K3G097-AS81-81

EC dual centrifugal fan

forward curved, dual inlet

with housing, for railway applications



ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

Nominal data

Type	**K3G097-AS81-81**	
Motor	**M3G084-BF**	
Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Type of data definition		fa
Speed (rpm)	min^{-1}	3900
Power input	W	435
Min. back pressure	Pa	0
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	85

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data in accordance with ecodesign regulation EU 327/2011 (EN 17166)

		Actual	Request 2015
01 Overall efficiency η_{es}	%	45.7	34.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		55.6	44
05 Variable speed drive		Yes	

09 Power input P_e	kW	0.27
09 Air flow q_v	m^3/h	705
09 Pressure increase p_{fs}	Pa	573
10 Speed (rpm) n	min^{-1}	4730
11 Specific ratio*		1.01

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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

LU-163258

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Technical features

Mass	2.2 kg
Size	97 mm
Motor size	84
Material of impeller	PA UL94 V0 plastic
Housing material	PA UL94 V0 plastic
Number of blades	34
Balance quality per DIN ISO 21940-11	G 2.5
Direction of rotation	Clockwise, seen on rotor
Type of protection	Motor IP24 KM, electronics IP6K9K (mating connector fitted)
Insulation class	"B"
Humidity (F) / environmental protection class (H)	H3
Note ambient temperature	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications), a fan version with special low-temperature bearings must be used.; Above +70°C with power derating
Max. permissible ambient motor temp. (transp./ storage)	+85 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Any
Condensation drainage holes	None, open rotor
Operation mode	S1
Motor bearing	Ball bearing; (sealed)
Life expectancies	40,000 h (typical)
Technical features	- Lowering input - Error output (high-side switch) - INVLIN (control input, inverse linear) - Output limit -Load dump (58 V) - Motor current limit - Soft start - Control input 0-10 VDC / PWM - Temperature derating (Error message via diagnostic output in derating operation) - Overvoltage detection - Over-temperature protected electronics - Line undervoltage detection - Reverse polarity protection
EMC directives	According to EN 50121-3-2
Electrical connection	Standby current less than 500 µA
Cable exit	Lateral
Protection class	III
Product conforming to standard	EN 15085-1, CPC3; EN 45545-2, HL3; EN 50155; EN 61373, Cat. 1B; CE
Approval	EAC

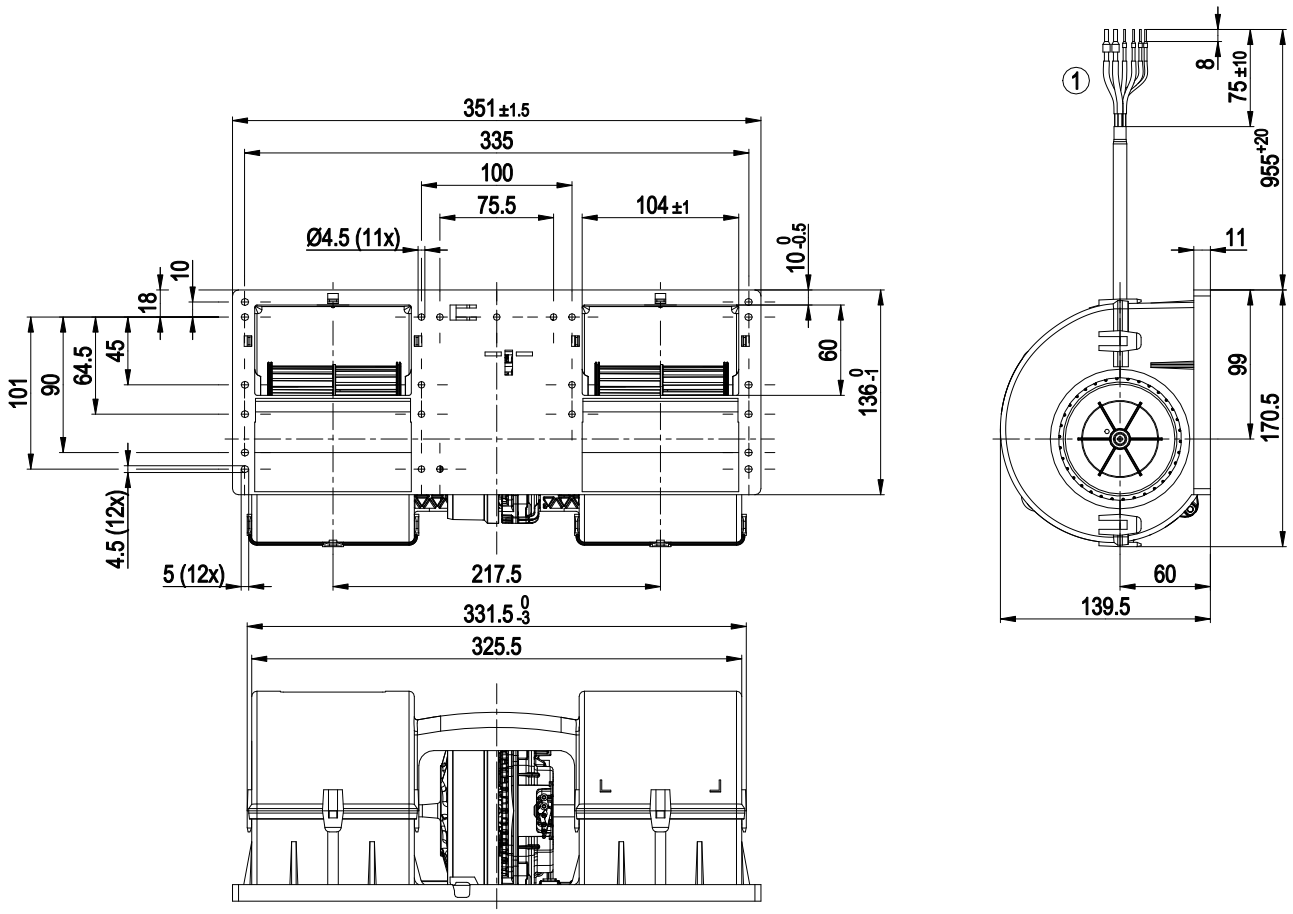
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Product drawing



1	Connection line, halogen-free, railway application EN 45545, 2x 2.5 mm², 4x 1.0 mm²
	6x core-end sleeve

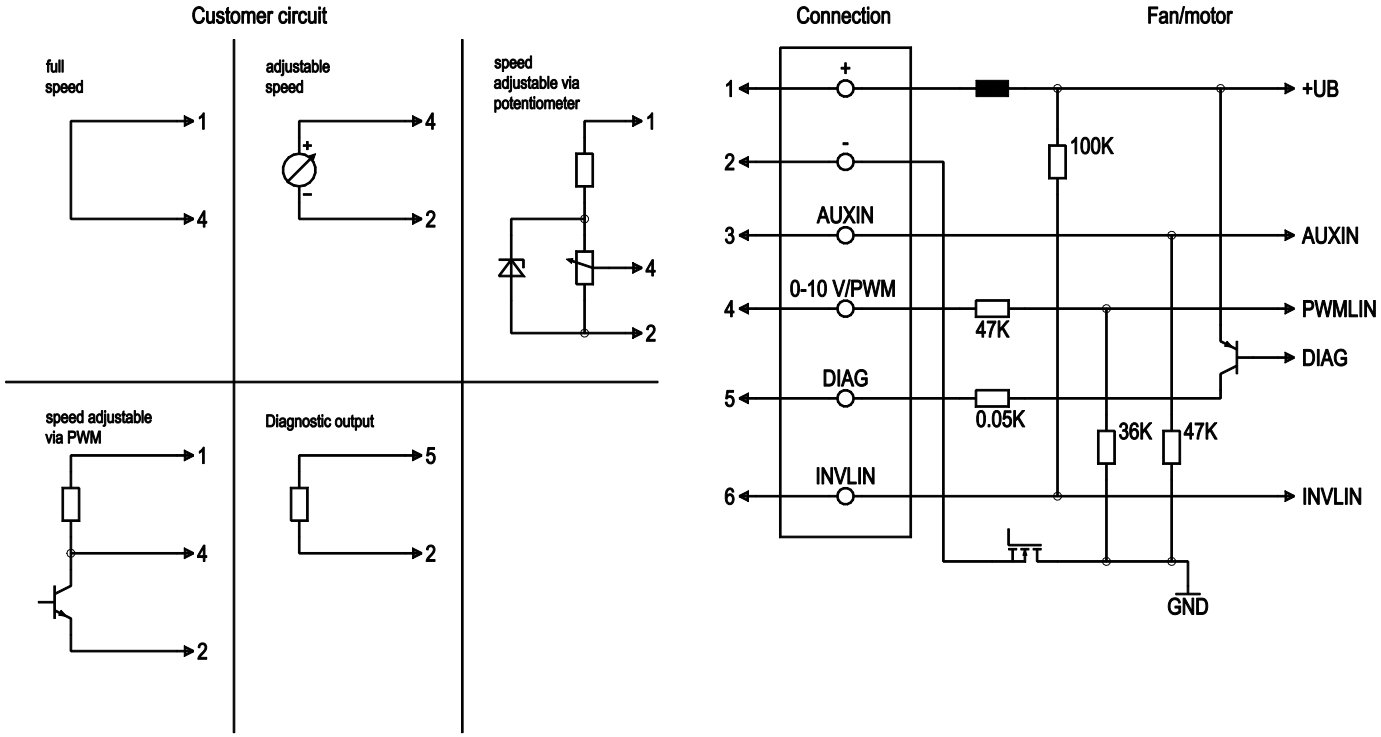
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Connection screen



No.	Conn.	Designation	Colour	Function / assignment
	1	+	black	Power supply, see type plate for voltage range
	2	-	brown	Power supply, see type plate for voltage range
	3	AUXIN	blue	Digital input: when active (> 4 V), value of PWM signal is halved
	4	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)
	5	DIAG	white	Diagnostic output: open collector, Isource max = 20 mA, Fan OK -> low; fan error -> high
	6	INVLIN	orange	Control input, inverse linear

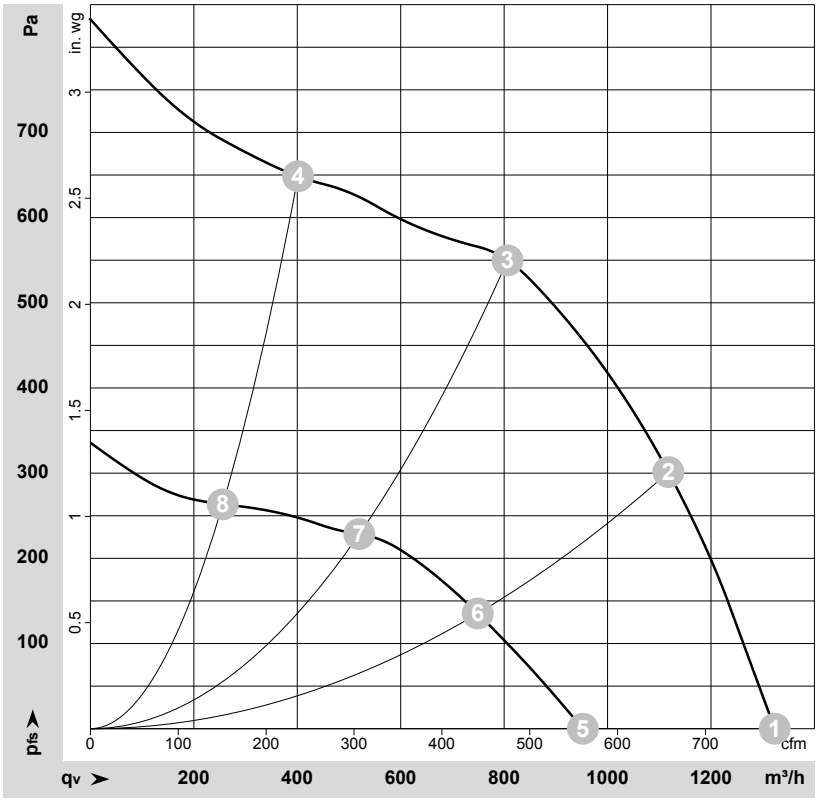
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Charts: Air flow



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-163258-1
Measurement: LU-163419-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

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	3900	435	16.60*	73	84	1325	0	780	0.00
2	26-32	4395	408	15.70*	71	82	1120	300	660	1.20
3	26-32	4675	309	11.90*	69	80	805	550	475	2.21
4	26-32	4905	193	7.40*	69	79	400	650	235	2.61
5	16	2845	165	10.34			950	0	560	0.00
6	16	2960	126	7.88			750	135	440	0.54
7	16	3060	92	5.76			520	228	305	0.92
8	16	3150	58	3.67			255	263	150	1.06

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

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