EC centrifugal fan - RadiCal

backward curved, single inlet

R3G190-RH50-01 ebmpapst Datasheet
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Nominal data

Type	**R3G190-RH50-01**
Motor	**M3G074-BF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Type of data definition		ml
State		prelim.
Speed (rpm)	min^{-1}	3880
Power input	W	145
Current draw	A	1.15
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data according to ErP directive

		Actual	Request 2015
01 Overall efficiency η_{es}	%	51.1	42.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		70.6	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.14
09 Air flow q_v	m^3/h	580
09 Pressure increase p_{fs}	Pa	402
10 Speed (rpm) n	min^{-1}	3895
11 Specific ratio*		1.00

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

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Technical features

Mass	1.8 kg
Size	190 mm
Surface of rotor	Thick layer passivated
Material of electronics housing	Die-cast aluminium
Material of impeller	PA plastic
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 44
Insulation class	"B"
Humidity (F)/environmental protection class (H)	F3-1
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on top; rotor on bottom on request
Condensate discharge holes	None
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Control input 0-10 VDC / PWM - Output 10 VDC, max. 1.1 mA - Tach output - Over-temperature protected motor - Soft start
EMC interference immunity	Acc. to EN 61000-6-2
EMC harmonics	Acc. to EN 61000-3-2/3
EMC interference emission	Acc. to EN 61000-6-3 (household environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 60335-1
Approval	CSA C22.2 No.77; UL 2111

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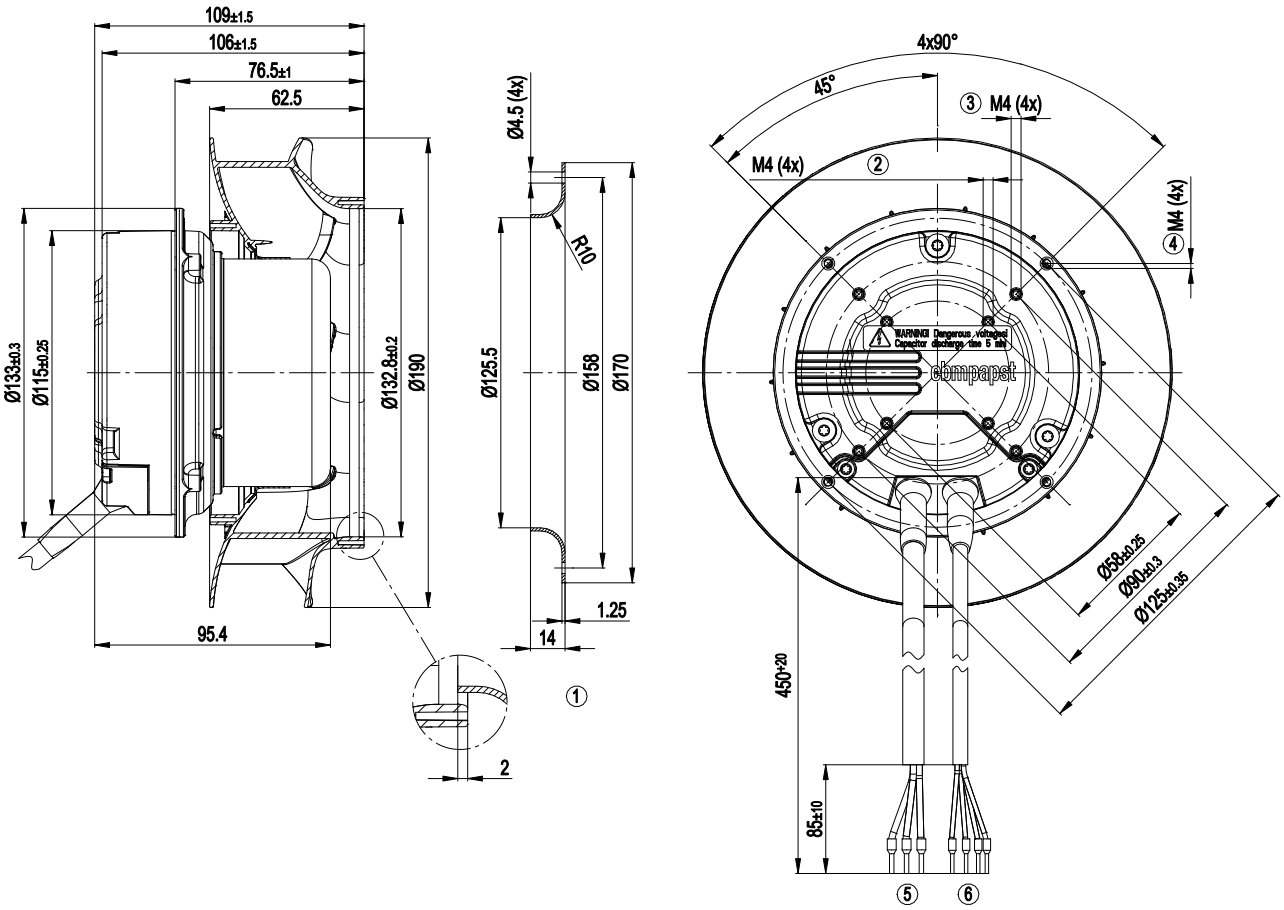
Product drawing



1	Accessory part: Inlet nozzle 09576-2-4013, not included in the standard scope of delivery
2	Pilot hole prepared for self-tapping screw M4, depth of screw max. 8 mm
3	Pilot hole prepared for self-tapping screw M4, depth of screw max. 6 mm
4	Depth of screw 8 - 10 mm
5	Connection line AWG 18, 3x crimped core-end sleeves
6	Connection line AWG 22, 4x crimped core-end sleeves

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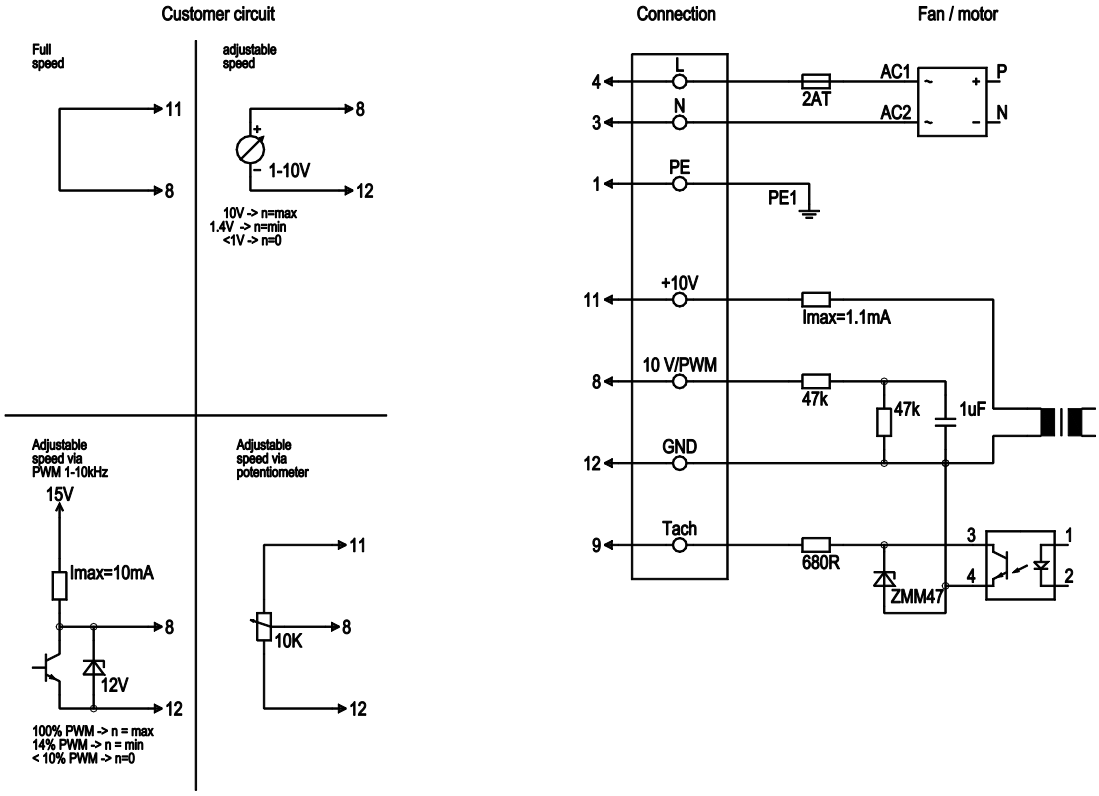
Connection screen



No.	Conn.	Designation	Colour	Function / assignment
	4	L	black	Power supply 230 VAC, 50-60 Hz, see type plate for voltage range
	3	N	blue	Neutral conductor
	1	PE	green/yellow	Protective earth
	8	0-10 V PWM	yellow	Control input 0 - 10 V or PWM, electrically isolated
	9	Tach	white	Tach output: open collector, 1 pulse per revolution, electrically isolated
	11	10V / max 1.1 mA	red	Voltage output 10 V / max. 1.1 mA, electrically isolated
	12	GND	blue	GND - Connection for control interface

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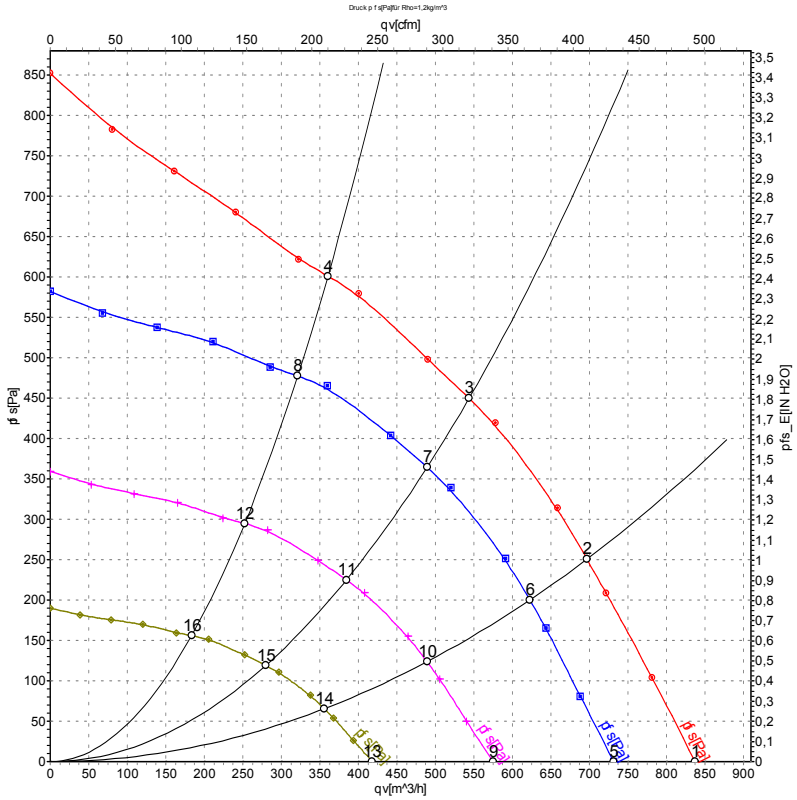
Charts: Air flow 50 Hz



Measurement: LU-126693-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	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	inH2O
1	230	50	4005	123	0.99	72	80	840	0	495	0.00
2	230	50	3915	138	1.09	66	74	695	250	410	1.00
3	230	50	3880	145	1.15	63	71	545	450	320	1.81
4	230	50	3925	139	1.11	66	73	360	600	210	2.41
5	230	50	3500	82	0.66	69	77	730	0	430	0.00
6	230	50	3500	98	0.78	64	72	625	200	365	0.80
7	230	50	3500	106	0.84	61	69	490	364	290	1.46
8	230	50	3500	99	0.78	63	70	320	477	190	1.91
9	230	50	2750	40	0.32	64	72	575	0	340	0.00
10	230	50	2750	48	0.38	58	66	490	124	290	0.50
11	230	50	2750	51	0.41	55	63	385	225	225	0.90
12	230	50	2750	48	0.38	58	65	250	295	150	1.18
13	230	50	2000	15	0.12	57	65	420	0	245	0.00
14	230	50	2000	18	0.15	52	60	355	65	210	0.26
15	230	50	2000	20	0.16	49	56	280	119	165	0.48
16	230	50	2000	18	0.15	51	58	185	156	110	0.63

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · q_V = Air flow
p_{fs} = Pressure increase