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

Nominal data

Type	**R3G400-RS03-H6**
Motor	**M3G084-FA**

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}	1450
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	50

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}	%	61.6	48.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		75.5	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.47
09 Air flow q_v	m^3/h	3005
09 Pressure increase p_{fs}	Pa	318
10 Speed (rpm) n	min^{-1}	1450
11 Specific ratio*		1.00

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-165571

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Technical description

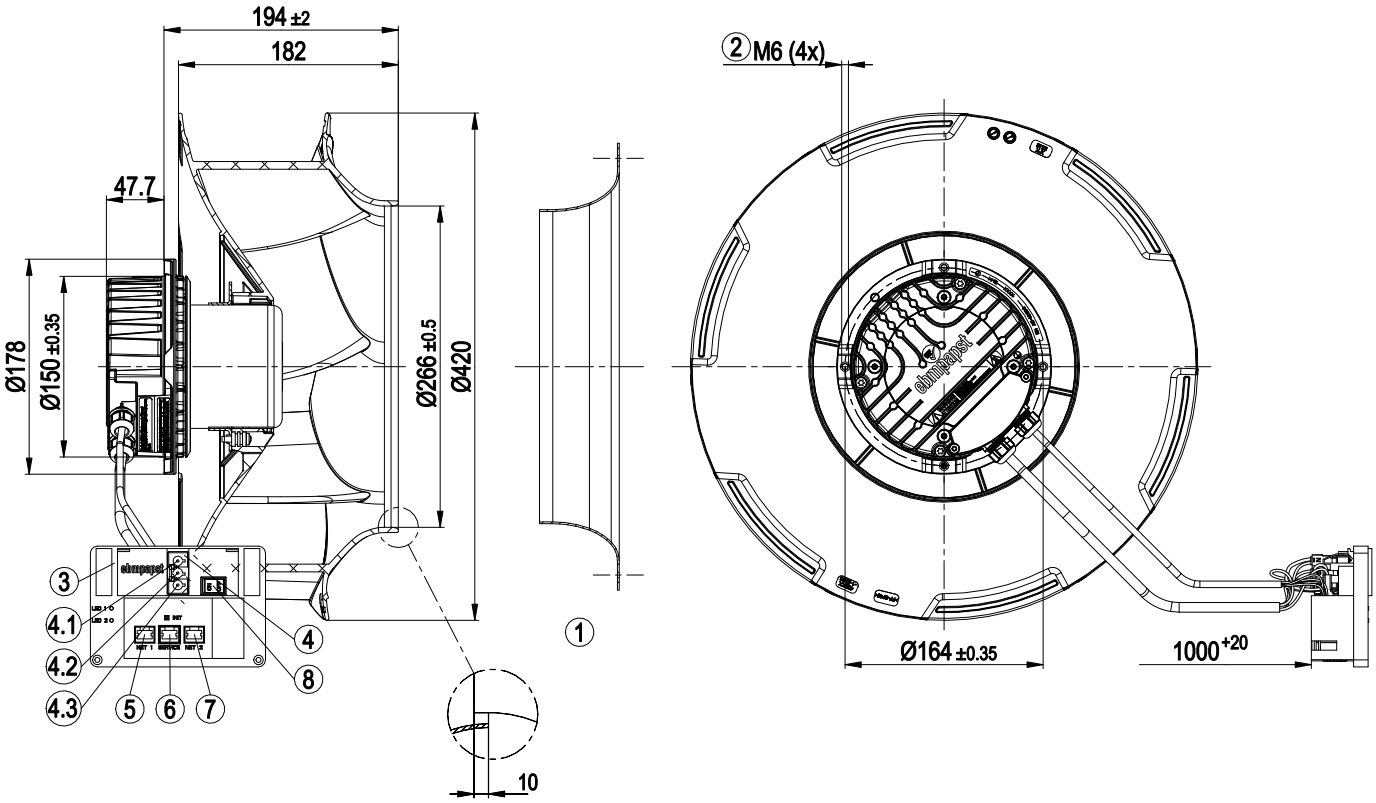
Weight	6.4 kg
Size	400 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	Motor IP55, electronics IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H0 - dry environment
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
Condensation drainage holes	On rotor side
Mode	S1
Motor mounting	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display with LED - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - 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 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Plug
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (if protective earth is connected by customer to the housing's connection point)
Conformity with standards	EN 61800-5-1; CE
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

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Product drawing



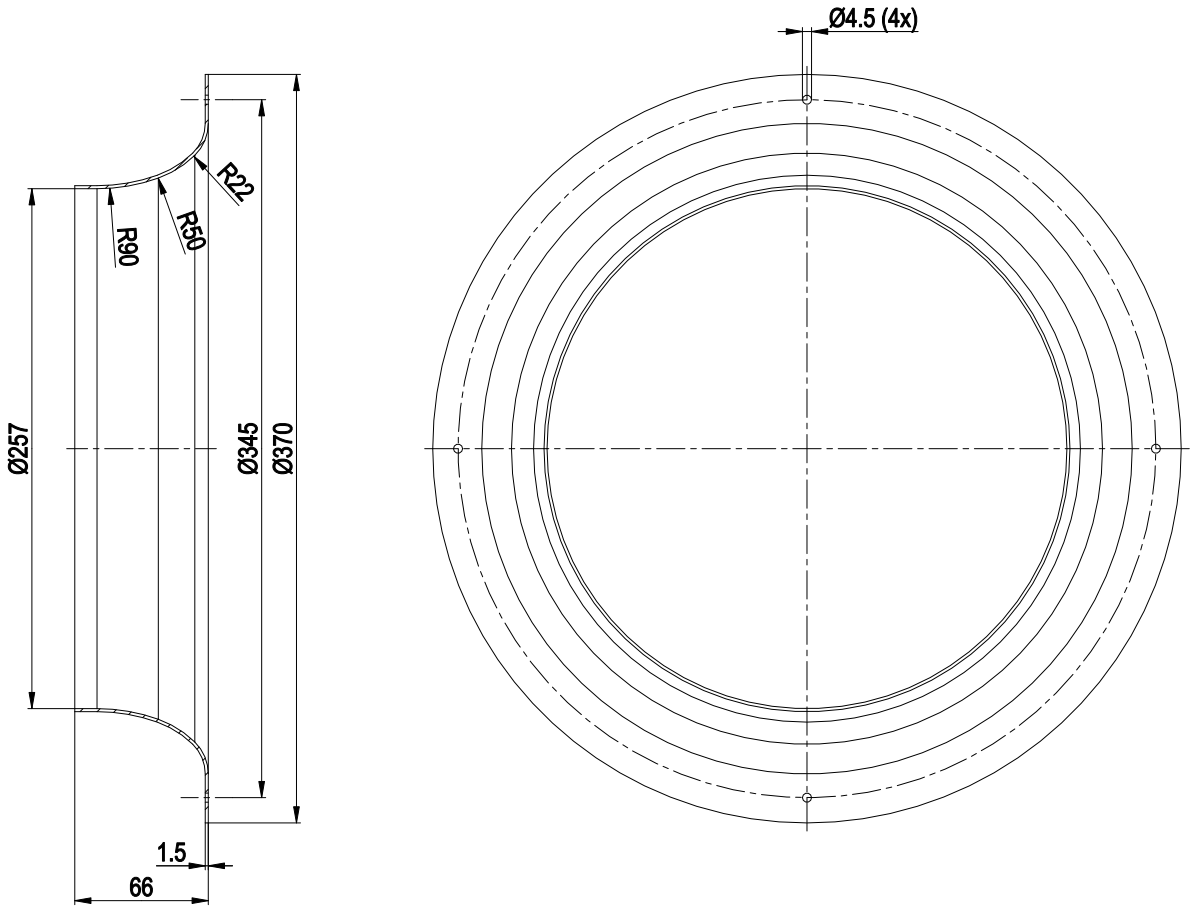
1	Accessory part: inlet ring 54476-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Terminal box
4	Connector housing 3-pole GST18/3 Wieland 92.032.9058.1
4.1	N
4.2	PE
4.3	L
5	8-pole connector housing TE 100616-2
6	8-pole connector housing TE 100616-2
7	8-pole connector housing TE 100616-2
8	Switch, ARCOLECTRIC SWITCHES P L C (no. H8550VBACF) As-delivered condition end customer switch set to "OFF"

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Accessory part



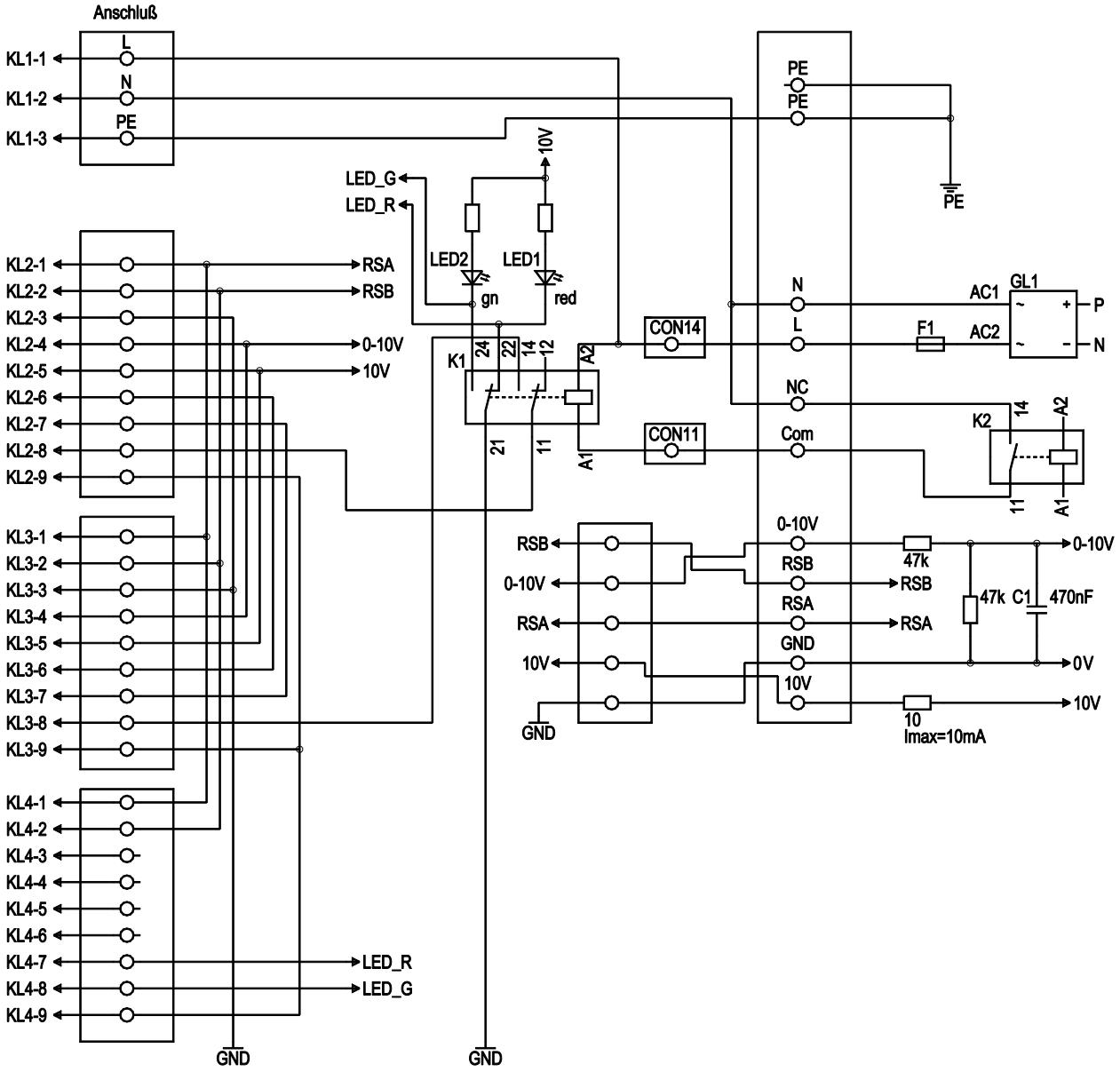
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	L	black	Power supply, phase
1	2	N	blue	Power supply, neutral conductor
1	3	PE	green/yellow	Protective earth
2	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
2	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
2	3	GND	-	Reference ground for control interface, SELV
2	4	0-10 V / PWM	-	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	5	+10 V	-	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
2	6	RES	-	Reserve
2	7	COM*	-	Alarm COM*
2	8	NC	-	NC KL2 UMAX 24 V

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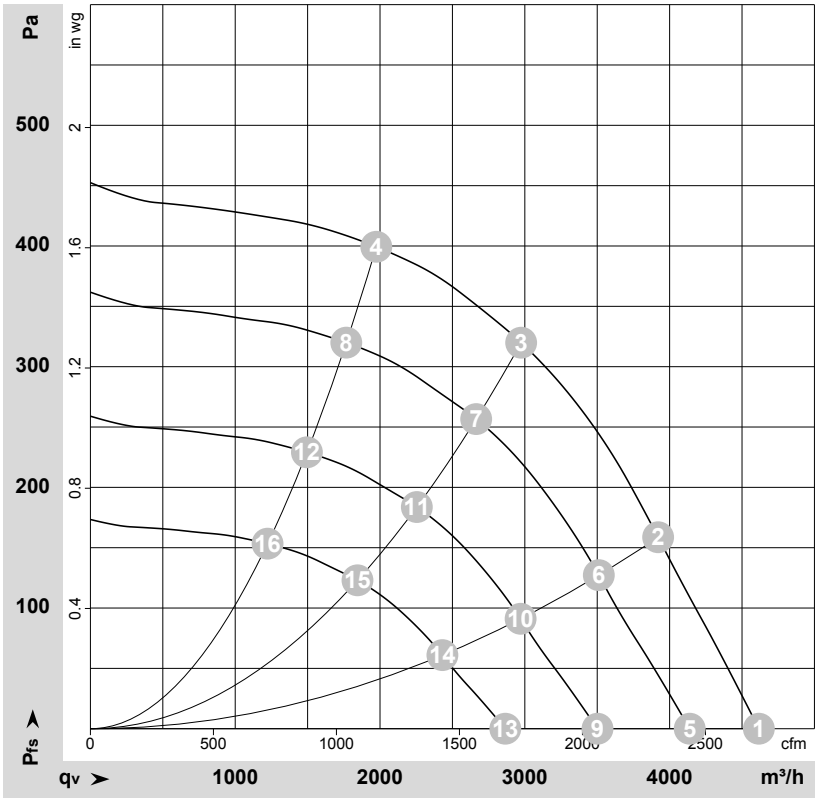
No.	Conn.	Designation	Color	Function/assignment
2	9	Schirm	-	Shield
3	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
3	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
3	3	GND	-	Reference ground for control interface, SELV
3	4	0-10 V / PWM	-	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
3	5	+10 V	-	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
3	6	RES	-	Reserve
3	7	COM*	-	Alarm COM*
3	8	NC*	-	NC* KL3 UMAX 24 V
3	9	Schirm	-	Shield
4	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
4	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
4	7	LED R	-	External LED Red
4	8	LED G	-	External LED Green
4	9	Schirm	-	Shield

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-165571-1

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

	U	f	n	P_{ed}	I	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	230	50	1450	347	1.53	4615	0	2715	0.00
2	230	50	1450	434	1.91	3920	160	2310	0.64
3	230	50	1450	500	2.20	2975	320	1750	1.28
4	230	50	1450	429	1.88	1975	400	1160	1.61
5	230	50	1300	250	1.10	4140	0	2435	0.00
6	230	50	1300	312	1.37	3510	127	2065	0.51
7	230	50	1300	344	1.50	2665	257	1570	1.03
8	230	50	1300	308	1.35	1765	320	1040	1.28
9	230	50	1100	151	0.67	3500	0	2060	0.00
10	230	50	1100	189	0.83	2970	91	1750	0.37
11	230	50	1100	208	0.91	2255	184	1325	0.74
12	230	50	1100	187	0.82	1495	229	880	0.92
13	230	50	900	83	0.37	2865	0	1685	0.00
14	230	50	900	104	0.45	2430	61	1430	0.24
15	230	50	900	114	0.50	1845	123	1085	0.49
16	230	50	900	102	0.45	1225	153	720	0.61

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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