R3G450-AZ30-09

EC centrifugal fan - RadiPac

backward curved, single inlet

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Nominal data

Type	**R3G450-AZ30-09**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	2750
Power input	W	5370
Current draw	A	8.3
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

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

		Actual	Request 2015
01 Overall efficiency η_{es}	%	64.4	59.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		67.2	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	5.37
09 Air flow q_v	m^3/h	8040
09 Pressure increase p_{fs}	Pa	1492
10 Speed (rpm) n	min^{-1}	2750
11 Specific ratio*		1.02

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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

LU-122139

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Technical features

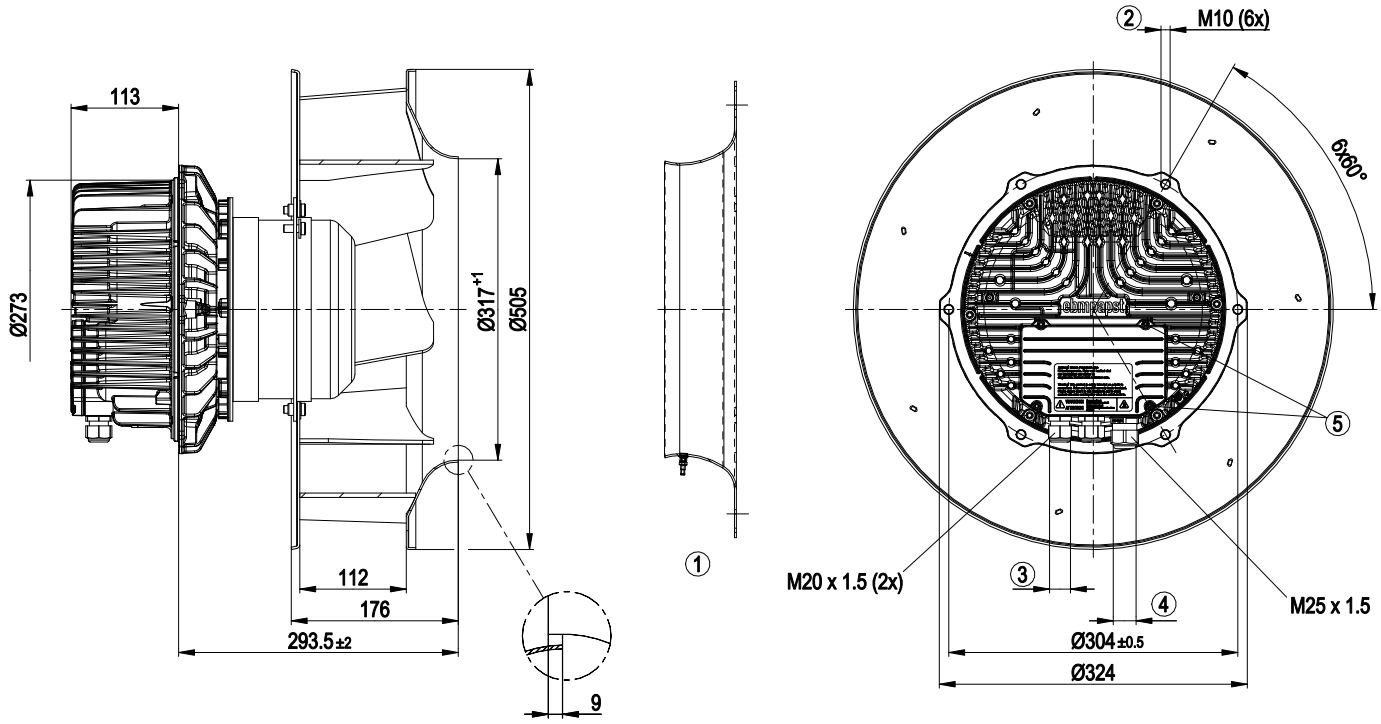
Mass	31.1 kg
Size	450 mm
Motor size	150
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP55
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H1
Note ambient temperature	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications) we recommend our fan version with special low-temperature bearings.
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
Technical features	- Output 10 VDC, max. 10 mA - Output for slave 0-10 V - External 24 V input (programming) - External release input - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC - 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	Reverse polarity and locked-rotor protection
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	CSA C22.2 no. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

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Product drawing



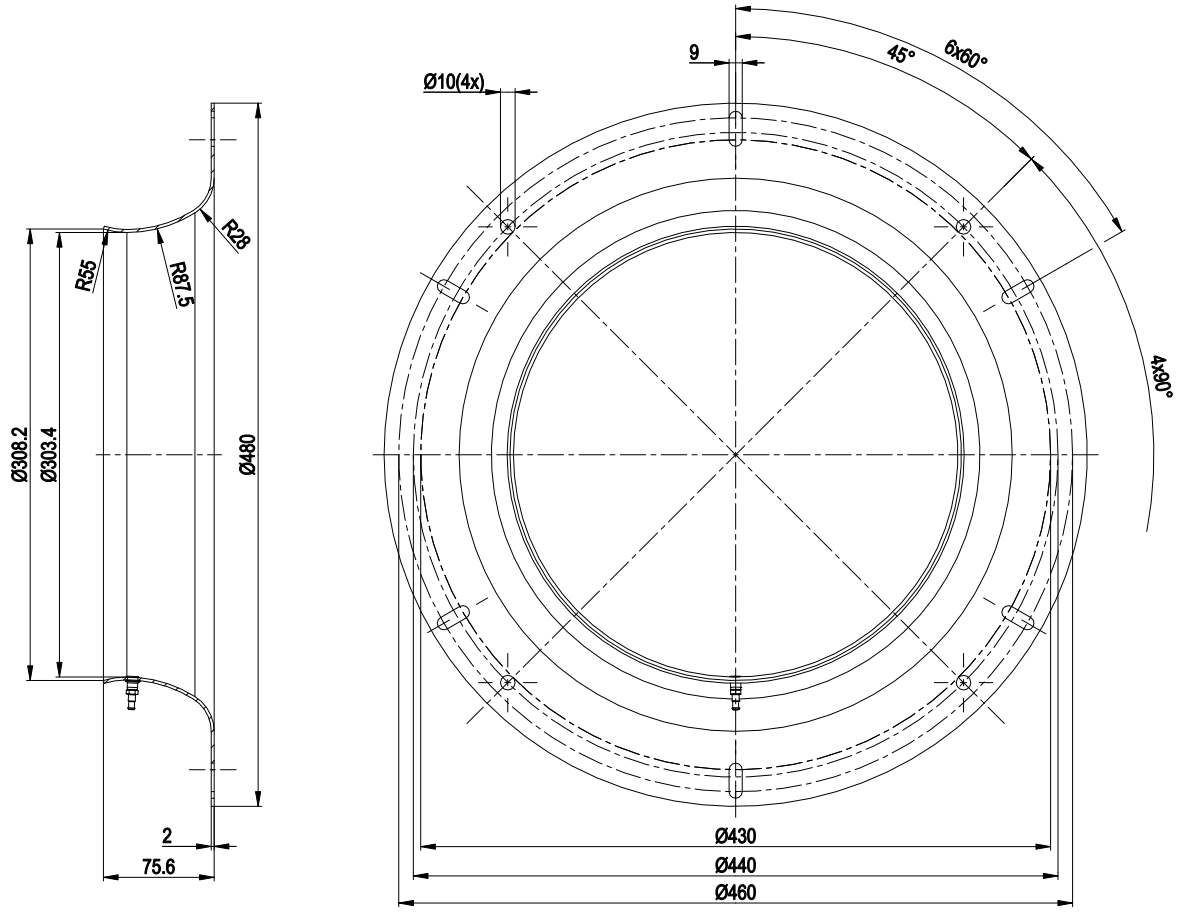
1	Accessory part: Inlet nozzle 45075-2-4013 with pressure tap (k-factor: 240) not included in scope of delivery
2	Depth of screw max. 20 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
4	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6±0.9 Nm
5	Tightening torque 3.5±0.5 Nm

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Accessory part



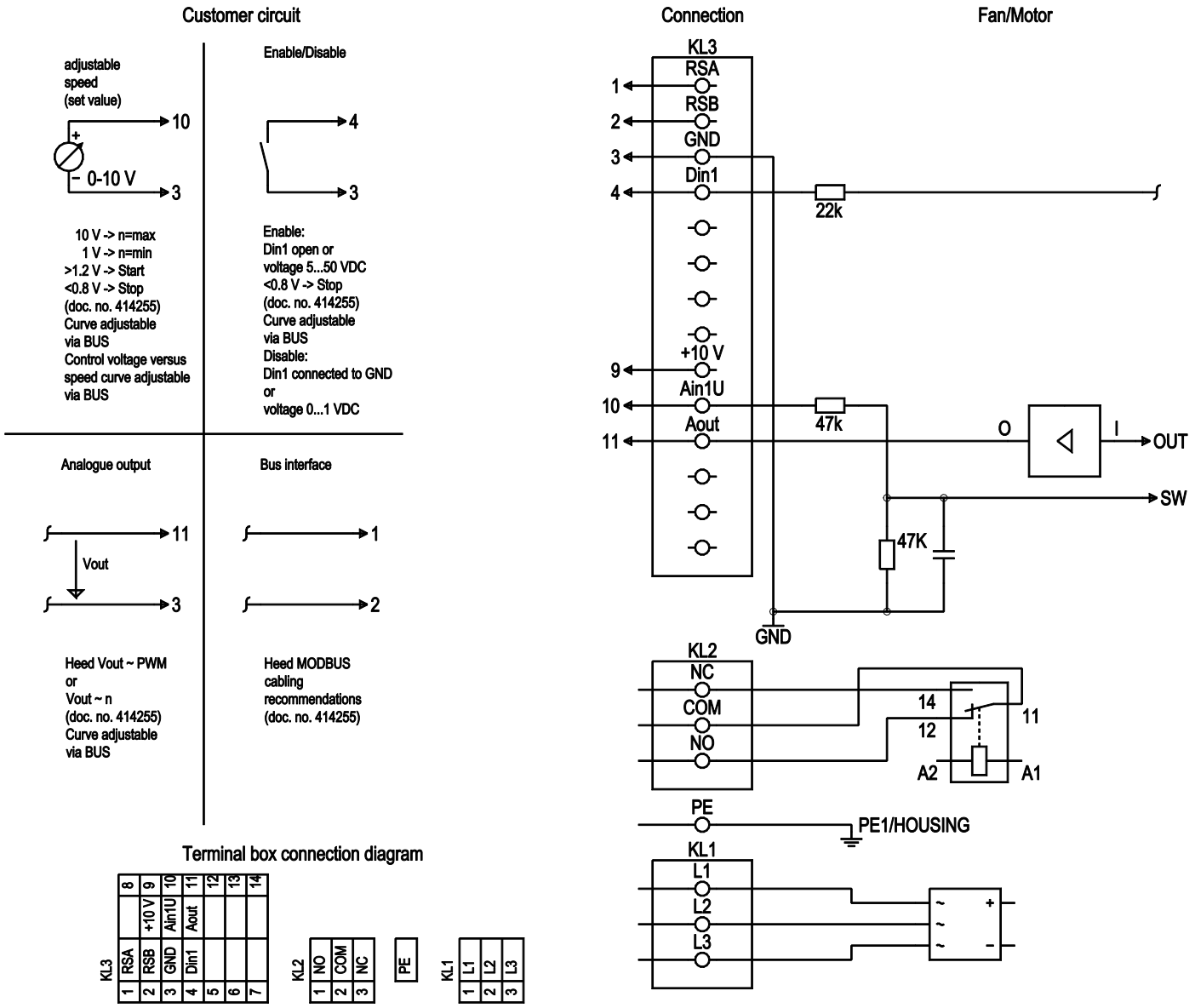
-	inlet nozzle 45075-2-4013 with a pressure tap (k-factor: 240) not included in scope of delivery

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Connection screen



No.	Conn.	Designation	Function / assignment
KL 1	1, 2, 3	L1, L2, L3	Power supply, phase, see type plate for voltage range
PE	PE	PE	Protective earth
KL2	1	NO	Status relay, floating status contact, option 1: Make for failure, option 2: Make for error message from running monitor
KL2	2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
KL2	3	NC	Status relay, floating status contact, option 1: Break for failure, option 2: Break for error message from running monitor
KL 3	1	RSA	RS-485 interface for MODBUS, RSA; SELV
KL 3	2	RSB	RS-485 interface for MODBUS, RSB; SELV
KL 3	3	GND	Reference earth for control interface; SELV

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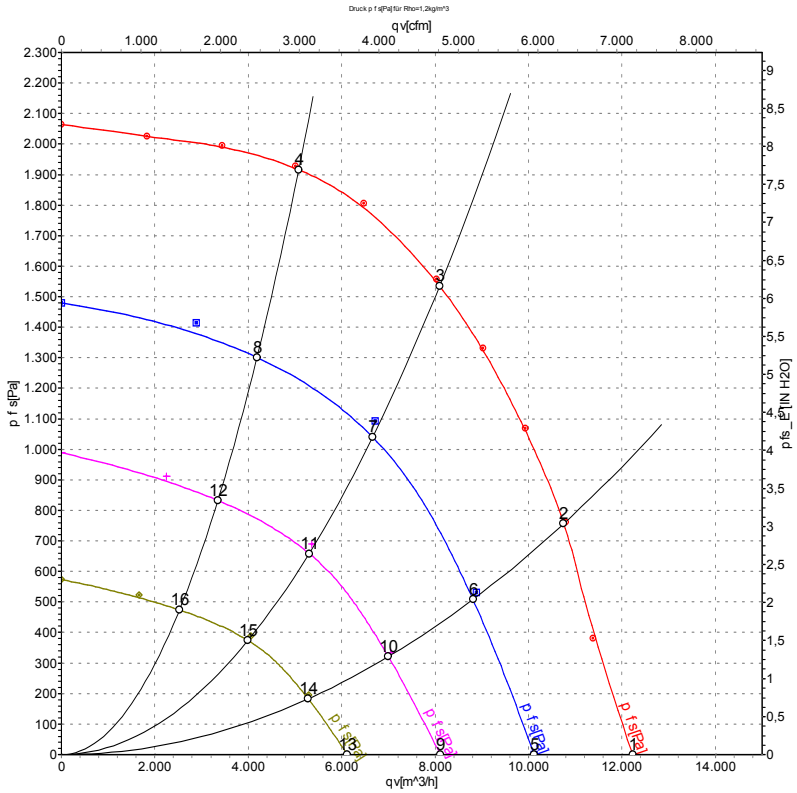
No.	Conn.	Designation	Function / assignment
KL 3	4	Din1	Digital input 1: Enabling of electronics, Enabling: Pin open or applied voltage 5-50 VDC Disabling: Bridge to GND or applied voltage <1 VDC Reset function: Triggers software reset after a level change to <1 VDC; SELV
KL 3	-	-	-
KL 3	-	-	-
KL3	-	-	-
KL3	-	-	-
KL 3	9	10 V / max. 10 mA	Voltage output, power supply for external devices (e.g. potentiometers), SELV
KL 3	10	Ain1 U	Analogue input 1, set value: 0-10 V, Ri = 100 kΩ, parametrizable curve; SELV
KL 3	11	Aout	Analogue output 0-10 VDC, max. 5 mA, output of the current motor level control coefficient / motor speed parametrisable curve; SELV
KL 3	-	-	-
KL 3	-	-	-
KL 3	-	-	-

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Charts: Air flow 50 Hz



Measurement: LU-122139-1
Measurement: LU-122147-1
Measurement: LU-122148-1
Measurement: LU-122149-1

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	400	50	2750	3229	4.98	92	100	105	12230	0	7200	0.00
2	400	50	2750	4492	6.92	86	93	99	10750	775	6325	3.11
3	400	50	2750	5370	8.30	82	89	95	8095	1550	4765	6.22
4	400	50	2750	5098	7.82	85	94	98	5075	1925	2990	7.73
5	400	50	2280	1781	2.78	89	97	101	10120	0	5955	0.00
6	400	50	2280	2516	3.90	81	88	94	8810	551	5185	2.21
7	400	50	2280	3078	4.76	76	83	91	6665	1098	3920	4.41
8	400	50	2280	2653	4.12	81	88	94	4185	1306	2465	5.24
9	400	50	1815	987	1.60	84	91	95	8110	0	4775	0.00
10	400	50	1815	1315	2.09	74	82	87	7000	342	4120	1.37
11	400	50	1815	1587	2.45	71	77	85	5300	695	3120	2.79
12	400	50	1815	1395	2.19	74	81	87	3345	834	1970	3.35
13	400	50	1375	488	0.95	75	82	87	6120	0	3600	0.00
14	400	50	1375	607	1.07	68	74	80	5280	196	3110	0.79
15	400	50	1375	717	1.21	64	72	77	3995	393	2350	1.58
16	400	50	1375	646	1.13	67	74	79	2525	474	1485	1.90

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

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