

# **Wire Feeder User Manual SUP-AMF-PD(V1.1)**



**Wuxi Super Laser Technology Co., Ltd.**

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## Update record





Version	Update content	Hardware version	Software version	Interface version	Date	Editor
V1.0	First edition	V1.1	776	201	25.04.19	Liu Chen
V1.1	Enhanced Wire Conduit	V1.1	776	201	25.8.1	Liu Chen

## I. Safety Precautions

This product is a welding wire feeder. To ensure safe operation and proper functioning, users are advised to post the following safety labels on the equipment to inform all operators, maintenance personnel, and bystanders.




### 1.1 Electrical Safety

- ① This device is powered by a 24V output from a switching power supply, which uses 220V AC. Users must adhere to electrical safety protocols to avoid electric shock.
- ② The device features insulated support blocks. To ensure safe operation and prevent electrostatic damage or leakage, proper grounding is essential. Conductive parts should be connected to the protective (grounding) conductor in the fixed wiring to prevent them from becoming live if basic insulation fails. Additional safety measures (e.g., double insulation or reinforced insulation) may be applied as needed.
- ③ No user-serviceable parts are located inside the chassis. All installation, maintenance, or disassembly must be performed with the power disconnected.

Signs	Intention
	<p>High Voltage</p>
	<p>Must be grounded</p>
	<p>Must unplug</p>
	<p>No switching on</p>

## 1.2 Mechanical Safety

- ① The device contains motor-driven gears and rollers. Avoid contact during operation to prevent injury.
- ② During wire spool replacement, ensure the device is not accidentally activated to avoid injury.

Signs	Intention
	<p>Warning mechanical injury</p>
	<p>Caution nipping hand</p>
	<p>Do not start</p>

## II. Product Overview

This series of products are auxiliary wire feeding equipment used in the field of laser platform welding, and can also be used in related fields such as robot welding wire feeding. Suitable for carbon steel, stainless steel and aluminum welding wires. SUP-AMF-PD is a platform welding double wire feeding machine (hereinafter referred to as "wire feeding machine").

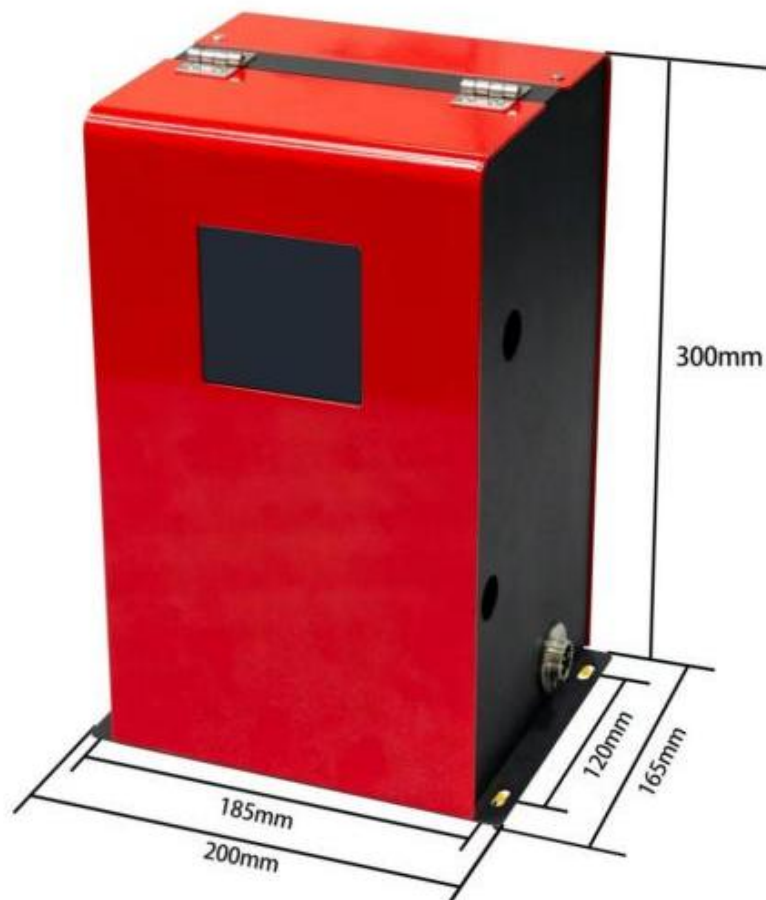
## III. Product Features

Main functions and parameters:

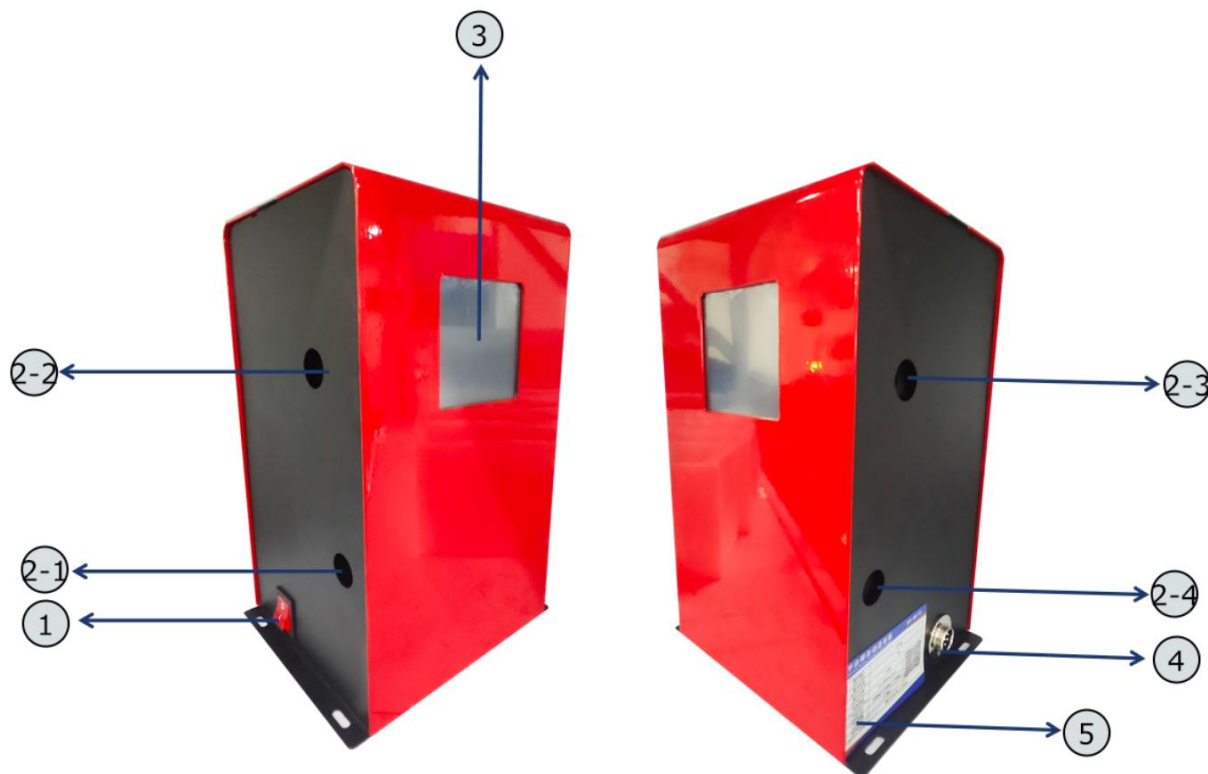
- Speed Range: 15~600cm/min;
- Max Load Capacity: 20kg;
- Compatible Wire Materials: Carbon Steel, Stainless Steel, Aluminum;
- Operation: Touchscreen;
- Control System: Proprietary, supports custom extensions;

### 3.1 Product Appearance

The installation hole position of the wire feeder is 185mmx120mm.  
The physical object is as follows.



3.1 Outside view



### 3.2 Appearance component drawing

#### 3.1 Appearance component sheet

Numbers	Name	Note
1	Switch	24V Switch
2-1、2-2	Wire outlet	
2-3、2-4	Wire inlet	
3	Screen	4 inch
4	Eight-core socket	Power&Signal
5	Nameplate	

### 3.2 Product Specifications

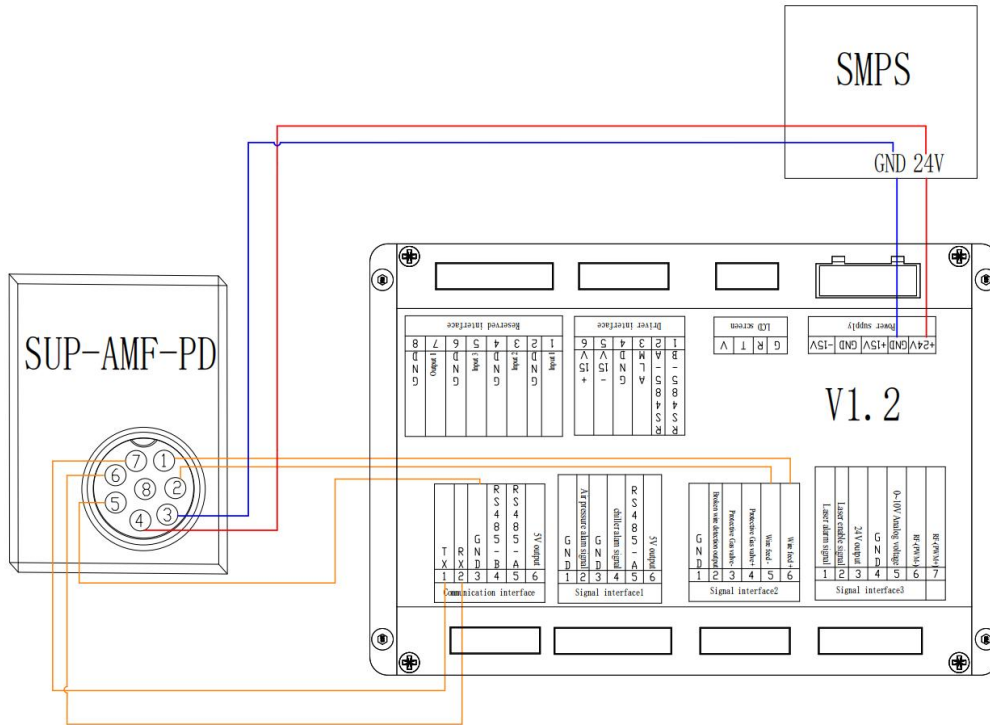
#### 3.2 Key product parameters list

Power Supply	24V DC
Operating Temperature	-10~50℃
Max Power Consumption	120W
Feeding Speed	15~600cm/min
Feeding Modes	Continuous/Pulse
Compatible Wires	Carbon Steel Solid Wire,/Stainless Steel Solid Wire/ Aluminum Solid Wire
Net.weight	7.3kg
Maximum load capacity of damping shaft	20kg

## IV. Installation & Usage

### 4.1 Equipment wiring

The detailed wiring diagram of the wire feeder:



### 4.1 Equipment wiring drawing

### 4.2 Definition of plug cable

The definition of the eight-core plug interface as follows:



### 4.2 Plug interface diagram

### 4.1 Standard version plug interface definition

Interface definition-Standard				
Socket	Corresponding accessory	Interface pin position	Definition	Number tube
Eight-core socket	Eight-core cable	1 pin	Wire feeder enable + START	Wire feed+
		2 pin	Wire feeder enable-GND	Wire feed-
		3 pin	24V Power-	0V
		4 pin	24V Power+	24V+
		5 pin	GND	GND
		6 pin	232-RXD	RXD
		7 pin	232-TXD	TXD
		8 pin	PE	Grounding

### 4.3 Equipment Installation

#### 4.3.1 Wire Feeding Tube & Wheel Selection

Select the appropriate feeding wheel and tube based on the wire material and diameter, and avoid bending the feeding tube.

Wire Feeding Wheel Models			
Applicable welding wire	Material	Wire feeding wheel	Wire diameter
	Carbon Steel, Stainless Steel	V mode	Φ0.8mm/1.0mm φ1.2mm/1.6mm (Standard)
	Aluminum	U mode	Φ0.8mm/1.0mm φ1.2mm/1.6mm (Customized)



2025-3M Inlet & Outlet Ends



0816-1.5M



### 4.3 Wire feeding tube and wheel diagrammatic drawing

#### 4.3.2 Welding wire reel installation

When installing the wire reel, please note:

- When choosing the wire reel, pay attention to the damping specification and do not exceed

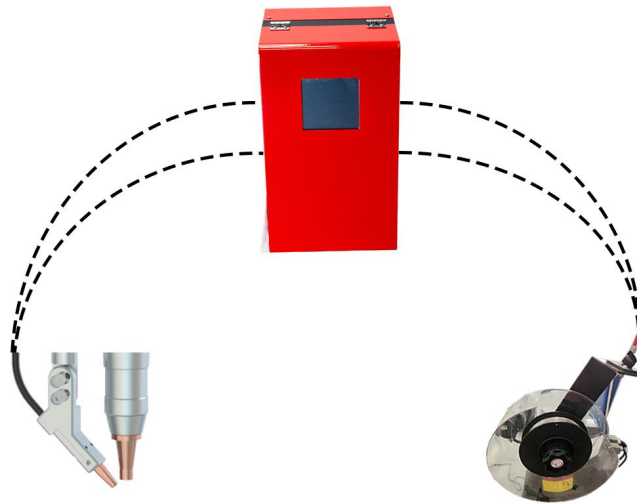
the maximum load.;

- Select the welding wire according to the welding material;
- The positioning holes of the welding wire reel should be aligned with the positioning pins of the damping shaft to ensure smooth rotation between the welding wire reel and the damping shaft, avoiding friction between them and preventing unstable wire feeding.

#### 4.3.3 Wire feeding tube installation

When installing the wire feeding tube, please note:

- Loosen the locking screw and insert the wire feeding tube. It is advisable that the wire feeding tube does not rub against the wire feeding wheel and it is convenient to insert the welding wire;
- It is standard-equipped with a set of four wire feeding tubes. The platform welding double wire feeding tubes (PD0816-2) are connected to the wire outlet and the welding torch. The wire feeding tube 1.6 (Fe0816-3 end joints at both ends) is connected to the wire outlet and the wire reel frame to avoid mixed use;
- After inserting it into the appropriate position, tighten the screws until there is no shaking when manually turning the wire feeding tube;
- The damping shaft is fixed with 3-M8 bolts distributed at 120°. For detailed dimensions, please refer to the figure 4.7.



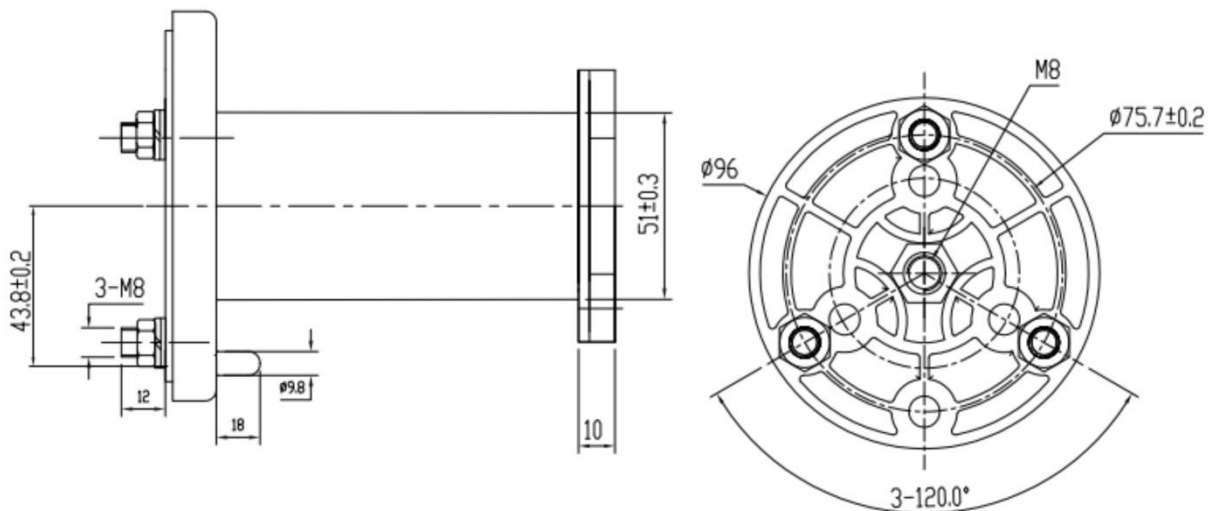
4.4 Assembly illustration of the wire feeding tube



4.5 Installation details



4.6 Wire feeding tube (Fe0816-3)



4.7 20KG Damping shaft size

#### 4.3.4 Assembly of wire feeding tube and welding head

Taking the 25A and 26A type double swing welding guns as examples, the wire feeding tubes are assembled as shown in the following figure. Pls note:

- Select a connection block based on the type of the welded joint;

- Ensure that the welding wire is stuck in the copper nozzle slot, and then lock the hex screw。

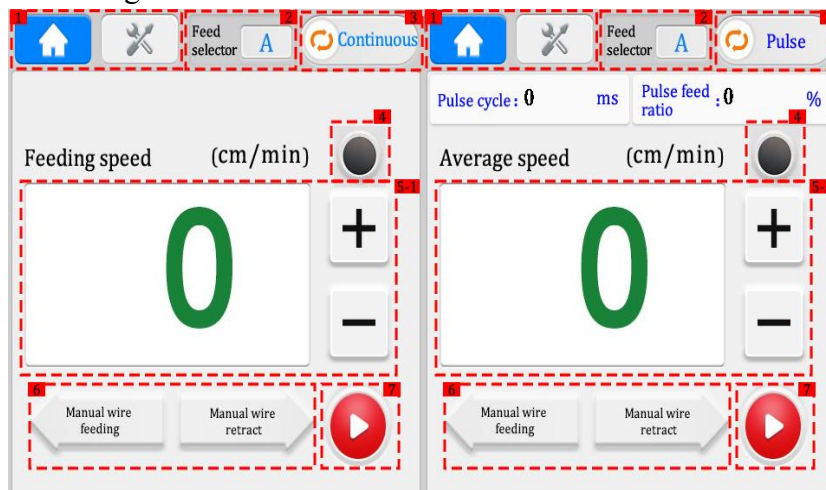


#### 4.8 Connect the wire feeding tube to welding head

#### 4.4 Operation interface

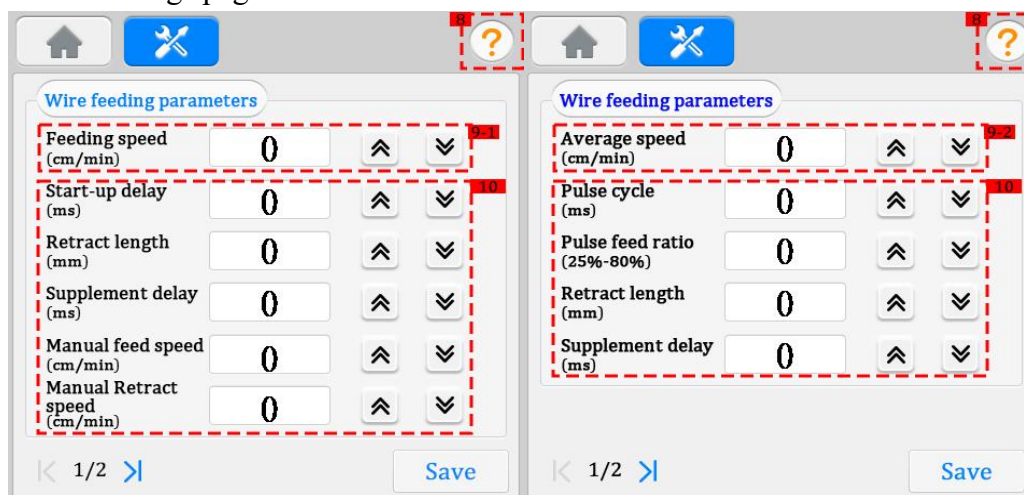
The PD wire feeder is equipped with a 4-inch touch screen with a resolution of  $480 \times 480$ .

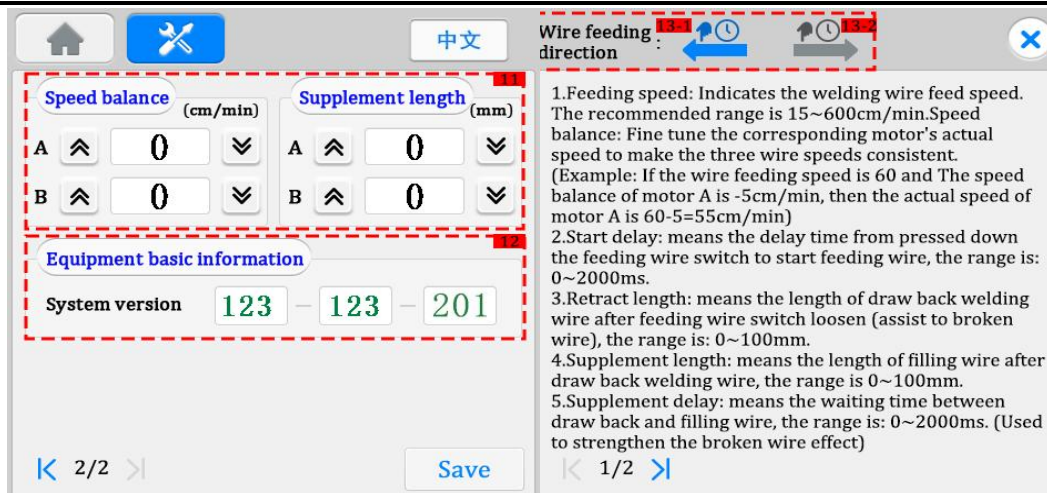
### 4.4.1 Interface Home Page



NO.	Key name	Function	Note
1	Home Page/Settings	Page switching	
2	Motor switching	Switch the running motor	When [AB] is selected, both the A and B motors run at the same time
3	Pulse / Continuous	Switch the wire feeding mode	Pulse mode is used in fish-scale welding
4	Status indication	Green light indicates that the motor is rotating	
5-1	Wire Feed Speed	Adjust the speed of wire feeding	Valid in continuous mode
5-2	Average speed		Valid in pulse mode
6	Manual wire feed /Manual pullback	Click on the motor to rotate forward/backward	Manual wire feed speed $\neq$ wire feed speed
7	Run/stop	Click to switch to the corresponding state	Motor does not run when stop

### 4.4.2 Interface settings page





NO.	Key name	Function	Note
8	Help page	Detailed description of parameters	
9-1	Wire Feed Speed	Wire extraction speed during welding	Valid in continuous mode
9-2	Average speed	Adjust the overall wire feeding speed during welding	Valid in pulse mode
10	Start delay	Compared with the light signal emitted by the welding head, wire output is delayed	Global validity
	Pullback length	When wire breaks, motor rotates in reverse to assist in wire breaking	
	Mending delay	Supply the length of the pullback	
	Manual wire feed speed	The pull-back speed of the motor reversal, uses for manual debugging	
	Manual pullback speed	The pull-back speed of the motor reversal, uses for manual debugging	
	Pulse period	Adjust the length of individual fish scales	
11	Flatness	Adjust the obvious degree of fish scale, the smaller the more obvious	Valid in pulse mode
	Wire filling length	Supply the length of the pullback	Global validity
Speed balance	Fine-tune the actual speed of the corresponding motor to make the motor speed consistent		
12	System version	The software and hardware versions of the wire feeder	
13-1	Motor direction 1	When feeding wire, motor A rotates counterclockwise and motor B rotates clockwise. Long press to take effect	
13-2	Motor direction 2	When feeding wire, motor A rotates	

		clockwise and motor B rotates counterclockwise. Long press to take effect	
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## V. Maintenance

### 5.1 Routine maintenance

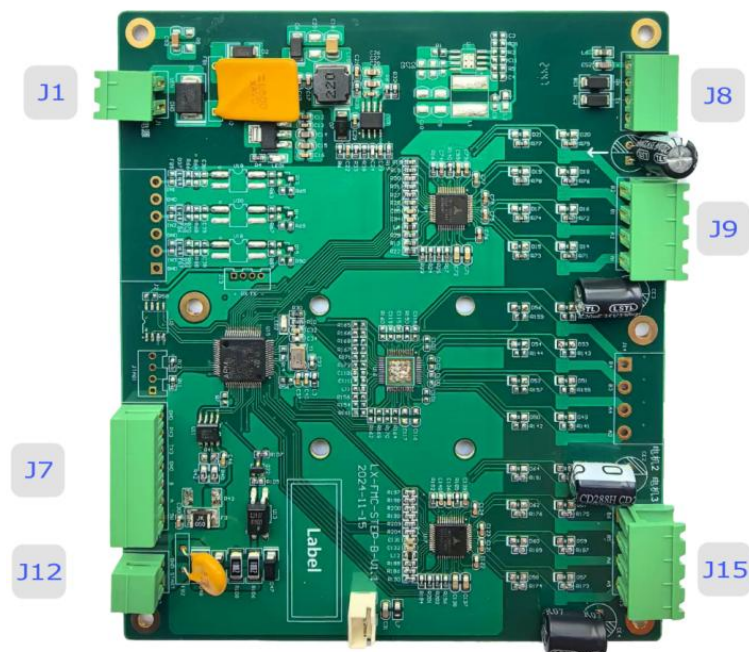
- Devices should be effectively grounded;
- Protect the touch screen to avoid damage to the screen panel;
- Install the welding wire correctly and check and dredge it regularly to avoid friction caused by improper assembly, resulting in metal chips blocking the wire feed wheel box and wire feed pipe;
- When working in harsh environments, pay attention to water and dust proofing, and do not soak the equipment in water.

### 5.2 Fault handling

#### 5.2.1 Control logic

The wire feeder is connected to pin 5/6 of the signal interface 2 of the V1.2 control box (marked as "Wire feeder +/-") through the eight-core plug signal wire at the tail to control the wire output. When the light is being welded out, the main board of the control box gives the wire feeding enable signal. The main control board of the wire feeding machine drives the motor to run, and the wire feeding machine starts to work.

#### 5.2.2 Motherboard interface



5.1 V1.1 Wire feeder Motherboard

5.1 Wire feeder motherboard pin position definition table

Interface identification	Interface definition	Interface pins	Pins definition	Corresponding interface		
J1	24V Power port	1	WIN	Switch power	+V0	
		2	GND		-V0	
J7	Communication Interface	1	GND	Controller - Communication port	GND	
		2	RX		TX	
		3	TX		RX	
		4	GND	Reserve 485		
		5	B			
		6	A			
		7	5V	Reserve normal output		
J8	Screen interface	1	-	Screen	GND	
		2	T		RXD	
		3	R		TXD	
		4	+		VCC	
J9	Motor 1	1	B2	Stepping motor 1	B+	
		2	B1		B-	
		3	A2		A-	
		4	A1		A+	
J15	Motor 3	1	B6	Stepping motor 2	B+	
		2	B5		B-	
		3	A6		A-	
		4	A5		A+	
J12	Wire feeding enable interface	1	GND	Eight-core cable	2pin	
		2	START		1pin	

5.2.3 Common anomalies and handling methods

Problem description	Solution
Abnormal wire feeding and obvious wire output delay	Adjust the wire feeding tube to increase the bending arc and try to keep it as straight as possible.
No wire come out during welding	<p>Ensure that the wire feeding enable signals of the communication and welding control boxes are normal.</p> <p>The normal operation of the wire feeder can be initially judged by observing the wire feeding enable signal on the "monitoring page" or "diagnosis page" of the welding system:</p> <p>If the trigger is pressed, the indicator light of the "Wire feeding Enable Signal" on the "monitoring page" of the welding system is on (green), but the wire feeder actually does not feed wire. Or enter the [Diagnosis Page] of the welding system, turn on the [Wire Feeding Enable] switch. If the theoretical output status light is on (green), but the wire feeder does not actually feed wire, it is initially judged that the wire feeder is not working properly.</p>

Other troubleshooting:

Parameter setting error: Wire feeding will be performed only when the running state of the wire feeder interface is "Run", and no wire feed will be performed when "stop";

Component failure: need to check the wiring between the motherboard and the motor, repair and replace the faulty parts;

- Check the power supply: After power-on, check whether the power indicator is on and the running indicator is blinking. If the power indicator is on and the running indicator is steady on or off, the motherboard is faulty;
- Both the power light and the operation light are normal. When the trigger is pressed, no wire is fed. Check whether the interface [J12] is conducting to the ground. If it is, it is judged that the motor is abnormal. If it is not conductive, it is judged that the main board of the wire feeder was abnormal.



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