R3G310-RS05-J1

EC centrifugal fan - RadiCal®

backward curved, single inlet



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G310-RS05-J1**	
Motor	**M3G084-FA**	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed	min^{-1}	2700
Power input	W	790
Current draw	A	1.25
Min. ambient temperature	°C	-40
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}	%	66.1	46.4	50.4
Efficiency grade N		77.7	58	62
Power input P_{ed}	kW	0.78		
Air flow q_v	m^3/h	2700		
Pressure increase p_{fs}	Pa	632		
Speed n	min^{-1}	2710		

Data definition with optimum efficiency. LU-152719
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

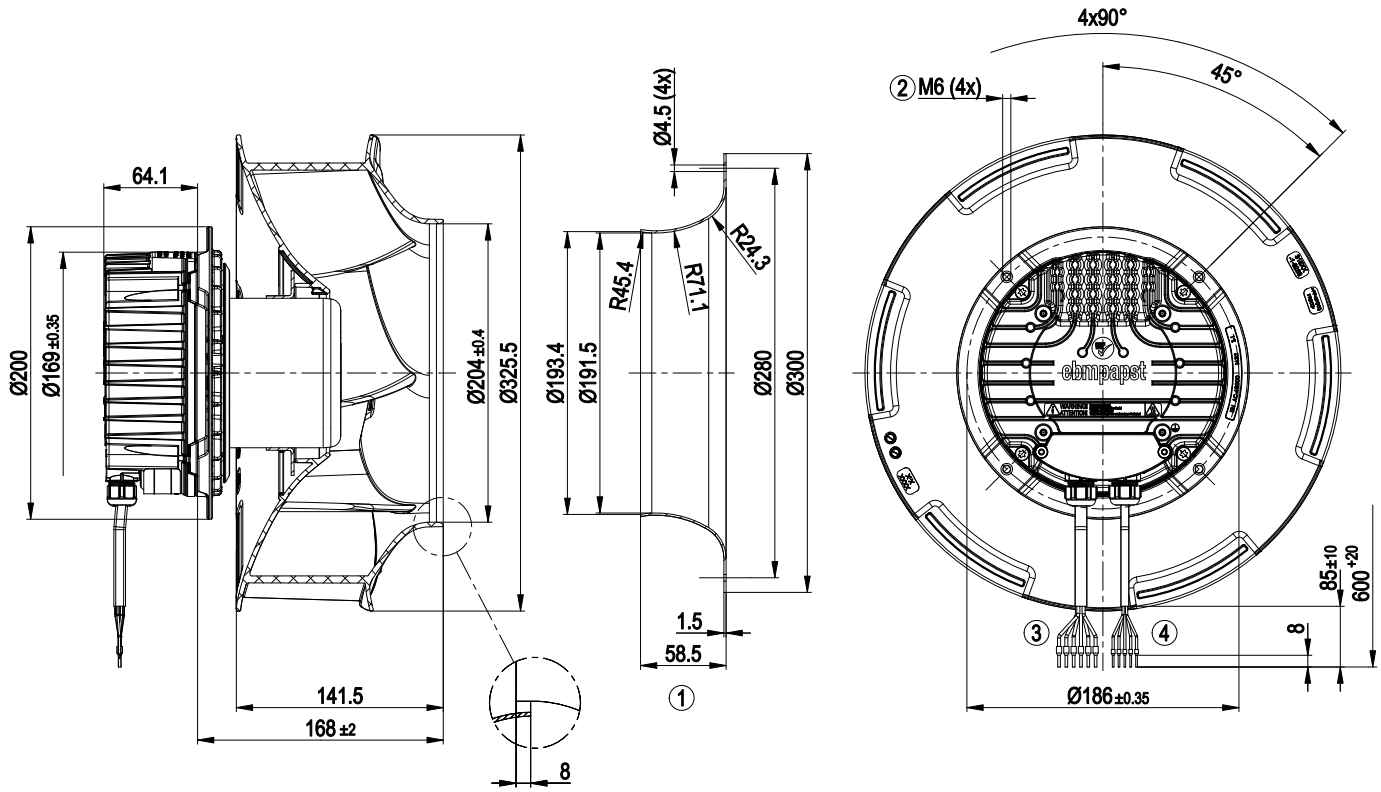
Mass	5.5 kg
Size	310 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PP plastic
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F3-1
Max. permissible ambient motor 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, passive - 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
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC harmonics	Acc. to EN 61000-3-2/3
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
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; EN 60335-1; CE
Approval	EAC

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Product drawing



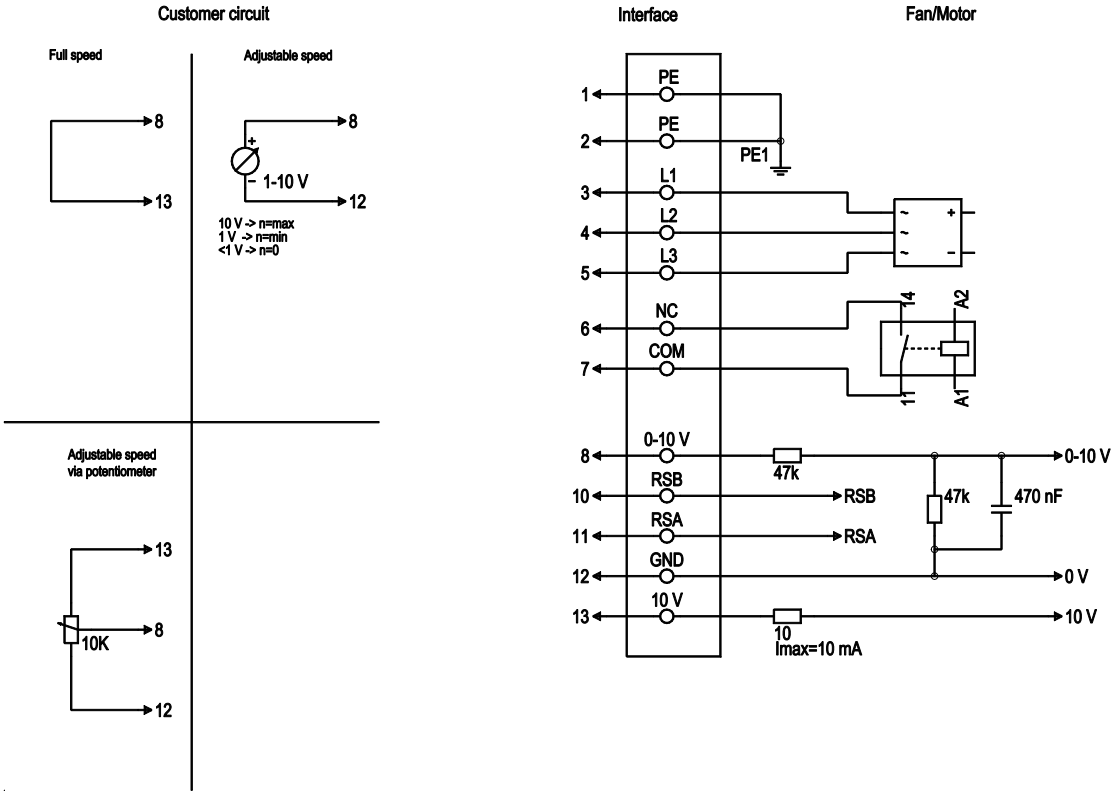
1	Accessory part: inlet nozzle 31000-2-4013 not included in scope of delivery
2	Depth of screw max. 16 mm
3	Connection line PVC AWG18, 6x crimped core-end sleeves
4	Connection line PVC AWG22, 5x crimped core-end sleeves

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Connection screen



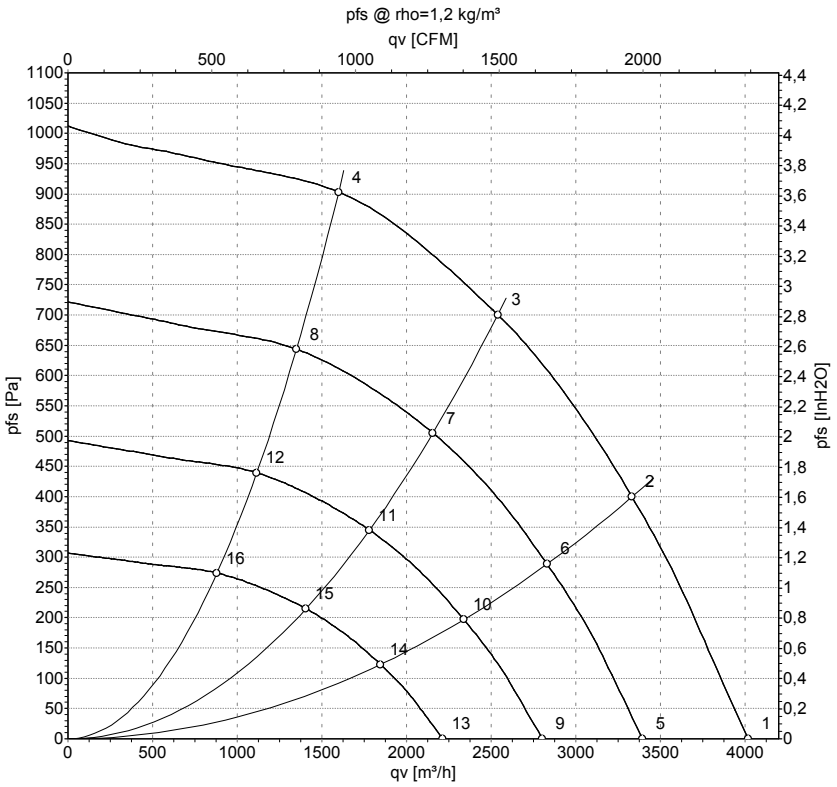
No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) min. 10 mA, basic insulation on mains side and 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-152719

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}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa
1	400	50	2700	557	0.89	76	84	4020	0
2	400	50	2700	718	1.13	72	79	3335	400
3	400	50	2700	790	1.25	69	76	2540	700
4	400	50	2700	726	1.14	72	80	1600	900
5	400	50	2300	335	0.53	71	79	3395	0
6	400	50	2300	440	0.69	68	75	2830	289
7	400	50	2300	482	0.76	65	72	2155	505
8	400	50	2300	437	0.69	68	76	1350	644
9	400	50	1900	189	0.30	67	75	2805	0
10	400	50	1900	248	0.39	63	70	2340	198
11	400	50	1900	272	0.43	60	67	1780	345
12	400	50	1900	246	0.39	63	71	1115	439
13	400	50	1500	93	0.15	61	69	2215	0
14	400	50	1500	122	0.19	57	64	1845	123
15	400	50	1500	134	0.21	54	61	1405	215
16	400	50	1500	121	0.19	57	65	880	274

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 · qv = Air flow
p_{fs} = Pressure increase

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