K3G097-AS81-88

EC centrifugal fan combination

forward-curved, dual-intake

with housing, for rail applications

Nominal data

Type	**K3G097-AS81-88**	
Motor	**M3G084-BF**	
Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Method of obtaining data		fa
Speed (rpm)	min^{-1}	3900
Power consumption	W	435
Min. back pressure	Pa	0
Min. back pressure	in. wg	0
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	85

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

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Technical description

Weight	2 kg
Size	97 mm
Motor size	84
Impeller material	PA plastic
Housing material	PA plastic
Balancing grade according to DIN ISO 1940-1	G 2.5
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
Ambient temperature note	Over +70 °C with power derating; Occasional start-up between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.
Max. permitted ambient temp. for motor (transport/storage)	+85 °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	- Lowering input - Error output (high-side switch) - INVLIN (inverse linear control input) - Power limiter - Load dump (58 V) - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Temperature derating (Fault message via diagnostic output in derating operation) - Overvoltage detection - Thermal overload protection for electronics - Line undervoltage detection - Reverse polarity protection
EMC regulations	According to EN 50121-3-2
Electrical hookup	Connector with cable; Standby current less than 500 µA
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

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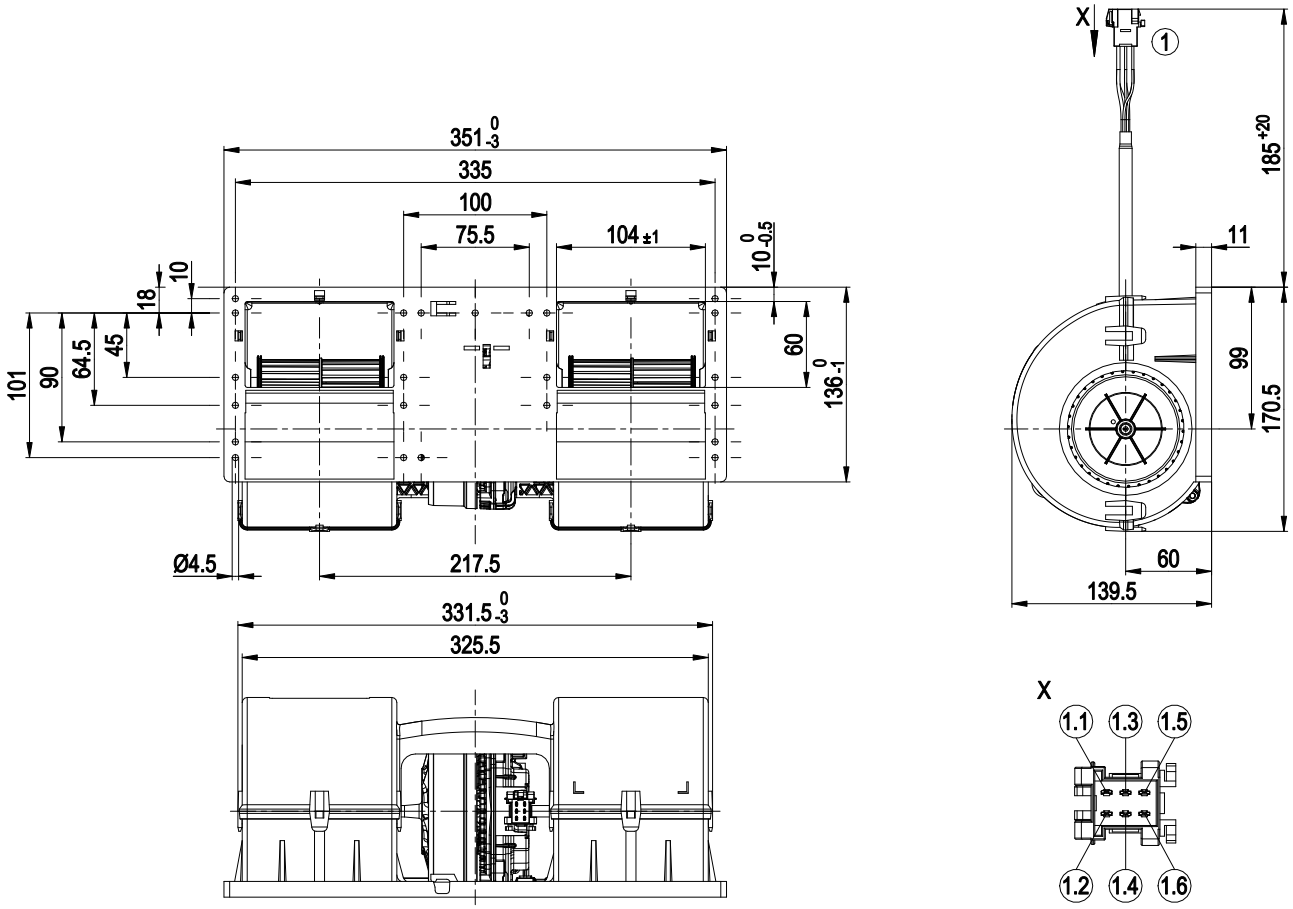
Product drawing



1	Cable, halogen-free, railway application EN 45545, 2x 2.5 mm², 4x 1.0 mm²
	6-pole connector housing TE 929505-2, 4x flat plug TE 0-928930-2, 2x flat plug TE 0-928781-2
1.1	+ UB
1.2	GND
1.3	PWM/LIN
1.4	INVLIN
1.5	AUXIN
1.6	Diagnostic output
	6-pole mating connector TE 929504-2, 4x flat plug TE 0-927771-1, 2x flat plug TE 0-927768-1

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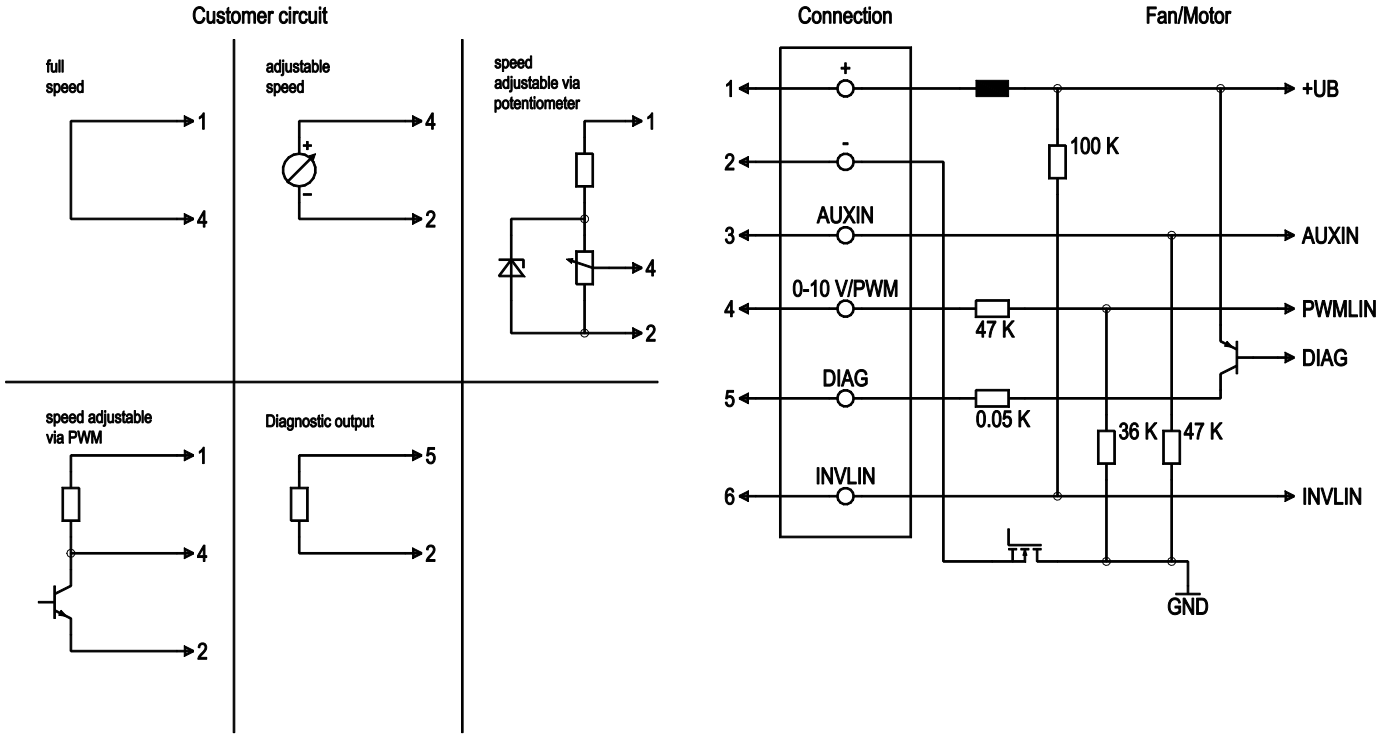
Connection diagram



No.	Conn.	Designation	Function/assignment
	1	+	Power supply, see nameplate for voltage range
	2	-	Power supply, see nameplate for voltage range
	3	AUXIN	Digital input: when active (> 4 V), value of PWM signal is halved
	4	0-10 V / PWM	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	Diagnostic output: Open collector, Isource max = 20 mA, Fan OK -> low; fan error -> high
	6	INVLIN	Control input, inverse linear

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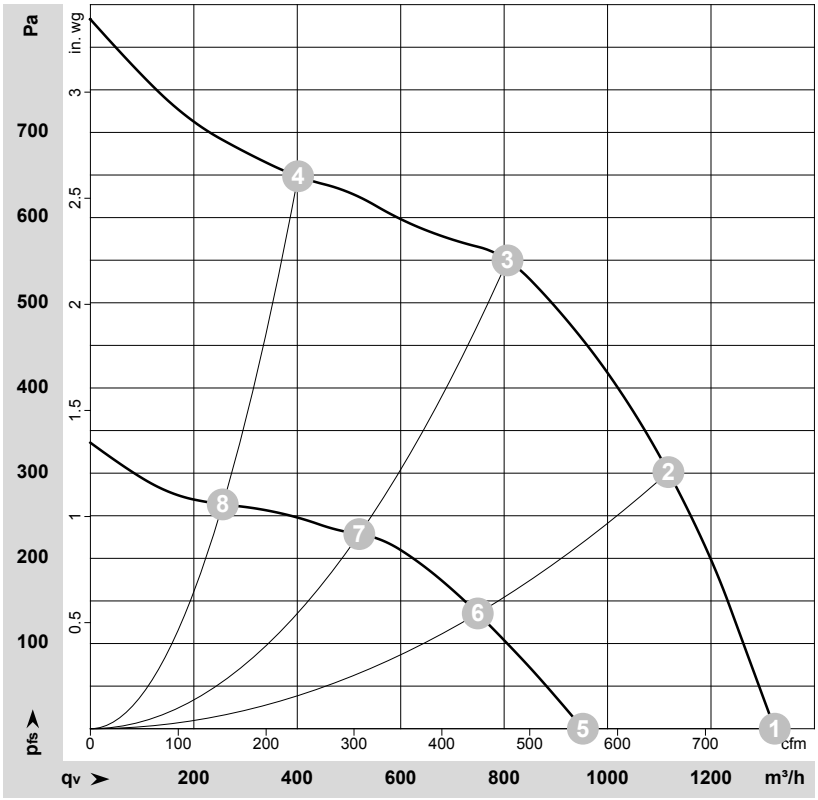
Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

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

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	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 = 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