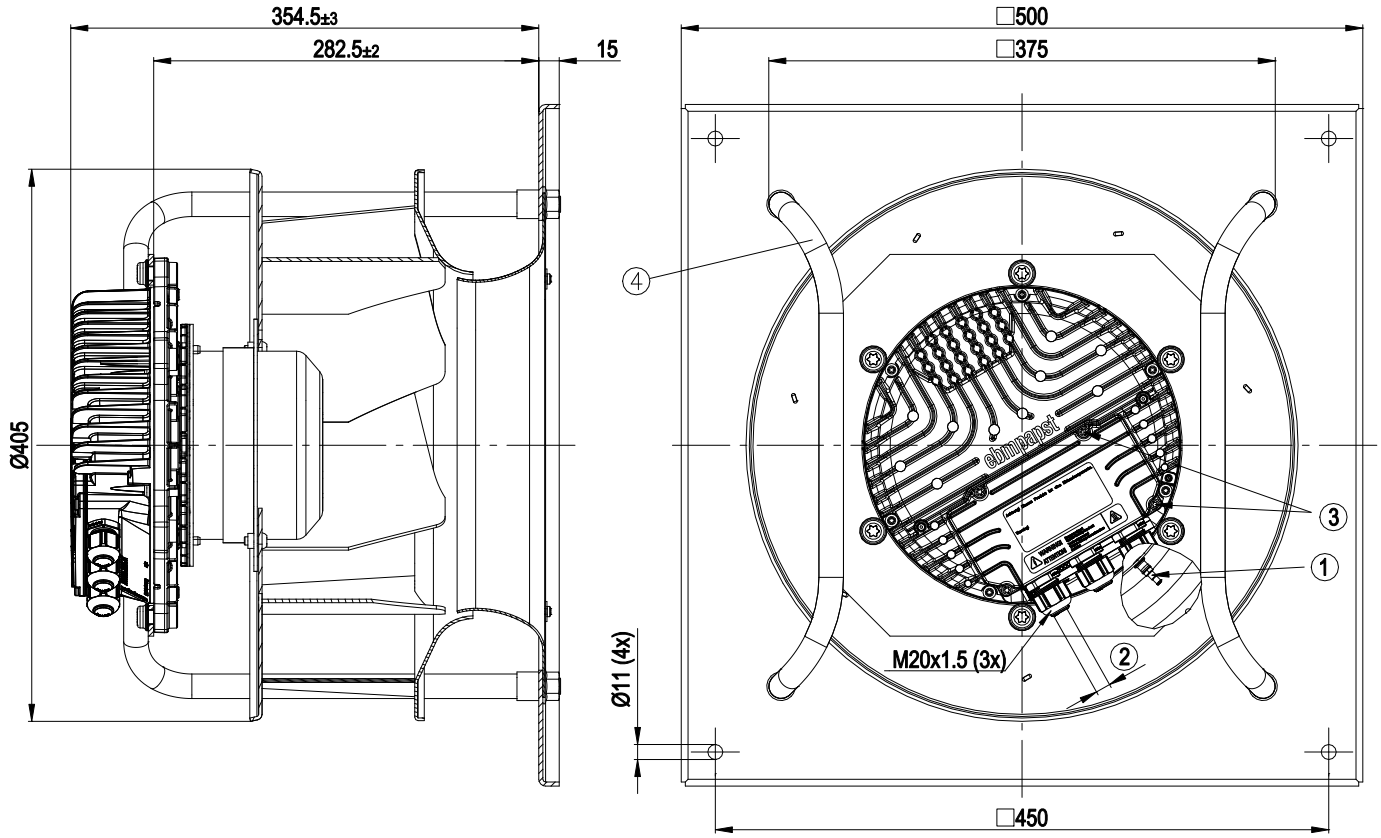
Product drawing



1	Inlet ring with pressure tap (k-factor:148)
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
3	Tightening torque 3.5±0.5 Nm
4	Installation position: Shaft horizontal (only install support struts vertically as illustrated) or rotor at bottom; rotor on top on request

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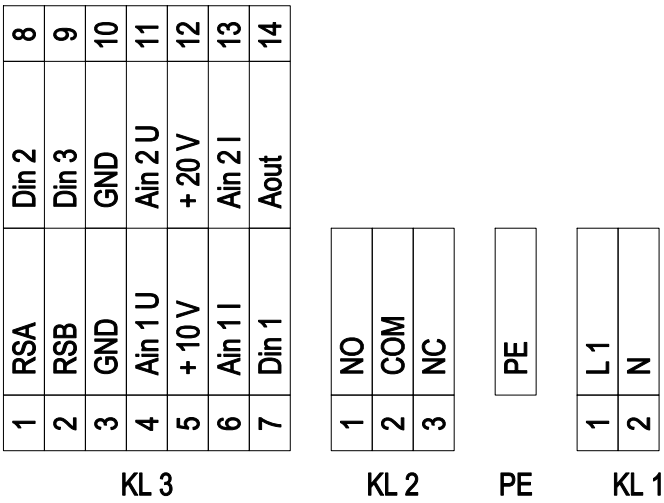
Connection diagram



No.	Conn.	Designation	Function/assignment
KL1	1	L1	Supply connection, power supply 1-phase 200-277 VAC; 50/60 Hz
KL1	2	N	Supply connection, power supply 1-phase 200-277 VAC; 50/60 Hz
PE		PE	Ground connection, PE connection
KL2	1	NO	Status relay, floating status contact; Option 1: Make for failure; Option 2: Make for run monitoring error message
KL2	2	COM	Status relay, floating status contact; changeover contact; common connection; contact rating 250 VAC/ max. 2 A (AC1)/min. 10 mA
KL2	3	NC	Status relay, floating status contact; Option 1: Break for failure; Option 2: Break for run monitoring error message
KL3	1	RSA	Bus connection RS485; RSA; MODBUS RTU
KL3	2	RSB	Bus connection RS485; RSB; MODBUS RTU
KL3	3	GND	Reference ground for control interface
KL3	4	Ain1 U	Analog input 1 (set value); 0-10 V; Ri = 100 kohms; adjustable curve; only for use as alternative to input Ain1 I
KL3	5	+10 V	Fixed voltage output 10 VDC; +10 V ±3%; max. 10 mA; short-circuit-proof power supply for ext. devices (e.g. potentiometer)
KL3	6	Ain1 I	Analog input 1 (set value); 4-20 mA; Ri = 100 ohms; adjustable curve; only for use as alternative to input Ain1 U
KL3	7	Din1	Digital input 1: Enable electronics; Enable: Pin open or applied voltage 5...50 VDC; Disable: Bridge to GND or applied voltage < 0.8 VDC; Reset function: Triggering of software reset after level change to < 0.8 V
KL3	8	Din2	Digital input 2: Parameter set 1/2 switching; Depending on EEPROM setting, the valid/used parameter set can be selected via BUS or digital input DIN2. Parameter set 1: Pin open or applied voltage 5...50 VDC; Parameter set 2: Bridge to GND or applied voltage < 0.8 VDC
KL3	9	Din3	Digital input 3: Direction of action of integrated controller; According to EEPROM setting, the direction of action of the integrated controller 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 < 0.8 VDC
KL3	10	GND	Reference ground for control interface
KL3	11	Ain2 U	Analog input 2; Measured value 0-10 V; Ri = 100 kohms; adjustable curve; only for use as alternative to input Ain2 I
KL3	12	+20 V	Fixed voltage output 20 VDC; +20 V +25/-10%; max. 50 mA; short-circuit-proof power supply for ext. devices (e.g. sensors)
KL3	13	Ain2 I	Analog input 2; measured value: 4-20 mA; Ri = 100 ohms; adjustable curve; only for use as alternative to input Ain2 U

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No.	Conn.	Designation	Function/assignment
KL3	14	Aout	Analog output 0-10 V; max. 5 mA; output of current motor modulation level/of current motor speed Adjustable curve.

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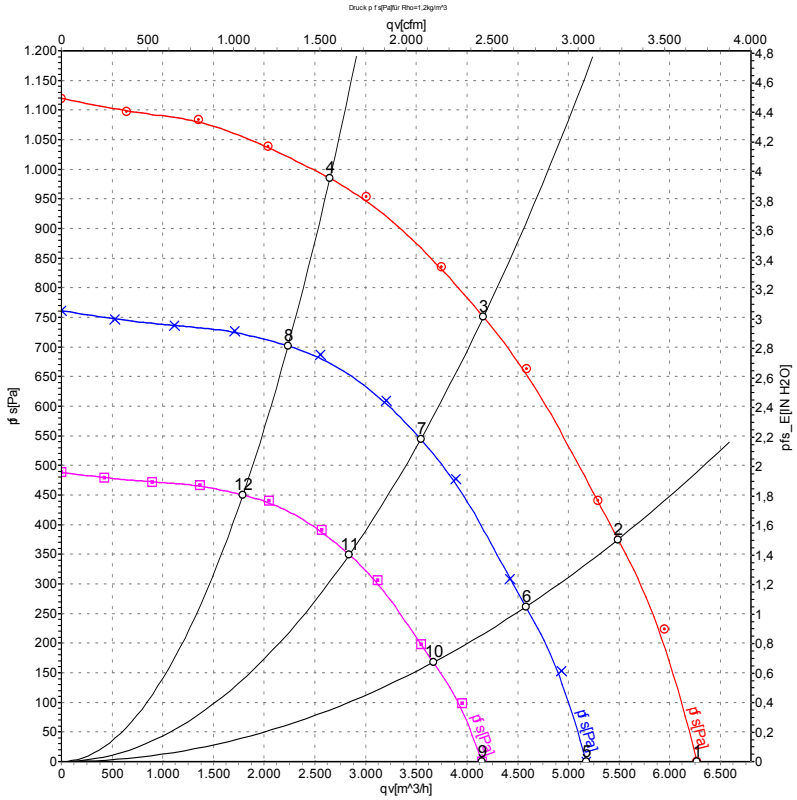
Curves: Air performance 50 Hz



Measurement: LU-131069

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}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa
1	230	50	2450	998	4.33	79	86	93	6265	0
2	230	50	2450	1232	5.35	75	82	89	5490	375
3	230	50	2450	1400	6.00	72	79	86	4165	750
4	230	50	2450	1344	5.84	74	82	89	2645	985
5	230	50	2035	562	2.44	75	82	89	5175	0
6	230	50	2035	715	3.11	71	78	85	4580	261
7	230	50	2035	855	3.72	68	76	83	3545	544
8	230	50	2035	810	3.52	71	78	85	2235	702
9	230	50	1630	289	1.25	70	77	84	4145	0
10	230	50	1630	368	1.60	66	73	81	3670	167
11	230	50	1630	440	1.91	64	71	78	2840	349
12	230	50	1630	416	1.81	66	73	80	1790	450

U = Power supply · f = Frequency · n = Speed · 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 · qv = Air flow · p_{fs} = Pressure increase