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1. Hardware physical picture



Figure 1. Physical diagram of the equipment

2. Power supply connection to RS485 (bottom left corner)

(1) Hardware description

- a) The VIN is the power supply positive electrode
- b) GND is the negative electrode
- c) A + for RS485DATA +
- d) B-for RS485DATA-



Figure 2. Interface of the power supply and RS485

(2) Correct power connection: the power indicator is on



Figure 3. Power supply indicator lamp

3. Ethernet Port Connection (top left)



Figure 4: The Ethernet port

- (1) Direct connection of equipment
 - a) Connect the device directly to the service side (for example, the computer)



Figure 5. Device Ethernet port 1



Figure 6 Computer Ethernet port 1

b) Correct connection: Device Ethernet port is lit



Figure 7 Ethernet port indicator lamp

(2) Router

- a) Before connecting the device Ethernet port to the router LAN port, it should be set to the same network section as the router (refer to item 5)
- b) The device Ethernet port is connected to the router LAN port



Figure 8 Device Ethernet port



Figure. 9 Access Router LAN Port

c) Correct connection: Device Ethernet port is lit



Figure 10 Device Ethernet port lit

- d) Connect with the router completed
- (3) switchboard
 - a) Device Ethernet port connects to the switch first (find any port access on the switch port)



Figure 11 Equipment Ethernet port



Figure 12. Switch connection to the equipment

b) The switch connects to the service side (for example, the computer)



Figure 13 Switch and service end



Figure 14 Switch and service end connection

c) The device is connected

4. Device address setting (middle left)

- a) No dial switch to see item 9
- b) Convert to decimal device address by binary according to the location of the dial switch (refer to item 9)



Figure 15 Equipment code dialing switch

c) Near the value is 0 and the number 1 is the binary lowest bit

5. Configure the modbus network port

- (1) Connect to the web configuration page
 - a) Click Start or press the win key on the keyboard to open the control panel

8	w
۵	Documents
8	Pictures
ø	Settings nter
Q	Power
	💽 New tab - Profile 1 🔅 Settings

Figure 16 Start menu

b) Open the network configuration



Figure 17, the control panel

c) Scroll to the bottom and click on the Change Adapter



Figure 18 Network and Internet

d) Double-click on the Ethernet icon (select WLAN if it is a router connection)



Figure 19 Network connection

e) Click on the property

Ethernet Status			×
General			
Connection IPv4 Connectivi	tv:		Internet
IPv6 Connectivi	tv:	No netv	vork access
Media State:			Enabled
Duration:			00:13:50
Speed:			1.0 Gbps
Details			
Activity			
	Sent —	-	Received
Bytes:	118,811	Ĩ	238,418
Properties	Disable	Diagnose	
			Close

Figure 20. Ethernet status

f) double click IPv4



Figure 21 Ethernet properties

g) Modify to be the same network segment as the tcp

Internet Protocol Version 4 (TCP/IPv4) Properties								
General								
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. Obtain an IP address automatically								
IP address:	192.168.0.2							
Subnet mask:	255.255.255.0							
Default gateway:	192.168.0.1							
Obtain DNS server address autor	natically							
Use the following DNS server add	resses:							
Preferred DNS server:	· · · ·							
Alternate DNS server:	· · ·							
Validate settings upon exit Advanced								
OK Cancel								

Figure 22 TCP / IPV4

h) The Computer Ethernet port is fully configured

6. Configure the tcp network port parameters

(1) Enter the ip address of the tcp (the ip default i p is 192.168.0.10) in the web browser



Figure 23 Go to the tcp configuration

(2) Go to the tcp configuration page with the default password: admin



Figure 24 tcp background password input

(3) Click on the left-hand side of the LAN

		Tips
Current	LAN	• Mode
	Mode: Modbus Slave 👻	UDP: UDP.
LAN	IP Type: Static IP 🗸	TCPC: TCP Client.
LAN	Local IP: 192 168 0 10	TCPS: TCP Server.
	Submask: 255 255 0	ModbusSlave: The network is modbus slave.
Serial Port	Gateway: 192 168 0 1	ModbusMaster: The network is
	MAC: 84 C2 E4 38 08 E8	modbus host.
	Local Port: 5000 (1~65535)	 MAC The module can modify the MAC
Expand	Remote IP: 192 168 0 1	address or get default MAC addr by restoring factory settings.
	Remote Port: 60000 (1~65535)	Local Port
	Reconnect time: 3 (0~65535second)	Set 0 for random port.
Advanced	Save Cancel	
System		

Figure 25 The TCP background enters the LAN interface

(4) Change Mode: to Modbus Slave, ip Type: to Static IP, Local IP is modified as required, and Gateway to coincide with the Ethernet port configuration

GT1001 Ethernet to TTL	中文 Restart Exit Version:v0.0
Current LAN Serial Port Expand Advanced System	Version: VADS Tips UPP: UDPS UPC: UDPS TCPC: TCP Glenet. TCPS: TCP Glenet. TCPS: TCP Genet. TCPS: TCP Genet. ModBus About: * MAC * M

Figure 26. TCP background LAN port configuration

(5) Configure serial port information with a default Baud rate of 9600

中文 Restart Exit Version: v0.0
Tips • Flow Control
Used to control RS-485 transmission direction. NFC: OFF. FC: ON.

- 7. Modbus Poll Control
- (1) Configure the modbus poll
 - a) Open the Modbus Poll



Figure 28. The Modbus Poll icon

b) Click on Setup and select the first option Read / Weite Definition...

Β,	Modb	ous Poll -	[Mbpoll1]						_			×	(
2	File	Edit Co	onnection Set	up F	unctions	Display	View	Win	dow	Help	-	Ð	×
<u> </u> [ן 🗃 נ	8 😂	× 🗂 🖳	ä	л 05 (D6 15 1	6 17	22 2	3 Т	C	8	\?	
Tx	Tx = 0: Err = 0: ID = 1: F = 03: SR = 1000ms												
No	conne	ection		_									_
		Alias	0000	00									
0				0									
1				0									
2				0									
3				0									
4				0									
5				0									
6				0									
7				0									
8				0									
9				0									
For	For Help, press F1. [192.168.0.10]: 5000												

Figure 29 modbus settings

회 Modbus Poll - [Mbpoll1]		– 🗆 🗙
👺 File Edit Connection	Setup Functions Display View	Window Help _ 🗗 🛪
🗅 📽 🖬 🎒 🗙 🛅	Read/Write Definition	F8 🛛 🛛 🤗 📢
Tx = 4: Err = 4: ID = 1: F =	Read/Write Once	F6
No connection	Read/Write Disabled	Shift+F6
Alias	Excel Log	Alt+X
0	Excel Logging Off	Alt+Q
1	Log	Alt+L
2	Logging Off	Alt+O
3	Reset Counters	F12
4	Reset All Counters	Shift+F12
5		
7	Use as Default	
8	- O	
9	0	
Read/write definition	[192.168.0.10]: 5000	
		Inis PC

Figure 30 modbus settings

c) Change S I a v e and the I D to the modbus device address (<u>unknown: see item</u> <u>9</u>)

Read/Write	Definition			×
Slave ID:	1			OK
Function:	03 Read Holding F	Registers (4x) 🖂		Cancel
Address:	0 Proto	col address. E.g.	4001	1 -> 10
Quantity:	10			
Scan Rate:	1000 [ms]			Apply
Disable Read/ Disabl	Write Disabled le on error		Rea	d/Write Once
View Rows	○ 20 ○ 50 () 100 () Fit to) Quar	ntity
Hide A	Alias Columns ss in Cell	PLC Addr	esses miel M	(Base 1) Iode

Figure 31 Device ID Settings

d) Modify the Function: Up to 03 Read Holdding Registers (4x)

Read/Write Definition							
Slave ID: 1	ОК						
Function: 03 Read Holding Registers (4x) 🗸	Cancel						
Address: 0 Protocol address. E.g. 4001	11 -> 10						
Quantity: 10							
Scan Rate: 1000 [ms]	Apply						
Disable Read/Write Disabled Disable on error Bea	ad/Write Once						
View Rows ● 10 ○ 20 ○ 50 ○ 100 ○ Fit to Qua	ntity						
Hide Alias Columns PLC Addresses	s (Base 1) Mode						

Figure 32 sets up the read-hold register

e) The Addres was modified to 0, and the Quantity corresponds to the number of relays

Read/Write	Definition				×		
Slave ID:	1				ОК		
Function:	Function: 03 Read Holding Registers (4x) 🗸						
Address:	0	Protoco	l address. E.g.	4001	1 -> 10		
Quantity:	10						
Scan Rate:	Scan Rate: 1000 [ms]						
Disable Read/ Disabl	Disable Disable Disable Disable on error						
View Rows ● 10 ◯ 20 ◯ 50 ◯ 100 ◯ Fit to Quantity							
Hide A	Hide Alias Columns PLC Address						

- Figure 33 sets the register address and number of registers
- f) click ok

Read/Write D	efinition		>
Slave ID:	1		OK
Function:	03 Read Holding	Registers (4x) 🖂	Cancel
Address:	0 Proto	ocol address. E.g. 4	0011 -> 10
Quantity:	10		
Scan Rate:	1000 [ms]		Apply
Disable			
Read∕^	Write <u>D</u> isabled		
Disable	e on error	F	<u>Read/Write Once</u>
View			
Rows			
10	○20 ○50	🔾 100 🔘 Fit to G	luantity
🗌 Hide A	lias Columns	PLC Addres	ses (Base 1)
□ ∆ddres	s in Cell	Enron/Dani	el Mode

Figure 34, to confirm the operation

g) The Modbus initialization configuration is completed

(2) Connect to the TCP communication

a) Click Connection and then Connect

월 Modbus Poll	- [Mbpoll1]							_	1		\times
🛒 File Edit 🚺	Connection Setup	Functions	D	isplay	View	v w	/indo	w	Help	-	e ×
🛛 🗅 🖨 🖶 省	Connect	F3	06	15 1	6 17	22	23	Т	[]	8	N?
Tx = 4: Err = 4	Disconnect	F4	IS								
No connection	Auto Connect	>	∟								
A	Quick Connect	F5									
0	0										
1	0										
2	0										
3	0										
4	0										
5	0										
6	0										
7	0										
8	0										
9	0										
1											
P		[192.168.0.1	10]: 5	6000							

Figure 35 Setup the connection to the TCP cilent

b) Change the Connection to a Modbus TCP / IP

Lonnection		OK
Modbus TCP/IP	~	
Corial Port Modbus TCP/IP		Cancel
Modbus UDP/IP Modbus RTU/ASCII C Modbus RTU/ASCII C 115200 Baud)ver TCP/IP)ver UDP/IP	Mode
8 Data bits 🗸		Response Timeout 1000 [ms]
1 Stop Bit V	Advanced	Delay Between Polls 20 [ms]
Remote Modbus Serve	r	
IP Address or Node Na	ame	
192.168.0.10		~
Server Port	Connect Timeout	IPv4
E000	2000 [mol	0

Figure 36 connection mode Select Modbus TCP/IP

c) Fill in the IP of the TCP device (the default ip is 192.168.0.10, and the Server Port is 5000)

		OK
Modbus TCP/IP	~	Cancel
Serial Settings]
Silicon Labs CP210x US	SB to UART Bridge (COM $ \sim $	Mode
115200 Baud $ \smallsetminus$		● RTU ○ ASCII
8 Data bits 🛛 🗸		Response Timeout
From Dealer and		
E ven Parity 🗸		Delay Between Polls
1 Stop Bit \sim	Advanced	20 [ms]
Remote Modbus Server		
IP Address or Node Nam	ne	
192.168.0.10		~
Server Port	Connect Timeout	IPv4
5000	2000 [mal	● IF ¥4

Figure 37 Setup the device IP address and the remote portr

d) Click OK

Connection		OK
Modbus TCP/IP	~	Coursel
Serial Settings		Lancel
Silicon Labs CP210x US	SB to UART Bridge (COM \sim	Mode
115200 Baud 🖂		RTU OASCII
		Response Timeout
8 Data bits 🔍		1000 [ms]
Even Parity \sim		- Delau Between Polls
1 Stop Bit \sim	Advanced	20 [ms]
Remote Modbus Server		
IP Address or Node Nar	ne	
192.168.0.10		~
Server Port	Connect Timeout	● IPv4
5000	3000 [ms]	

Figure 38, confirm the connection

e) Successful communication (with no red font)



Figure 39. Confirm the equipment connection status

(3) Issue instructions

a) Click any box

ය 뭷	웹 Modbus Poll - [Mbpoll1]					
File Edit Connection Setup Functions Display View Window Help						
Ľ) 🖻 🖬 🚭 🗙	1 🛛 🗒 🚊 🗆	05 06 15 16	17 22 23 TC 🖉	l % №	
Τ×	= 28: Err = 0: ID	= 0: F = 03: SR =	1000ms			
	ماني	00000	ماني	00010		
H	Allas	0,0000	Allas	0,0000		
H		0×0000		0×0000		
- 2		0x0000		0,0000		
2		0x0000				
4		0x0000				
5		0x0000				
6		0x0000				
7		0x0000				
8		0x0000				
9		0x0000				
Π						
Γ						

Figure 40 Modifies the display numerical format

b) CTRL+A check all

D	🖻 🖬 🎒 🗙	□ <u>県</u> ඛ л	05 06 15 16	17 22 23 TC 🛛	⊒ १ ∖
× =	66: Err = 0: ID	= 0: F = 03: SR =	1000ms		
	Alias	00000	Alias	00010	
0		0x0000		0x0000	
1		0x0000		0x0000	
2		0x0000			
3		0x0000			
4		0x0000			
5		0x0000			
6		0x0000			
7		0x0000			
8		0x0000			
9		0x0000			

Figure 41 Modification of the display numberical format

c) Click on the toolbar Display and select Hex



Figure 42 modification shows the numerical format of HEX

d) Double-click any register to pop up the write operation window



Figure 43 Operating the modbus register

e) Change the Value (HEX) to 0100 to open the first relay

¥,	Modbus Poll - [Mbpoll1]				_			Х
Dec.	File Edit Co	nnection Setup	Functions	Display	View	Window	Help	- 6	×
: C) 🖻 🖬 🎒	× 🗂 🗏 🁜	O5 0	6 15 1	6 17 2	2 23 T	C 🗵	🤋 📢	
Τ×	= 630: Err = 0	: ID = 1: F = 03:	SR = 1000	ms					
L									
	Alias	00000							
0		0x0100							
1		0x0000							
2		0x0000							
3		0x0000							
4		0×0000							
5		0x0000							
6		0×0000							
7		0x0000							
8		0x0000							
9		0x0000							
For	Help, press F1.		[192.168.0.10	: 5000					

Figure 44 Issue 0X0100 to the 0th bit register

- f) The 0~7 of the Address corresponds to the first to eighth relay of the 8-way relay
- g) The TCP configuration and debugging are completed

8. Query the TCP device IP address

(1) The Windows instruction lookup

a) Connect the device separately to the computer network port, and turn the win
 + R key out of the operation window

🖅 Run	×
٨	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	cmd ~
	OK Cancel Browse

Figure 45 enters the windows command window

b) Enter cmd, click OK or go back



Figure 46 Windows command window

c) Enter "arp -a" and go back



Figure 47 Query the IP records

(2) According to the network segment, you can find the corresponding device ip Router background search (requirement: the same network segment)

a) Find it in the connection device

	有线	@ 1000.100	10.0.0.100	84:C2:E4:38:08:E8
--	----	------------	------------	-------------------

Figure 48 The router background

b) TCP IP unset

9. Device ID lookup

(1) Look up through Modbus Poll

a) Open Modbus Poll



Figure 49. The Modbus Poll icon

b) Click on Setup in the toolbar to select the first item



Figure 50 modbus settings

c) Change Slave IP: 255; Function: Select 03; Address: 253; Quantity: 1;

Read/Write Defir	nition		×	
Slave ID: 255			OK	
Function: 03 Re	ad Holding Registers	(4x) 🗸	Cancel	
Address: 253	Protocol addre	ss. E.g. 401	11 -> 10	
Quantity: 1				
Scan Rate: 1000	[ms]		Apply	
Disable Read/Write Disabled Disable on error			ad/Write Once	
View Rows 10 0 20 50 0 100 Fit to Quantity				
Hide Alias Co	lumns 🗌 PL ell 🗌 Er	.C Addresse nron/Daniel	es (Base 1) Mode	

Figure 51 modbus register setting

d) Select Connection in the toolbar and click on item

월 Modbus Po	l - [Mbpoll1]	
👺 File Edit	Connection Setup	Functions Display
D 🖻 🖬 🖨	Connect	F3 6 15 16 17
Tx = 200: Err =	Disconnect	F4 OOms
No connection	Auto Connect	>
	Quick Connect	F5
0		
1		
2		
3	0x000	0
4		
5		
6		
7		
8		
9		
	1	

Figure 52 Setup the Connect TCP client

e) Modify Connection: Modbus TCP/IP; IP Address or Node Name: (equipment ip); Server Port:5000

Connection Setup		×
Connection Modbus TCP/IP	~	OK
Serial Settings		Cancer
COM3		Mode
115200 Baud ${\scriptstyle \sim}$		● RTU ○ ASCII
8 Data bits \sim		Response Timeout 1000 [ms]
Even Parity \sim		Dolau Potucon Pollo
1 Stop Bit 👘 🗸	Advanced	20 [ms]
Remote Moabus Server		
IP Address or Node Name		
10.0.0.100		~
Server Port	Connect Timeout	● IPv4
5000	3000 [ms]	O IPv6

Figure 53 Set up the TCP connection mode and the device IP address

f) The value in the red box is the device address

📲 Modbus Poll - [Mbpoll1]



Figure 54 Obtaining the equipment addres

g) Device address query is completed

10. Multi-device connection

(1) Hardware connection

- a) Consistent with the single-device connection mode
- b) Direct device connection: When there is only one Ethernet port on the service side, it can only use multi-device through a router or switc
- c) Unified LAN port for router and equipment interface
- d) The device connects with the switch

(2) Modbus TCP communication

- a) The multiple devices need to open multiple Modbus Poll s when using Modbus TCP communication
- b) The fourth paragraph at the end of the device IP address needs to be modified to be different(Reference 5)

Internet Protocol Version 4 (TCP/IPv4) Properties				
General				
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.				
Obtain an IP address automatically				
• Use the following IP address:				
IP address:	192.168.0.10			
Subnet mask:	255.255.255.0			
Default gateway:	192 . 168 . 0 . 1			
Obtain DNS server address automatically				
• Use the following DNS server addresses:				
Preferred DNS server:				
Alternate DNS server:				
Validate settings upon exit	Advanced			
	OK Cancel			

Figure 55 More than Five Equipment IP Settings

c) Device address also needs to be different (<u>Reference 7-c</u>)

Read/Write Definition X		
Slave ID: 1 OK		
Function: 03 Read Holding Registers (4x) $$		
Address: 0 Protocol address. E.g. 40011 -> 10		
Quantity: 10		
Scan Rate: 1000 [ms] Apply		
Disable Read/Write Disabled Disable on error Read/Write Once		
View Rows ● 10 ◯ 20 ◯ 50 ◯ 100 ◯ Fit to Quantity		
Hide Alias Columns PLC Addresses (Base 1) Address in Cell Enron/Daniel Mode		

Figure 56 + Equipment "Device IP" settings

(3) No dial switch

- a) RS485 serial port modification
- (4) There is a dial switch
 - a) Modified by dialing the dial switch (<u>Reference 4-c</u>)
- (5) Debug equipment
 - a) Reference (<u>7</u>)

11. Wireless mode

a) The service side can connect to the same network segment WIFI

12. The document reading is over

a) Thank you for watching!

