

JBT-CTRL-556

Docking station drive integrated controller

Hardware ManualV1.0.0

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1. Product Introduction

1.1 Product Overview

JBT-CTRL-556 The docking station drive and control integrated controller is a special control panel launched for the "docking station" industry. 2Road external Potentiometer speed regulation function, speed range 0-250rpm, synchronous control can be achieved 2road 42 or 57 series of motors, combined with 2Road or 3Road Sensor signals, input and output signals of upper and lower stations, key control signals, can realize standard mode, NG Mode, marking mode, cylinder Mode Four control modes. This product has rich functions, superior performance, simple use, and can be widely used in the docking station equipment industry.

1.2 Product functions and features

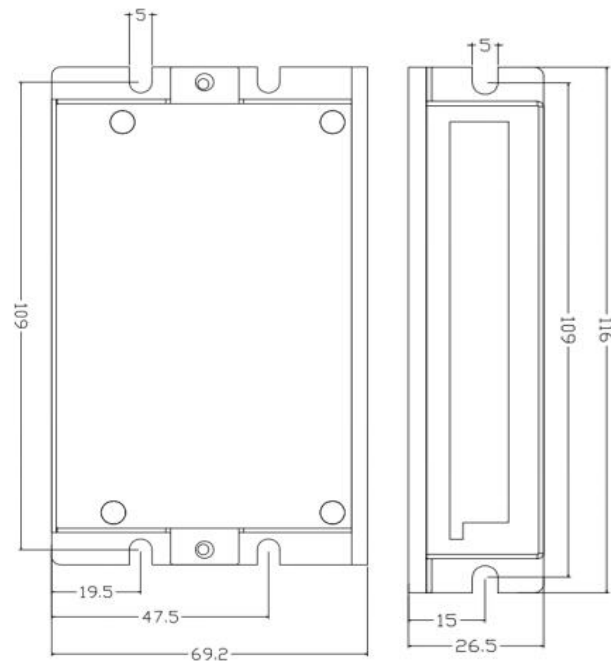
- **Rated operating voltage:** DC24V;
- **Matching motor:** GR42HB40, GR42HB48, GR42HB60, GR57HB56, GR57HB76, GR60HB86 Series motors;
- **Motor synchronous operation:** Acceptable 2Road motor and synchronous operation;
- **Position Sensors:** 2Road or 3Optional (automatic identification by software), sensor NPN type;
- **Interface terminals:** Signal, 42Motor XH2.54 series, 57Motor 3.81 Wiring terminal, power supply JST-VH series;

1.3 Application Areas

Suitable for docking station equipment.

2. Electrical, Mechanical and Environmental Indicators

2.1 Mechanical installation drawing



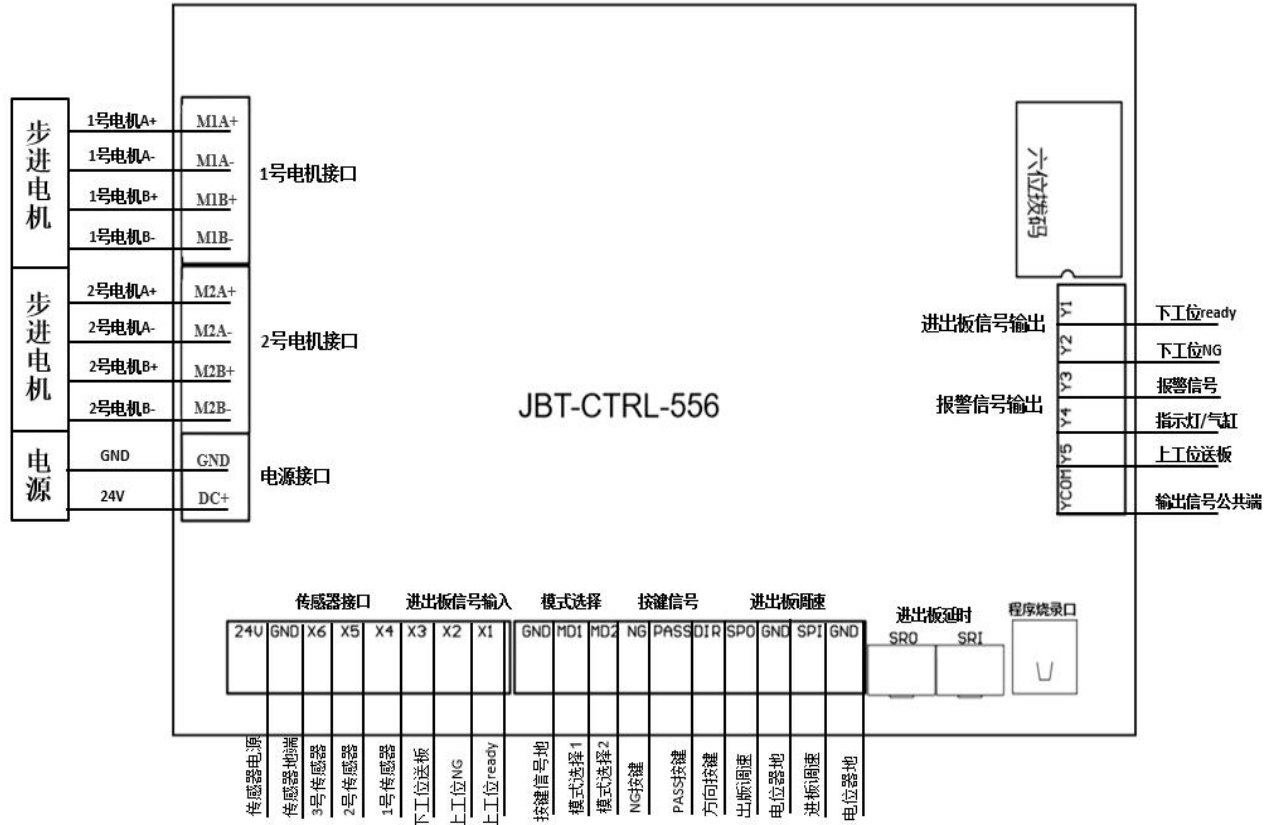
picture2.1 Installation Dimensions (Unit:mm)

2.2Electrical Specifications

illustrate	JBT-CTRL-556			
	Minimum	Typical Value	Maximum	unit
Total output current	2.5		4.8	RMS(A)
Input power voltage	12	twenty four	40	VDC
Control signal input current	7	10	16	mA
Running speed	0	-	250	rpm
Insulation resistance	500			MΩ

3. Driver interface and wiring introduction

3.1Interface Diagram



picture3.1 JBT-CTRL-556Interface Diagram

3.2 Interface Description

3.2.1 Power interface

serial number	name	illustrate
1	DC+	Power input positive terminal, recommended power output voltage is +24V
2	GND	Power input negative terminal

3.2.2 Motor interface

serial number	name	illustrate	name	illustrate
1	M1A+	catch1No. Motor corresponding winding Same line sequence, 2Motor running direction To the opposite	M2A+	catch2No. Motor corresponding winding Same line sequence, 1Motor running direction To the opposite
2	M1A-		M2A-	
3	M1B+		M2B+	
4	M1B-		M2B-	

3.2.3 Signal input interface

serial number	name	illustrate	
1	X1	andGNDConnecting means signal input enter	readySignal input terminal, the upper station sends to this machinereadySignal
2	X2		NGSignal input terminal, the upper station sends to this machineNGSignal
3	X3		Send board signal input terminal, the lower station machine requests the board sending signal from this machine
4	X4	catchNPNTType Photoelectric Sensor	1Position sensor signal input terminal
5	X5		2Position sensor signal input terminal
6	X6		3Position sensor signal input terminal
7	24V	Position sensor power positive terminal	
8	GND	Position sensor ground	

3.2.4 Timeout setting potentiometerSRO,SRI

SRO: Output delay setting potentiometer, range:0~5s, turn clockwise to increase.

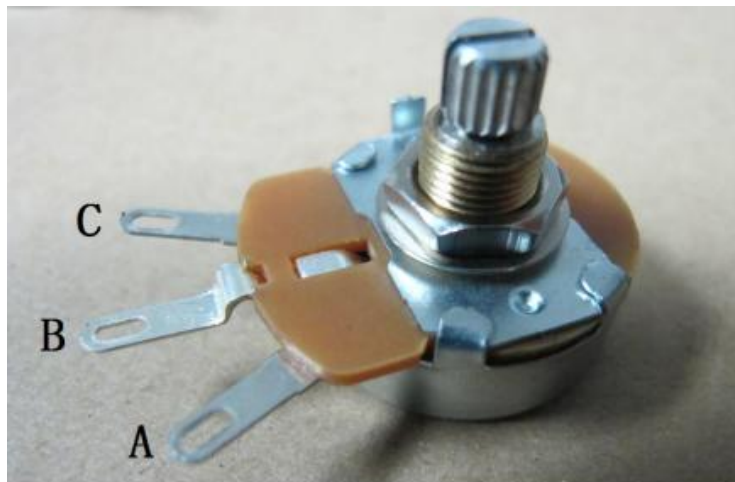
SRI: Board entry timeout setting potentiometer, range:3~60s, turn clockwise to increase.

3.2.5 Signal output interface

serial number	name	illustrate	
1	Y1	When the signal is output, the interface YCOMConductivity	readySignal output terminal, this machine sends to the next station machine readySignal
2	Y2		NGSignal output terminal, this machine sends to the next station machine NGSignal
3	Y3		Alarm output
4	Y4		Indicator light/cylinder control valve output
5	Y5		The board sending signal output terminal sends a signal to the upper station to request the board to be sent.
6	YCOM	Output signal common terminal	

3.2.6 External key input signal interface

serial number	name	illustrate	
1	GND	Mode switch and key signal ground	
2	MO1	and GNDConnection table Indicator signal input	Mode selector switch1Input signal
3	MO2		Mode selector switch2Input signal
4	NG		NGButton end, NGWhen the button is connected, the product is not qualified for connection
5	PASS		PASSButton end, PASSWhen the button is turned on, the product is connected
6	DIR		Running direction button end, DIRWhen the button is turned on, the running direction of the docking station will be changed
7	SPO	PotentiometerA, CCan	Speed potentiometer on the output boardBend, recommended potentiometer resistance:10K
8	GND	Interchangeable, can be based on actual Wiring for practical applications	Speed potentiometer on the output boardAorCend
9	SPI		Speed potentiometer connected to the boardBend, recommended potentiometer resistance:10K
10	GND		Speed potentiometer connected to the boardAorCend



3.2.7DIP switch settings

SW1		SW2	SW3	Mode Function
off		off	off	Standard Mode
on		off	off	NG Mode 1, 2, 3
off		on	off	Marking mode
on		on	off	NG Mode 1, 4, 5
off		off	on	Cylinder Mode
on		off	on	NG Mode 6
name	Function	illustrate		
SW4	Alarm selection	on: Alarm signal output function is turned on off: Alarm signal output function is closed		
SW5	Current selection	SW5(off),SW6(off):2*1.25A		
SW6		SW5(on),SW6(off):2*1.5A SW5(off),SW6(on):2*2.0A SW5(on),SW6(on):2*2.4A		

Operation mode selection switch and dip switchSW1-SW3The relationship is as follows:

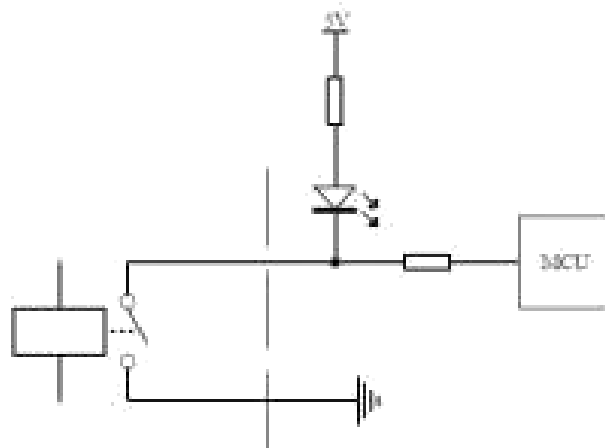
Mode Function	Specific function settings
Standard Mode	Automatic mode 1: Mode selection switchMO1andMO2NeitherGNDOn; Automatic mode 2: Mode selection switchMO1andGNDOn; Manual mode: Mode selector switchMO2andGNDConnect;
NGMode 1, 2, 3	NGMode 1: Mode selection switchMO1andGNDConnect; NGMode 2: Mode selection switchMO1andMO2NeitherGNDConnect; NG Mode 3: Mode selection switchMO2andGNDConnect;
NGMode 1, 4, 5	NGMode 1: Mode selection switchMO1andGNDConnect; NGMode 4: Mode selection switchMO2andGNDConnect; NGMode 5: Mode selection switchMO1andMO2NeitherGNDConnect;
Marking mode	Marking mode 1: Mode selection switchMO1andGNDOn; Marking mode 2: Mode selection switchMO1andMO2NeitherGNDConnect;
Cylinder Mode	Cylinder mode 1: mode selection switchMO2andGNDOn; Cylinder mode 2: Mode selection switchMO2andGNDNo connection;

3.3 Interface Circuit Description

3.3.1 Input interface circuit

As shown in Figure 2, it is an input switch signal interface circuit, which can receive the switch input signal. The interface circuit is adapted to the following control signals:

- (1) Upper station interface: NGSignal, readySignal;
- (2) Lower station interface: requireSignal;
- (3) Operation mode selection interface: mode selection switch SW1, Mode selector switch SW2;

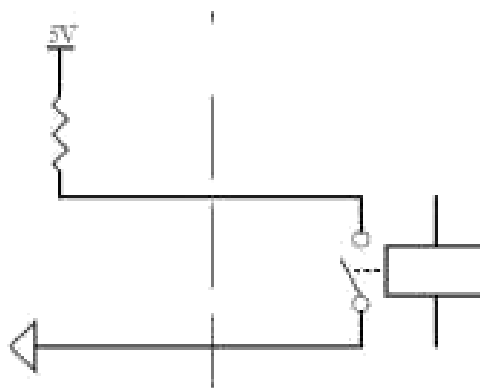


picture2 Input switch signal interface circuit

3.3.2 Output interface circuit

As shown in Figure 3, it is an output switch signal interface circuit, which can output switch signals. This interface circuit is adapted to the following control signals:

- (1) Upper station interface: requireSignal;
- (2) Lower station interface: NGSignal, readySignal;
- (3) Alarm, indicator light/cylinder interface: external alarm, indicator light or cylinder;

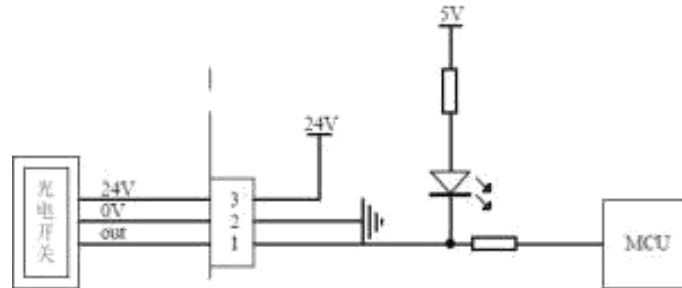


picture3 Output switch signal interface circuit

3.3.3 Photoelectric sensor input interface circuit

As shown in Figure 4, it is a position sensor input interface circuit. The input interface circuit is adapted to the following control signals:

- (1) NPN Type sensor.

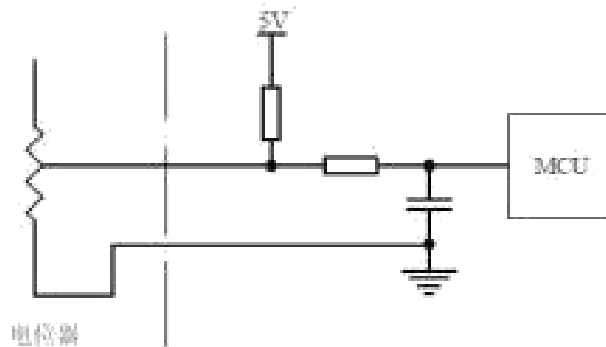


picture4 Position sensor input interface circuit

3.3.4 Analog input interface circuit

As shown in Figure 5, it is an analog input interface circuit, which is adapted to the following control signals:

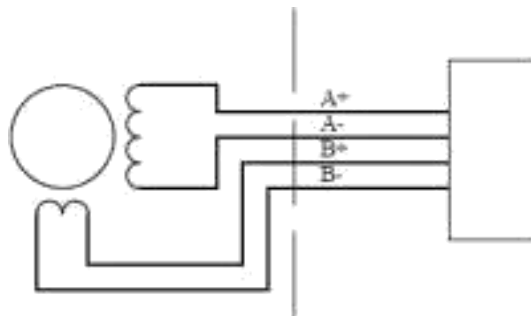
- (1) Input signal of speed regulation into the board;
- (2) Output board speed control input signal;



picture5 Analog input interface circuit

3.3.5 Motor output interface circuit

As shown in Figure 6, it is the motor output interface circuit, which is suitable for driving 42/57/60 series 2-phase hybrid stepper motor.

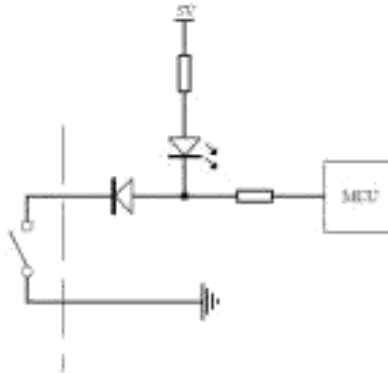


picture6 Motor output interface

3.3.6 External switch input

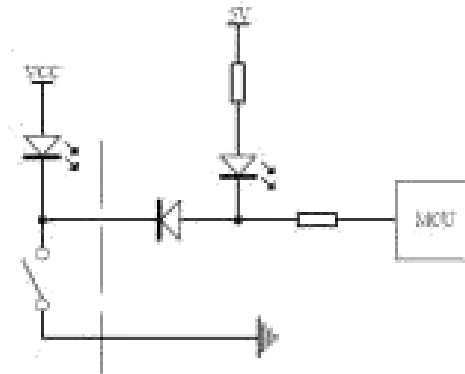
As shown in the following two figures,DIRDirection switch,PASSRe-judgement switch,NGRe-judgment switch input interface circuit.

As shown7As shown, the user adoptsledWiring diagram when pressing a button:



picture7WithoutledButton Wiring Diagram

As shown8As shown, the user adoptsledWiring diagram when pressing a button:



picture8bringledButton Wiring Diagram

4. Indicator lights and alarm indicators

4.1 Power supply, alarm indicator light

ledNumber of flashes		Phenomenon	illustrate
greenled	redled	After the green light flashes, the red light flashes	
0	-	Green light is always on, red light is off	The driver is enabled and the driver board is powered normally

V. Version Revision History

Version Number	illustrate	Modify deadline	Preparer/Reviewer
V1.0.0	Initial use version;	2024.03.11	HY/TCJ