EC centrifugal fan

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	**R3G310-BL06-G9**
Motor	**M3G084-DF**

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}	1650
Power consumption	W	250
Current draw	A	1.1
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 Commission Regulation (EU) 327/2011

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	67.2	45.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		84	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.25
09 Air flow q_v	m^3/h	1805
09 Pressure increase p_{fs}	Pa	301
10 Speed (rpm) n	min^{-1}	1650
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-187634

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Technical description

Weight	5.1 kg
Size	310 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	7
Direction of rotation	Counterclockwise, 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 (with customer connection of protective earth)
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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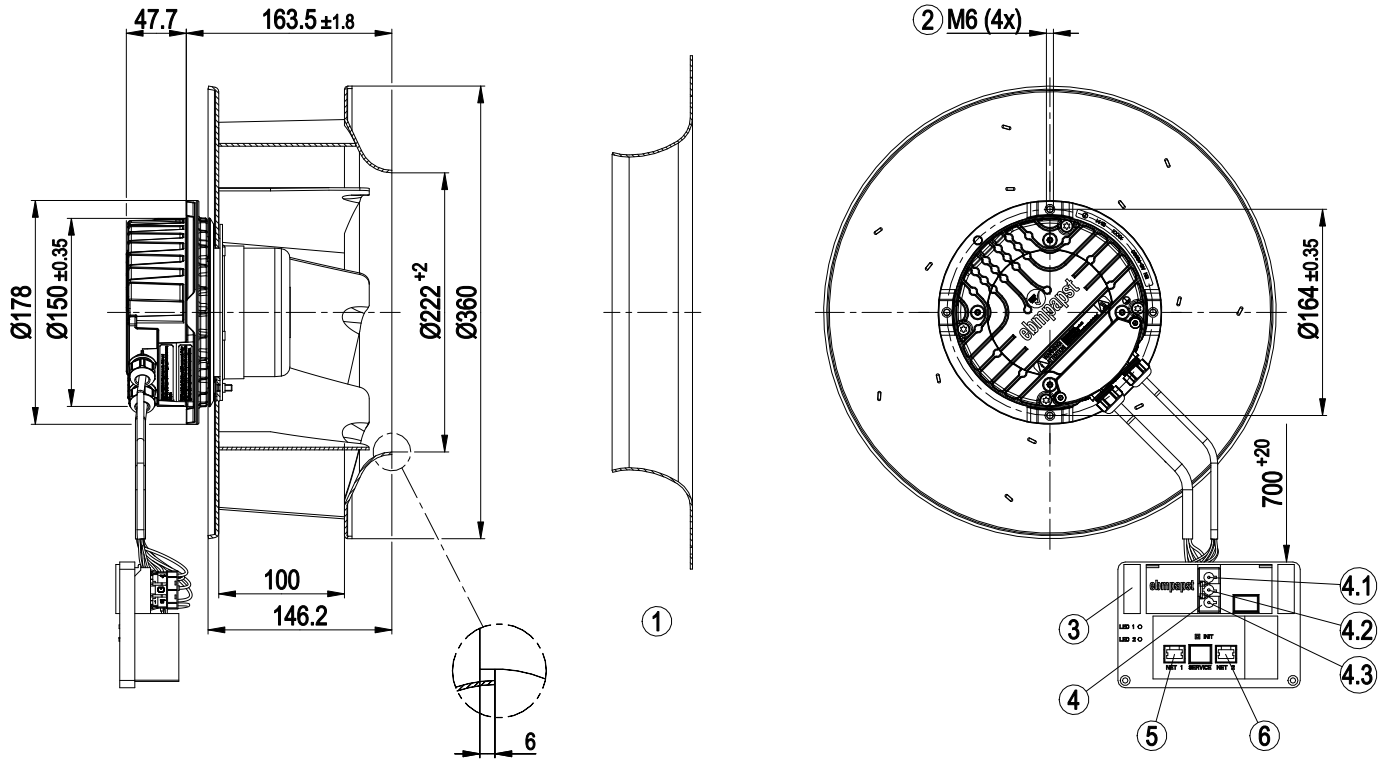
Product drawing



1	Accessory part: inlet ring 31570-2-4013 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

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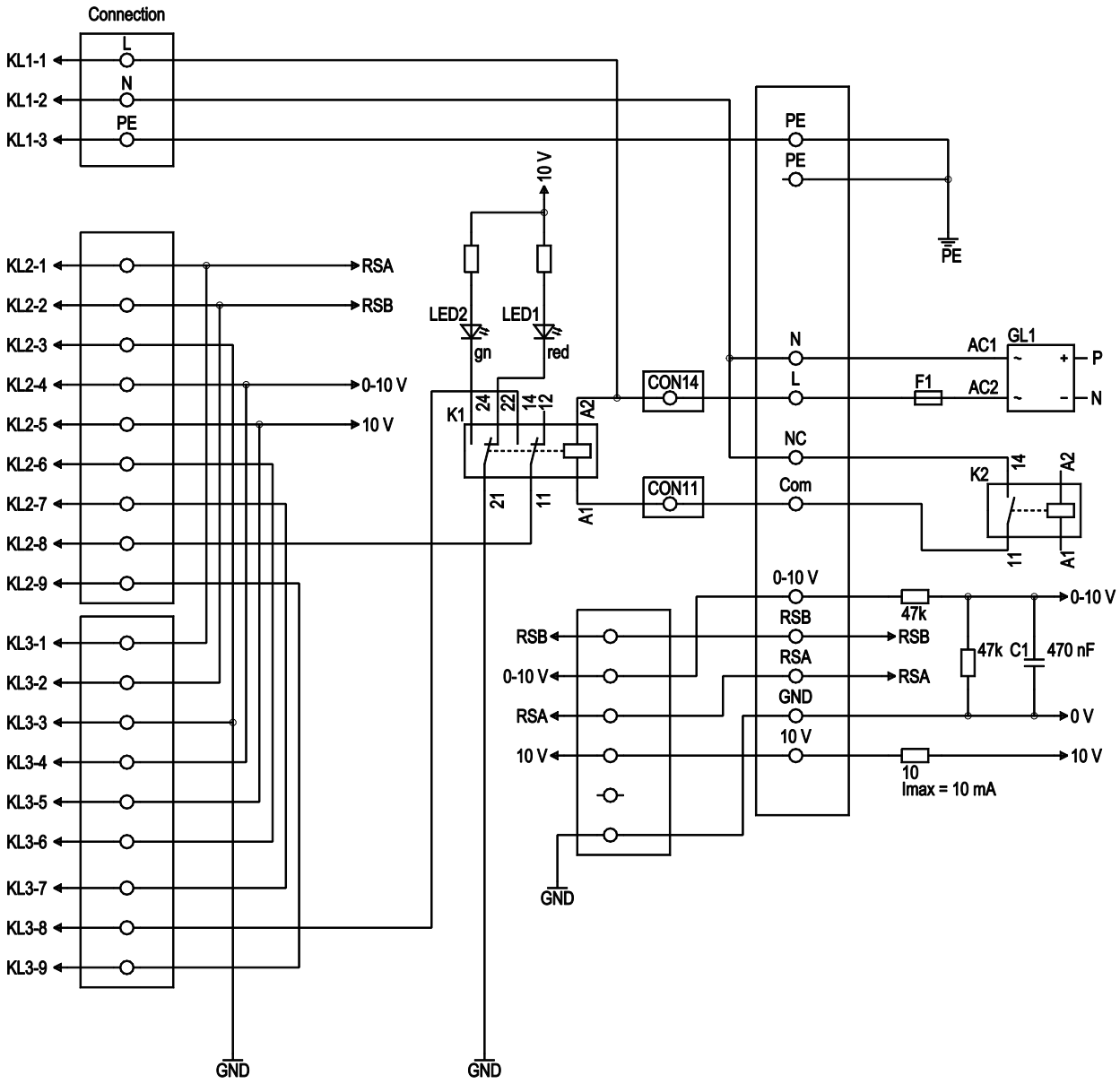
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	L	black	Supply connection, power supply single-phase 200-277 VAC, 50/60 Hz
1	2	N	blue	Power supply, single-phase 200-277 VAC, 50/60 Hz
1	3	PE	green/yellow	Ground connection
2	1	RSA	-	Bus connection RS485, RSA, MODBUS-RTU; SELV
2	2	RSB	-	Bus connection RS485, RSB, MODBUS-RTU; SELV
2	3	GND	-	Reference ground for control interface; SELV
2	4	0-10 V	-	Control input
2	5	+10 V	-	Fixed voltage output 10 VDC
2	6	RES	-	Reserve
2	7	COM*	-	Alarm COM*
2	8	NC	-	NC KL2 UMAX 24 V
2	9	Schirm	-	Shield

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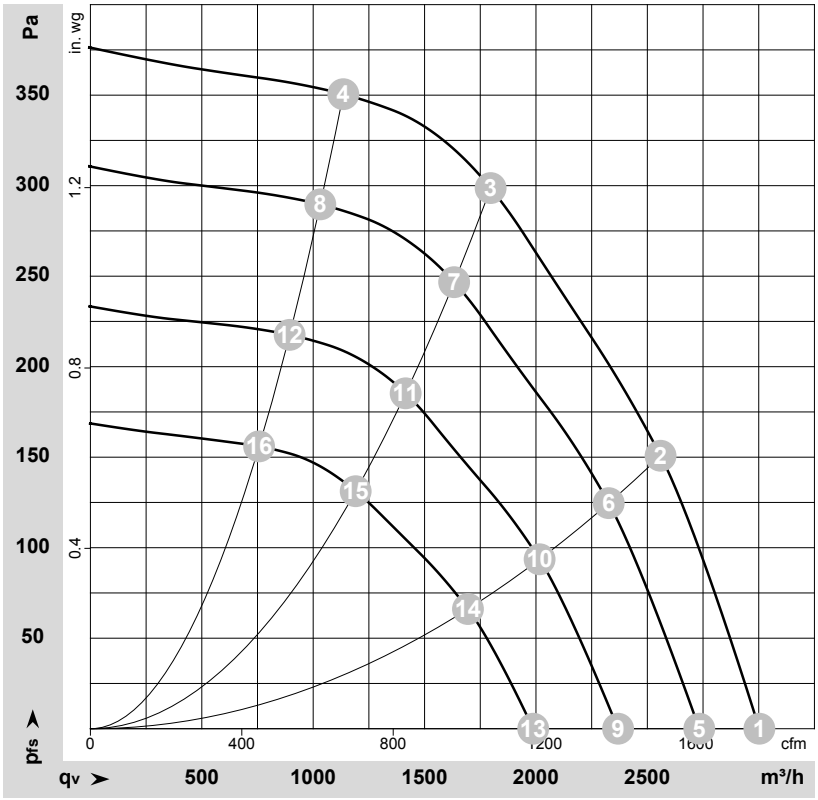
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-187634-1
Measurement: LU-187747-1

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}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	1~	230	50	1650	178	0.79	66	74	3005	0	1765	0.00
2	1~	230	50	1650	223	0.98	61	70	2560	150	1505	0.60
3	1~	230	50	1650	250	1.10	59	67	1795	300	1060	1.20
4	1~	230	50	1650	228	1.00	61	69	1135	350	670	1.41
5	1~	230	50	1500	135	0.59	63	71	2735	0	1610	0.00
6	1~	230	50	1500	167	0.74	59	67	2325	125	1370	0.50
7	1~	230	50	1500	190	0.83	57	65	1635	249	960	1.00
8	1~	230	50	1500	171	0.75	59	67	1030	290	605	1.16
9	1~	230	50	1300	88	0.39	60	68	2370	0	1395	0.00
10	1~	230	50	1300	109	0.48	55	64	2015	94	1185	0.38
11	1~	230	50	1300	124	0.54	53	61	1415	187	835	0.75
12	1~	230	50	1300	112	0.49	55	63	895	218	525	0.88
13	1~	230	50	1100	59	0.27			1990	0	1170	0.00
14	1~	230	50	1100	72	0.34			1695	66	1000	0.26
15	1~	230	50	1100	81	0.37			1190	132	700	0.53
16	1~	230	50	1100	75	0.35			755	156	445	0.63

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