W3G300-BV24-81

EC axial fan

with brushless DC motor

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	**W3G300-BV24-81**	
Motor	**M3G084-BF**	
Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Frequency	Hz	DC
Type of data definition		fa
Speed (rpm)	min^{-1}	3160
Power input	W	205
Current draw	A	7.9
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

		Actual	Request 2015
01 Overall efficiency η_{es}	%	46.1	29.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		56.3	40
05 Variable speed drive		Yes	

09 Power input P_e	kW	0.24
09 Air flow q_v	m^3/h	1805
09 Pressure increase p_{fs}	Pa	197
10 Speed (rpm) n	min^{-1}	3040
11 Specific ratio*		1.00

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-141130

EC axial fan

with brushless DC motor
for railway applications

Technical features

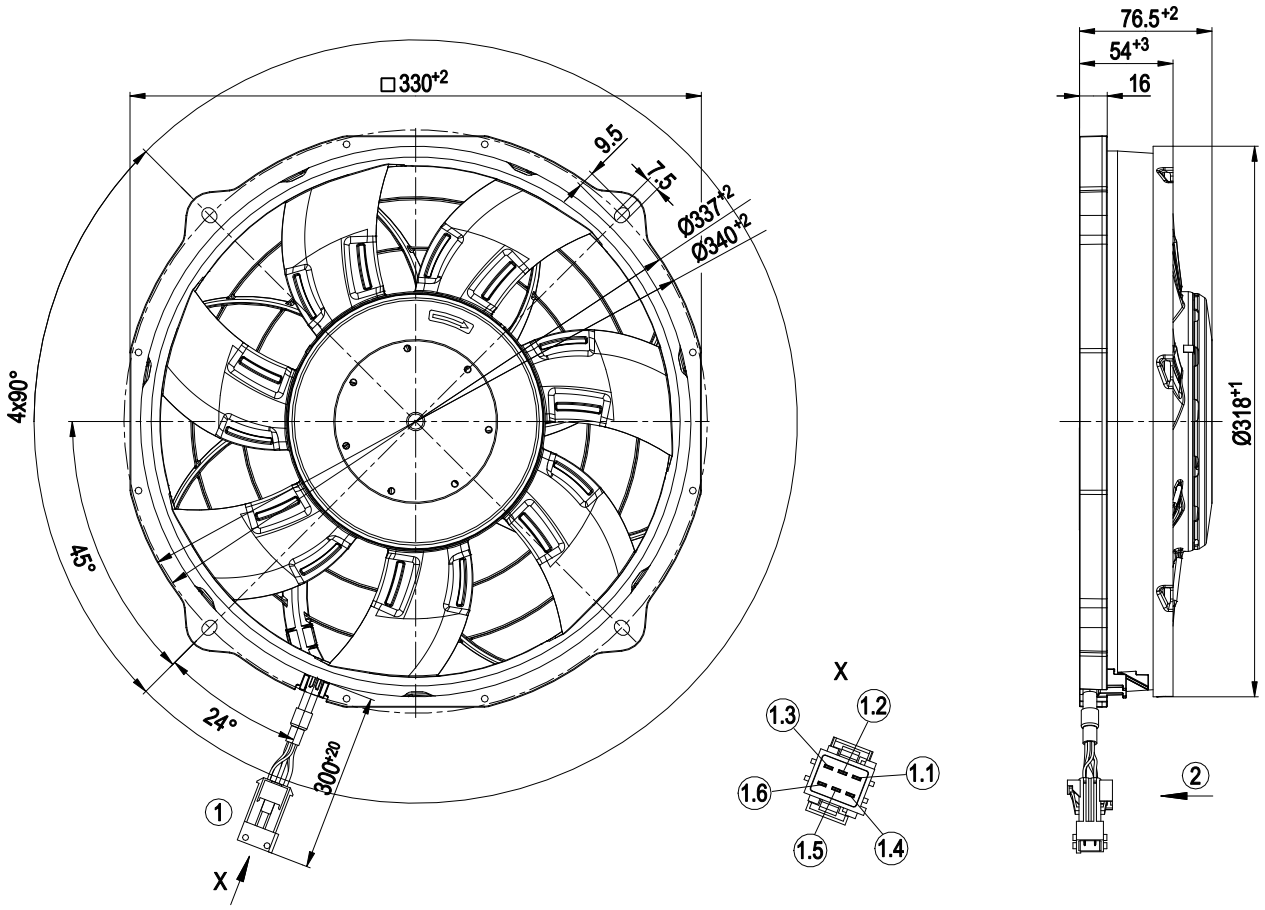
Mass	2 kg
Size	300 mm
Motor size	84
Material of blades	PA UL94 V0 plastic
Material of wall ring	PA UL94 V0 plastic
Number of blades	7
Direction of air flow	V
Direction of rotation	Clockwise, seen on rotor
Type of protection	Motor IP24 KM, electronics IP6K9K (mating connector fitted)
Insulation class	"B"
Humidity (F) / environmental protection class (H)	H3
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 - Overvoltage detection - Over-temperature protected electronics - Line undervoltage detection - Reverse polarity protection
EMC directives	According to EN 50121-3-2
Electrical connection	Connector with connection line; Standby current less than 500 µA
Cable exit	Lateral
Protection class	III
Product conforming to standard	EN 45545-2, HL3: 2013; EN 50155: 2008; EN 61373, Cat. 1B: 2010; CE
Approval	EAC

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

EC axial fan

with brushless DC motor
for railway applications

Product drawing



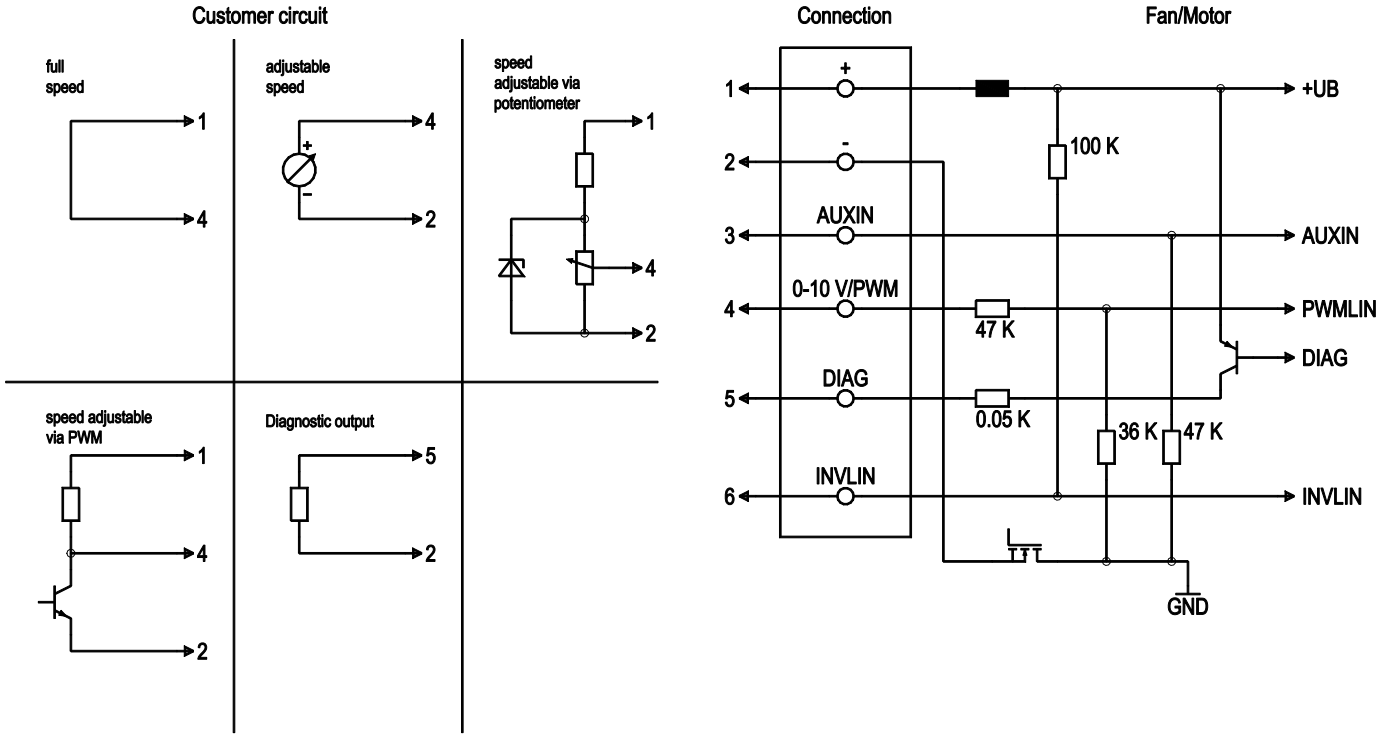
1	Connection line with plug Tyco Junior Power Timer 1-962349-1, 6-pole, coded
	6-pole connector housing TE 1-962349-1, 2x flat connector TE 2-962916-1, 4x flat connector TE 1-962915-1 1x seal TE 963205-1, 2x seal TE 828905-1, 4x seal TE 828904-1
1.1	+ UB
1.2	GND
1.3	PWM/LIN
1.4	INVLIN
1.5	ABSENK
1.6	Diagnostic output
	Accessory part: Connection line (460 mm) with mating connector, part no. 02002-4-1021 not included in scope of delivery 6-pole mating connector TE 1-963212-1, 4x receptacle TE 929939-1, 2x receptacle TE 929937-1
2	Direction of air flow "V"

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

EC axial fan

with brushless DC motor
for railway applications

Connection screen



No.	Conn.	Designation	Function / assignment
	1	+	Power supply, see type plate for voltage range
	2	-	Power supply, see type plate 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, Isink max = 10 mA, Ri > 50 Ω Fan OK -> low; fan error -> high
	6	INVLIN	Control input, inverse linear

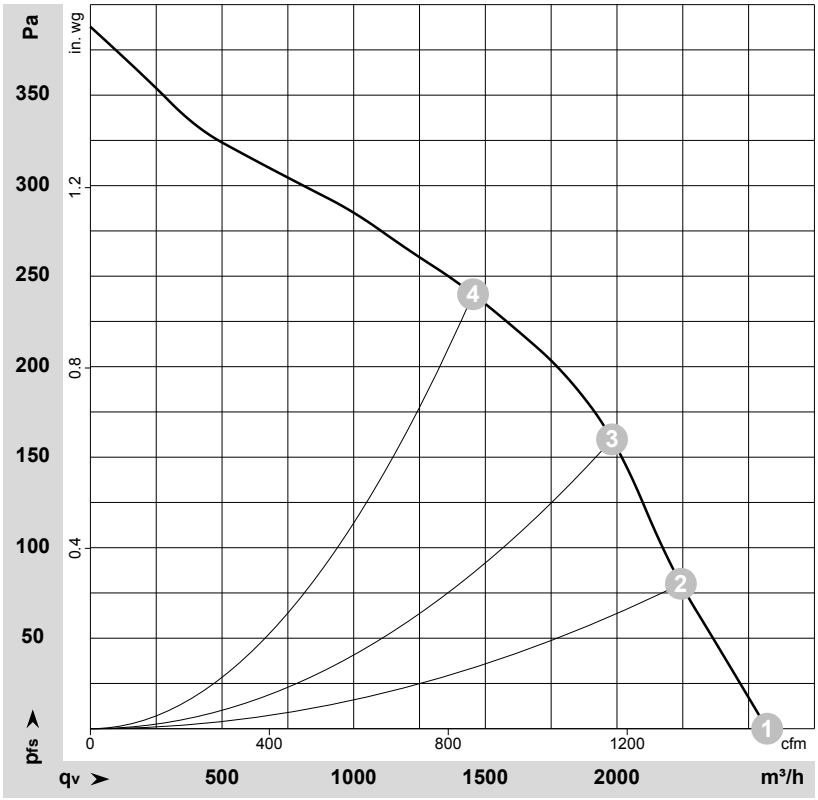
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC axial fan

with brushless DC motor

for railway applications

Charts: Air flow



ρ = 1.181 kg/m³ ± 2 %

Measurement: LU-141130-1

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	3160	205	7.90	74	82	2570	0	1515	0.00
2	26	3155	217	8.35	73	81	2245	80	1320	0.32
3	26	3085	240	9.24	73	81	1980	160	1165	0.64
4	26	2960	244	9.36	73	80	1455	240	855	0.96

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

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