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User Manual
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SRX series integrated I/O module

Modbus-RTU protocol
Remote IO Module
Distributed IO module

catalogue

1.Preface

1.1 Usage of the document

This document describes product specifications, installation, operation, and configuration, as well as network protocols. This document is intended for use only by trained electrical automation engineers.

(1) Disclaimer

The author has made the necessary checks on the documentation, but with the development of the product upgrade, the documentation may contain technical parameters or editing errors, we reserve the right to make adjustments and changes without prior notice to the user.

(2) Trademarks

Modbus-rtu is a simple, vendor-neutral derivative of the MODBUS family of communication protocols for managing and controlling automation equipment.

(3) Patent description

The designer of this product has applied for patent protection for the appearance and technical implementation of the product, and any attempt to copy, copy or reverse design may violate the law.

(4) Copyright

1.2 Security Matters

This product is a professional equipment used in industrial occasions, and only staff with electrical operation experience can use it. Please read this manual carefully before use and follow the instructions to avoid personal injury or product damage.

The product complies with the IP20 protection grade design and must be installed in a power distribution cabinet that is dustproof and moisture-proof.

1.3 Document History

Release	date	description
V1.0	2021.11.03	First issue
V1.1	2022.03.22	Added analog module
V1.2	2024.12.30	Added 8DI8DO,8RTD, and 8TC specifications

1.4 Reference Files

《IEC11631-22007 Programmable controllers –Part 2:Equipment requirements and tests》;

《IEC/TR 61158 Industrial Communication Network - Fieldbus Specification》

《IEC61784-1 Industrial Communication Network - Industry regulations Part I Fieldbus Industry Regulations;》

2. Product overview

2.1 Model number list

The SRX-RTU series of remote I / O products support the standard Modbus-RTU communication protocol, which integrates digital, analog, temperature and other functions integrated by the module ontology without other Modbus-RTU bus couplers.

Naming rules for digital and analog modules

S R X - D 1 6 1 6 P - RTU

Serial prefix
integrated
- Prefix meaning -
Super Remote IO
X represents the flexibility of this module, which can currently achieve 288 combinations.。

Module type
D: numeric quantity
A: Analog quantity

Input point/output point
1600: Number 16 in /0 out
3200: number 32 in /0 out
0016: digits 0 in /16 out
0032: indicates the number 0 in /32 out
0808: digits 8 in /8 out
1616: Number 16 in /16 out
2408: digital quantity 24 in /8 out
0824: digits 8 in /24 out
0600: Analog 6 input
1200: Analog 12 in
0004: Analog output 4
0008: Analog output 8
0604: Analog 6 in /4 out

Output type
P:PNP output
N:NPN output
Note: This character is only Quantity input in contained numbers Enable when out, simulate The volume module does not enable this Characters.

Communication protocol
PN:PROFINET(Ethernet)
EP:EtherNet/IP(Ethernet)
CE:CC-Link IE FB(Ethernet)
EA:EtherCAT
MT:Modbus TCP(Ethernet)
RTU:Modbus RTU(RS485)

How to distinguish the type of numeric input point?
① When the input point is 16DI, the PNP&NPN input is also supported
② When the input point is 8DI, only one input mode is supported, and the type is the same as that of the output point
③ When the input point is 24DI, 16 DI supports PNP&NPN input at the same time, and 8 DI supports only one input mode with the same type as the output point
④ Analog models can support both current and voltage signal types

Naming rules for mixed digital and analog modules

S R X - M 8 8 6 0 P - RTU

Serial prefix
integrated
- Prefix meaning -
Super Remote IO
X represents the flexibility of this module, which can currently achieve 288 combinations.。

Module type
M: Mixed digital and analog Mixed Moduel

Digital input/digital outpu
88:8DI/8DO
0F: No input /16DO
F0:16DI/ None Output

Analog input/analog output
60:6AI/ No output
04: No input /4AO

Numeric output type
P:PNP output
N:NPN output

Communication protocol
PN:PROFINET(Ethernet)
EP:EtherNet/IP(Ethernet)
CE:CC-Link IE FB(Ethernet)
EA:EtherCAT
MT:Modbus TCP(Ethernet)
RTU:Modbus RTU(RS485)

How to distinguish numeric input point types?
① When the input point is 16DI, the PNP&NPN input is also supported
② When the input point is 8DI, only one input mode is supported, and the type is the same as that of the digital output point
How to distinguish analog input/output types?
AI: Analog inputs are both current and voltage mixed
AO: Analog output is current and voltage mixed type

Naming rules for the temperature acquisition module

S R X - 0 8 R T D - RTU

Serial prefix
integrated
- Prefix meaning -
Super Remote IO
X represents the flexibility of this module, which can currently achieve 288 combinations.。

Number of channels
08:8 channel
16:16 channel

Collection type
RTD: thermal resistance
TC: thermocouple

Communication protocol
PN:PROFINET(Ethernet)
EP:EtherNet/IP(Ethernet)
CE:CC-Link IE FB(Ethernet)
EA:EtherCAT
MT:Modbus TCP(Ethernet)
RTU:Modbus RTU(RS485)

Thermistor and thermocouple hybrid module model: SRX-8RTD-8TC-**

Temperature acquisition and other functions of the mixed module naming rules

S R X - 8 8 D P - 8 R T D - RTU

Serial prefix
integrated
- Prefix meaning -
Super Remote IO
X represents the flexibility of this module, which can currently achieve 288 combinations.。

Slot 1 Functions
88DP:8DI/8DO,PNP input,PNP output
88DN:8DI/8DO,NPN input and NPN output
16DI: indicates the 16DI and PNP&NPN input
16DOP:16DO,PNP output
16DON:16DO,NPN output
6AI:6AI, current and voltage hybrid input
4AO:4AO, mixed current and voltage output

Slot 2 Functions
8RTD: 8-channel thermal resistance
8TC: 8-channel thermocouple

Communication protocol
PN:PROFINET(Ethernet)
EP:EtherNet/IP(Ethernet)
CE:CC-Link IE FB(Ethernet)
EA:EtherCAT
MT:Modbus TCP(Ethernet)
RTU:Modbus RTU(RS485)

class	number of order	Specification description
Digital quantity input / output	SRX-D0808P-RTU	Support for Modbus RTU protocol, RS485 interface, 8 DI _ PNP, 8 DO _ PNP, transistor, 24VDC,0.5A
	SRX-D0808N-RTU	Support for the Modbus RTU protocol, RS485 interface, 8 DI _ NPN, 8 DO _ NPN, transistor, 24VDC,0.5A
	SRX-D1616P-RTU	Support for the Modbus RTU protocol, RS485 interface, 16 DI _ PNP & NPN, 16 DO _ PNP, transistor, 24VDC,0.5A
	SRX-D1616N-RTU	Support for the Modbus RTU protocol, RS485 interface, 16 DI _ PNP & NPN, 16 DO _ NPN, transistor, 24VDC,0.5A
	SRX-D2408P-RTU	Support for the Modbus RTU protocol, RS485 interface, 24 DI _ PNP, 8 DO _ PNP, transistor, 24VDC,0.5A
	SRX-D2408N-RTU	Support for the Modbus RTU protocol, RS485 interface, 24 DI _ NPN, 8 DO _ NPN, transistor, 24VDC,0.5A
	SRX-D0824P-RTU	Support for the Modbus RTU protocol, RS485 interface, 8 DI _ PNP, 24 DO _ PNP, transistor, 24VDC,0.5A
	SRX-D0824N-RTU	Support for Modbus RTU protocol, RS485 interface, 8 DI _ NPN, 24 DO _ NPN, transistor, 24VDC,0.5A
Digital input	SRX-D1600-RTU	Support for the Modbus RTU protocol, RS485 interface, 16 DI _ PNP & NPN, 24VDC
	SRX-D3200-RTU	Support for the Modbus RTU protocol, the RS485 interface, 32 DI _ PNP & NPN, 24VDC
Digital output	SRX-D0016P-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ PNP, transistor, 24VDC,0.5A
	SRX-D0016N-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ NPN, transistor, 24VDC,0.5A
	SRX-D0032P-RTU	Support for Modbus RTU protocol, RS485 interface, 32 DO _ PNP, transistor, 24VDC,0.5A
	SRX-D0032N-RTU	Support for Modbus RTU protocol, RS485 interface, 32 DO _ NPN, transistor, 24VDC,0.5A
analog quantity	SRX-A0600-RTU	Support for the Modbus RTU protocol, RS485 interface, 6AI, U / I, 16bit, 24VDC
	SRX-A1200-RTU	Support for the Modbus RTU protocol, RS485 interface, 12AI, U / I, 16bit, 24VDC
	SRX-A0004-RTU	Support for the Modbus RTU protocol, RS485 interface, 4AO, U / I, 16bit, 24VDC
	SRX-A0008-RTU	Support for Modbus RTU protocol, RS485 interface, 8AO, U / I, 16bit, 24VDC
	SRX-A0604-RTU	Support for Modbus RTU protocol, RS485 interface, 6AI, 4AO, U / I, 16bit, 24VDC
Temperature collection	SRX-08RTD-RTU	Support Modbus RTU protocol, RS485 interface, 8 RTD (thermal resistance), 16bit, 24VDC, three wire / two wire system
	SRX-16RTD-RTU	Support Modbus RTU protocol, RS485 interface, 16 RTD (thermal resistance), 16bit, 24VDC, three wire / two wire system
	SRX-08TC-RTU	Support for Modbus RTU protocol, RS485 interface, 8TC (thermocouple), 16bit, 24VDC, two-wire system
	SRX-16TC-RTU	Support for Modbus RTU protocol, RS485 interface, 16TC (thermocouple), 16bit, 24VDC, two-wire system
	SRX-8RTD-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 8 RTD (thermoelectric resistance), 8TC (thermocouple), 16bit, 24VDC
Hybrid module	SRX-M8860P-RTU	Support for Modbus RTU protocol, RS485 interface, 8 DI 8 DO _ PNP, transistor, 0.5A, 6AI, U / I, 16bit, 24VDC

	SRX-M8860N-RTU	Support for Modbus RTU protocol, RS485 interface, 8 DI 8 DO _ NPN, transistor, 0.5A, 6AI, U / I, 16bit, 24VDC
	SRX-M8804P-RTU	Support for Modbus RTU protocol, RS485 interface, 8 DI 8 DO _ PNP, transistor, 0.5A, 4AO, U / I, 16bit, 24VDC
	SRX-M8804N-RTU	Support for Modbus RTU protocol, RS485 interface, 8 DI 8 DO _ NPN, transistor, 0.5A, 4AO, U / I, 16bit, 24VDC
	SRX-MF060-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DI _ PNP & NPN, 6AI, U / I, 16bit, 24VDC
	SRX-MF004-RTU	Support for Modbus RTU protocol, RS485 interface, 16DI, 4AO, U / I, 16bit, 24VDC
	SRX-M0F60P-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ PNP, transistor, 0.5A, 6AI, U / I, 16bit, 24VDC
	SRX-M0F60N-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ NPN, transistor, 0.5A, 6AI, U / I, 16bit, 24VDC
	SRX-M0F04P-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ PNP, transistor, 0.5A, 4AO, U / I, 16bit, 24VDC
	SRX-M0F04N-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ NPN, transistor, 0.5A, 4AO, U / I, 16bit, 24VDC
	SRX-88DP-8RTD-RTU	Support for Modbus RTU protocol, RS485 interface, 8DI8DO_PNP,0.5A, 8 RTD (thermal resistance), 16bit, 24VDC
	SRX-88DN-8RTD-RTU	Support for Modbus RTU protocol, RS485 interface, 8DI8DO_NPN,0.5A, 8 RTD (thermal resistance), 16bit, 24VDC
	SRX-88DP-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 8DI8DO_PNP,0.5A, 8TC (thermocouple), 16bit, 24VDC
	SRX-88DN-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 8DI8DO_NPN,0.5A, 8TC (thermocouple), 16bit, 24VDC
	SRX-16DI-8RTD-RTU	Support Modbus RTU protocol, RS485 interface, 16 DI _ PNP & NPN, 8 RTD (resistance), 16bit, 24VDC
	SRX-16DI-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DI _ PNP & NPN, 8TC (thermocouple), 16bit, 24VDC
	SRX-16DOP-8RTD-RTU	Support for Modbus RTU protocol, RS485 interface, 16DO_PNP,0.5A, 8 RTD (thermal resistance), 16bit, 24VDC
	SRX-16DON-8RTD-RTU	Support for Modbus RTU protocol, RS485 interface, 16DO_NPN,0.5A, 8 RTD (thermal resistance), 16bit, 24VDC
	SRX-16DOP-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ PNP, transistor, 0.5A, 8TC (thermocouple), 16bit
	SRX-16DON-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 16 DO _ NPN, transistor, 0.5A, 8TC (thermocouple), 16bit
	SRX-6AI-8RTD-RTU	Support for Modbus RTU protocol, RS485 interface, 6AI, U / I, 8 RTD (thermal resistance), 16bit, 24VDC
	SRX-4AO-8RTD-RTU	Support for Modbus RTU protocol, RS485 interface, 4AO, U / I, 8 RTD (thermal resistance), 16bit, 16bit, 24VDC
	SRX-6AI-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 6AI, U / I, 8TC (thermocouple), 16bit, 24VDC
	SRX-4AO-8TC-RTU	Support for Modbus RTU protocol, RS485 interface, 4AO, U / I, 8TC (thermocouple), 16bit, 24VDC

2.2 SRX-RTU specification parameters

2.2.1 16DI specification

The 16-point digital input (DI) specification parameters are shown in Table 2.

order number	project	specifications
1	number of channels	16
2	access type	2 bytes
3	Ton	Type. 18uS / Max. 35uS
4	Toff	Type. 135uS / Max. 250uS
5	Enter the type	Source or leakage type
6	Enter the connector	Plug-in connector
7	Rated input voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
8	The "0" signal level	-3...+5 V (IEC 61131-2, type 2)
9	The "1" signal level	15...30 V (IEC 61131-2, type 2)
10	input currenton	Typ. 10mA/Ch (IEC 61131-2, type 2)
11	Electrical isolation	Input / control area: 500V DC

Table 2 Digital quantity input specifications

2.2.2 16 DQ specifications

The 16-point digital output (DQ) specification parameters are shown in Table 3.

order number	project	specifications
1	number of channels	16
2	access type	2 bytes
3	Ton	Type. 12uS / Max. 25uS
4	Toff	Type. 10 mS / Max. 20 mS (empty load)
5	Output type	Source or leakage type
6	Output connector	Plug-in connector
7	loadtype	Pure resistance, sensibility, the light bulb
8	Rated output voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
9	maximum output current	Max. 0.5 A / Ch, independent short-circuit protection for each channel
10	Rated total output current	8A

Table 3 Digital quantity output specifications

2.2.3 8DI / 8 DQ specifications

Number 8 input / 8 output (DI / DQ) Specification parameters are shown in 4.

input specification		
order number	**project**	**specifications**
1	number of channels	16
2	access type	2 bytes
3	Ton	Type. 18uS / Max. 35uS
4	Toff	Type. 135uS / Max. 250uS
5	Enter the type	Source or leakage type
6	Enter the connector	Plug-in connector
7	Rated input voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
8	The "0" signal level	-3...+5 V (IEC 61131-2, type 2)
9	The "1" signal level	15...30 V (IEC 61131-2, type 2)
10	input currenton	Typ. 10mA/Ch (IEC 61131-2, type 2)
11	Electrical isolation	Input / control area: 500V DC
Output specifications		
order number	**project**	**specifications**
1	number of channels	8
2	access type	2 bytes
3	Ton	Type. 12uS / Max. 25uS
4	Toff	Type. 10 mS / Max. 20 mS (empty load)
5	Output type	Source or leakage type
6	Output connector	Plug-in connector
7	loadtype	Pure resistance, sensibility, the light bulb
8	Rated output voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
9	maximum output current	Max. 0.5 A / Ch, independent short-circuit protection for each channel
10	Rated total output current	8A

Table 4 Digital quantity output specifications

2.2.4 6AI specifications

The 6-channel analog volume input (AI) specification parameters are shown in Table 5.

order number	project	specifications
1	number of channels	6
2	access type	12 bytes
3	Enter the type	Voltage type / current type
4	resolution ratio	16 bits (with symbols)
5	Sampling range	0~10V,0~20mA,4~20mA
6	Enter the connector	Plug-in connector
7	input impedence	Current sampling: 124.5 Ω, voltage sampling: 10 MΩ
8	sampling error	<± 0.3% (full range)
9	sample rate	Greater than 1 k SPS / ch
10	Software filtering	Available software configuration (TIA Botu)

Table 5 Analog input (AI) specifications

2.2.5 4 AQ specification

The 4-channel analog output (AQ) specification parameters are shown in Table 6.

order number	project	specifications
1	number of channels	4
2	access type	8 bytes
3	Enter the type	Voltage type / current type
4	resolution ratio	16 bits (with symbols)
5	Sampling range	0~10V,0~20mA,4~20mA
6	Output connector	Plug-in connector
7	load	The current output is 500 Ω, and the voltage output is 1 KΩ
8	sampling error	<± 0.3% (full range)
9	conversion rate	Greater than 1 k SPS / ch
10	Software filtering	Available software configuration (TIA Botu)

Table 6 Analog output (AQ) specifications

2.2.6 8 RTD specification

The channel thermal resistance input (RTD) specification parameters are shown in Table 7.

order number	project	specifications
1	number of channels	8 CH (two-wire system or three-wire system)
2	access type	16 Bytes or 8 words
3	Enter the type	PT100,Cu50
4	temperature range	-200℃ ~ + 850℃ (PT sensor), -60℃ ~ + 250℃ (Ni sensor)
5	presentation of information	0.1℃ per channel bit
6	sampling error	Less than ± 0.3% (full range)
7	sample rate	2ms
8	Filter time	Configuration

Table 7 Thermal resistance input (RTD) specifications

2.2.7 8TC specification

The 8-channel thermocouple input (TC) specification parameters are shown in Table 8.

order number	project	specifications
1	number of channels	8 CH (two-wire system)
2	access type	16 Bytes or 8 words
3	Enter the type	Type J / K / E / T / S / R / B / N thermocouples
4	presentation of information	0.1℃ per channel bit
5	sampling error	Less than ± 0.3% (full range)
6	sample rate	2ms
7	Filter time	Configuration
8	survey measure pattern Around ℃	Type K form-270 to 1370℃
9		S type – 50 to 1760℃
10		R type-50 to 1760℃
11		Type B forms ranged from 0 to 1820℃
12		Type J-210 to 1200℃
13		Type N-270 to 1300℃
14		Type E – 270 to 1,000℃
15		T type-270 to 400℃
16	data format	16-bit signed integer (Integer)

Table 8 Thermal resistance input (RTD) specifications

2.2.8 Modbus-RTU communication specifications

The Modbus-RTU communication specification parameters are shown in Table 5.

Order number	project	specifications
1	protocol	Modbus-RTU
2	Baud rate (kbps)	4800/9600/19200/38400/57600/115200/256000
3	physical interface	Open connector 2 * 5-pin (with terminal resistance interface)
4	From the station address	1..99
5	FC	01H,02H,03H,04H,05H,06H,0FH,10H
6	Port protection	Transformer isolation, 1500V DC (IEC61000-4-2)

Table 6 Modbus-RTU communication specifications

2.2.9 Power supply specification

The module power supply is divided into three independent parts: the control part, the digital input, and the MOSFET digital output, which are isolated from each other. So you need to provide three separate sets of power to each part of the circuit or connect them directly in parallel.

(1) The control voltage is 24V DC (-15% / + 20%), maximum 0.5A current consumption, with polar reverse protection; electrical isolation from other I / O parts is 500V DC.

(2) Digital input voltage uses 24V DC (-15% / + 20%), maximum 16 * 10 mA current consumption; the electrical isolation withstand voltage from other I / O parts is 500V DC.

(3)MOSFET The digital output part uses 24V DC (-15% / + 20%), maximum 16*0.5A current consumption, with channel independent overcurrent protection; the electrical isolation pressure resistance from other I / O parts is 500 VD

3. Structure description

3.1 Shell

SRX series module is made of industrial plastic material, the overall size is: 33 * 122.5 * 90.5 (W/H/D, mm)

Protection class: IP20, suitable for cabinet installation.

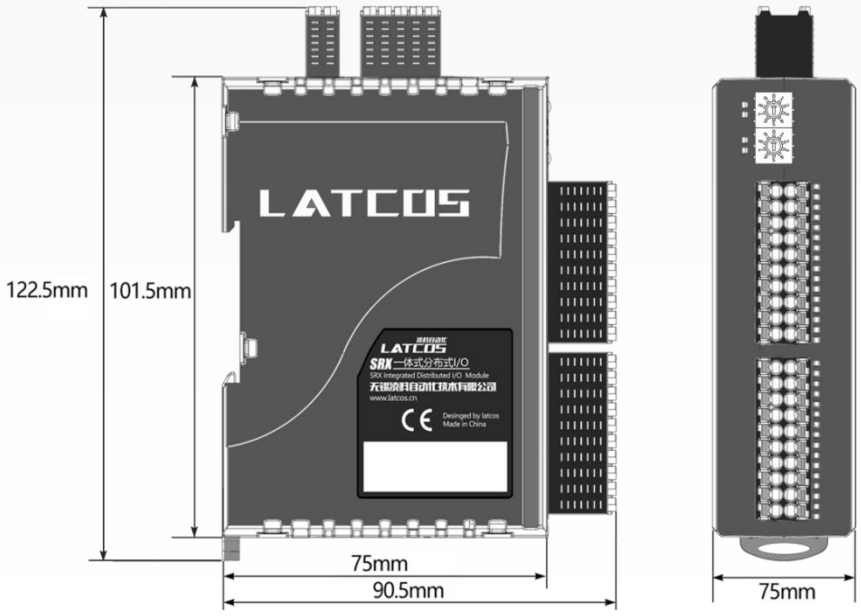


Figure 1 Module size diagram

3.2 Installation Mode

SRX series modules are designed with natural convection heat dissipation. At least 25 mm space must be left above and below to facilitate normal heat dissipation. The distance between the front panel and the backplane should be at least 75 mm.

The module can be easily mounted on a standard DIN rail with the rail specification TS35/7.5, as shown in Figure 2.

Figure 2 SRX series installation diagram

SRX series module is made of industrial plastic material, the overall size is: 33 * 122.5 * 90.5 (W/H/D, mm)

Protection class: IP20, suitable for cabinet installation.

4.Hardware description

4.1 SRX-RTU structure Figure 16 points

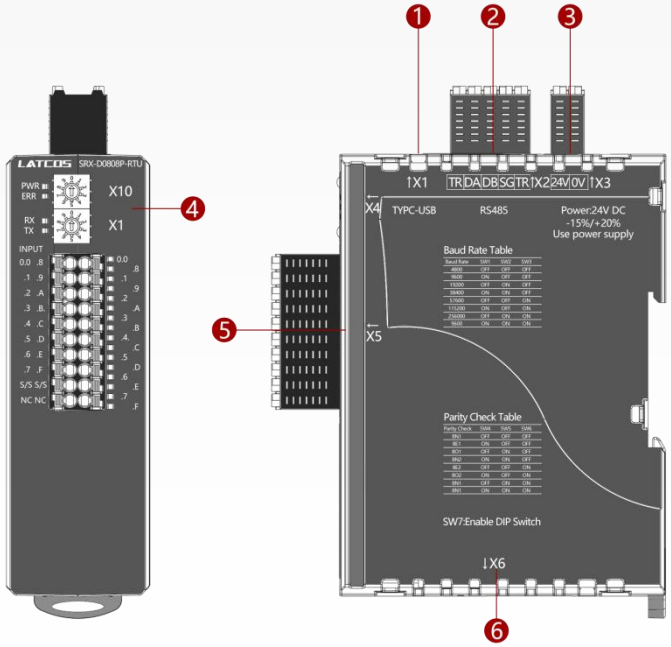


Figure 3 Module Wiring Diagram

order number	characteristic	The interface name	function definition
①	X1	TYPE-C Indicates the interface	Adjust module parameters
②	X2	RS485 port	Used to connect cables to port 485
③	X3	24V power input terminal	Module power input
④	X4	Dip switch of slave station address	This parameter is used to set the address of the slave station
⑤	X5	Input or output terminals	Signal point
⑥	X6	Dip switch	Adjust the baud rate and verification mode of the module

4.2 SRX-RTU structure Figure 32 points

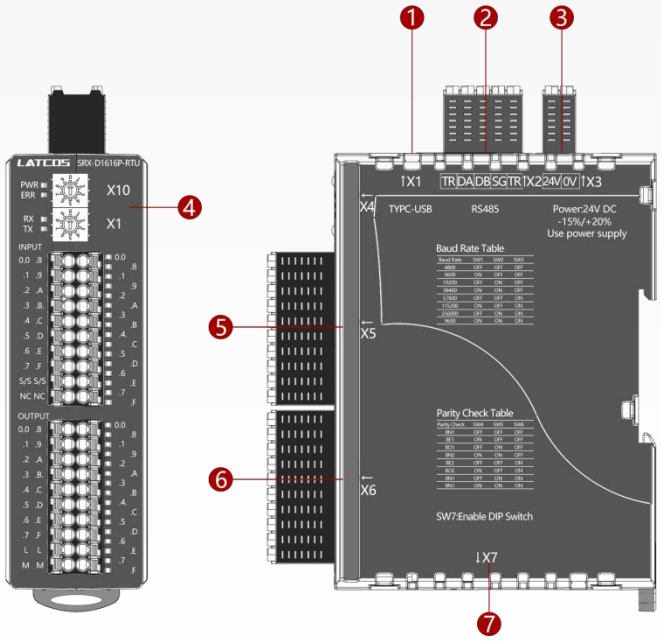
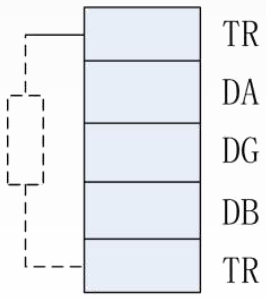


Figure 4 The module wiring diagram

order number	characteristic	The interface name	function definition
①	X1	TYPE-C joggle	Adjust module parameters
②	X2	The RS485 port	For port 485 wiring
③	X3	The 24V power supply input terminal	Module power input
④	X4	Codes from the station address	To setting the slave address
⑤	X5	Input or output terminals	signal location
⑥	X6	Input or output terminals	signal location
⑦	X7	Dial switch	Adjust the baud rate and check mode of the module

4.3 Communication interface

The module uses a self-use wiring socket as the physical interface for Modbus communication, where the two TR are the terminal resistors selected wiring. A 120 Ω of terminal resistance is integrated within the internal module. When TR 1 and DA, TR 2 and DB short contact terminal resistance is effective. The interface definition is shown in the following table



Modbus Terminal definition

pin	signal	description
1	TR1	Terminal resistance selection wiring
2	DA	Receive / send data, line A (red)
3	DG	Data to
4	DB	Receive / send data, line B (red)
5	TR2	Terminal resistance selection wiring

4.4 LED indication

The LED indication of the module is divided into three parts: system status indication,

I / O status indication, and modbus communication indicator light

4.4.1 System status indicates the working status description of the system

PWR(green)	ERR(red)	explain
○	○	The power is abnormal
●	●	Modbus Communication interface failure
●	○	The module successfully entered the running state and successfully establishes circular data interaction with the main station.

Table 7 System status indicates ● The green light is on ● The red light is steady on

○ not bright

4.4.2 I / O status indication

The digital input / output port uses a green LED to indicate the status of the corresponding channel, means the logical status of the input / output port is "1", and the light out means the logical status of the input / output port is "0"

4.4.3 Modbus-RTU indicator lamp

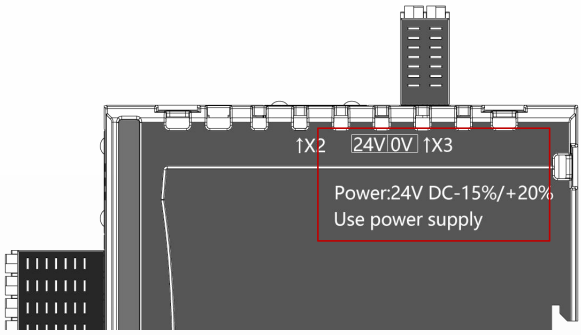
Under normal circumstances, the Modbus-RTU port indicator should be RX and TX indicator green flashing, if otherwise, the fault occurred. The RX green light is not on, indicating no data transmission from the Modbus-RTU master station.

- **As Table 8: Table 7 RJ 45 indicator instructions**

RX	TX	explain
○	uncorrelated	Modbus-No data is sent in the RTU master station
●	uncorrelated	Modbus-RTU main station has data sending
uncorrelated	○	The module did not reply to the data
uncorrelated	●	The module replies to the data normally

Table 8 Modbus-RTU indicator instructions

4.5 Communication power supply

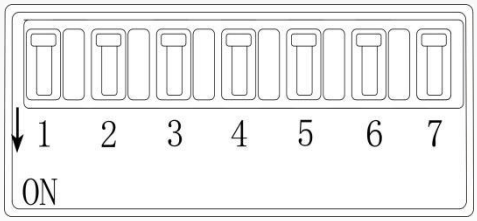


24V	24V, DC power supply positive electrode
0V	0V, DC power supply negative electrode

Table 9 Power supply wiring terminals

The control voltage is 24V DC (-15% / + 20%), maximum 0.5A current consumption with polar reverse protection; electrical isolation from other I / O parts is 500V DC.

4.6 Dip switch



The baud rate sets the DIP switch

Baud rate	SW1	SW2	SW3
4800	OFF	OFF	OFF
9600	ON	OFF	OFF
19200	OFF	ON	OFF
38400	ON	ON	OFF
57600	OFF	OFF	ON
115200	ON	OFF	ON
256000	OFF	ON	ON
9600	ONF	ON	ON

Table 10 Functions of dip switches 1,2, and 3

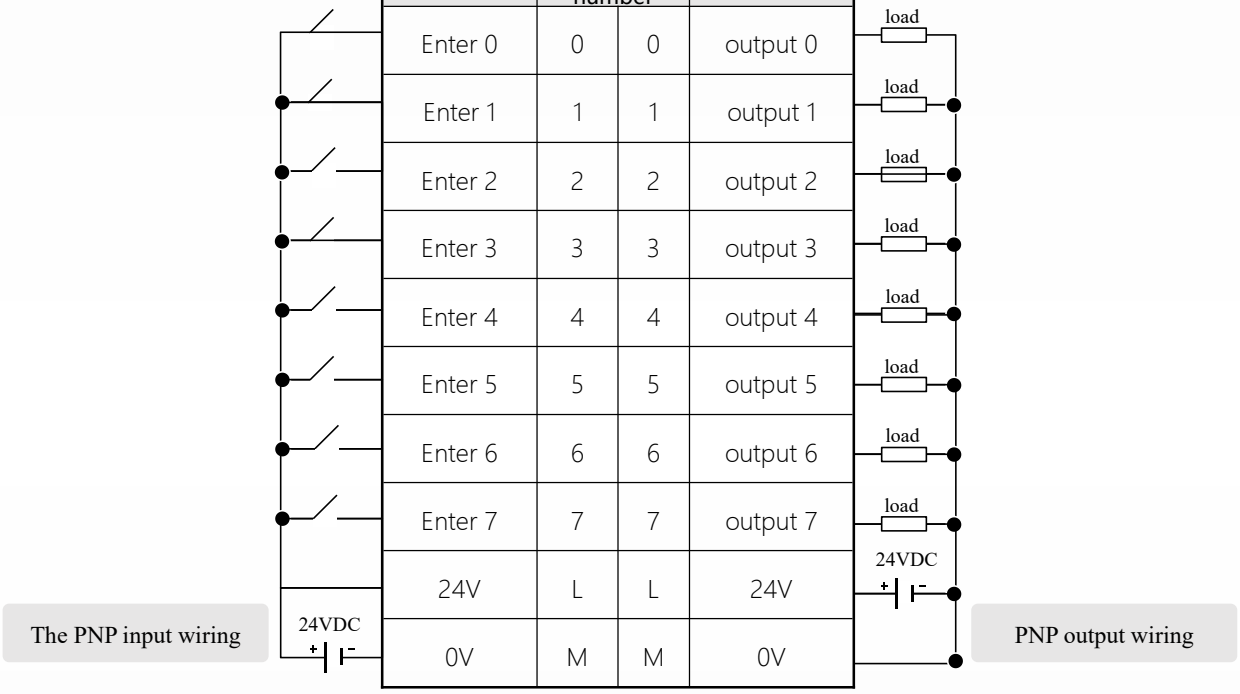
4.7 Module terminal wiring diagram

4.7.1 Wiring diagram of the digital quantity module

SRX-D0808P-RTU

DI X4 DO

Signal name	Terminal number		Signal name
Enter 0	0	0	output 0
Enter 1	1	1	output 1
Enter 2	2	2	output 2
Enter 3	3	3	output 3
Enter 4	4	4	output 4
Enter 5	5	5	output 5
Enter 6	6	6	output 6
Enter 7	7	7	output 7
24V	L	L	24V
0V	M	M	0V



The PNP input wiring

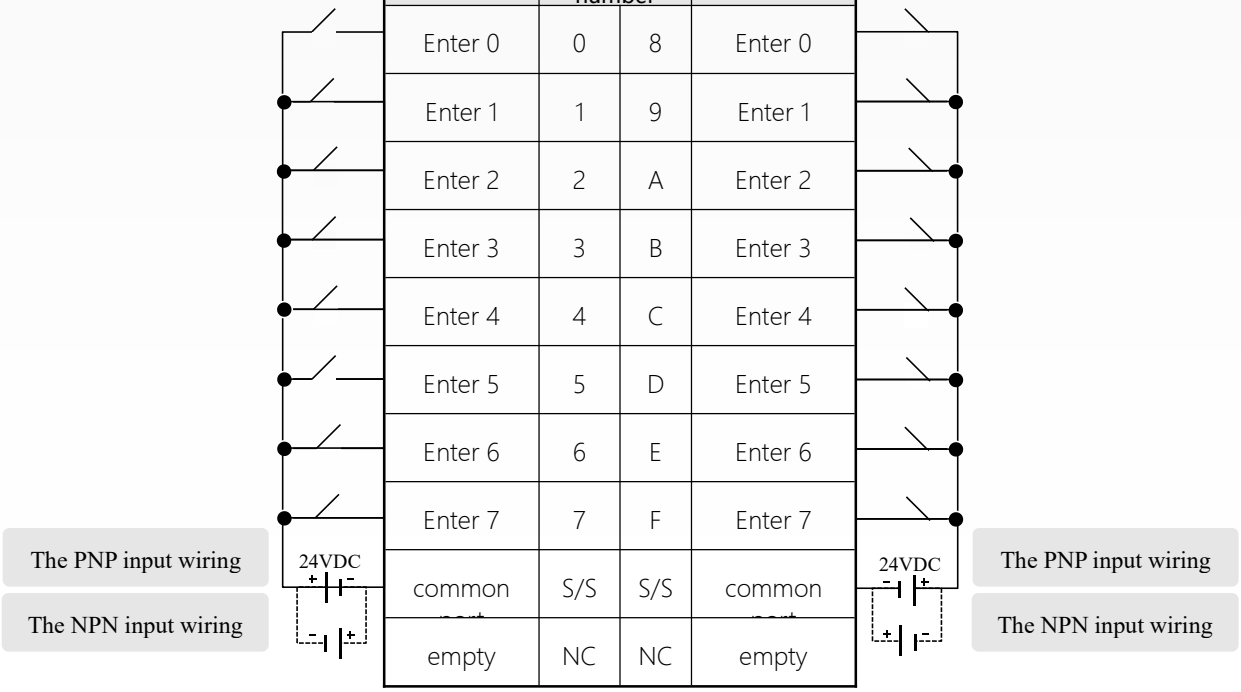
PNP output wiring

Note: L-L internal short circuit
M-M internal short circuit

SRX-D1600-RTU

DI X4 DI

Signal name	Terminal number		Signal name
Enter 0	0	8	Enter 0
Enter 1	1	9	Enter 1
Enter 2	2	A	Enter 2
Enter 3	3	B	Enter 3
Enter 4	4	C	Enter 4
Enter 5	5	D	Enter 5
Enter 6	6	E	Enter 6
Enter 7	7	F	Enter 7
common port	S/S	S/S	common port
empty	NC	NC	empty

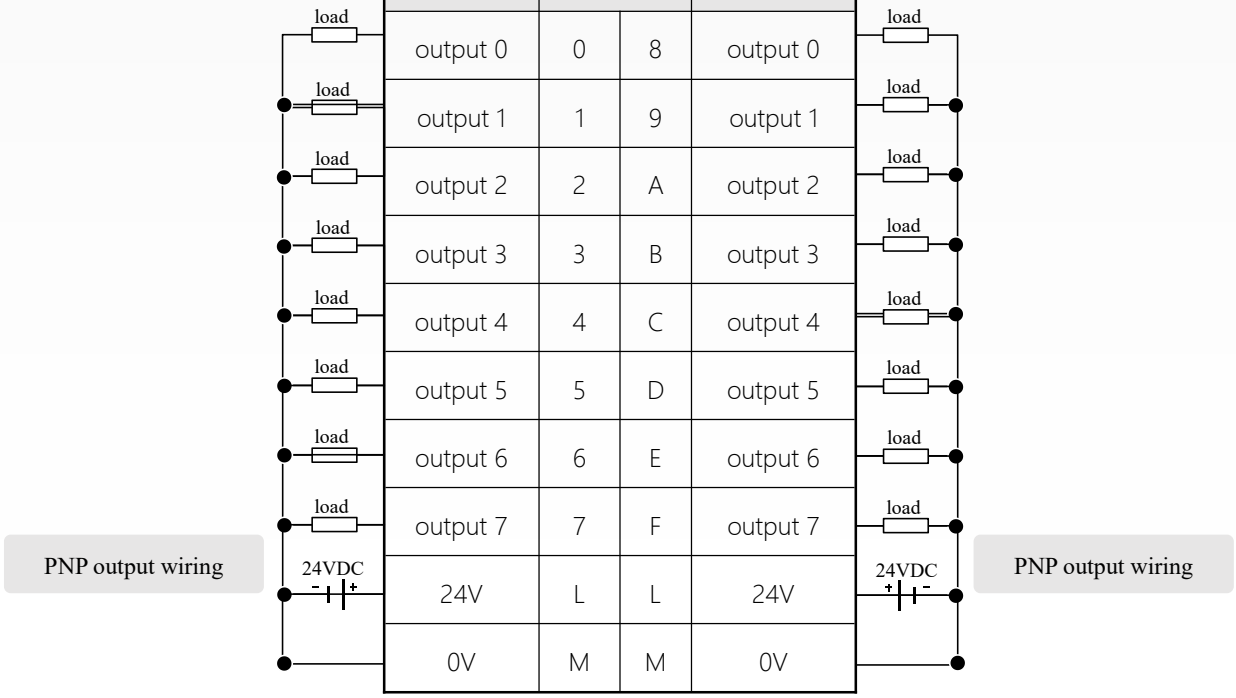


Note: L-L internal short circuit
M-M internal short circuit

SRX-D0016P-RTU

DO X4 DO

Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V

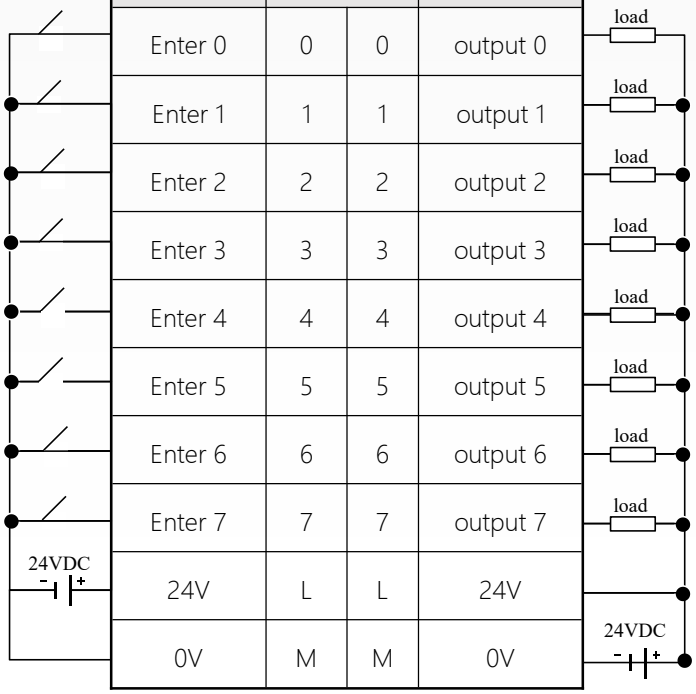


Note: L-L internal short circuit
M-M internal short circuit

SRX-D0808N-RTU

DI X4 DO

Signal name	Terminal number		Signal name
Enter 0	0	0	output 0
Enter 1	1	1	output 1
Enter 2	2	2	output 2
Enter 3	3	3	output 3
Enter 4	4	4	output 4
Enter 5	5	5	output 5
Enter 6	6	6	output 6
Enter 7	7	7	output 7
24V	L	L	24V
0V	M	M	0V



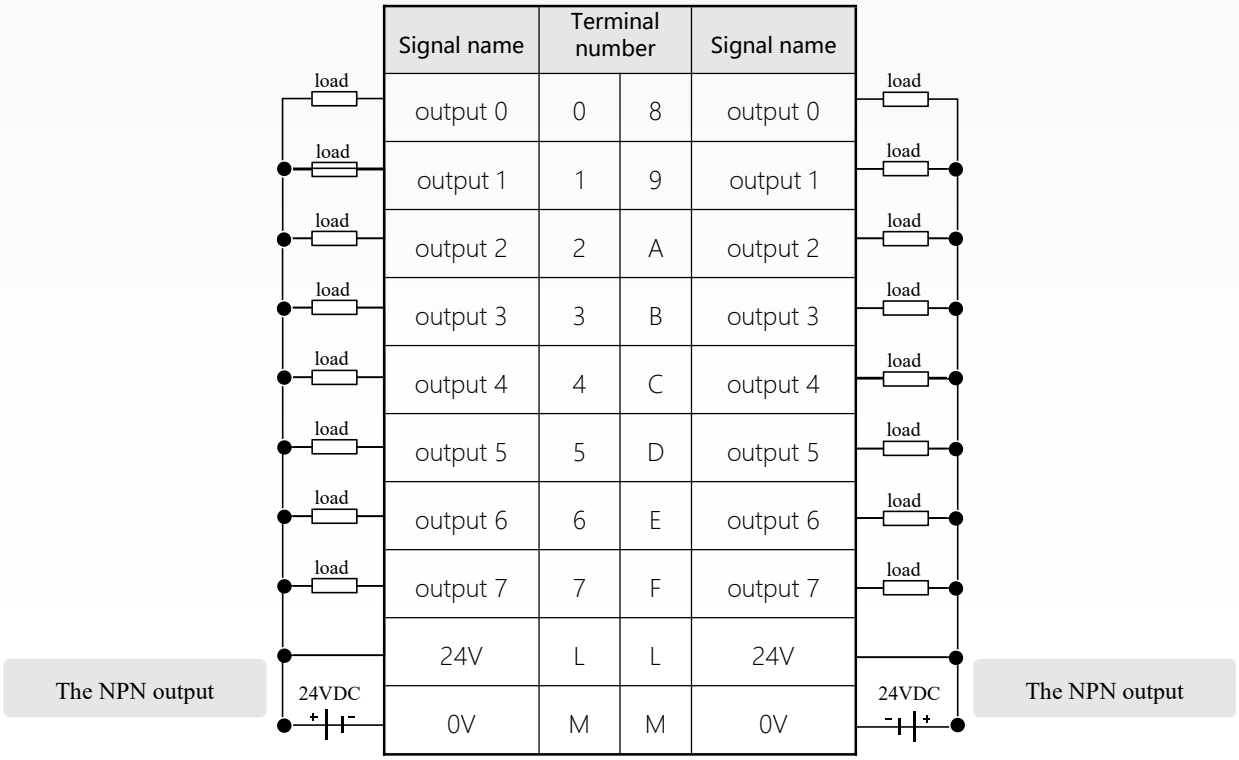
The NPN input wiring

The NPN output

Note: L-L internal short circuit
M-M internal short circuit

SRX-D0016N-RTU

DO X4 DO



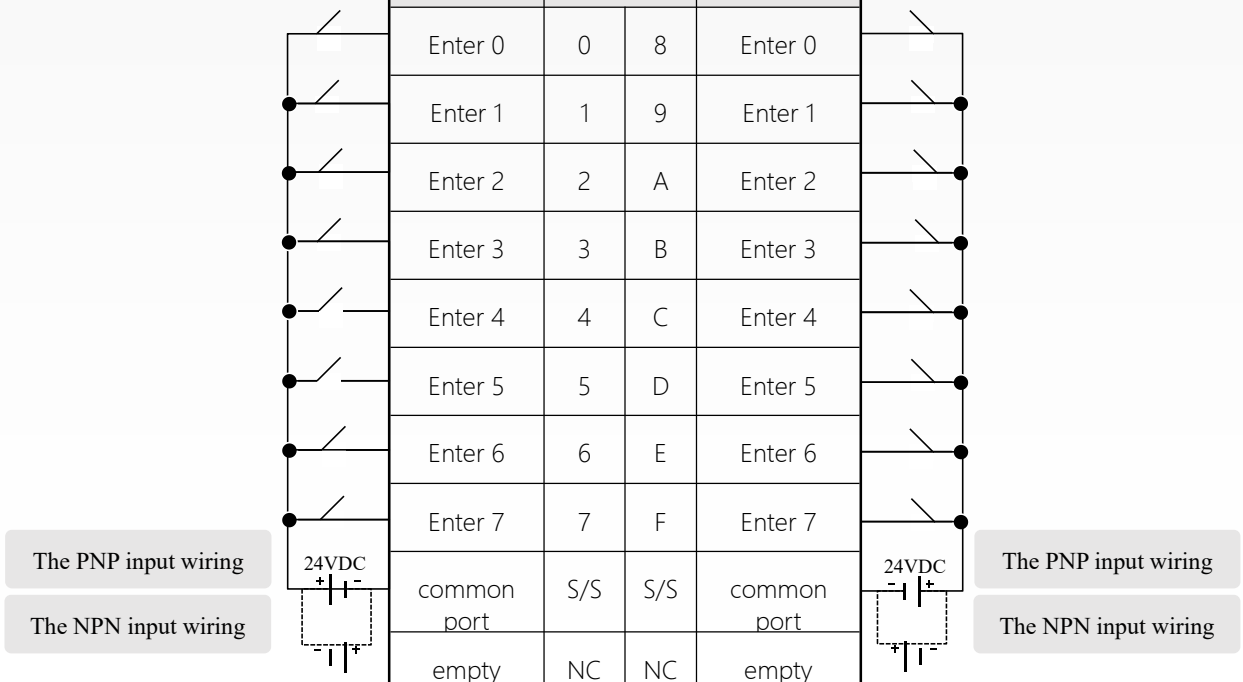
Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V

Note: L-L internal short circuit
M-M internal short circuit

SRX-D3200-RTU

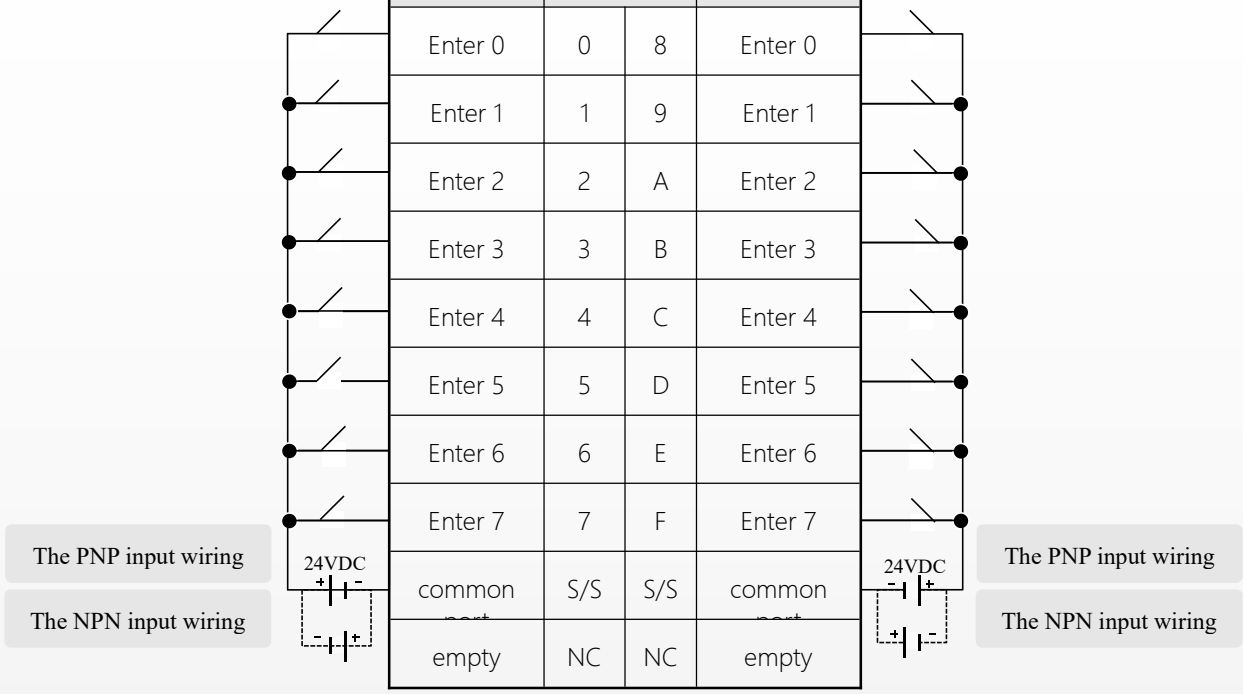
DI X4 DI

Signal name	Terminal number		Signal name
Enter 0	0	8	Enter 0
Enter 1	1	9	Enter 1
Enter 2	2	A	Enter 2
Enter 3	3	B	Enter 3
Enter 4	4	C	Enter 4
Enter 5	5	D	Enter 5
Enter 6	6	E	Enter 6
Enter 7	7	F	Enter 7
common port	S/S	S/S	common port
empty	NC	NC	empty



DI X5 DI

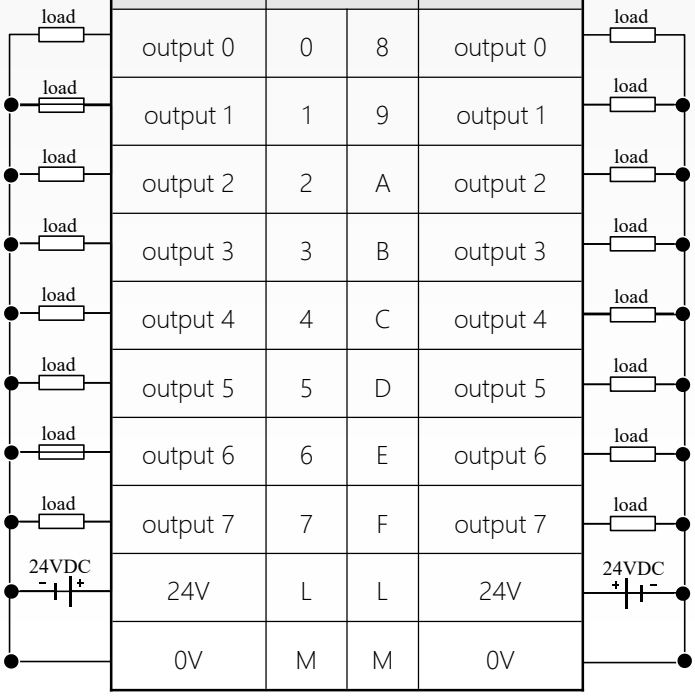
Signal name	Terminal number		Signal name
Enter 0	0	8	Enter 0
Enter 1	1	9	Enter 1
Enter 2	2	A	Enter 2
Enter 3	3	B	Enter 3
Enter 4	4	C	Enter 4
Enter 5	5	D	Enter 5
Enter 6	6	E	Enter 6
Enter 7	7	F	Enter 7
common port	S/S	S/S	common port
empty	NC	NC	empty



SRX-D0032P-RTU

DO X4 DO

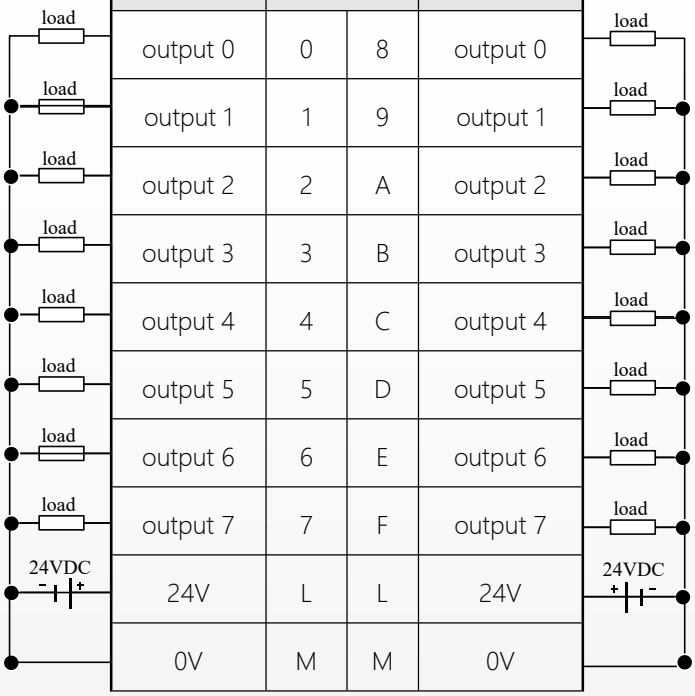
Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V



PNP output wiring PNP output wiring

DO X5 DO

Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V



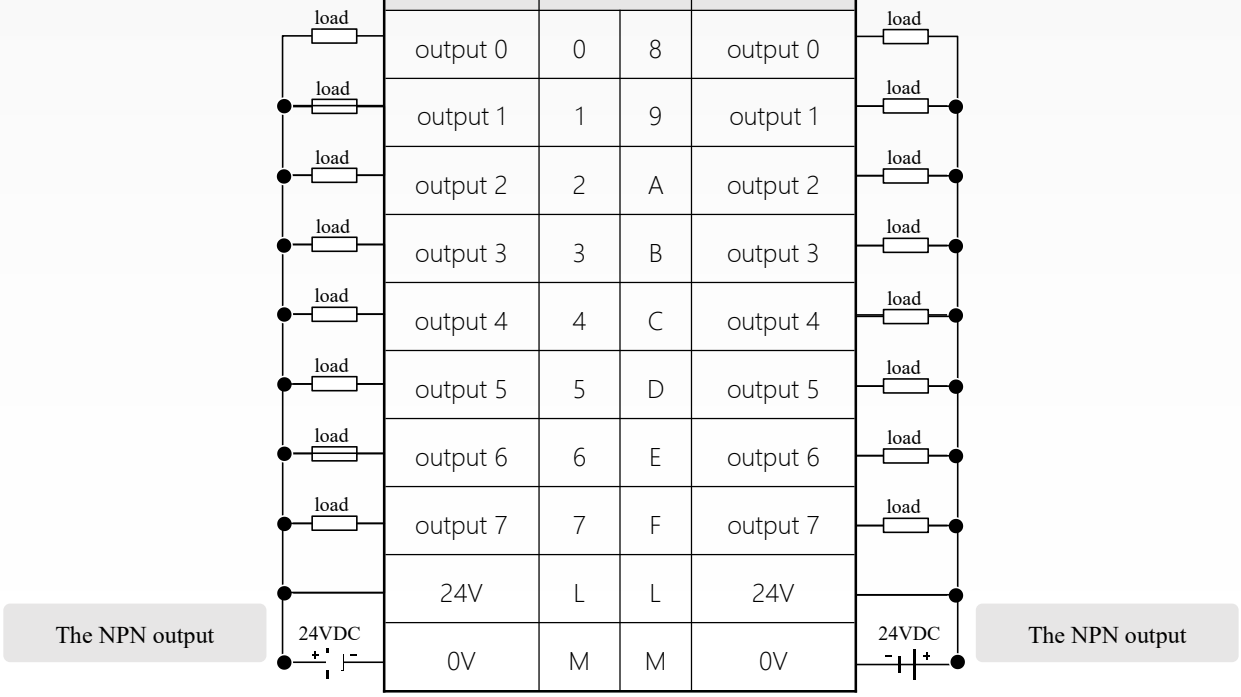
PNP output wiring PNP output wiring

Note: L-L internal short circuit
M-M internal short circuit

SRX-D0032N-RTU

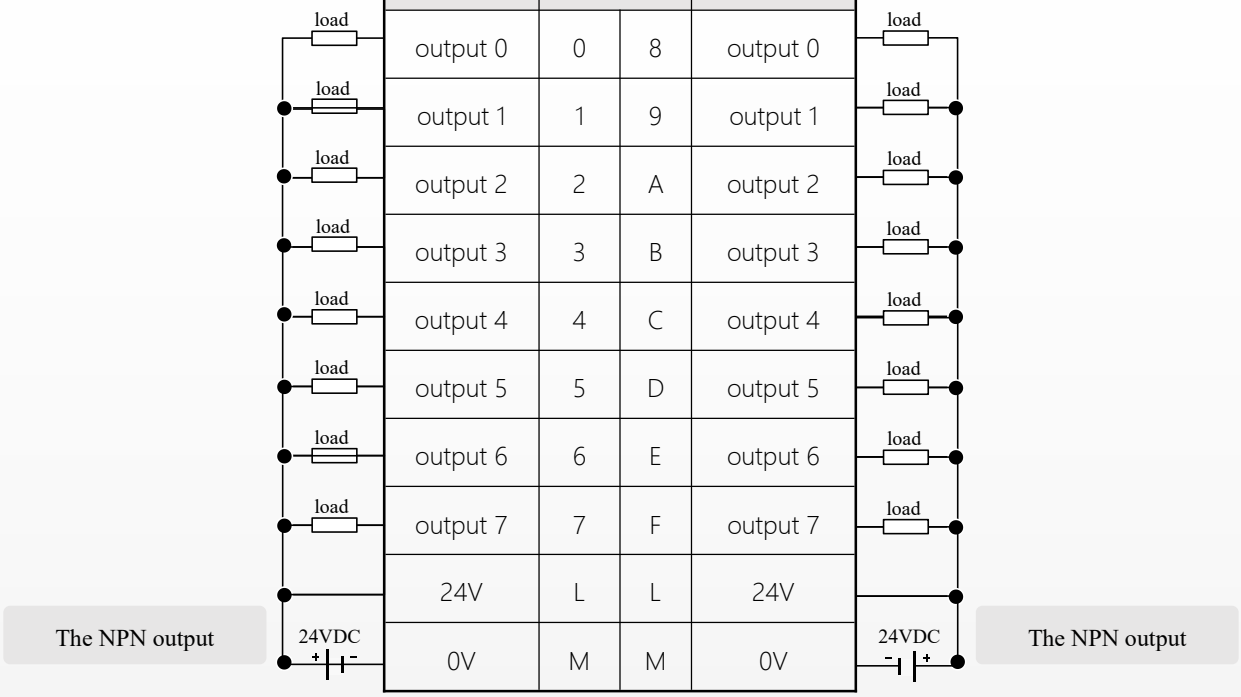
DO X4 DO

Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V



DO X5 DO

Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V

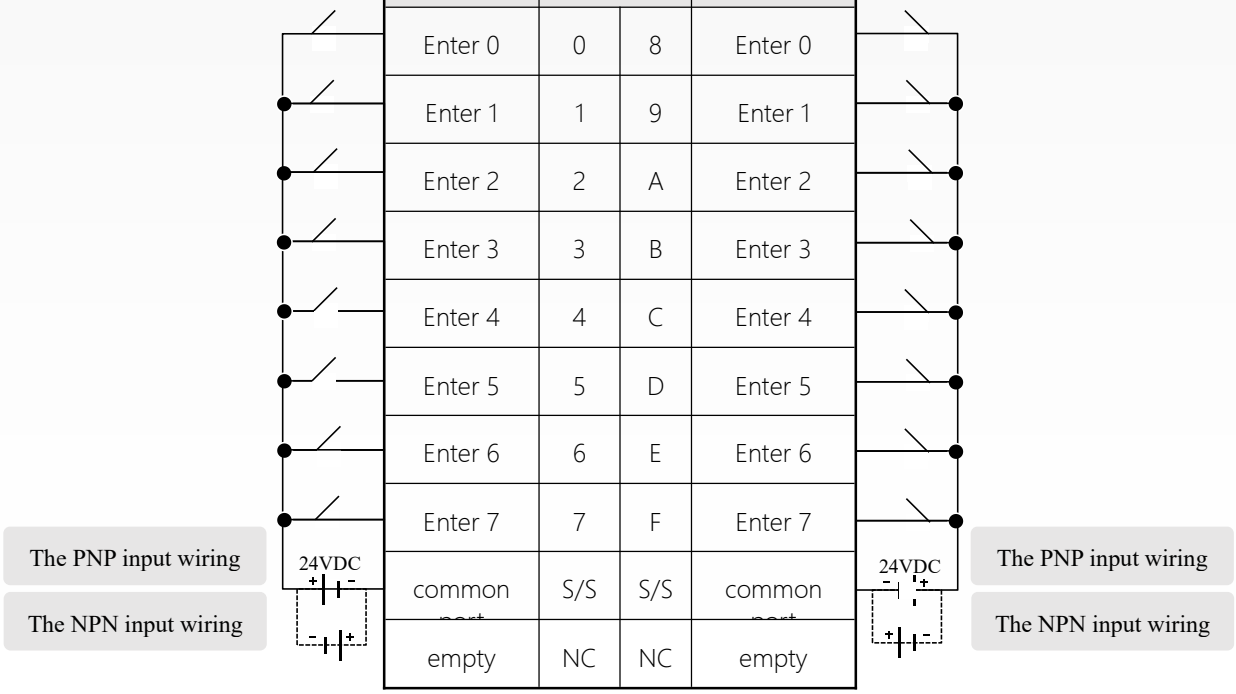


Note: L-L internal short circuit
M-M internal short circuit

SRX-D1616P-RTU

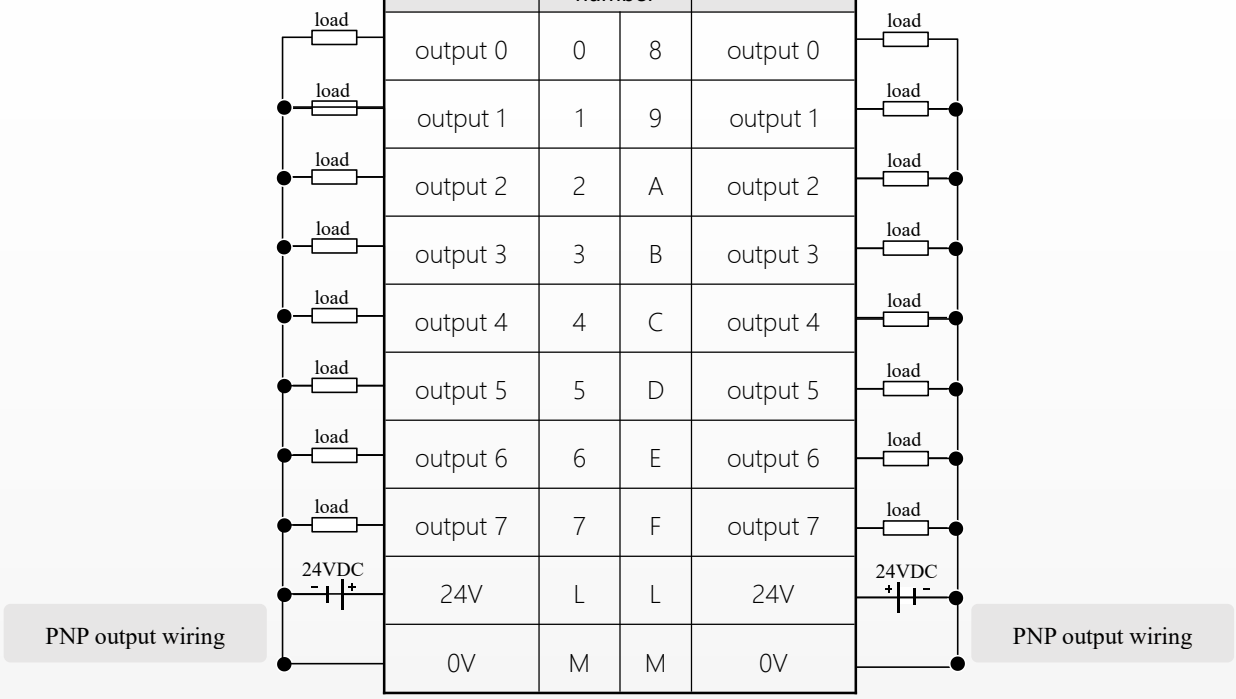
DI X4 DI

Signal name	Terminal number		Signal name
Enter 0	0	8	Enter 0
Enter 1	1	9	Enter 1
Enter 2	2	A	Enter 2
Enter 3	3	B	Enter 3
Enter 4	4	C	Enter 4
Enter 5	5	D	Enter 5
Enter 6	6	E	Enter 6
Enter 7	7	F	Enter 7
common port	S/S	S/S	common port
empty	NC	NC	empty



D0 X5 DO

Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V

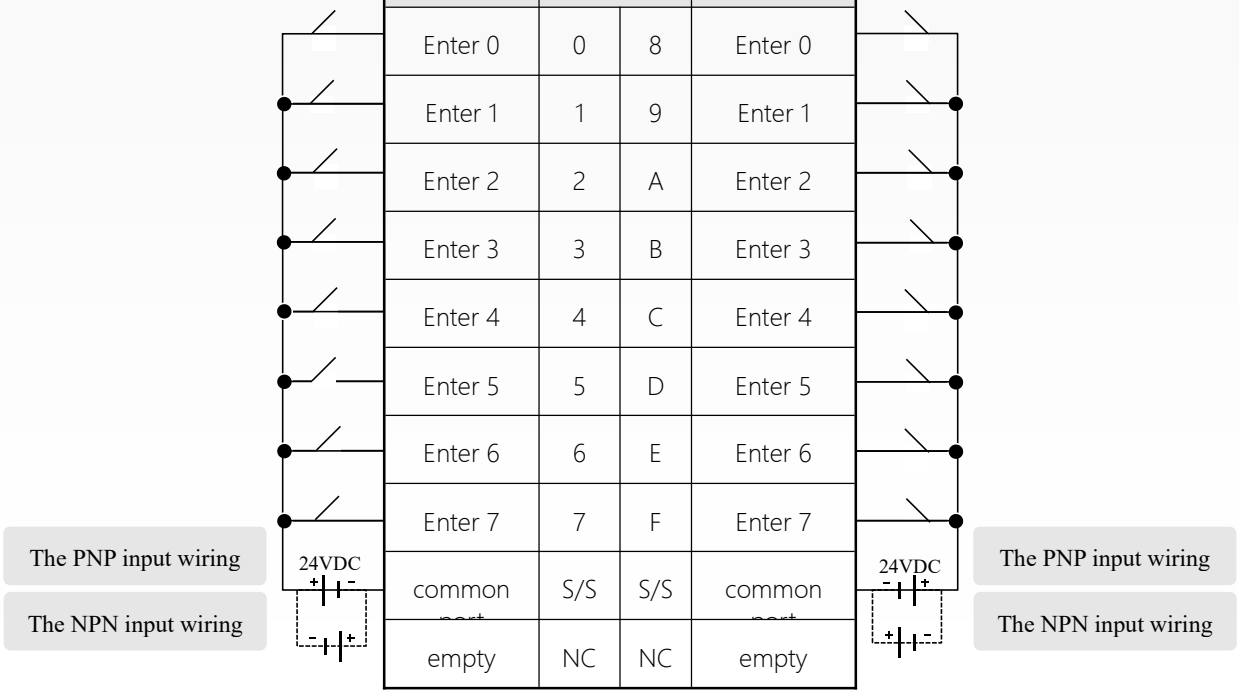


Note: L-L internal short circuit
M-M internal short circuit

SRX-D1616N-RTU

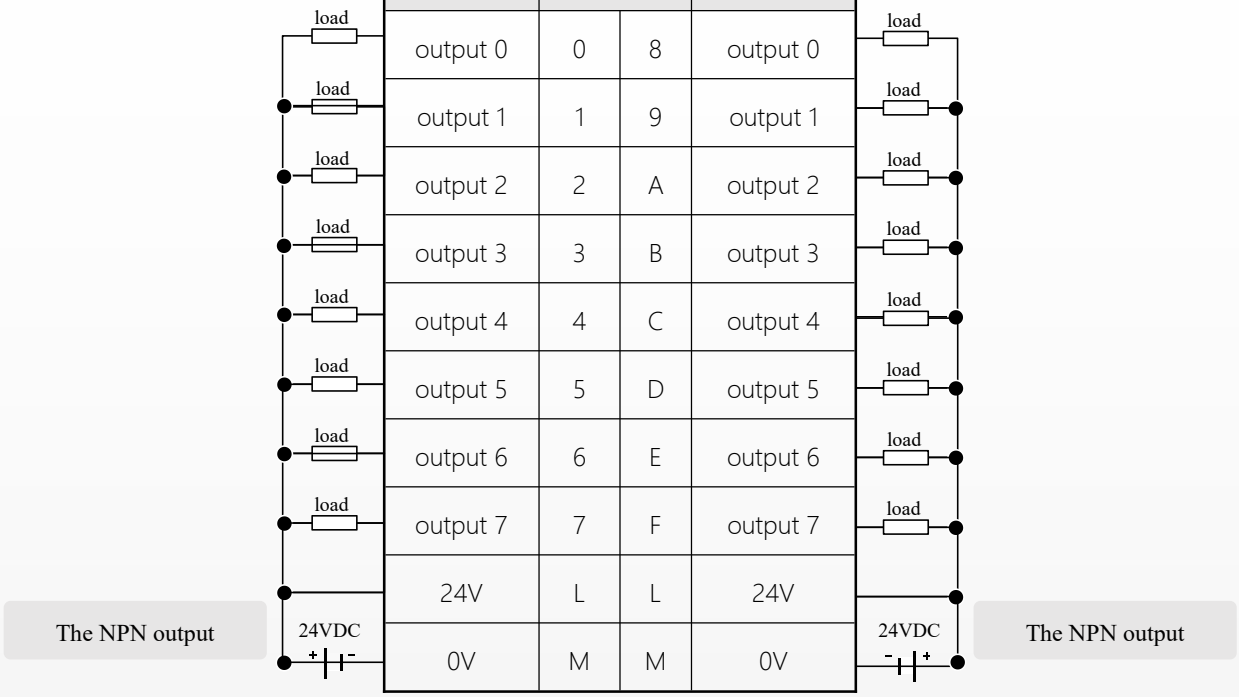
DI X4 DI

Signal name	Terminal number		Signal name
Enter 0	0	8	Enter 0
Enter 1	1	9	Enter 1
Enter 2	2	A	Enter 2
Enter 3	3	B	Enter 3
Enter 4	4	C	Enter 4
Enter 5	5	D	Enter 5
Enter 6	6	E	Enter 6
Enter 7	7	F	Enter 7
common port	S/S	S/S	common port
empty	NC	NC	empty



D0 X5 DO

Signal name	Terminal number		Signal name
output 0	0	8	output 0
output 1	1	9	output 1
output 2	2	A	output 2
output 3	3	B	output 3
output 4	4	C	output 4
output 5	5	D	output 5
output 6	6	E	output 6
output 7	7	F	output 7
24V	L	L	24V
0V	M	M	0V



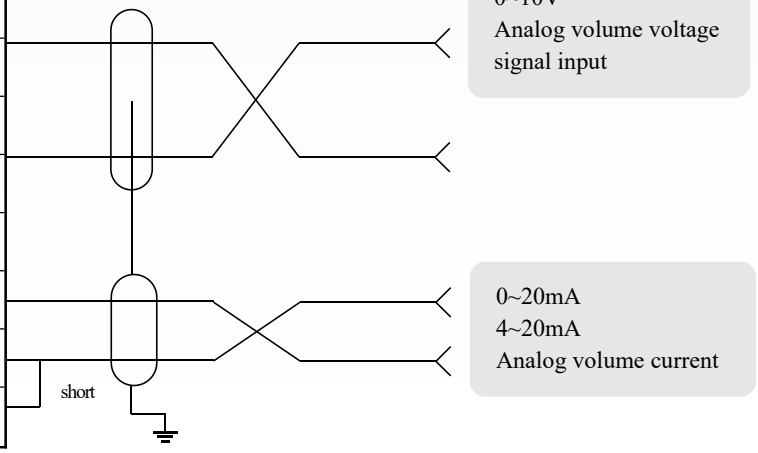
Note: L-L internal short circuit
M-M internal short circuit

4.7.2 Wiring diagram of the analog quantity mo dule

SRX-A0600-RTU

AI X4 AI

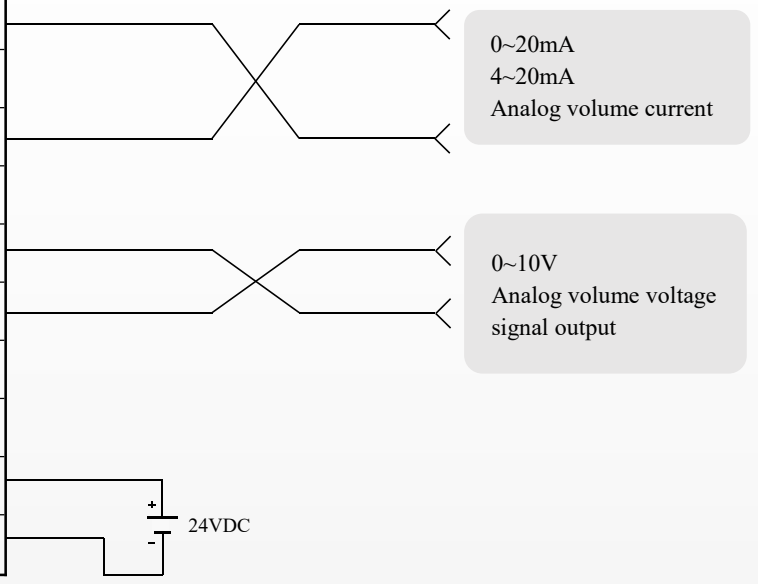
Signal name	Terminal number		Signal name
landing	PE	PE	landing
Channel 1 signal ground	GND1	GND4	Channel 4 signal ground
Channel 1 current signal	I1	I4	Channel 4 current signal
Channel 1 voltage signal	V1	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND5	Channel 5 signal ground
Channel 2 current signal	I2	I5	Channel 5 current signal
Channel 2 voltage signal	V2	V5	Channel 5 voltage signal
Channel 3 signal ground	GND3	GND6	Channel 6 signal ground
Channel 3 current signal	I3	I6	Channel 6 current signal
Channel 3 voltage signal	V3	V6	Channel 6 voltage signal



SRX-A0004-RTU

AO X4 AO

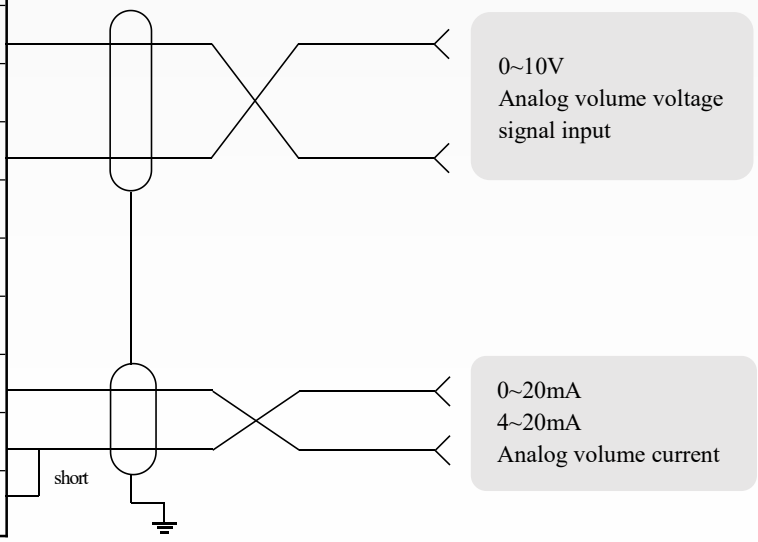
Signal name	Terminal number		Signal name
Channel 1 current signal	I1	I3	Channel 3 current signal
Channel 1 voltage signal	V1	V3	Channel 3 voltage signal
Channel 1 signal ground	GND1	GND3	Channel 3 signal ground
Channel 2 current signal	I2	I4	Channel 4 current signal
Channel 2 voltage signal	V2	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND4	Channel 4 signal ground
empty	NC	NC	empty
landing	PE	PE	landing
24V	L	L	24V
0V	M	M	0V



SRX-A0604-RTU

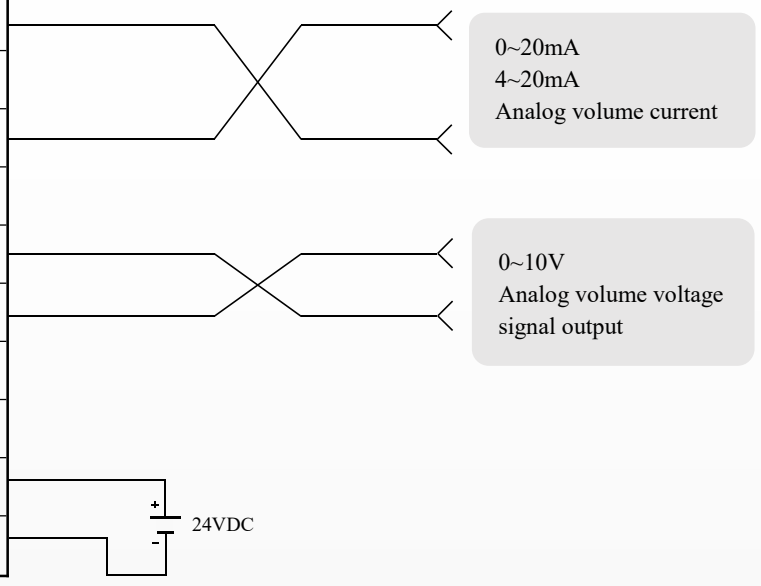
AI X4 AI

Signal name	Terminal number		Signal name
landing	PE	PE	landing
Channel 1 signal ground	GND1	GND4	Channel 4 signal ground
Channel 1 current signal	I1	I4	Channel 4 current signal
Channel 1 voltage signal	V1	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND5	Channel 5 signal ground
Channel 2 current signal	I2	I5	Channel 5 current signal
Channel 2 voltage signal	V2	V5	Channel 5 voltage signal
Channel 3 signal ground	GND3	GND6	Channel 6 signal ground
Channel 3 current signal	I3	I6	Channel 6 current signal
Channel 3 voltage signal	V3	V6	Channel 6 voltage signal



AO X5 AO

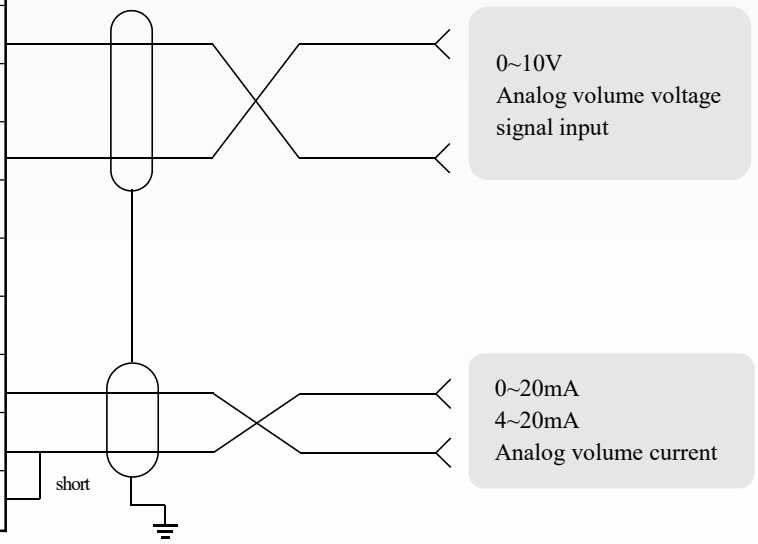
Signal name	Terminal number		Signal name
Channel 1 current signal	I1	I3	Channel 3 current signal
Channel 1 voltage signal	V1	V3	Channel 3 voltage signal
Channel 1 signal ground	GND1	GND3	Channel 3 signal ground
Channel 2 current signal	I2	I4	Channel 4 current signal
Channel 2 voltage signal	V2	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND4	Channel 4 signal ground
empty	NC	NC	empty
landing	PE	PE	landing
24V	L	L	24V
0V	M	M	0V



SRX-A1200-RTU

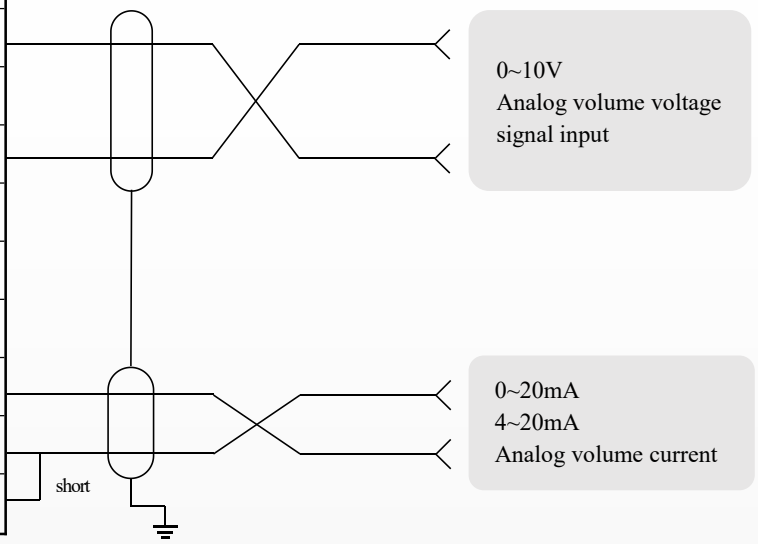
AI X4 AI

Signal name	Terminal number		Signal name
landing	PE	PE	landing
Channel 1 signal ground	GND1	GND4	Channel 4 signal ground
Channel 1 current signal	I1	I4	Channel 4 current signal
Channel 1 voltage signal	V1	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND5	Channel 5 signal ground
Channel 2 current signal	I2	I5	Channel 5 current signal
Channel 2 voltage signal	V2	V5	Channel 5 voltage signal
Channel 3 signal ground	GND3	GND6	Channel 6 signal ground
Channel 3 current signal	I3	I6	Channel 6 current signal
Channel 3 voltage signal	V3	V6	Channel 6 voltage signal



AI X5 AI

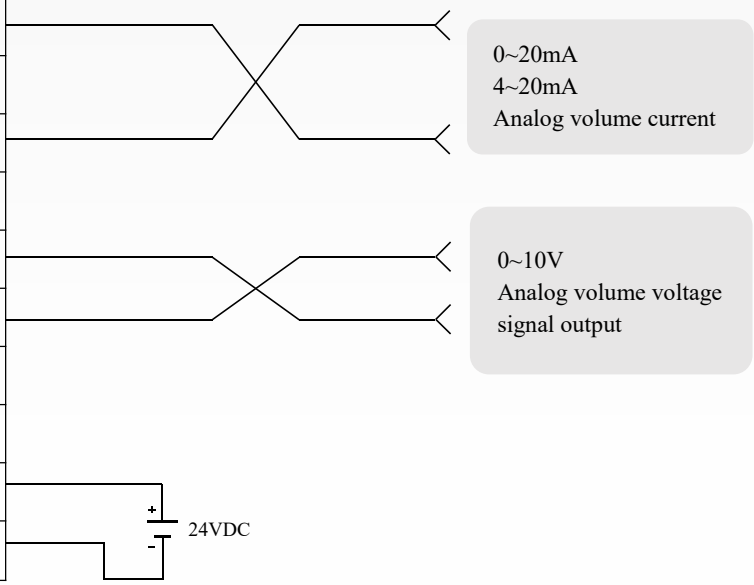
Signal name	Terminal number		Signal name
landing	PE	PE	landing
Channel 1 signal ground	GND1	GND4	Channel 4 signal ground
Channel 1 current signal	I1	I4	Channel 4 current signal
Channel 1 voltage signal	V1	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND5	Channel 5 signal ground
Channel 2 current signal	I2	I5	Channel 5 current signal
Channel 2 voltage signal	V2	V5	Channel 5 voltage signal
Channel 3 signal ground	GND3	GND6	Channel 6 signal ground
Channel 3 current signal	I3	I6	Channel 6 current signal
Channel 3 voltage signal	V3	V6	Channel 6 voltage signal



SRX-A0008-RTU

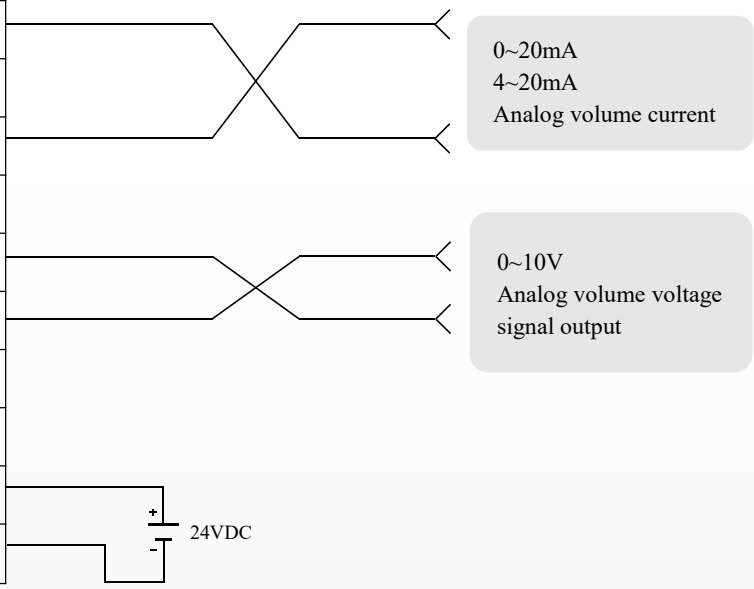
AO X4 AO

Signal name	Terminal number		Signal name
Channel 1 current signal	I1	I3	Channel 3 current signal
Channel 1 voltage signal	V1	V3	Channel 3 voltage signal
Channel 1 signal ground	GND1	GND3	Channel 3 signal ground
Channel 2 current signal	I2	I4	Channel 4 current signal
Channel 2 voltage signal	V2	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND4	Channel 4 signal ground
empty	NC	NC	empty
landing	PE	PE	landing
24V	L	L	24V
0V	M	M	0V



AO X5 AO

Signal name	Terminal number		Signal name
Channel 1 current signal	I1	I3	Channel 3 current signal
Channel 1 voltage signal	V1	V3	Channel 3 voltage signal
Channel 1 signal ground	GND1	GND3	Channel 3 signal ground
Channel 2 current signal	I2	I4	Channel 4 current signal
Channel 2 voltage signal	V2	V4	Channel 4 voltage signal
Channel 2 signal ground	GND2	GND4	Channel 4 signal ground
empty	NC	NC	empty
landing	PE	PE	landing
24V	L	L	24V
0V	M	M	0V

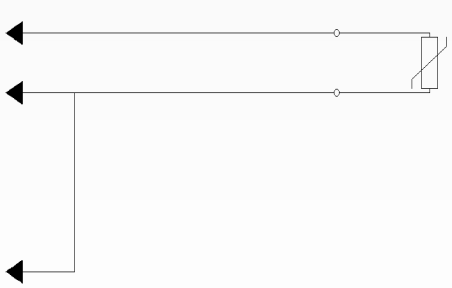


4.7.3 Wiring diagram of the temperature module

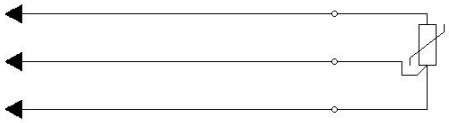
SRX-8RTD-RTU

RTD X4 RTD

Signal name	Terminal number		Signal name
Channel 1 signal A	1A	5A	Channel 5 signal A
Channel 1 signal B	1B	5B	Channel 5 signal B
Channel 2 signal A	2A	6A	Channel 6 signal A
Channel 2 signal B	2B	6B	Channel 6 signal B
landing	GNG	GND	landing
Channel 3 signal A	3A	7A	Channel 7 signal A
Channel 3 signal B	3B	7B	Channel 7 signal B
Channel 4 signal A	4A	8A	Channel 8 signal A
Channel 4 signal B	4B	8B	Channel 8 signal B
landing	GND	GND	landing



Two-wire system PT 100 input



Three-line system PT 100 input

SRX-8TC-RTU

TC X4 TC

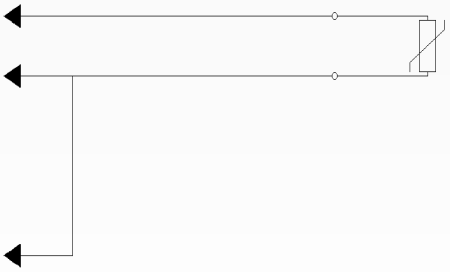
Signal name	Terminal number		Signal name
Channel 1 signal A	1A	5A	Channel 5 signal A
Channel 1 signal B	1B	5B	Channel 5 signal B
Channel 2 signal A	2A	6A	Channel 6 signal A
Channel 2 signal B	2B	6B	Channel 6 signal B
Channel 3 signal A	3A	7A	Channel 7 signal A
Channel 3 signal B	3B	7B	Channel 7 signal B
Channel 4 signal A	4A	8A	Channel 8 signal A
Channel 4 signal B	4B	8B	Channel 8 signal B
landing	GND	GND	landing
landing	GND	GND	landing

Two-line thermocouple input

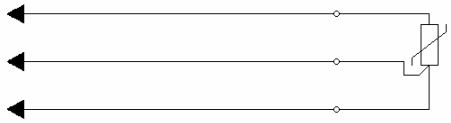
SRX-16RTD-RTU

RTD1 X4 RTD1

Signal name	Terminal number		Signal name
Channel 1 signal A	1A	5A	Channel 5 signal A
Channel 1 signal B	1B	5B	Channel 5 signal B
Channel 2 signal A	2A	6A	Channel 6 signal A
Channel 2 signal B	2B	6B	Channel 6 signal B
landing	GNG	GND	landing
Channel 3 signal A	3A	7A	Channel 7 signal A
Channel 3 signal B	3B	7B	Channel 7 signal B
Channel 4 signal A	4A	8A	Channel 8 signal A
Channel 4 signal B	4B	8B	Channel 8 signal B
landing	GND	GND	landing



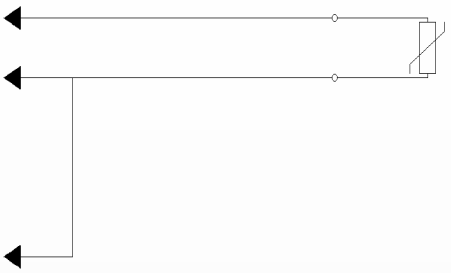
Two-wire system PT 100 input



Three-line system PT 100 input

RTD2 X5 RTD2

Signal name	Terminal number		Signal name
Channel 1 signal A	1A	5A	Channel 5 signal A
Channel 1 signal B	1B	5B	Channel 5 signal B
Channel 2 signal A	2A	6A	Channel 6 signal A
Channel 2 signal B	2B	6B	Channel 6 signal B
landing	GNG	GND	landing
Channel 3 signal A	3A	7A	Channel 7 signal A
Channel 3 signal B	3B	7B	Channel 7 signal B
Channel 4 signal A	4A	8A	Channel 8 signal A
Channel 4 signal B	4B	8B	Channel 8 signal B
landing	GND	GND	landing



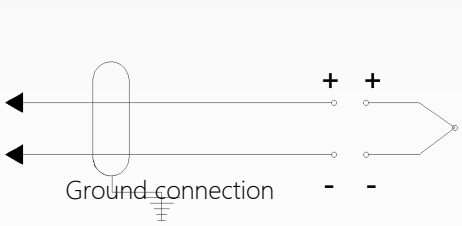
Two-wire system PT 100 input

Three-line system PT 100 input

SRX-16TC-RTU

TC1 X4 TC1

Signal name	Terminal number		Signal name
Channel 1 signal A	1A	5A	Channel 5 signal A
Channel 1 signal B	1B	5B	Channel 5 signal B
Channel 2 signal A	2A	6A	Channel 6 signal A
Channel 2 signal B	2B	6B	Channel 6 signal B
Channel 3 signal A	3A	7A	Channel 7 signal A
Channel 3 signal B	3B	7B	Channel 7 signal B
Channel 4 signal A	4A	8A	Channel 8 signal A
Channel 4 signal B	4B	8B	Channel 8 signal B
landing	GND	GND	landing
landing	GND	GND	landing



Two-line thermocouple input

TC2 X4 TC2

Signal name	Terminal number		Signal name
Channel 1 signal A	1A	5A	Channel 5 signal A
Channel 1 signal B	1B	5B	Channel 5 signal B
Channel 2 signal A	2A	6A	Channel 6 signal A
Channel 2 signal B	2B	6B	Channel 6 signal B
Channel 3 signal A	3A	7A	Channel 7 signal A
Channel 3 signal B	3B	7B	Channel 7 signal B
Channel 4 signal A	4A	8A	Channel 8 signal A
Channel 4 signal B	4B	8B	Channel 8 signal B
landing	GND	GND	landing
landing	GND	GND	landing

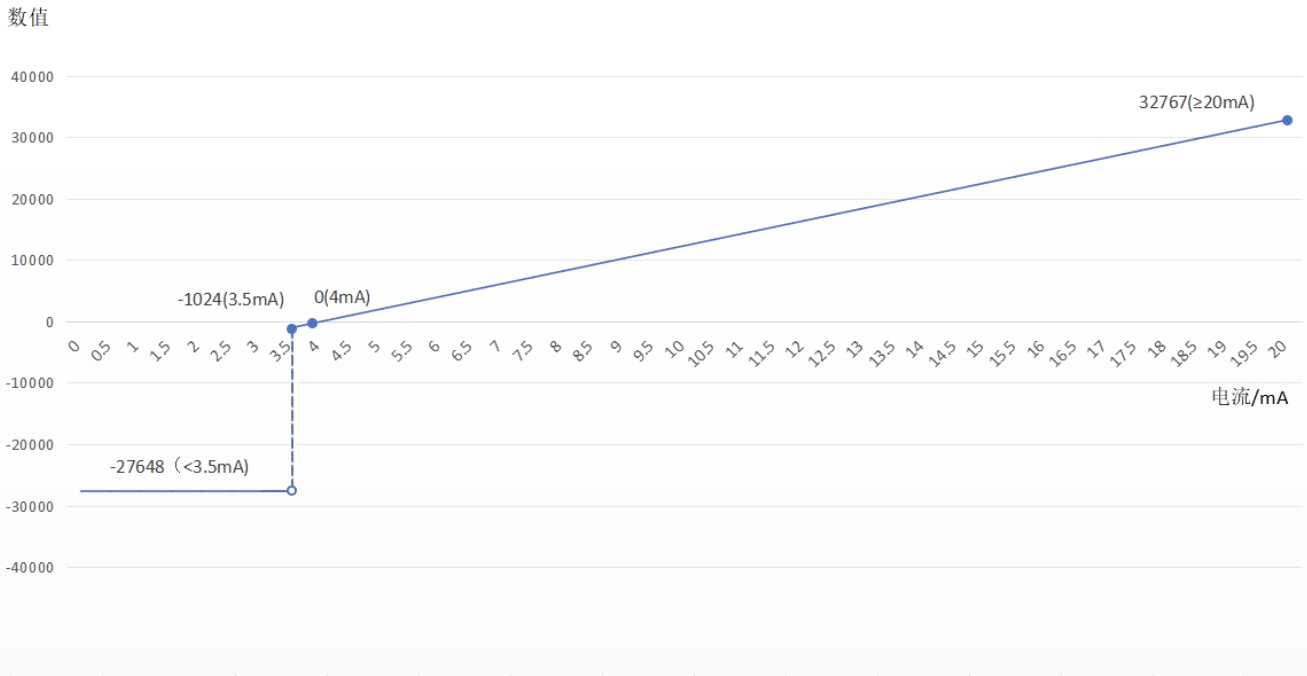
Two-line thermocouple input

★ For the wiring diagram of other hybrid modules, please download the CAD diagram www.latcos.cn from the official website

4.7.4 4~20mA definition and line chart

Current measurement range value			
System		current measurement range	
decimalism	hexadecimal	4~20mA	
Channel 8 signal B	Channel 8 signal B	Channel 8 signal B	Channel 8 signal B
landing	landing	landing	landing
landing	landing	landing	landing
Channel 8 signal B	Channel 8 signal B	Channel 8 signal B	Channel 8 signal B
landing	landing	landing	landing
landing	landing	landing	landing

4~20mA current line diagram



5.Modbus-RTU protocol

5.1Modbus-RTU Industrial Ethernet protocol

5.1.1 Modbus-RTU Industrial Ethernet protocol

Definition:

Modbus is a serial communication protocol that was published by Modicon (now Schneider Electric) in 1979 for communication using programmable logic controllers (PLCS). Modbus has become the De facto communication protocol in the industrial sector and is now a common way of connecting industrial electronic devices.

5.2 SRX-RTU address mapping

SRX-RTUDI/DQ/AI/AQ data is mapped to the master memory space via configuration profiles.

- ●16 digital inputs are mapped to 2-byte In addresses;
- ●6 analog inputs are mapped to 12-byte In addresses;
- ●16 digital output mapped to 2-byte Out address;

5.3 Module parameters

Each module has specific parameters, which are required to be flexibly configured in the hardware configuration according to the field situation. Parameter configuration and download were performed using the LAEconfig software. See the LAEconfig instructions for the specific operation.

The SRX-D0808X-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input the filter time (Filter)							
data specification:								
The parameter name		**unit**	**form**	**input range**	**explain**			
the Chinese language	**English**							
Input filter time	Filter	ms	decimal system	0-255 (Default: 5)				
output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
data specification:								
The parameter name		**unit**	**form**	**input range**	**explain**			
the Chinese language	**English**							
Fault mode enabling	DO Error_Mode bits	-	decimal system	0-255 (Default: 0)	The fault security state value of DQ0.x port is enabled, the binary bit bit corresponds to DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safe state, if the "Error Mode" corresponds to bit bit of "1", the value of "Error Value [7..0]" corresponds to bit bit is output to the corresponding DQ0.x port.			
Fault value: Safety status value	DO Error_Value bits	-	decimal system	0-255 (Default: 0)	If the binary bit bit corresponding to the Error Mode [7..0] parameter is set to enable, the parameter value is output to the DQ port when the system enters a fault safe state.			

SRX-D1600-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input the filter time (Filter)							
data specification:								
The parameter name		**unit**	**form**	**input range**	**explain**			
the Chinese language	**English**							
Input filter time	Filter	ms		0-255 (Default: 5)				

The SRX-D0016X-RTU parameter configuration definition

output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
data specification:								
The parameter name		**unit**	**form**	**input range**	**explain**			
the Chinese language	**English**							
Fault mode enabling	DO Error_Mode bits	-	decimal system	0-255 (Default: 0)	The fault security state value of DQ0.x port is enabled, the binary bit bit corresponds to DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safe state, if the "Error Mode" corresponds to bit bit of "1", the value of "Error Value [7..0]" corresponds to bit bit is output to the corresponding DQ0.x port.			
Fault value: Safety status value	DO Error_Value bits	-	decimal system	0-255 (Default: 0)	If the binary bit bit corresponding to the Error Mode [7..0] parameter is set to enable, the parameter value is output to the DQ port when the system enters a fault safe state.			

SRX-D3200-RTU configuration parameter definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input the filter time (Filter)							
data specification:								

The parameter name		unit	form	input range	explain
the Chinese language	English				
Input filter time	Filter	ms	decimal system	0-255 (Default: 5)	

SRX-D0032X-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
BYTE 2	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 8-15)	For 15	For 14	For 13	For 12	For11	For 10	For 9	For 8
BYTE 3	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 8-15)	15	14	13	12	11	10	9	8
. .	16-31 See the above configuration							
data-in:								

The parameter name		unit	form	input range	explain
the Chinese language	English				
Fault mode	DO	-	decimal	0-255	The fault security state value of DQ0.x port is enabled, the binary

enabling	Error_Mode bits		system	(Default: 0)	bit bit corresponds to DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safe state, if the "Error Mode" corresponds to bit bit of "1", the value of "Error Value [7..0]" corresponds to bit bit is output to the corresponding DQ0.x port.
Fault value: Safety status value	DO Error_Value bits	-	decimal system	0-255 (Default: 0)	If the binary bit bit corresponding to the Error Mode [7..0] parameter is set to enable, the parameter value is output to the DQ port when the system enters a fault safe state.

The SRX-D1616X-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input the filter time (Filter)							
data specification:								
The parameter name		**unit**	**form**	**input range**	**explain**			
the Chinese l anguage	**English**							
Input filter time	Filter	ms	decimal system	0-255 (Default: 5)				
output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
BYTE 2	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 8-15)	For 15	For 14	For 13	For 12	For11	For 10	For 9	For 8
BYTE 3	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits8-15)	15	14	13	12	11	10	9	8
data specification:								
The parameter name		**unit**	**form**	**input range**	**explain**			
the Chinese l anguage	**English**							
Fault mode enabling	DO Error_Mode bits	-	decimal system	0-255 (Default: 0)	The fault security state value of DQ0.x port is enabled, the binary bit bit corresponds to DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safe state, if the "Error Mode" corresponds to bit bit of "1", the value of "Error Value [7..0]" corresponds to bit bit is output to the corresponding DQ0.x port.			
Fault value: Safety status value	DO Error_Value bits	-	decimal system	0-255 (Default: 0)	If the binary bit bit corresponding to the Error Mode [7..0] parameter is set to enable, the parameter value is output to the DQ port when the system enters a fault safe state.			

SRX-A0600-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Measuring Range For CH1							
BYTE 1	Notch Filter For CH1							
BYTE 2	AverageNum For CH1							
BYTE 3	Full value For CH1							
BYTE 4								
BYTE 5	Zero_valueFor CH1							
BYTE 6								
BYTE 7	Measuring Range For CH2							
BYTE 8	Notch Filter For CH2							
BYTE 9	AverageNum For CH2							
BYTE 10	Full value For CH2							
BYTE 11								
BYTE 12	Zero_valueFor CH2							
BYTE 13								
...	...							

data specification:

The parameter name		unit	form	input range	explain
the Chinese language	English				
Channel 1 measurement type	Measuring Range For CH1	-	symbol	0:Disable 1:0-10V (by default) 2:0-20ma 3:4-20ma	Select the corresponding simulation quantity into the range of it Disable Close of the sampling channel
The frequency filter for the channel 1	Notch Filter For CH1	-	symbol	0:Disable 1:50Hz 2:60Hz	Filter the 50Hz or 60Hz power frequency clutter interference
The number of sampling of channel 1	AverageNum For CH1	-	symbol	X0 (default) X4 X8 X16 X32	The module adopts the average algorithm, and adjusting this parameter can adjust the average depth, improve the sampling accuracy, but will reduce the response time
Full-range engineering value of channel 1	Full value For CH1	-	symbol	-3276832767 (default 32767)	Engineering value of the maximum range
Zero-range engineering value of channel 1	Zero_valueFo r CH1	-	symbol	-32768... 32767 (default: 0)	Engineering value of the minimum range

SRX-A1200-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Measuring Range For CH1							
BYTE 1	Notch Filter For CH1							
BYTE 2	AverageNum For CH1							
BYTE 3	Full value For CH1							
BYTE 4								
BYTE 5	Zero_valueFor CH1							
BYTE 6								
BYTE 7	Measuring Range For CH2							
BYTE 8	Notch Filter For CH2							
BYTE 9	AverageNum For CH2							
BYTE 10	Full value For CH2							
BYTE 11								
BYTE 12	Zero_valueFor CH2							
BYTE 13								
...	...							

data specification:

The parameter name		unit	form	input range	explain
the Chinese language	English				
Channel 1 measurement type	Measuring Range For CH1	-	symbol	0:Disable 1:0-10V (by default) 2:0-20ma 3:4-20ma	Select the corresponding simulation quantity into the range of it Disable Close of the sampling channel
The frequency filter for the channel 1	Notch Filter For CH1	-	symbol	0:Disable 1:50Hz 2:60Hz	Filter the 50Hz or 60Hz power frequency clutter interference
The number of sampling of channel 1	AverageNum For CH1	-	symbol	X0 (default) X4 X8 X16 X32	The module adopts the average algorithm, and adjusting this parameter can adjust the average depth, improve the sampling accuracy, but will reduce the response time
Full-range engineering value of channel 1	Full value For CH1	-	symbol	-3276832767 (default 32767)	Engineering value of the maximum range
Zero-range engineering value of channel 1	Zero_valueFo r CH1	-	symbol	-32768... 32767 (default: 0)	Engineering value of the minimum range

SRX-A0004-RTU parameter configuration definition

output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Measuring Range For CH1							
BYTE 1	Notch Filter For CH1							
BYTE 2	AverageNum For CH1							
BYTE 3	Full value For CH1							
BYTE 4								
BYTE 5	Zero_valueFor CH1							
BYTE 6								
BYTE 7	Measuring Range For CH2							
BYTE 8	Notch Filter For CH2							
BYTE 9	AverageNum For CH2							
BYTE 10	Full value For CH2							
BYTE 11								
BYTE 12	Zero_valueFor CH2							
BYTE 13								
...	...							

data specification:

The parameter name		unit	form	input range	explain
the Chinese language	English				
Channel 1 measurement type	Measuring Range For CH1	-	symbol	0:Disable 1:0-10V (by default) 2:0-20ma 3:4-20ma	Select the corresponding simulation quantity into the range of it Disable Close of the sampling channel
The frequency filter for the channel 1	Notch Filter For CH1	-	symbol	0:Disable 1:50Hz 2:60Hz	Filter the 50Hz or 60Hz power frequency clutter interference
The number of sampling of channel 1	AverageNum For CH1	-	symbol	X0 (default) X4 X8 X16 X32	The module adopts the average algorithm, and adjusting this parameter can adjust the average depth, improve the sampling accuracy, but will reduce the response time
Full-range engineering value of channel 1	Full value For CH1	-	symbol	-32768..32767 (default 32767)	Engineering value of the maximum range
Zero-range engineering value of channel 1	Zero_valueFor CH1	-	symbol	-32768... 32767 (default: 0)	Engineering value of the minimum range

SRX-A0008-RTU parameter configuration definition

output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Measuring Range For CH1							
BYTE 1	Notch Filter For CH1							
BYTE 2	AverageNum For CH1							
BYTE 3	Full value For CH1							
BYTE 4								
BYTE 5	Zero_valueFor CH1							
BYTE 6								
BYTE 7	Measuring Range For CH2							
BYTE 8	Notch Filter For CH2							
BYTE 9	AverageNum For CH2							
BYTE 10	Full value For CH2							
BYTE 11								
BYTE 12	Zero_valueFor CH2							
BYTE 13								
...	...							

data specification:

The parameter name		unit	form	input range	explain
the Chinese language	English				
Channel 1 measurement type	Measuring Range For CH1	-	symbol	0:Disable 1:0-10V (by default) 2:0-20ma 3:4-20ma	Select the corresponding simulation quantity into the range of it Disable Close of the sampling channel
The frequency filter for the channel 1	Notch Filter For CH1	-	symbol	0:Disable 1:50Hz 2:60Hz	Filter the 50Hz or 60Hz power frequency clutter interference
The number of sampling of channel 1	AverageNum For CH1	-	symbol	X0 (default) X4 X8 X16 X32	The module adopts the average algorithm, and adjusting this parameter can adjust the average depth, improve the sampling accuracy, but will reduce the response time
Full-range engineering value of channel 1	Full value For CH1	-	symbol	-32768..32767 (default 32767)	Engineering value of the maximum range
Zero-range engineering value of channel 1	Zero_valueFo r CH1	-	symbol	-32768... 32767 (default: 0)	Engineering value of the minimum range

SRX-A0604-RTU parameter configuration definition

data-in								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Measuring Range For CH1							
BYTE 1	Notch Filter For CH1							
BYTE 2	AverageNum For CH1							
BYTE 3	Full value For CH1							
BYTE 4								
BYTE 5	Zero_valueFor CH1							
BYTE 6								
BYTE 7	Measuring Range For CH2							
BYTE 8	Notch Filter For CH2							
BYTE 9	AverageNum For CH2							
BYTE 10	Full value For CH2							
BYTE 11								
BYTE 12	Zero_valueFor CH2							
BYTE 13								

...

output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Measuring Range For CH1							
BYTE 1	Notch Filter For CH1							
BYTE 2	AverageNum For CH1							
BYTE 3	Full value For CH1							
BYTE 4								
BYTE 5	Zero_valueFor CH1							
BYTE 6								
BYTE 7	Measuring Range For CH2							
BYTE 8	Notch Filter For CH2							
BYTE 9	AverageNum For CH2							
BYTE 10	Full value For CH2							
BYTE 11								
BYTE 12	Zero_valueFor CH2							
BYTE 13								
...								

data specification:

The parameter name		unit	form	input range	explain
the Chinese language	English				
Channel 1 measurement type	Measuring Range For CH1	-	symbol	0:Disable 1:0-10V (by default) 2:0-20ma 3:4-20ma	Select the corresponding simulation quantity into the range of it Disable Close of the sampling channel
The frequency filter for the channel 1	Notch Filter For CH1	-	symbol	0:Disable 1:50Hz 2:60Hz	Filter the 50Hz or 60Hz power frequency clutter interference
The number of sampling of channel 1	AverageNum For CH1	-	symbol	X0 (default) X4 X8 X16 X32	The module adopts the average algorithm, and adjusting this parameter can adjust the average depth, improve the sampling accuracy, but will reduce the response time
Full-range engineering value of channel 1	Full value For CH1	-	symbol	-32768..32767 (default 32767)	Engineering value of the maximum range
Zero-range engineering value of channel 1	Zero_valueFor CH1	-	symbol	-32768... 32767 (default: 0)	Engineering value of the minimum range

★ The functions of other mixed modules are combined by the functions of the above modules, and the parameters can refer to the above information accordingly.

For example, SRX-M8860P-RTU, refer to the parameters of SRX-D0808P-RTU and SRX-A0600-RTU.

6. Description of Modbus-RTU

6.1. Modbus-RTU message format

Note: 1 byte is composed of 8-bit binary, namely 8 bits.

device address	FC	data field	CRC verification
1 Bytes	1 Bytes	N bytes	2 bytes (16-bit loop redundancy check code)

6.1.1. Equipment address

The device address is the first byte of each communication message frame, ranging from 0 to 255. This byte indicates that the device set to the address by the user will receive this message sent by the main station. Each device must have a unique address, and only the device that meets this address can respond to the message from the main station. When the information is sent back, the first byte of the data returned is also the address of the device.

The device address in the data sent by the main station indicates which device will be sent to, and the device address in the data returned by the device indicates where the data comes from.

6.1.2. Functional code

Function code is the second byte of the data of each communication. The range of the function code defined by the MODBUS communication regulation is 1 to 127. We only use some of the function codes, as follows:

FC (HEX)	definition	description
01	Read the switch	Read the status of the one-way or multiple-channel switch
02	Read the discrete input states	Read the status of the one or multiple inputs
03	Read the hold register	Read one or more hold-register (analog) data
04	Write input register	Controls one input register (analog volume) data
05	Write a single switch	Control the split or close of the first road switch
06	Write a single hold register	Write a hold register (analog) data
0F	Write multiple switches	Controls the split or close of the multiplex switch
10	Write the multiple hold registers	Write multiple hold-register (analog) data

6.1.3. Data area

The data area is the data that the main station writes to the slave station and the data that the slave station replies to read by the main station.

The content of the data area is stored in the form of Big Endian, with the first high byte and the second low byte issued during communication.

6.1.4. CRC calibration

CRC verification is a 16-bit cyclic redundancy verification code, mainly used to verify the accuracy of transmitted data.

CRC verification detailed detai

6.2. Detailed description of the functional code

6.2.1 Function code 01: Read the switch

All switches are encoded in binary bits, one bit per switch, one byte can accommodate 8 switches, 1 as the combined state and 0 as the split state.

The address of the switch is bit coded, which can be understood as the switch with address 0 in the D0 bit in the data area, the switch with address 1 in the D1 bit in the data area,... the switch with address 7 in the D7 bit in the data area, the switch in the data area, the switch with address X bit, the D [X%8] bit in the X / 8 + 1 byte in the data area.

Host to send the message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	01: Read the switch status
start address	Two bytes	From which address switch start read the switch state (starting bit bit)
Number of switches	Two bytes	Read the state of several switches (bits)
CRC check code	Two bytes	CRC of device address, function code, starting address, number of switches, check code

Airport return data message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	01: Read the switch status
Number of data bytes N	1 Bytes	How many bytes of data to return, each byte contains the status of the 8 switches Number of data bytes N= (number of switches + 7) 8
data	N bytes	The D0 bit of the first byte is the state of the first (starting address) switch; The D1 bit of the returned first byte is the state of the second (starting address + 1) switch; ..... The D0 bit of the N th byte returned is the status of the 8th N-7th (starting address + 8N-8) switch The D1 bit of the N th byte returned is the state of the 8th N-6 (starting address + 8N-7) switch .....
CRC check code	Two bytes	Device address, function code, data bytes, CRC of data, check code

6.2.2. Function code 03: Read the register

Each register is two bytes (16-bit binary data), with high byte first and low back. The data represented by each register range from-32768 to 32767, and the negative number is indicated by the complement (two's complement).

The address code of the register can be understood as the register with address 0 in the first and second byte in the data area, the register with address 1 in the third and fourth byte in the data area, and the register with address 2 in the fifth and sixth byte th byte in the data area.

Host to send the message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	03: Read the register
start address	Two bytes	Read data from which address register
Number of registers	Two bytes	Read data from several registers (bytes = number of registers 2)
CRC check code	Two bytes	CRC of device address, function code, starting address, number of registers, check code

Airport return data message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	03: Read the register
Number of data bytes N	1 Bytes	Number of data bytes N= number of registers 2
Register data	N bytes	Number of registers = number of data bytes = 2 The first and second byte returned are the first (starting address), of the register data The third and fourth byte returned are the register data for the second (starting address + 1) .....
CRC check code	Two bytes	CRC, device address, function code, data bytes, register data, check code

6.2.3. Function code 05: Write a single-way switch

Host to send the message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	05: Write the single-circuit switch
The address of the switch	Two bytes	Control the switch of which address
control command	Two bytes	FF00 is the switch order and 0000 is the switch order
CRC check code	Two bytes	Device address, function code, address of switch, CRC of control command, check code

Airport return data message format:

The message returned by the slave is identical to that sent by the host machine.

Returning this message from the machine indicates that the device receives the remote control command and starts to execute the command. To judge whether the read switch state is equal to the target value of control, that is, the read switch state is equal to the written switch state, and the remote control execution has been successfully completed.

6.2.4. Function code 06: Write a single register

Host to send the message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	06: Write a single register
Register address	Two bytes	Which register to write the data to
The written data	Two bytes	Data that is written to the register
CRC check code	Two bytes	CRC of device address, function code, register address, written data, check code

Airport return data message format:

The message returned by the slave is identical to that sent by the host machine.

To return the message from the machine, indicating that the device accepts the command to write the register, starts to execute the command, determines whether the successful execution has completed the written data, to the fact that the read register data is equal to the written value, that is, the read register data is equal to the written register data, that the written execution has been successfully completed.

6.2.5. Function code 0F: write the multi-channel switch

Host to send the message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	0F: Write the multichannel switch
start address	Two bytes	Control from which address the switch starts
Number of switches	Two bytes	Control of several switches
Number of data bytes N	1 Bytes	The number of bytes of the data written to the switch, namely, the number of bytes of the following remote control command Number of data bytes N= (number of switches + 7) 8
The written data	N bytes	The D0 bit of the first byte is the state of the first (starting address) switch; The D1 bit of the first byte is the state of the second (starting address + 1) switch; ..... The D0 bit of the 2nd byte is the state of the ninth (starting address + 8) switch .....
CRC check code	Two bytes	CRC of equipment address, function code, starting address, number of switches, number of bytes, data, check code

Airport return data message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	0F: Write the multichannel switch
start address	Two bytes	Control from which address the switch starts
Number of switches	Two bytes	Control of several switches
CRC check code	Two bytes	CRC of device address, function code, starting address, number of switches, check code

Returning this message from the machine indicates that the device receives the remote control command and starts to execute the command. To judge whether the read switch state is equal to the target value of control, that is, the read switch state is equal to the written switch state, and the remote control execution has been successfully completed.

6.2.6. Function code 10: Write multiple registers

Host to send the message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	10: Write multiple registers
start address	Two bytes	From which address is the register to start to write
Number of registers	Two bytes	Write to several registers
Number of data bytes N	1 Bytes	The number of bytes of the data written to the register, namely, the number of bytes of the following remote tuning command Number of data bytes N= number of registers 2
The written data	N bytes	The first and second byte written is the first (starting address), the register data The third and fourth byte written are the register data of the second (starting address + 1) ...
CRC check code	Two bytes	Device address, function code, starting address, number of registers, number of bytes, CRC of data, check code

Airport return data message format:

form	length	act on
device address	1 Bytes	device address
FC	1 Bytes	10: Write multiple registers
start address	Two bytes	From which address is the register to start to write
Number of registers	Two bytes	Write to several registers
CRC check code	Two bytes	CRC of device address, function code, starting address, number of registers, check code

Returning the message from the slave, it indicates that the slave accepts the remote adjustment command and starts to execute the command to determine whether the successful execution is completed that the data of the read register equals the target value of the remote adjustment, that is, the data of the read out register is equal to the data written to the register, and that the successful execution of the remote adjustment has been completed.

6.3. response to host command

6.3.1. Correct command response to the host

device address	FC	data field	CRC verification
1 Bytes	1 Bytes	N bytes	2 bytes (16-bit loop redundancy check code)

The function code of the slave machine is the same as that issued by the host machine.

6.3.2 Error command response to host

device address	FC	data field		CRC verification
1 Bytes	1 Bytes Top position 1	N bytes Error coding		2 bytes (16-bit loop redundancy check code)

From Master Function code = Host function code | 0x80.

Error coding

code (HEX)	meaning	explain
01	Invalid function code	Unfulfilled functionality Unset features
02	Invalid data address	The starting address crosses the line The number of data crosses the line
03	Invalid data value	Wrong number of data frames Data CRC check error The written numerical value is invalid

6.3.3. Example of the error command response message

01 81 02 C1 91 The command received with function code 01 has an error (81), error code 02: invalid address or length out of line.

01 83 02 C0 F1 Received command with function code 03 has error (83), error code 02: invalid address or length out of line.

01 85 03 02 91 The command with function code 05 received has an error (85), error code 03: the written value is invalid.

6.4. Example of the Modbus-RTU communication protocol message

The slave —— device address is 8

Machine —— switch status: 0- - - -points, 1- - - -combined.

address	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
state	0	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	1	1	1	1	0

The slave —— register data

address	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
data (DEC)	1000	100	10	2000	200	20	3000	300	30	4000	400	40	5000	500	50	6000	600	60	7000	700	70
data (HEX)	03EA	0064	000A	07D0	00C8	0014	0BB8	012C	001E	0FA0	0190	0028	1388	01F4	0032	1770	0258	003C	1B58	02BC	0046

6.4.1. Function code 01: Read the switch

5 switch status from 4 to 8:

Host send data (HEX): 08 01 00 04 00 05 BD 51

form	length	data (HEX)	description
device address	1 Bytes	08	Equipment address: 08
FC	1 Bytes	01	01: Read the switch status
start address	Two bytes	00 04	Starting address: 0004, first high byte 00, second low byte 04
Number of switches	Two bytes	00 05	Read the status of 0005 switches, starting the high byte 00 and the low byte 05
CRC check code	Two bytes	BD 51	CRC for 08 01 00 04 00 05, check code

Data (HEX): 08 01 01 03 12 15

form	length	data (HEX)	description
device address	1 Bytes	08	Equipment address: 08
FC	1 Bytes	01	01: Read the switch status
Number of data bytes N	1 Bytes	01	Next is 1 byte of data, up to the status of 8 switches
data	1 Bytes	03	To query the status of only 5 switches, D0-D4: switch status, D5-D7 is meaningless Data 03 is represented in binary as equal to 00000011
CRC check code	Two bytes	12 15	CRC of 08 01 01 03, the check code

6.4.2. Function code 03: Read the register

Query 4 register data from 2 to 5:

Host send data (HEX): 08 03 00 02 00 04 E5 50

form	length	data (HEX)	description
device address	1 Bytes	08	Equipment address: 08
FC	1 Bytes	03	03: Read the register
start address	Two bytes	00 02	Starting address: 0002, first high byte 00, second low byte 02
Number of registers	Two bytes	00 04	Read the data of 0004 registers, the first high byte 00 and the second low byte 04
CRC check code	Two bytes	E5 50	CRC of 08 03 00 02 00 04, check code

Data (HEX): 08 03 08 00 0A 07 D0 00 C8 00 14 50 DF

form	length	data (HEX)	description
device address	1 Bytes	08	Equipment address: 08
FC	1 Bytes	03	03: Read the register
Number of data bytes N	1 Bytes	08	Next there are 8 bytes, or data for 4 registers
Register data	Eight bytes	00 0A 07 D0 00 C8 00 14	Since the query command starts the query from the register of the address 2, The data of the first register returned is that of the register with address 2: 00 0A:, Address 2 for register data = 0x00 0A, or 10 07 D0:, Data = 0x07D0, or 2000 00 C8:, Address 4 for register data = 0x00C8, namely 200 00 14:, Data = 0x00 14,20
CRC check code	Two bytes	50 DF	CRC of 08 03 08 00 0A 07 D0 00 C8 00 14, check code

6.4.3. Function code 05: Write a single-way switch

Close the switch at address 6:

Host send data (HEX): 08 05 00 06 FF 00 6C A2

Data returned (HEX): 08 05 00 06 FF 00 6C A2

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	05	05: Write the single-circuit switch
The address of the switch	Two bytes	00 06	Address of the switch: 0006, first high byte 00, second low byte 06
control command	Two bytes	FF 00	Switch closing command: 0 xFF 00
CRC check code	Two bytes	6C A2	CRC of 08 05 00 06 FF 00, check code

Switch the switch at address 6:

Host send data (HEX): 08 05 00 06 00 00 2D 52

Data returned from the machine (HEX): 08 05 00 06 00 00 2D 52

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	05	05: Write the single-circuit switch
The address of the switch	Two bytes	00 06	Address of the switch: 0006, first high byte 00, second low byte 06
control command	Two bytes	00 00	Switch switch command: 0x0000
CRC check code	Two bytes	2D 52	CRC of 08 05 00 06 00 00, check code

6.4.4. Function code 06: Write a single register

Write the data-30 to a register with address 8:

Host send data (HEX): 08 06 00 08 FF E2 C9 28

Data returned (HEX): 08 06 00 08 FF E2 C9 28

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	06	06: Write a single register
Register address	Two bytes	00 08	Register address: 0008, first high byte 00, second low byte 08
The written data	Two bytes	FF E2	The complement for the written register data-30 is 0 xFF E2, first high byte FF and later low byte E 2
CRC check code	Two bytes	C9 28	08 06 00 08 CRC of FFE 2, check code

6.4.5. Function code 0F: write the multi-channel switch

Close switch with address 61, close switch with address 70, and close switch with address 81:

Host send data (HEX): 08 0F 00 06 00 03 01 05 07 3E

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	0F	0F: Write the multichannel switch
start address	Two bytes	00 06	Starting address: 0006, first high byte 00, second low byte 06
Number of switches	Two bytes	00 03	Remote control of 3 switches, first high byte 00 and second low byte 03
Number of data bytes	1 Bytes	01	Number of bytes for writing data: 1, bytes, representing the status of up to 8 switches
The written data	1 Bytes	05	Due to the state of writing 3 switches, D0-D2: switch status, D3-D7 meaningless data 05 is represented in binary equal to 00000101
CRC check code	Two bytes	07 3E	CRC of 08 0F 00 06 00 03 01 05, the check code

Data (HEX): 08 0F 00 06 00 03 F5 52

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	0F	0F: Write the multichannel switch
start address	Two bytes	00 06	Starting address: 0006, first high byte 00, second low byte 06
Number of switches	Two bytes	00 03	Remote control of 3 switches, first high byte 00 and second low byte 03
CRC check code	Two bytes	F5 52	CRC of 08 0F 00 06 00 03, the check code

6.4.6. Function code 10: Write multiple registers

Write the data-20 to a register with address 5, write-3000 to a register with address 6, and write-300 to a register with address 7:

Host send data (HEX): 08 10 00 05 00 03 06 FF EC F4 48 FE D4 9C 9B

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	10	10: Write multiple registers
start address	Two bytes	00 05	Starting address: 0005, first high byte 00, second low byte 05
Number of registers	Two bytes	00 03	Write written in 3 registers
Number of data bytes	1 Bytes	06	Bytes of data: 6 bytes, including 3 registers
The written data	Six bytes	FF EC F4 48 FE D4	Since the write command starts from the register of address 5, the data of the first register written to is the data of the register of address 5: FFEC:, data = 0 xFFEC, -20 F4 48:, Register with address 6 with data = 0 xF 4 48, namely-3000 FE D4 Data for a register with address 7 = 0 xFED 4, namely-300
CRC check code	Two bytes	07 3E	08 10 00 05 00 03 06 FF EC F4 48 FE D4 of CRC, check code

Data returned (HEX): 08 10 00 05 00 03 90 90

form	length	data (HEX)	description
device address	1 Bytes	08	device address
FC	1 Bytes	10	10: Write multiple registers
start address	Two bytes	00 05	Starting address: 0005, first high byte 00, second low byte 05
Number of registers	Two bytes	00 03	Write written in 3 registers
CRC check code	Two bytes	90 90	CRC of 08 10 00 05 00 03, check code

Please go to the official website to download the corresponding communication Settings file between PLC and SRX-RTU.www.latcos.cn

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