K3G310-BE90-N2

EC centrifugal module

backward-curved, single-intake

with support structure, for rail applications

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**K3G310-BE90-N2**
Motor	**M3G112-EA**

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}	2950
Power consumption	W	1300
Current draw	A	2.0
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

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	15 kg
Size	310 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Inlet nozzle material	Sheet steel, galvanized
Support structure material	Aluminum
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H3
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 bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - Run monitoring - Power limiter - Motor current limitation - Emergency operation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC regulations	According to EN 50121-3-2
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	Lateral
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2007; EN 61373, Cat. 1B: 2010
Approval	EAC

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Comment	A prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533; if supply potential (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their property of reinforced insulation and 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.

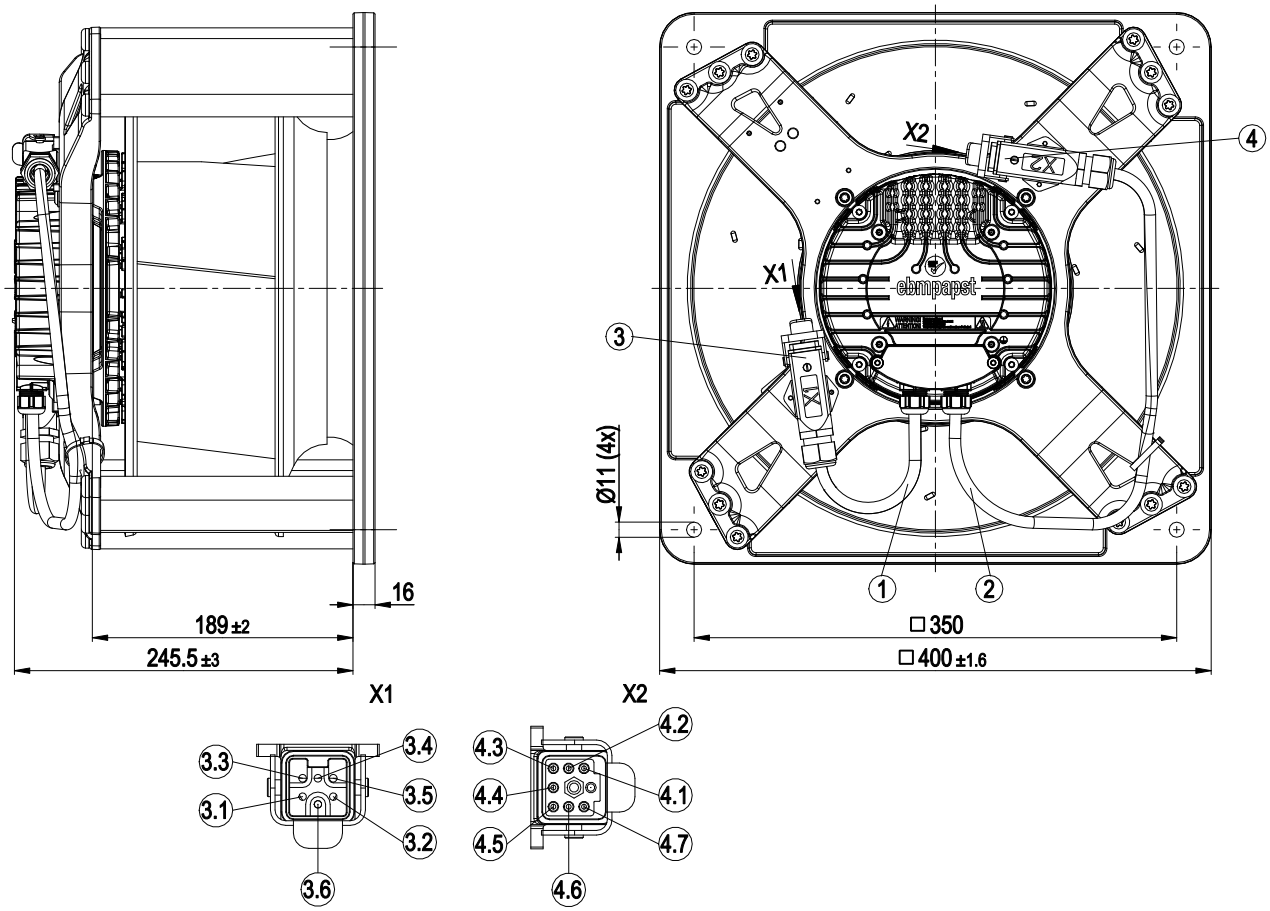
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Product drawing



1	Cable, halogen-free, railway application EN 45545, 4G 1.5 mm²
2	Cable, halogen-free, railway application EN 45545, 7x 0.5 mm²
3	Connector housing Harting 19 20 003 1250 with connector housing Harting 09 12 007 3001
3.1	not used
3.2	not used
3.3	L2
3.4	L3
3.5	L1
3.6	PE
4	Connector housing Harting 19 20 003 1250 with pin insert Harting 09 20 005 3001
4.1	GND
4.2	0-10 V
4.3	RSB
4.4	+10 V
4.5	RSA
4.6	COM
4.7	NC

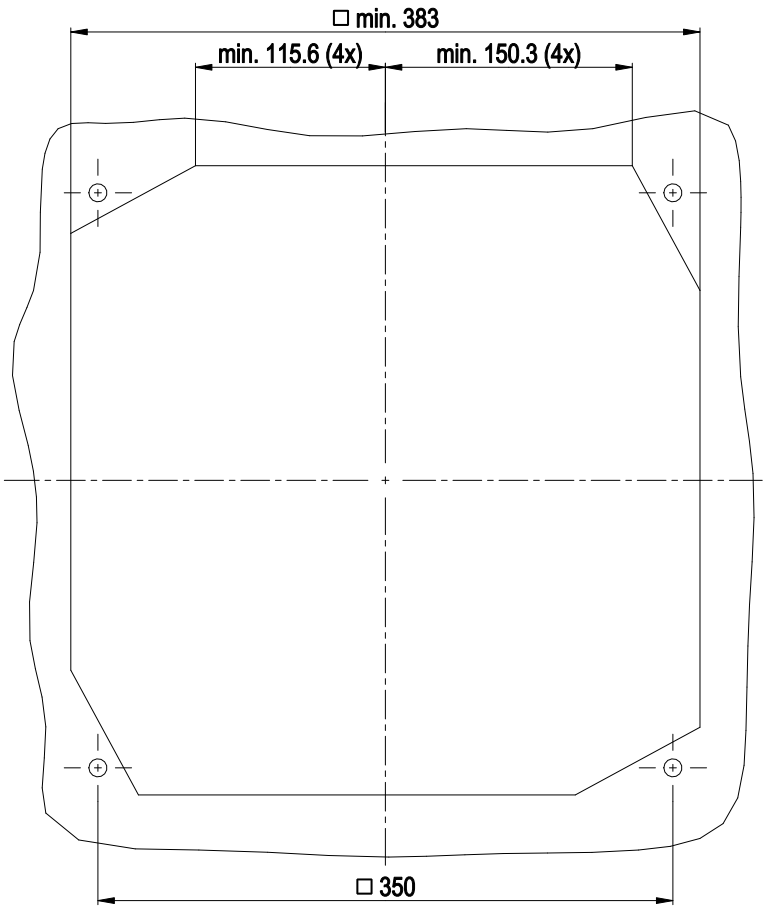
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Mounting dimensions



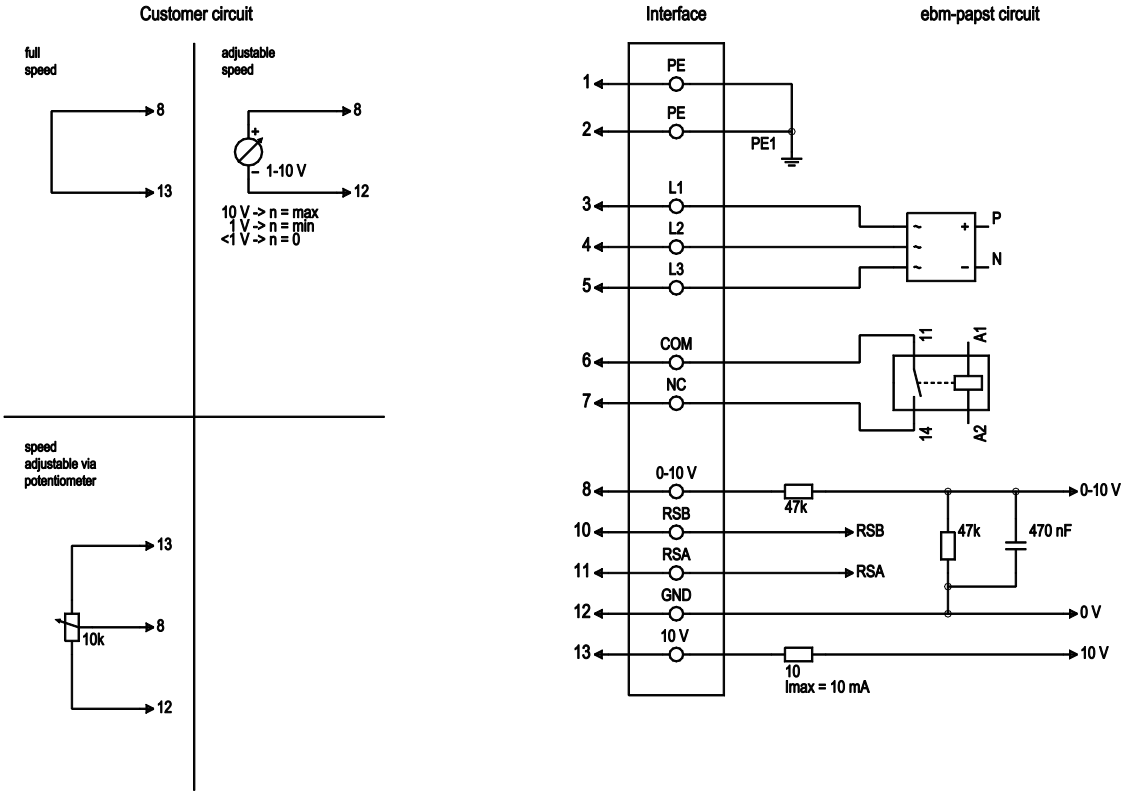
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Connection diagram



No.	Conn.	Designation	Function/assignment
1	1	PE	Protective earth
1	2	PE	not brought out via wire
1	3	L1	Power supply, phase 50/60 Hz
1	4	L2	Power supply, phase 50/60 Hz
1	5	L3	Power supply, phase 50/60 Hz
2	6	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / max. 2 A (AC1), min. 1 mA / 5 VDC, reinforced insulation on control interface side, basic insulation on supply side according to EN 50124-1
2	7	NC	Status relay, floating status contact, break for failure, contact rating 250 VAC / max. 2 A (AC1), min. 1 mA / 5 VDC, reinforced insulation on control interface side, basic insulation on supply side according to EN 50124-1
2	8	0-10 V	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	RS485 interface for MODBUS, RSA; SELV
2	12	GND	Reference ground for interface, SELV
2	13	+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)

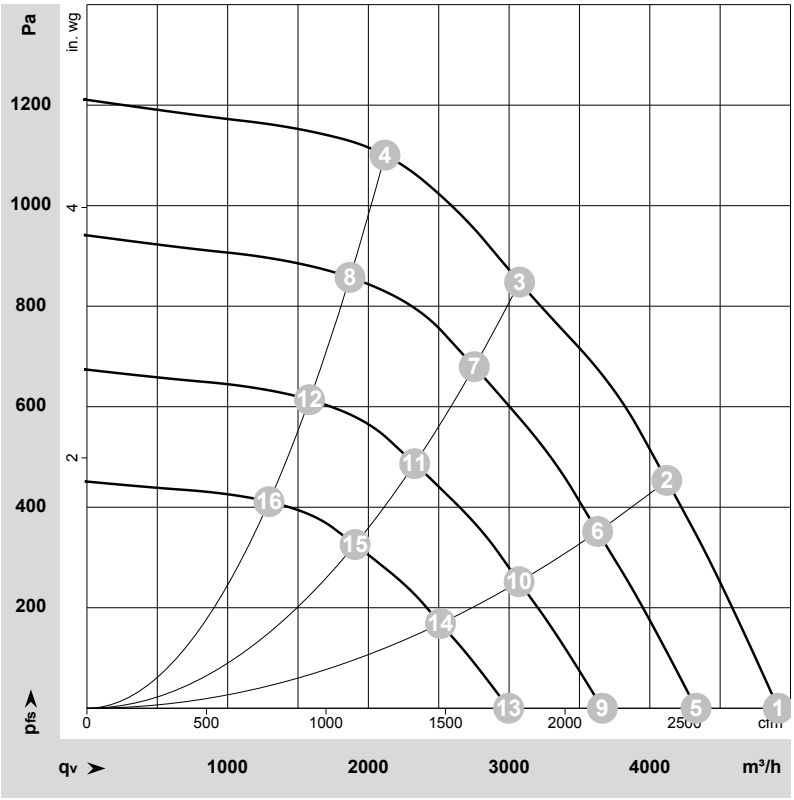
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-198148-1

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	3~	400	50	2950	1041	1.60	82	90	95	4915	0	2890	0.00
2	3~	400	50	2950	1214	1.86	78	86	91	4120	450	2425	1.81
3	3~	400	50	2950	1300	2.00	72	80	87	3075	850	1810	3.41
4	3~	400	50	2950	1292	1.98	75	84	90	2120	1100	1245	4.42
5	3~	400	50	2600	712	1.10	78	86	92	4330	0	2550	0.00
6	3~	400	50	2600	828	1.27	74	82	88	3630	351	2135	1.41
7	3~	400	50	2600	933	1.43	70	78	84	2755	680	1620	2.73
8	3~	400	50	2600	884	1.36	72	81	86	1870	862	1100	3.46
9	3~	400	50	2200	431	0.66	74	82	87	3665	0	2155	0.00
10	3~	400	50	2200	502	0.77	70	78	84	3070	252	1810	1.01
11	3~	400	50	2200	565	0.87	65	73	80	2330	487	1370	1.96
12	3~	400	50	2200	535	0.82	68	77	82	1580	617	930	2.48
13	3~	400	50	1800	236	0.36	69	77	82	2995	0	1765	0.00
14	3~	400	50	1800	275	0.42	65	73	79	2515	168	1480	0.67
15	3~	400	50	1800	309	0.48	60	68	75	1905	326	1120	1.31
16	3~	400	50	1800	293	0.45	63	72	77	1295	413	760	1.66

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

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