R3G450-AD33-01

EC centrifugal fan

backward-curved, single-intake



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G450-AD33-01**
Motor	**M3G112-GA**

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}	1550
Power consumption	W	1000
Current draw	A	1.7
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}	%	58.3	51.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		68.9	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.98
09 Air flow q_v	m^3/h	3605
09 Pressure increase p_{fs}	Pa	530
10 Speed (rpm) n	min^{-1}	1560
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-103529

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Technical description

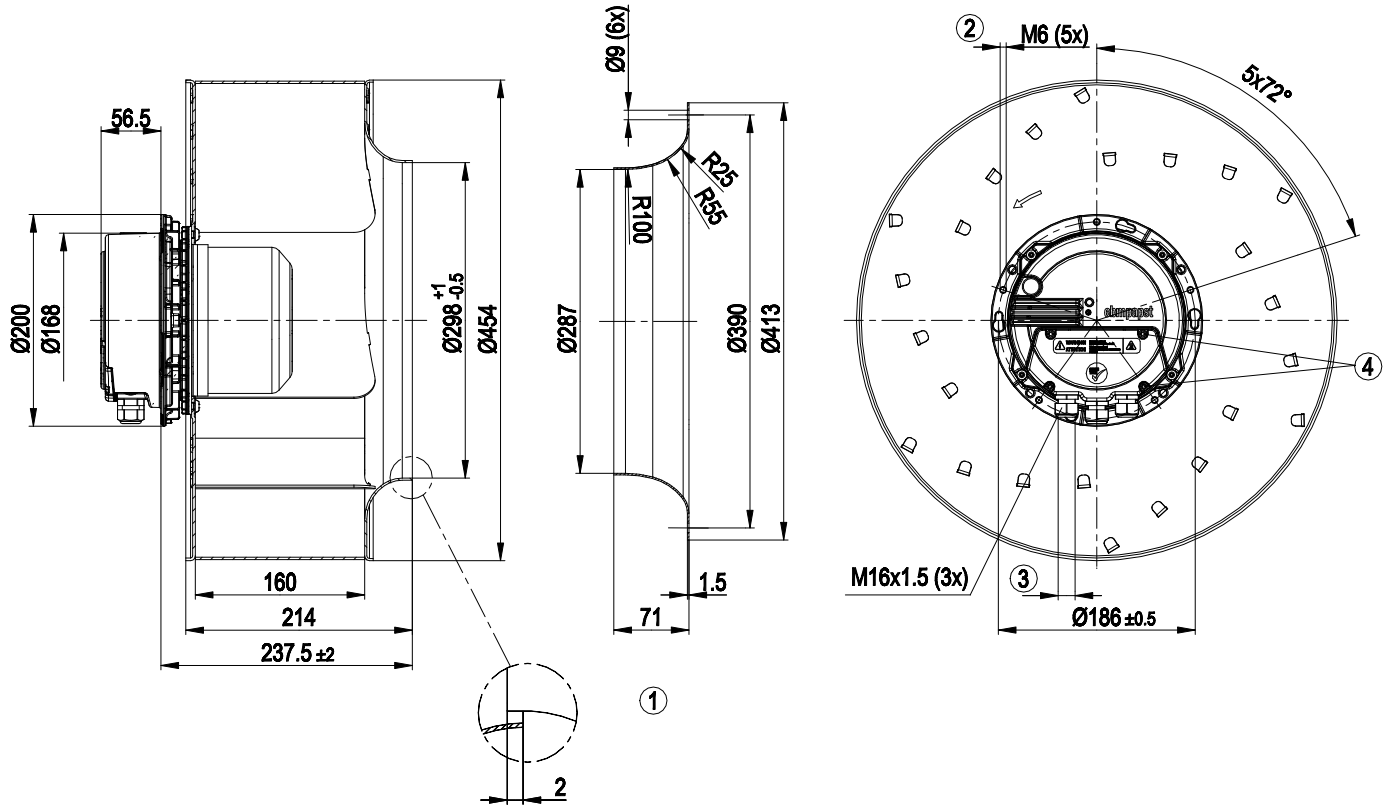
Weight	11.2 kg
Fan size	450 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection 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	Shaft horizontal
Condensation drainage holes	None
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 - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 ebmBUS - 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
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
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	Via terminal box
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE

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Product drawing



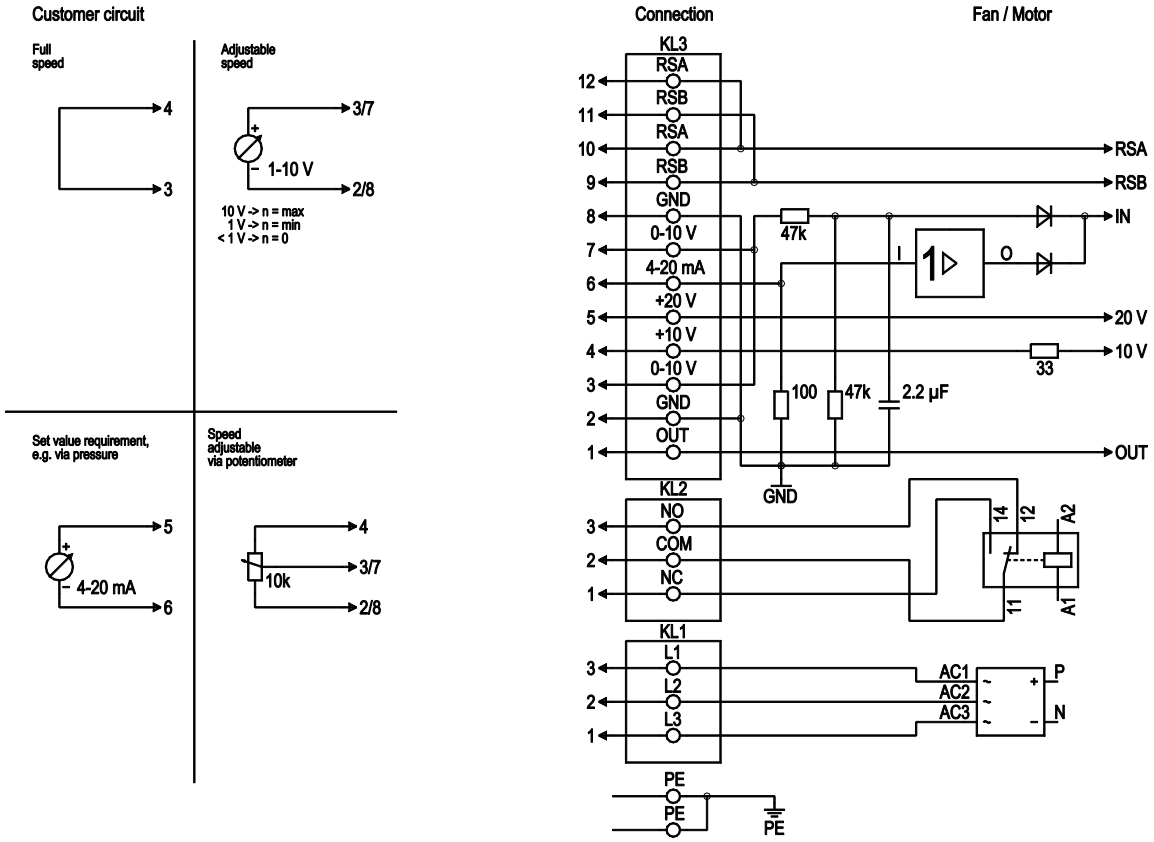
1	Accessory part: inlet ring 54478-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable diameter min. 4 mm, max. 10 mm; tightening torque 2.5±0.4 Nm
4	Tightening torque 3.5 ± 0.5 Nm

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Connection diagram



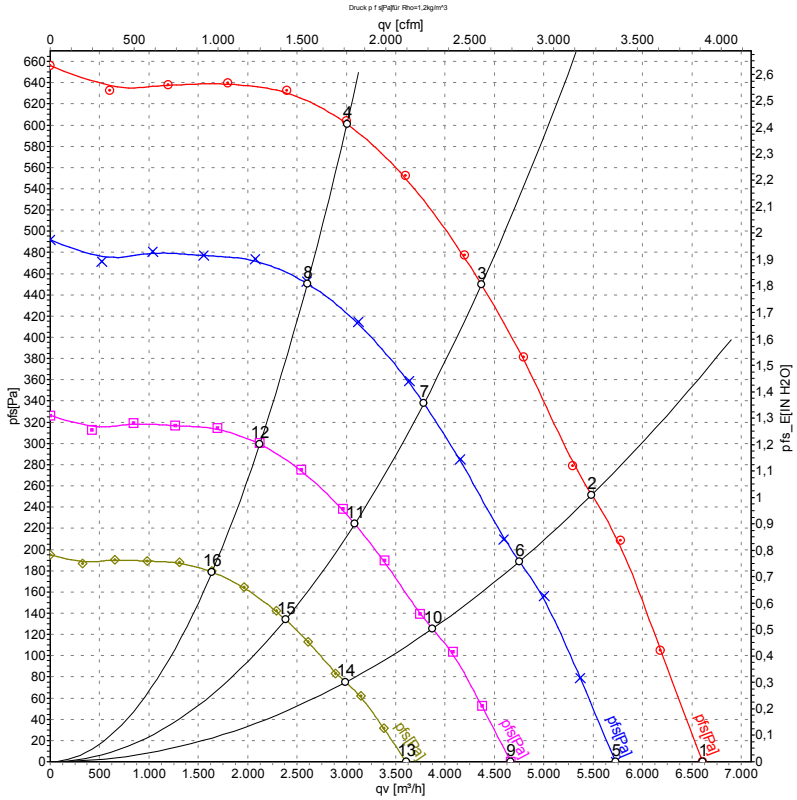
No.	Conn.	Designation	Function/assignment
PE		PE	Protective earth terminal
KL1	1, 2, 3	L1, L2, L3	Power supply 50/60 Hz
KL2	1	NC	Floating status contact, break for failure
KL2	2	COM	floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
KL2	3	NO	Floating status contact, make for failure
KL3	1	OUT	Analog output, 0-10 VDC, max. 3 mA, SELV, output of current motor modulation level: 1 V corresponds to 10% modulation level. 10 V corresponds to 100% modulation level.
KL3	2, 8	GND	Reference ground for control interface, SELV
KL3	3, 7	0-10 V	Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV
KL3	4	+10 V	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV
KL3	5	+20 V	Voltage output 20 VDC (+25%/-10%), max. 50 mA, power supply for external devices (e.g. sensors), SELV
KL3	6	4-20 mA	Use control / current sensor value input 4-20 mA, impedance 100 Ω only as alternative to 0-10 V input, SELV
KL3	9, 11	RSB	RS485 interface for ebmBUS, RSB, SELV
KL3	10, 12	RSA	RS485 interface for ebmBUS, RSA, SELV

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Curves: Air performance 50 Hz



Measurement: LU-103529-1

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}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	400	50	1550	785	1.31	74	81	86	6610	0	3890	0.00
2	400	50	1550	863	1.39	71	78	84	5485	250	3230	1.00
3	400	50	1550	1000	1.70	69	76	82	4365	450	2570	1.81
4	400	50	1550	943	1.51	68	76	81	3005	600	1770	2.41
5	400	50	1350	510	0.85	71	78	83	5725	0	3370	0.00
6	400	50	1350	562	0.90	68	75	81	4755	189	2800	0.76
7	400	50	1350	642	1.03	66	73	79	3785	338	2230	1.36
8	400	50	1350	612	0.98	65	73	78	2605	453	1530	1.82
9	400	50	1100	276	0.46	66	73	79	4665	0	2745	0.00
10	400	50	1100	304	0.49	63	71	77	3875	125	2280	0.50
11	400	50	1100	347	0.56	61	69	74	3085	224	1815	0.90
12	400	50	1100	331	0.53	60	68	73	2120	301	1250	1.21
13	400	50	850	127	0.21	61	68	73	3605	0	2120	0.00
14	400	50	850	140	0.23	58	65	71	2995	75	1760	0.30
15	400	50	850	160	0.26	56	63	69	2385	134	1405	0.54
16	400	50	850	153	0.24	55	63	68	1640	180	965	0.72

U = Power supply · 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 · qv = Air flow · p_{fs} = Pressure increase

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