K3G097-AT85-P1

EC dual centrifugal fan

forward-curved, with brushless DC motor
with housing, for rail applications

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Amtsgericht (court of registration) Stuttgart · HRA 590344

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Nominal data

Type	**K3G097-AT85-P1**
Motor	**M3G074-CF**

Nominal voltage	VDC	110
Nominal voltage range	VDC	77 .. 138
Frequency	Hz	DC
Method of obtaining data		fa
Speed (rpm)	min^{-1}	3450
Power consumption	W	330
Current draw	A	3.0
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}	%	45.7	34.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		55.2	44
05 Variable speed drive		Yes	

09 Power consumption P_e	kW	0.32
09 Air flow q_v	m^3/h	595
09 Pressure increase p_{fs}	Pa	793
10 Speed (rpm) n	min^{-1}	5490
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-203109

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Technical description

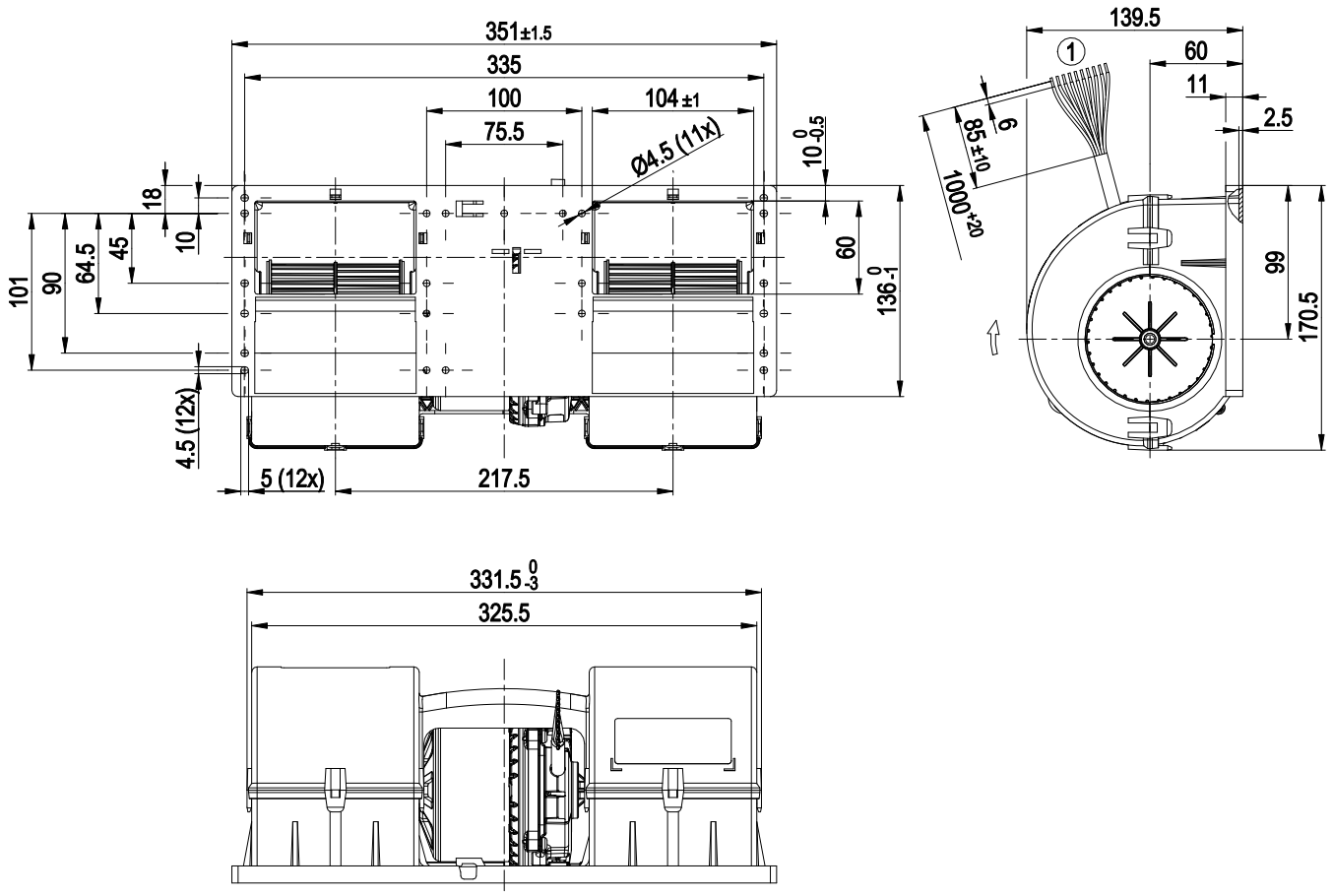
Weight	2.62 kg
Size	97 mm
Motor size	74
Impeller material	PA plastic
Housing material	PA plastic
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	Customer-specific; IP 6K9K
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H3
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Any
Condensation drainage holes	None, open rotor
Mode	S1
Motor bearing	Ball bearing; (sealed)
Life expectancy	40,000 h (typical)
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Power limiter - 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 - Line undervoltage detection - Reverse polarity protection
EMC regulations	According to EN 50121-3-2
Electrical hookup	Standby current less than 500 µA
Motor protection	Electronic motor protection
With cable	Lateral
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2008; EN 61373, Cat. 1B: 2010; CE
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



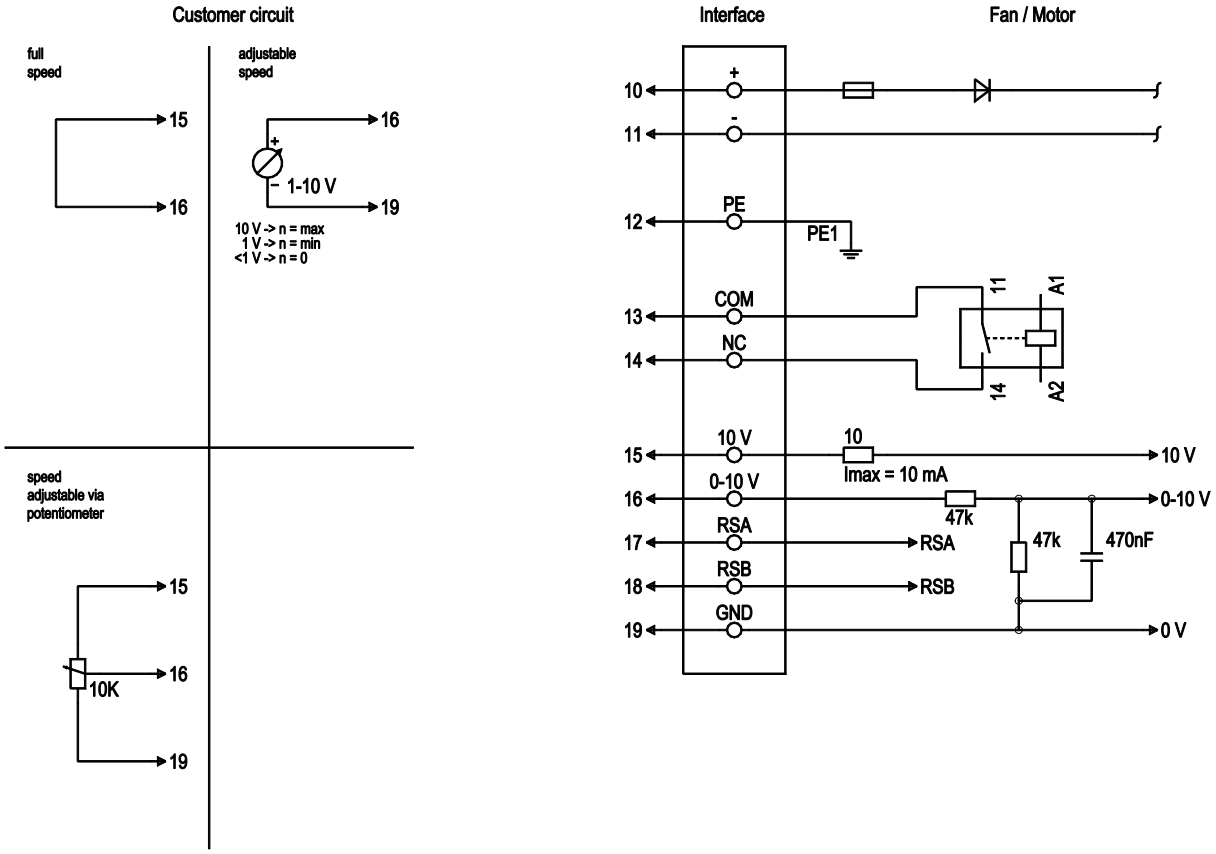
1	Cable, halogen-free, railway application EN 45545, 10G 1.0 mm²
	10x lead tip

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Connection diagram



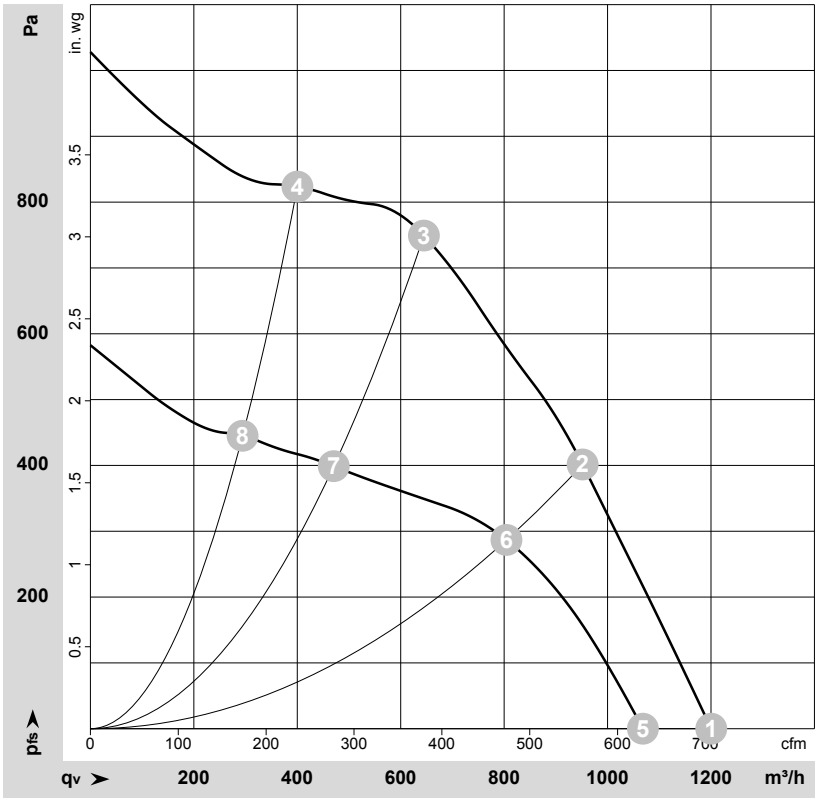
No.	Conn.	Designation	Color	Function/assignment
	10	+	brown	Power supply, see nameplate for voltage range
	11	-	black	Power supply, see nameplate for voltage range
	12	PE	green/yellow	Protective earth
	13	COM	gray	Status relay, floating status contact, common connection, contact rating 250 VAC/2 A (AC1)/min. 10 mA/5 V; Reinforced insulation in accordance with EN 50124-1 for switching voltages up to 110 VDC
	14	NC	purple	Status relay, floating status contact, break for failure, contact rating 250 VAC/2 A (AC1)/min. 10 mA/5 V; Reinforced insulation in accordance with EN 50124-1 for switching voltages up to 110 VDC
	15	+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)
	16	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
	17	RSA	white	RS-485 interface for MODBUS, RSA; SELV
	18	RSB	orange	RS-485 interface for MODBUS, RSB; SELV
	19	GND	blue	Reference ground for control interface, SELV

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Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-203109-1
Measurement: LU-203305-1

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	110-138	3450	330	3.00*	70	81	1200	0	705	0.00
2	110-138	4415	330	3.00*	69	80	950	400	560	1.61
3	110-138	5380	330	3.00*	70	80	645	750	380	3.01
4	110-138	5495	241	2.20*	71	81	400	830	235	3.33
5	77	3190	236	3.06			1070	0	630	0.00
6	77	3745	209	2.72			805	287	475	1.15
7	77	3980	142	1.84			470	399	275	1.60
8	77	4080	107	1.39			295	447	175	1.79

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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