EC centrifugal fan - RadiPac

backward-curved, single-intake

R3G310-PY12-V1 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**R3G310-PY12-V1**	
Motor	**M3G084-GF**	
Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3300
Power consumption	W	1700
Current draw	A	2.4
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	50

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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	66.7	53.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		74.8	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.69
09 Air flow q_v	m^3/h	3290
09 Pressure increase p_{fs}	Pa	1160
10 Speed (rpm) n	min^{-1}	3295
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-204239

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Technical description

Weight	9.1 kg
Size	310 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Stainless steel
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
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 bearing	Ball bearing; (sealed)
Technical features	- Output 10 VDC - Integrated PID controller - Power limiter - Motor current limitation - 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 interference emission	According to EN 61000-6-4 (industrial environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Connector with cable
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77; UL 1004-7 + 60730-1

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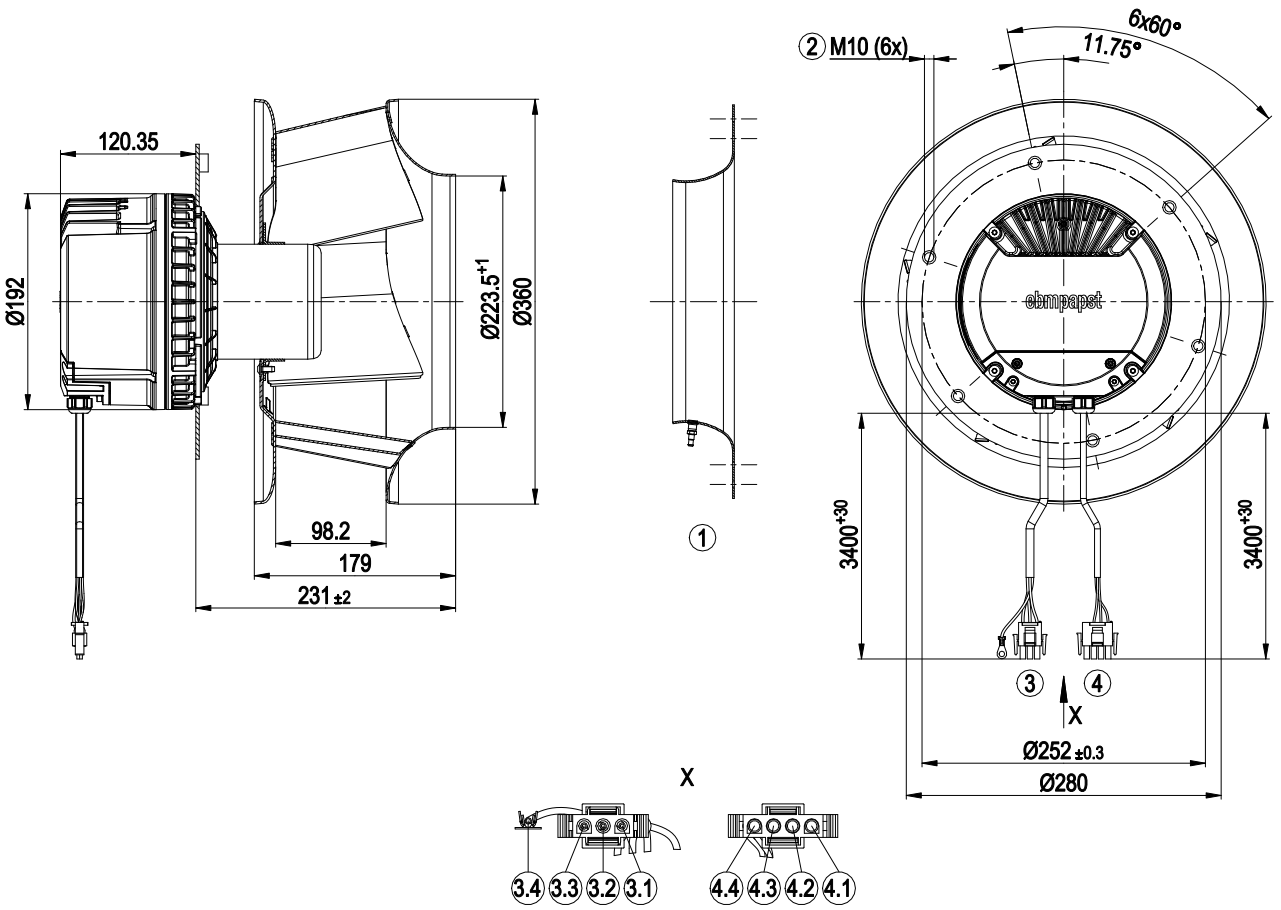
Product drawing



1	Accessory part: Inlet ring 31475-2-4013 with pressure tap (k-factor: 116) not included in scope of delivery
2	M10 rivet nut
3	Cable silicone 3x 0.34 mm²
	3-pole connector housing TE 770018-1, 3x plug pin TE 770007-1, 1x ring terminal dia. 5 (PE)
3.1	L1
3.2	L2
3.3	L3
3.4	PE
4	Cable silicone 4x 1.0 mm²
	4-pole connector housing TE 770019-1, 3x plug pin TE 770009-1
4.1	0-10 V/PWM
4.2	+10 V
4.3	GND
4.4	not used

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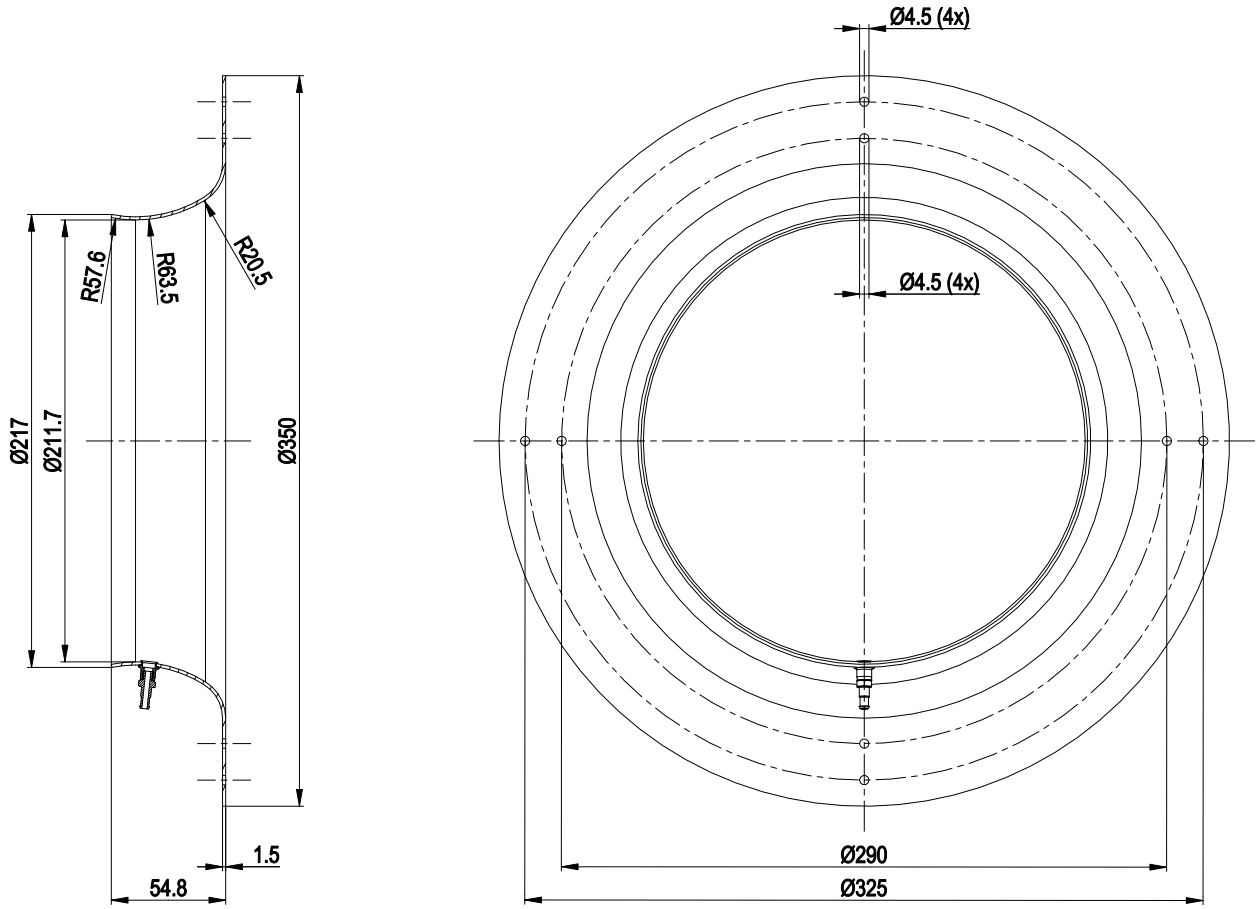
Accessory part



Inlet ring 31475-2-4013 with pressure tap (k-factor: 116)

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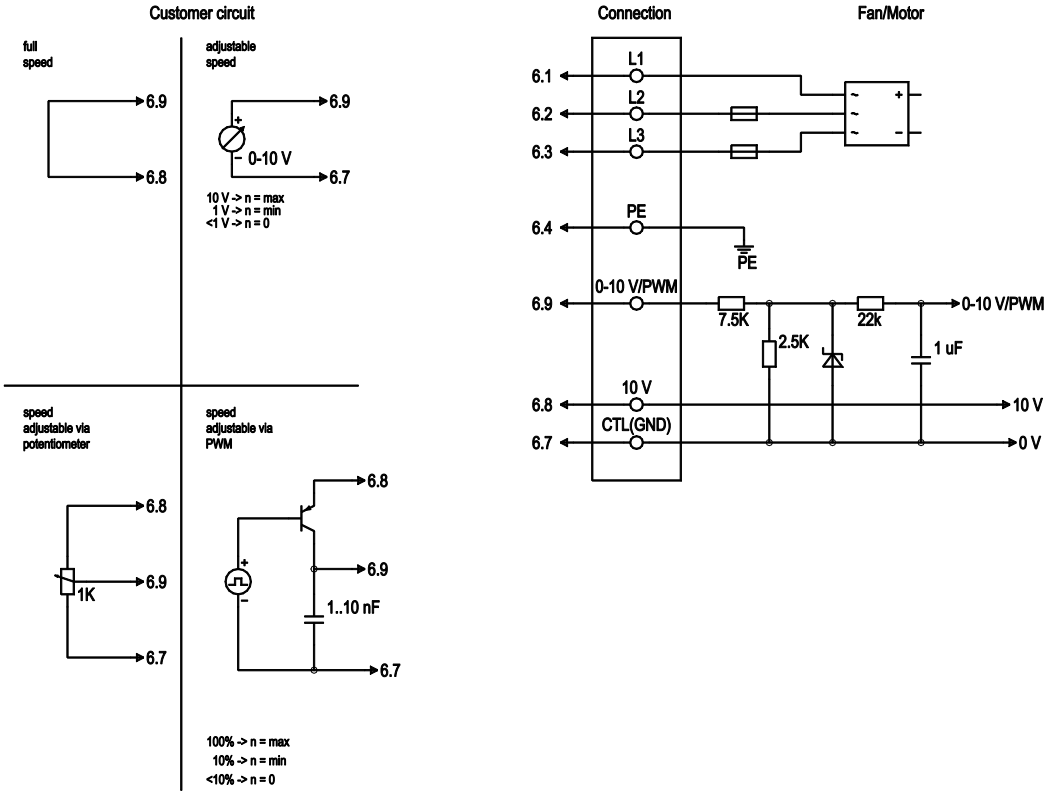
Connection diagram



No.	Conn.	Designation	Function/assignment
1	6.1	L1	Power supply, see nameplate for voltage range
1	6.2	L2	Power supply, see nameplate for voltage range
1	6.3	L3	Power supply, see nameplate for voltage range
1	6.4	PE	Protective earth
2	6.9	0-10 V / PWM	Control input 0-10 VDC or PWM, impedance 10 kohms, SELV
2	6.8	+10 V	Voltage output, power supply for external devices (e.g. potentiometers), SELV
2	6.7	CTL (GND)	Reference ground for interface, SELV

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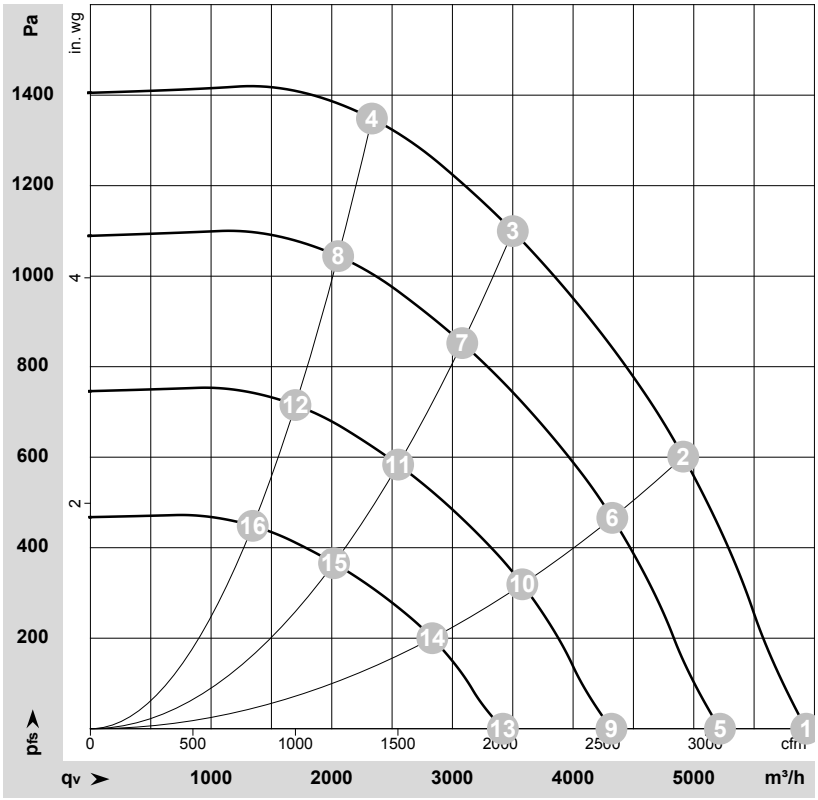
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-204239-1

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

	Wired	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	3~	460	50	3300	971	1.58	90	98	98	5930	0	3490	0.00
2	3~	460	50	3300	1491	2.19	80	88	90	4915	600	2890	2.41
3	3~	460	50	3300	1700	2.40	73	82	85	3500	1100	2060	4.42
4	3~	460	50	3300	1604	2.32	77	87	91	2335	1350	1375	5.42
5	3~	460	50	2900	661	1.07	87	95	95	5215	0	3070	0.00
6	3~	460	50	2900	1017	1.49	77	85	87	4325	470	2545	1.89
7	3~	460	50	2900	1161	1.67	70	78	82	3080	852	1815	3.42
8	3~	460	50	2900	1093	1.58	74	84	88	2055	1048	1210	4.21
9	3~	460	50	2400	375	0.61	82	90	90	4320	0	2540	0.00
10	3~	460	50	2400	577	0.85	72	80	82	3580	322	2105	1.29
11	3~	460	50	2400	658	0.95	65	74	77	2550	584	1500	2.34
12	3~	460	50	2400	620	0.90	70	79	83	1700	718	1000	2.88
13	3~	460	50	1900	186	0.30	77	84	85	3420	0	2010	0.00
14	3~	460	50	1900	286	0.42	66	74	76	2835	202	1670	0.81
15	3~	460	50	1900	326	0.47	59	68	71	2020	366	1190	1.47
16	3~	460	50	1900	307	0.45	64	73	78	1345	450	790	1.81

Wired = Wiring · U = Voltage · 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 LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase