Product Specification

Part Name: Axial Fan

Model No.: EC180-A800-001-074-05S-F-002

Customer Code: /

Version No.: A/0

Prepared by: _____

Checked by: _____

Reviewed by: _____

Approved by: _____

Customer Approval/Date: _____

Description of Revision

Version No.	Notes & Remarks	Contents	Revised by	Date
A/1	/	/	/	/

1.0 Introduction

This specification describes the standards, operating environment, and technical requirements of the product.

2.0 Standards & Requirements of The Product Followed

2.1 Standards of the product followed are:

- EN IEC 60034-1 Rotating electrical machines - Part1:Rating and performance
- EN IEC 61000-6-2 Electromagnetic compatibility (EMC) - part 6-2 : Generic standards - immunity for industrial environments
- EN IEC 61000-6-4 Electromagnetic compatibility (EMC) - part 6-4 : Generic standards - Emission standard for industrial environments

2.2 The fan is CE approved.

2.3 Materials are RoHS compliant.

3.0 Mechanical Requirements

3.1 Dimensional drawings

3.2 Fan Materials

- Material of blade

☐ SPCC ☐ Aluminium alloy ■ Plastic

☐ Stainless Steel ☐ Others

- Materials of motor magnets

High strength enamelled wire QZ-2 180°C

Silicon Steel

- Bearing type

Maintenance free ball bearing

3.3 Motor: EC180M

3.4 Balancing

The residual unbalance weight is less than the permit value of G6.3 rating (balancing precision grade, according to the standard of JB/T9101) when the fan is running at rated voltage and frequency.

3.5 Vibration

Vibrating speed virtual value of fans accord with JB/T8689

3.6 Net weight: 48 kg

3.7 Fan life

The designed lifespan of the fan is 40000 hours assuming the fan is running at rated voltage, rated load and 40 degree C environmental temperature.

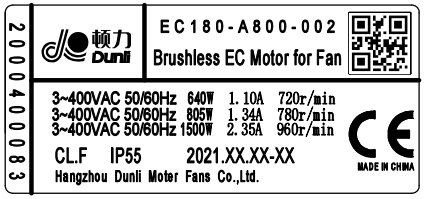
4.0 Fan Performance

4.1 Voltage range

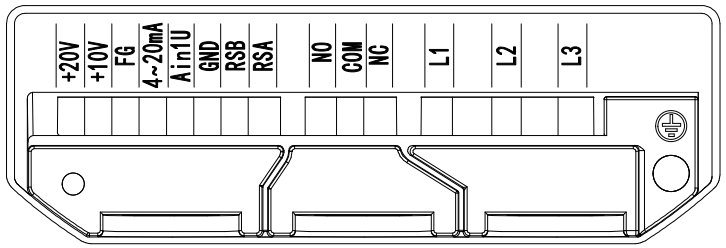
The nominal voltage of the fan is 400V, and The nominal voltage range of the fan is 380-480V.

4.2 Performance data

4.3 Label



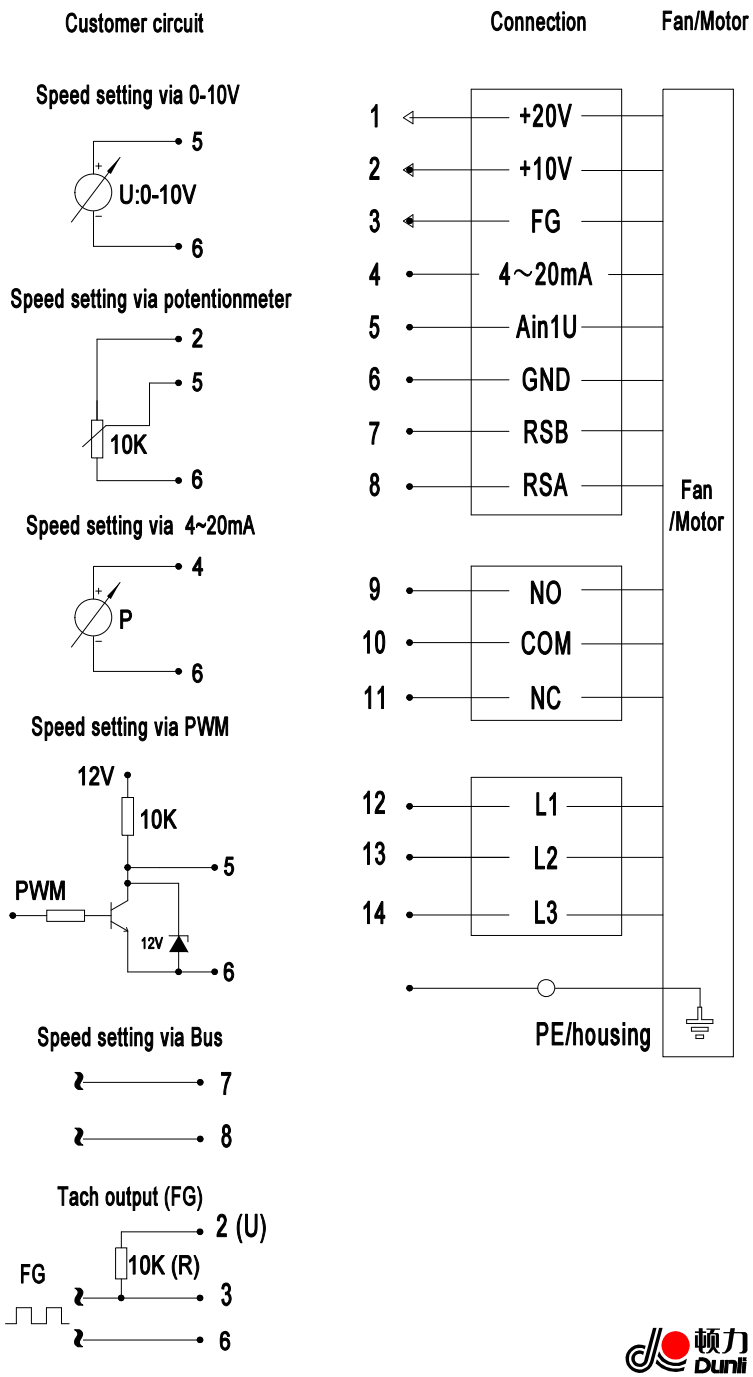
4.4 Wiring diagram



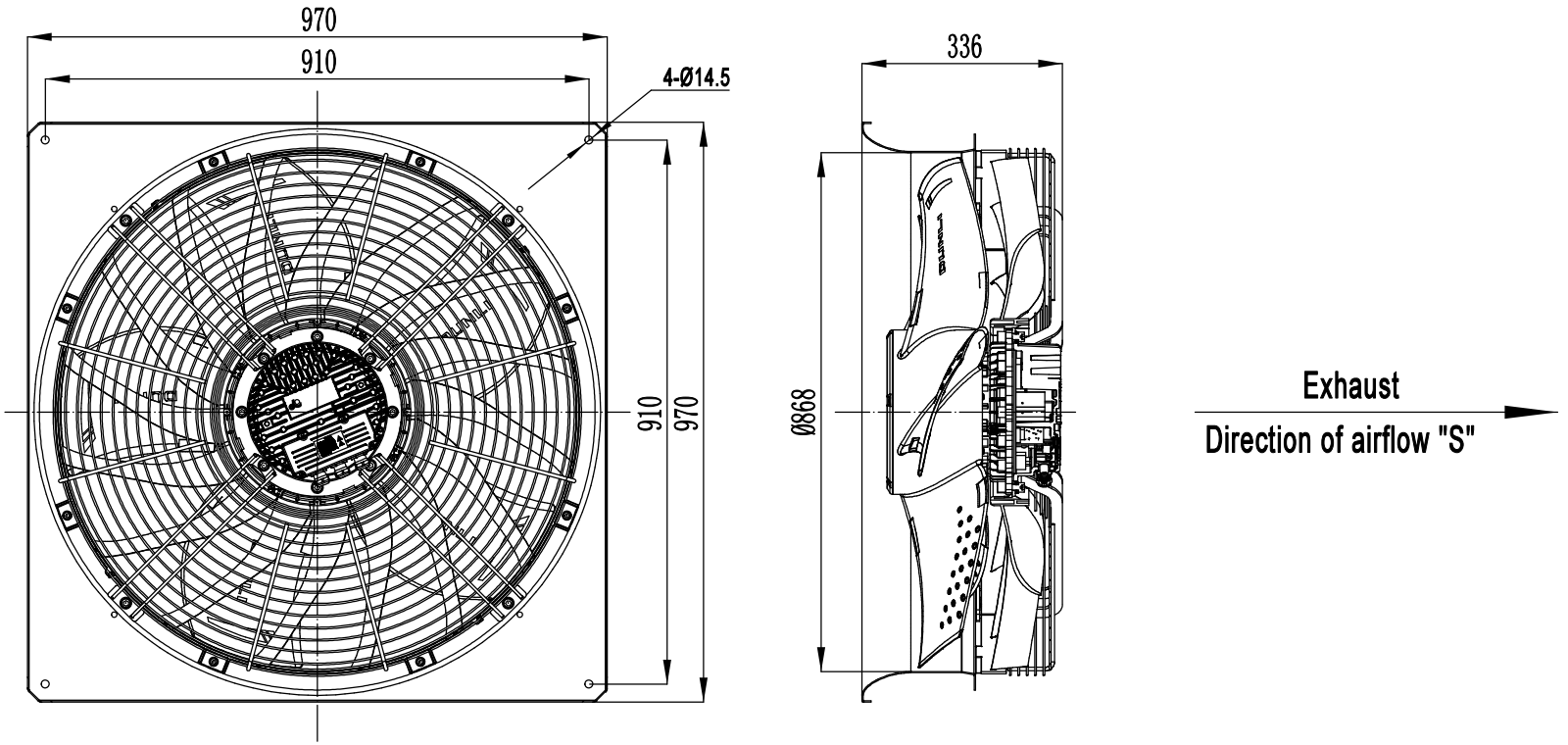
+20V	Output 20V DC power supply, max. 40 mA
+10V	Output 10V DC power supply, max. 10 mA
FG	Tach output
4～20mA	Input 4～20mA DC regulation current
Ain1U	0～10V/PWM Transfer control input, Ri≥100KΩ
GND	Reference ground for control interface
RSB	RS485, RSB, MODBUS interface
RSA	RS485, RSA, MODBUS interface

NO	Relay normally open switch
COM	COM, contact rating 250 VAC / 3 A (AC1)
NC	Relay normally closed switch

L1	Power: 3～400VAC, 50/60 Hz
L2	
L3	



3.1 Dimensional drawings

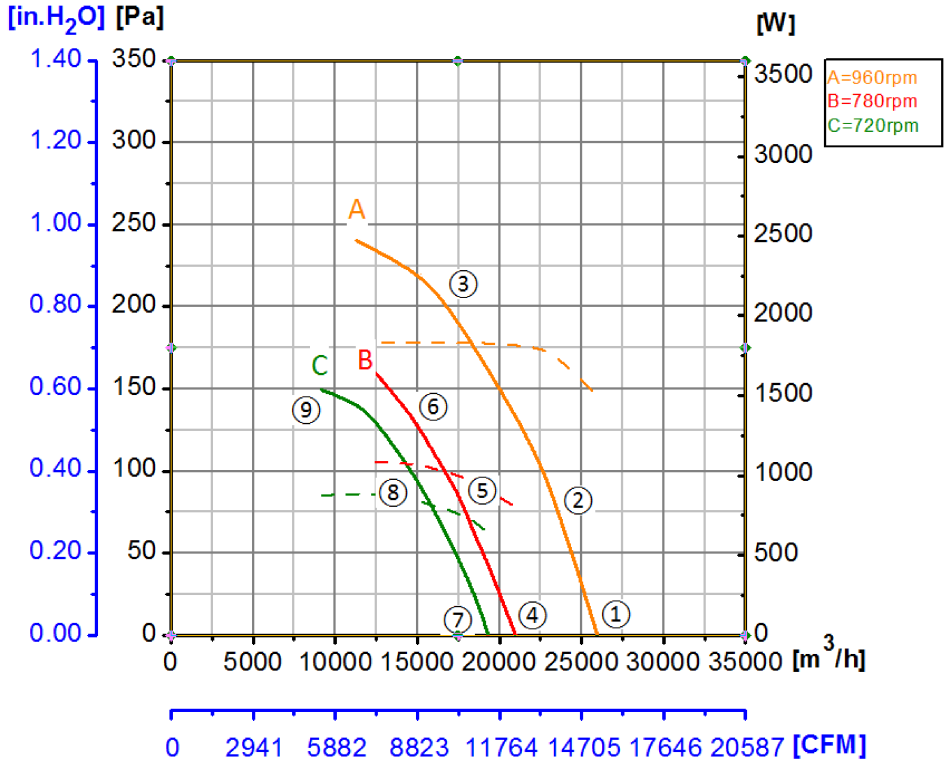


4.2 Performance data

Voltage [V]	Frequency [Hz]	Current [A] (±16%)	Input Power [W] (±16%)	Speed [r/min] (±10%)	Air Flow @ 0 Pa [m^3/h] (±10%)	Noise Level* [Lp dB(A)] Max	Type of Data Definition
3~400	50/60	2.35	1500	960	25940	/	fa
3~400	50/60	1.34	805	780	20960	/	fa
3~400	50/60	1.10	640	720	19300	/	fa

Definition of Data:
fa - Running at free air
ml - Max load
me - Max efficiency
cs - Customer specified
cu - Customer unit

4.5 Air performance curve(s)



Data according to ErP Directive	Actual	Req.2020			
Installation category	A		Power consumption P_{ed}	W	1828
Efficiency category	static		Air flow q_v	m³/h	16812
Overall Efficiency η_{es}	51%	42%	Pressure increase P_{fs}	Pa	200
Efficiency grade N	59	50	Speed(rpm) n	r/min	922
Variable speed drive	yes		**ErP2020		
Data obtained at optimum efficiency level The ErP data is determined by using a motor-impeller combination in a standardized measurement setup					

4.6 Measured values

Item No.	Volt	Speed	Input	Static Pressure		Air Flow	
	V	r/min	W	Pa	In.H_2O	m^3/h	CFM
1	400	960	1498.9	0.4	0.00	25940.4	15259.1
2	400	963	1744.9	79.4	0.31	23416.2	13774.2
3	400	922	1827.7	200.1	0.79	16811.8	9889.3
4	400	778	805.2	0.40	0.00	14052.7	8266.3
5	400	776	996.9	80.1	0.32	17781.3	10459.6
6	400	778	1074.1	140.60	0.55	20956.3	12327.2
7	400	723	639.1	0.2	0.00	19295.4	11350.2
8	400	724	818.5	80.3	0.32	15789.2	9287.8
9	400	723	886.7	140.6	0.55	11386.4	6697.9

5.0 Electrical Reqirements

5.1 Control methods:
0-10VDC / PWM / 4～20mA / RS485 MODBUS

5.2 Power output:
+10VDC / +20VDC

5.3 Tach output:
To connect a Pull-up Resistance between FG Line and Pull-up Voltage Line (R=U/1mA). FG will output a 50% duty cycle square signal once the motor started, and the frequency is "f=P*n/60" (P-motor pole, n-motor rotational speed).

5.4 Technical features:
Alarm relay/Passive PFC/Soft start.

5.5 Protecting functions:
When there's any protection of over-temperature, locked-rotor, under-voltage, over-voltage, phase missing or current limit occurred and caused the motor stopped, the motor will restart automatically after the fault removed.

5.6 EMC:
EMC immunity to interference According to EN IEC 61000-6-2(industrial environment)
EMC interference emission According to EN IEC 61000-6-4(industrial environment)

5.7 Level of protection: IP55
5.8 Insulation class: F
5.9 Leakage current: According to EN IEC 60335-1
5.10 Type of Application: S1
5.11 Installation Type:
■ Horizontal DN ■ Vertical
□ Special request, please contact manufacturer

6.0 Quality Control

This product is built according to the ISO9001 Quality Management System.

7.0 Operating & Storing Environmental Requirements

7.1 Operating environmental requirements
Operating temperature range: -25℃～+60℃.
Operating humidity range: 0%～95% RH.
No Rime or Condensation with the Ambient.
Operating altitude: ⩽1000m.
(If the altitude is higher than 1000m, please refer to EN IEC60034-1).
Atmospheric pressure Range: 80～110Kpa.

7.2 Tansport/Storing environmental requirements
Temperature range of transportation/storage: -40℃ ～ +80℃.
Humidity range of transportation and storage: 0% ～ 75% RH.

8.0 Packaging & Marks

8.1 Packaging: Carton packaging.
8.2 Marks
Mark with the name of manufacturer, fan model number, date of production, weight, dimensions, etc.

9.0 Other Requirements On Accessories

9.1 Controller
□ Yes ■ No □ As per sales' requirements
9.2 Connector
Connector (□ Yes ■ No) Model no.:
Terminal (□ Yes ■ No) Model no.:

10.0 Warnings & Instructions

10.1 This product can not be used for these places where the corrosive gas and/or steam are exsiting, and/or in coal mine wells where there are methane mixed gas and coal that may cause dust explosion hazard.

10.2 The bearings used are ball bearing. Please prevent the rotor from strike and impact. The fan should be stored at and used for these places where have no strong impact force and shock.

10.3 Please do connections by professionals according to the wire diagram or this product specification. Please check to make sure there's no blocking with the fan before installation. Please make sure the fan is running in correct direction.

10.4 Please do not touch any of the high voltage line while the product is powered on. The fan unit should be connected to ground well.

10.5 In order to cool down the motor part, please use this product under a well-ventilated condition and beware of avoiding being scalded during operation.

10.6 Please keep away from rotating parts while the product is running, and no exoteric matter getting into inside of the product.

10.7 In order to prevent the product from damage by the impact voltage, please use VSP to control fan start or stop.Do not use relay or other mechanical switch on the power supply line to control fan start or stop frequently.

10.8 Please use this product under the conditions specified on this specification, and please contact with us if your application is out of the applicable conditions specified in the spec sheet.

10.9 The warranty of the products is normally one (1) year (accordance to contract or purchase order).

11.0 Others

11.1 We have intellectual rights on this product. We are NOT responsible for any patent disputes caused by using this product on other products/technical solutions.

11.2 It should be assured that this specification can NOT be revealed to any third party without the consent of our corporation.

12.0 Attentions

If customer does NOT comply with the stipulations of this specification or the listed warnings and instructions, customer should undertake the due obligation for all the quality issues and accidents.