EC centrifugal fan - RadiCal

backward-curved, single-intake

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

Nominal data

Type	**R3G400-RG71-27**
Motor	**M3G112-EA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1770
Power consumption	W	850
Current draw	A	3.7
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	50
Starting current	A	5.2

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	65.1	50.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		76.4	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.84
09 Air flow q_v	m^3/h	3785
09 Pressure increase p_{fs}	Pa	481
10 Speed (rpm) n	min^{-1}	1770
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-195313

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Technical description

Weight	8.7 kg
Size	400 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic (black)
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	Shaft horizontal or rotor on bottom; rotor on top on request
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 15 VDC, max. 30 mA - Operation and alarm display: reversible voltage output 0 V / +15 V - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 ebmBUS - Soft start - Control interface with SELV potential safely disconnected from the mains - 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 61000-6-4 (industrial environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	EAC

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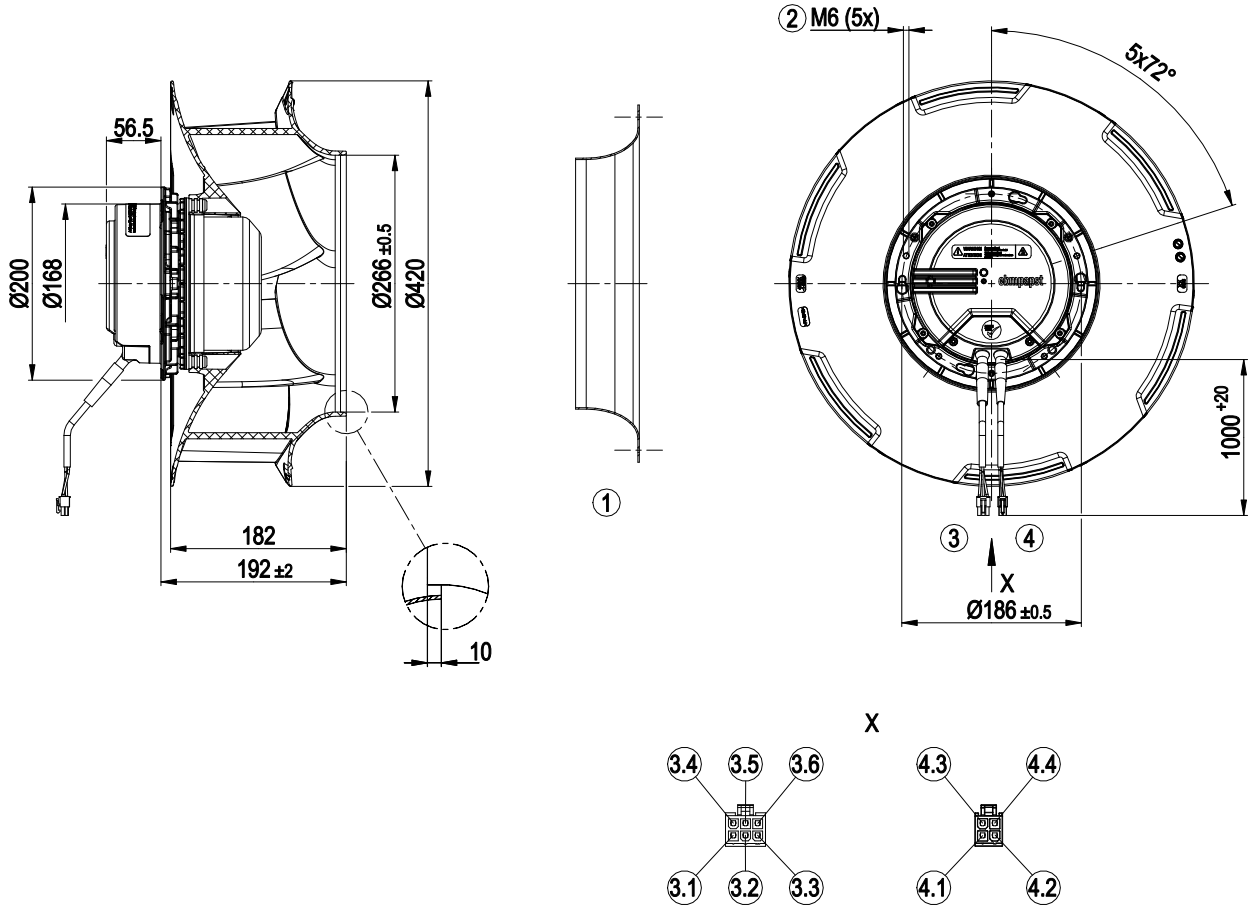
Product drawing



1	Accessory part: inlet ring 54476-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable AWG18
	6-pole connector housing Molex 39-01-2065, 3x socket Molex 39-00-0038
3.1	Not used / no function
3.2	PE
3.3	Not used / no function
3.4	L
3.5	Not used / no function
3.6	N
4	Cable AWG22
	4-pole connector housing Molex 39-01-2045, 4x socket Molex 39-00-0038
4.1	RSA
4.2	RSB
4.3	LED +
4.4	LED -

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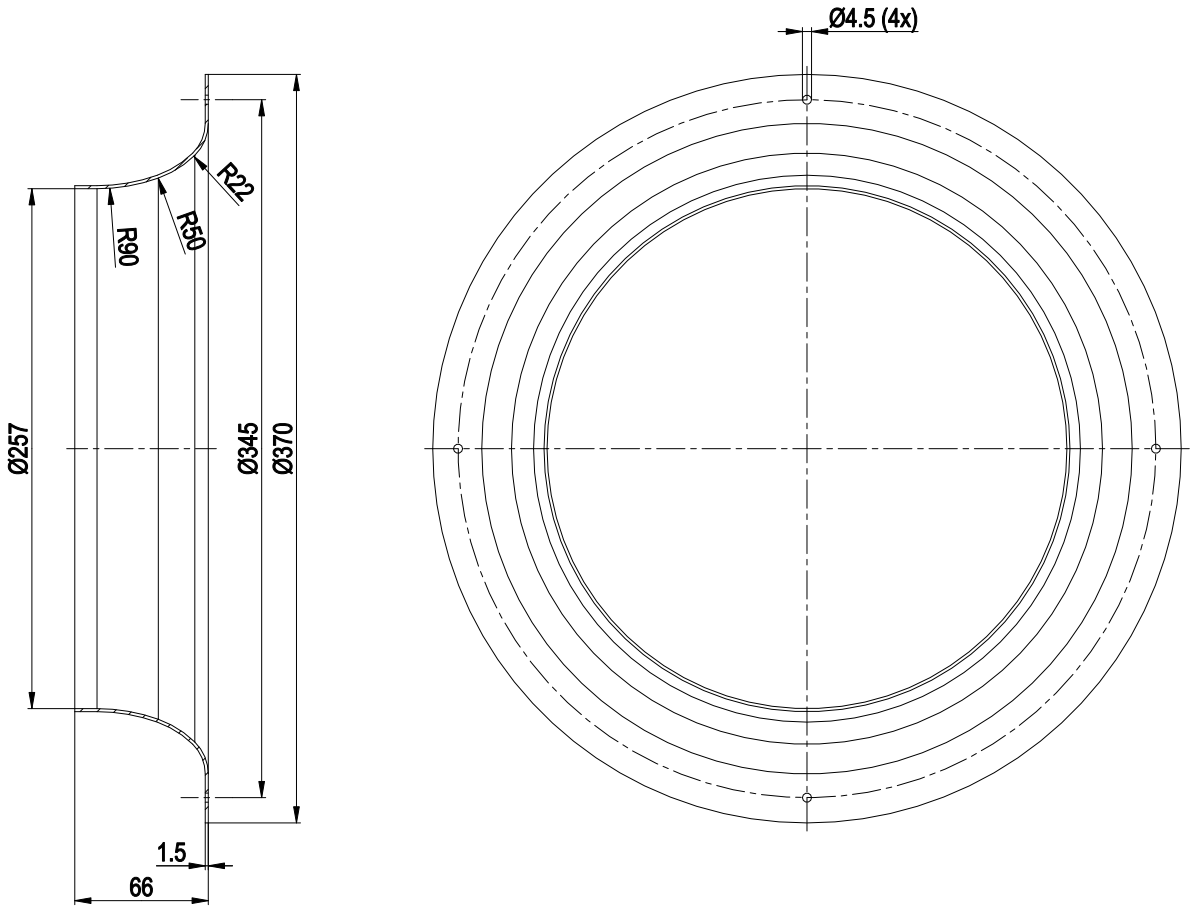
Accessory part



Inlet ring 54476-2-4013 not included in scope of delivery

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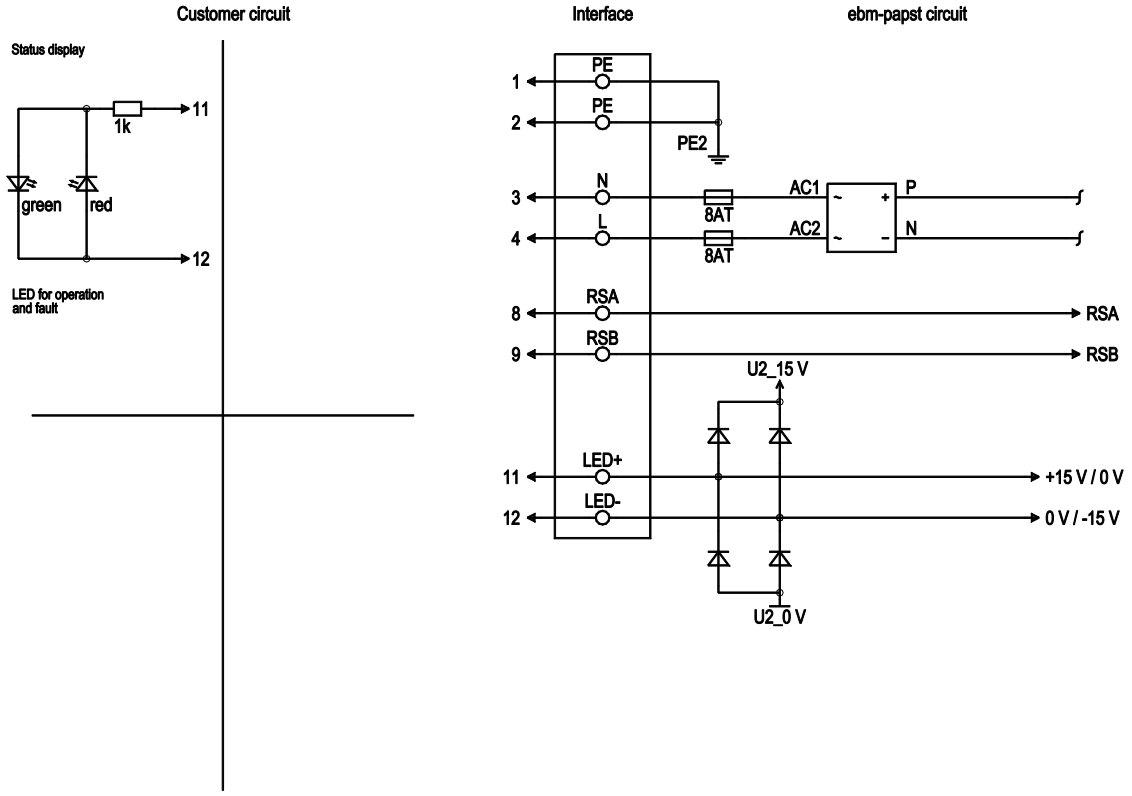
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, voltage range see nameplate, 50/60 Hz
1	4	L	black	Power supply, phase, voltage range see nameplate, 50/60 Hz
2	8	RSA	yellow	RS485 interface for ebmBUS, RSA, SELV
2	9	RSB	white	RS485 interface for ebmBUS, RSB, SELV
2	11	LED+	red	Voltage output 15 V (+15%/-10%), max. 30 mA, power supply for external devices (e.g. status display for LED), SELV
2	12	LED-	blue	Reference ground for control interface, SELV

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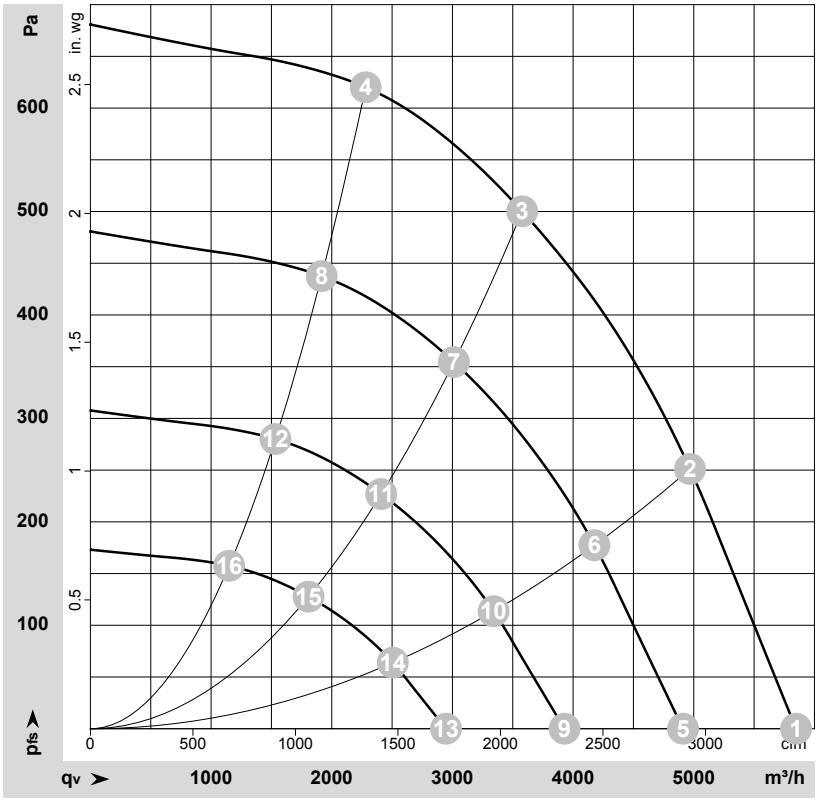
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-198866-1

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	1~	230	50	1770	586	2.56	79	86	88	5845	0	3440	0.00
2	1~	230	50	1770	788	3.45	71	78	83	4970	250	2925	1.00
3	1~	230	50	1770	850	3.70	64	70	77	3580	500	2105	2.01
4	1~	230	50	1770	770	3.36	68	74	78	2280	620	1345	2.49
5	1~	230	50	1500	347	1.52	75	81	83	4910	0	2890	0.00
6	1~	230	50	1500	469	2.05	67	74	79	4175	180	2460	0.72
7	1~	230	50	1500	502	2.20	60	66	73	3010	355	1775	1.43
8	1~	230	50	1500	456	1.99	64	70	74	1915	438	1130	1.76
9	1~	230	50	1200	178	0.78	69	76	78	3930	0	2315	0.00
10	1~	230	50	1200	240	1.05	61	68	73	3340	115	1965	0.46
11	1~	230	50	1200	257	1.13	54	60	67	2410	227	1420	0.91
12	1~	230	50	1200	234	1.02	58	64	68	1535	281	900	1.13
13	1~	230	50	900	75	0.33	62	69	70	2945	0	1735	0.00
14	1~	230	50	900	101	0.44	54	61	66	2505	65	1475	0.26
15	1~	230	50	900	108	0.47	47	53	60	1805	128	1065	0.51
16	1~	230	50	900	99	0.43	51	57	61	1150	158	675	0.63

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