EC centrifugal fan - RadiPac

backward curved, single inlet

R3G250-AY15-K1 ebmpapst Datasheet
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County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
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Nominal data

Type	**R3G250-AY15-K1**
Motor	**M3G084-GF**

Phase		3~
Nominal voltage	VAC	200
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	3700
Power input	W	840
Current draw	A	2.8
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	65

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data in accordance with ecodesign regulation EU 327/2011 (EN 17166)

		Actual	Request 2015
01 Overall efficiency η_{es}	%	63.6	50.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		74.9	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.83
09 Air flow q_v	m^3/h	2000
09 Pressure increase p_{fs}	Pa	876
10 Speed (rpm) n	min^{-1}	3685
11 Specific ratio*		1.01

Data definition with optimum efficiency.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-159524

The indicated efficiency values for obtaining conformity with the Ecodesign Directive EU 327/2011 were achieved with defined air conduction components (e.g. inlet nozzles).
The dimensions are to be requested from ebm-papst. If other air guide geometries are used on the installation side, the ebm-papst evaluation loses its validity/conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2(2a) (motors completely integrated into a product).

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Technical features

Mass	6.7 kg
Size	250 mm
Motor size	84
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP54
Insulation class	"B"
Humidity (F) / environmental protection class (H)	H1
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - External 24 V input (programming) - Alarm relay - Integrated PID controller - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical connection	Terminal box
Motor protection	Thermal overload protector (TOP) wired internally
Safety classification	I; If a protective earth is connected by the customer This component to be built-in can have several local protection class ratings. The specification refers to the basic design of this component. The final protection class is based on the intended installation and connection of the component.
Product conforming to standard	EN 61800-5-1; CE
Approval	CSA C22.2 no. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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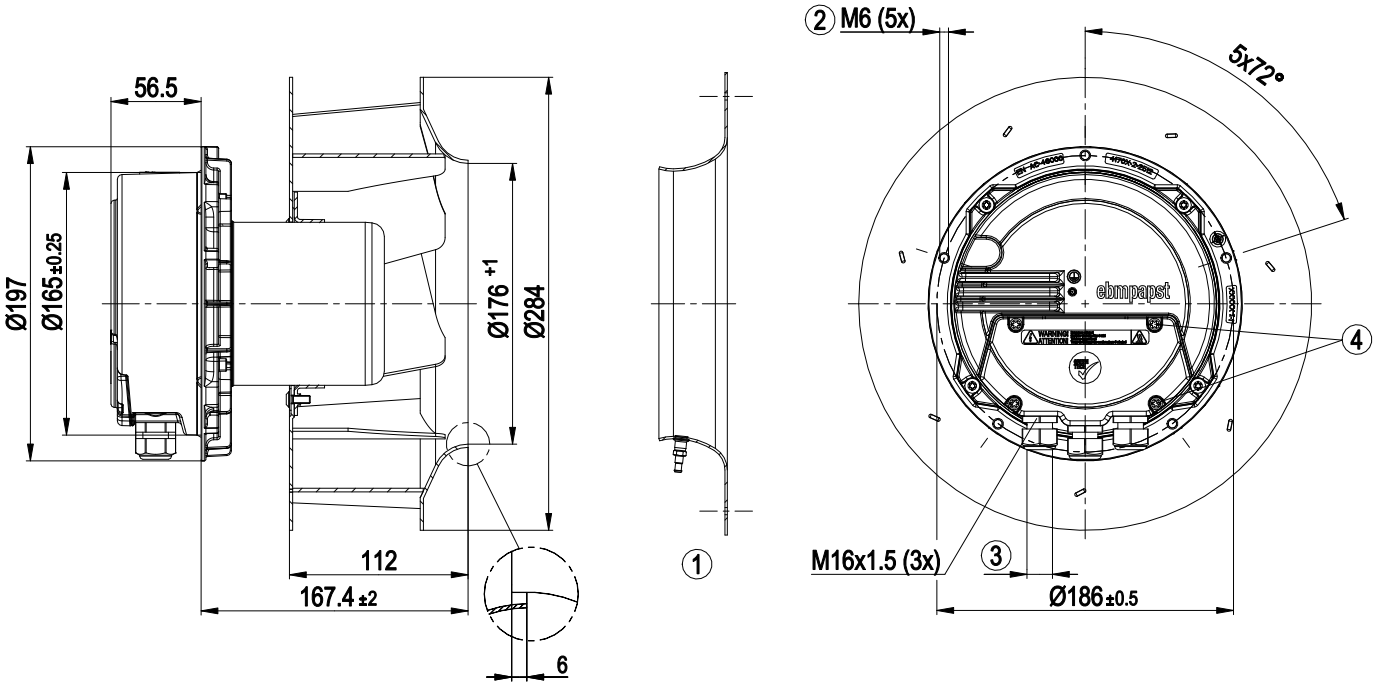
Product drawing



1	Accessory part: inlet nozzle 25075-2-4013 with a pressure tap (k-factor: 70) not included in scope of delivery
2	Depth of screw max. 16 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2.5±0.4 Nm
4	Tightening torque 3.5±0.5 Nm

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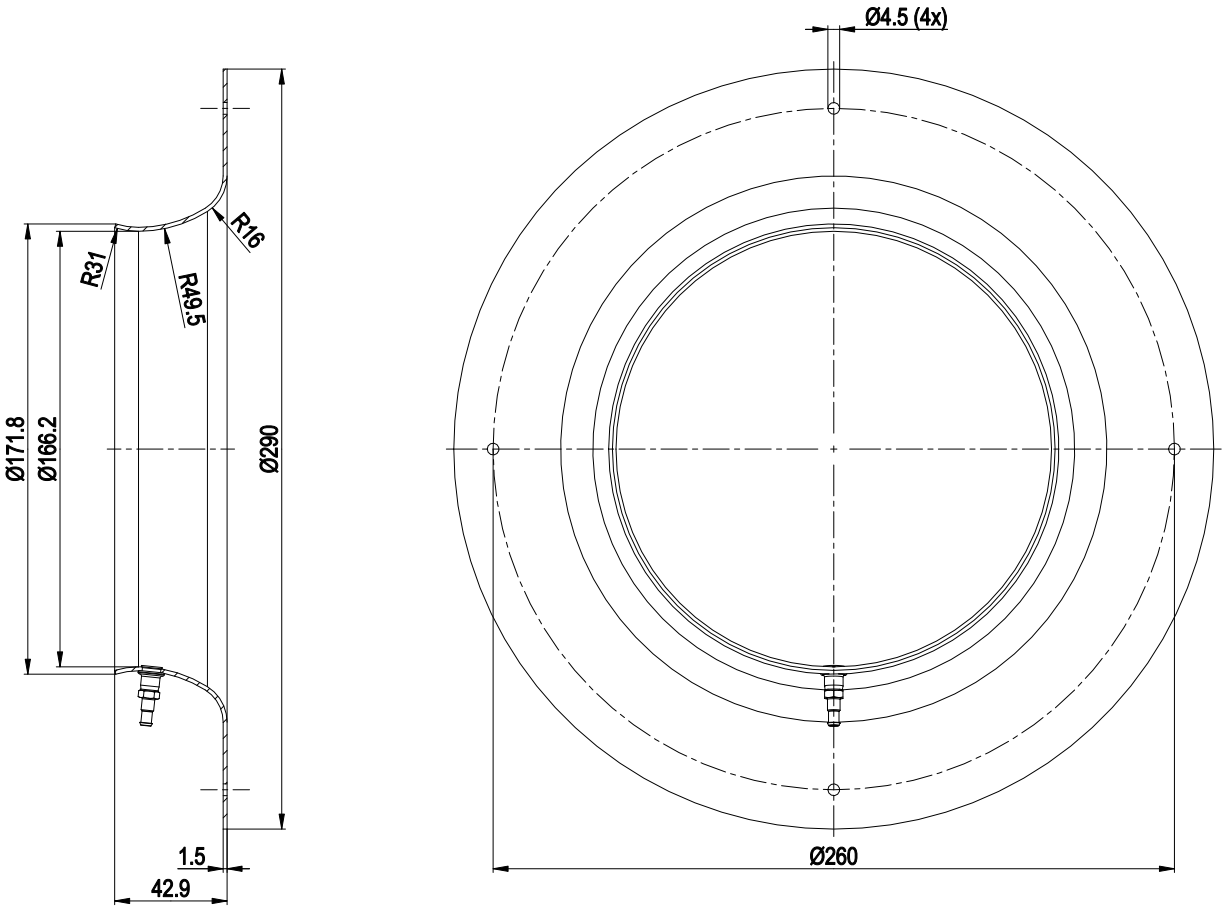
Accessory part



Inlet nozzle 25075-2-4013 with pressure tap not included in scope of delivery

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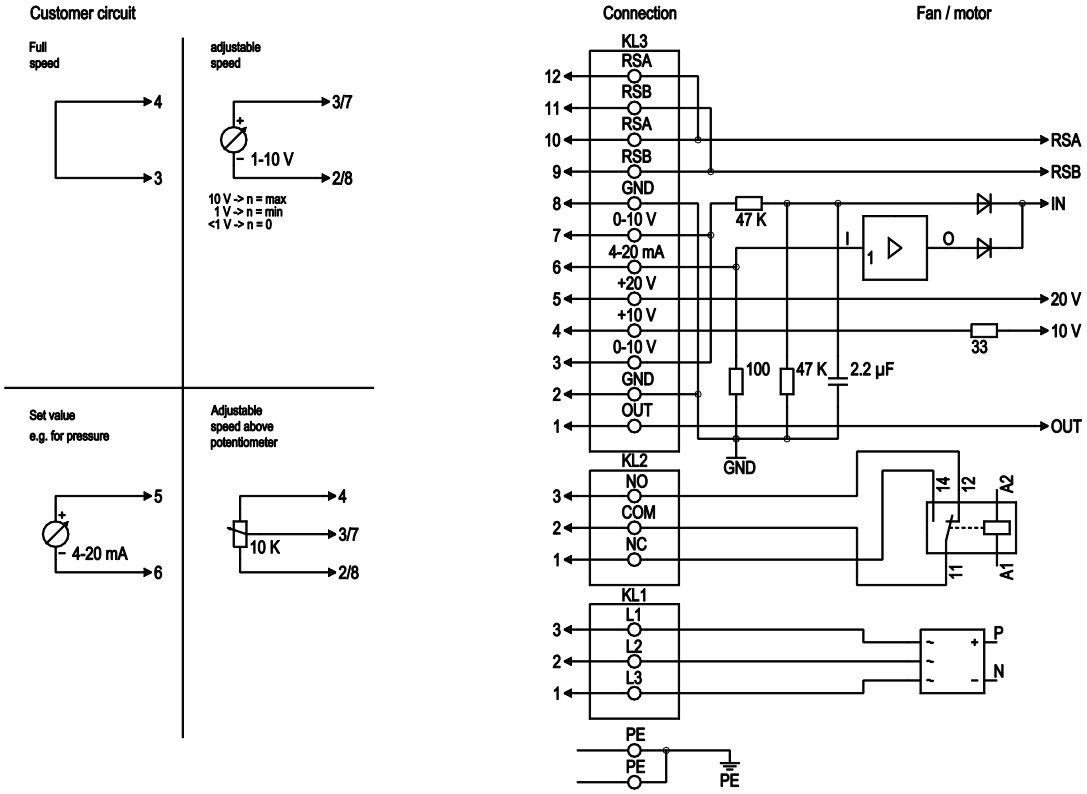
Connection screen



No.	Conn.	Designation	Function / assignment
PE		PE	Protective earth connection
KL1	1, 2, 3	L1, L2, L3	Supply voltage, voltage range (see type plate), 50/60 Hz
KL2	1	NC	Floating status contact, break with error
KL2	2	COM	Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
KL2	3	NO	Floating status contact, close with error
KL3	1	OUT	Analogue output, 0-10 VDC, max. 3 mA, SELV, Output of the actual motor duty cycle (PWM): 1 V corresponds to 10% PWM, 10 V correspond to 100% PWM.
KL3	2, 8	GND	Signal ground for control interface, SELV
KL3	3, 7	0-10 V	Set value / actual sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV
KL3	4	+10 V	Voltage output 10 VDC (+/-3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV
KL3	5	+20 V	Voltage output 20 VDC (+25%/-10%), max. 50 mA, supply voltage for external devices (e.g. sensors), SELV
KL3	6	4-20 mA	Set value / actual sensor value input 4-20 mA, impedance 100 Ω, only as alternative to 0-10 V input, SELV
KL3	9, 11	RSB	RS485 interface for MODBUS, RSB
KL3	10, 12	RSA	RS485 interface for MODBUS, RSA

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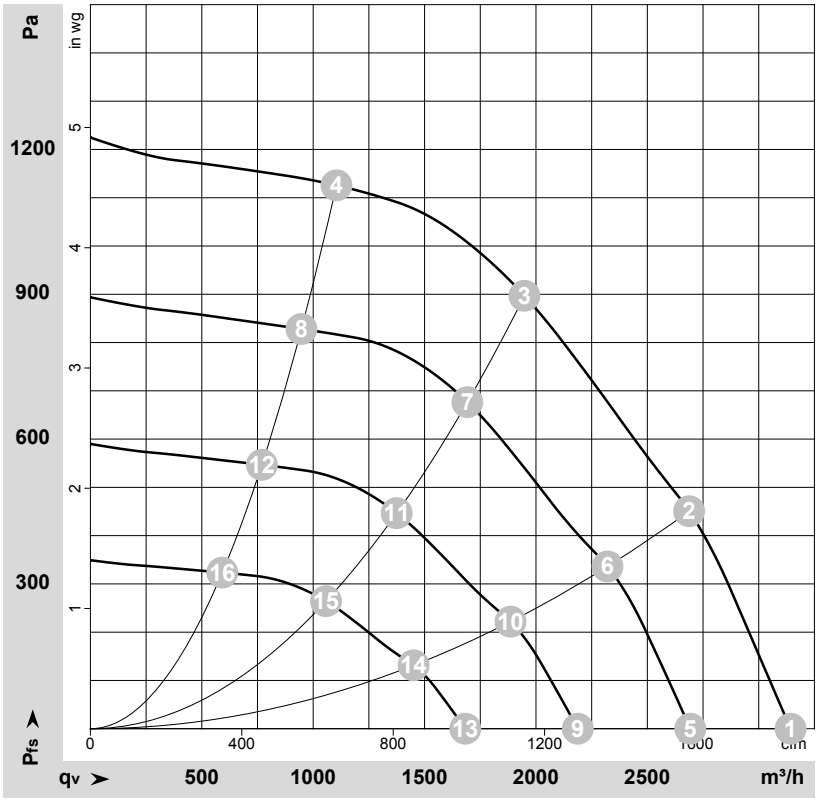
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-159524-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	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	200	50	3700	668	2.39	77	85	91	3145	0	1850	0.00
2	200	50	3700	793	2.71	74	83	88	2690	450	1580	1.81
3	200	50	3700	840	2.80	71	79	84	1950	900	1145	3.61
4	200	50	3700	757	2.64	77	85	90	1105	1125	650	4.52
5	200	50	3200	420	1.51	73	81	87	2695	0	1585	0.00
6	200	50	3200	511	1.75	70	79	84	2320	339	1365	1.36
7	200	50	3200	550	1.88	67	76	80	1690	678	995	2.72
8	200	50	3200	478	1.67	73	81	87	945	828	555	3.32
9	200	50	2600	225	0.81	68	76	82	2190	0	1290	0.00
10	200	50	2600	274	0.94	65	74	79	1885	224	1110	0.90
11	200	50	2600	295	1.01	62	70	75	1375	448	810	1.80
12	200	50	2600	256	0.89	68	76	81	770	547	455	2.20
13	200	50	2000	102	0.37	61	69	75	1685	0	990	0.00
14	200	50	2000	125	0.43	59	67	72	1450	132	855	0.53
15	200	50	2000	134	0.46	55	64	68	1060	265	625	1.06
16	200	50	2000	117	0.41	61	69	75	590	323	350	1.30

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · LwA_{out} = Sound power level outlet side
q_V = Air flow · p_{fs} = Pressure increase