R3G630-RB21-05

Emerson

EC centrifugal fan - RadiCal

backward-curved, single-intake

ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G630-RB21-05**
Motor	**M3G150-IF**

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}	1300
Power consumption	W	2700
Current draw	A	4.1
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	55

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	65.7	56.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		71.6	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	2.76
09 Air flow q_v	m^3/h	11165
09 Pressure increase p_{fs}	Pa	553
10 Speed (rpm) n	min^{-1}	1305
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-137530

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Technical description

Weight	31.5 kg
Fan size	630 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
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
Condensation drainage holes	On rotor side
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 - Operation and alarm display - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - 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 interference emission	According to EN 61000-6-4 (industrial environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Leakage current (measuring circuit according to IEC 60990, Fig. 4, TN system); normal operation	<= 3.5 mA
Leakage current (measuring circuit according to IEC 60990, Fig. 4, TN system); phase failure	<= 3.5 mA

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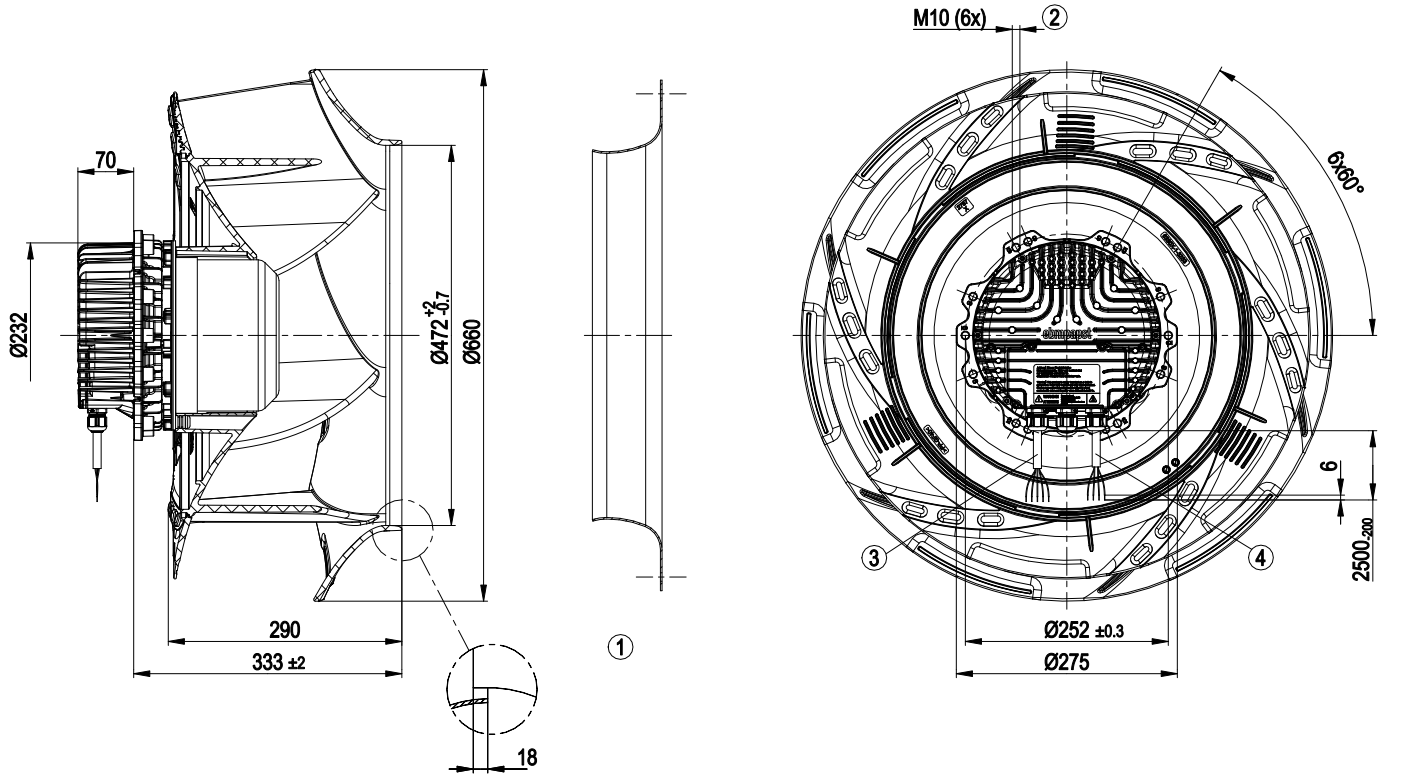
Leakage current (measured with TrueRMS ammeter); normal operation	< 6 mA
Leakage current (measured with TrueRMS ammeter); phase failure	< 6 mA
Motor protection	Reverse polarity and locked-rotor protection
With cable	Lateral
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; C22.2 No.77 + CAN/CSA-E60730-1

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Product drawing



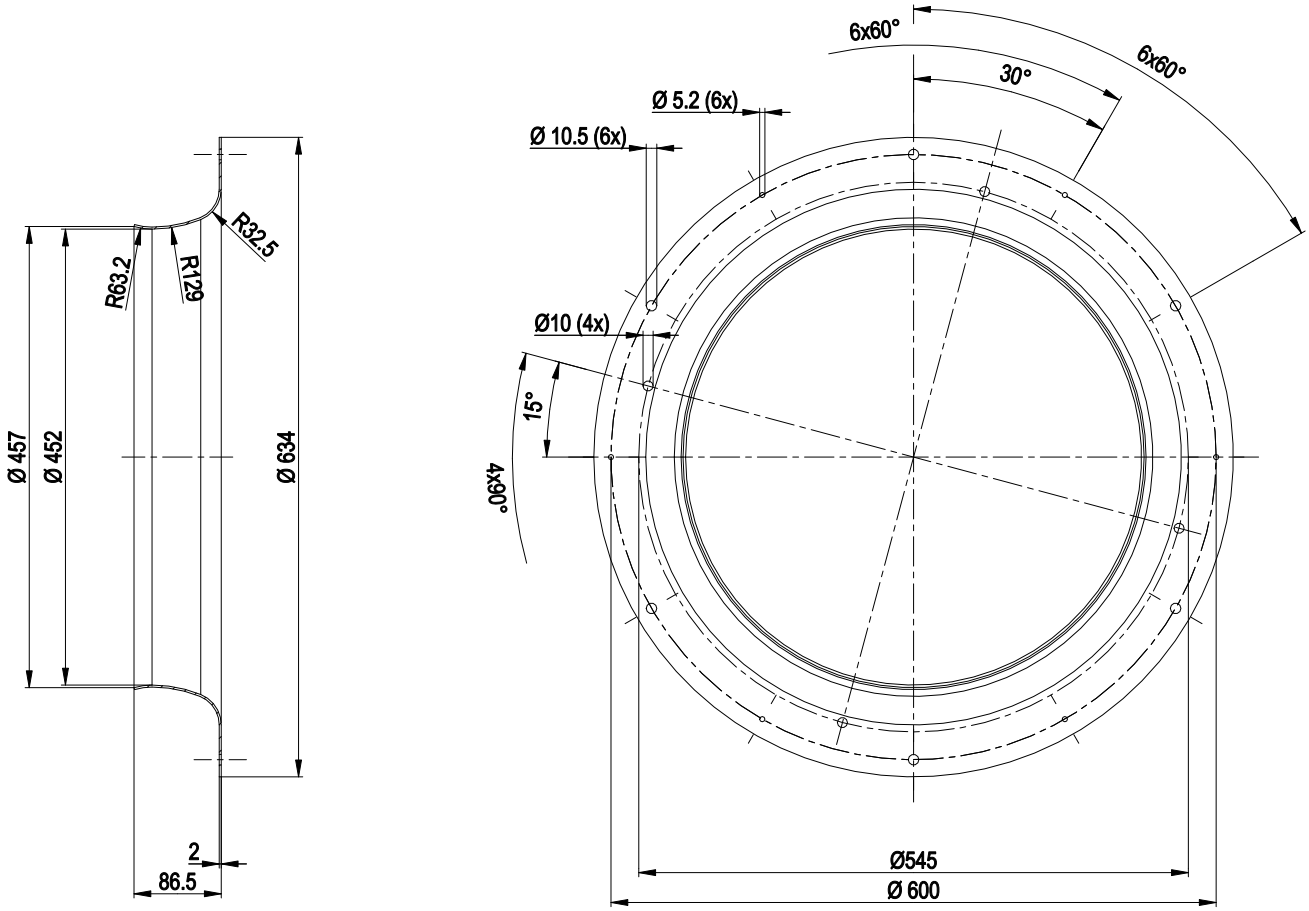
1	Accessory part: inlet ring 63300-2-4013 not included in scope of delivery
2	Max. clearance for screw 25 mm
3	Cable PVC AWG20, 5x crimped ferrules
4	Cable PVC AWG18, 4x crimped ferrules

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Accessory part



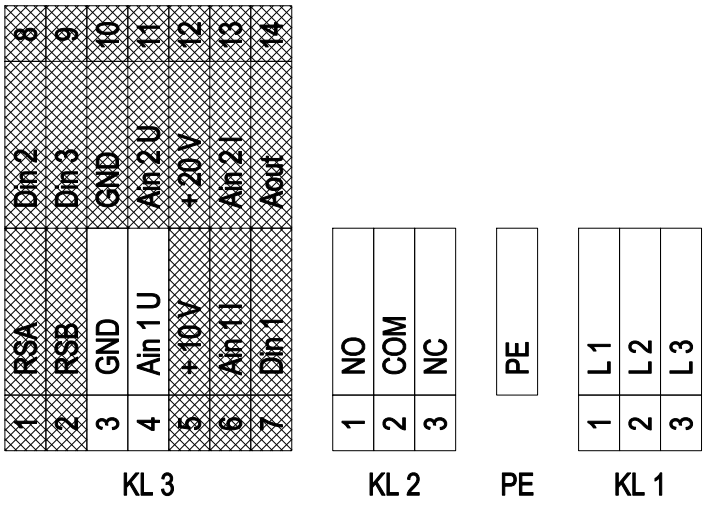
Accessory part: inlet ring 63300-2-4013 not included in scope of delivery

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Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Color	Function/assignment
1	KL1	L1	black	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	KL1	L2	black	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	KL1	L3	black	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	PE	PE	green/yellow	Ground connection, PE connection
2	KL2	NO	orange	Status relay, floating status contact, make for failure
2	KL2	COM	black	Status relay, floating status contact; changeover contact; common connection; contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
2	KL2	NC	yellow	Status relay, floating status contact, break for failure
	KL3	RSA		Bus connection RS485, RSA, MODBUS RTU
	KL3	RSB		Bus connection RS485, RSB, MODBUS RTU
2	KL3	GND	blue	Reference ground for control interface
2	KL3	Ain1 U	red	Analog input 1 (set value), 0-10 V, Ri = 100 kΩ, adjustable curves, only usable as alternative to input Ain1I
	KL3	+ 10 V		Fixed voltage output 10 VDC, +10 V ±3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)
	KL3	Ain1 I		Analog input 1 (set value), 4-20 mA, Ri = 100 Ω, adjustable curves, only usable as alternative to input Ain1U
	KL3	Din1		Digital input 1: enable electronics, enable: pin open or applied voltage 5...50 VDC: disable: bridge to GND or applied voltage < 1 VDC; reset function: triggers software reset after a level change to < 1 V
	KL3	Din2		Digital input 2: Switching parameter sets 1/2; according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: pin open or applied voltage 5-50 VDC; parameter set 2: bridge to GND or applied voltage < 1 VDC
	KL3	Din3		Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected as normal/inverse via bus or digital input; normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage < 1 VDC
	KL3	Ain2 U		Analog input 2, measured value 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2I
	KL3	+ 20 V		Fixed voltage output 20 VDC, 20 V +25/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors)
	KL3	Ain2 I		Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2U

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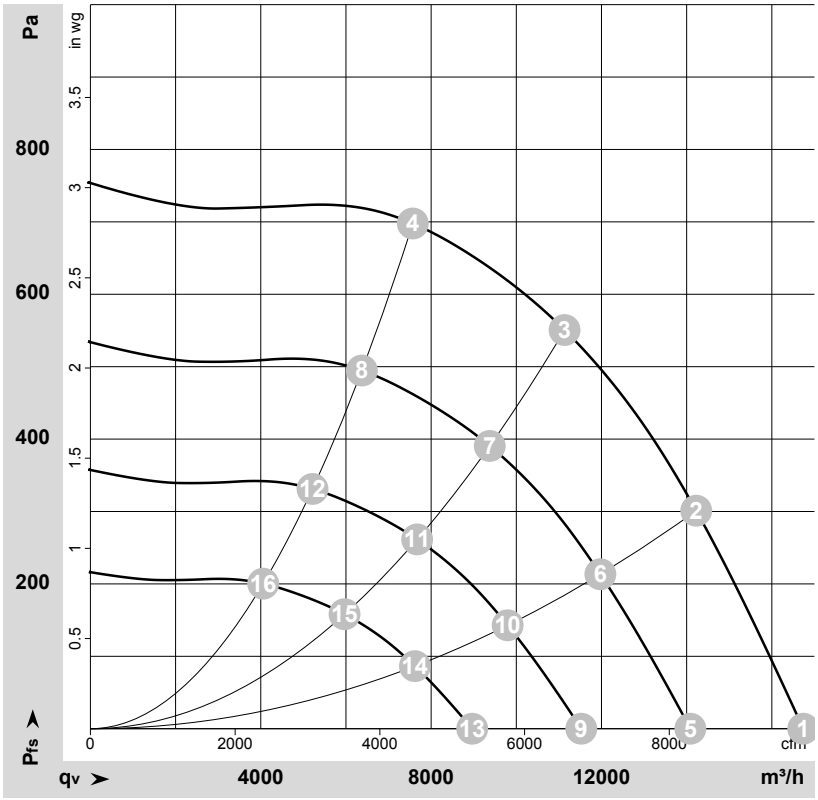
No.	Conn.	Designation	Color	Function/assignment
	KL3	Aout		Analog output 0-10 V, max. 5 mA, output of current motor modulation level / of the current motor speed. Adjustable curve.

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-137530-1

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}	qv	p_{fs}	qv	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	Y	400	50	1300	1779	2.93	79	86	91	16740	0	9850	0.00
2	Y	400	50	1300	2451	3.96	73	80	85	14225	300	8370	1.20
3	Y	400	50	1300	2700	4.10	70	76	81	11135	550	6555	2.21
4	Y	400	50	1300	2640	4.00	73	80	84	7570	700	4455	2.81
5	Y	400	50	1100	1060	1.75	75	82	86	14085	0	8290	0.00
6	Y	400	50	1100	1461	2.36	69	76	81	11975	215	7050	0.86
7	Y	400	50	1100	1649	2.65	65	72	77	9375	393	5520	1.58
8	Y	400	50	1100	1577	2.53	68	76	80	6375	497	3750	2.00
9	Y	400	50	900	581	0.96	70	77	81	11525	0	6785	0.00
10	Y	400	50	900	800	1.29	64	71	76	9795	144	5765	0.58
11	Y	400	50	900	903	1.45	60	67	72	7670	263	4515	1.06
12	Y	400	50	900	864	1.39	63	71	75	5215	333	3070	1.34
13	Y	400	50	700	273	0.45	63	70	75	8965	0	5275	0.00
14	Y	400	50	700	376	0.61	58	64	70	7620	87	4485	0.35
15	Y	400	50	700	425	0.68	54	61	66	5965	159	3510	0.64
16	Y	400	50	700	406	0.65	57	64	68	4055	201	2385	0.81

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

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