R3G250-RU27-81

EC centrifugal fan

backward-curved, single-intake

for rail applications



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G250-RU27-81**	
Motor	**M3G084-CF**	
Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Method of obtaining data		fa
Speed	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 ErP Directive

		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	

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 n	min^{-1}	3845
11 Specific ratio*		1.01

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

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Technical description

Weight	2.75 kg
Fan size	250 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PA plastic, sheet-metal plate painted black
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP24 KM; (motor); electronics IP66 / 69K
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F5
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 top; rotor on bottom on request
Condensation drainage holes	None
Cooling hole/opening	On rotor side
Mode	S1
Motor storage	Ball bearing; (sealed)
Technical features	- Start at 85 °C (2 min permitted) - Fault output (high-side switch max. 30 mA) - Load dump (58 V) - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Temperature derating - Overvoltage detection - Thermal overload protection for electronics - Undervoltage detection
Electrical hookup	Standby current less than 500 µA
Motor protection	Reverse polarity and locked-rotor protection
With cable	Lateral
Protection class	III
Conformity with standards	EN 15085-1, CPC3: 2007; EN 61373, Cat. 1B: 2010
Comment	According to EN 45545; EN 50155

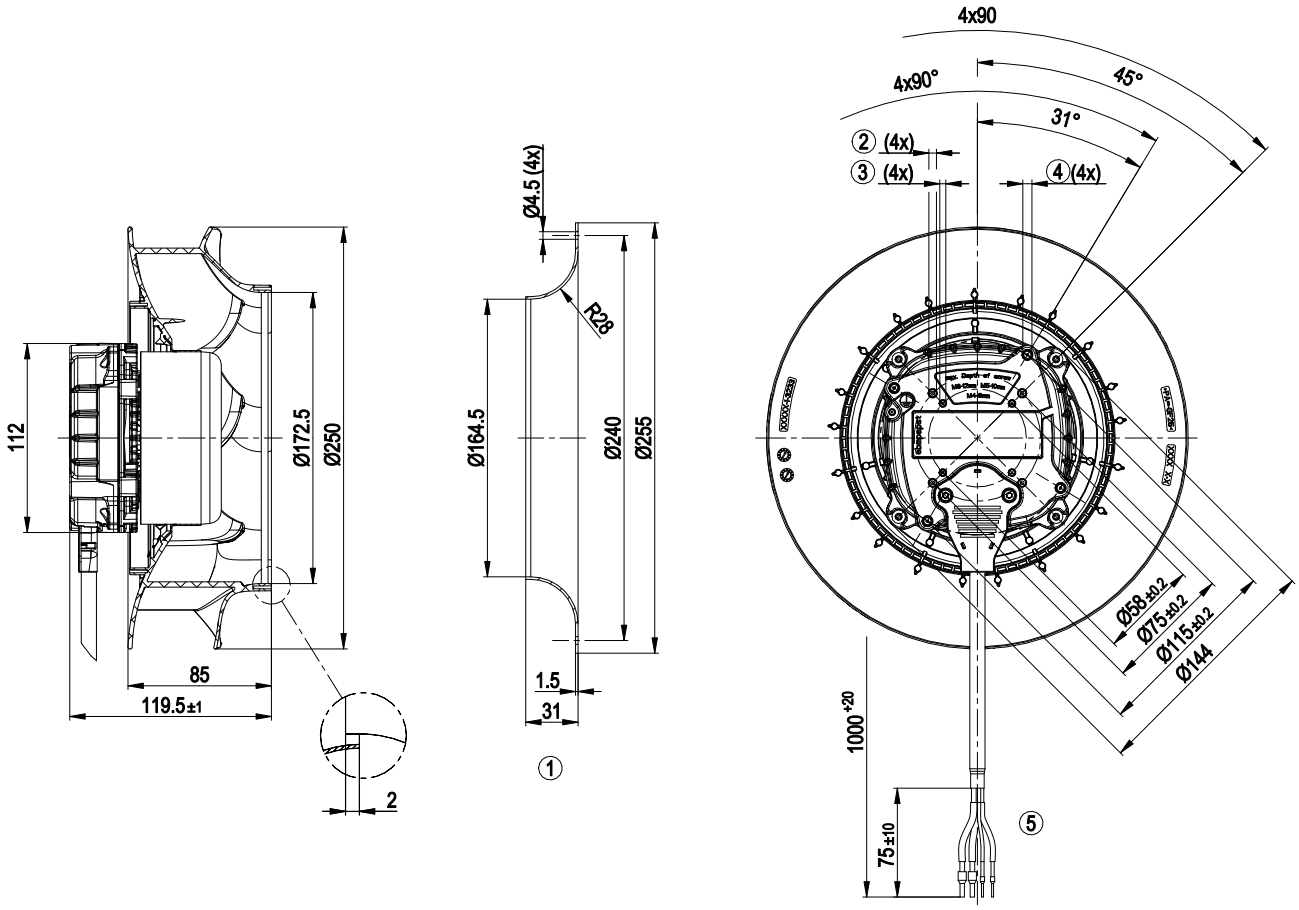
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Product drawing



1	Accessory part: inlet ring 96359-2-4013 not included in scope of delivery
2	Max. clearance for screw 10 mm, tapping hole ready for self-tapping M5 screw
3	Max. clearance for screw 8 mm, tapping hole ready for self-tapping M4 screw
4	Max. clearance for screw 12 mm, tapping hole ready for self-tapping M6 screw
5	Cable (railway) 2x 2.5 mm², 2x 1.0 mm², 4x crimped ferrules

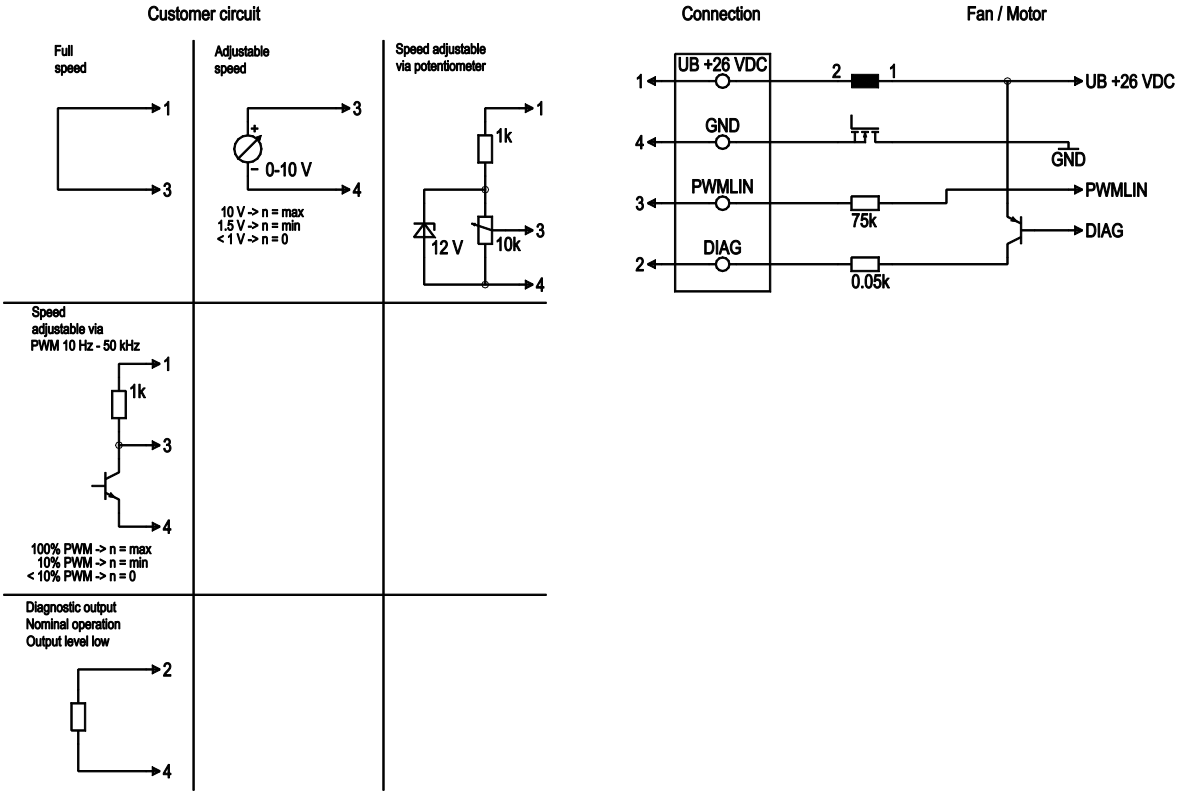
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	UB +26 VDC	black	Power supply 26 VDC
1	2	DIAG	white	Diagnostic output
1	3	PWMLIN	yellow	Analog voltage control input 0-10 V or PWM
1	4	GND	brown	Power supply GND, reference ground

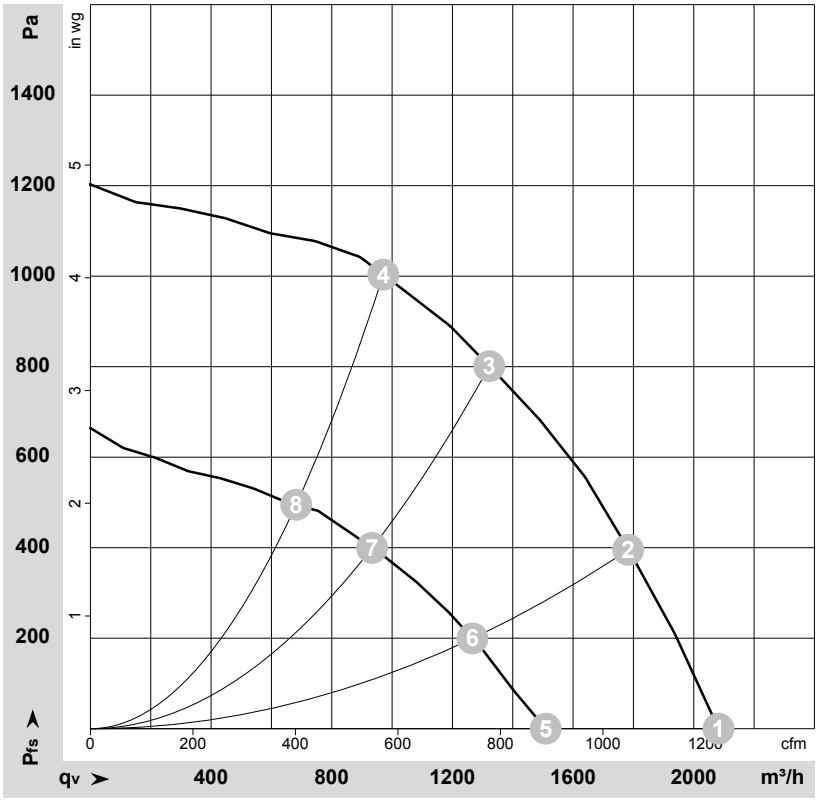
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Curves: Air performance



ρ = 1,15 kg/m³ ± 2%

Measurement: LU-162027
Measurement: LU-162195

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}	qv	p_{fs}
	V	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa
1	26-32	3860	410	15.8*	80	87	2080	0
2	26-32	3860	513	19.8*	78	85	1785	400
3	26-32	3860	568	21.9*	74	81	1320	800
4	26-32	3860	560	21.6*	76	82	970	1000
5	16	2800	166	10.43			1510	0
6	16	2755	187	11.72			1265	200
7	16	2730	204	12.78			935	400
8	16	2730	197	12.39			680	495

U = Power supply · n = Speed · 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
qv = Air flow · p_{fs} = Pressure increase

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