EC centrifugal fan - RadiCal

backward-curved, single-intake

R3G500-FT07-H1 ebmpapst Datasheet
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Amtsgericht (court of registration) Stuttgart · HRA 590344

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Nominal data

Type	**R3G500-FT07-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
Status		prelim.
Speed (rpm)	min^{-1}	1030
Power consumption	W	500
Current draw	A	2.2
Min. back pressure	Pa	220
Min. back pressure	in. wg	0.88
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	66.2	48.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		79.9	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.49
09 Air flow q_v	m^3/h	4740
09 Pressure increase p_{fs}	Pa	227
10 Speed (rpm) n	min^{-1}	1030
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-202642

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Technical description

Size	500 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 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 the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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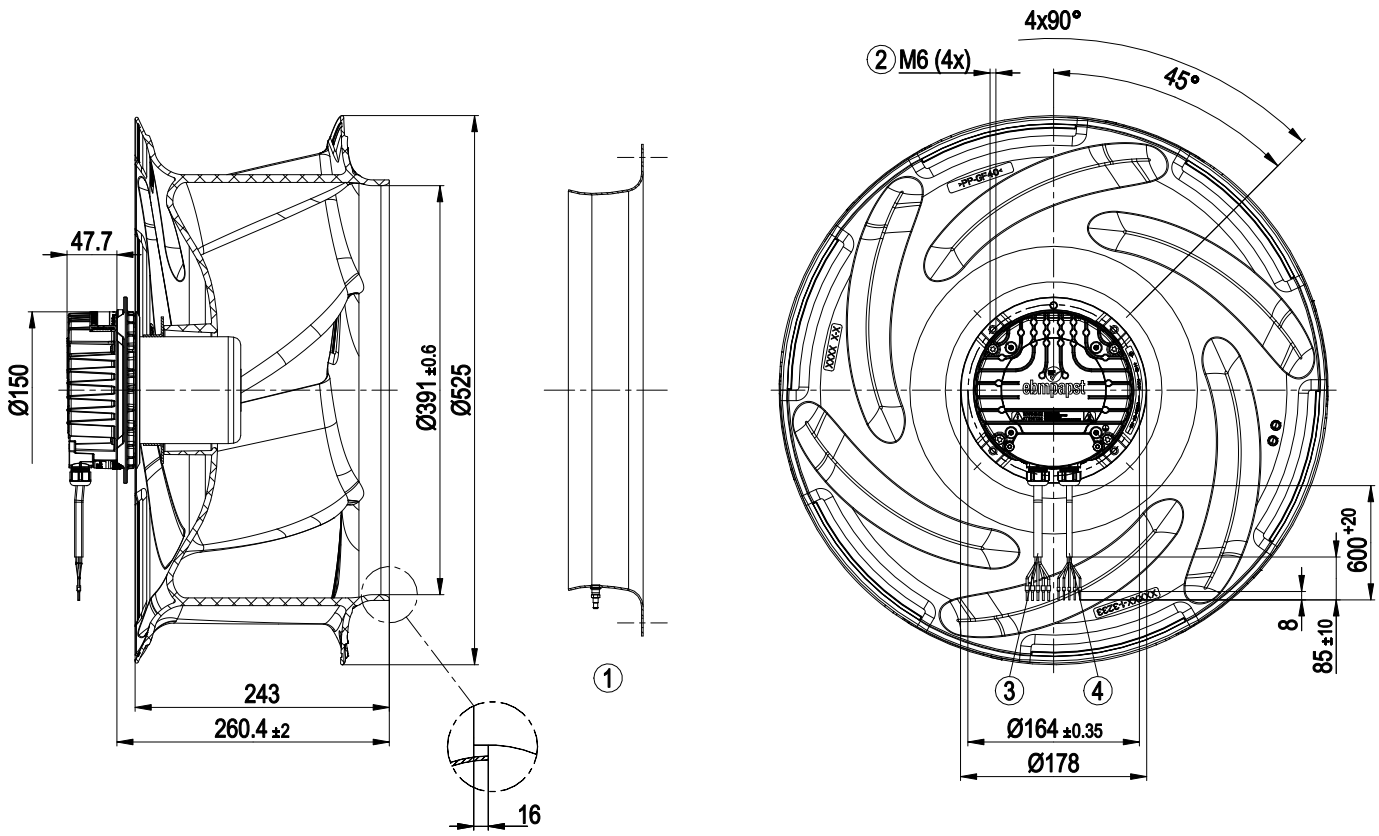
Product drawing



1	Accessory part: Inlet ring 50355-2-4013 with pressure tap (k-factor: 375) not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18
	5x wire-end ferrule
4	Cable PVC AWG22
	5x wire-end ferrule

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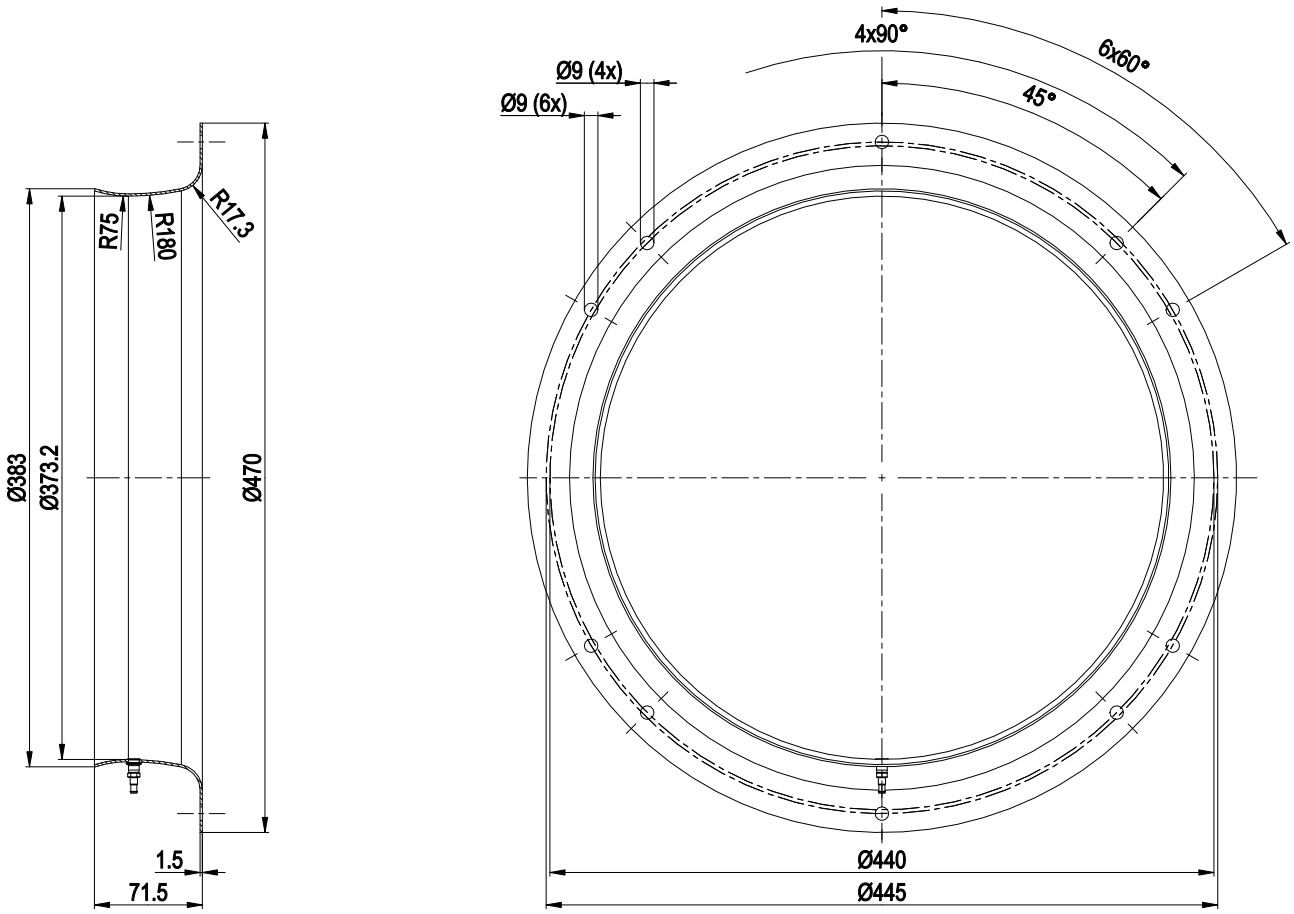
Accessory part



Inlet ring 50355-2-4013 with pressure tap (k-factor: 375)

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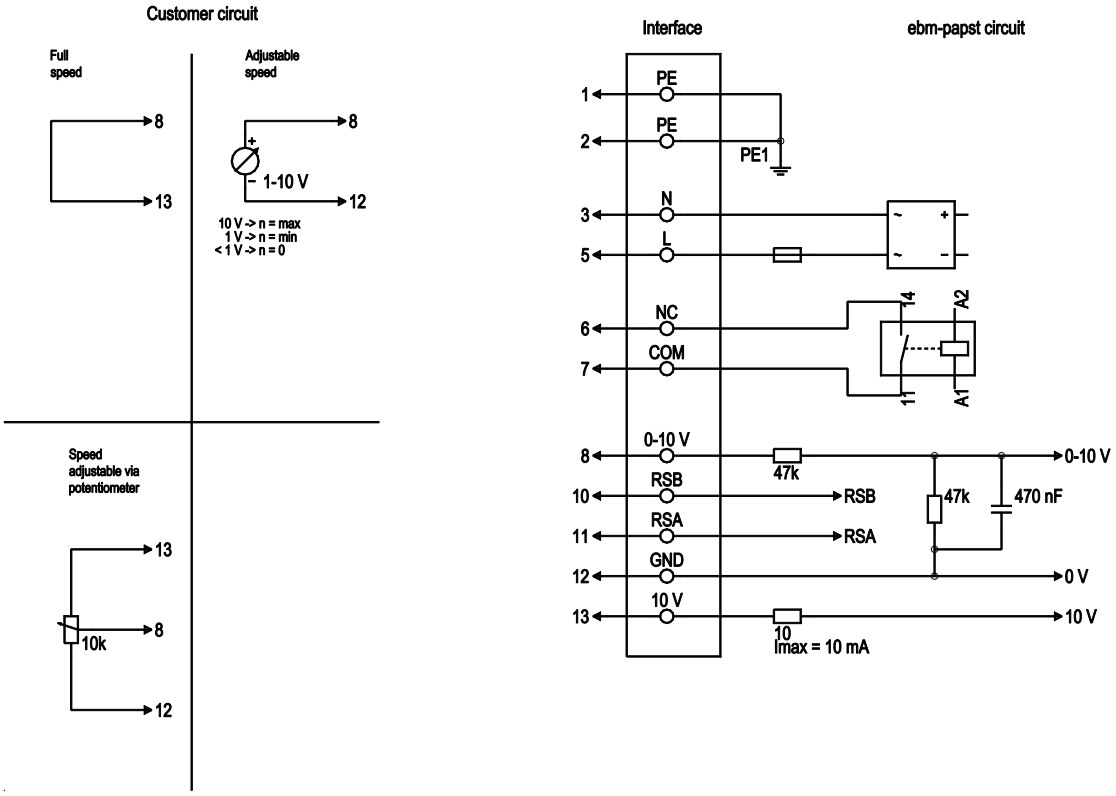
Connection diagram



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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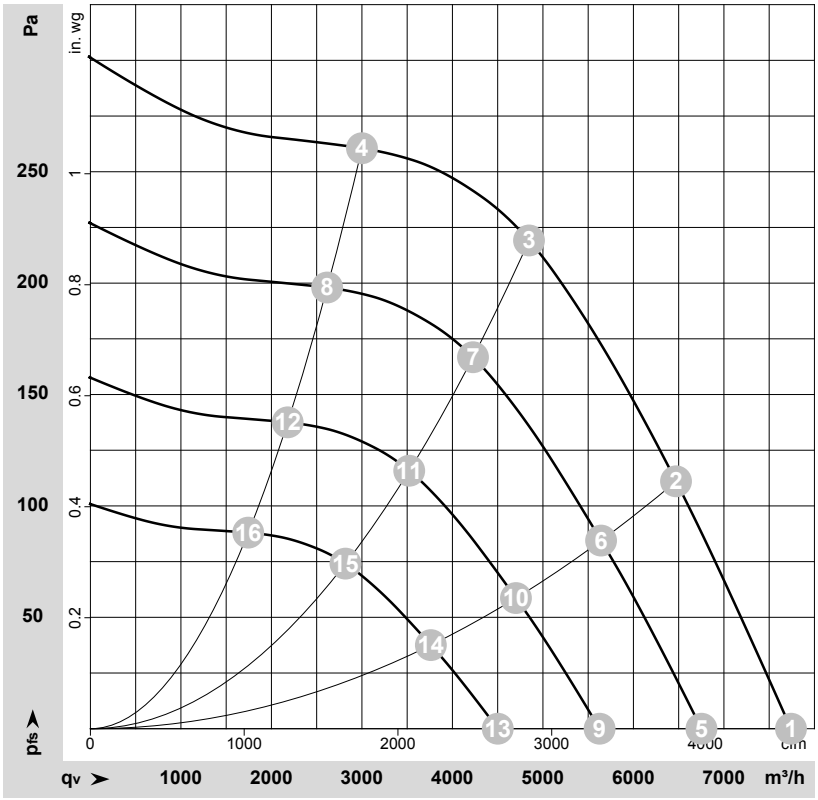
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-202642-1

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	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	1~	230	50	1030	278	1.24	64	73	78	7740	0	4555	0.00
2	1~	230	50	1030	418	1.83	61	71	77	6470	110	3810	0.44
3	1~	230	50	1030	500	2.20	58	66	72	4845	220	2850	0.88
4	1~	230	50	1030	440	1.93	60	68	72	3000	260	1765	1.04
5	1~	230	50	900	185	0.82	61	70	75	6750	0	3975	0.00
6	1~	230	50	900	277	1.22	58	67	73	5645	85	3320	0.34
7	1~	230	50	900	330	1.45	55	63	69	4225	168	2490	0.67
8	1~	230	50	900	292	1.28	57	65	69	2615	198	1540	0.79
9	1~	230	50	750	107	0.47	56	65	70	5625	0	3310	0.00
10	1~	230	50	750	160	0.70	53	62	69	4700	59	2765	0.24
11	1~	230	50	750	191	0.84	50	58	64	3525	117	2075	0.47
12	1~	230	50	750	169	0.74	52	60	64	2180	138	1285	0.55
13	1~	230	50	600	55	0.24	50	60	65	4500	0	2650	0.00
14	1~	230	50	600	82	0.36	48	57	63	3760	38	2215	0.15
15	1~	230	50	600	98	0.43	45	53	58	2820	75	1660	0.30
16	1~	230	50	600	86	0.38	47	55	59	1745	88	1025	0.35

Wired = Wiring · U = Voltage · 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 · q_V = Air flow · p_{fs} = Pressure increase