R3G220-RV83-01

EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications



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Nominal data

Type	**R3G220-RV83-01**	
Motor	**M3G074-CF**	
Nominal voltage	VDC	110
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3360
Power consumption	W	180
Current draw	A	1.65
Min. ambient temperature	°C	-40
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}	%	51.6	43.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		69.9	62
05 Variable speed drive		Yes	

09 Power consumption P_e	kW	0.18
09 Air flow q_v	m^3/h	800
09 Pressure increase p_{fs}	Pa	373
10 Speed (rpm) n	min^{-1}	3310
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-158319

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Technical description

Weight	2.2 kg
Fan size	220 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic UL94 V0
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP44; installation- and position-dependent
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 - Operation and alarm display - Alarm relay - Run monitoring - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - Thermal overload protection for electronics
EMC regulations	According to EN 50121-3-2
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 15085-1, CPC3: 2007; EN 45545-2, HL3: 2013; EN 50155: 2008; EN 61373, Cat. 1B: 2010
Approval	EAC
Comment	Only suitable for indoor use

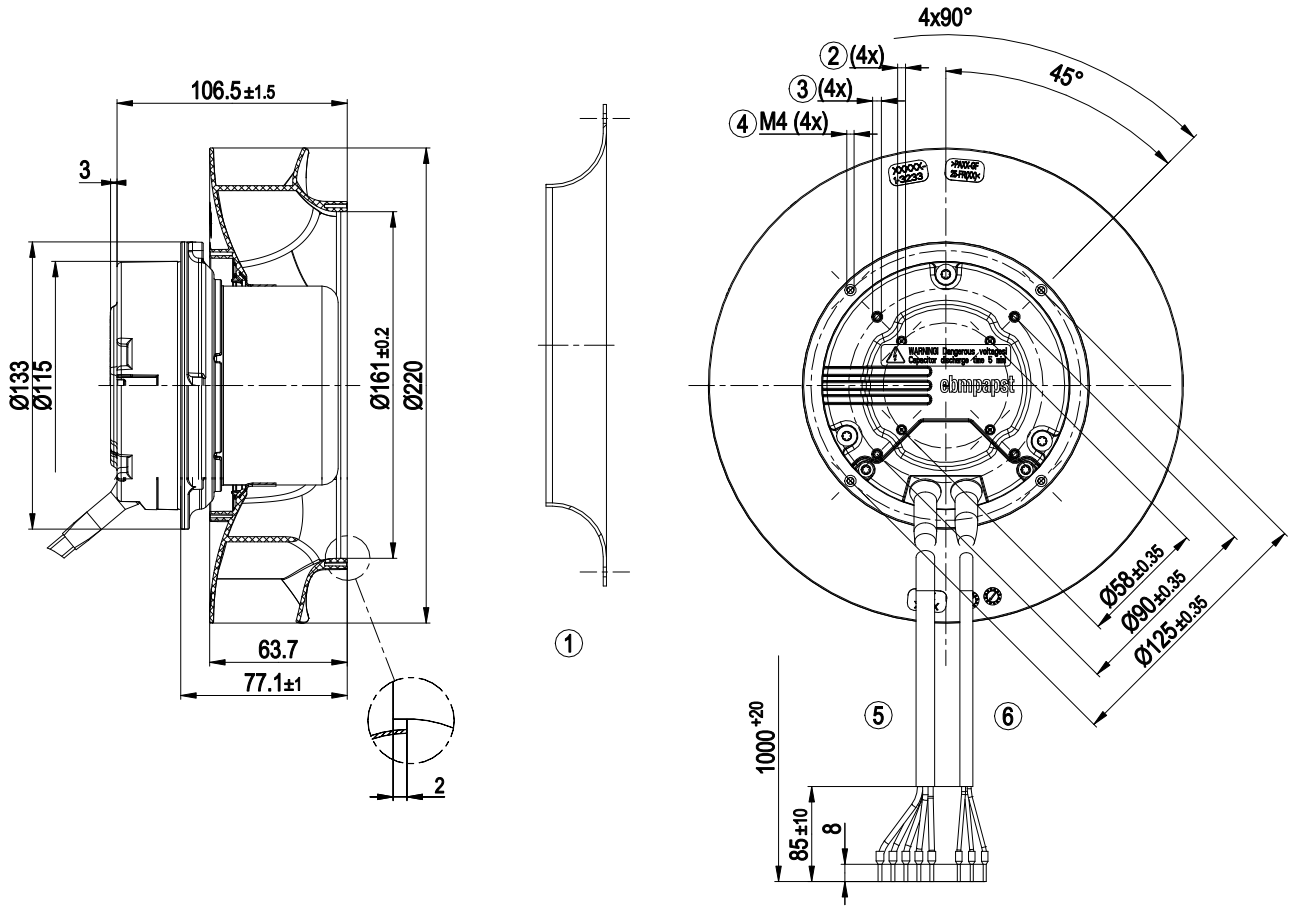
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Product drawing



1	Accessory part: inlet ring 09609-2-4013 not included in scope of delivery
2	Tapping hole prepared for self-tapping M4 screw, max. clearance for screw 8 mm
3	Tapping hole prepared for self-tapping M4 screw, max. clearance for screw 6 mm
4	Max. clearance for screw 10 mm
5	Cable halogen-free, BETAtrans® 3 GKW flex, 5G 1.0 mm², 5x crimped ferrules
6	Cable halogen-free, BETAtrans® 3 GKW flex, 3x 0.33 mm², 3x crimped ferrules

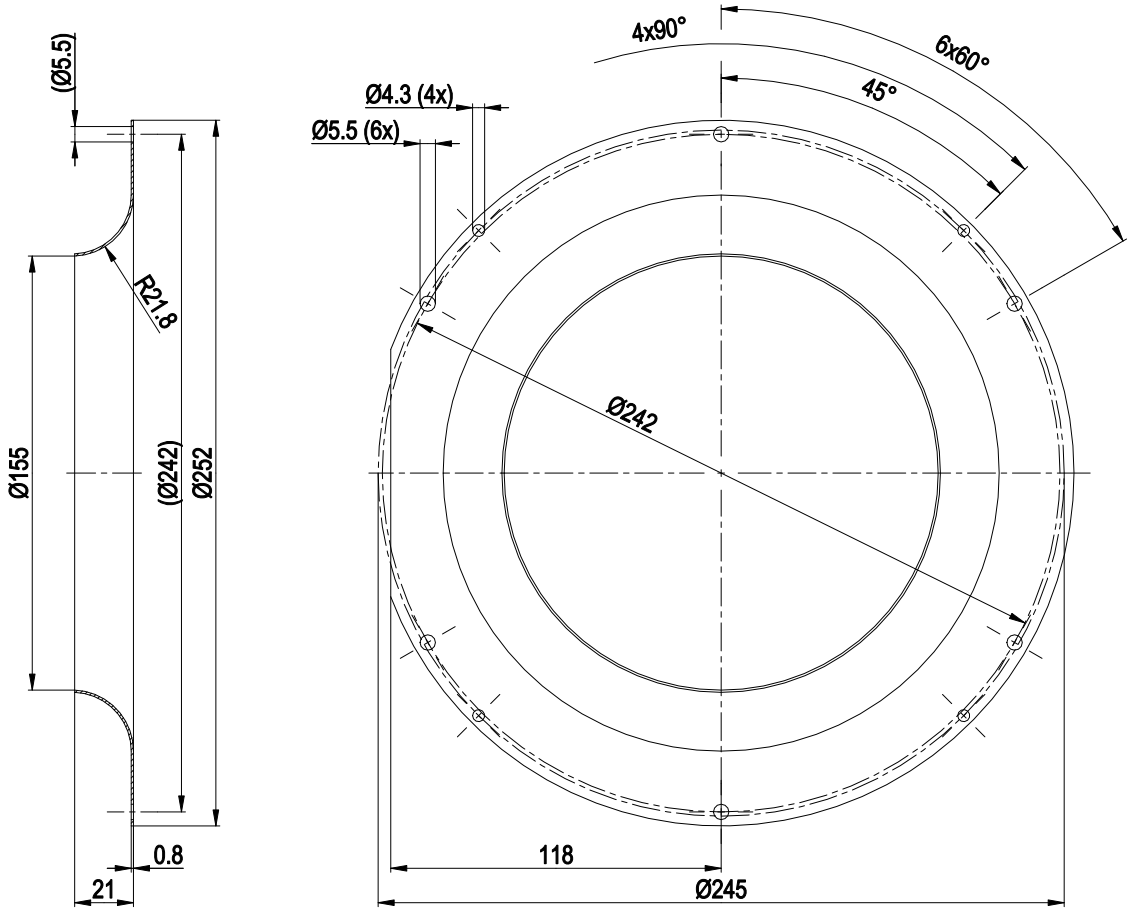
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Accessory part



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

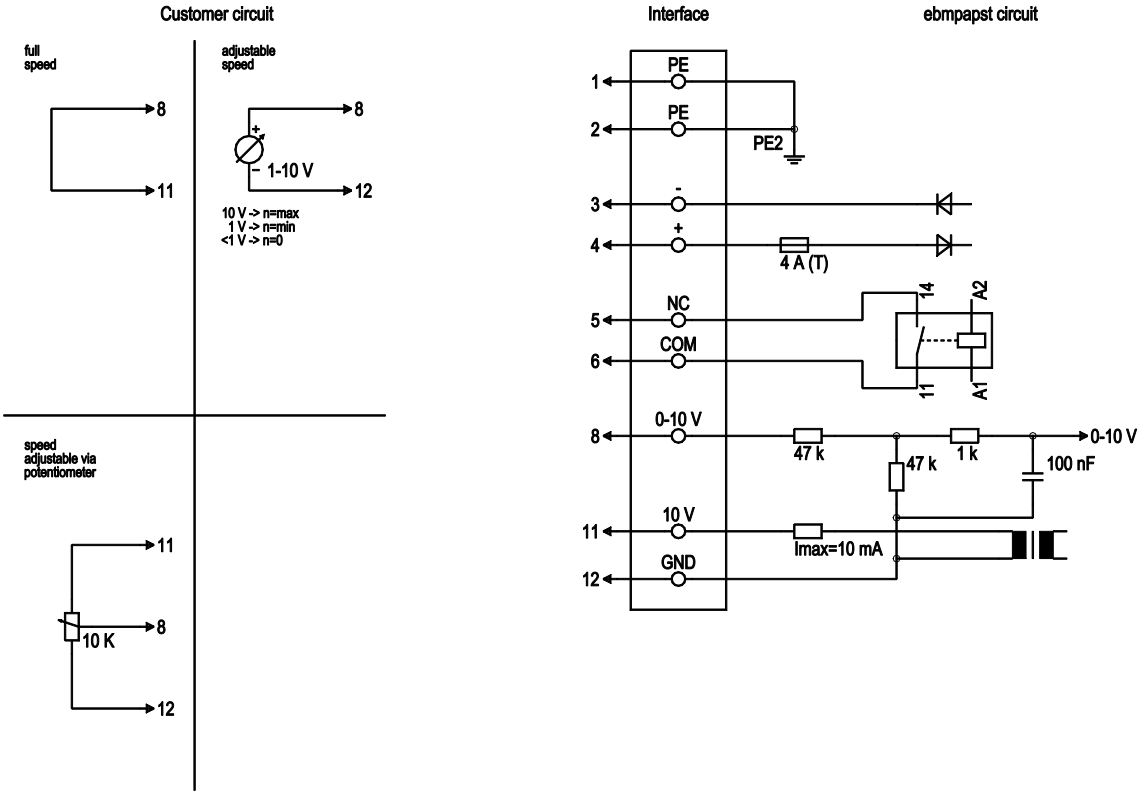
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	-	blue	Power supply, GND (110 VDC)
1	4	+	red	Power supply, 110 VDC
1	5	NC	white 2	Floating status contact (0.3 A - 110 VDC, 1 A - 60 VDC, 3 A - 30 VDC), closed at n >= 100 rpm, break for failure
1	6	COM	white 1	Floating status contact, closed at n >= 100 rpm, break for failure
2	8	0-10 V	yellow	Control input, set value 0-10 VDC, impedance 100 kΩ, SELV
2	11	10 VDC	red	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV
2	12	GND	blue	Reference ground for control interface (SELV)

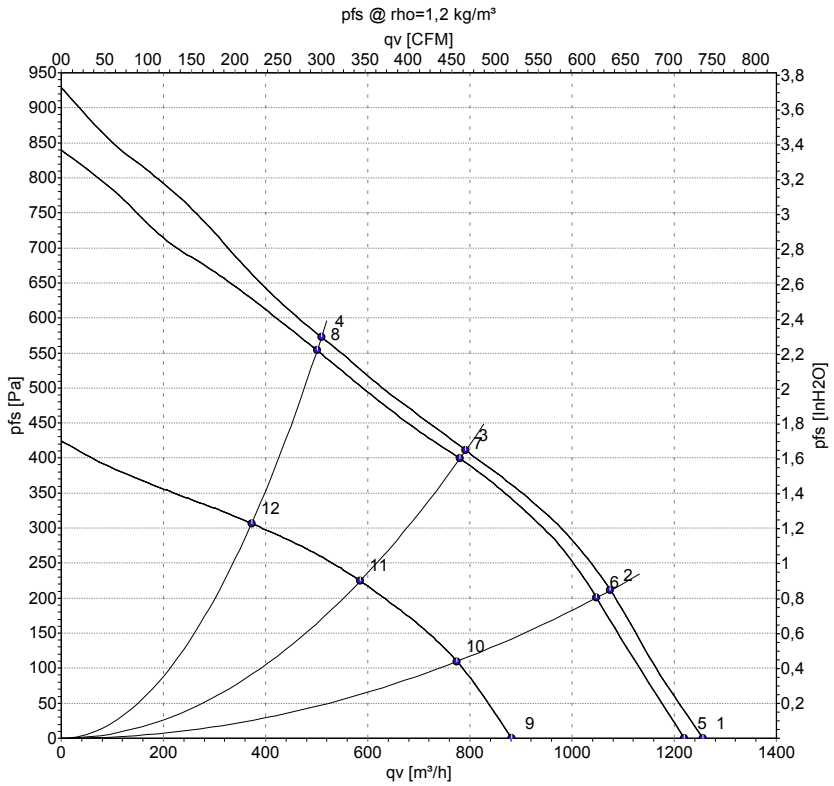
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Curves: Air performance



Measurement: LU-158309-1
Measurement: LU-158319-1
Measurement: LU-158146-1

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	n	P_{ed}	I	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	m^3/h	Pa	cfm	inH2O
1	138	3600	190	1.38	1255	0	740	0.00
2	138	3510	191	1.38	1075	215	635	0.86
3	138	3370	190	1.38	790	411	465	1.65
4	138	3455	187	1.36	510	573	300	2.30
5	110	3500	176	1.60	1220	0	715	0.00
6	110	3425	180	1.63	1050	200	615	0.80
7	110	3360	180	1.65	780	400	460	1.61
8	110	3390	174	1.59	500	550	295	2.21
9	77	2550	72	0.93	880	0	520	0.00
10	77	2535	76	0.99	775	110	455	0.44
11	77	2515	81	1.06	585	225	345	0.90
12	77	2540	78	1.01	375	307	220	1.23

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

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