R3G450-RJ74-21

EC centrifugal fan - RadiCal®

backward curved, single inlet

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G450-RJ74-21**
Motor	**M3G112-EA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Type of data definition		ml
State		prelim.
Speed	min^{-1}	1440
Power input	W	750
Current draw	A	3.3
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*	1.00

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

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}	%	64.2	46.2	50.2
Efficiency grade N		76	58	62
Power input P_{ed}	kW	0.76		
Air flow q_v	m^3/h	4110		
Pressure increase p_{fs}	Pa	392		
Speed n	min^{-1}	1440		

Data definition with optimum efficiency. LU-152165
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

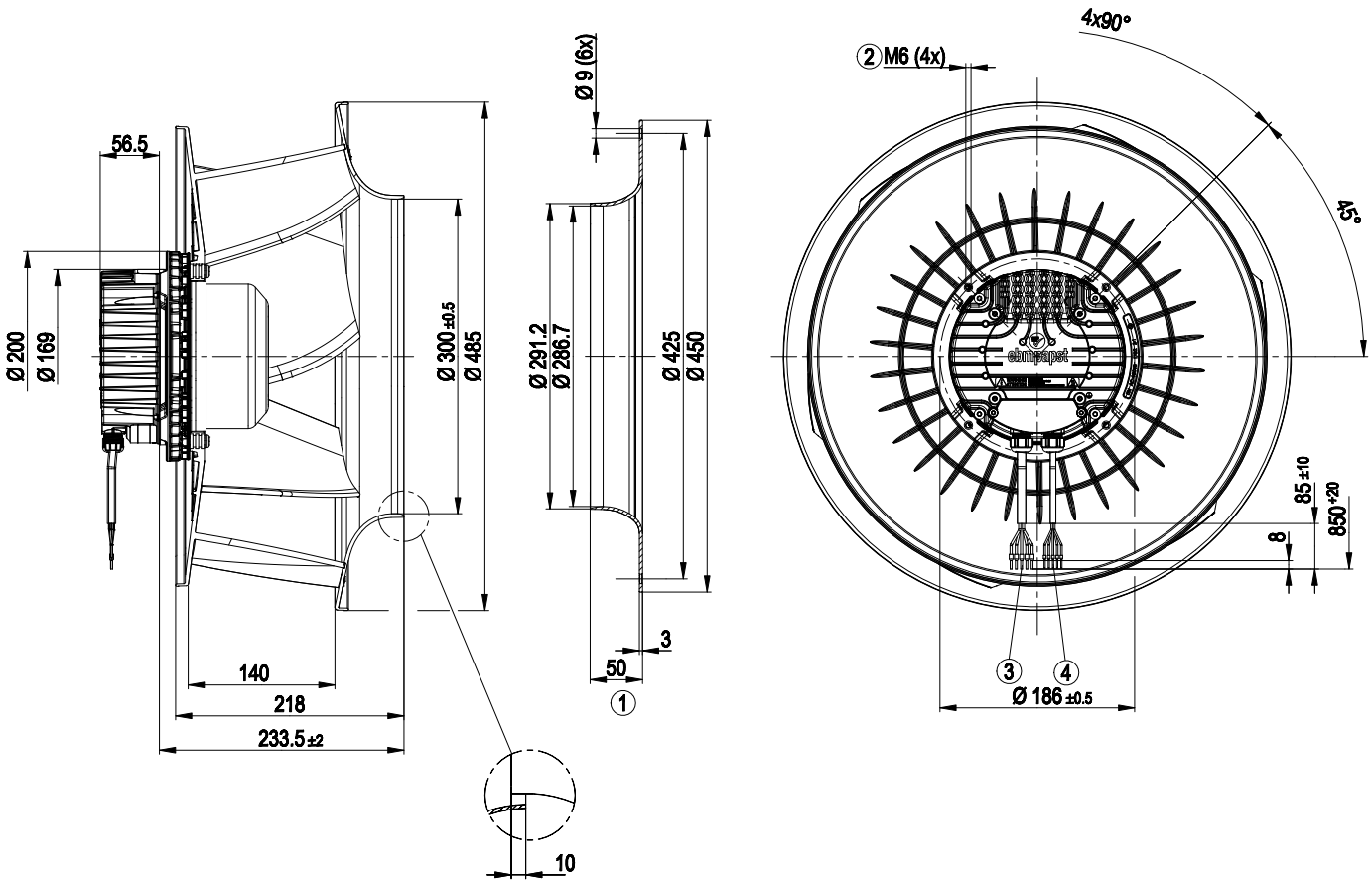
Mass	12 kg
Size	450 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PP plastic
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F4-1
Max. permissible ambient motor 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 - Operation and alarm display - Alarm relay - Integrated PID controller - Motor current limit - PFC, active - RS485 MODBUS RTU - 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
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1
Approval	EAC

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Product drawing



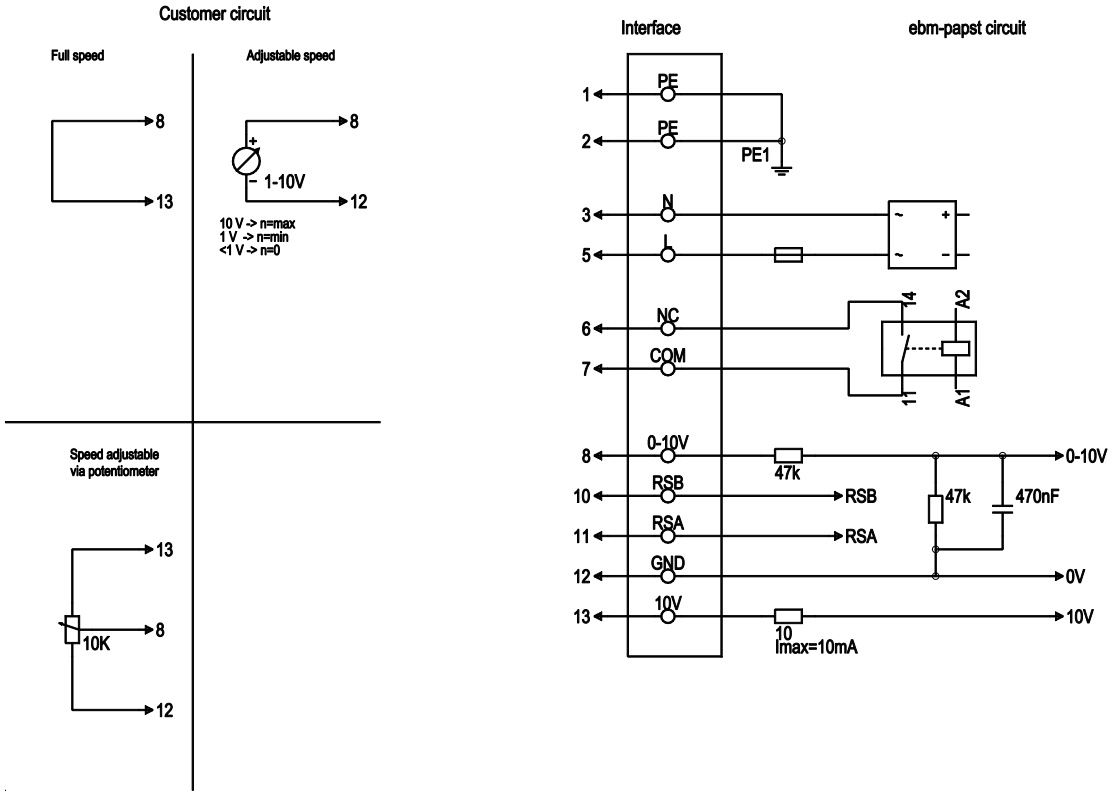
1	Accessory part: Inlet nozzle 45901-2-2943, not included in the standard scope of delivery
2	Depth of screw max. 16 mm
3	Connection line PVC AWG18, 5x crimped core-end sleeves
4	Connection line PVC AWG22, 5x crimped core-end sleeves

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Connection screen



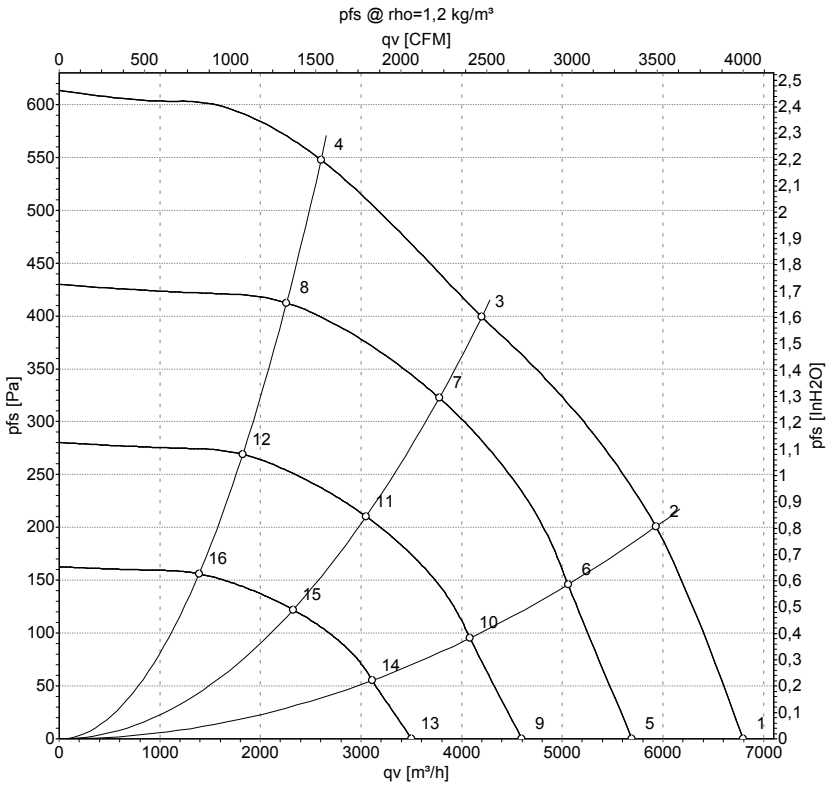
No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Supply voltage, neutral conductor, 50/60 Hz
1	5	L	black	Supply voltage, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
2	8	0-10V	yellow	Analogue input 1 (set value); 0-10 V; Ri=100kΩ; parametrisable curve
2	10	RSB	brown	RS485 interface for Modbus, RSB
2	11	RSA	white	RS485 interface for Modbus, RSA
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC; +10 V +/-3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. potentiometer)

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Charts: Air flow 50 Hz



Measurement: LU-152165

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	230	50	1550	574	2.56	70	79	86	6795	0
2	230	50	1525	750	3.30	69	78	84	5930	200
3	230	50	1440	750	3.30	64	72	78	4200	400
4	230	50	1495	750	3.30	68	76	82	2605	550
5	230	50	1300	337	1.51	66	74	81	5695	0
6	230	50	1300	458	2.03	65	73	80	5055	146
7	230	50	1300	557	2.46	61	69	76	3775	324
8	230	50	1300	502	2.21	64	72	78	2260	415
9	230	50	1050	178	0.79	61	69	76	4600	0
10	230	50	1050	242	1.07	60	68	75	4085	95
11	230	50	1050	294	1.30	56	64	70	3050	211
12	230	50	1050	265	1.17	59	67	73	1825	271
13	230	50	800	79	0.35	54	62	69	3505	0
14	230	50	800	107	0.47	53	61	68	3110	55
15	230	50	800	130	0.57	49	57	64	2325	123
16	230	50	800	117	0.52	52	60	66	1390	157

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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