EC centrifugal fan - RadiCal

backward-curved, single-intake

R3G500-RH52-28 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G500-RH52-28**
Motor	**M3G112-GA**

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}	1150
Power consumption	W	865
Current draw	A	3.8
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	64.3	50.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		75.5	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.86
09 Air flow q_v	m^3/h	4985
09 Pressure increase p_{fs}	Pa	367
10 Speed (rpm) n	min^{-1}	1160
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-166752

ebmpapst

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Technical description

Weight	13 kg
Fan size	500 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP20
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F4-1
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
Cooling hole/opening	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 15 VDC, max. 30 mA - Operation and alarm display: reversible voltage output 0 V / +15 V - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 ebmBUS - 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 61000-6-4 (industrial 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; CE
Approval	CCC

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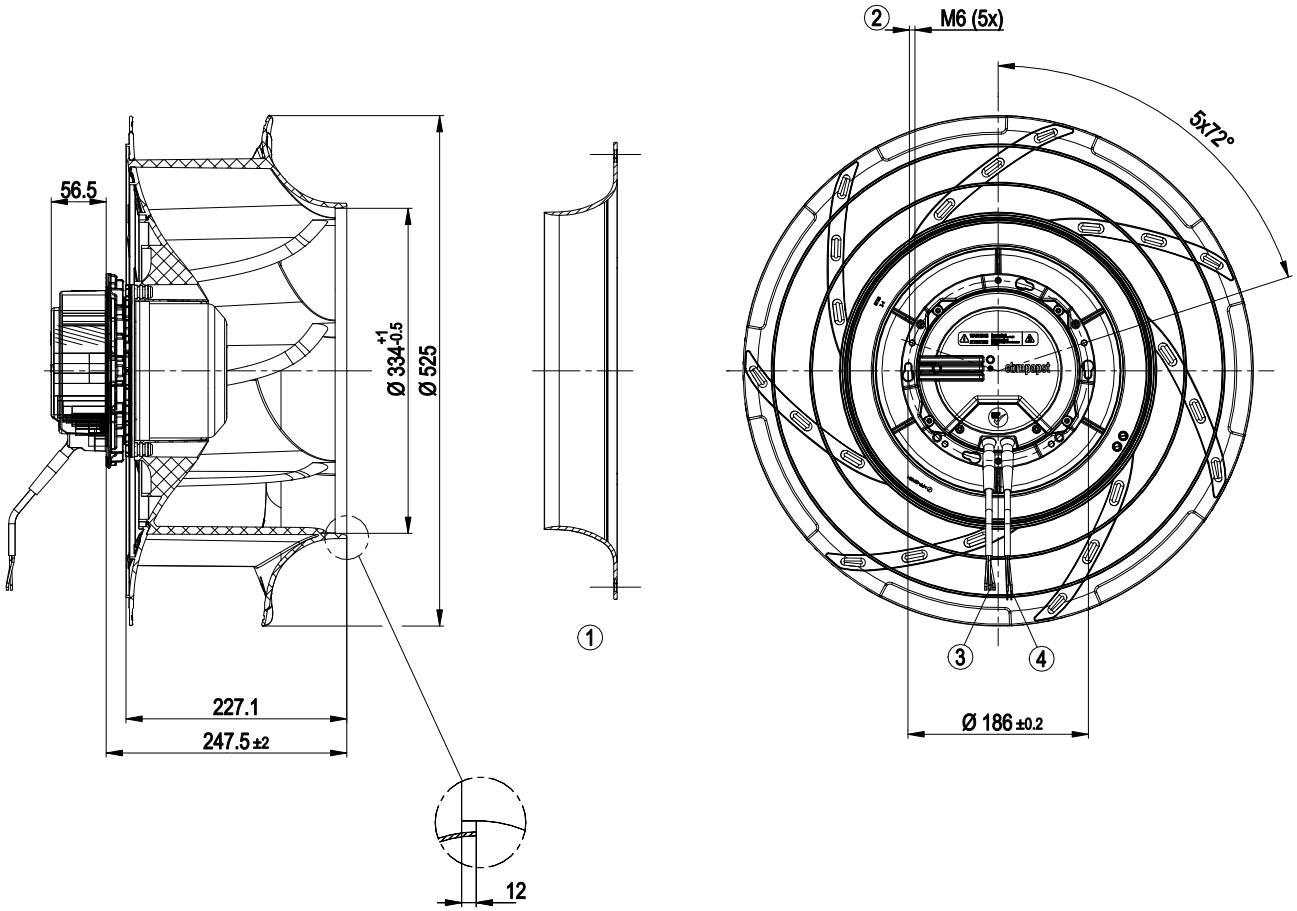
Product drawing



1	Accessory part: Inlet ring 50901-2-2943 not included in scope of delivery.
2	Clearance for screw 12-16 mm
3	Cable PVC AWG 22, 4x crimped ferrules
4	Cable PVC AWG 18, 3x crimped ferrules

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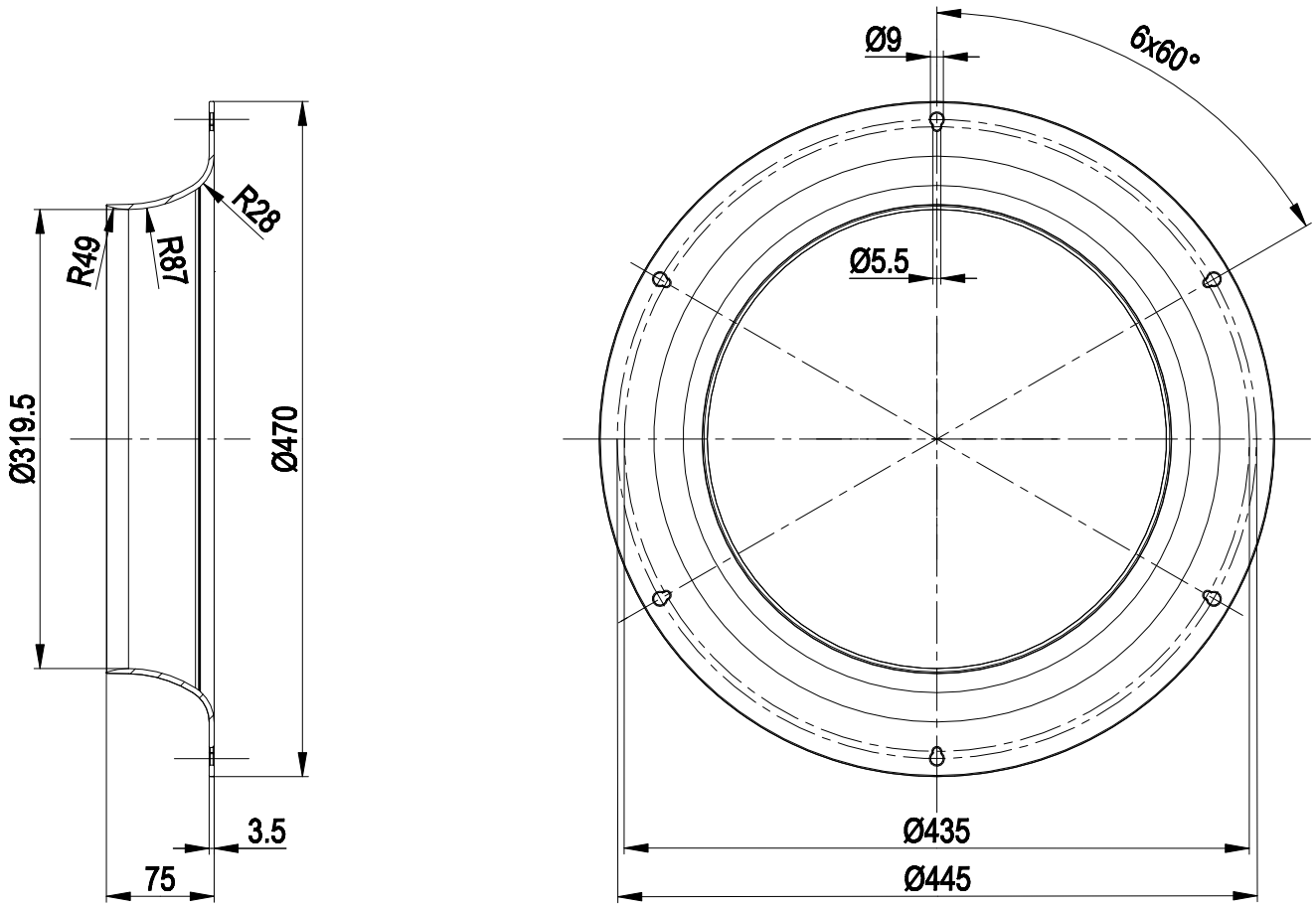
Accessory part



1	Accessory part: inlet ring 50901-2-2943

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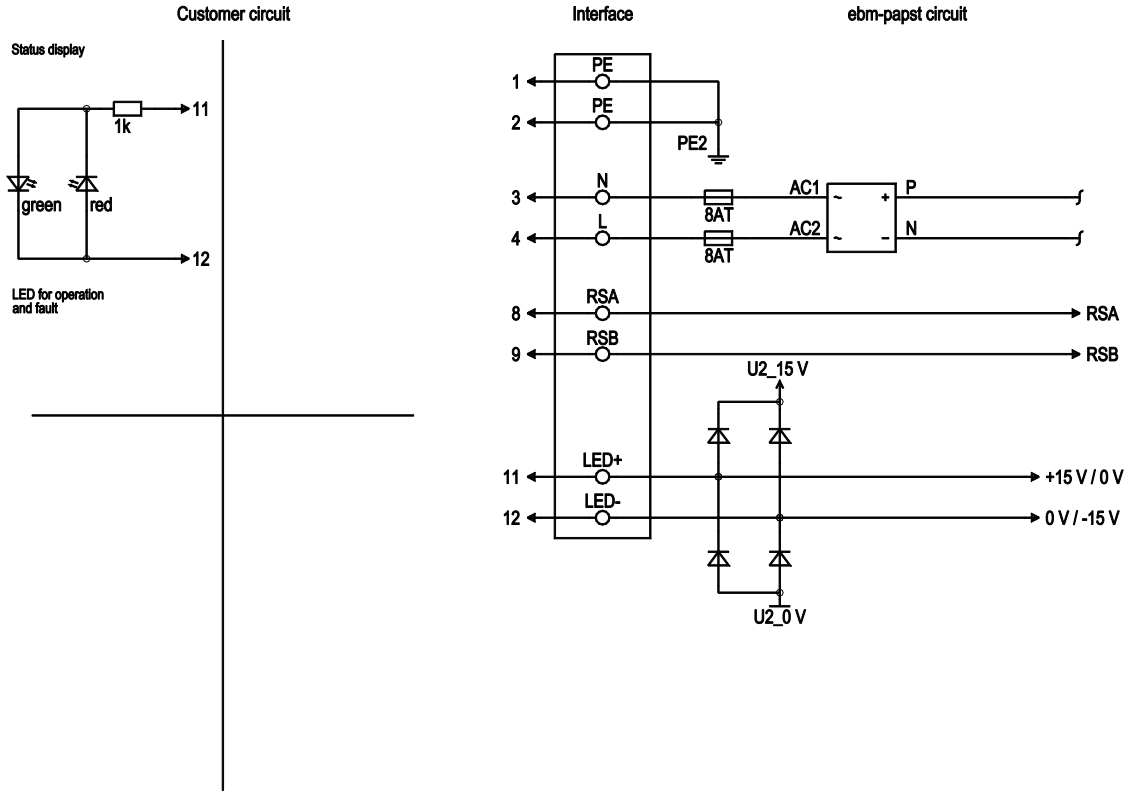
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, voltage range see nameplate, 50/60 Hz
1	4	L	black	Power supply, phase, voltage range see nameplate, 50/60 Hz
2	8	RSA	yellow	RS485 interface for ebmBUS, RSA, SELV
2	9	RSB	white	RS485 interface for ebmBUS, RSB, SELV
2	11	LED+	red	Voltage output 15 V (+15%/-10%), max. 30 mA, power supply for external devices (e.g. status display for LED), SELV
2	12	LED-	blue	Reference ground for control interface, SELV

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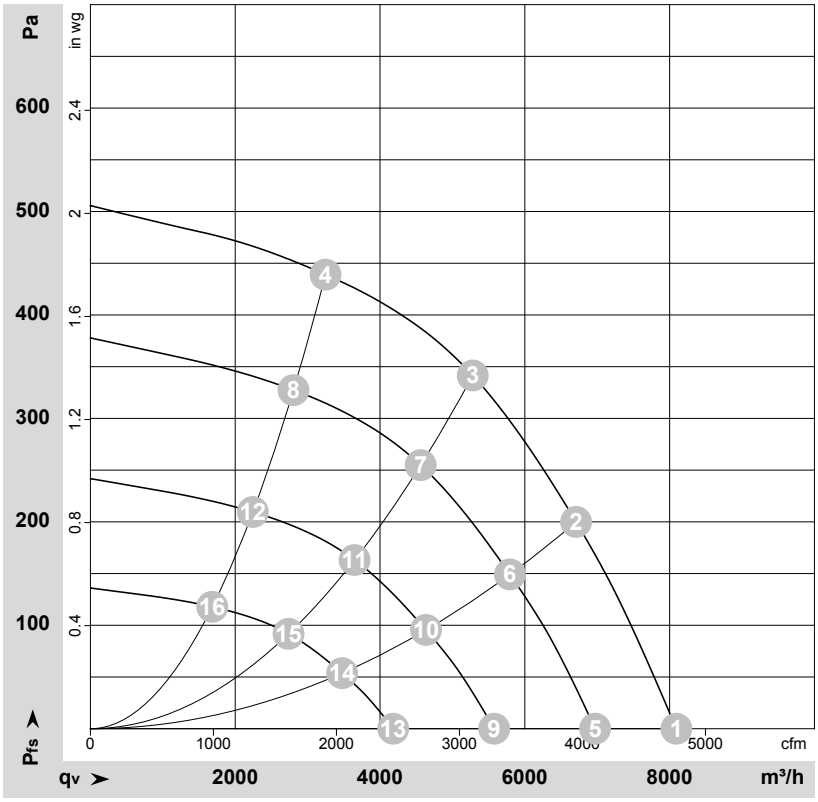
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-166752-1

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}	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	Y	230	50	1150	597	2.61	69	75	81	8095	0	4765	0.00
2	Y	230	50	1150	806	3.54	65	72	78	6710	200	3950	0.80
3	Y	230	50	1150	865	3.80	61	68	74	5280	340	3110	1.36
4	Y	230	50	1150	759	3.32	62	69	74	3250	440	1910	1.77
5	Y	230	50	1000	381	1.67	65	72	78	6970	0	4100	0.00
6	Y	230	50	1000	520	2.28	61	68	74	5795	150	3410	0.60
7	Y	230	50	1000	557	2.46	57	64	70	4560	255	2685	1.02
8	Y	230	50	1000	489	2.14	58	65	70	2805	328	1650	1.32
9	Y	230	50	800	195	0.85	59	66	72	5575	0	3280	0.00
10	Y	230	50	800	266	1.17	55	63	69	4635	96	2730	0.39
11	Y	230	50	800	285	1.26	51	59	64	3650	163	2150	0.65
12	Y	230	50	800	250	1.09	52	59	64	2245	210	1320	0.84
13	Y	230	50	600	82	0.36	52	59	65	4180	0	2460	0.00
14	Y	230	50	600	112	0.49	48	55	62	3475	54	2045	0.22
15	Y	230	50	600	120	0.53	44	51	57	2735	92	1610	0.37
16	Y	230	50	600	106	0.46	45	52	57	1685	118	990	0.47

Wired = Wiring · 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