R3G220-AE50-10

EC centrifugal fan

backward-curved, single-intake

R3G220-AE50-10 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G220-AE50-10**
Motor	**M3G074-CF**

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}	3560
Power consumption	W	150
Current draw	A	1.1
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}	%	48.8	43.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		67.7	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.16
09 Air flow q_v	m^3/h	600
09 Pressure increase p_{fs}	Pa	427
10 Speed (rpm) n	min^{-1}	3320
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-69105

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Technical description

Weight	2.2 kg
Fan size	220 mm
Rotor surface	Thick-film passivated
Electronics housing material	Die-cast aluminum
Impeller material	PA66 plastic, glass-fiber reinforced
Number of blades	11
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP44; installation- and position-dependent as per EN 60034-5
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. 1.1 mA - Alarm relay - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Thermal overload protection for motor
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 55022 (Class B)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE
Approval	CSA C22.2 No. 77; UL 2111

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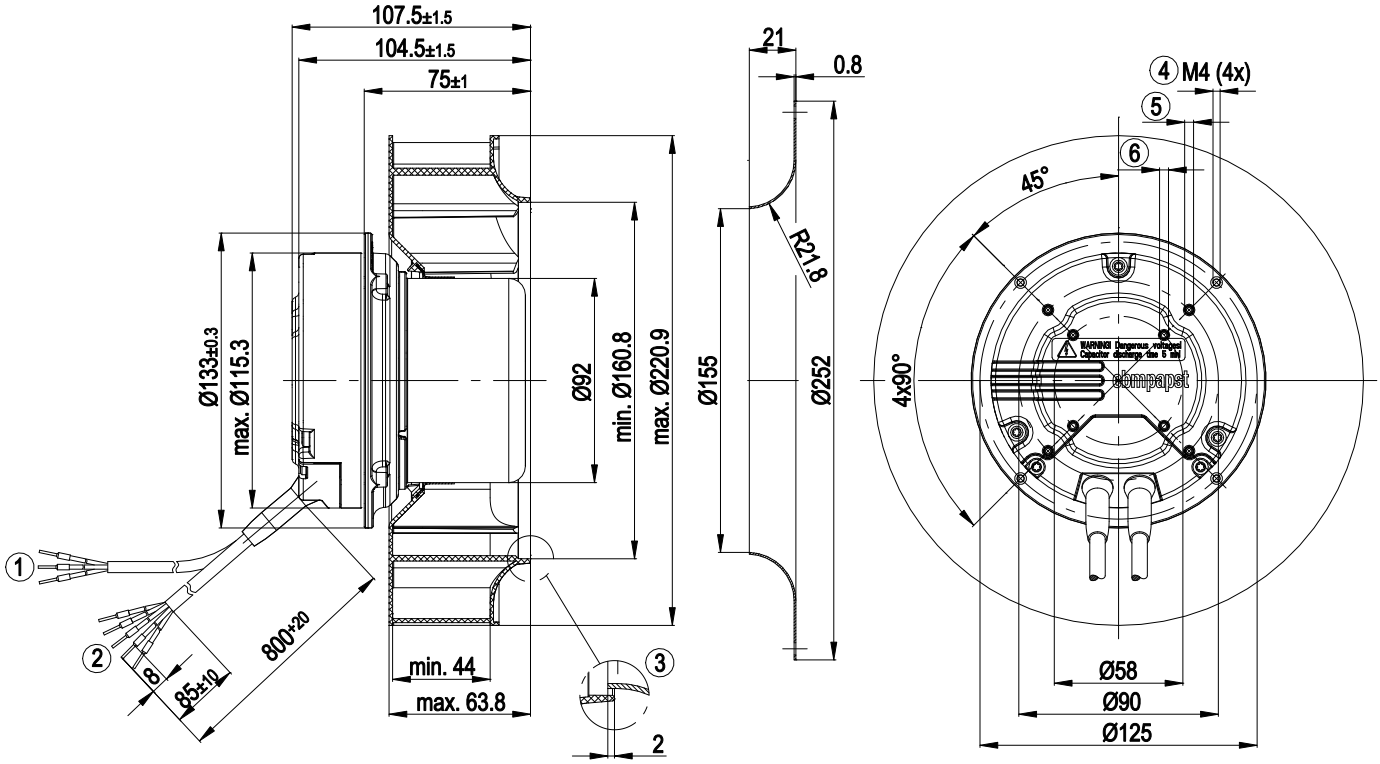
Product drawing



1	Control cable PVC AWG22, 3 x crimped ferrules
2	Cable PVC AWG18, 5 x crimped ferrules
3	Accessory part: Inlet ring 09609-2-4013, not included in scope of delivery
4	Clearance for screw 8-10 mm; tightening torque 2.5±0.2 Nm; gluing the screws is recommended
5	Tapping hole ready for self-tapping M4 screw, max. clearance for screw 6 mm
6	Tapping hole ready for self-tapping M4 screw, max. clearance for screw 8 mm

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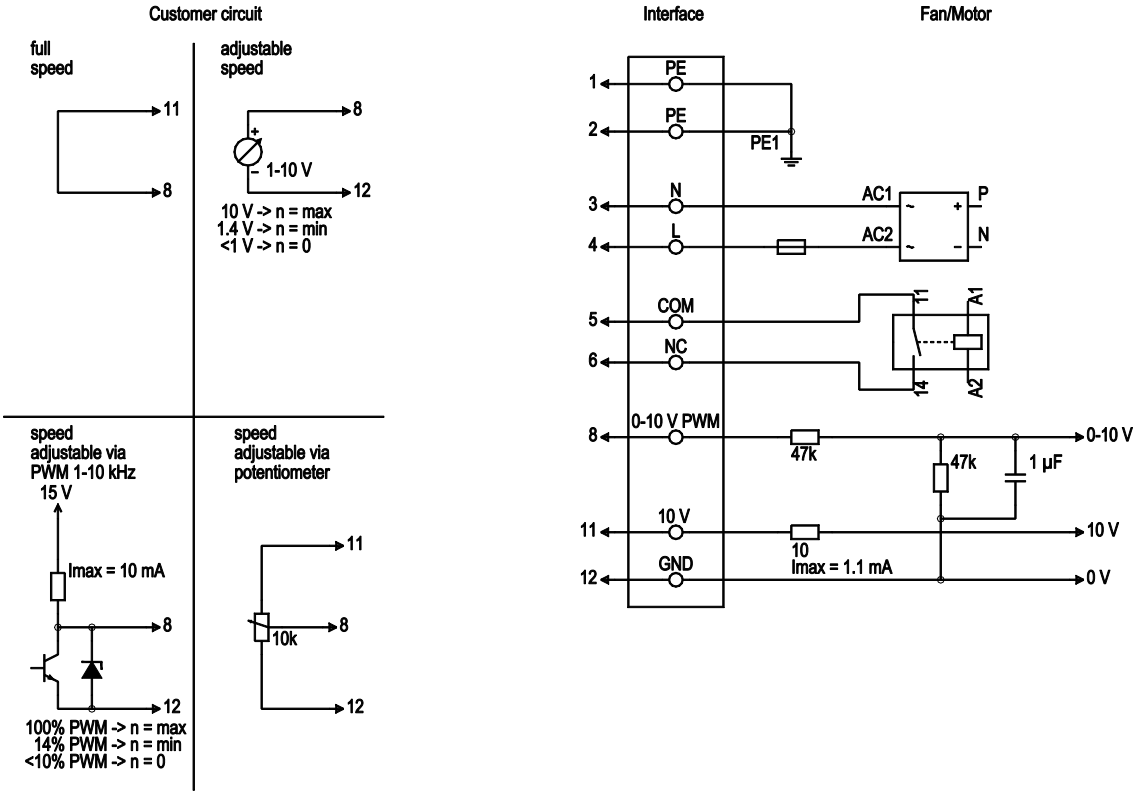
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	1,2	PE	green/yellow	Protective earth
	3	N	blue	Neutral conductor
	4	L	black	Power supply 230 VAC, 50-60 Hz, see nameplate for voltage range
	5	COM	white 1	Floating status contact, break for failure (2A, max. 250 VAC, min.10 mA)
	6	NC	white 2	Floating status contact, break for failure
	8	0-10V PWM	yellow	Control input 0-10 V or PWM, electrically isolated
	11	10V/max1.1mA	red	Voltage output 10 V/1.1 mA, electrically isolated
	12	GND	blue	GND connection for control interface

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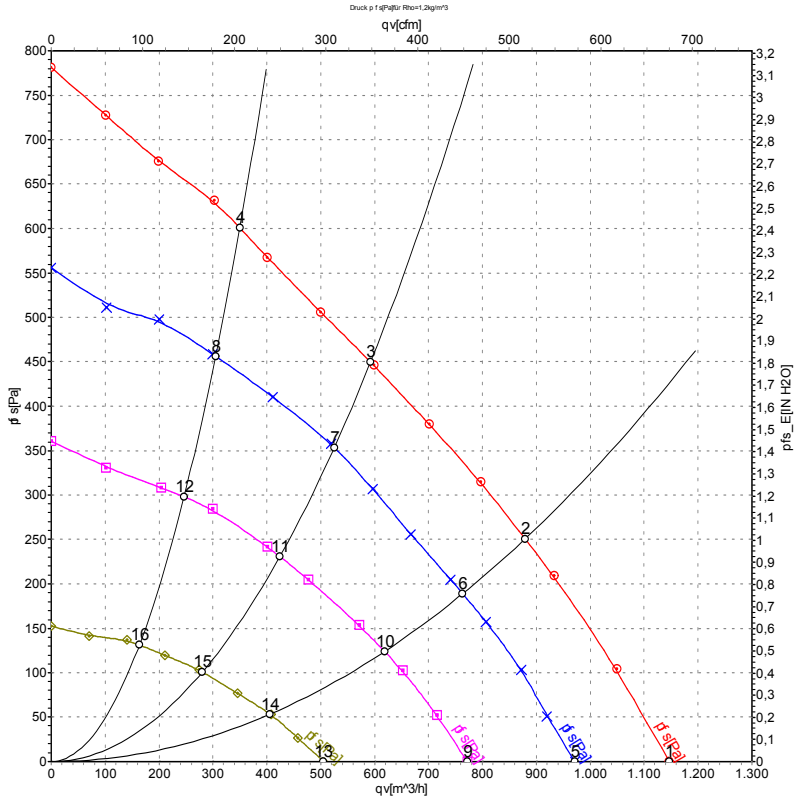
Curves: Air performance 50 Hz



Measurement: LU-69105-1
Measurement: LU-67052-1
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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	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa	CFM	inH2O
1	230	50	3560	150	1.10	1145	0	675	0.00
2	230	50	3410	170	1.26	880	250	520	1.00
3	230	50	3320	170	1.21	590	450	350	1.81
4	230	50	3455	170	1.25	350	600	205	2.41
5	230	50	3080	103	0.76	970	0	570	0.00
6	230	50	3015	120	0.88	765	189	450	0.76
7	230	50	3000	124	0.91	525	355	310	1.43
8	230	50	3040	115	0.86	305	457	180	1.83
9	230	50	2500	62	0.46	770	0	455	0.00
10	230	50	2430	67	0.50	620	124	365	0.50
11	230	50	2430	70	0.52	425	231	250	0.93
12	230	50	2455	69	0.51	245	298	145	1.20
13	230	50	1625	22	0.19	505	0	295	0.00
14	230	50	1595	24	0.20	405	54	240	0.22
15	230	50	1595	26	0.21	280	101	165	0.41
16	230	50	1605	23	0.19	165	131	95	0.53

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