R3G310-RR05-H6

EC centrifugal fan - RadiCal

backward-curved, single-intake

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Nominal data

Type	**R3G310-RR05-H6**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2250
Power consumption	W	500
Current draw	A	2.2
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 Commission Regulation (EU) 327/2011

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	63.9	48.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		77.6	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.49
09 Air flow q_v	m^3/h	2005
09 Pressure increase p_{fs}	Pa	508
10 Speed (rpm) n	min^{-1}	2255
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-165322

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Technical description

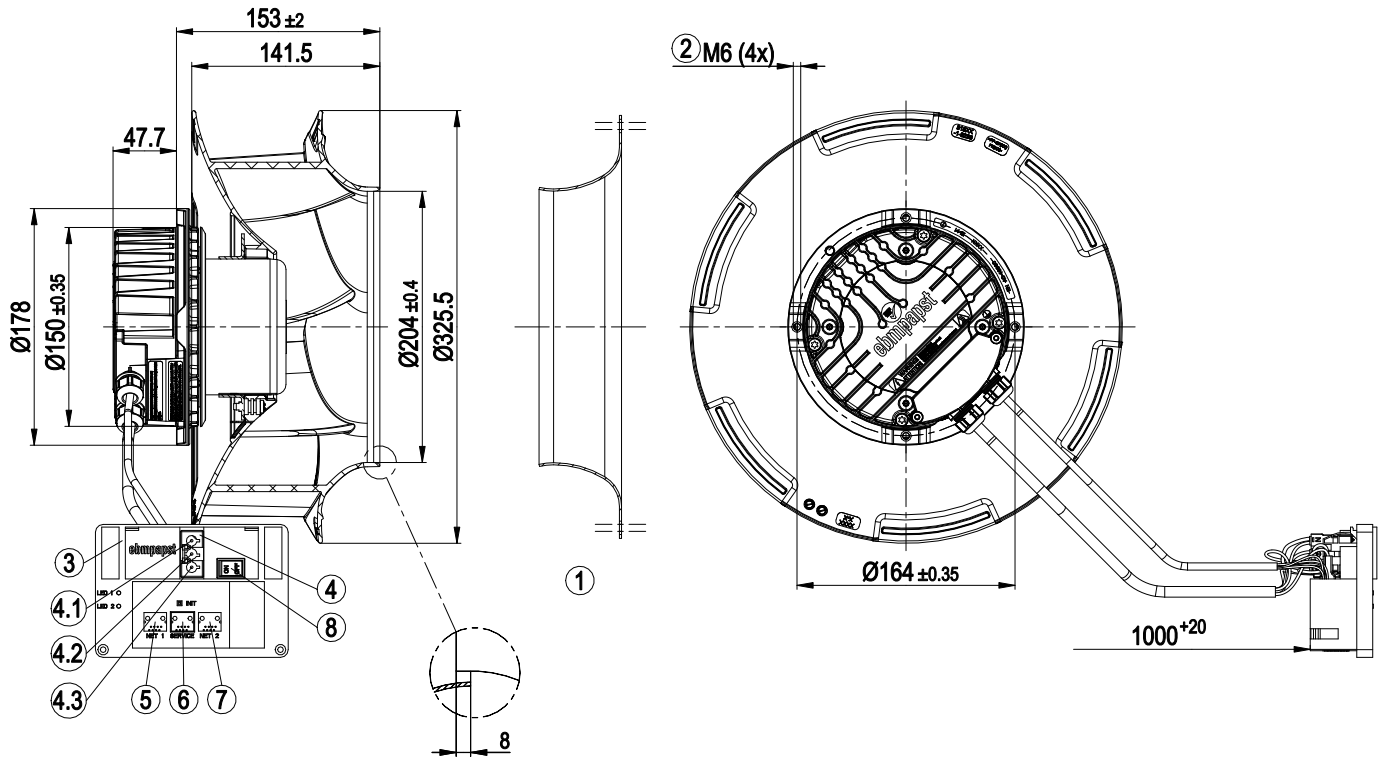
Weight	4.8 kg
Size	310 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	Motor IP55, electronics IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H0 - dry environment
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 bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor mounting	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display with LED - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - 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	Plug
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
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

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Product drawing



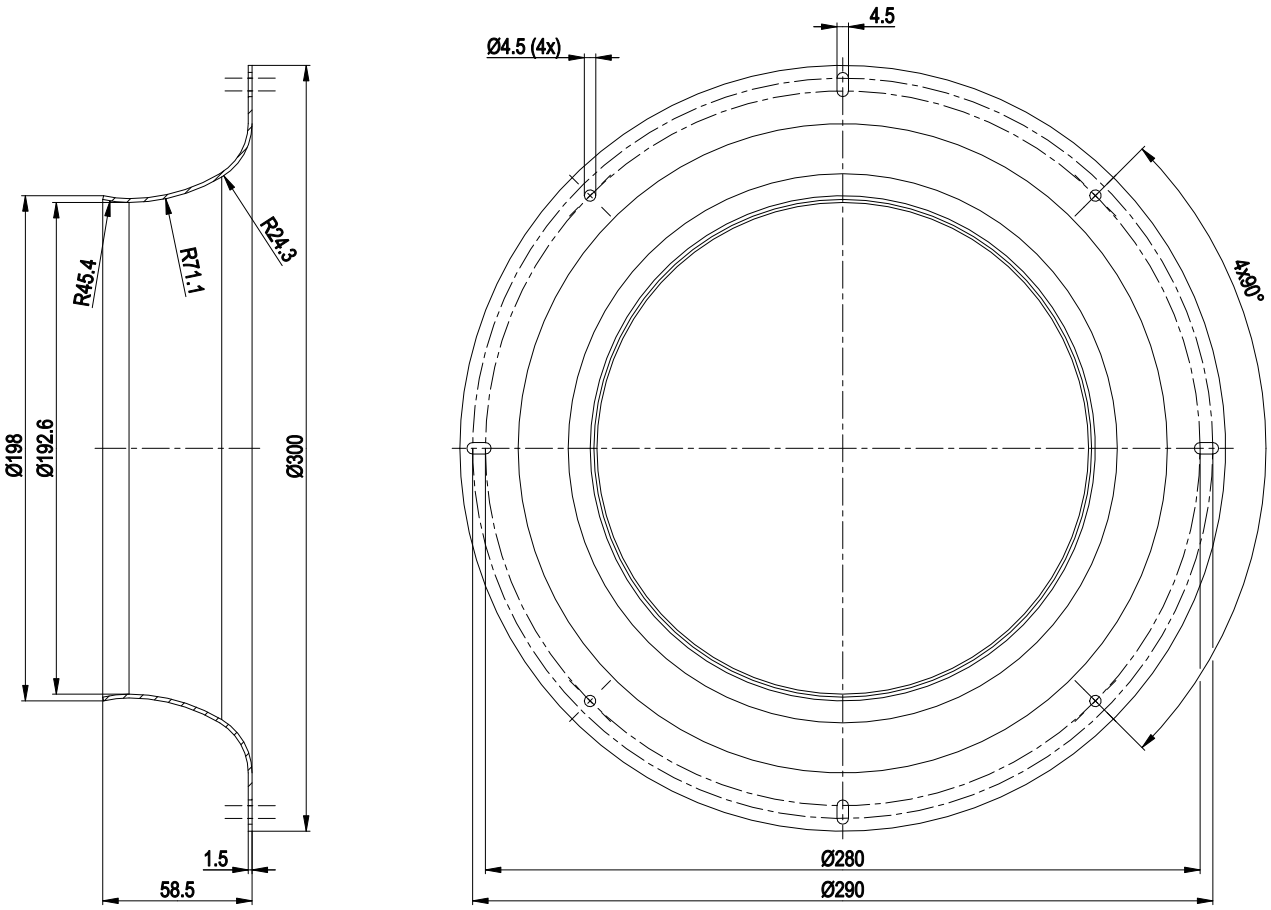
1	Accessory part: inlet ring 31000-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Terminal box
4	Connector housing 3-pole GST18/3 Wieland 92.032.9058.1
4.1	N
4.2	PE
4.3	L
5	8-pole connector housing TE 100616-2
6	8-pole connector housing TE 100616-2
7	8-pole connector housing TE 100616-2
8	Switch, ARCOLECTRIC SWITCHES P L C (no. H8550VBACF) As-delivered condition end customer switch set to "OFF"

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Accessory part



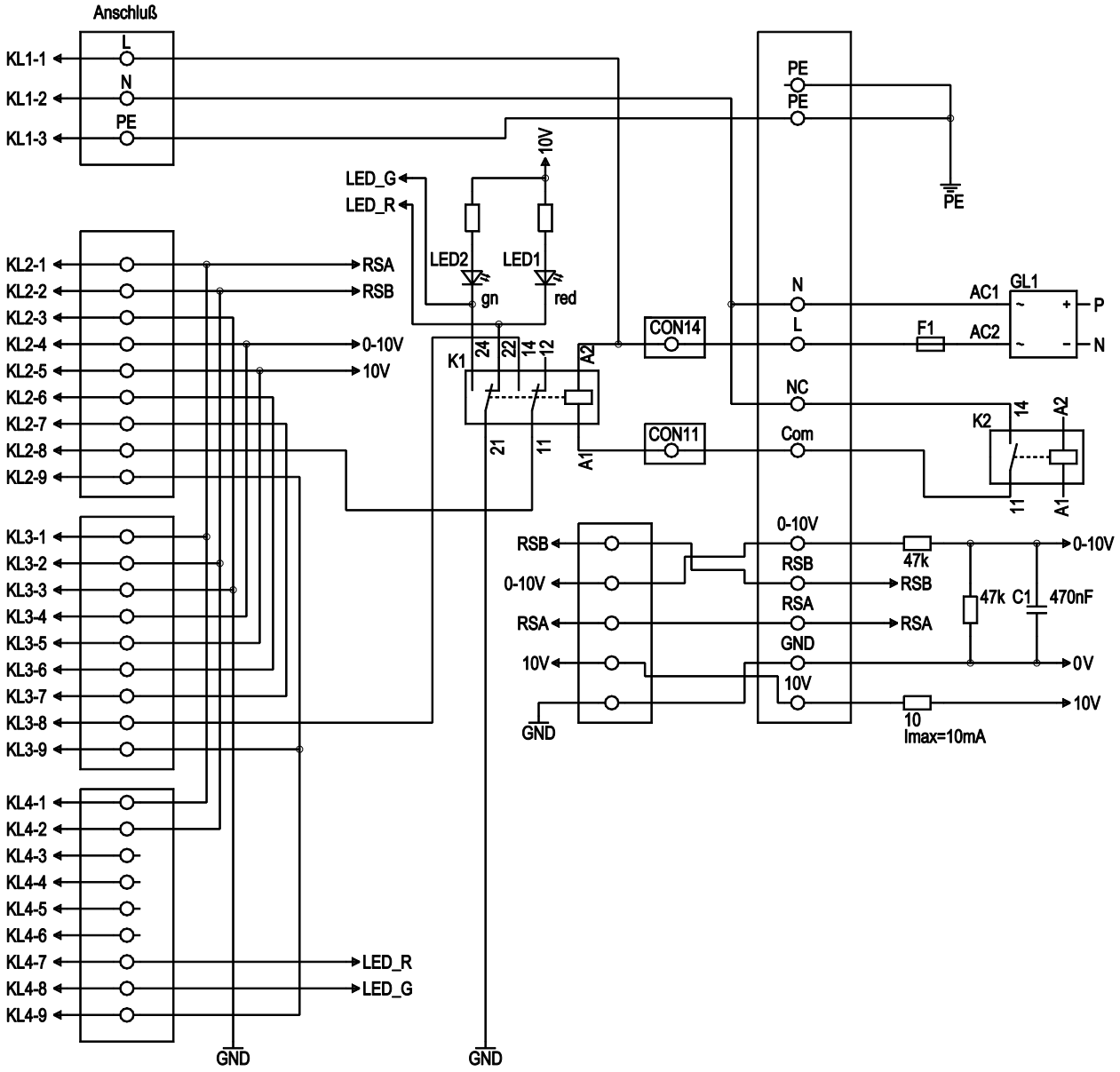
Accessory part: inlet ring 31000-2-4013 not included in scope of delivery

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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	L	black	Power supply, phase
1	2	N	blue	Power supply, neutral conductor
1	3	PE	green/yellow	Protective earth
2	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
2	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
2	3	GND	-	Reference ground for control interface, SELV
2	4	0-10 V / PWM	-	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	5	+10 V	-	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
2	6	RES	-	Reserve
2	7	COM*	-	Alarm COM*
2	8	NC	-	NC KL2 UMAX 24 V

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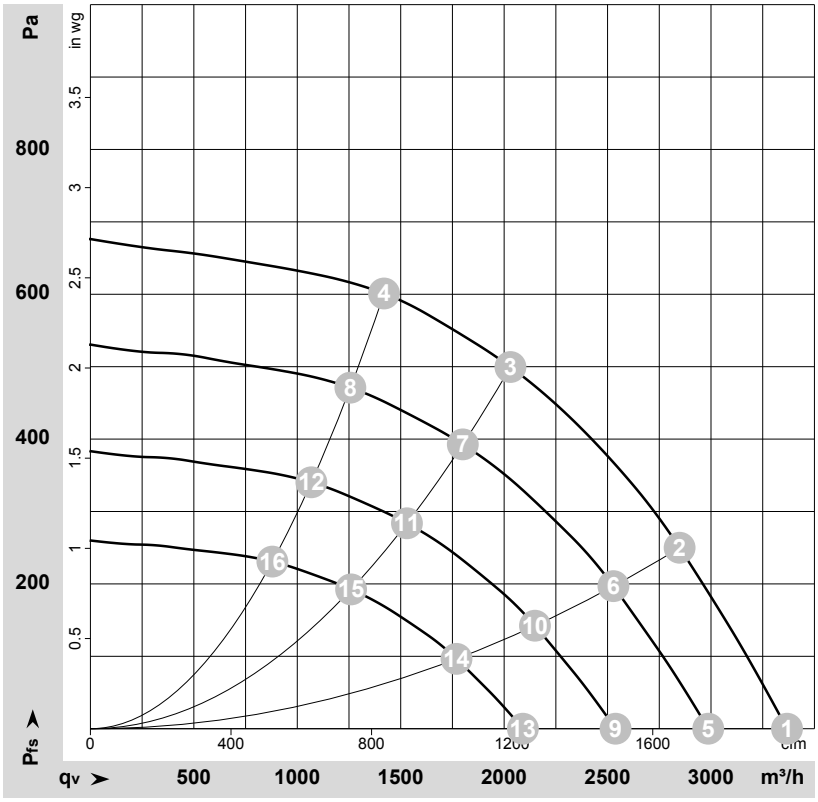
No.	Conn.	Designation	Color	Function/assignment
2	9	Schirm	-	Shield
3	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
3	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
3	3	GND	-	Reference ground for control interface, SELV
3	4	0-10 V / PWM	-	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
3	5	+10 V	-	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
3	6	RES	-	Reserve
3	7	COM*	-	Alarm COM*
3	8	NC*	-	NC* KL3 UMAX 24 V
3	9	Schirm	-	Shield
4	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
4	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
4	7	LED R	-	External LED Red
4	8	LED G	-	External LED Green
4	9	Schirm	-	Shield

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-165322-1

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	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	230	50	2250	327	1.44	3365	0	1980	0.00
2	230	50	2250	422	1.85	2850	250	1675	1.00
3	230	50	2250	500	2.20	2030	500	1195	2.01
4	230	50	2250	449	1.97	1420	600	835	2.41
5	230	50	2000	228	1.01	2985	0	1760	0.00
6	230	50	2000	295	1.29	2530	197	1490	0.79
7	230	50	2000	342	1.50	1800	393	1060	1.58
8	230	50	2000	312	1.37	1255	471	740	1.89
9	230	50	1700	140	0.62	2540	0	1495	0.00
10	230	50	1700	181	0.79	2150	142	1265	0.57
11	230	50	1700	210	0.92	1530	284	900	1.14
12	230	50	1700	191	0.84	1070	340	630	1.36
13	230	50	1400	78	0.35	2090	0	1230	0.00
14	230	50	1400	101	0.44	1770	97	1040	0.39
15	230	50	1400	117	0.51	1260	193	740	0.77
16	230	50	1400	107	0.47	880	231	520	0.93

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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