K3G310-RU29-81

EC centrifugal module - RadiCal

backward-curved, single-intake

with support structure, for rail applications

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Nominal data

Type	**K3G310-RU29-81**	
Motor	**M3G084-CF**	
Nominal voltage	V	24
Nominal voltage range	V	16 .. 32
Method of obtaining data		fa
Status		prelim.
Speed (rpm)	min^{-1}	2550
Power consumption	W	470
Current draw	A	19.5
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

Data according to Commission Regulation (EU) 327/2011 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	59.5	49
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		72.5	62
05 Variable speed drive		Yes	

09 Power consumption P_e	kW	0.57
09 Air flow q_v	m^3/h	2415
09 Pressure increase p_{fs}	Pa	468
10 Speed (rpm) n	min^{-1}	2380
11 Specific ratio*		1.02

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-181040

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Technical description

Size	310 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	Motor IP24 KM, electronics IP6K9K (mating connector installed)
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H3
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
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
Cooling hole/opening	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	-Start at 85 °C (2 min) permitted - Error output (high-side switch) - Load dump (58 V) - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Standstill on cable break - Temperature derating - Overvoltage detection - Thermal overload protection for electronics - Line undervoltage detection - Reverse polarity protection
EMC regulations	According to EN 50121-3-2
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; CE
Approval	EAC

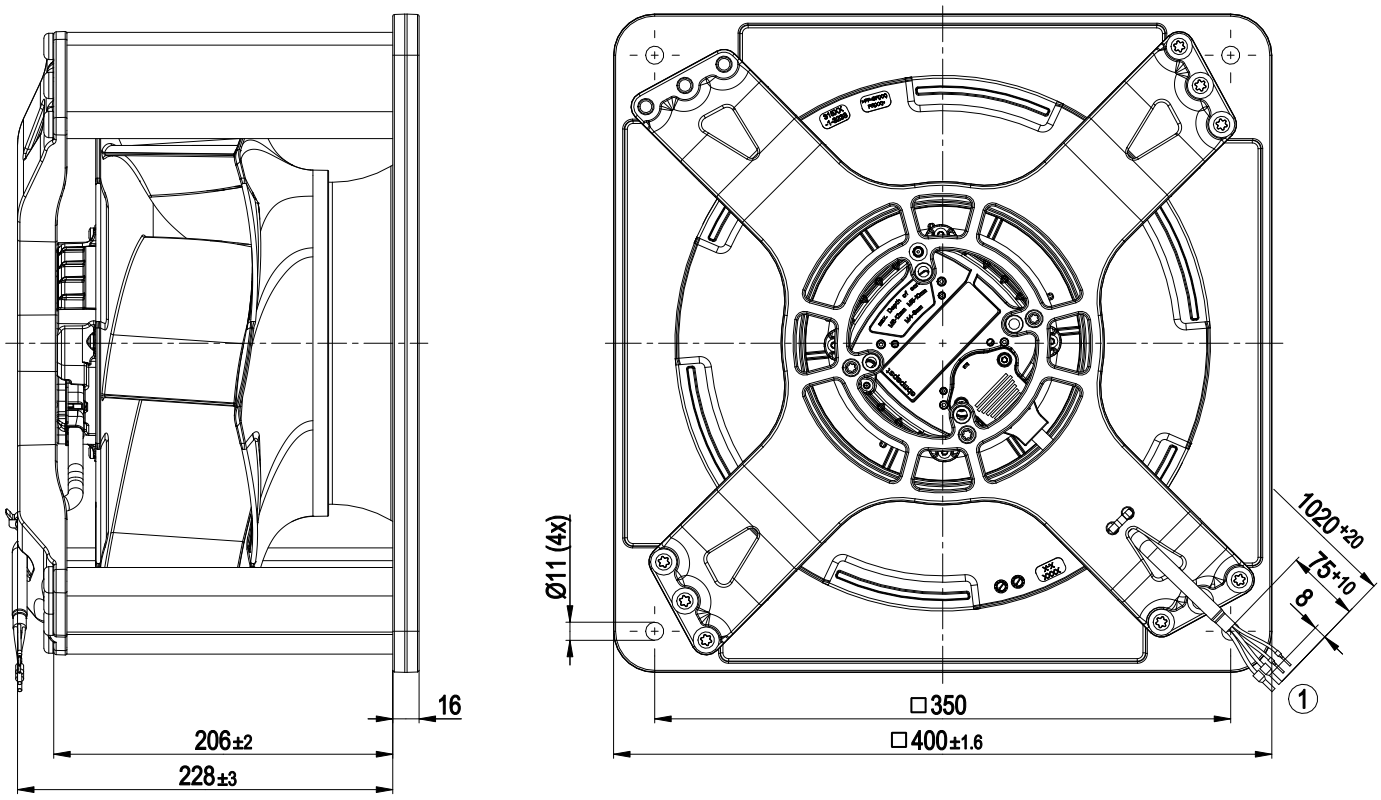
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Product drawing



1	Cable BETAtrans® 3 GKW 2x 6.0 mm², 2x 1.0 mm²
	4x wire-end ferrule

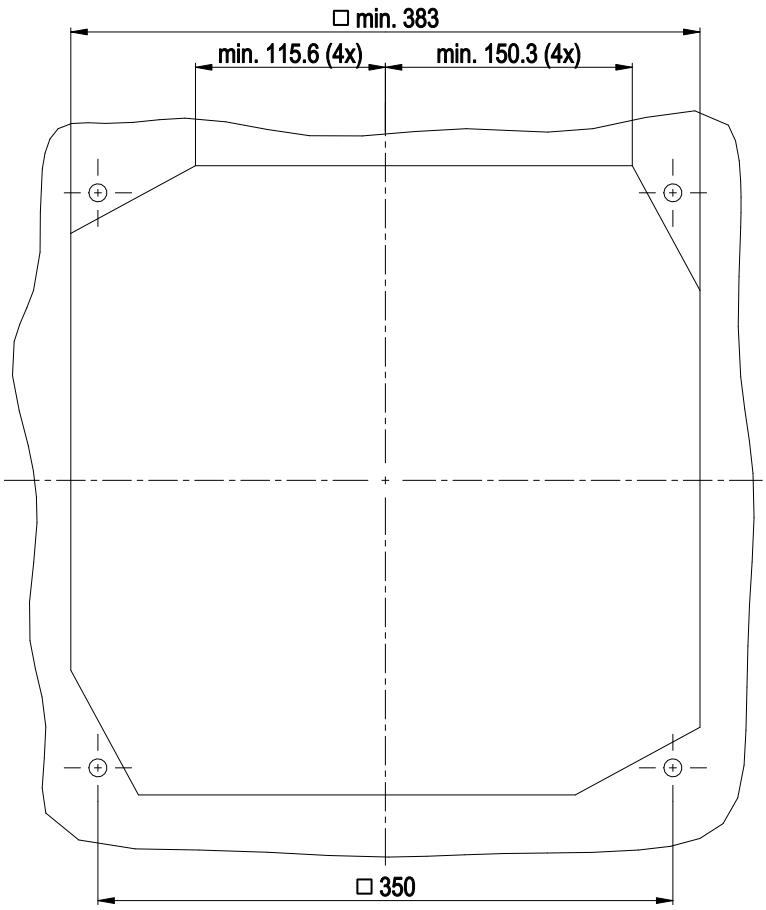
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Mounting dimensions



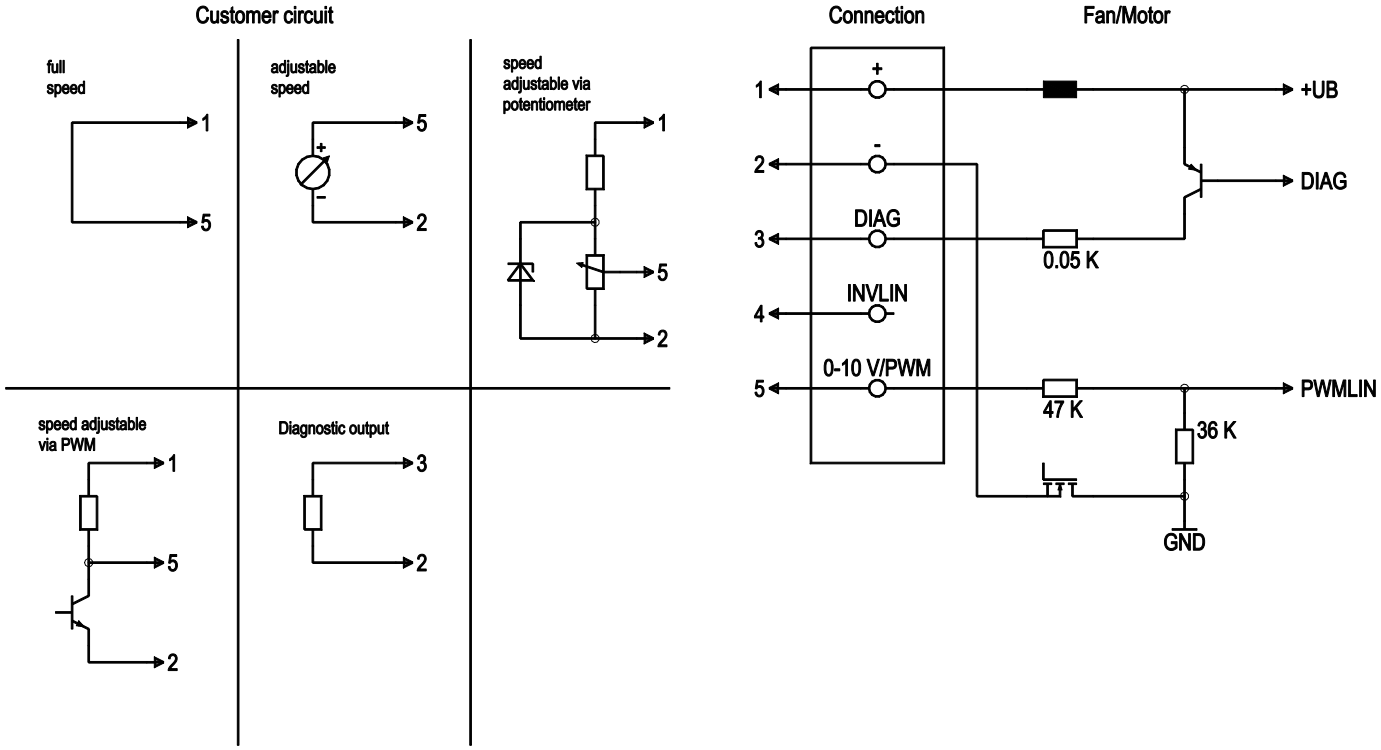
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	+	black	Power supply, see nameplate for voltage range
1	2	-	brown	Power supply, see nameplate for voltage range
1	3	DIAG	white	Diagnostic output: Open collector, Isource max = 20 mA, Fan OK -> low; fan error -> high
1	4	INVLIN		not used
1	5	0-10 V / PWM	yellow	Control input: Ri > 47 kΩ 0-10 V (typ. < 1 V -> n=0; 1.5 V -> n=min; > 10 V -> n=max) PWM (amplitude 10 V; 1-50 kHz; typ. < 5 % -> n=0; 15% -> n=min; > 100% -> n=max)

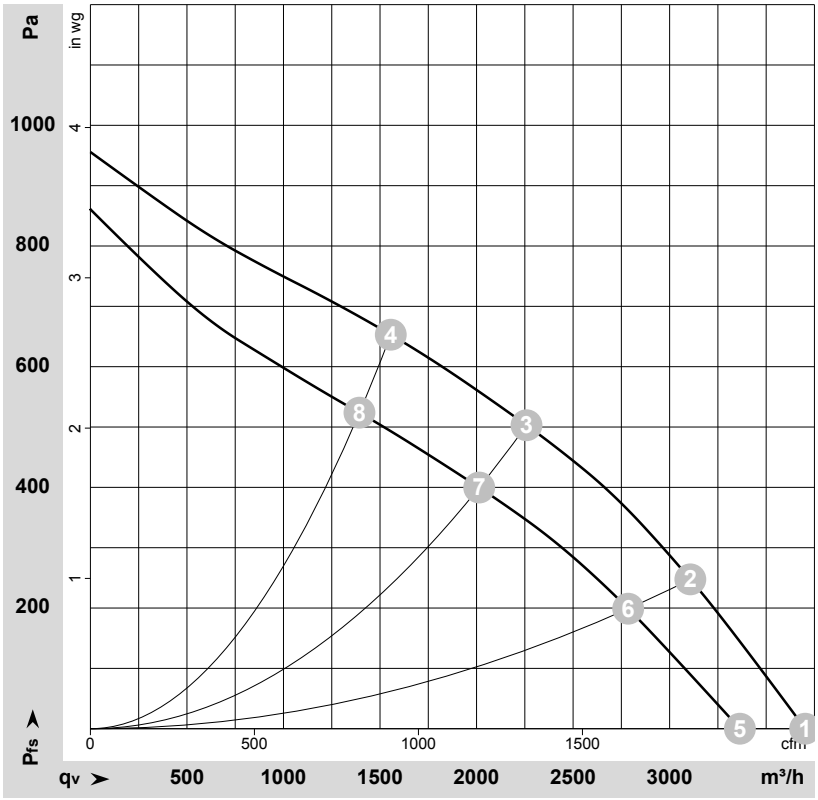
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Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-181040-1
Measurement: LU-181070-1

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	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	24-32	2550	470	19.50*	74	81	3700	0	2180	0.00
2	24-32	2430	538	22.40*	71	78	3105	250	1830	1.00
3	24-32	2380	581	24.20*	67	74	2260	500	1330	2.01
4	24-32	2400	556	23.10*	69	76	1555	650	915	2.61
5	16	2305	372	23.27			3365	0	1980	0.00
6	16	2190	410	25.52			2785	199	1640	0.80
7	16	2125	432	26.89			2015	400	1185	1.61
8	16	2155	422	26.37			1395	524	820	2.10

U = Voltage · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · * = Current measured at nominal voltage · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
q_V = Air flow · p_{fs} = Pressure increase

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