EC centrifugal fan - RadiPac

backward-curved, single-intake

R3G250-PR03-H9 ebmpapst Datasheet
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Nominal data

Type	**R3G250-PR03-H9**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	2800
Power consumption	W	400
Current draw	A	1.75
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	45
Starting current	A	2.45

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}	%	66.6	47.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		81.3	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.39
09 Air flow q_v	m^3/h	1805
09 Pressure increase p_{fs}	Pa	473
10 Speed (rpm) n	min^{-1}	2810
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-191417

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Technical description

Size	250 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
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	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 - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - 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 circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-3 (household 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
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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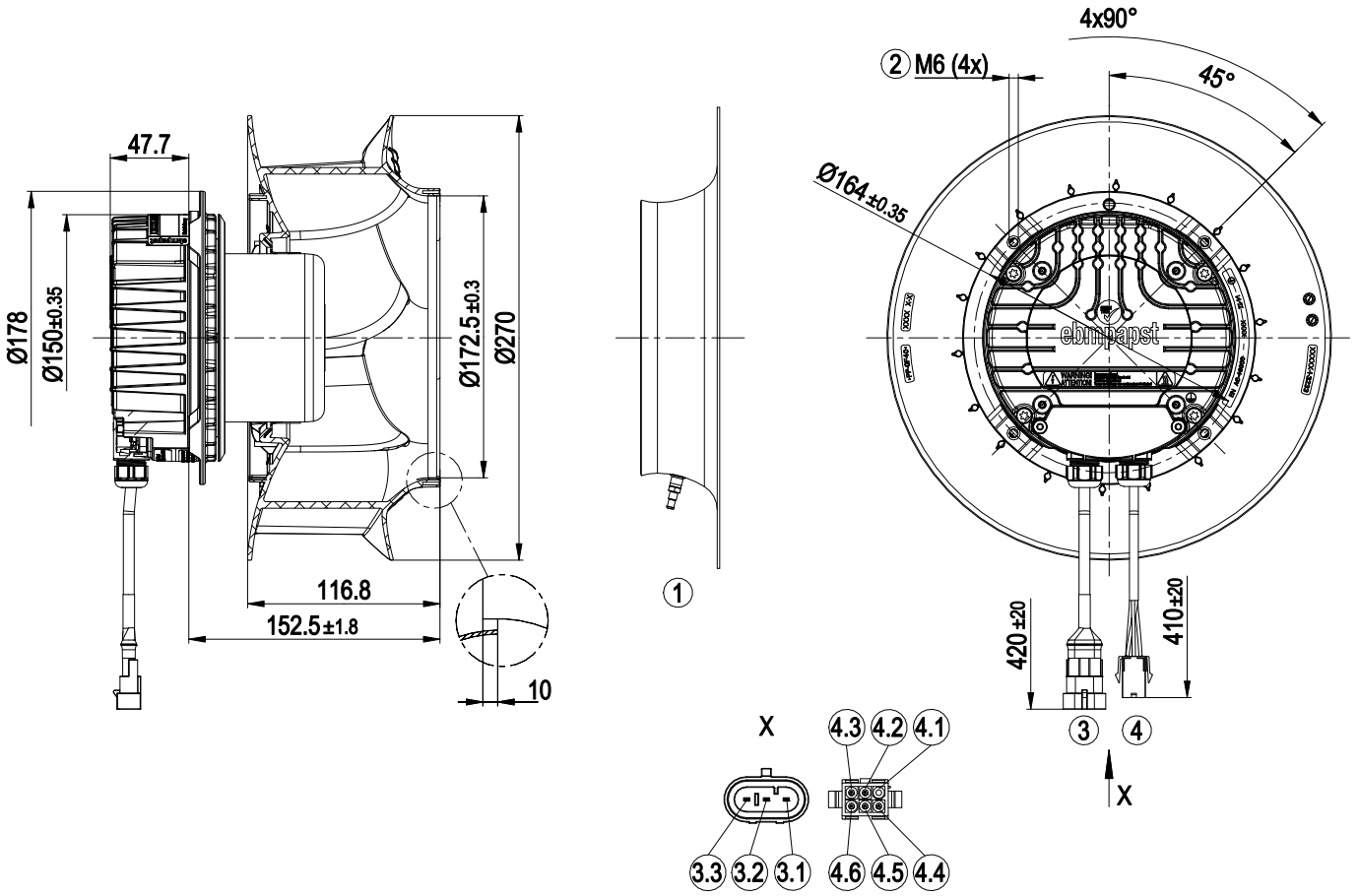
Product drawing



1	Accessory part: Inlet ring 96355-2-4013 with pressure tap (k-factor: 76) not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18
	3-pole connector housing TE 1745082-1, 3x flat plug TE 282109-1, 3x seal TE 281934-2
3.1	L
3.2	N
3.3	PE
4	Cable PVC AWG22
	6-pole connector housing TE794940-1, 5x plug pin TE 170360-3, 5x seal TE 794758-1
4.1	Dummy plug
4.2	0-10 V/PWM
4.3	RSB
4.4	RSA
4.5	+10 V
4.6	GND

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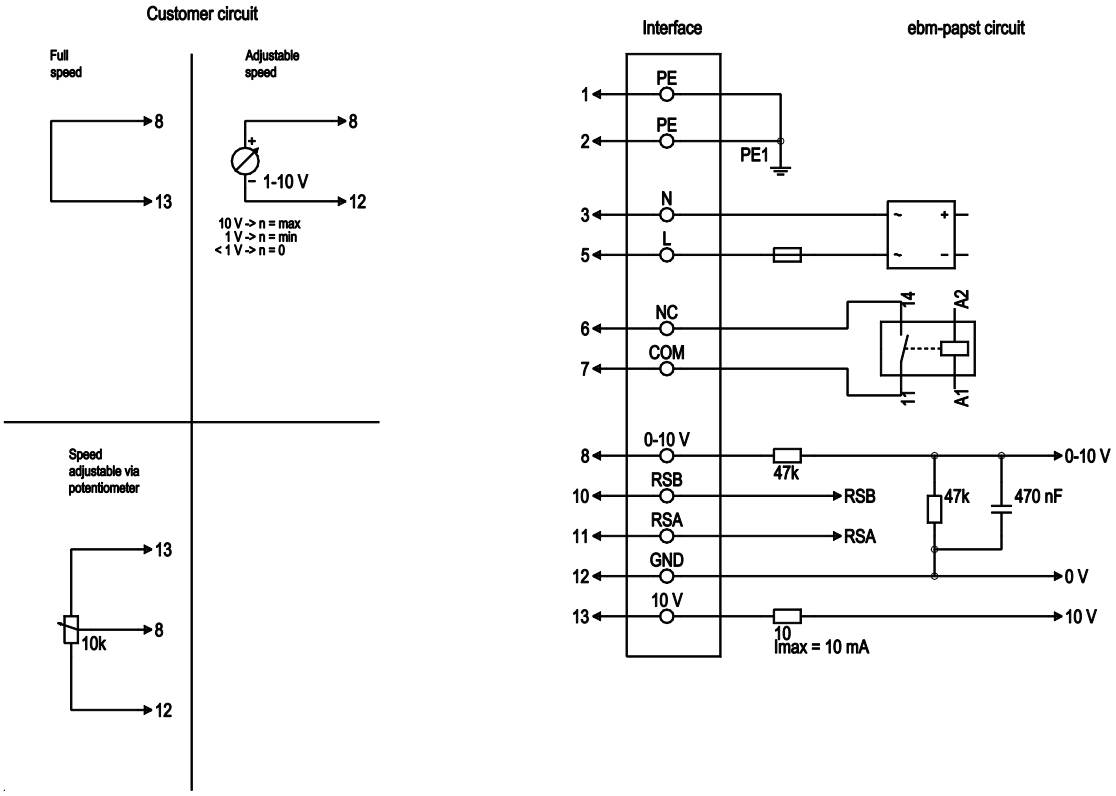
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10V	yellow	Analog input (set value); 0-10 V; Ri = 100 kΩ; adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB
2	11	RSA	white	RS485 interface for MODBUS, RSA
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V ±3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)

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Curves: Air performance 50 Hz

ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-191417-1

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	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	1~	230	50	2800	281	1.25	2570	0	1515	0.00
2	1~	230	50	2800	367	1.62	2240	250	1320	1.00
3	1~	230	50	2800	395	1.75	1710	500	1005	2.01
4	1~	230	50	2800	351	1.55	1000	650	585	2.61
5	1~	230	50	2400	176	0.78	2200	0	1295	0.00
6	1~	230	50	2400	230	1.01	1920	184	1130	0.74
7	1~	230	50	2400	247	1.08	1460	366	860	1.47
8	1~	230	50	2400	219	0.97	855	474	500	1.90
9	1~	230	50	2000	102	0.45	1835	0	1080	0.00
10	1~	230	50	2000	133	0.59	1600	128	940	0.51
11	1~	230	50	2000	143	0.63	1215	254	715	1.02
12	1~	230	50	2000	127	0.56	710	329	420	1.32
13	1~	230	50	1600	52	0.23	1465	0	865	0.00
14	1~	230	50	1600	68	0.30	1280	82	750	0.33
15	1~	230	50	1600	73	0.32	975	163	575	0.65
16	1~	230	50	1600	65	0.29	570	211	335	0.85

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