K3G280-BC01-N3

EC centrifugal module

backward-curved, single-intake

with cube design, for rail applications

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	**K3G280-BC01-N3**
Motor	**M3G084-FA**

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}	3140
Power consumption	W	940
Current draw	A	1.5
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

EC centrifugal module

backward-curved, single-intake

with cube design, for rail applications

Technical description

Weight	17.98 kg
Size	280 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized and painted black
Spacer material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
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	Any
Condensation drainage holes	None
Mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - 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 switch auto reset, internally connected
With cable	Lateral

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal module

backward-curved, single-intake

with cube design, for rail applications

Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2008; EN 61373, Cat. 1B: 2010
Comment on CE	Ecodesign Directive 2009/125/EC + Fan Regulation (EC) No. 327/2011 does not apply, as use only in means of transport for transporting persons or goods.
Approval	EAC; CCC
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.

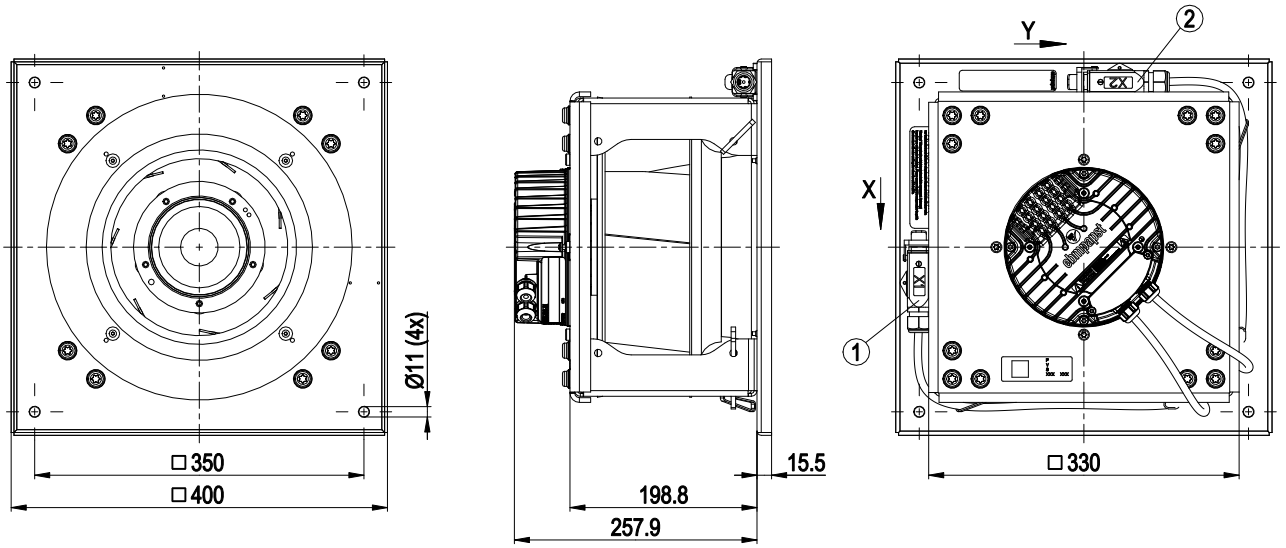
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

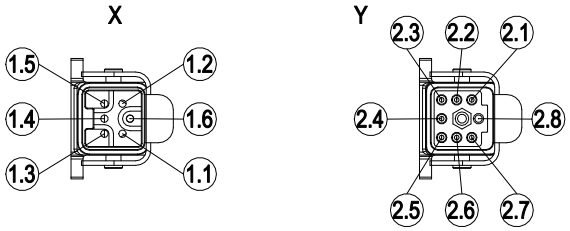
EC centrifugal module

backward-curved, single-intake

with cube design, for rail applications

Product drawing





1	Cable, halogen-free, railway application EN 45545, 4G 1.5 mm²
	Connector housing Harting 19 20 003 1250 incl. flat rubber gasket 34100-4-6730, 6-pole connector 09 12 005 3001, 4x plug pin 09 33 000 6104
1.1	not used
1.2	not used
1.3	L2
1.4	L3
1.5	L1
1.6	PE
2	Cable, halogen-free, railway application EN 45545, 7X 0.5 mm²
	Connector housing Harting 19 20 003 1250 incl. flat rubber gasket 34100-4-6730, 8-pole connector 09 12 007 3001, 8x plug pin 09 33 000 6105
2.1	GND
2.2	0-10 V
2.3	RSB
2.4	+10 V
2.5	RSA
2.6	COM
2.7	NC
2.8	not used

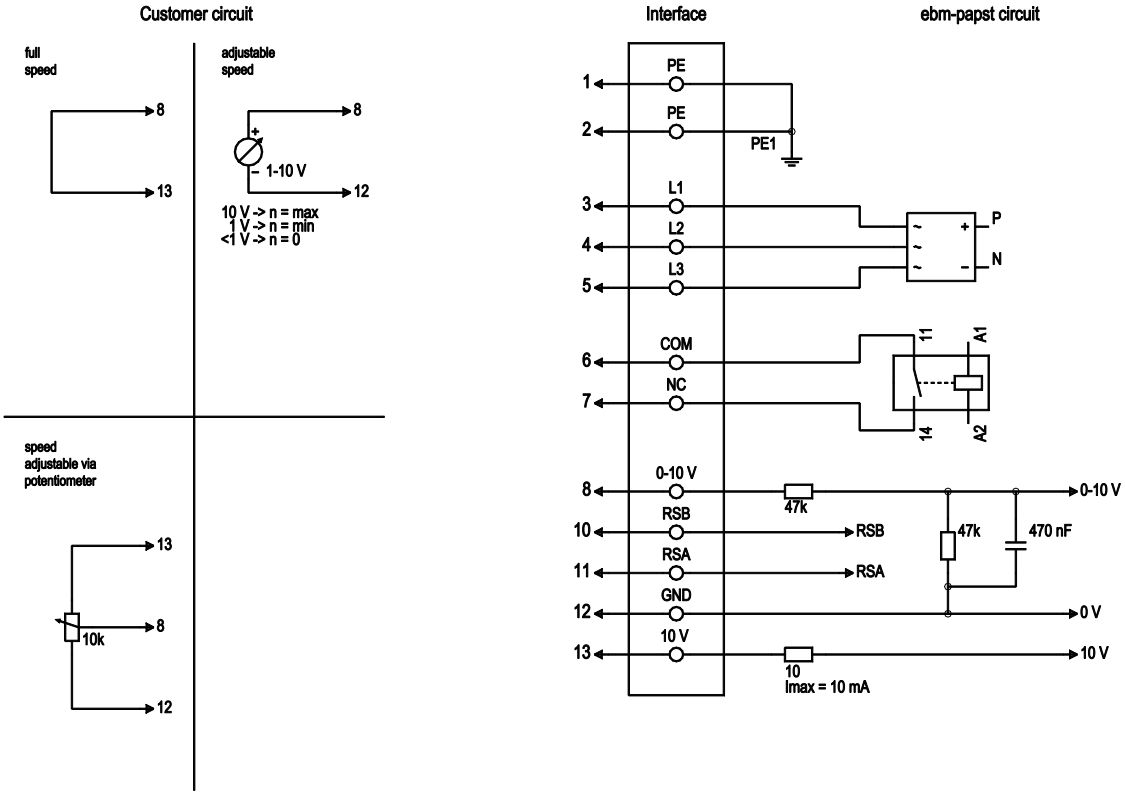
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal module

backward-curved, single-intake

with cube design, for rail applications

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)

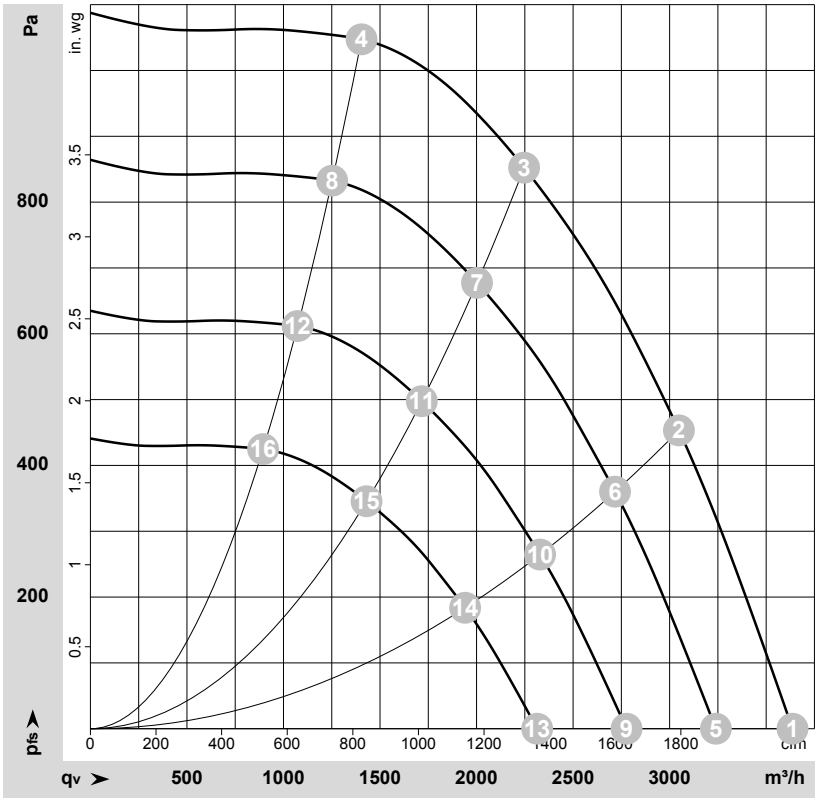
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal module

backward-curved, single-intake

with cube design, for rail applications

Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-193803-1
Date: 2018-06-26
Nozzle: 28070-2-4013

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	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	3~	400	50	3140	722	1.13	3635	0	2140	0.00
2	3~	400	50	3140	901	1.39	3050	450	1795	1.81
3	3~	400	50	3140	940	1.50	2245	850	1320	3.41
4	3~	400	50	3140	860	1.33	1405	1050	825	4.22
5	3~	400	50	2800	510	0.80	3240	0	1905	0.00
6	3~	400	50	2800	638	0.99	2715	361	1600	1.45
7	3~	400	50	2800	699	1.08	2000	677	1180	2.72
8	3~	400	50	2800	610	0.94	1250	833	735	3.34
9	3~	400	50	2400	321	0.50	2775	0	1635	0.00
10	3~	400	50	2400	402	0.62	2330	265	1370	1.06
11	3~	400	50	2400	440	0.68	1715	498	1010	2.00
12	3~	400	50	2400	384	0.59	1075	612	630	2.46
13	3~	400	50	2000	186	0.29	2315	0	1360	0.00
14	3~	400	50	2000	233	0.36	1940	184	1140	0.74
15	3~	400	50	2000	255	0.39	1430	346	840	1.39
16	3~	400	50	2000	222	0.34	895	425	525	1.71

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

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com