R3G450-RT03-H1

EC centrifugal fan - RadiCal

backward-curved, single-intake



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G450-RT03-H1**
Motor	**M3G084-GF**

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}	1260
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	50

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}	%	61.1	48.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		74.7	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.51
09 Air flow q_v	m^3/h	3690
09 Pressure increase p_{fs}	Pa	278
10 Speed (rpm) n	min^{-1}	1255
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-151537

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Technical description

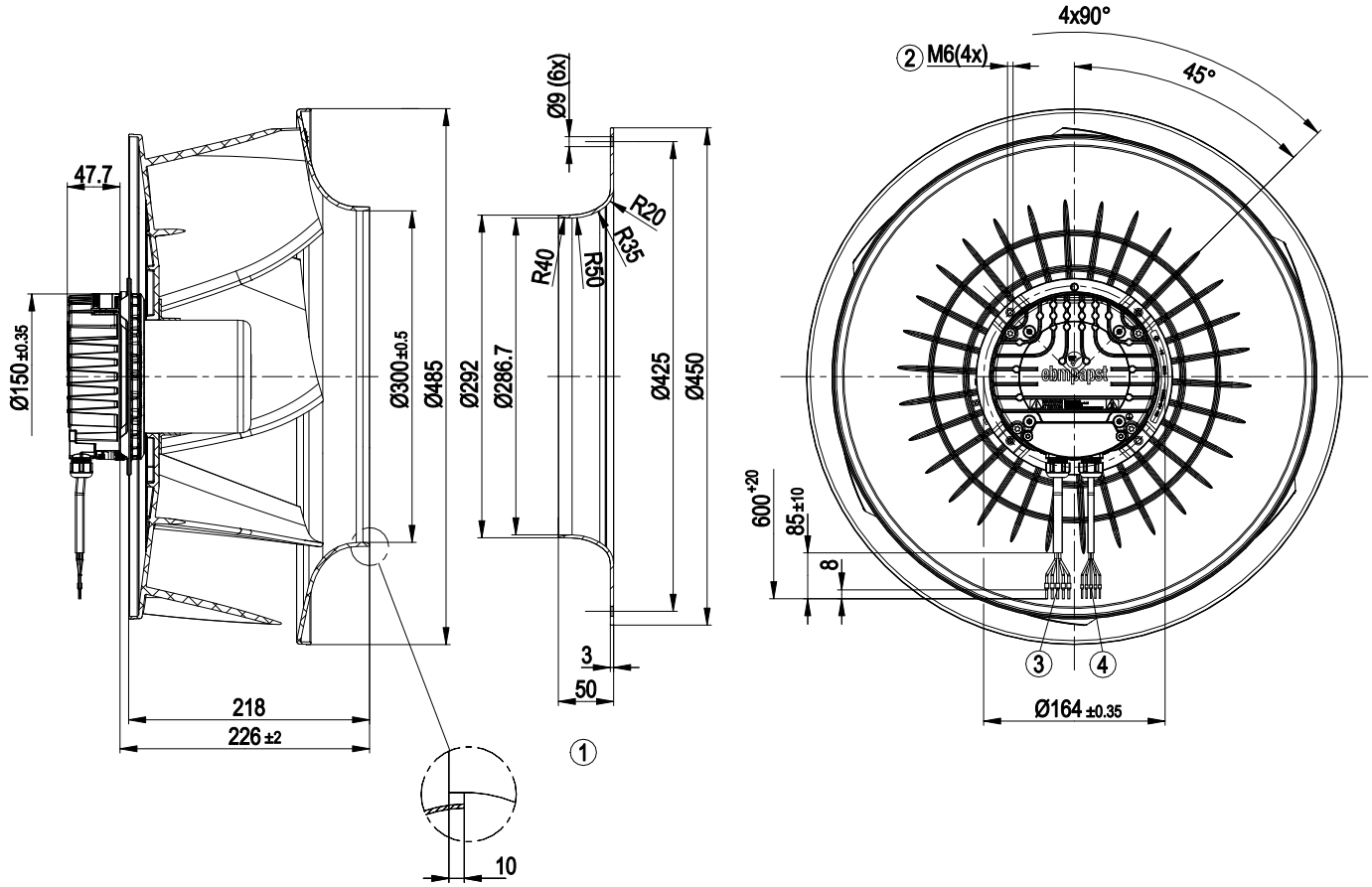
Weight	7.5 kg
Fan size	450 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	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 (with customer connection of protective earth)
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



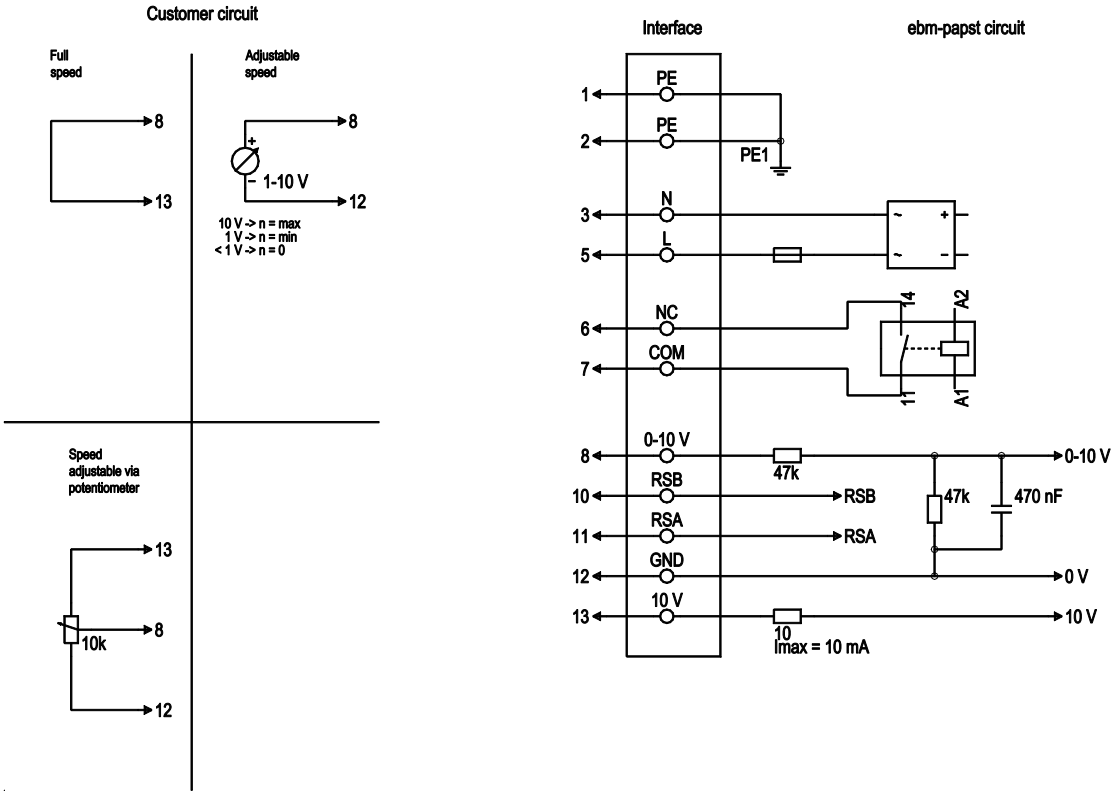
1	Accessory part: inlet ring 45901-2-2943 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18, 5x crimped ferrules
4	Cable PVC AWG22, 5x crimped ferrules

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Connection diagram



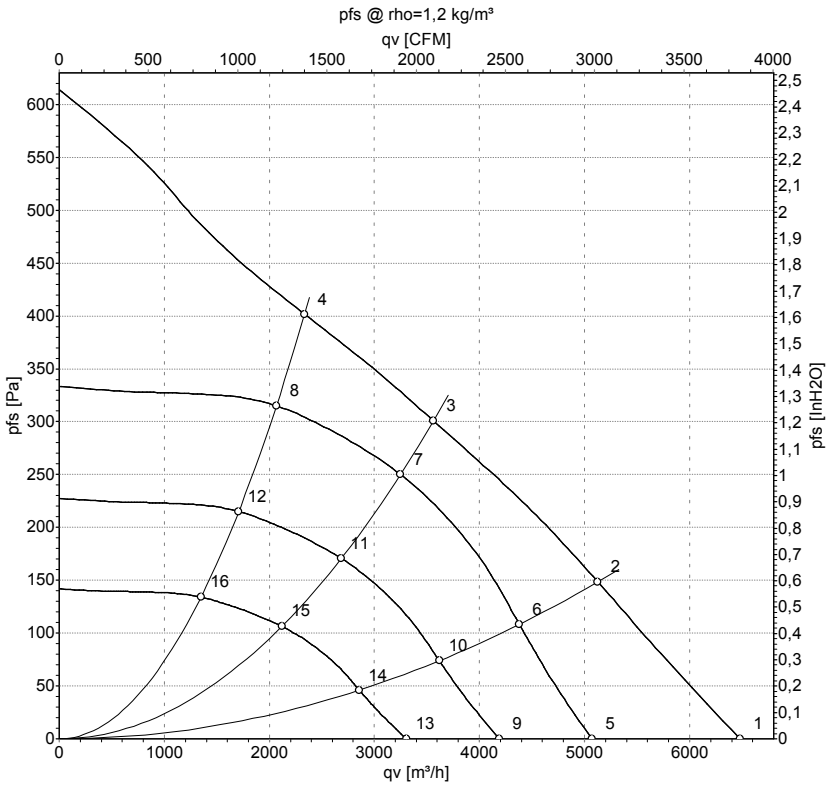
No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, 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-151537-1

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}	LwA_{out}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	230	50	1470	500	2.20	87	95	95	6480	0	3815	0.00
2	230	50	1345	500	2.20	73	80	83	5125	150	3020	0.60
3	230	50	1260	500	2.20	59	69	73	3565	300	2095	1.20
4	230	50	1295	500	2.20	62	71	76	2335	400	1375	1.61
5	230	50	1150	249	1.08	81	89	89	5070	0	2985	0.00
6	230	50	1150	324	1.41	69	76	79	4380	108	2580	0.43
7	230	50	1150	394	1.71	57	66	71	3250	252	1910	1.01
8	230	50	1150	362	1.58	60	68	74	2065	316	1215	1.27
9	230	50	950	140	0.61	76	84	84	4185	0	2465	0.00
10	230	50	950	183	0.79	64	71	74	3620	74	2130	0.30
11	230	50	950	222	0.97	52	62	66	2685	172	1580	0.69
12	230	50	950	204	0.89	55	63	69	1710	216	1005	0.87
13	230	50	750	69	0.30	71	78	78	3305	0	1945	0.00
14	230	50	750	90	0.39	58	65	69	2855	46	1680	0.18
15	230	50	750	109	0.47	46	56	60	2120	107	1245	0.43
16	230	50	750	101	0.44	49	58	63	1350	135	795	0.54

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
LwA_{out} = Sound power level outlet side · qv = Air flow · p_{fs} = Pressure increase

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