

EC centrifugal module - RadiCal

backward-curved, single-intake
with support structure, for rail applications

K3G280-RR10-P1 ebmpapst Datasheet
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Nominal data

Type	K3G280-RR10-P1	
Motor	M3G084-DF	
Nominal voltage	VDC	110
Nominal voltage range	VDC	77 .. 138
Method of obtaining data		ml
Speed (rpm)	min ⁻¹	2600
Power consumption	W	475
Current draw	A	4.3
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

Technical description

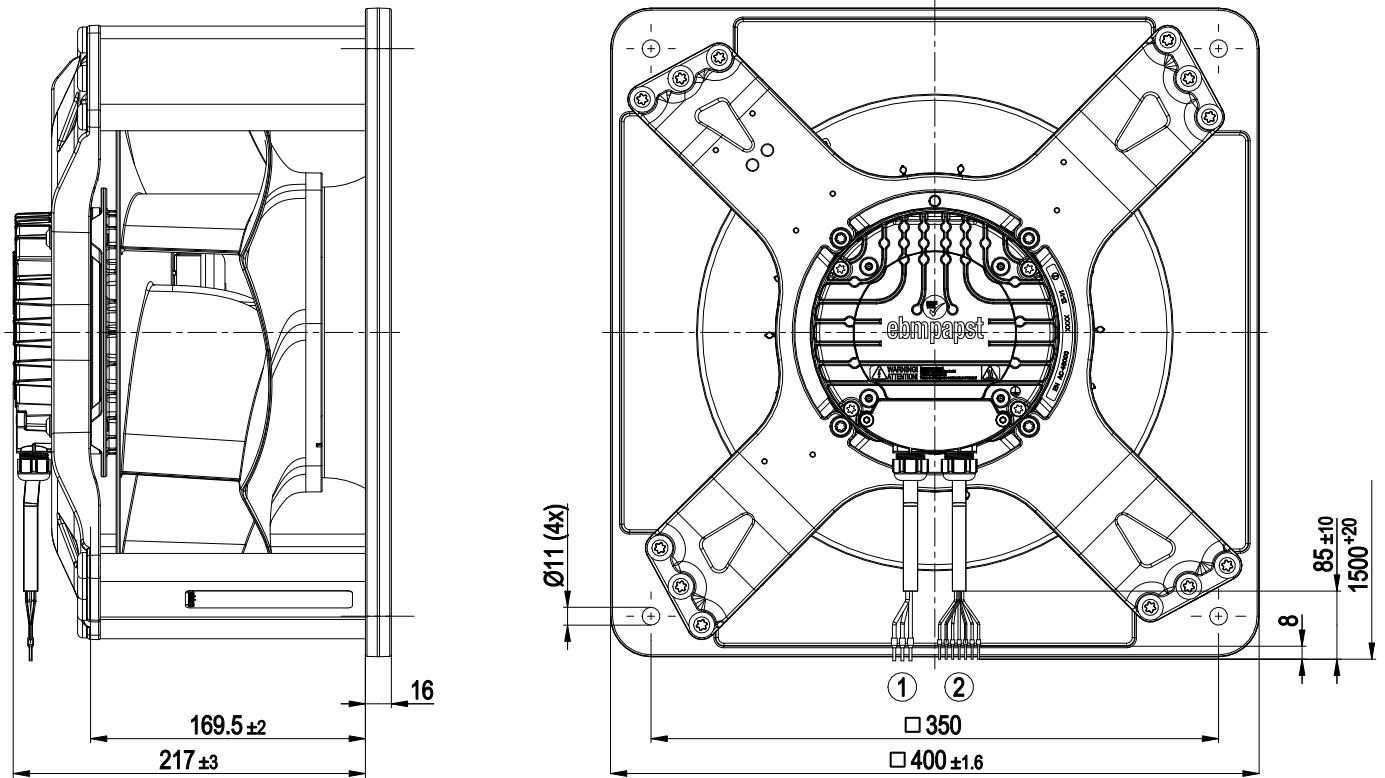
Weight	9.82 kg
Size	280 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic, sheet-metal plate painted black
Inlet nozzle material	Sheet steel, galvanized
Support structure material	Aluminum
Number of blades	6
Direction of rotation	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; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Motor current limitation - 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 detection - Reverse polarity protection
EMC regulations	According to EN 50121-3-2
Motor protection	Thermal switch auto reset, internally connected
With cable	Lateral
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 15085-1, CPC3; EN 45545-2, HL3; EN 50155; EN 61373, Cat. 1B
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
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



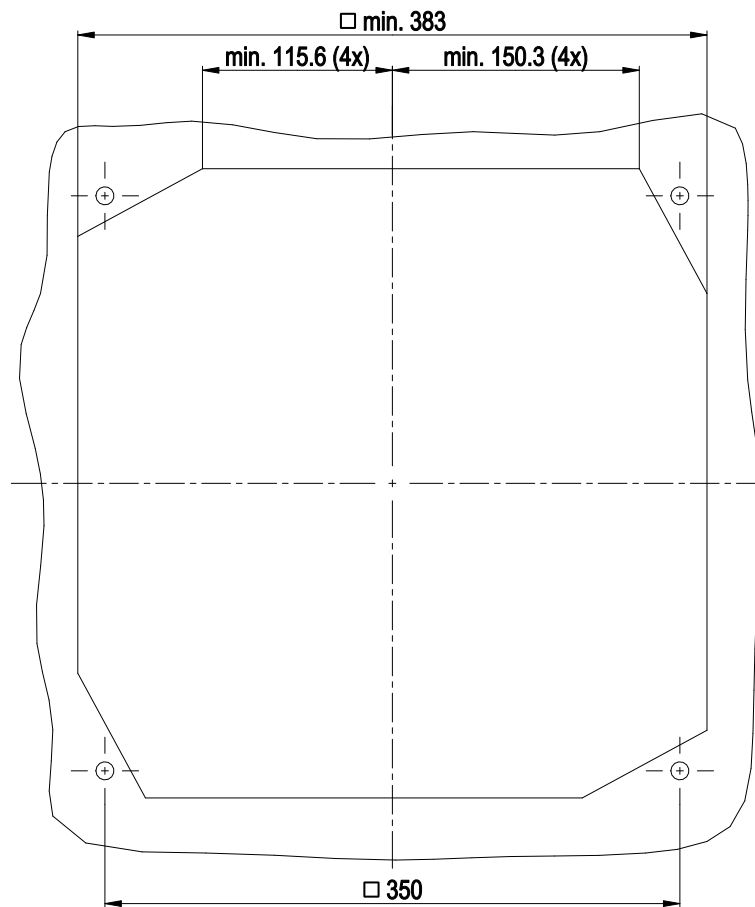
1	Cable, halogen-free, railway application EN 45545, 4G 1.5 mm ² 3x wire-end ferrule, 1x wire not routed externally
2	Cable, halogen-free, railway application EN 45545, 7x 0.5 mm ² 7x wire-end ferrule

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Mounting dimensions

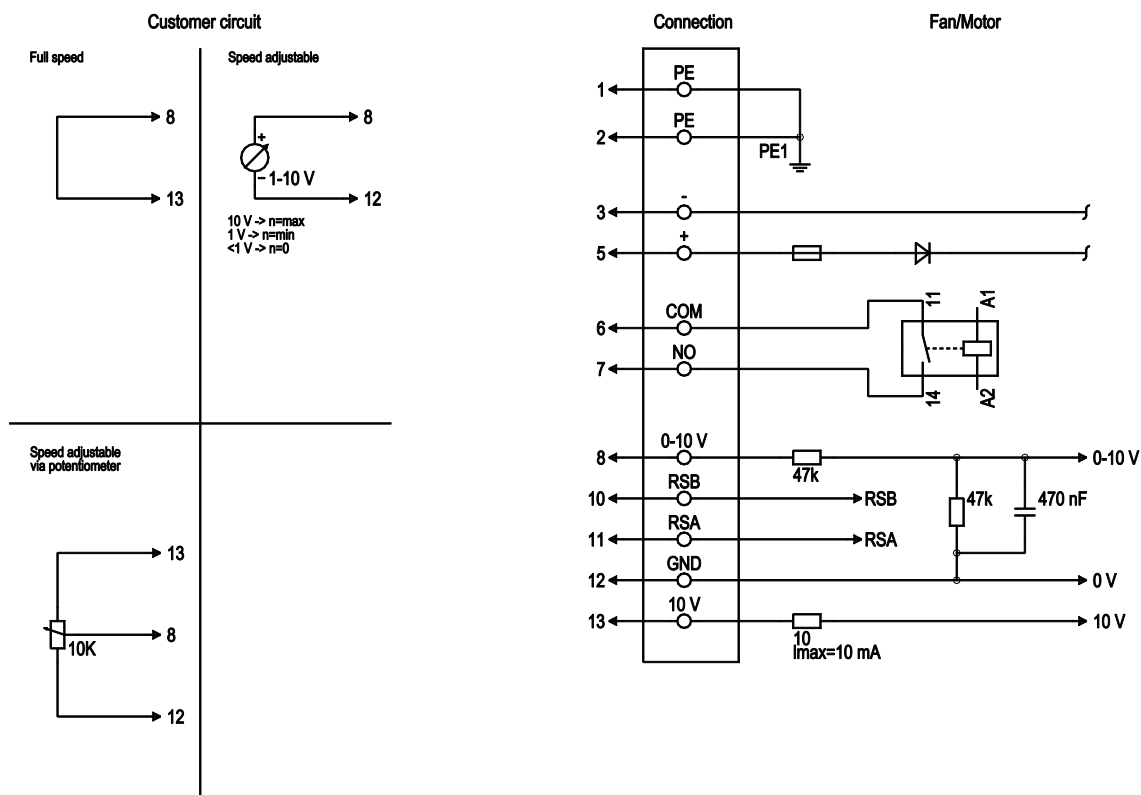


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Connection diagram

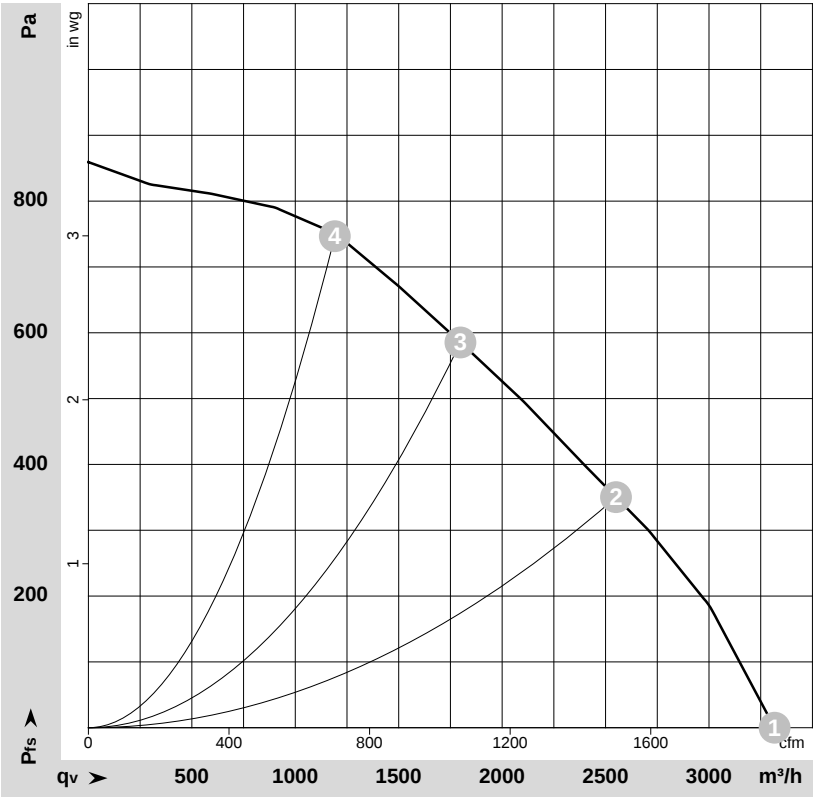


No.	Conn.	Designation	Color	Function/assignment
1	1	PE	green/yellow	Protective earth
1	2	PE	-	not brought out via wire
1	3	-	black	Power supply, GND, voltage range see nameplate
1	5	+	brown	Power supply, see nameplate for voltage range
2	6	COM	gray	Status relay, floating status contact, common connection, contact rating 250 VAC/30 VDC max. 2 A (AC1), min. 1 mA/5 VDC, reinforced insulation on control interface side, basic insulation on supply side in accordance with EN 50124-1
2	7	NO	orange	Status relay, floating status contact, normally open contact, contact rating 250 VAC/30 VDC max. 2 A (AC1), min. 1 mA/5 VDC, reinforced insulation on control interface side, basic insulation on supply side in accordance with EN 50124-1
2	8	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	brown	RS-485 interface for MODBUS, RSB; SELV, bus termination resistor provided by customer
2	11	RSA	white	RS-485 interface for MODBUS, RSA; SELV, bus termination resistor provided by customer
2	12	GND	blue	Reference ground for control interface; SELV
2	13	+10 V	red	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



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-177987-1
Date: 2026-07-24
Nozzle: 28000-2-4013

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

	U	n	P _{ed}	I	LpA _{in}	LwA _{in}	q _v	P _{fs}	q _v	P _{fs}
	V	min ⁻¹	W	A	dB(A)	dB(A)	m³/h	Pa	cfm	in. wg
1	110	2810	436	3.96	77	84	3315	0	1950	0.00
2	110	2715	495	4.50	70	77	2550	350	1500	1.41
3	110	2635	495	4.50	66	73	1800	580	1060	2.33
4	110	2760	491	4.46	69	75	1190	750	700	3.01

U = Voltage · 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