R3G400-AK53-21

EC centrifugal fan

backward-curved, single-intake

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Nominal data

Type	**R3G400-AK53-21**
Motor	**M3G112-EA**

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}	1880
Power consumption	W	1000
Current draw	A	1.6
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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	58.9	51.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		69.4	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.99
09 Air flow q_v	m^3/h	3505
09 Pressure increase p_{fs}	Pa	554
10 Speed (rpm) n	min^{-1}	1895
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-107842

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Technical description

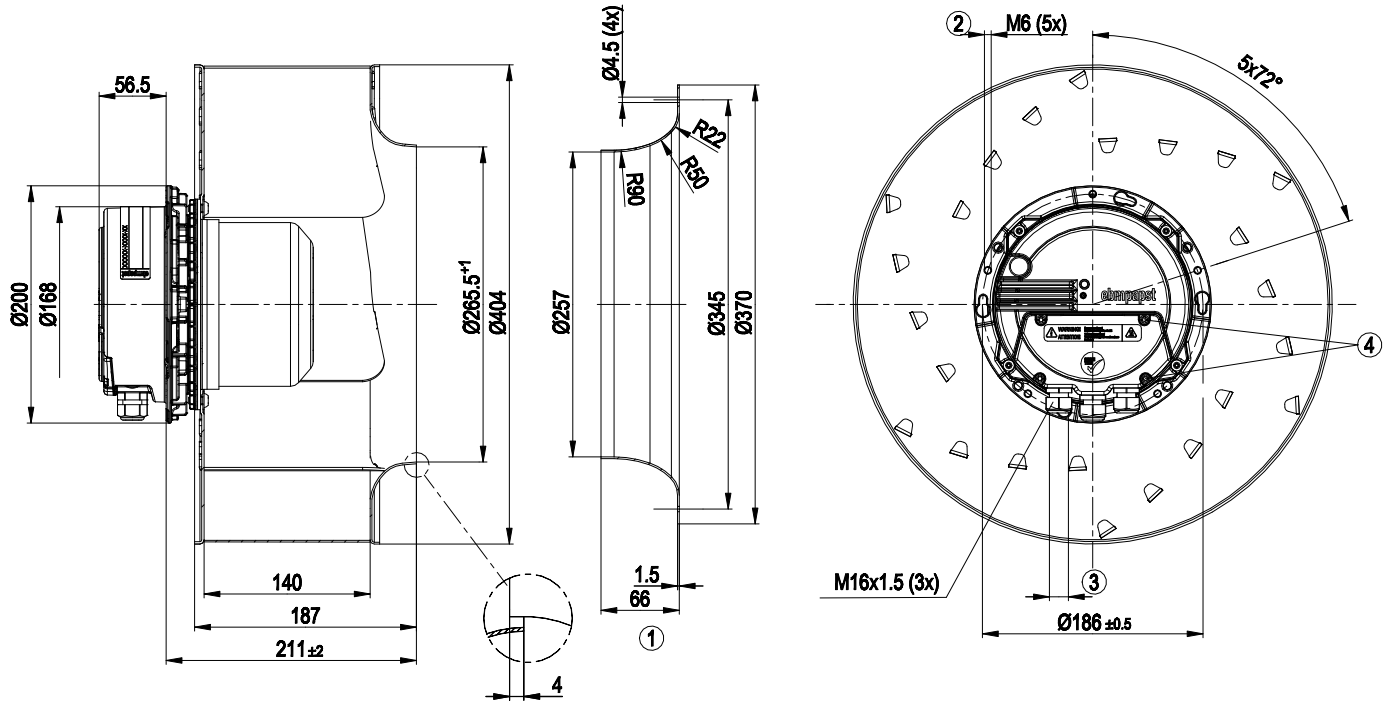
Weight	8.9 kg
Size	400 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) 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	Any
Condensation drainage holes	On rotor and stator sides
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 - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 ebmBUS - Soft start - Control input 0-10 VDC / PWM - 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 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	CE
Approval	VDE; CSA C22.2 No. 77 + C22.2 No. 14; UL 1004-3 + UL 508C

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Product drawing



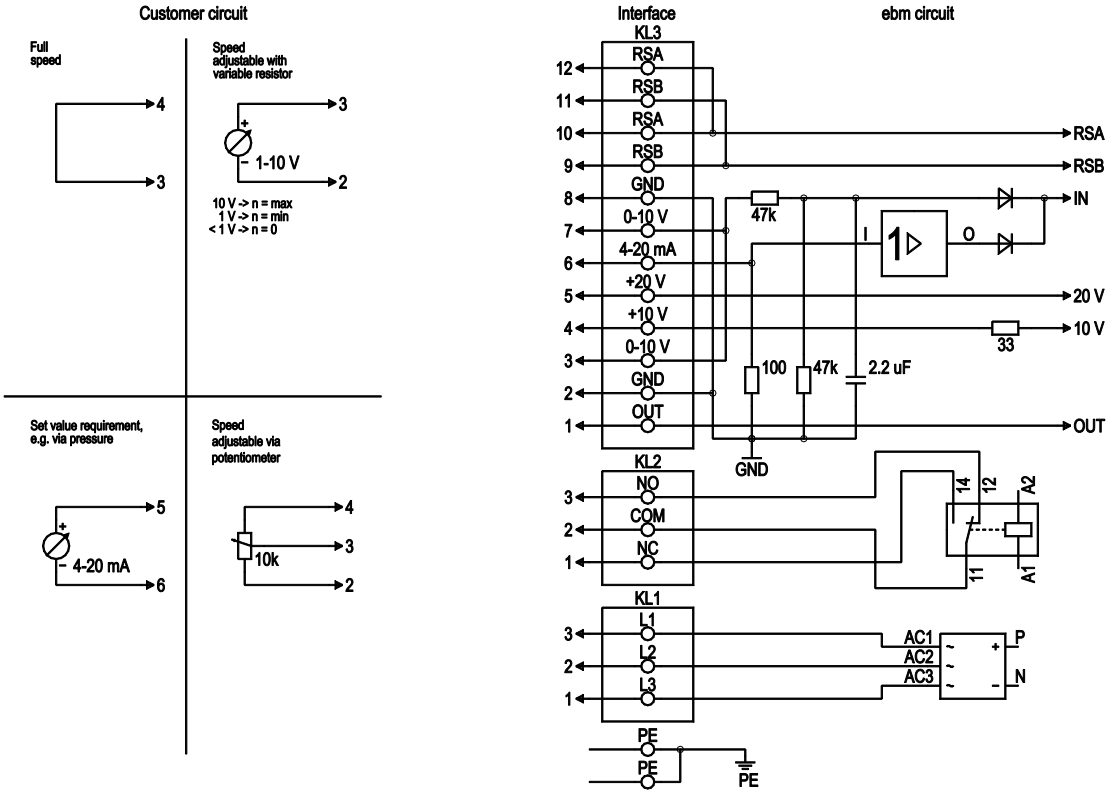
1	Accessory part: inlet ring 54476-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable diameter min. 4 mm, max. 10 mm; tightening torque 2.5±0.4 Nm
4	Tightening torque 3.5 ± 0.5 Nm

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Connection diagram



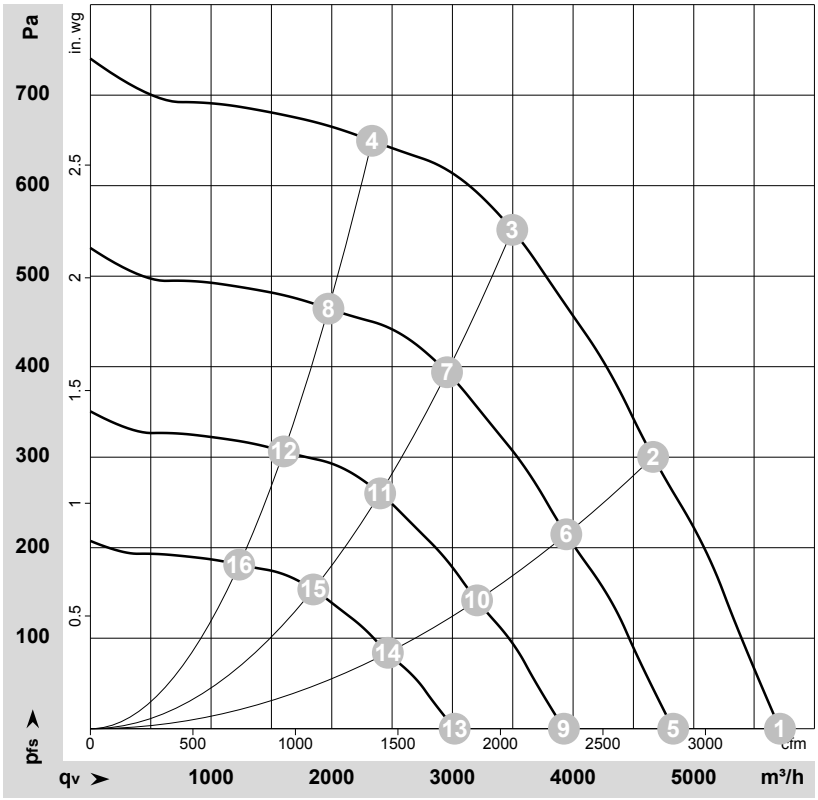
No.	Conn.	Designation	Function/assignment
PE		PE	Protective earth terminal
KL1	1, 2, 3	L1, L2, L3	Power supply 50/60 Hz
KL2	1	NC	Floating status contact, break for failure
KL2	2	COM	Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
KL2	3	NO	Floating status contact, make for failure
KL3	1	OUT	Tach output; 1 pulse/revolution, open collector; Ri=680 Ω,
KL3	2, 8	GND	Reference ground for control interface, SELV
KL3	3, 7	0-10 V	Use control input/current 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, power supply for external devices (e.g. sensors), SELV
KL3	6	4-20 mA	Use control input/current 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 ebmBus, RSB, SELV
KL3	10, 12	RSA	RS485 interface for ebmBus, RSA, SELV

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Curves: Air performance 50 Hz



ρ = 1.187 kg/m³ ± 2 %

Measurement: LU-107842-1

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	1880	762	1.27	76	82	88	5715	0	3365	0.00
2	3~	400	50	1880	874	1.43	73	80	86	4665	300	2745	1.20
3	3~	400	50	1880	1000	1.60	71	77	83	3495	550	2060	2.21
4	3~	400	50	1880	880	1.43	74	81	85	2335	650	1375	2.61
5	3~	400	50	1600	460	0.77	72	78	84	4830	0	2845	0.00
6	3~	400	50	1600	528	0.86	69	76	82	3945	213	2320	0.86
7	3~	400	50	1600	603	0.94	67	73	79	2955	396	1740	1.59
8	3~	400	50	1600	531	0.86	69	76	81	1975	464	1160	1.86
9	3~	400	50	1300	247	0.41	66	73	78	3925	0	2310	0.00
10	3~	400	50	1300	283	0.46	64	70	76	3205	141	1885	0.57
11	3~	400	50	1300	324	0.50	61	68	74	2400	262	1415	1.05
12	3~	400	50	1300	285	0.46	64	71	76	1605	306	945	1.23
13	3~	400	50	1000	112	0.19	60	66	72	3020	0	1775	0.00
14	3~	400	50	1000	129	0.21	57	64	70	2465	83	1450	0.33
15	3~	400	50	1000	147	0.23	55	61	67	1845	155	1085	0.62
16	3~	400	50	1000	130	0.21	58	65	69	1235	181	725	0.73

Wired = Wiring · U = Voltage · 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

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