

SV04 Switching Valve Quick Use Guide

1. Notes

Please read the following notes carefully and follow it strictly for correct and safe use of product.

Installation and Use

- ◆ When installing this product, please install it on the existing installation holes, additional holes are strictly prohibited.
- ◆ Applicable power supply: 24V DC $\pm 10\%$, not less than 1A
- ◆ Please use RUNZE debugging software serialcomm 1.3.0 for product debugging
- ◆ While debugging, try to debug over liquid to avoid dry wear of the spool, which will affect the service life of the valve
- ◆ While Using this product, please connect to GND to reduce the interference brought by environmental factors
- ◆ When not using this product, remember to clean the valve ports with water to avoid the residue staying in the ports for a long time.

Service

Please do not disassemble this product or the product shell by yourself, this will lose your warranty rights. When this product has the following problems, please contact your sales or technical support.

- ◆ Damage to the power cord or communication cable
- ◆ Damage to the product caused by dropping or hard hitting
- ◆ The device remained not working after following the instruction

2. Item list

Open the SV04 package, the package contains the following items

| Name | Quantity |
|--------------------------------|----------|
| SV04 multiport switching valve | 1 set |
| Nine color line Accessory kit | 1 pc |
| Operation QR code | 1 sheet |
| certificate of conformity | 1 sheet |

The Nine Color Line Accessory Kit contains the following items


| Item | Color |
|--------------------------------|---|
| RS232 communication cable | Blue and white, black and white, orange and white |
| RS485, CAN communication cable | Orange, blue, green, yellow |
| Power cable | Red, black |

3. Cable Connection and Debugging

3.1 USB Driver Installation

If you are using our USB To RS232/RS485 debugger for the first time, please download the debugger driver from the official website

- 1、Login to the official website (https://www.runzeliuti.com)
- 2、"Download"->"Debug Tools"->"USB to RS232, RS485 converter driver "Click to download
- 3、Driver installation

Open the application  CH341SER.EXE file , confirm it is the CH341SER.INF file, click Install, and then click OK, the installation is complete.

3.2 Power Cable

As shown in Figure 3-2-1 below, plug the white terminal of the power cable into the power port of the device, and connect the other end to the power supply



Figure 3-2-1

3.3 Communication Cable

RS232 communication cable is connected in the order shown in Figure 3-3-1 below

Note: USB serial converter needs to dial to RS232 communication

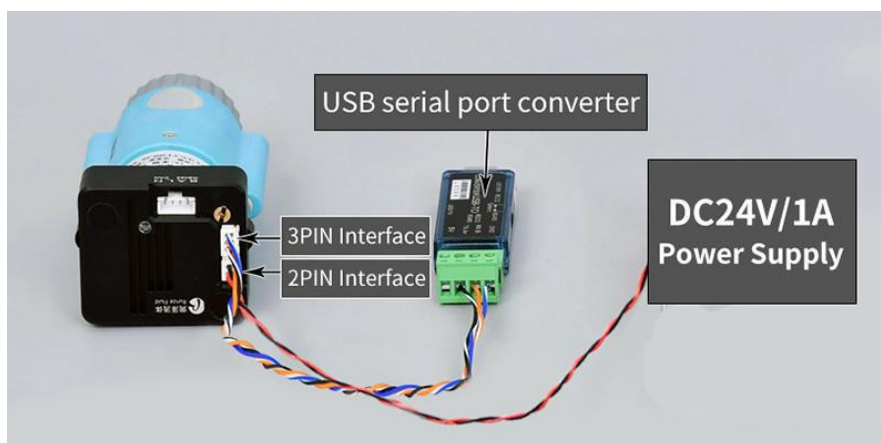


Figure 3-3-1

RS485 communication interface and CAN communication interface are connected in the same socket in the order shown in Figure 3-3-2 and 3-3-3 below, respectively.

Note: When using RS485 communication, the USB serial converter needs to dial to RS485 communication.

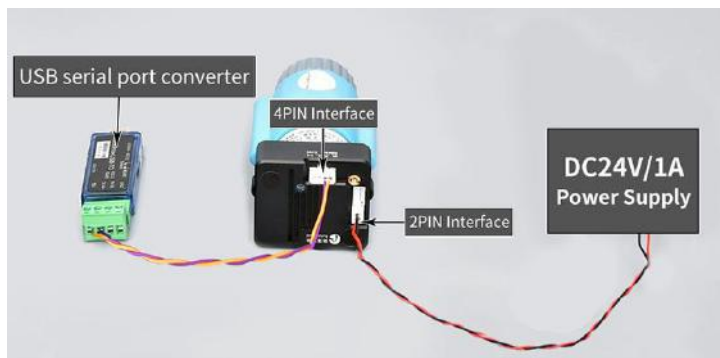


Figure 3-3-2

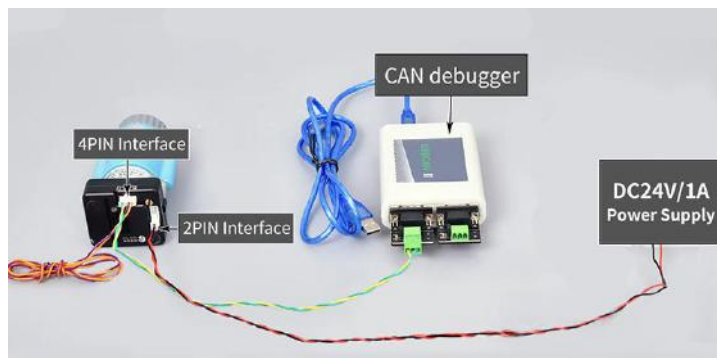



Figure 3-3-3

4. Quick Use

4.1 Debugging Software

Open the debugging software serialcomm 1.3.0, Figure 4-1-1 baud rate is the baud rate of the slave computer, the factory default is 9600bps, after setting the serial port and baud rate, click the "Open Port" button, then click the command generator icon on the top left  or click the "Tools" to open the "Command Generator".

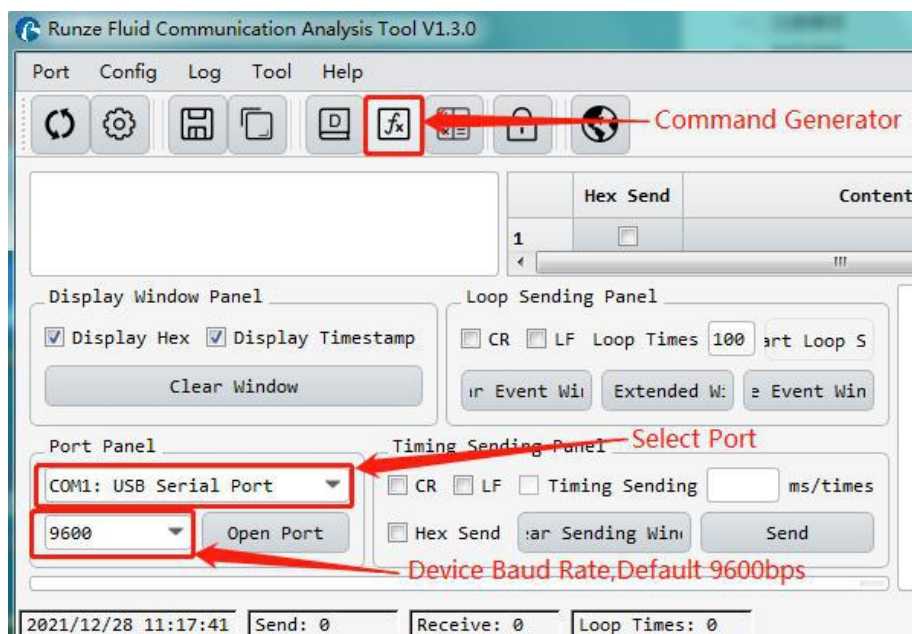


Figure 4-1-1

In the command generation tool, input the address, command, parameters, the command corresponds to various command codes of B2, parameters correspond to B3, B4, if it is a factory command, you need to check the factory mode, if it is a general command is not necessary to check. After setting, click Generate and Copy, the command display box on the right can show the current generated code and has been copied in the clipboard, as shown in Figure 4-1-2 below.

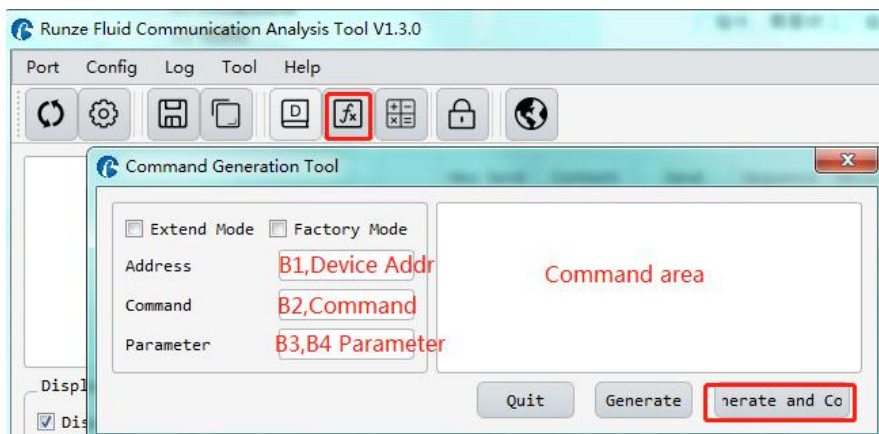


Figure 4-1-2

Note: The input of address, command and parameter boxes are all in hexadecimal.

Return to the main interface of debugging software, double-click the input box under "content", right-click to paste the copied command or use the shortcut key ctrl+V to paste the copied command. Then check the "hex send" ahead and click the blank button in the corresponding line under "send" to send the command.

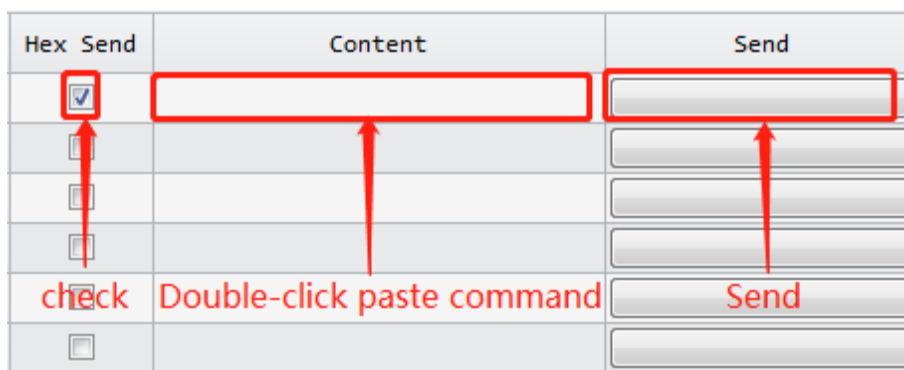


Figure 4-1-3

4.2 Examples of RS232 communication

- ① Send Command: 0x20 query the device address

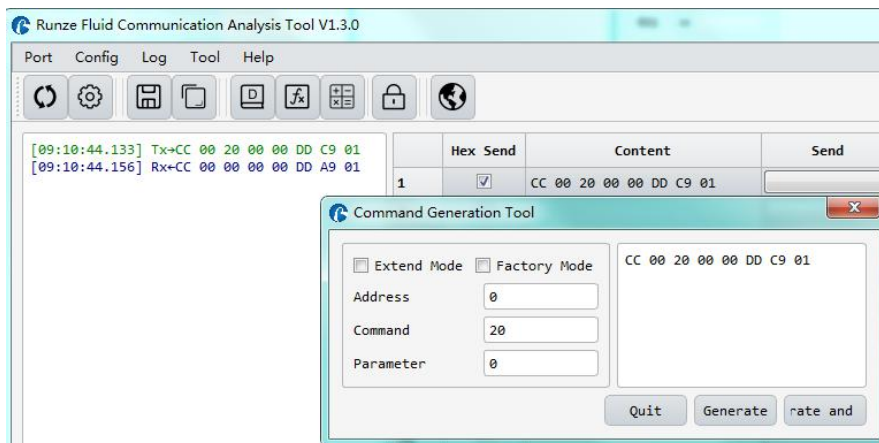


Figure 4-2-1

② Send command: 0x44 switching port command

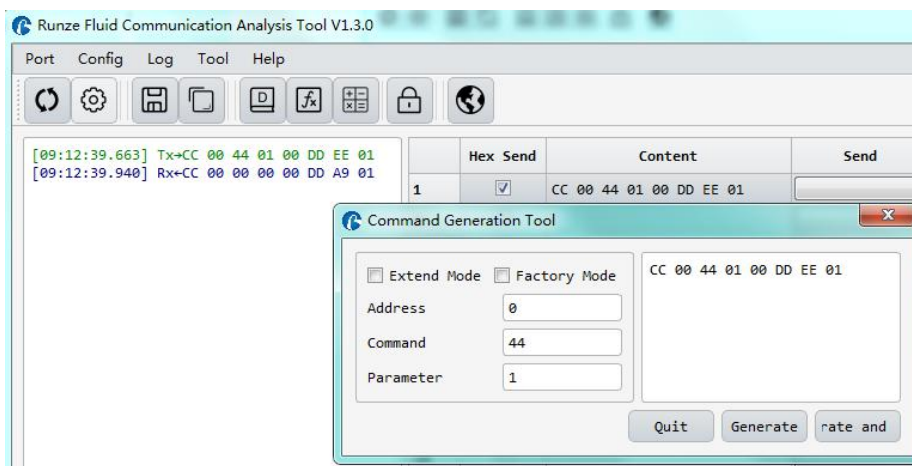


Figure 4-2-2

Paste the copied command in the blank space below "Send", check the 'hex send' in front, then click send, get the return code and B2 byte is 00, then it means port switching is successful.

4.3 RS485 Debugging Tool Description

RS485 communication refer to 4.2 examples of RS232 communication

4.4 CAN Debugging Tool Description

CAN communication refer to 4.2 examples of RS232 communication

5. Common Problems & Solutions

| Phenomenon | Problem | Solution |
|---------------------------|---|--|
| Not working when power on | The working voltage is not in the acceptable range. | Test whether the voltage is within the specified range |
| | The connection is loose or disconnected. | Check whether the connection is good. |
| | The working current is not in the | Detect whether the current is within |

| | | |
|---|---|---|
| | acceptable range. | the specified range |
| Not aspirate after switching | It is blocked by debris. | Remove the pump tube and clear the debris. |
| Liquid has bubbles. | The connection is not tight. | Replace suitable connectors. |
| No communication | The TX and RX lines of RS232 are connected reversely or phase A & B of RS485 are connected reversely. | Exchange the TX and RX line sequence of RS232 and exchange the phase A & B sequence of RS485. |
| The sent and received communications are consistent in RS232. | TX and RX are in short circuit. | Check whether there is short circuit, if so, replace the cable. |
| Working but the sent and received communications are consistent in RS485, | AB reversed, and the USB converter is not dialed to RS485 | Switch AB and dial USB to RS485 communication |

6. Quick Commands

| Code B2 | Abbreviation | Parameter B3 B4 |
|---------|--|--|
| 0x20 | Query address | The address ranges from 0x0000 to 0x007F. The default value is 00 |
| 0x3E | Query current channel position | B3=0x00 B4=0x00 |
| 0x3F | Query current version | B3=0x01 B4=0x09, above is an example, if the response parameter is the same as above parameter, it means the current version is V1.9, see the version number on the label for details |
| 0x4A | Query motor state | B3=0x00 B4=0x00 |
| 0x44 | The motor rotates through the code disc, and selects the best path automatically | It depends on the actual number of valve channels. For example, for the selector valve with 10 channels, B3=0xXX B4=0x00, where the value range of XX is 01 ~ 0A. |
| 0x45 | Reset | B3=0x00 B4=0x00 The selector valve runs to the reset optocoupler and stops. |
| 0x4F | Origin reset | B3=0x00 B4=0x00 The selector valve runs to the encoder origin position, which overlaps with reset position of the 0x45 command. |
| 0xA4 | Switch the port according to the required direction | According to the actual number of ports of the selector valve, the parameter cannot exceed the maximum number of ports of the current valve, and B3, B4 must be two adjacent ones. see the figure below for details. |
| 0xB4 | Switch between ports according the required direction | According to the actual number of ports of the selector valve, the parameter cannot exceed the maximum number of ports of the current valve, and B3, B4 must be two adjacent ones. see the figure below for details. |
| 0x49 | Strong Stop | B3=0x00 B4=0x00 |