Product Data Sheet 8315100378

VWEG172XJLSS
6314/17TDHAR

ebmpapst

engineering a better life

6314/17TDHAR

INDEX

1 General

Fan type	Axial	
Rotating direction looking at rotor	Counterclockwise	
Airflow direction	Air outlet over struts	
Bearing system	Ball bearing	
Mounting position - shaft	Any	

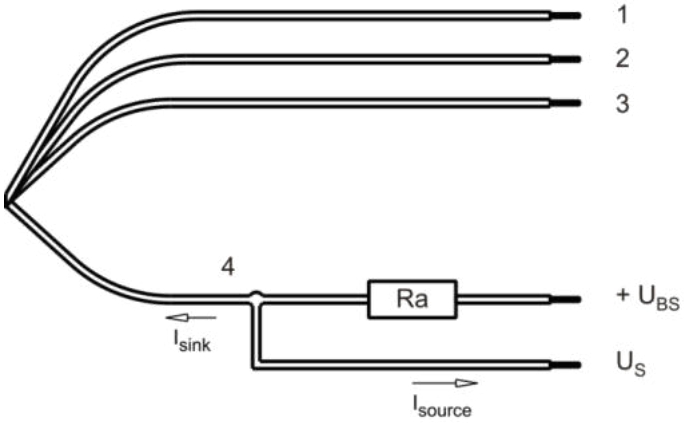
2 Mechanics

2.1 General

Depth	51,0 mm	
Diameter	172,0 mm	
Mass	0,875 kg	
Housing material	Metal	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	Wire outlet corner: 600 Ncm Remaining corners: 600 Ncm ISO 4762 - M4 degreased, without an additional brace and without washer	

2.2 Connections

Electrical connection	Wires	
Lead wire length Tolerance	L = 1.000 mm +- 15 mm	
Tube length Tolerance	S = 10 mm +- 2,0 mm	



Wire	Color	Operation	Wire size	Insulation diameter
1	red	+ UB	AWG 22	1,7 mm
2	blue	- GND	AWG 22	1,7 mm
3	violet	PWM	AWG 22	1,7 mm
4	white	Alarm	AWG 22	1,7 mm

The auxilliaries shown on the schematic diagram (which are required for the intended use) are not part of our delivery.

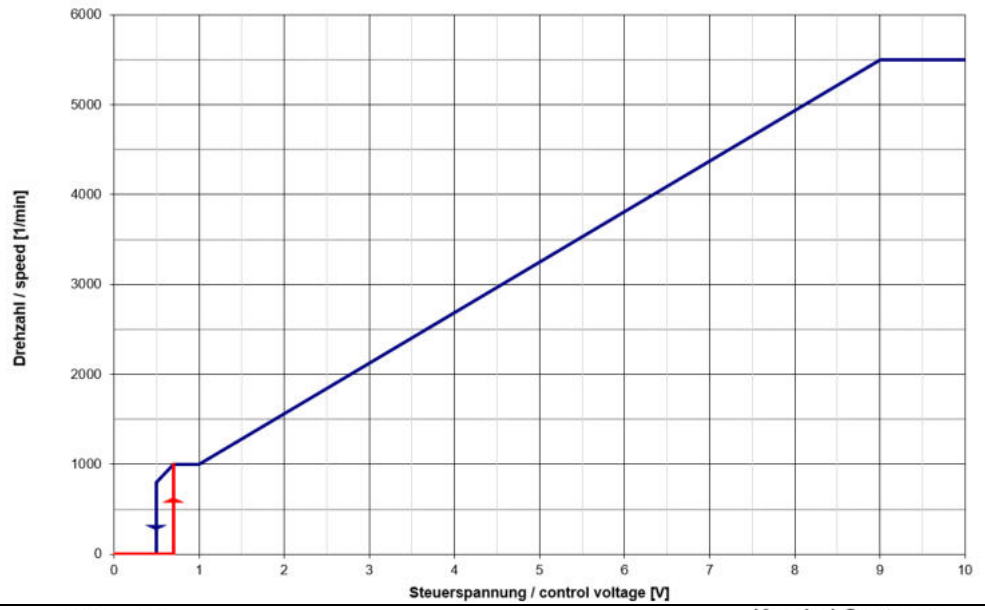
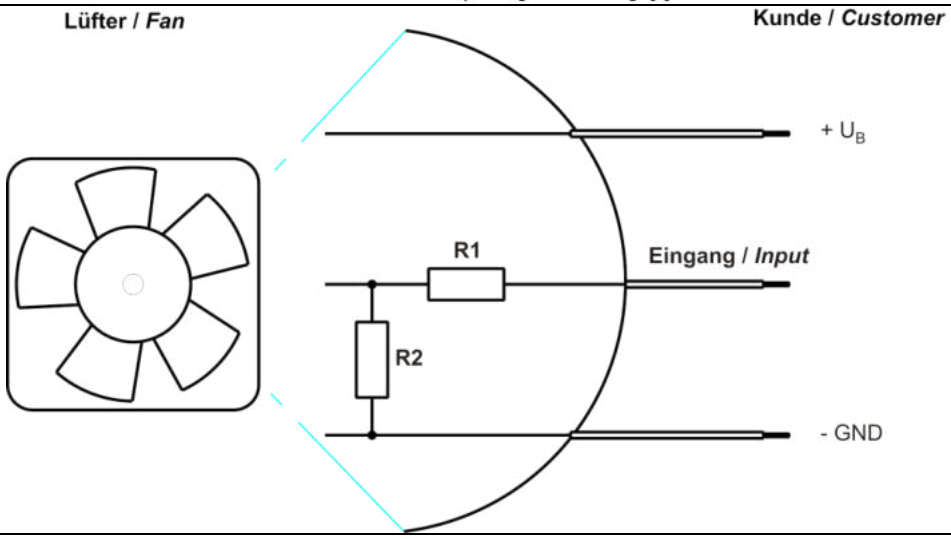
3 Operating Data

3.1 Electrical Interface - Input

Control input	Analog

Features

Input voltage range		0 V - 10 V

Characteristics	
Schematics	

Information to the curve:

0V - 0.7V:	0 1/min
0.7V:	1.000 1/min (Fan on, comming from 0% PWM)
0.7V - 1.0V:	1.000 1/min (corresponding to min. speed)
1,0V - 9.0V:	linear increasing curve
9,0V - 10V:	5.500 1/min (corresponding to max. speed)
0.7V - 0.5V:	linear decreasing curve (comming from 10V analog)
0.5V:	800 1/min or 0 1/min (Fan off, comming from 10V analog)

3.2 Electrical Operating Data

Measurement conditions: Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

Δp = 0: corresp. to free air flow (see chapter aerodynamics)
I: corresp. to arithm. mean current value

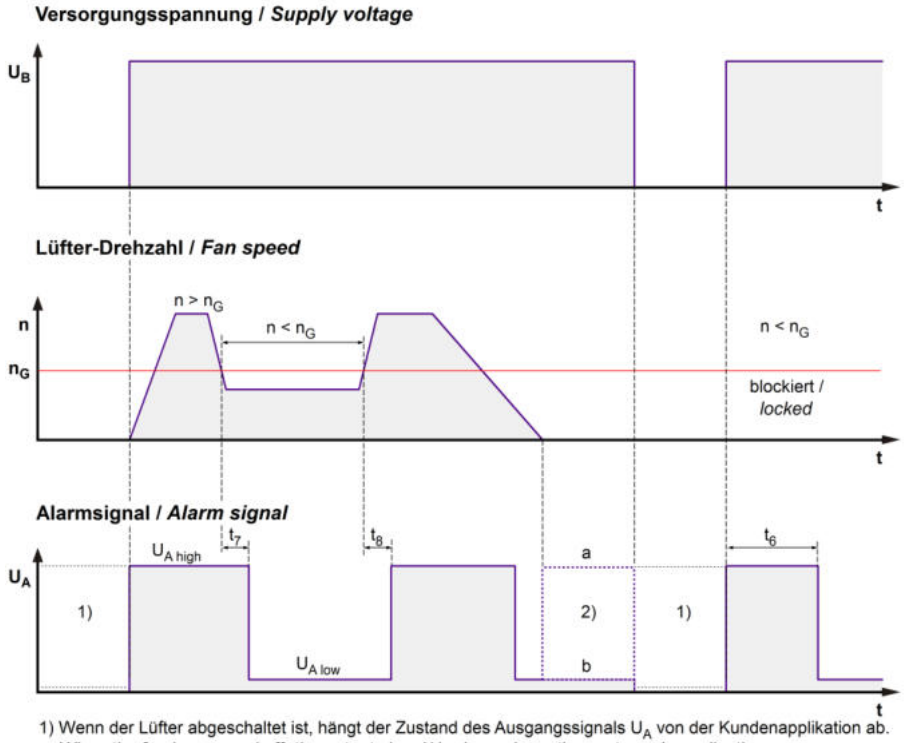
Name	Condition		
U Contr. 0001	U Contr.: 9,5 V		

100% PWM or broken lead wire (open control input)

Features	Condition	Symbol	Values		
Voltage range		U	16 V		36 V
Nominal voltage		U_N		24 V	
Power consumption Tolerance	Δp = 0 U Contr. 0010	P	20,5 W +- 10 %	41 W +- 10 %	38 W +- 10 %
Current consumption Tolerance	Δp = 0 U Contr. 0010	I	1.280 mA +- 10 %	1.700 mA +- 10 %	1.055 mA +- 10 %
Speed Tolerance	Δp = 0 U Contr. 0010	n	4.500 1/min +- 5,0 %	5.500 1/min +- 3,0 %	5.500 1/min +- 3,0 %

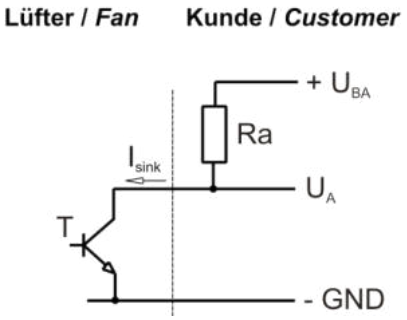
3.3 Electrical Interface - Output

Alarm type	/17 (high = ok, open collector)



1) Wenn der Lüfter abgeschaltet ist, hängt der Zustand des Ausgangssignals U_A von der Kundenapplikation ab.
When the fan is powered off, the output signal U_A depends on the customer's application.
2) Für den gültigen Zustand (a oder b) siehe Alarmunterdrückung in der Tabelle.
For the valid condition (a or b) see alarm suppression in the table.

$$Ra = \frac{U_{BA} - U_{A\,low}}{I_{sink}}$$

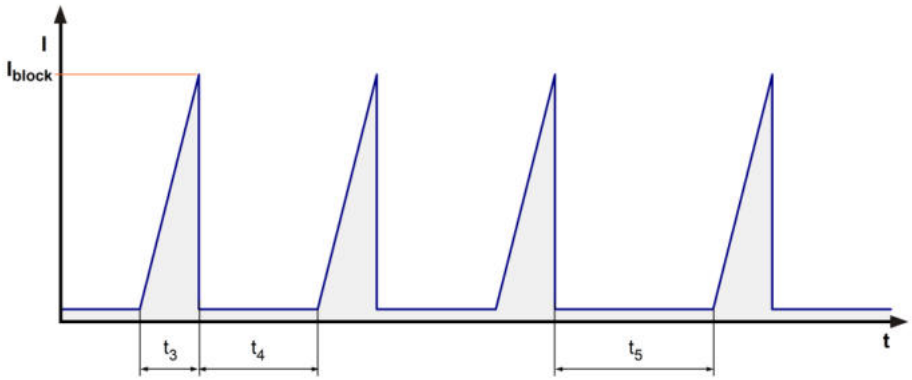


Features		Note	Values
Alarm operating voltage	U_{BA}		<= 36 V
Alarm signal Low	$U_{A\,low}$	I sink: 2 mA	<= 0,4 V
Alarm signal High	$U_{A\,high}$	I source: 0 mA	<= 36 V
Maximum sink current	I_{sink}		20 mA
Leakage current			75 uA
External resistor		External resistor Ra from UBA to UA required. All voltage measured to GND.	
Alarm start-up delay time Tolerance	t_6		15,0 s +- 1,0 s
Alarm delay time Tolerance	t_7		8,0 s +- 1,0 s
Alarm trip speed limit	n_G		4.100 1/min

3.4 Electrical Features

Electronic function	Speed-Controlled	
Reversed polarity protection Max. residual current at U_N	P-CH FET I_F <= 5 mA	
Locked rotor protection	Electronically temperature controlled	
Locked rotor current at U_N	I_{block}	
Clock signal at locked rotor Extended Downtime	t_3 / t_4 typical: 3 s / 10 s t_5: 40 s after 4 start-up tests	
Internal fuse	Littelfuse NANO2 > Very Fast-Acting > 451/453 Series 7A / 125V (Art.No.: 0451007.MRL)	
Voltage control *)	Fan turns on at U_B > 14 V or < 38 V Fan turns off at U_B < 12 V or > 40 V	

*) This fan has an undervoltage and overvoltage control circuit integrated which turns the motor off if the voltage is out of range.



This fan has a startup delay of 2 seconds after applying supply voltage.

Start-up current @ 24V (I = 500mA/div ; t = 2s/div)
Locked rotor current @ 24V (I = 200mA/div ; t = 5s/div)
Running current @ 24V (I = 200mA/div ; t = 1ms/div)

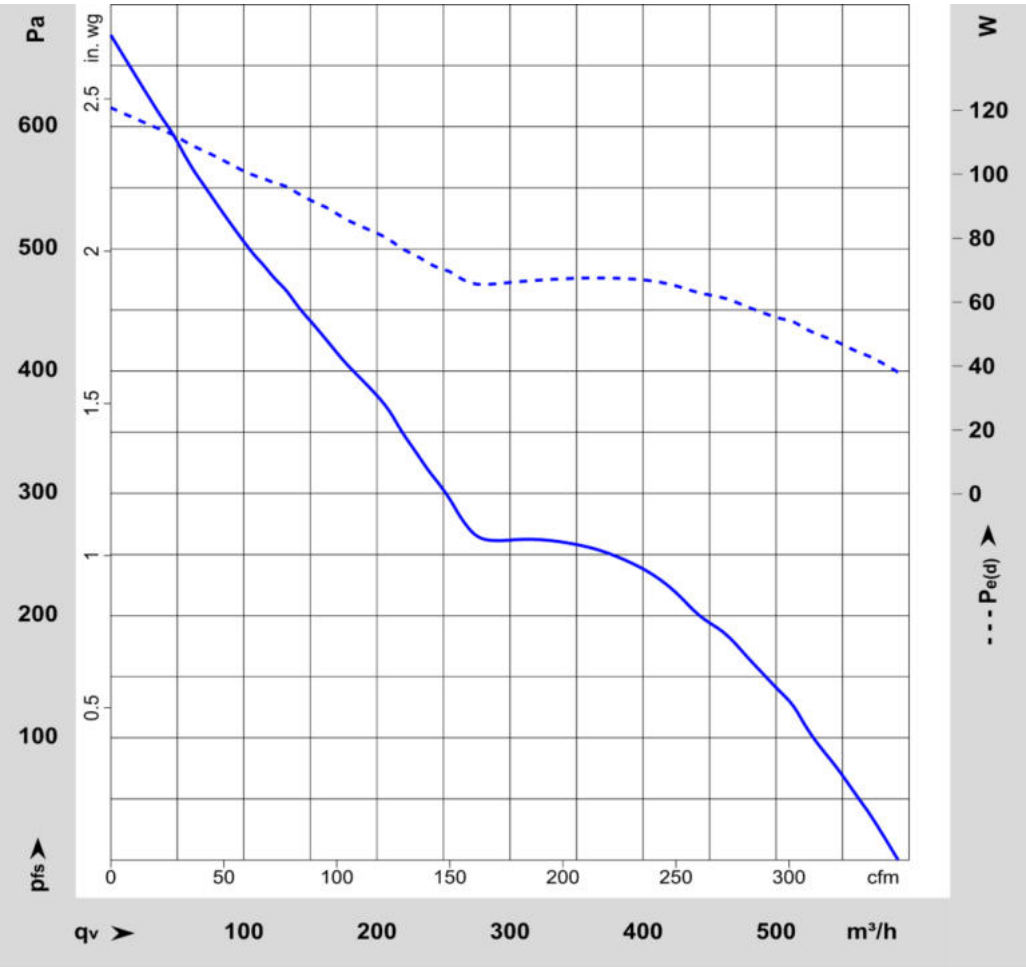
3.5 Aerodynamics

Measurement conditions:	Measured with a double chamber intake rig acc. to DIN EN ISO 5801. Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal. The information is only valid under the specified test conditions and may be changed by the installation conditions. If there are deviations from the standard test conditions, the characteristic values must be checked under the installed conditions. Power consumption of the fan motor when operating at normal voltage is shown. Depending on the operating conditions of the application, the power input may be higher.

a.) Operation condition:

5.500 1/min at free air flow	U Contr. 9,5 V		

Max. free-air flow (Δp = 0 / V̇ = max.)	593 m3/h	
Max. static pressure (Δp = max. / V̇ =0)	680 Pa	



3.6 Sound Data

Measurement conditions: Sound pressure level: 1 meter distance between microphone and the air intake.

Measured in a semianechoic chamber with a background noise level of Lp(A) < 5 dB(A)
For further measurement conditions see chapter aerodynamics.

a.) Operation condition:

5.500 1/min at free air flow	U Contr. 9,5 V		

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	75 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	

4.2 Climatic Requirements

Humidity requirements	humid heat, constant; according to DIN EN 60068-2-78, 14 days	
Water exposure	None	
Dust requirements	None	
Salt fog requirements	None	

Permitted application area:
The product is intended for use in sheltered rooms with controlled temperature and controlled humidity. Directly exposure to water must be avoided.

Pollution degree 1 (according DIN EN 60664-1)
There is either no pollution or it occurs only dry, non-conductive pollution. The pollution has no negative impact.

Please require severity levels and specification parameters from the responsible development departments.

4.3 EMC

Kind	**Electrostatic Discharge Immunity Test**
According	DIN EN 61000-4-2:2001-12
Ceck accuracy / Limit	Contact Discharge +/- 4 kV; Air Discharge +/- 8 kV
Result	A: The monitored function operates as designed during and after exposure to a disturbance.

5 Safety

5.1 Electrical Safety

Dielectric strength DIN EN 62368 and DIN EN 60335 A.) Type test Measuring conditions: After 48h of storage at 95% R.H. and 25°C. No arcing or breakdown is allowed! All connections together to ground. B.) Routine test Measuring conditions: At indoor climate. No arcing or breakdown is allowed! All connections together to ground.	500 VAC / 1 Min. 850 VDC / 1 Sec.	
Isolation resistance Measuring conditions: After 48h of storage at 95% R.H. and 25°C measured with U=500 VDC for 1 min.	RI > 10 MOhm	
Clearance / creepage distance	1,0 mm / 1,2 mm	
Protection class	III	

5.2 Approval Tests

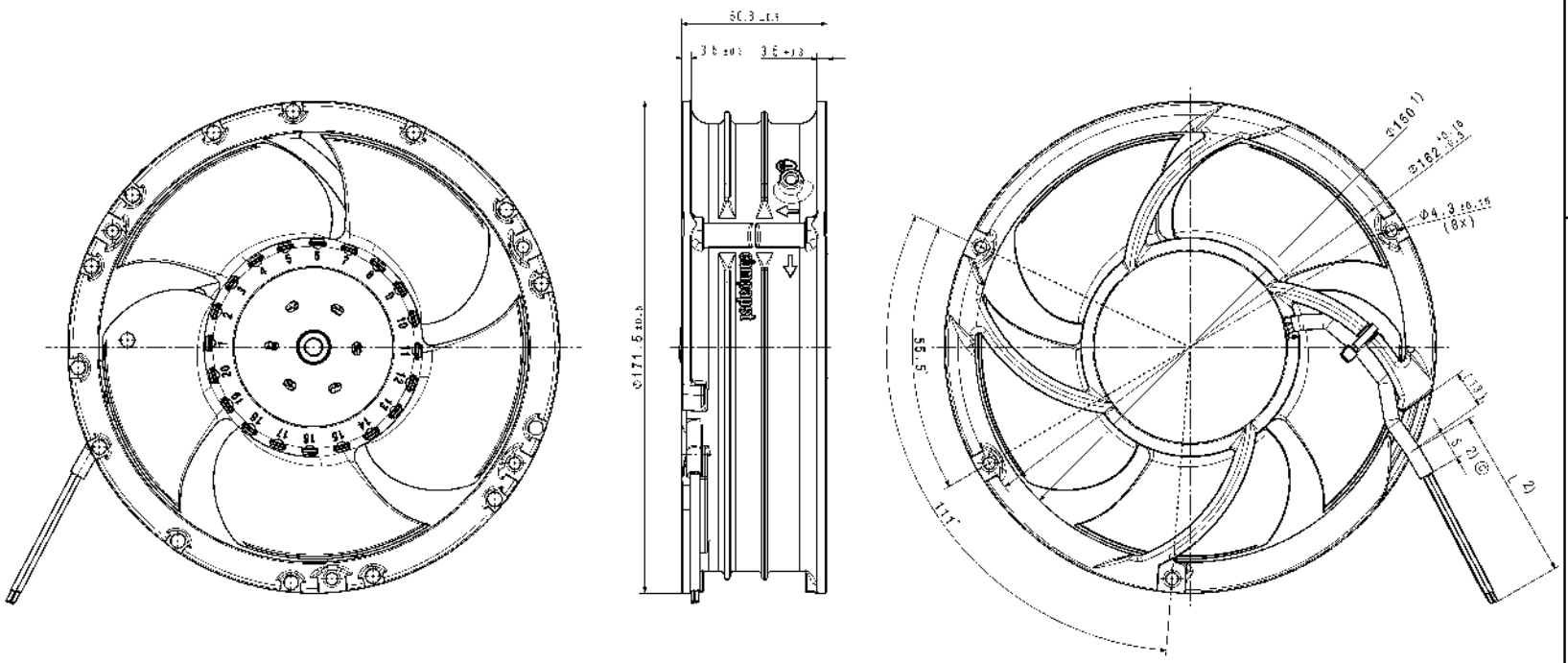
CE	EC Declaration of Conformity	No
EAC	Eurasian Conformity	Yes
UL	Underwriters Laboratories	Yes / UL507, Electric Fans E38324
VDE	Association for Electrical, Electronic and Information Technologies	Yes / Approval acc. to EN 62368 - Audio/video, information and communication technology equipment
CSA	Canadian Standards Association	Yes / C22.2 No. 113 Fans and Ventilators
CCC	China Compulsory Certification	Not applicable

The approval tests are observed to:
U approval max.:36,0 V @ TU approval max.: 70,0 °C

6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	70.000 h	
Life expectancy L10 at TU max.	35.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	117.500 h	



Axia sp al der Kugellager mit Feder spielfrei ge agert
1) Maße für Montageausschnitt
2) Anzah und Länge der Litzen und des Sch auches siehe Produktspezifikat on
Ⓒ

- ball bearing wit hout clearance by a pre-load spring
1) measures of mounting cut out
2) length an number o wires and tube see product specificat on
Ⓒ