R3G450-AT09-03

EC centrifugal fan

backward curved, single inlet



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G450-AT09-03**	
Motor	**M3G150-FF**	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed	min^{-1}	2150
Power input	W	2700
Current draw	A	4.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

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

Installation category	A
Efficiency category	Static
Variable speed drive	Yes
Specific ratio*	1.01

* Specific ratio = 1 + p_{fs} / 100 000 Pa

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}	%	60.9	52	56
Efficiency grade N		66.9	58	62
Power input P_{ed}	kW	2.7		
Air flow q_v	m^3/h	5770		
Pressure increase p_{fs}	Pa	972		
Speed n	min^{-1}	2165		

Data definition with optimum efficiency. LU-108835
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

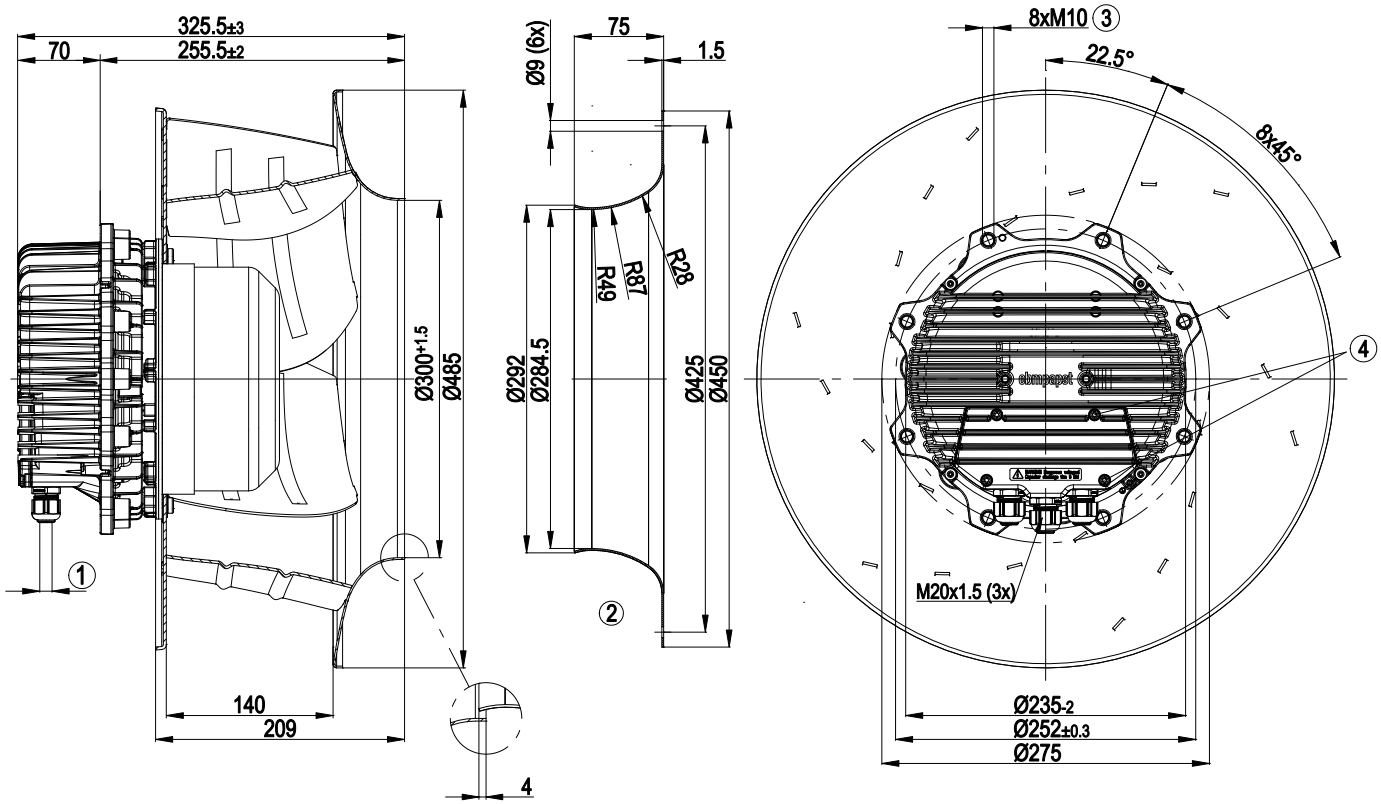
Mass	20.6 kg
Size	450 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F4-1
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensate discharge holes	Rotor-side
Operation 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 limit - PFC, passive - RS485 ebmBUS - Soft start - Control input 0-10 VDC / PWM - 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 61000-6-3 (household 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	UL 2111; VDE; EAC; CSA C22.2 Nr.77

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Product drawing



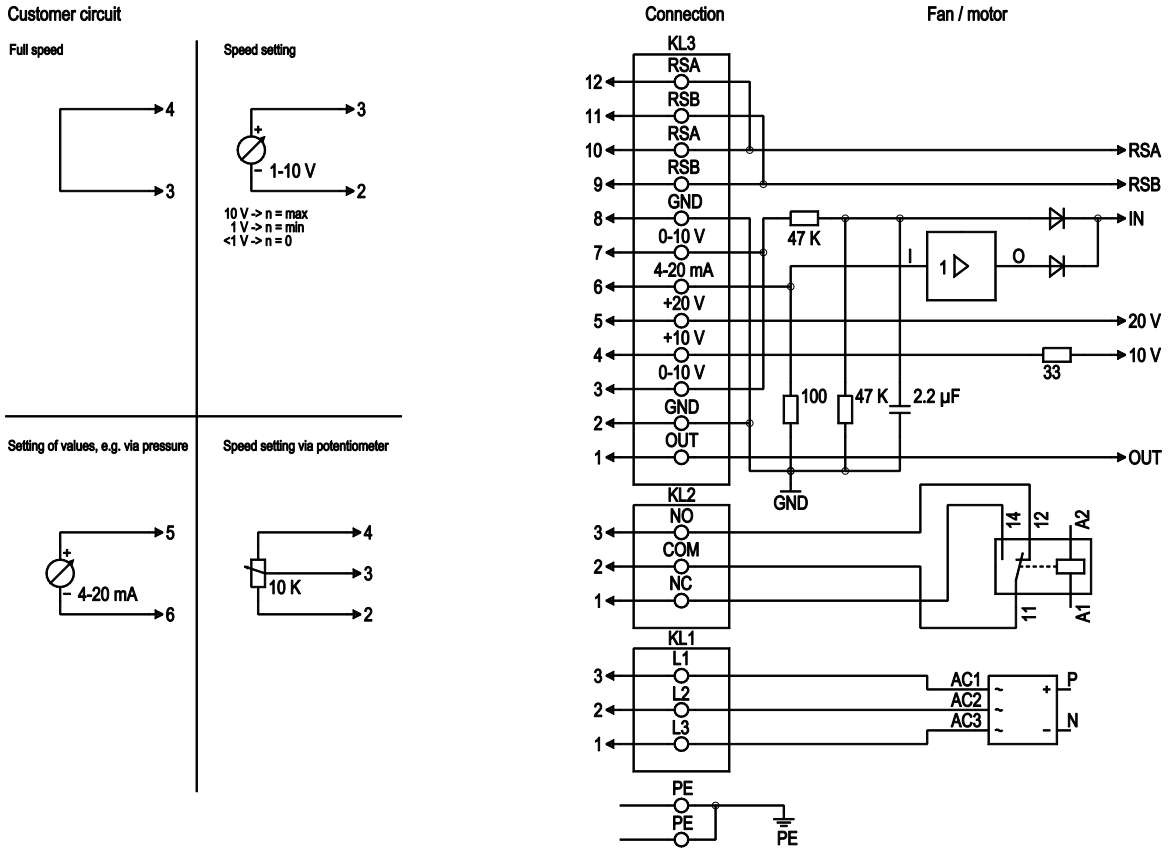
1	Cable diameter: min. 4 mm, max. 10 mm, tightening torque: 4±0.6 Nm
2	Accessory part: inlet nozzle 63045-2-4013 not included in the standard scope of delivery; other inlet nozzles on request
3	Depth of screw max. 25 mm
4	Tightening torque 3.5±0.5 Nm

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Connection screen



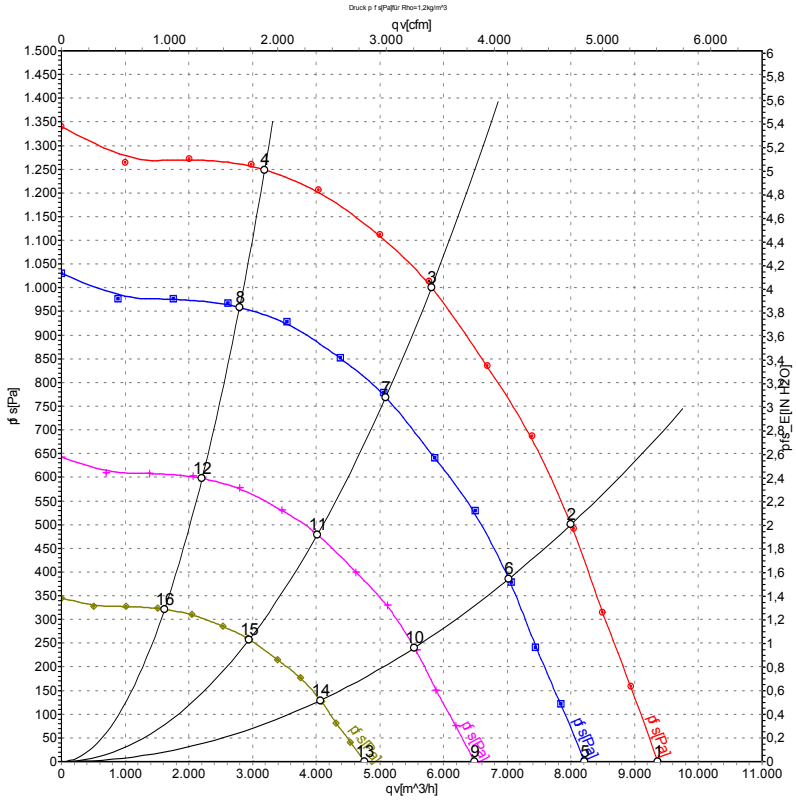
No.	Conn.	Designation	Function / assignment
PE		PE	Protective earth connection
KL1	1, 2, 3	L1, L2, L3	Supply voltage, 50/60 Hz
KL2	1	NC	Floating status message contact, normally closed connection
KL2	2	COM	Floating status message contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
KL2	3	NO	Floating status message contact, normally open connection
KL3	1	OUT	Analog output, 0-10 VDC, max. 3 mA, SELV, output of the current level control coefficient: 1 V equates to 10 % level control coefficient. 10 V equate to 100 % level control coefficient.
KL3	2, 8	GND	Reference mass for control interface, SELV
KL3	3, 7	0-10 V	Use control / actual 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, supply voltage for ext. devices (e.g. potentiometers), SELV
KL3	5	+20 V	Voltage output 20 VDC (+25 %/-10 %), max. 50 mA, supply voltage for ext. devices (e.g. sensors), SELV
KL3	6	4-20 mA	Use control / actual 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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Charts: Air flow 50 Hz



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}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa
1	400	50	2150	1853	2.82	84	91	98	9365	0
2	400	50	2150	2438	3.70	81	88	95	8000	500
3	400	50	2150	2700	4.20	76	83	90	5810	1000
4	400	50	2150	2292	3.48	80	87	94	3190	1250
5	400	50	1900	1250	1.90	82	88	95	8215	0
6	400	50	1900	1648	2.50	79	85	92	7020	389
7	400	50	1900	1820	2.78	73	80	87	5090	774
8	400	50	1900	1542	2.34	77	84	91	2795	960
9	400	50	1500	615	0.94	76	83	90	6485	0
10	400	50	1500	811	1.23	73	80	87	5540	242
11	400	50	1500	895	1.37	68	75	82	4020	482
12	400	50	1500	759	1.15	72	79	86	2205	598
13	400	50	1100	243	0.37	70	76	83	4755	0
14	400	50	1100	320	0.49	67	73	81	4065	130
15	400	50	1100	353	0.54	61	68	75	2950	259
16	400	50	1100	299	0.45	65	73	79	1620	322

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

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