R3G280-RR03-H1

EC centrifugal fan - RadiCal

backward-curved, single-intake



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G280-RR03-H1**
Motor	**M3G084-DF**

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}	2700
Power consumption	W	500
Current draw	A	2.2
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}	%	67.3	48.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		80.9	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.51
09 Air flow q_v	m^3/h	2105
09 Pressure increase p_{fs}	Pa	535
10 Speed (rpm) n	min^{-1}	2695
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-149673

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Technical description

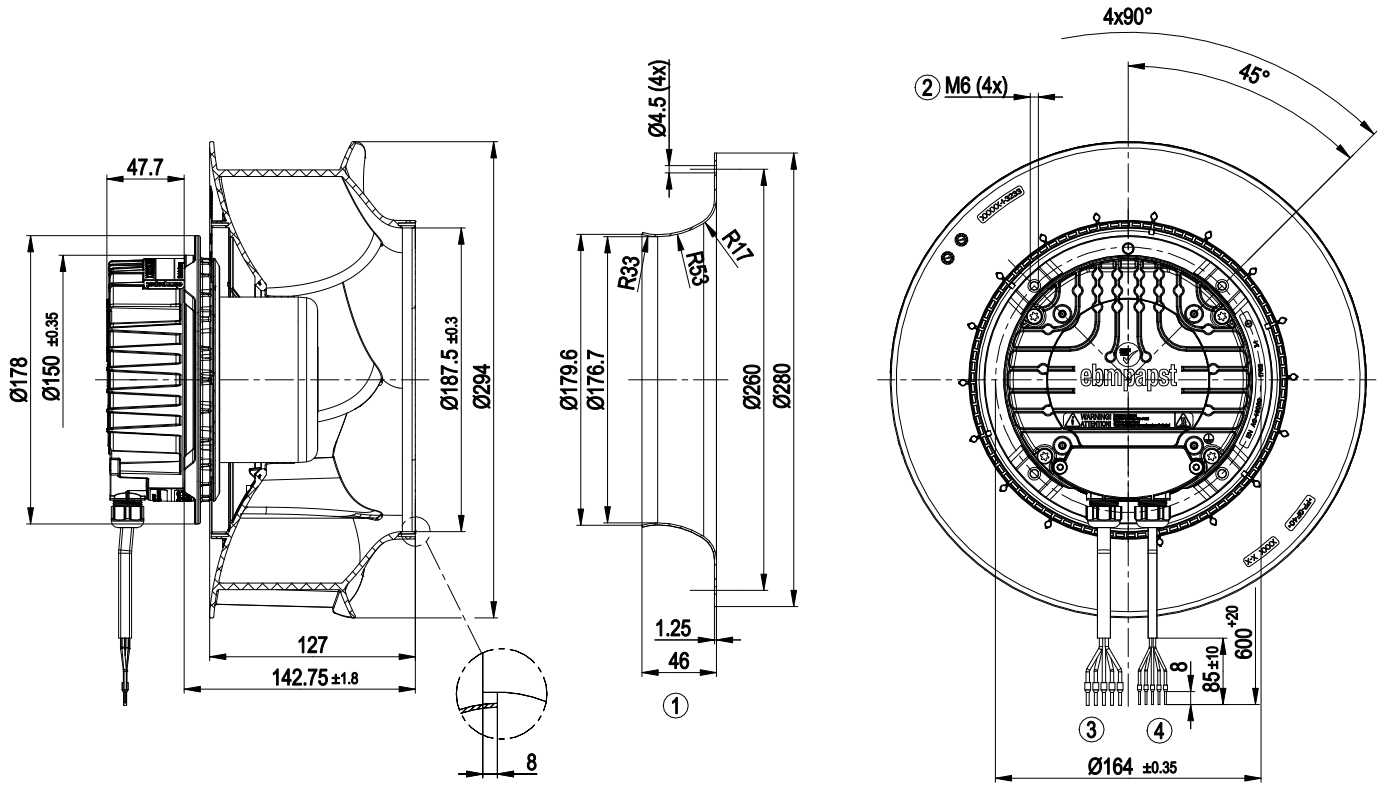
Weight	5 kg
Fan size	280 mm
Rotor surface	Painted black
Impeller material	PP plastic
Housing material	Die-cast aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F3-1
Max. permitted 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 bottom; rotor on top on request
Condensation drainage holes	On rotor side
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 supply - 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
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (if protective earth is connected by customer to the housing's connection point)
Conformity with standards	EN 61800-5-1; EN 60335-1; CE
Approval	CCC; EAC; C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

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Product drawing



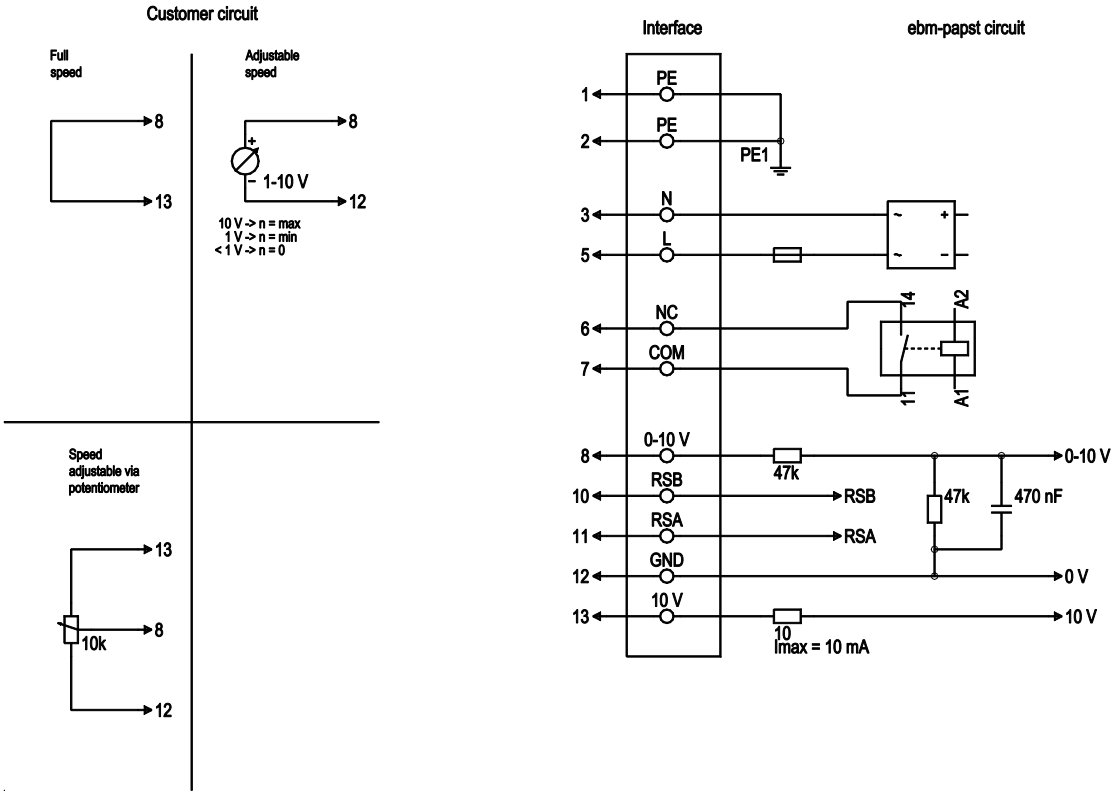
1	Accessory part: inlet ring 28000-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18, 5x crimped ferrules
4	Cable PVC AWG22, 5x crimped ferrules

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Connection diagram



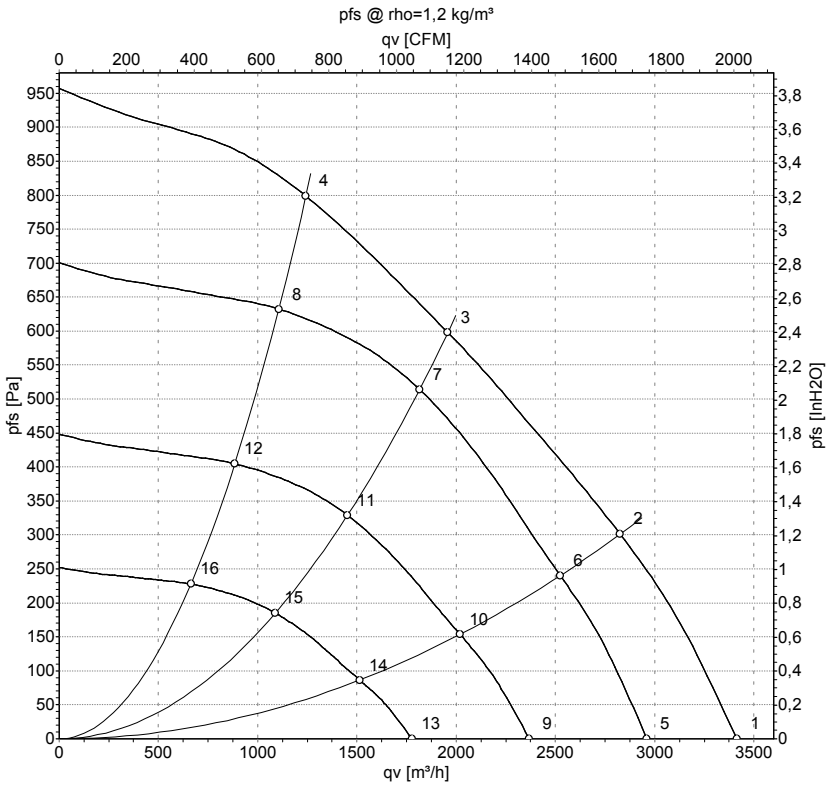
No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, 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



Measurement: LU-149673-1

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	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	230	50	2880	460	2.00	77	85	3415	0	2010	0.00
2	230	50	2800	500	2.20	73	80	2825	300	1665	1.20
3	230	50	2700	500	2.20	66	74	1960	600	1150	2.41
4	230	50	2810	500	2.20	70	78	1245	800	730	3.21
5	230	50	2500	300	1.31	74	81	2960	0	1745	0.00
6	230	50	2500	366	1.60	70	77	2525	240	1485	0.96
7	230	50	2500	410	1.78	64	72	1815	514	1070	2.06
8	230	50	2500	362	1.58	67	75	1105	633	650	2.54
9	230	50	2000	154	0.67	68	76	2370	0	1395	0.00
10	230	50	2000	187	0.82	64	71	2020	154	1190	0.62
11	230	50	2000	210	0.91	58	66	1450	329	855	1.32
12	230	50	2000	185	0.81	62	69	885	405	520	1.63
13	230	50	1500	65	0.28	61	68	1775	0	1045	0.00
14	230	50	1500	79	0.34	57	64	1515	86	890	0.35
15	230	50	1500	89	0.39	51	59	1090	185	640	0.74
16	230	50	1500	78	0.34	55	62	665	228	390	0.92

U = Power supply · 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
qv = Air flow · p_{fs} = Pressure increase

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