EC centrifugal fan - RadiCal

backward-curved, single-intake

R3G220-RD53-08 ebmpapst Datasheet
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Nominal data

Type	**R3G220-RD53-08**
Motor	**M3G055-CF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3230
Power consumption	W	168
Current draw	A	1.4
Min. ambient temperature	°C	-25
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}	%	56.7	43.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		75.4	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.16
09 Air flow q_v	m^3/h	805
09 Pressure increase p_{fs}	Pa	366
10 Speed (rpm) n	min^{-1}	3210
11 Specific ratio*		1.00

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-153697

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Technical description

Weight	1.4 kg
Size	220 mm
Motor size	55
Rotor surface	Thick-film passivated
Impeller material	PA plastic
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+ 80 °C
Min. permitted ambient temp. for motor (transport/storage)	- 40 °C
Installation position	Any
Condensation drainage holes	None, open rotor
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Auto-addressing can be activated by BUS - Power limiter - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - Thermal overload protection for electronics/motor - Line undervoltage detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Electronic motor protection
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE

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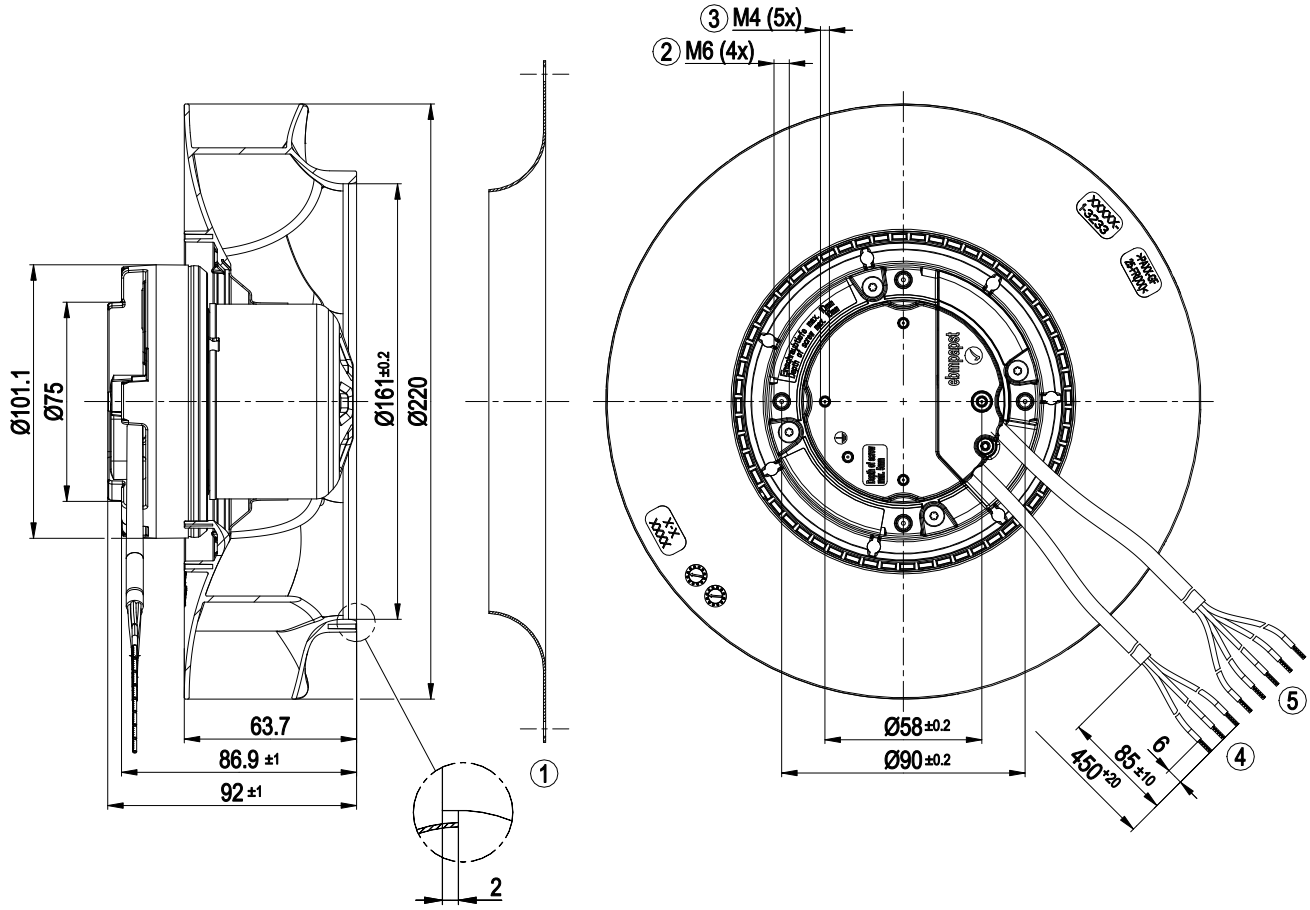
Product drawing



1	Accessory part: inlet ring 09609-2-4013 not included in scope of delivery
2	Max. clearance for screw 10 mm
3	Max. clearance for screw 5 mm
4	Cable PVC AWG20
	3x splice
5	Cable PVC AWG22
	5x splice

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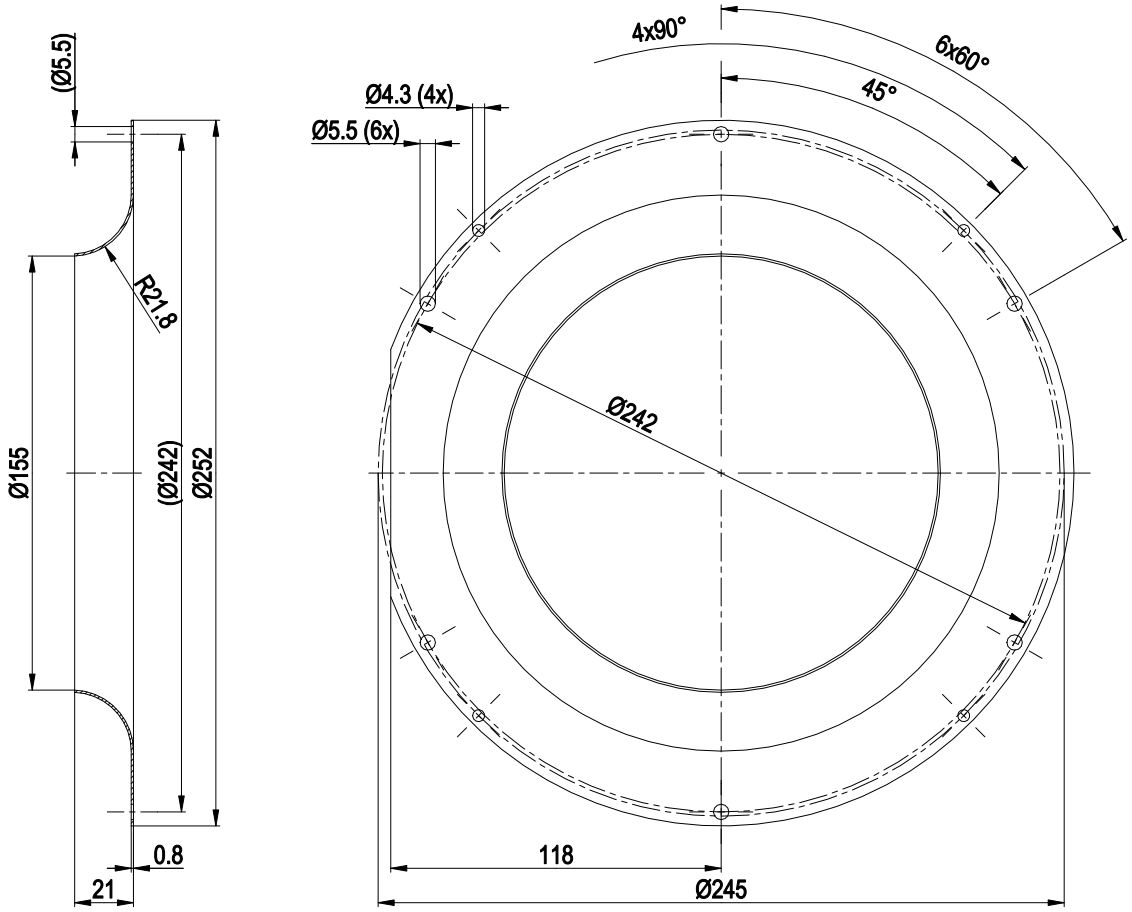
Accessory part



Inlet ring 09609-2-4013 not included in scope of delivery

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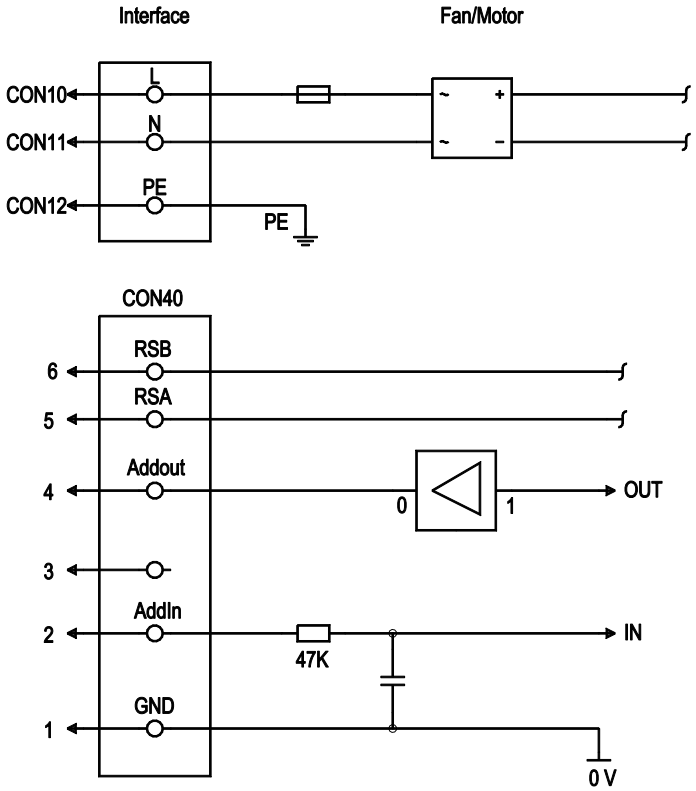
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	CON10	L	black	Power supply, phase, see nameplate for voltage range
	CON11	N	blue	Power supply, neutral conductor, see nameplate for voltage range
	CON12	PE	green/yellow	Protective earth
CON40	6	RSB	brown	RS-485 interface for MODBUS, RSB; SELV
CON40	5	RSA	white	RS485 interface for MODBUS, RSA; SELV
CON40	4	AddOut /max. 10 mA	gray	Addressing output 10 V, SELV
CON40	3			not used
CON40	2	AddIn	yellow	Addressing input Umax = 48 VDC, SELV
CON40	1	GND	blue	Reference ground for interface, SELV

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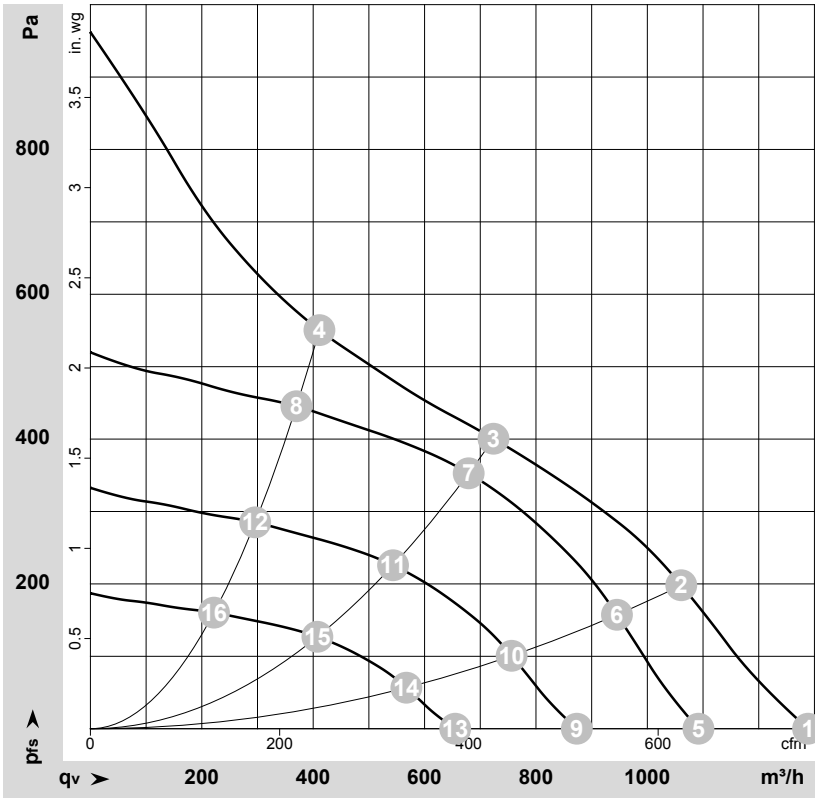
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-153697-1

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}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	1~	230	50	3540	168	1.40	70	78	1290	0	760	0.00
2	1~	230	50	3365	168	1.40	65	73	1060	200	625	0.80
3	1~	230	50	3230	168	1.40	62	70	725	400	425	1.61
4	1~	230	50	3330	168	1.40	66	74	410	550	240	2.21
5	1~	230	50	3000	99	0.82	66	73	1090	0	645	0.00
6	1~	230	50	3000	116	0.96	62	70	945	157	555	0.63
7	1~	230	50	3000	135	1.12	61	68	680	353	400	1.42
8	1~	230	50	3000	119	0.99	63	71	370	446	220	1.79
9	1~	230	50	2400	51	0.42	60	68	875	0	515	0.00
10	1~	230	50	2400	59	0.49	57	64	755	101	445	0.41
11	1~	230	50	2400	69	0.58	55	63	545	226	320	0.91
12	1~	230	50	2400	61	0.51	57	65	295	286	175	1.15
13	1~	230	50	1800	21	0.18	53	61	655	0	385	0.00
14	1~	230	50	1800	25	0.21	49	57	565	57	335	0.23
15	1~	230	50	1800	29	0.24	48	55	410	127	240	0.51
16	1~	230	50	1800	26	0.21	50	58	220	161	130	0.65

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