EC centrifugal fan - RadiCal

backward-curved, single-intake

R3G500-RA25-36 ebmpapst Datasheet
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Amtsgericht (court of registration) Stuttgart · HRA 590344

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Nominal data

Type	**R3G500-RA25-36**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1700
Power consumption	W	2650
Current draw	A	4
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 Commission Regulation (EU) 327/2011

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	63.3	56
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		69.3	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	2.67
09 Air flow q_v	m^3/h	6845
09 Pressure increase p_{fs}	Pa	842
10 Speed (rpm) n	min^{-1}	1710
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-122346

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Technical description

Weight	22.8 kg
Size	500 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	7
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 mounting	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - 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
Electrical hookup	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

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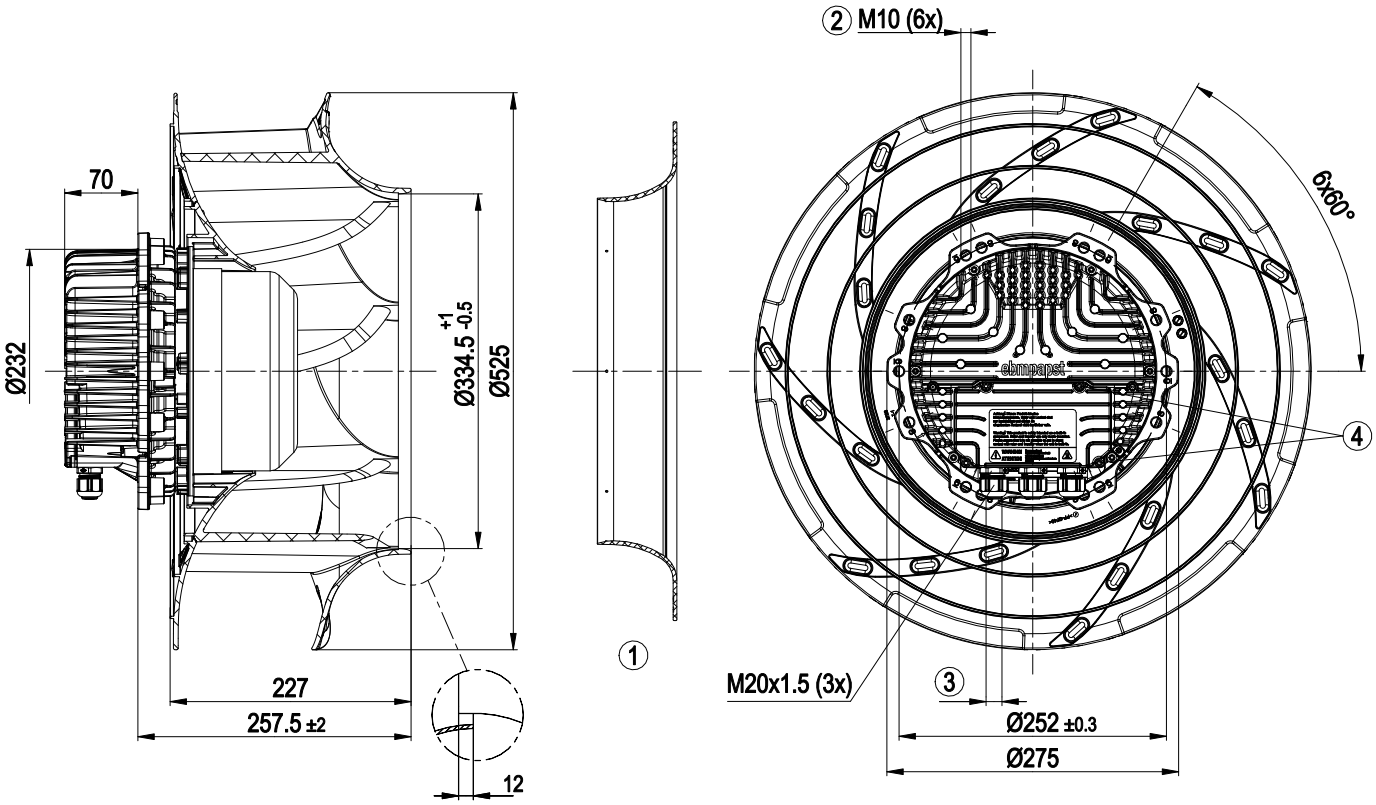
Product drawing



1	Accessory part: inlet ring 50901-2-2943 not included in scope of delivery
2	Max. clearance for screw 25 mm
3	Cable diameter: min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
4	Tightening torque 3.5 ± 0.5 Nm

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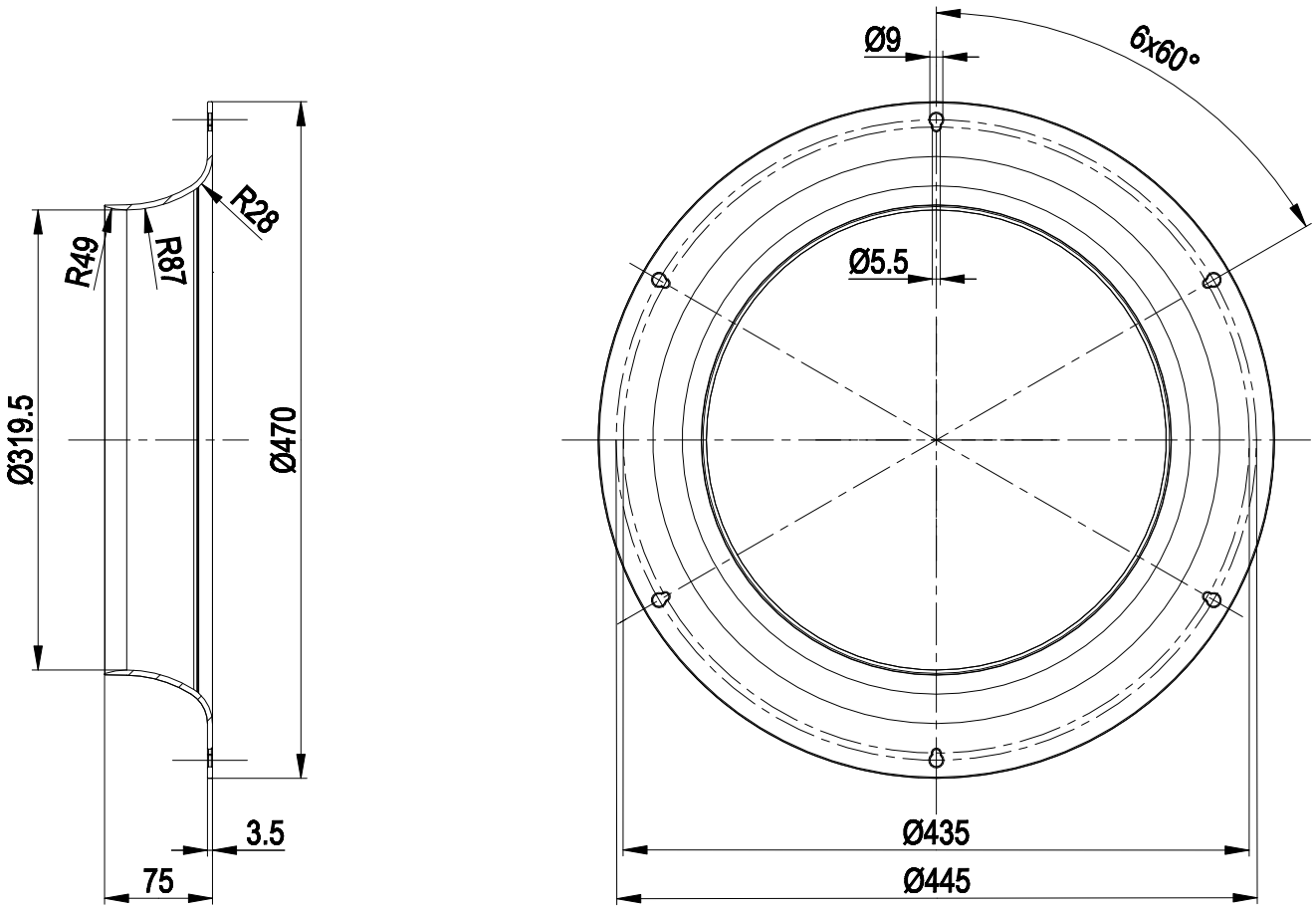
Accessory part



1	Accessory part: inlet ring 50901-2-2943

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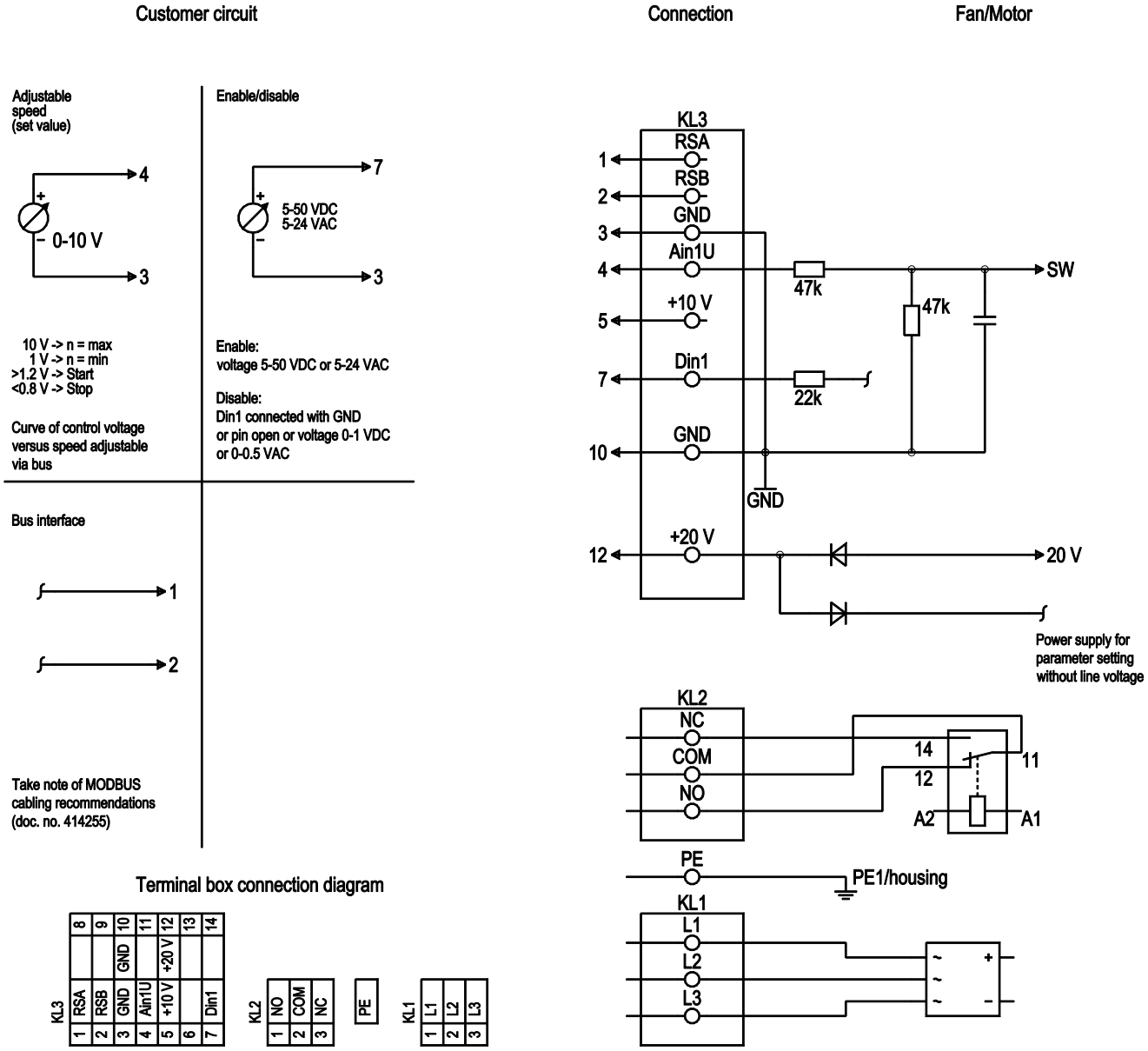
Connection diagram



No.	Conn.	Designation	Function/assignment
KL1	1	L1	Supply connection, power supply; for nominal voltage range see technical data
KL1	2	L2	Supply connection, power supply; for nominal voltage range see technical data
KL1	3	L3	Supply connection, power supply; for nominal voltage range see technical data
PE	PE	PE	Ground connection, PE connection
KL2	1	NO	Status relay, floating status contact, make for failure
KL2	2	COM	Status relay, floating status contact, changeover contact, common connection, contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
KL2	3	NC	Status relay, floating status contact, break for failure
KL3	1	RSA	Bus connection RS485, RSA, MODBUS-RTU; SELV
KL3	2	RSB	Bus connection RS485, RSB, MODBUS-RTU; SELV
KL3	3	GND	Reference ground for control interface; SELV
KL3	4	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV

No.	Conn.	Designation	Function/assignment
KL3	5	+10 V	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot); SELV
KL3	7	Din1	Digital input 1: enable electronics, enable: 5-50 VDC / 5-24 VAC disable: 0-1 VDC / 0-0.5 VAC or bridge to GND or pin open; SELV
KL3	10	GND	Reference ground for control interface; SELV
KL3	12	+24 V	Fixed voltage output 20 VDC; +20 V +25/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors); SELV or: +24 VDC input for parameter setting without line voltage

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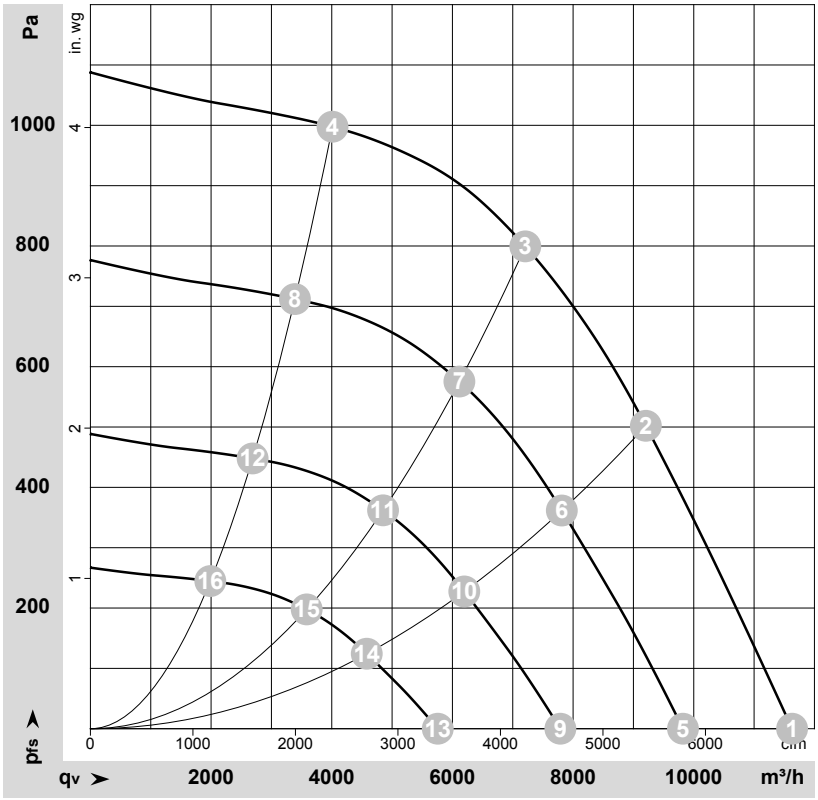
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-122346-1

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	3~	400	50	1700	1809	2.76	79	85	92	11630	0	6845	0.00
2	3~	400	50	1700	2477	3.76	74	81	87	9205	500	5420	2.01
3	3~	400	50	1700	2650	4.00	70	77	84	7210	800	4240	3.21
4	3~	400	50	1700	2232	3.41	75	82	88	4010	1000	2360	4.01
5	3~	400	50	1450	1089	1.66	74	81	88	9820	0	5780	0.00
6	3~	400	50	1450	1514	2.30	70	76	83	7815	362	4600	1.45
7	3~	400	50	1450	1632	2.48	66	73	80	6115	575	3600	2.31
8	3~	400	50	1450	1345	2.06	71	78	84	3390	713	1995	2.86
9	3~	400	50	1150	543	0.83	69	75	82	7790	0	4585	0.00
10	3~	400	50	1150	755	1.15	64	71	77	6195	228	3645	0.92
11	3~	400	50	1150	814	1.24	60	67	74	4850	362	2855	1.45
12	3~	400	50	1150	671	1.03	65	72	78	2690	448	1580	1.80
13	3~	400	50	850	219	0.34	61	68	75	5755	0	3390	0.00
14	3~	400	50	850	305	0.46	56	63	70	4580	124	2695	0.50
15	3~	400	50	850	329	0.50	53	60	66	3585	198	2110	0.79
16	3~	400	50	850	271	0.41	57	65	70	1985	245	1170	0.98

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 · q_V = Air flow · p_{fs} = Pressure increase