G3G180-BA11-07

EC centrifugal fan

forward-curved, single-intake

with housing (flange), for rail applications

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Nominal data

Type	**G3G180-BA11-07**
Motor	**M3G084-DF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		fa
Status		prelim.
Speed (rpm)	min^{-1}	2150
Power consumption	W	670
Current draw	A	1.1
Min. back pressure	Pa	0
Min. back pressure	in. wg	0
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}	%	50.9	34.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		60.1	44
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.34
09 Air flow q_v	m^3/h	905
09 Pressure increase p_{fs}	Pa	638
10 Speed (rpm) n	min^{-1}	2455
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

LU-200227

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Technical description

Weight	7.9 kg
Size	180 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	Sheet steel, galvanized and painted black
Housing material	Sheet steel, galvanized and painted black
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
Condensation drainage holes	None
Mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - Run monitoring - 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
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
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: 2008; EN 61373, Cat. 1B: 2010; CE
Approval	EAC

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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.

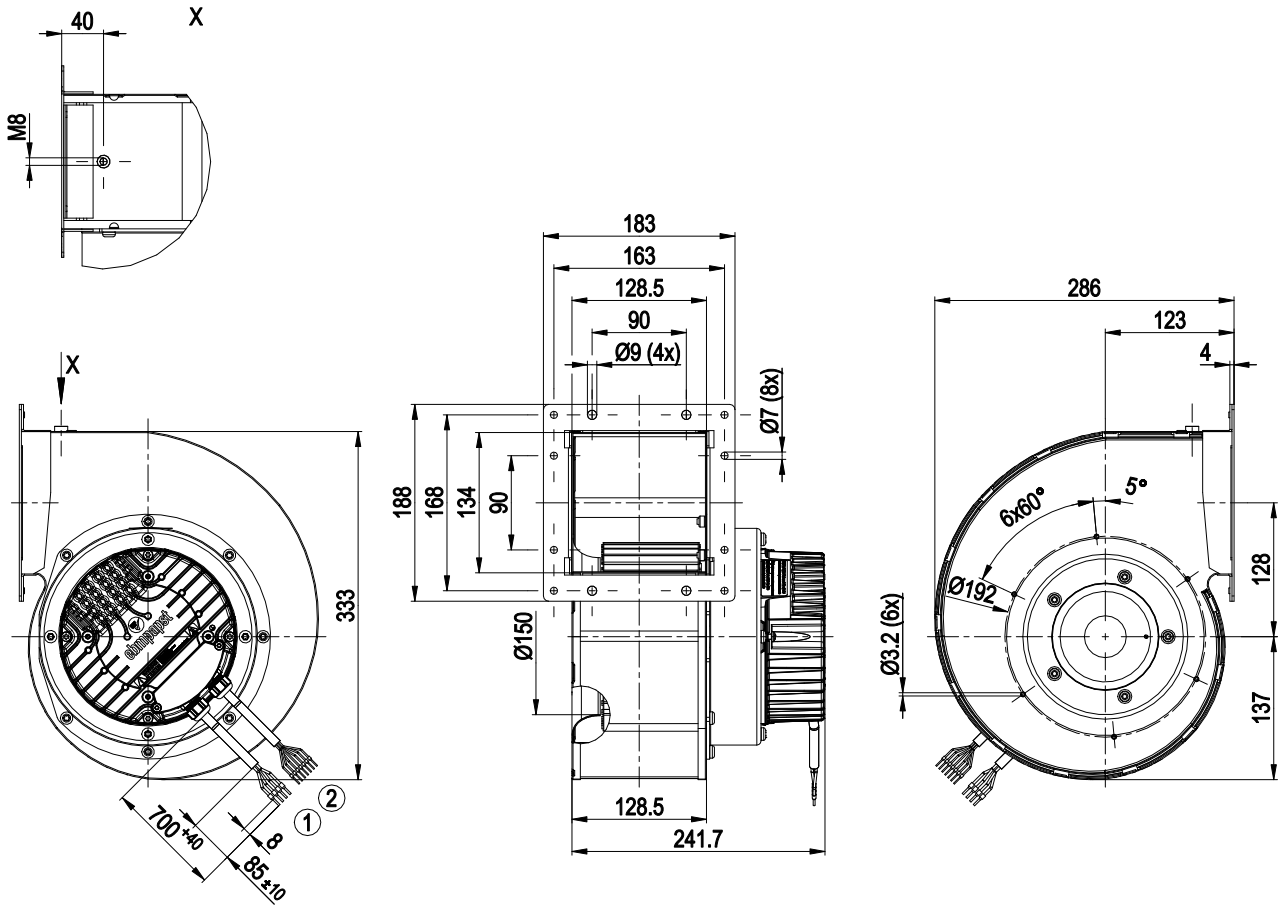
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Product drawing



1	Cable, halogen-free, railway application EN 45545, 4G 1.5 mm²
	4x wire-end ferrule
2	Cable, halogen-free, railway application EN 45545, 7x 0.5 mm²
	7x wire-end ferrule

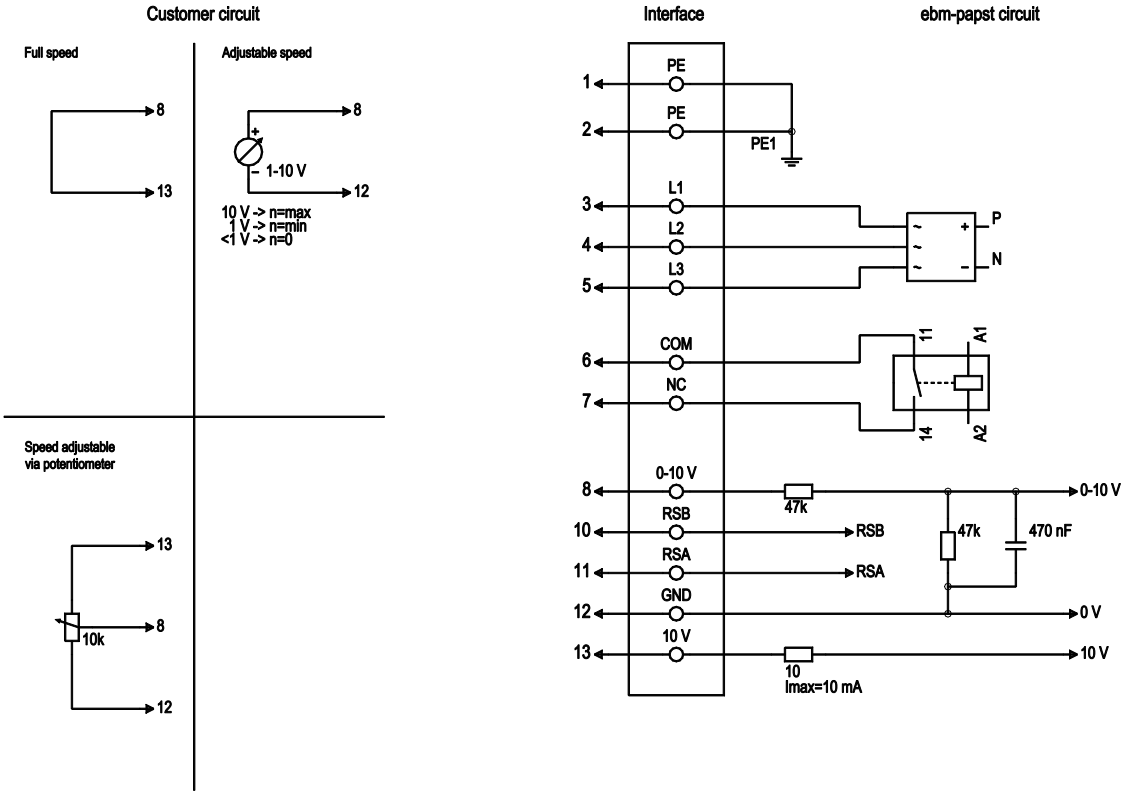
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	PE	green/yellow	Protective earth
1	2	PE	-	not brought out via wire
1	3	L1	black	Power supply, phase 50/60 Hz
1	4	L2	blue	Power supply, phase 50/60 Hz
1	5	L3	brown	Power supply, phase 50/60 Hz
2	6	COM	gray	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	orange	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	0-10V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V ± 3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); SELV

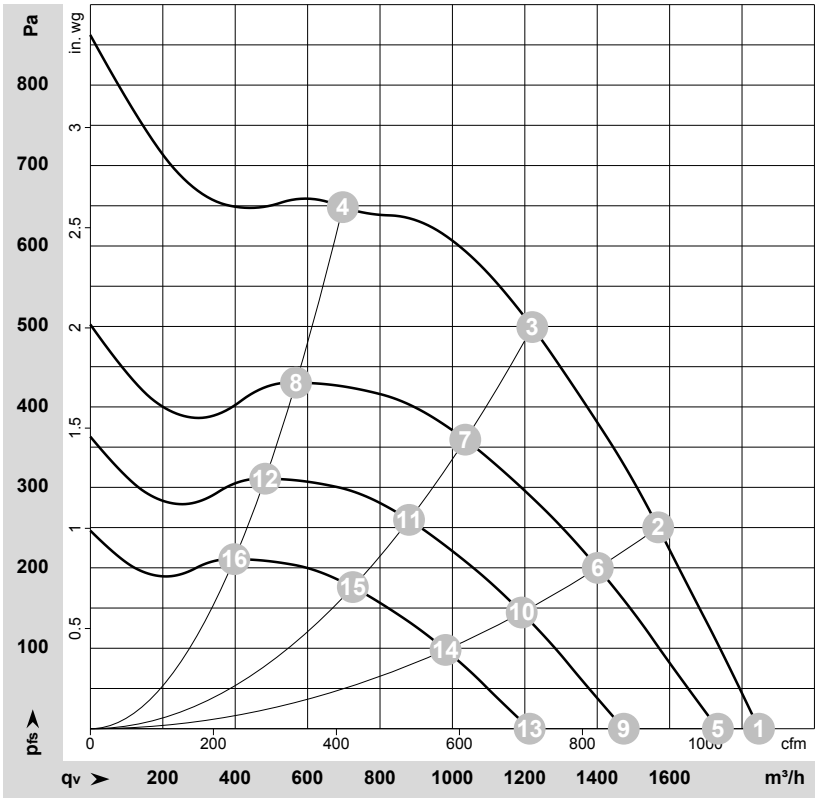
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-200227-1

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

	Wired	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	3~	400	50	2150	670	1.10	78	85	1845	0	1085	0.00
2	3~	400	50	2235	574	0.91	76	82	1570	250	925	1.00
3	3~	400	50	2355	454	0.74	73	79	1220	500	720	2.01
4	3~	400	50	2455	293	0.52	71	77	695	650	410	2.61
5	3~	400	50	2000	558	0.87	77	83	1735	0	1020	0.00
6	3~	400	50	2000	411	0.65	73	79	1400	200	825	0.80
7	3~	400	50	2000	277	0.45	69	75	1035	360	610	1.45
8	3~	400	50	2000	159	0.28	66	72	570	430	335	1.73
9	3~	400	50	1700	343	0.54	73	79	1475	0	865	0.00
10	3~	400	50	1700	253	0.40	69	75	1190	144	700	0.58
11	3~	400	50	1700	170	0.28	65	71	880	260	520	1.04
12	3~	400	50	1700	98	0.17	62	68	485	311	285	1.25
13	3~	400	50	1400	191	0.30	68	74	1215	0	715	0.00
14	3~	400	50	1400	141	0.22	64	70	980	98	575	0.39
15	3~	400	50	1400	95	0.15	60	66	725	177	425	0.71
16	3~	400	50	1400	54	0.10	57	63	400	211	235	0.85

Wired = Wiring · U = Voltage · f = Frequency · 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

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