ebm-papst Ventilator (Shanghai) Co., Ltd.
依必安派特风机（上海）有限公司
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华京路 418 号

SPECIFICATION FOR APPROVAL

Customer:

Description: 230V/△ 400V/Y, dia. 500mm, Backward curved AC centrifugal fan

Customer P/N: REV:

Fan Type: R4D500-AT03-01/A01 Article No.:

Sample Issue Date: Quantity:

Part designation/Type: R4D500-AT03-01
R: Centrifugal fan, single inlet
4: number of poles (AC)
D: single-phase motor with capacitor
500: impeller diameter in mm
AT03-01: key for mechanical, electrical, mechanical design
/A01: Cable difference with stand type

1、SCOPE:

This specification defines the electrical and mechanical characteristics of the AC-External rotor motor centrifugal fan. The appearance of the impeller in a centrifugal fan is somewhat similar to that of a millwheel. Air intake occurs in an axial direction; the air flows through the impeller radially. The blades which are fixed to the impeller backplate direct the air from intake to exhaust. Our comprehensive portfolio of ebm-papst products offers a suitable solution for every kind of demand and is divided into individual categories to meet the different demands of various fields of application.

2、CHARACTERS:

ITEM	DESCRIPTION
Nominal voltage	3~ 230V/△, 3~400V/Y
Power Input	1430W@50Hz
Nominal Speed	1375min^{-1}
Maximum permissible ambient temperature	-40~+80℃
Max. air flow(at zero static pressure)	8320m^3/h
Acoustical noise	78dBA
Insulation class	F
Type of protection	IP54
Rotation	Clockwise, seen on rotor
Motor protection	Thermal overload protector (TOP) wired internally
Motor connection	Variable

Technical parameters & scope



High standards for all ebm-papst products

Here at ebm-papst, we constantly strive to further improve our products in order to be able to offer you the best possible product for your application. Careful monitoring of the market ensures that technical innovations are reflected in the improvements of our products. Based on the technical parameters listed below and the ambience you want our product to operate in, we here at ebm-papst can always work out the best solution for your specific application.

General performance parameters

Any deviations from the technical data and parameters described here are listed on the product-specific data sheet.

Operating mode

If no other operating mode is specified on the product-specific data sheet, the operating mode is taken to be continuous operation (S1).

Insulation class (acc. to EN 60335)

On principle, our products comply with insulation class B.
Products with other insulation class are especially marked in the product-specific data sheets.

Protection class

In general, our products comply with protection class I (acc. to EN 50178 and EN 60335-1). Products with other protection class are specially indicated in the product-specific data sheets.

Type of protection

The type of protection applying to each product (according to DIN EN 60034-5) depends on the mounting position and is listed together with the relevant mounting position in the product-specific data sheet.

Drilled condensate discharges / mounting position

Condensate discharges are drilled depending on the mounting position. The product-specific data sheets provide information on this.
Please make sure that the drilled condensate discharges are not obstructed or closed.

Service life

The service life of ebm-papst products depends on two major factors:
- the service life of the insulation system
- the service life of the bearing system

The service life of the insulation system mainly depends on voltage level, temperature and ambient conditions, such as humidity and condensation.
The service life of the bearing system depends mainly on the thermal load on the bearing.
The majority of our products use maintenance-free ball bearings for any mounting position possible.
As an option, sleeve bearings can be used, which is indicated on the product-specific data sheet wherever applicable.
The service life L_{10} of the ball bearings can be taken as ca. 40,000 operating hours at an ambient temperature of 40 °C, yet this estimate can vary according to the actual ambient conditions.
We gladly provide you with a lifetime calculation taking into account your specific operating conditions.

Thermal protection / motor protection

Most of the ebm-papst motors are protected in accordance with the relevant and appropriate directives. Depending on motor type and field of application, the following protective features are realised:
- Thermal overload protection (TOP), either in circuit or brought out
- PTC with electronic diagnosis
- Impedance protection
- Thermal overload protection (TOP) with electronic diagnosis
- Current limitation via electronics

With the TOP brought out, the customer has to make sure to connect a conventional trigger device for switching it off.
All fans with 1~ AC voltage are equipped with a TOP that is connected in the winding circuit.
Exceptions to this are indicated on the data sheets.
Products without fitted TOP and without protection against improper use, a motor protection complying with the valid standards has to be installed.

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Sound pressure level (SPL)

The specified sound pressure level is established in a room low in reflection and with reverberant floor as required in DIN EN 45635 part or ISO 3745. The product under test is anti-vibration mounted and operated at nominal voltage, in the case of AC also at nominal frequen The microphone is placed one meter away from the air intake. The measured values, however, cannot be taken as absolutes, as the specific application is always subject to factors of influence that the measuring lab cannot adequately reproduce.

Determination of sound pressure levels (SPL)

The A-rated sound pressure level L_{WA} is 7 dB higher than the A-sound pressure level L_{pA}. This supposition is an approximated value and can deviate in some individual cases due to the mounting conditions.

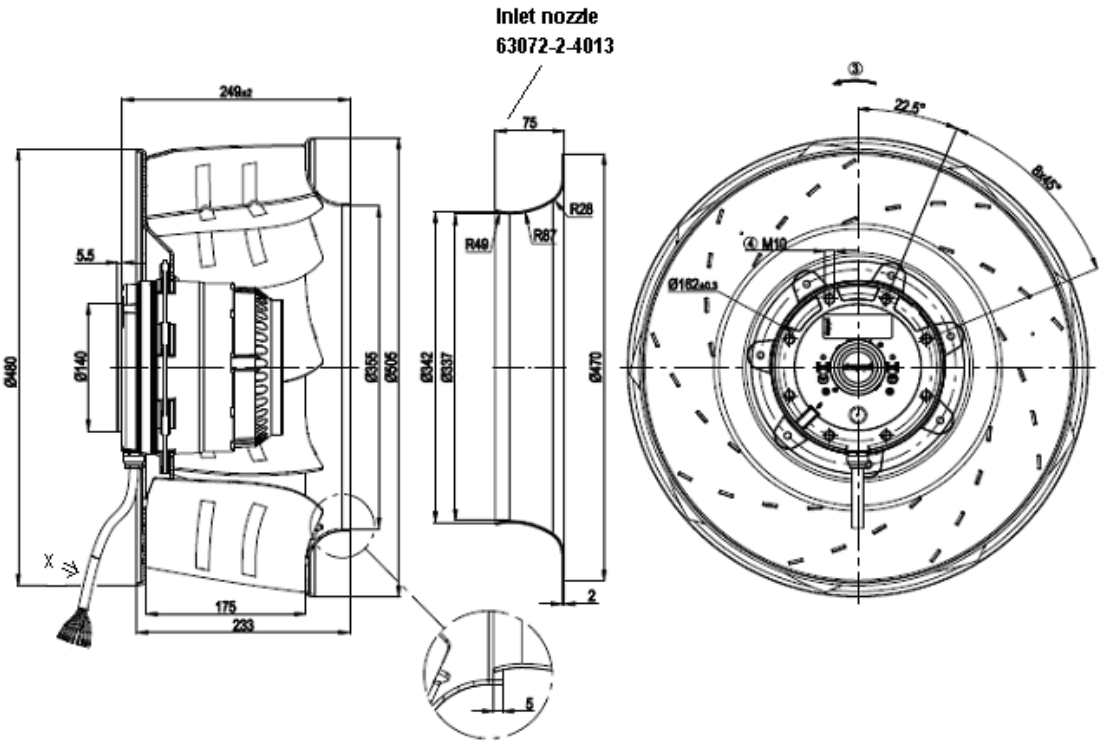
Measuring conditions

ebm-papst products are measured under the following conditions:

- axial and centrifugal fans with direction of air flow "V", without guard grille and in the wall ring
- backward curved centrifugal fans, free-running and with inlet ring
- forward curved single and dual inlet centrifugal fans with housing

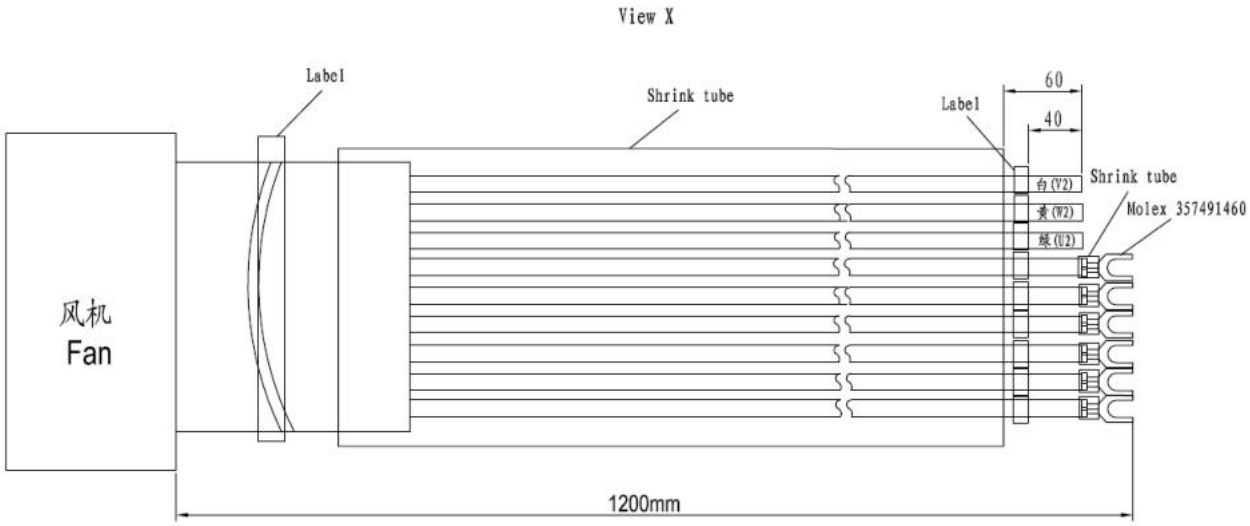
3、MECHANICAL:

3-1. Dimensions



Inlet nozzle not included in R4D500-AT03-01/A01

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3-2. Bearing System: ball bearings

4、MOTOR TYPE: M4D138-HF

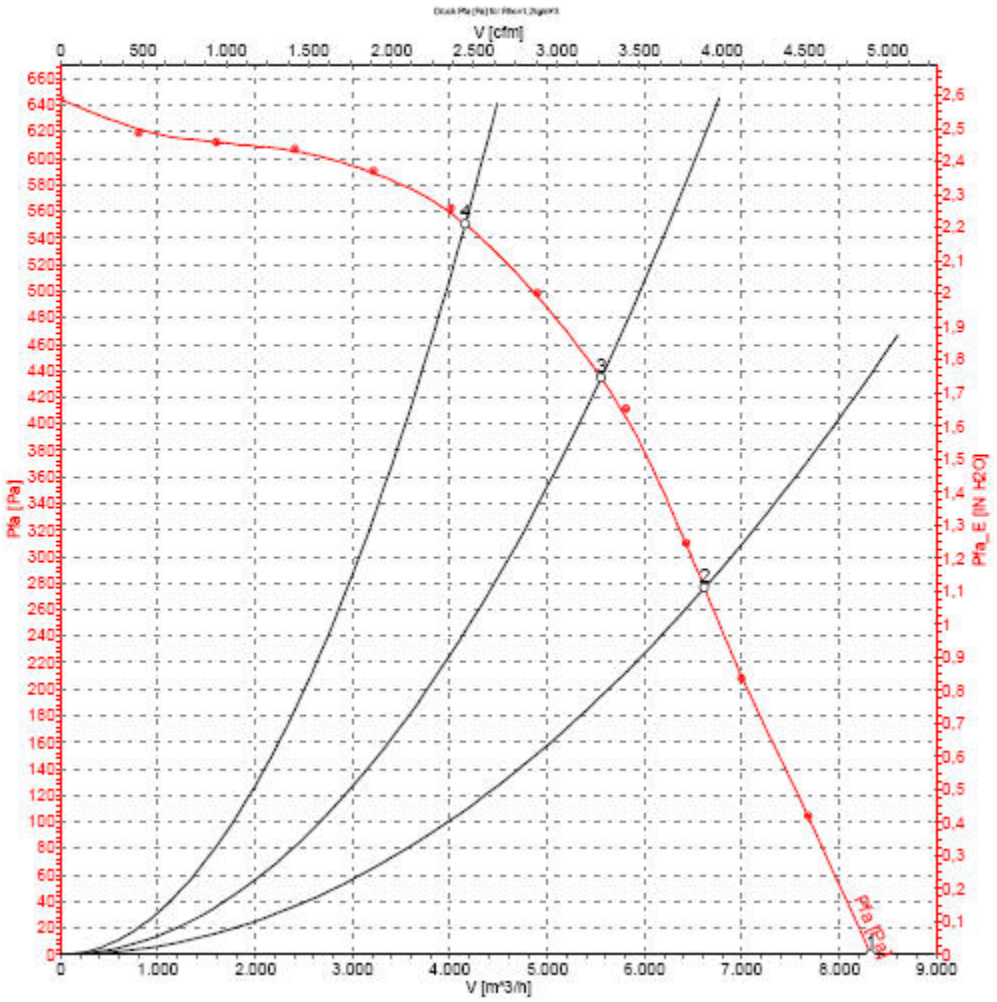
5、PRODUCTION LOCATION: Mulfingen Germany

6、IMPELLER NUMBER: 9

7、ROHS: Compliance

8、P & Q CURVE:

Charts: Air flow 50 Hz Y

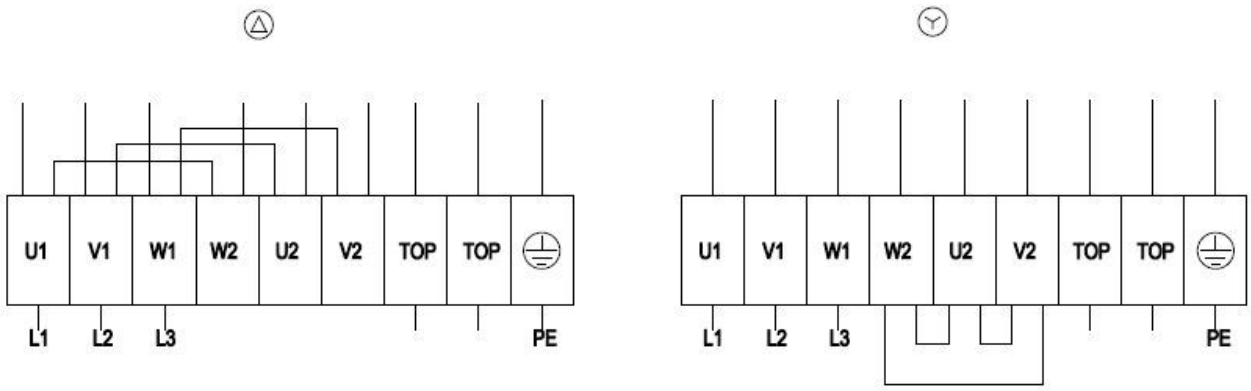


Measured values

	Conn.	U	f	n	P_1	I	$\dot{V}$	p_{fa}
		[V]	[Hz]	[min^{-1}]	[W]	[A]	[m^3/h]	[Pa]
1	Y	400	50	1405	1157	2.64	8320	0
2	Y	400	50	1380	1358	2.88	6615	276
3	Y	400	50	1375	1430	3.00	5550	436
4	Y	400	50	1380	1334	2.86	4155	552

9、CONNECTION DIAGRAM

Connection screen

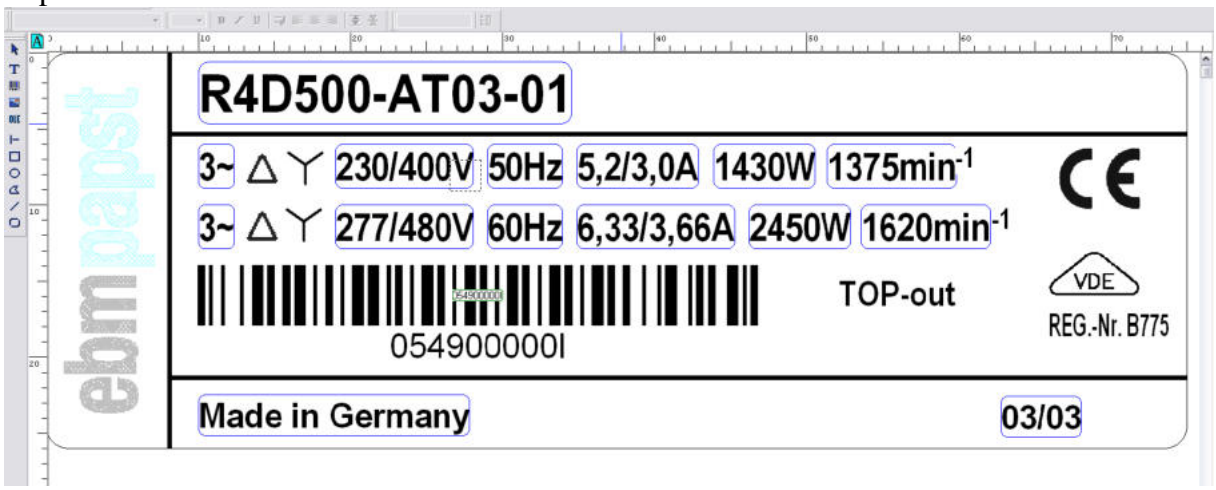


Note: Direction of rotation changes when two phases are reversed

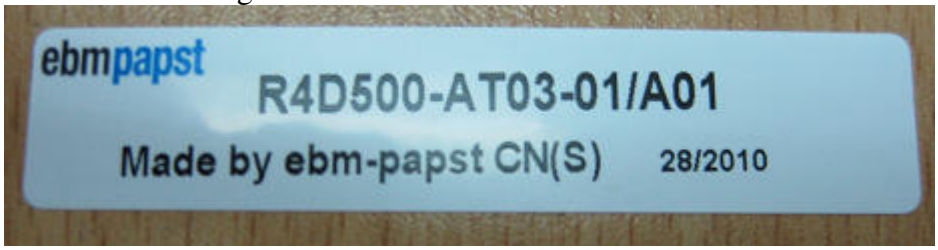
Δ	Delta-connection	Y	Star connection	L1	= U1 = black
L2	= V1 = blue	L3	= W1 = brown	W2	yellow
U2	green	V2	white	TOP	2 x grey
PE	green / yellow				

10、Label Drawing

Imported German Fan label



Processed in Shanghai Fan label



Rohs Compliance

ebmpapst

European Guidelines 2002/95/EC 、2005/618/EC、2005/717/EC、2005/747/EC、2006/310/EC (RoHS):

Legal regulation for substances

Dear Sir / Madam,

Referring to the European Guidelines 2002/95/EC 、2005/618/EC、2005/717/EC、2005/747/EC、2006/310/EC, we confirm that according to the current status of our knowledge and in accordance with the regulations, we could produce products complying with above mentioned guidelines and limited to the **order request** via our affiliated company from July 1,2006.

Yours Sincerely

Robert Xi

RoHS project manager

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