EC centrifugal fan

backward-curved, single-intake

for rail applications

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-AN12-93**
Motor	**M3G084-FA**

Nominal voltage	VDC	110
Nominal voltage range	VDC	77 .. 145
Frequency	Hz	DC
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2300
Power consumption	W	410
Current draw	A	3.7
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

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

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Technical description

Weight	5.3 kg
Size	310 mm
Motor size	84
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	None
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 1.1 mA - Alarm relay - Run monitoring - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics - Thermal overload protection for motor - Line undervoltage detection
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; EN 61373, Cat. 1B: 2010; CE
Comment	If voltage (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their property of reinforced insulation, meaning they then have only basic insulation The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.

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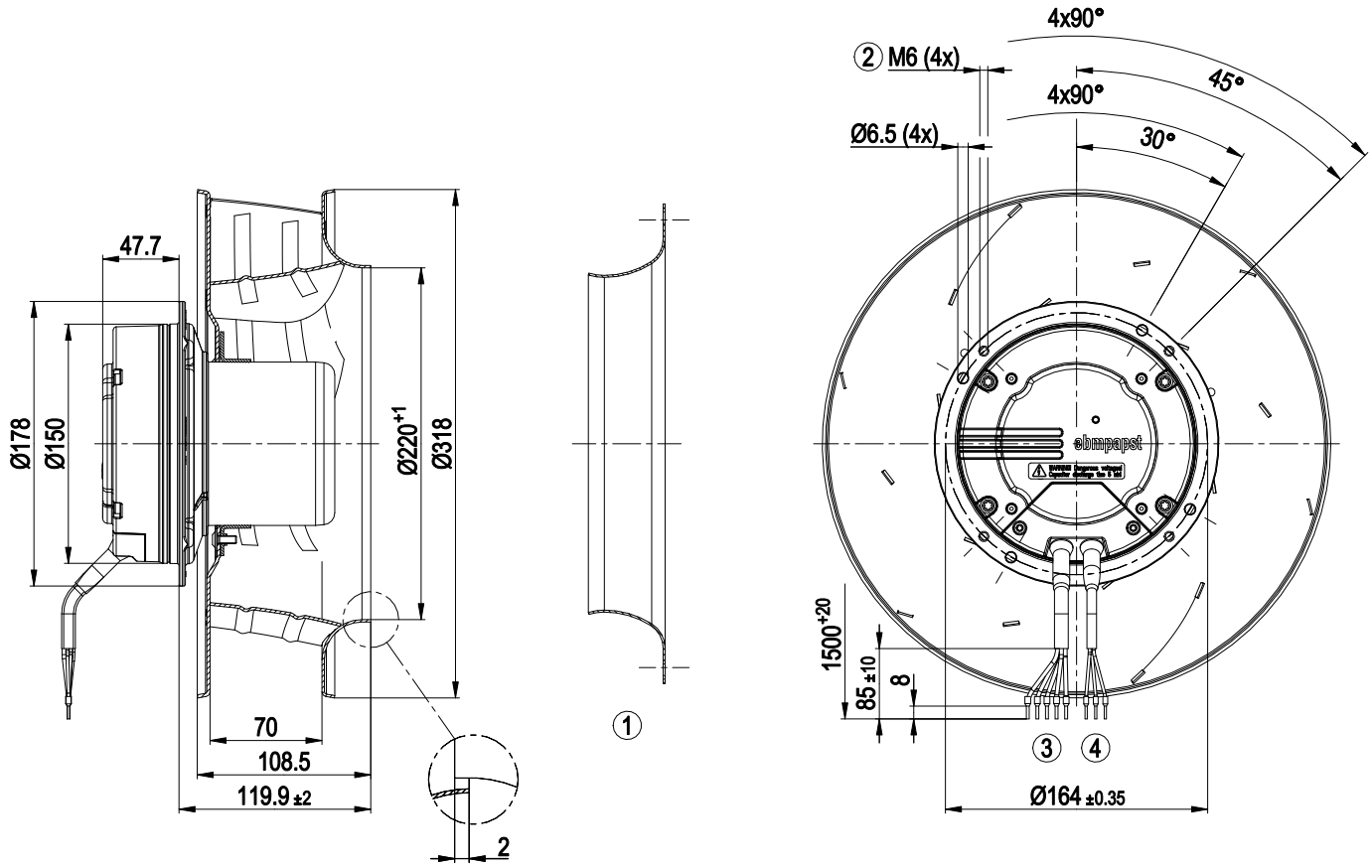
Product drawing



1	Accessory part: inlet ring 31050-2-4013 not included in scope of delivery
2	Max. clearance for screw 10 mm
3	Cable, halogen-free, railway application EN 45545, 5G 1.0 mm²
	5x wire-end ferrule
4	Cable, halogen-free, railway application EN 45545, 3x 0.33 mm²
	3x wire-end ferrule

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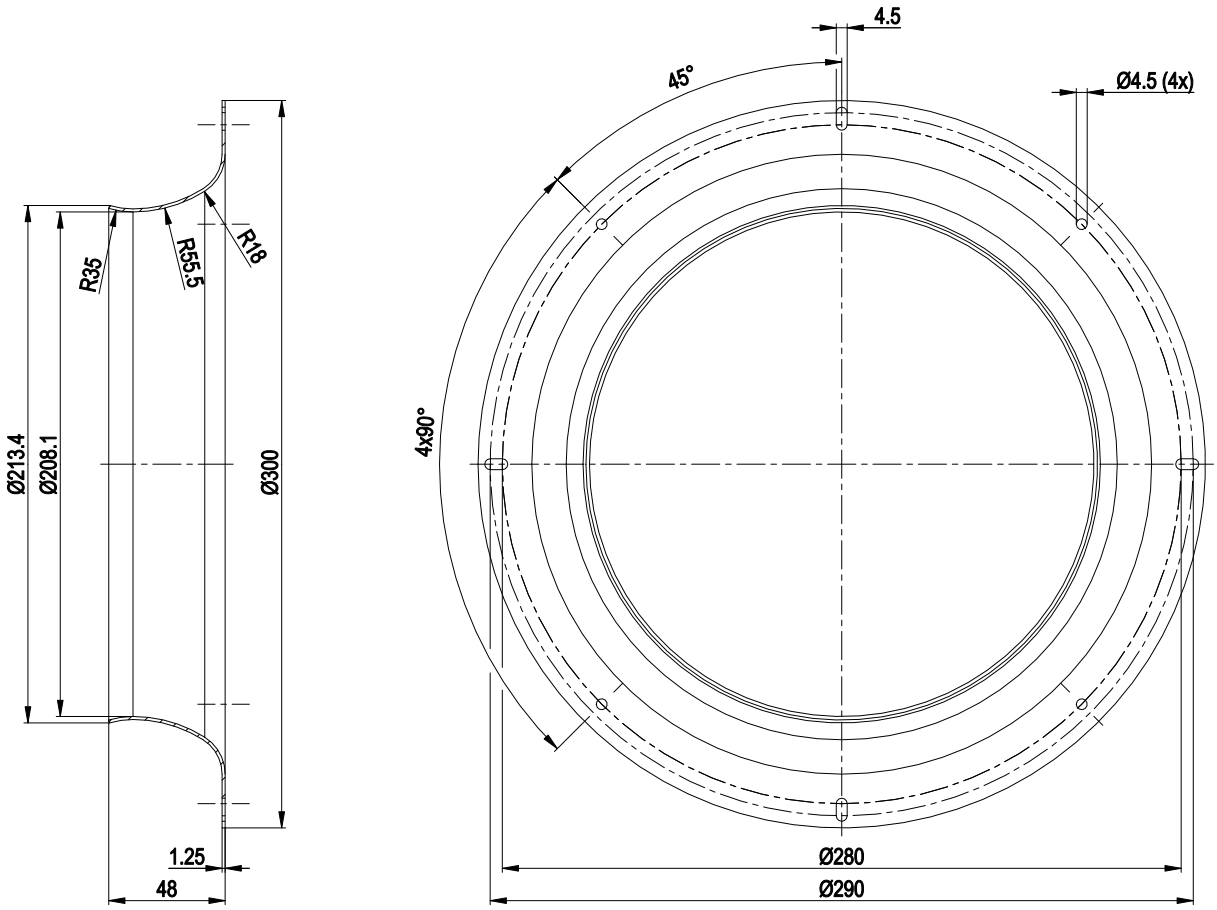
Accessory part



Inlet ring 31050-2-4013

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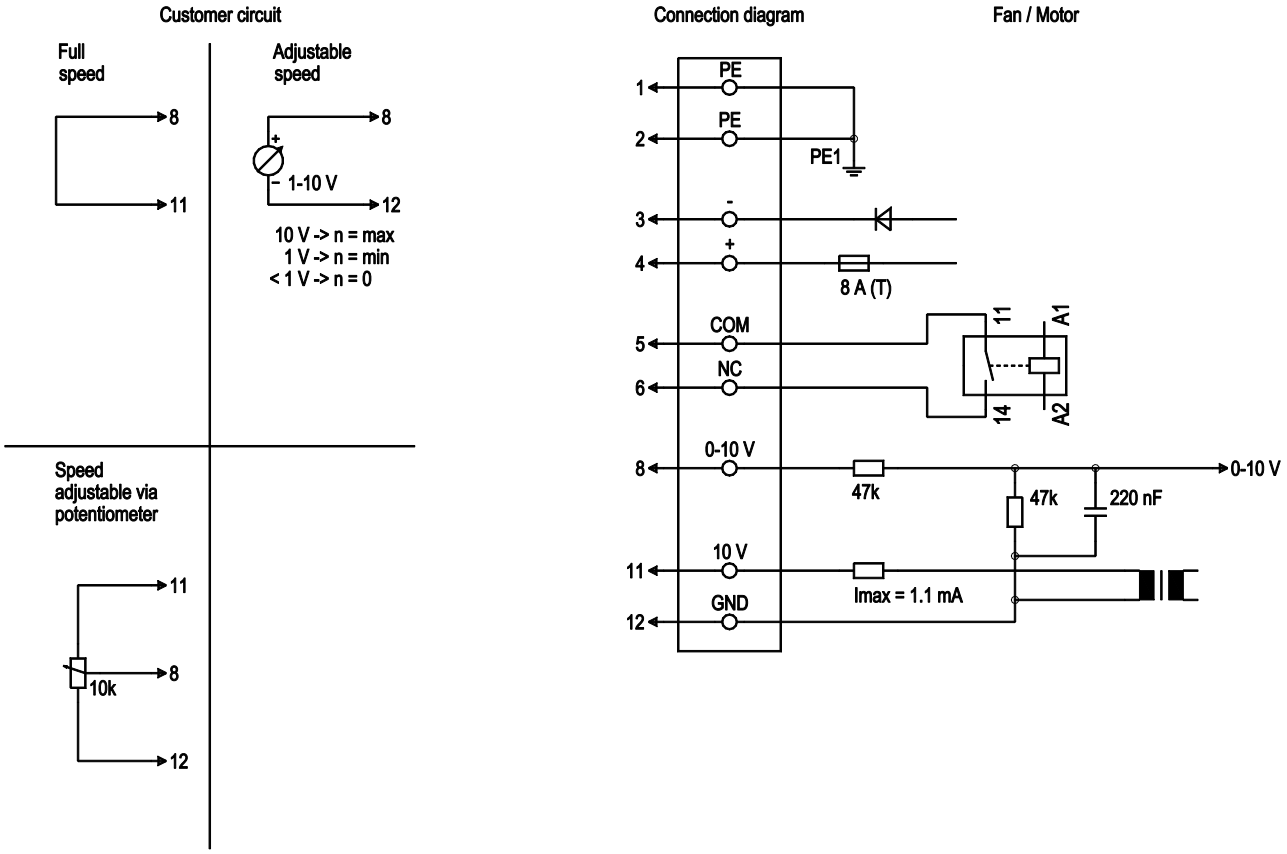
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1,2	PE	green/yellow	Protective earth
1	3	-	blue	Power supply, GND (110 VDC)
1	4	+	red	Power supply, 110 VDC
1	5	COM	white 1	Floating status contact, break for failure (0.6 A - 110 VDC, 1 A - 80 VDC, 3 A - 30 VDC)
1	6	NC	white 2	Floating status contact, break for failure and run monitor
2	8	0-10 V	yellow	Control input, set value 0-10 VDC, impedance 100 kΩ, SELV
2	11	10 VDC	red	Voltage output 10 VDC (±3%), max. 1.1 mA, power supply for external devices (e.g. potentiometers), SELV
2	12	GND	blue	Reference ground for control interface, SELV

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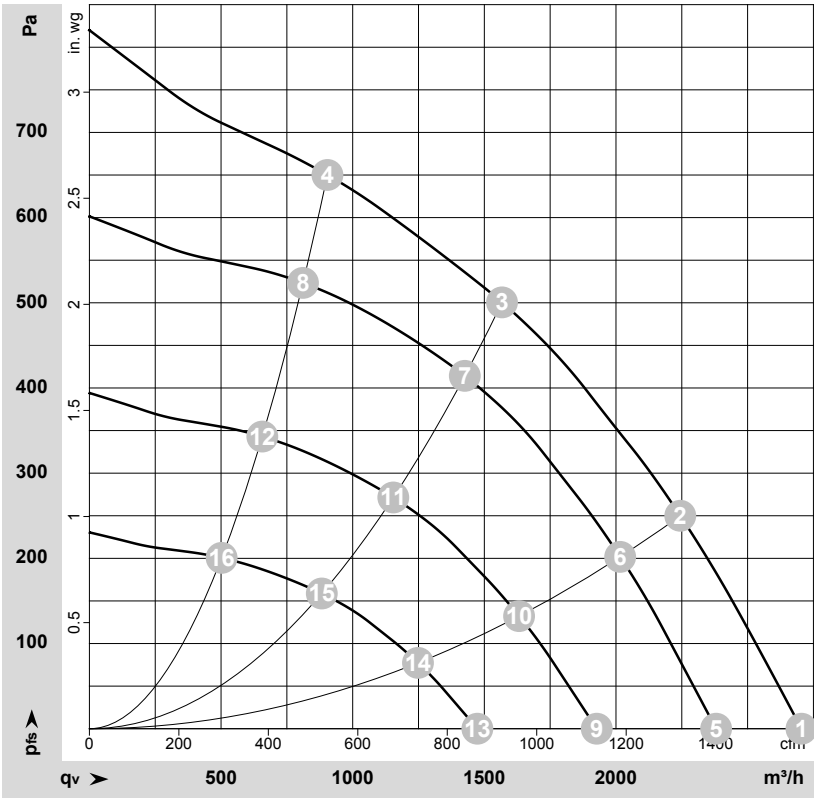
Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-104537-1

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	n	P_{ed}	I	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	110	2385	309	2.80	2705	0	1590	0.00
2	110	2340	371	3.37	2245	250	1320	1.00
3	110	2300	410	3.70	1565	500	920	2.01
4	110	2340	373	3.39	905	650	530	2.61
5	110	2100	211	1.91	2380	0	1400	0.00
6	110	2100	269	2.45	2015	202	1185	0.81
7	110	2100	308	2.80	1425	415	840	1.67
8	110	2100	270	2.45	810	523	475	2.10
9	110	1700	112	1.01	1925	0	1135	0.00
10	110	1700	143	1.30	1630	132	960	0.53
11	110	1700	163	1.49	1155	272	680	1.09
12	110	1700	143	1.30	655	343	385	1.38
13	110	1300	50	0.45	1475	0	870	0.00
14	110	1300	64	0.58	1250	77	735	0.31
15	110	1300	73	0.66	885	159	520	0.64
16	110	1300	64	0.58	500	201	295	0.81

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