K3G280-BD14-N2

EC centrifugal module

with cube design, for rail applications

K3G280-BD14-N2 ebmpapst Datesheet
sales@fansco.com
www.fansco.com

Nominal data

Type		K3G280-BD14-N2
Motor		M3G084-GF
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min-1	3140
Power consumption	W	900
Current draw	A	1.4
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
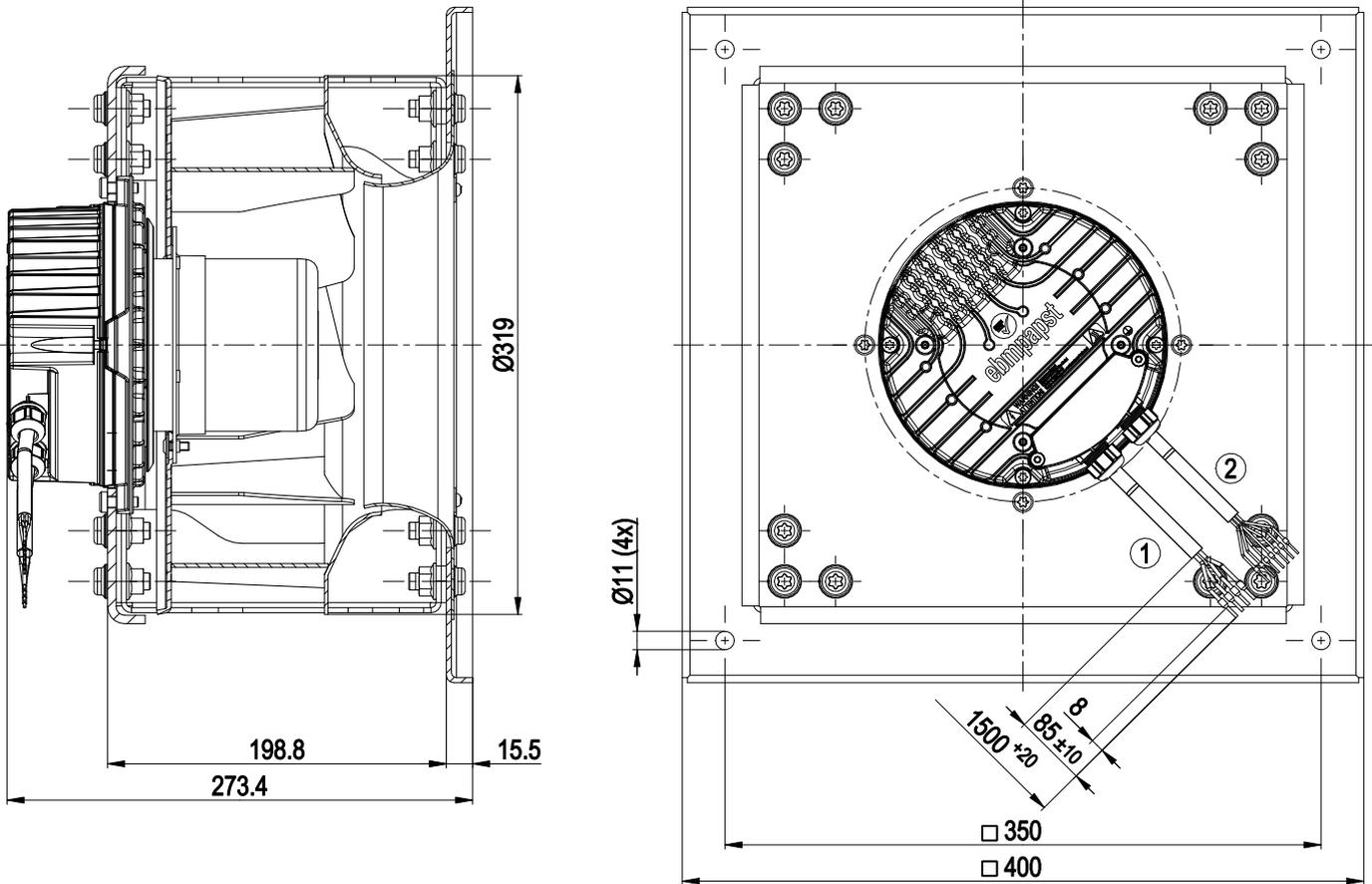Subject to change

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Technical description

Weight	14.0 kg
Fan size	280 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
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
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Lateral
Protection class	I (if protective earth is connected by customer to the housing's connection point)
Conformity with standards	EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013; EN 50155: 2008; EN 61373, Cat. 1B: 2010
Approval	EAC

GREEN TECH ✓

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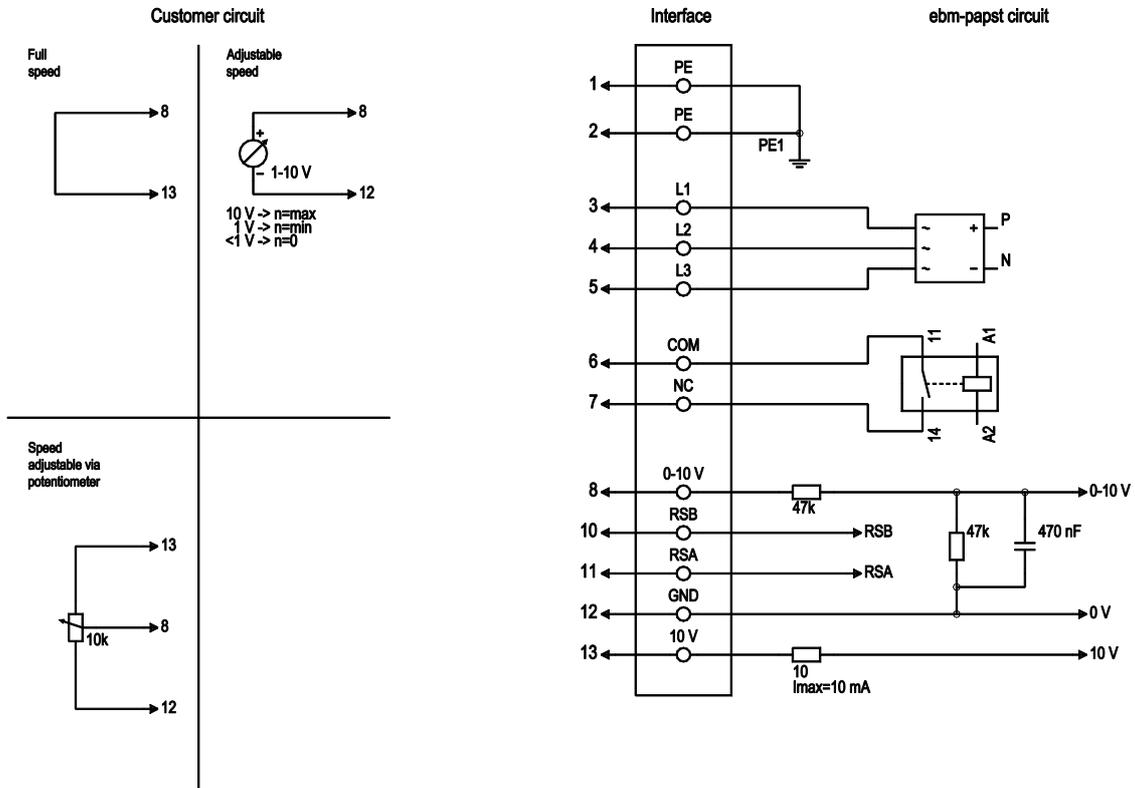| Comment | Prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533. If voltage (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their property of reinforced insulation, meaning they then have only basic insulation.
The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay. |

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Product drawing

Ø319

Ø11 (4x)

198.8

15.5

273.4

1500 +20

85 ±10

8

☐ 350

☐ 400

1	Cable halogen-free, BETAtrans® 3 GKW flex, 4G 1.5 mm², 4x crimped ferrules
2	Cable halogen-free, BETAtrans® 3 GKW flex, 7x 0.5 mm², 7x crimped ferrules

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Connection diagram

No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	L1	black	Power supply, phase, 50/60 Hz
1	4	L2	blue	Power supply, phase, 50/60 Hz
1	5	L3	brown	Power supply, phase, 50/60 Hz
2	6	COM	gray	Status relay, floating status contact, common connection, contact rating 250 VAC / 30 VDC 5 A minimum contact separation 1 mA / 5 VDC, reinforced insulation on supply side, basic insulation on control interface side
2	7	NC	orange	Status relay, floating status contact, break for failure, contact rating 250 VAC / 30 VDC 5 A minimum contact separation 1 mA / 5 VDC, reinforced insulation on supply side, basic insulation on control interface side
2	8	0-10V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V ± 3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); SELV

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Curves: Air performance 50 Hz
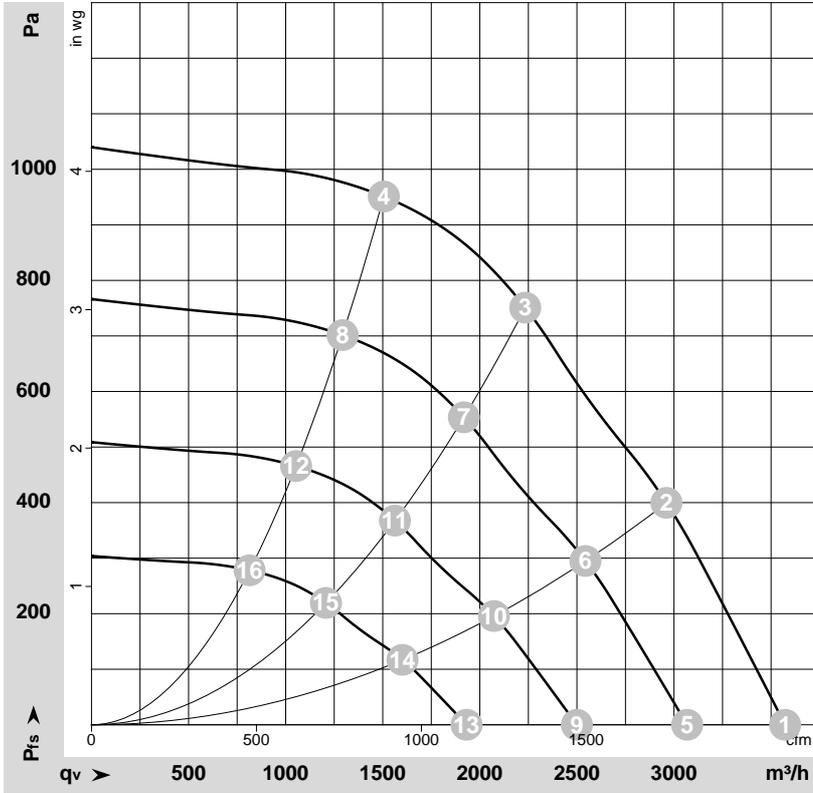
ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-174830-1

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	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)	m³/h	Pa	cfm	inH2O
1	400	50	3140	735	1.14	77	86	92	3570	0	2100	0.00
2	400	50	3140	879	1.36	75	84	90	2960	400	1745	1.61
3	400	50	3140	900	1.40	72	81	86	2235	760	1315	3.05
4	400	50	3140	836	1.29	73	82	87	1505	950	885	3.81
5	400	50	2700	466	0.72	74	82	88	3070	0	1805	0.00
6	400	50	2700	557	0.86	71	80	86	2545	302	1495	1.21
7	400	50	2700	570	0.88	69	77	82	1920	559	1130	2.24
8	400	50	2700	530	0.82	70	78	83	1295	702	760	2.82
9	400	50	2200	252	0.39	68	77	83	2500	0	1470	0.00
10	400	50	2200	301	0.47	66	75	81	2075	201	1220	0.81
11	400	50	2200	309	0.48	63	72	77	1565	371	920	1.49
12	400	50	2200	287	0.44	65	73	78	1055	466	620	1.87
13	400	50	1700	116	0.18	62	70	76	1930	0	1135	0.00
14	400	50	1700	139	0.21	60	68	74	1600	120	945	0.48
15	400	50	1700	142	0.22	57	65	71	1210	222	710	0.89
16	400	50	1700	132	0.20	58	67	72	815	278	480	1.12

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 LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase

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