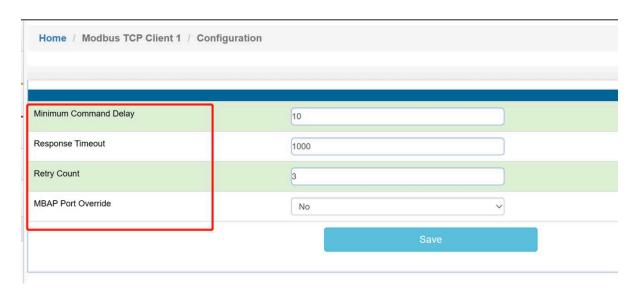# Modbus TCP/IP Client Configuration (Master)

Click on Modbus TCP/IP Client > Client1 > Configuration as shown in the image to view the default settings.
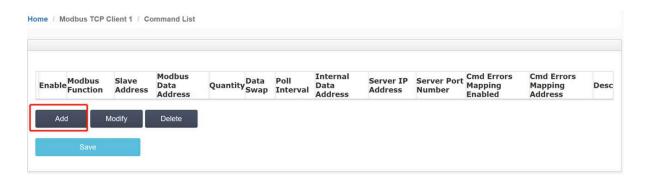

This configuration is ready for use by default.

- **Minimum Command Delay**: The polling time for each client to execute commands, measured in milliseconds (0-65535).

  (Note: A smaller delay allows for faster command sending, but it's not always better. Check the documentation of the slave device to ensure it can respond in a timely manner to the commands sent by the master.)

- **Response Timeout**: The response time of the connected device, also measured in milliseconds (0-65535).

- **Retry Count**: The number of retry attempts for connection (0-65535).

- **MBAP Port Override**: Port 502 override options (NO/YES).

Next, click on Modbus TCP/IP Client > Client1 > Commands.

Click "Add" to create a new command with the following settings:

Modbus TCP Client 1 - Add Command

Field	Value	说明
Enable	Yes	使能，禁止，内部寄存器有变化后写
Modbus Function	FC 3 - Read Holding Registers(4X)	Modbus TCP 功能码FC1,FC2,FC3,FC4,FC5,FC6,FC15,FC16
Slave Address	1	无效位，默认1
Modbus Data Address	0	从站读写数据Modbus起始位
Quantity	1	读或者写的数据的数量
Data Swap	No Change	数据高低位交换，字交换，字节交换，字和字节交换
Poll Interval	0	命令轮询时间
Internal Data Address	0	模块内部寄存器，存放数据的起始地址
Server IP Address	1.1.1.1	Modbus TCP从站IP地址
Server Port Number	502	Modbus TCP端口号
Cmd Errors Mapping Enabled	No	命令错误状态位反馈开启
Cmd Errors Mapping Address	0	命令错误状态位反馈地址，填写模块内部寄存器任意位置
Desc		命令描述

Close Save

Command Description: Use function codes to control reading and writing areas. The module's internal registers are in 16-bit INT format. When reading or writing BOOL values, be aware of the 16-to-1 relationship.

(Note: First, confirm the size of the internal register data area of the module, as it varies by model. The following command configuration examples are based on a data area of 10,000 words. When configuring the module, strictly refer to the range of the internal data area.)

Modbus TCP Client 1 - Add Command

Field	Value
Enable	Yes
Modbus Function	FC 3 - Read Holding Registers(4X)
Slave Address	1
Modbus Data Address	0
Quantity	100
Data Swap	No Change
Poll Interval	0
Internal Data Address	2000
Server IP Address	192.168.0.177
Server Port Number	502
Cmd Errors Mapping Enabled	Yes
Cmd Errors Mapping Address	2501
Desc	

The above command has the following meaning: The module uses function code FC3, with the slave data starting address at 0, equivalent to 40001. The read quantity is 100. The module's internal register starting address is 2000. This means it reads from the slave at IP address 192.168.0.177, retrieving 100 words from the slave data address range 40001-40100 and placing them into the module's internal registers 2000-2099. If the command does not return correctly, an error will be reported in internal register 2051.

If the function code is FC4 (read-only), the slave data starting address is 0, equivalent to 30001. The read quantity is still 100, with the internal register starting address at 2000. This indicates that it reads from the slave at IP address 192.168.0.177, retrieving data from the slave address range 30001-30100 and storing it in internal registers 2000-2099. If the command fails to return correctly, an error will again appear in internal register 2051.

Modbus TCP Client 1 - Add Command

Enable	Yes
Modbus Function	FC 1 - Read Coil (0X)
Slave Address	1
Modbus Data Address	0
Quantity	16
Data Swap	No Change
Poll Interval	0
Internal Data Address	32000
Server IP Address	192.168.0.177
Server Port Number	502
Cmd Errors Mapping Enabled	Yes
Cmd Errors Mapping Address	2501
Desc	

The above command has the following meaning: When the module uses function code FC1, the slave data starting address is 0, equivalent to 00001. The read quantity is 16 (reading 16 bits is equivalent to reading one word). The module's internal register starting address is 32000 (this is a bit address; reading 16 bits equals one word, so the actual starting address for internal registers is 32000/16 = 2000). This indicates that it reads from the slave at IP address 192.168.0.177, retrieving data from the slave address range 00001-00160 and placing it in the module's internal register starting at address 2000 (since reading 16 bits of data occupies only one internal register address). If the command does not return correctly, an error will be reported in internal register 2051.

If function code FC2 (read-only) is used, the slave data starting address is still 0, with a read quantity of 16. The internal register address remains at 32000, which again indicates reading from the slave at IP address 192.168.0.177, retrieving data from the slave address range 00001-00160 and storing it in internal register 2000. If the command fails to return correctly, an error will appear in internal register 2051.

Modbus TCP Client 1 - Add Command

Enable	Conditional
Modbus Function	FC 16 - Preset (Write) Multiple Register
Slave Address	1
Modbus Data Address	50
Quantity	20
Data Swap	No Change
Poll Interval	0
Internal Data Address	2000
Server IP Address	192.168.0.177
Server Port Number	502
Cmd Errors Mapping Enabled	Yes
Cmd Errors Mapping Address	2501
Desc	

The above command is described as follows: When **Conditional** is enabled, the module uses function codes FC6 or FC16, with a write quantity of 20. The internal register starting address is 2000, which means that whenever any register within the range tof 2000-2049 changes, it triggers a write command. The data is sent from the module to the slave at IP address 192.168.0.177, with the slave receiving data in the address range of 40051-40071. If the command does not execute correctly, an error will be reported in internal register 2051.

Modbus TCP Client 1 - Add Command

Enable	Yes
Modbus Function	FC 16 - Preset (Write) Multiple Register
Slave Address	1
Modbus Data Address	50
Quantity	20
Data Swap	No Change
Poll Interval	0
Internal Data Address	2000
Server IP Address	192.168.0.177
Server Port Number	502
Cmd Errors Mapping Enabled	Yes
Cmd Errors Mapping Address	2051
Desc	

The above command is described as follows: When the module uses function codes FC6 or FC16, the write quantity is 20, and the internal register starting address is 2000. This means that the data from internal registers in the range of 2000-2049 will be continuously written to the slave at IP address 192.168.0.177, with the slave receiving data in the address range of 40051-40071. If the command does not execute correctly, an error will be reported in internal register 2051.

Modbus TCP Client 1 - Add Command

Enable	命令使能	Yes
Modbus Function	功能码	FC 15 - Force (Write) Multiple Coils (0X)
Slave Address	默认1	1
Modbus Data Address	从站数据起始地址	0
Quantity	数量	160
Data Swap	数据高低位交换	No Change
Poll Interval	轮训时间	0
Internal Data Address	内部寄存器地址	16000
Server IP Address	从站IP地址	192.168.2.177
Server Port Number	从站端口号	502
Desc		

The above command is described as follows: When using function code FC15, the slave data starting address is 0. The module writes a quantity of 160 BOOLs (which is a multiple of 16, as 160 bits equals 10 words of 16 bits each). It references the internal register starting address of 16000 (also a multiple of 16, with the actual starting address being 1000), indicating that the 160 bits of data (10 integer values) from internal word registers 1000-1009 will be written to the slave address range 00001-00160.