EC centrifugal fan - RadiCal

backward-curved, single-intake

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G310-RQ10-C6**
Motor	**M3G084-GF**

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}	2650
Power consumption	W	740
Current draw	A	1.4
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}	%	66.2	50
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		78.2	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.72
09 Air flow q_v	m^3/h	2110
09 Pressure increase p_{fs}	Pa	747
10 Speed (rpm) n	min^{-1}	2655
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-142443

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Technical description

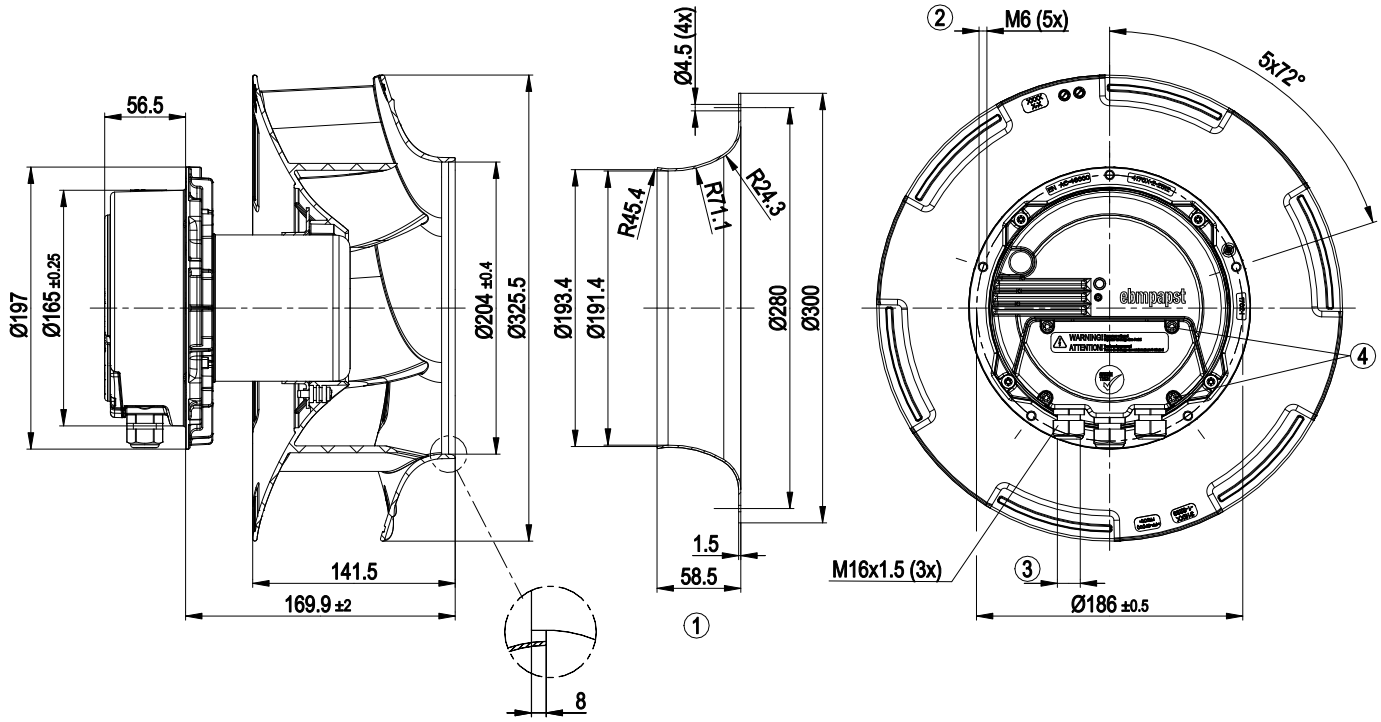
Weight	6.5 kg
Fan size	310 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F3-1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on top; rotor on bottom on request
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 - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - 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 (if protective earth is connected by customer to the housing's connection point)
Conformity with standards	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; C22.2 No.77 + CAN/CSA-E60730-1

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Product drawing



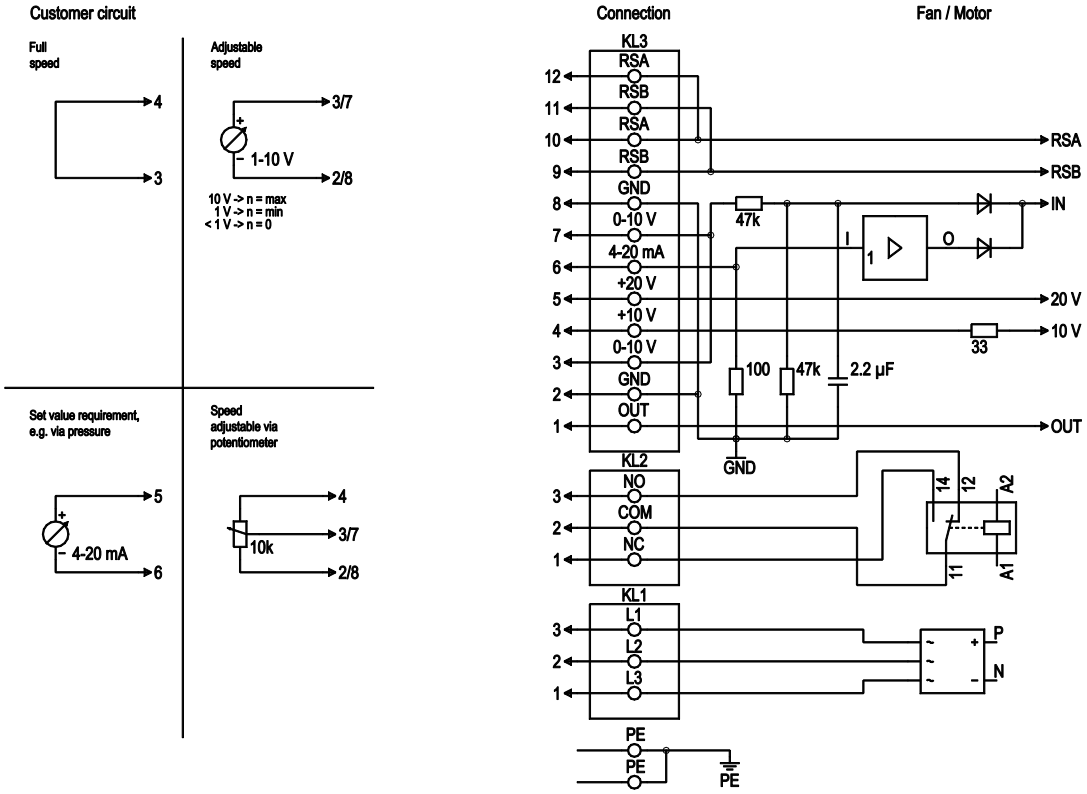
1	Accessory part: inlet ring 31000-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable diameter min. 4 mm; max. 10 mm; tightening torque 2.5±0.4 Nm
4	Tightening torque 3.5 ± 0.5 Nm

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Connection diagram



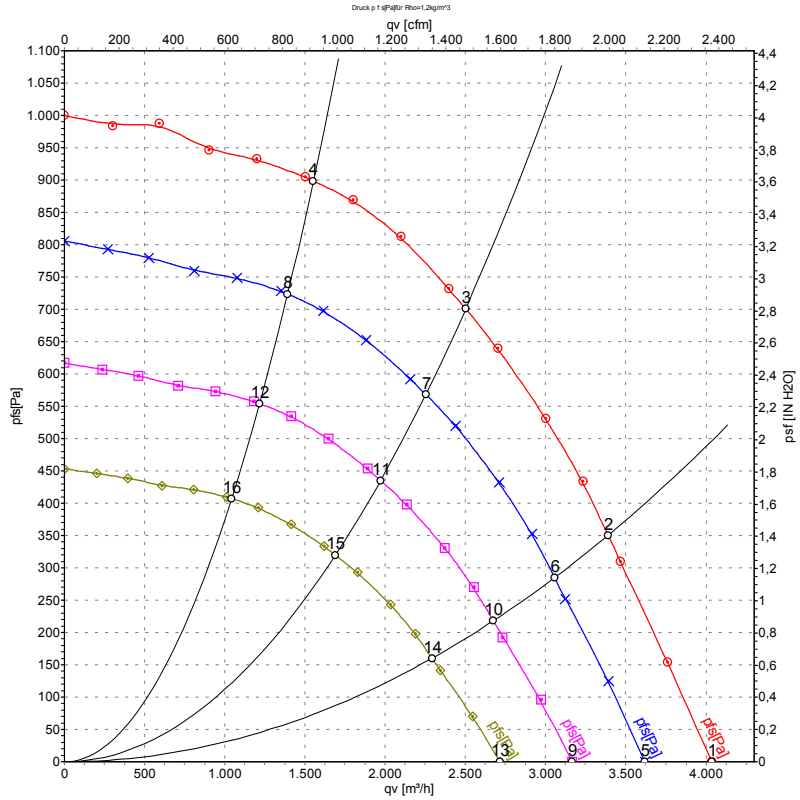
No.	Conn.	Designation	Function/assignment
PE		PE	Protective earth terminal
KL1	1, 2, 3	L1, L2, L3	Power supply, voltage range (see nameplate), 50/60 Hz
KL2	1	NC	Floating status contact, break for failure
KL2	2	COM	floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 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 MODBUS, RSB
KL3	10, 12	RSA	RS485 interface for MODBUS, RSA

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Curves: Air performance 50 Hz



Measurement: LU-140391-1

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}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	400	50	2670	545	1.12	77	84	4035	0	2375	0.00
2	400	50	2670	675	1.38	72	79	3390	350	1995	1.41
3	400	50	2650	740	1.40	67	75	2500	700	1470	2.81
4	400	50	2675	684	1.38	71	79	1550	900	915	3.61
5	400	50	2400	393	0.81	74	82	3620	0	2130	0.00
6	400	50	2400	495	1.02	69	77	3055	284	1800	1.14
7	400	50	2400	564	1.13	65	72	2255	568	1325	2.28
8	400	50	2400	494	1.01	69	76	1390	724	820	2.91
9	400	50	2100	263	0.54	71	78	3165	0	1865	0.00
10	400	50	2100	331	0.68	66	73	2675	218	1575	0.88
11	400	50	2100	378	0.76	61	69	1970	435	1160	1.75
12	400	50	2100	331	0.68	65	73	1220	554	715	2.22
13	400	50	1800	166	0.34	67	74	2715	0	1595	0.00
14	400	50	1800	209	0.43	62	69	2290	160	1350	0.64
15	400	50	1800	238	0.48	58	65	1690	320	995	1.28
16	400	50	1800	208	0.43	62	69	1045	407	615	1.63

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

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