R3G310-AX52-90

EC centrifugal fan

backward curved, single inlet

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Nominal data

Type	**R3G310-AX52-90**
Motor	**M3G112-EA**

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}	2580
Power input	W	1000
Current draw	A	1.63
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	55

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

Data according to ErP directive

		Actual	Request 2015
01 Overall efficiency η_{es}	%	63.3	51.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		73.9	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.98
09 Air flow q_v	m^3/h	3050
09 Pressure increase p_{fs}	Pa	681
10 Speed (rpm) n	min^{-1}	2590
11 Specific ratio*		1.01

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-106400

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Technical features

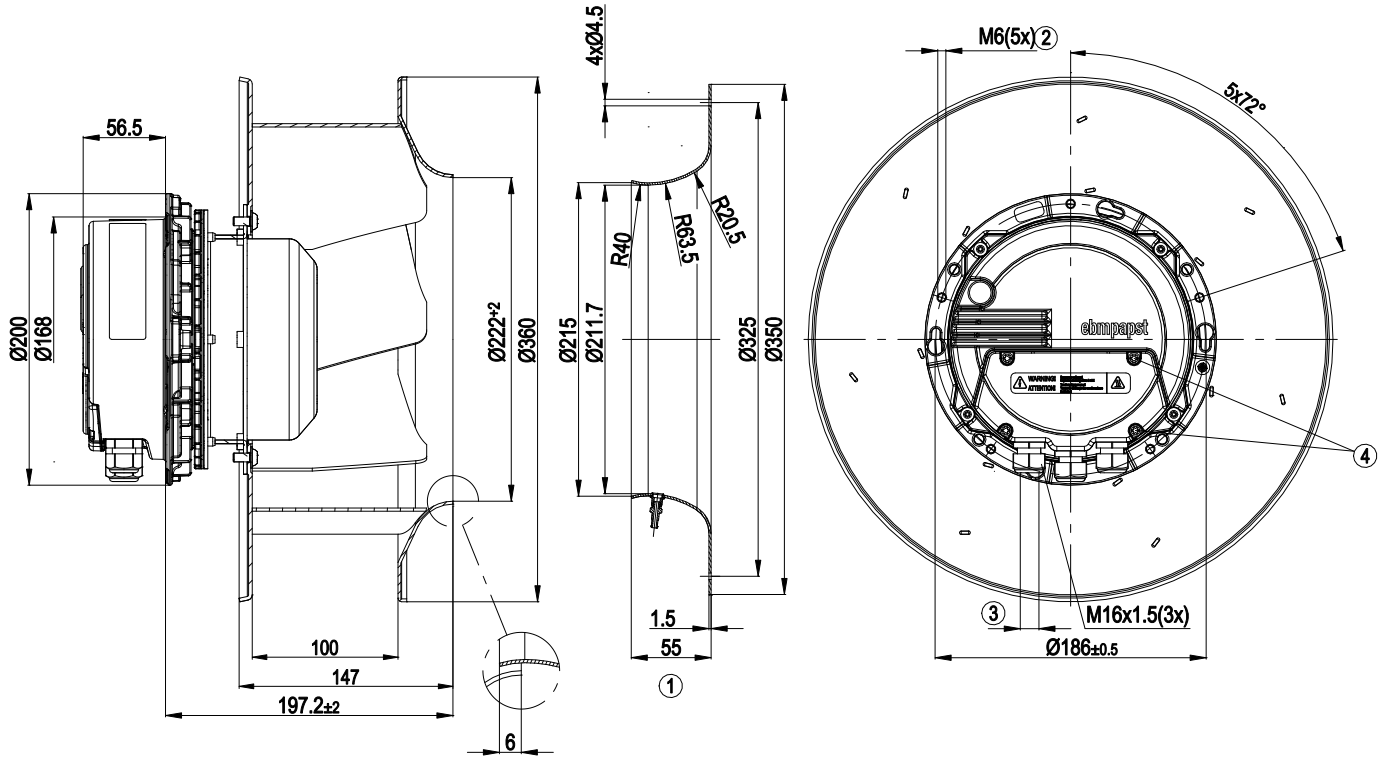
Mass	9 kg
Size	310 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"B"
Humidity (F)/environmental protection class (H)	F4-1
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
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
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
EMC interference immunity	Acc. to EN 61000-6-2
EMC harmonics	Acc. to EN 61000-3-2/3
EMC interference emission	Acc. to EN 61000-6-4 (industrial environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical leads	Via terminal box
Motor protection	Thermal overload protector (TOP) wired internally
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	CCC; UL 1004-7 + 60730; EAC

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Product drawing



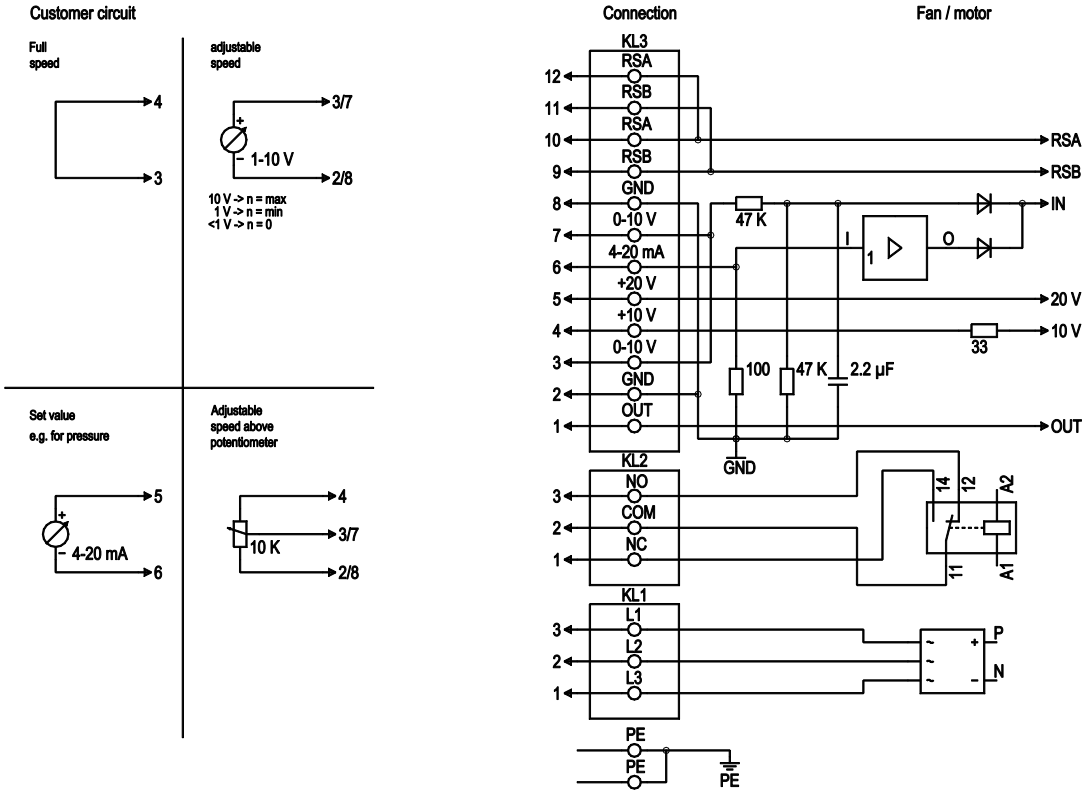
1	Accessory part: Inlet nozzle with bleeder connection for pressure relief 31575-2-4013 (k-factor: 116), not included in the standard scope of delivery
2	Depth of screw max. 16 mm
3	Cable diameter: min. 4 mm, max. 10 mm; tightening torque: 2.5±0.4 Nm
4	Tightening torque 3.5±0.5 Nm

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Connection screen



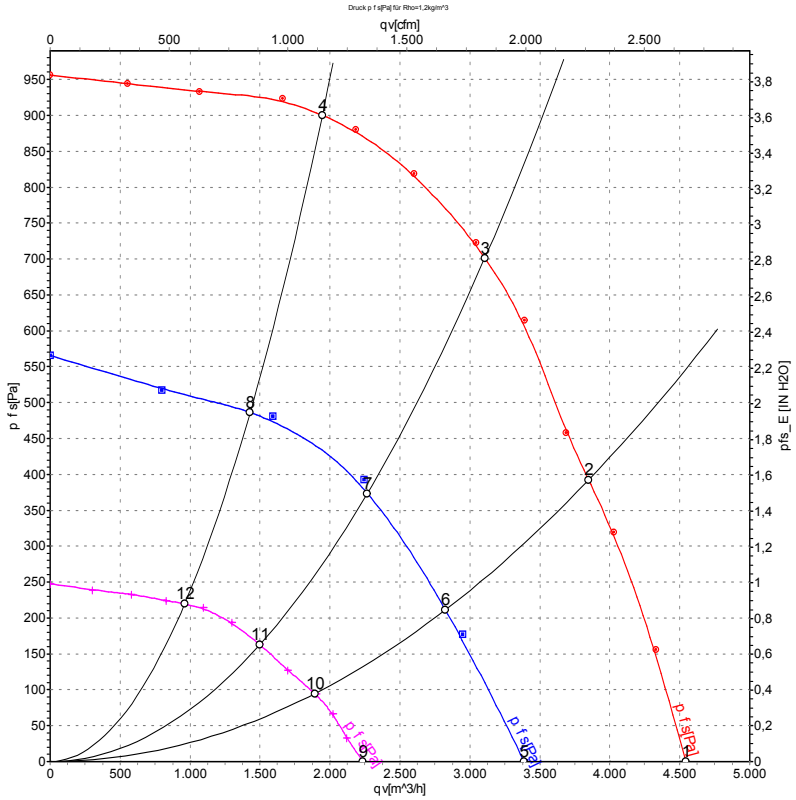
No.	Conn.	Designation	Function / assignment
PE		PE	Protective earth connection
KL1	1, 2, 3	L1, L2, L3	Supply voltage, voltage range (see type plate), 50/60 Hz
KL2	1	NC	Floating status contact, break with error
KL2	2	COM	Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, 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



Measurement: LU-106400-1
Measurement: LU-108542-1
Measurement: LU-106401-1

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	inH2O
1	400	50	2580	669	1.17	82	88	92	4540	0	2675	0.00
2	400	50	2580	862	1.46	75	81	87	3850	400	2265	1.61
3	400	50	2580	1000	1.63	70	77	83	3105	700	1830	2.81
4	400	50	2580	907	1.53	72	79	85	1945	900	1145	3.61
5	400	50	1930	288	0.57	73	80	84	3385	0	1995	0.00
6	400	50	1910	348	0.69	67	74	79	2825	216	1665	0.87
7	400	50	1900	396	0.77	63	70	76	2265	386	1335	1.55
8	400	50	1905	360	0.72	65	71	77	1430	489	840	1.96
9	400	50	1305	123	0.28	65	72	76	2235	0	1315	0.00
10	400	50	1305	144	0.33	60	67	72	1890	96	1115	0.39
11	400	50	1305	151	0.34	55	62	68	1495	164	880	0.66
12	400	50	1300	151	0.34	56	62	69	960	220	565	0.88

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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