

EC centrifugal module - RadiCal

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

K3G250-RU27-81 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Nominal data

Type	K3G250-RU27-81	
Motor	M3G084-CF	
Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Method of obtaining data		fa
Status		prelim.
Speed (rpm)	min ⁻¹	3860
Power consumption	W	410
Current draw	A	15.8
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}	%	57.6	48.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		70.7	62
05 Variable speed drive		Yes	

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

09 Power consumption P_e	kW	0.56
09 Air flow q_v	m³/h	1345
09 Pressure increase p_{fs}	Pa	789
10 Speed (rpm) n	min ⁻¹	3845
11 Specific ratio*		1.01

* Specific ratio = $1 + p_g / 100\,000\text{ Pa}$

LU-162027



Technical description

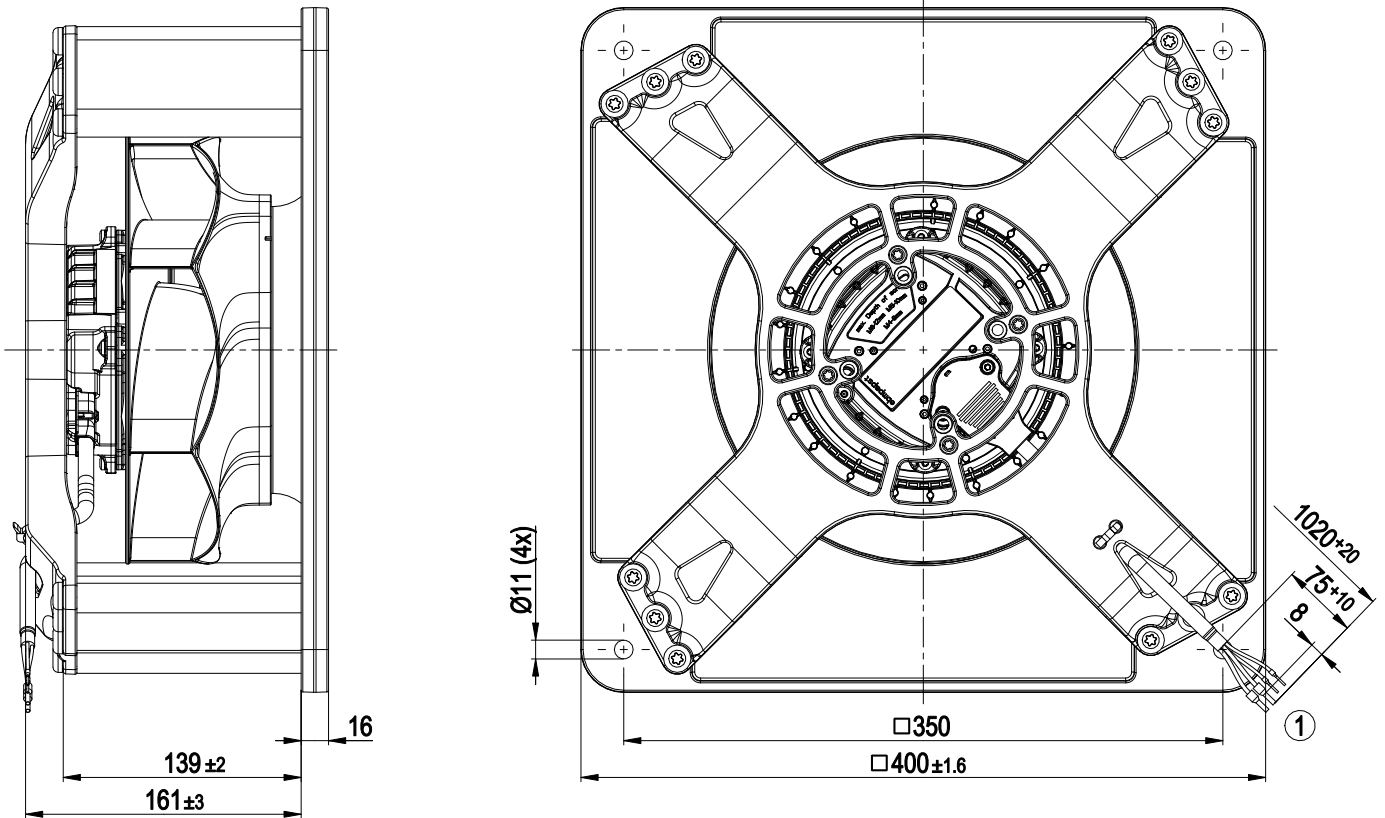
Weight	8.18 kg
Size	250 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PA plastic, sheet-metal plate painted black
Inlet nozzle material	Sheet steel, galvanized
Support structure material	Aluminum
Number of blades	7
Direction 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
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	- Error output (high-side switch) - Load dump (58 V) - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Temperature derating - Overvoltage detection - Thermal overload protection for electronics - Line undervoltage detection
EMC regulations	According to EN 50121-3-2
With cable	Lateral
Protection class	III
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

EC centrifugal module - RadiCal

backward-curved, single-intake

with support structure, for rail applications

Product drawing



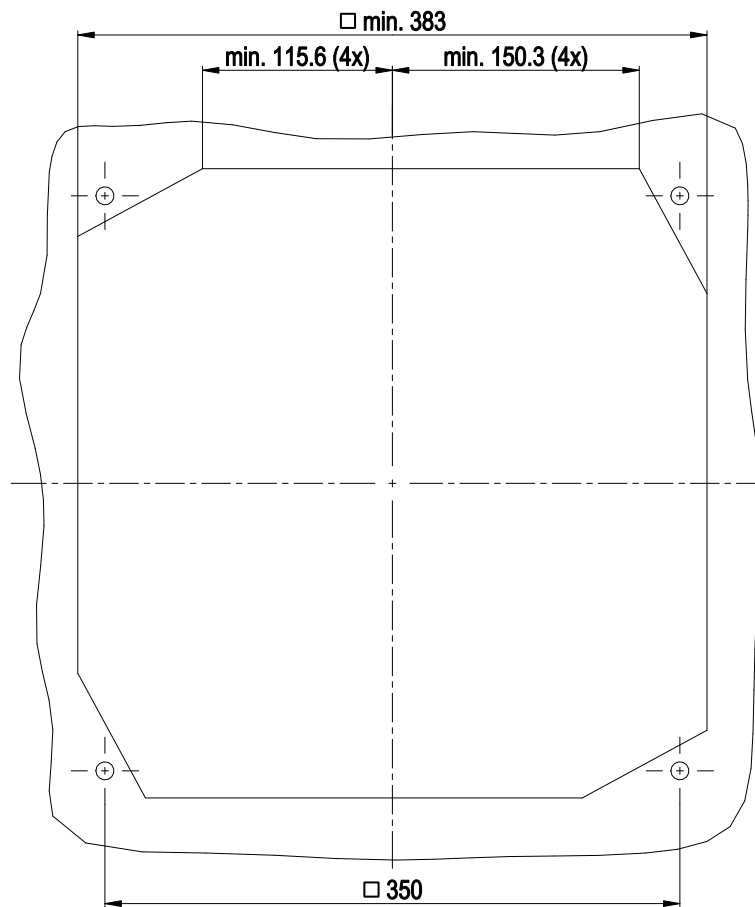
- | | |
|---|--|
| 1 | Cable, halogen-free, railway application EN 45545, 2x 2.5 mm ² , 2x 1.0 mm ² |
| | 4x wire-end ferrule |

EC centrifugal module - RadiCal

backward-curved, single-intake

with support structure, for rail applications

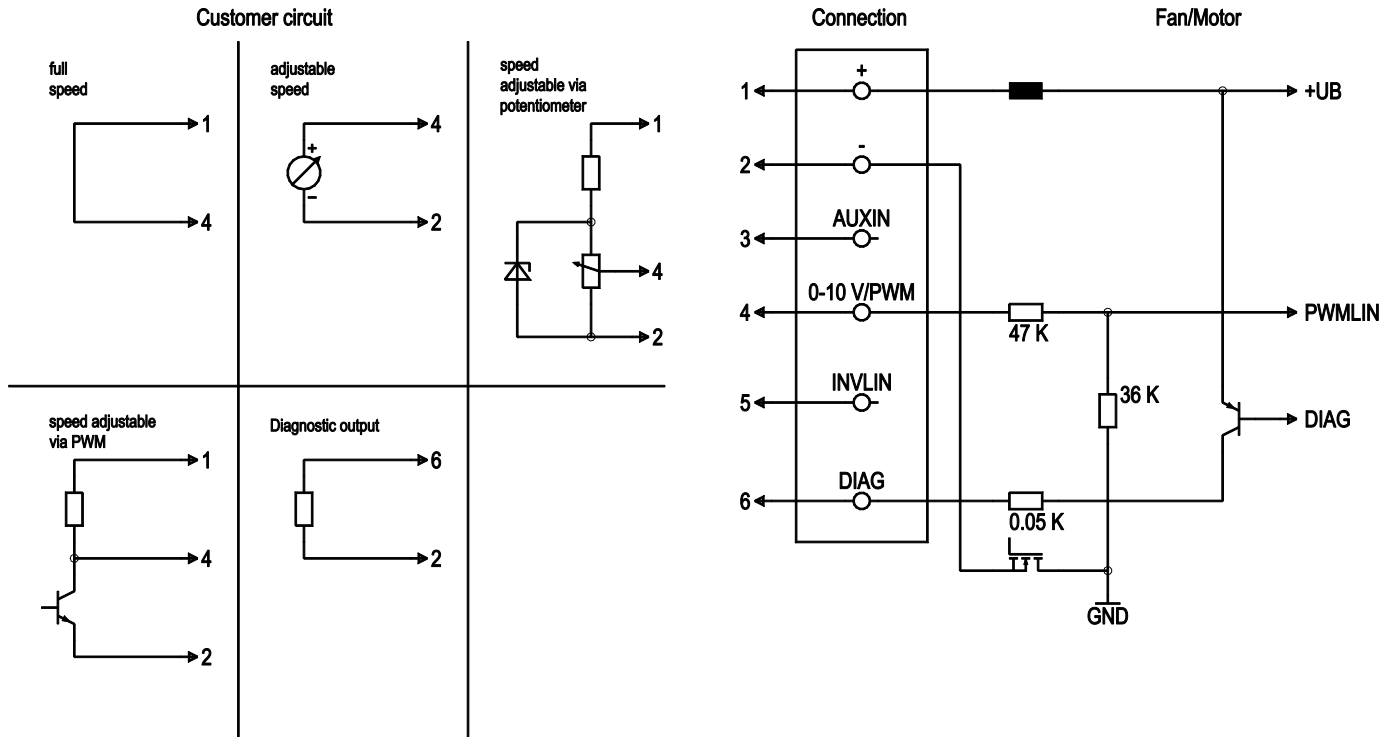
Mounting dimensions



EC centrifugal module - RadiCal

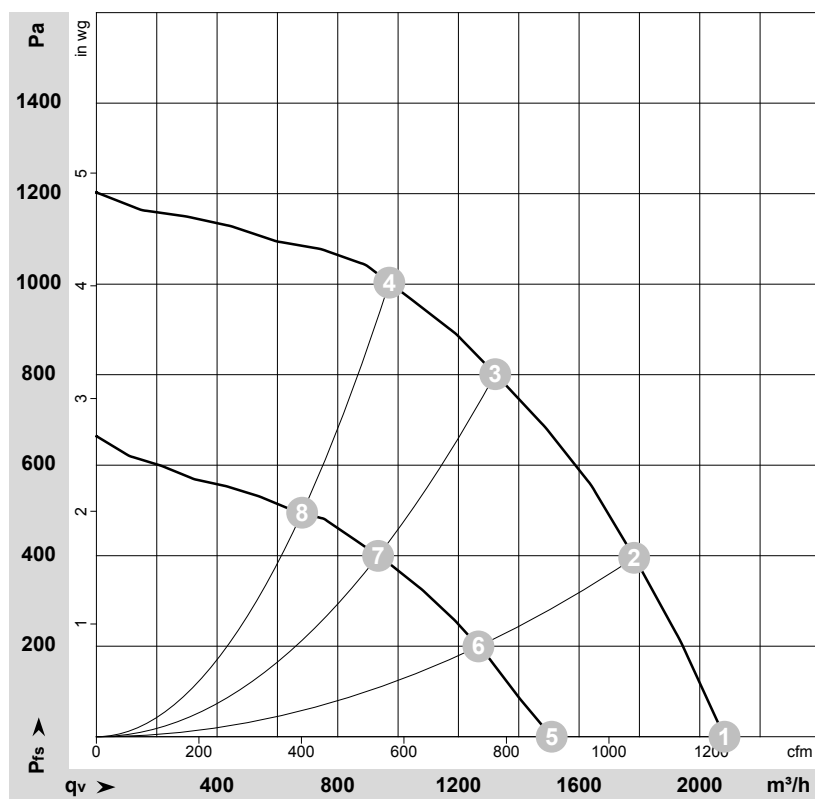
backward-curved, single-intake
with support structure, for rail applications

Connection diagram



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

Curves: Air performance



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

Measurement: LU-162027-1
Measurement: LU-162195-1

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	26-32	3860	410	15.80*	80	87	2080	0	1225	0.00
2	26-32	3860	513	19.80*	78	85	1785	400	1050	1.61
3	26-32	3860	568	21.90*	74	81	1320	800	780	3.21
4	26-32	3860	560	21.60*	76	82	970	1000	570	4.01
5	16	2800	166	10.43			1510	0	890	0.00
6	16	2755	187	11.72			1265	200	745	0.80
7	16	2730	204	12.78			935	400	550	1.61
8	16	2730	197	12.39			680	495	400	1.99

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

