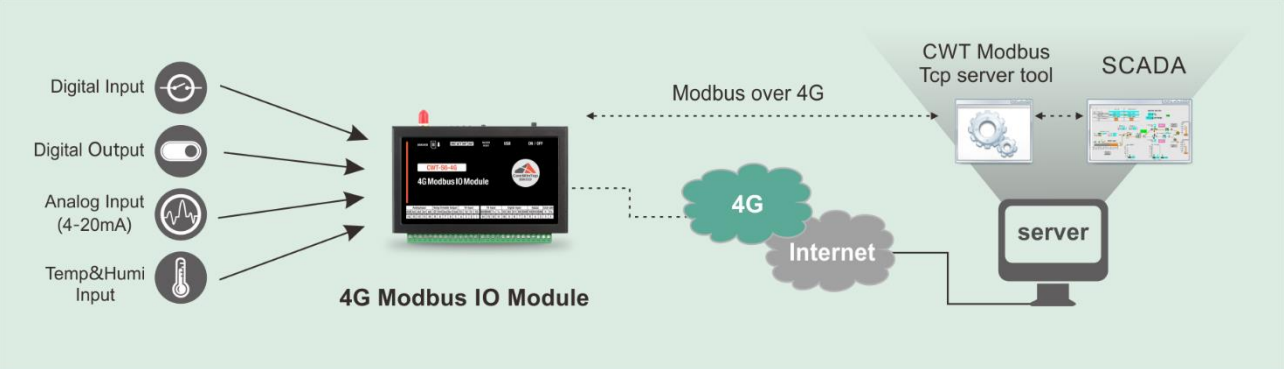
How to work with SCADA by Modbus

How does Scada system read and write the 4G module?

Usually, SCADA cannot directly send Modbus message to 4G module, because 4G network does not provide static public IP address for simcard (except VPN), For dealing with this issue, CWT provide a **Modbus TCP sever tool** to work with Scada in server， it forward SCADA Modbus TCP message to 4G module, and forward responds of 4G module to SCADA, So that realizes the connectivity of SCADA and 4G module.



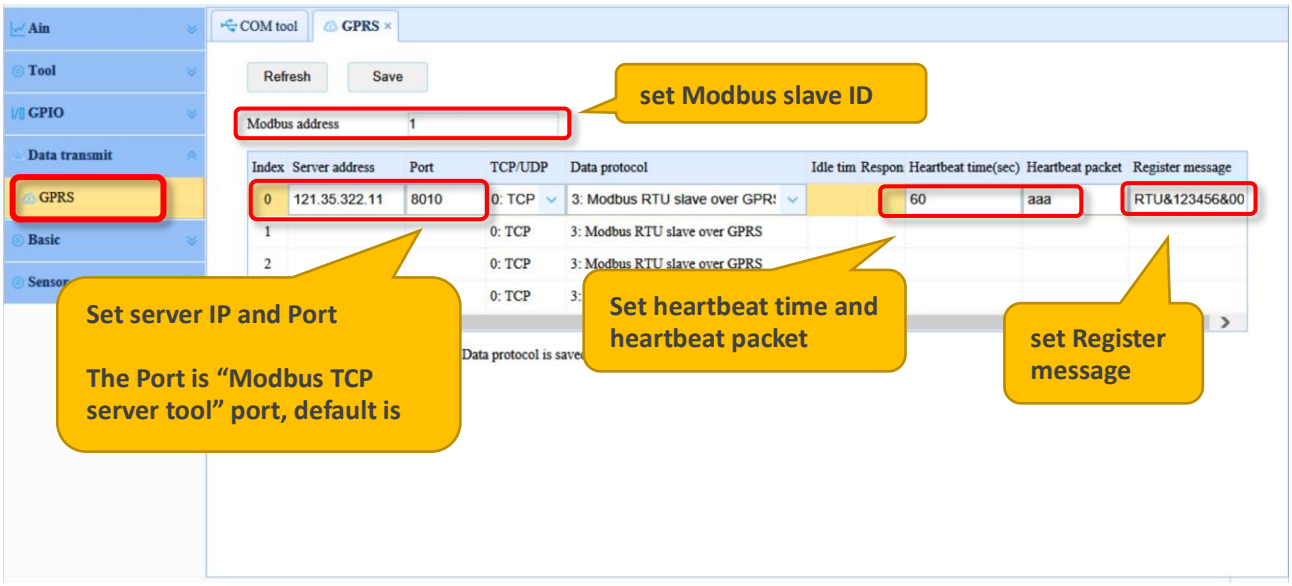
Communication process:

1. CWT 4g module build connection with Modbus TCP server according to server IP address (in this case, static public IP address or domain is necessary for server)
2. Scada system send Modbus TCP request command to Modbus TCP server tool
3. Modbus TCP server tool forward command to CWT 4g module
4. CWT 4g module responds

How to set 4G module and test

1. Set server parameters

In “GPRS” page



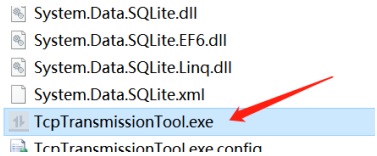
Note:

1) the ***register message*** must be setup, it's approval for connection between gateway and "Modbus TCP server too", the format is ***RTU&123456&[ID]***, the [ID] is 8 numbers.
   In this demo, we set register message is ***RTU&123456&00000001***
2) The heartbeat time and packet are necessary for holding connection between gateway and server. any characters can be heartbeat packet, and they don't affect Modbus communication.

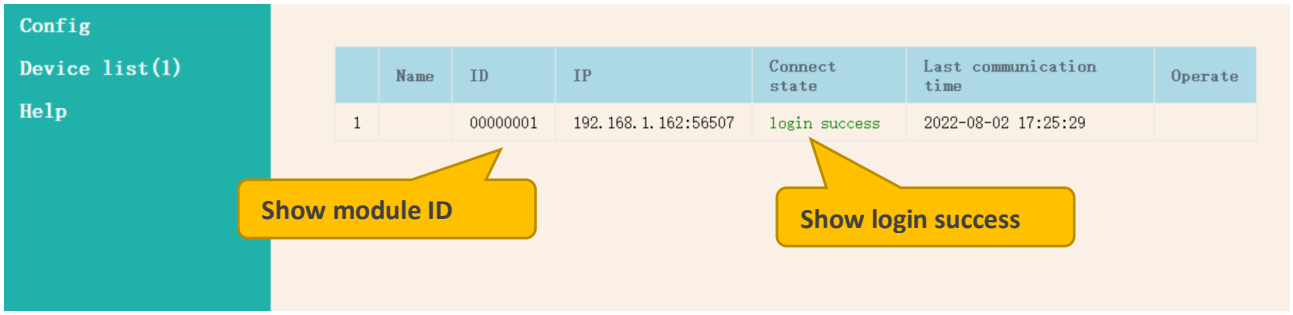
After setup, start the device to go to working mode.

2. Check connection in Modbus TCP server tool

Run the tool on server

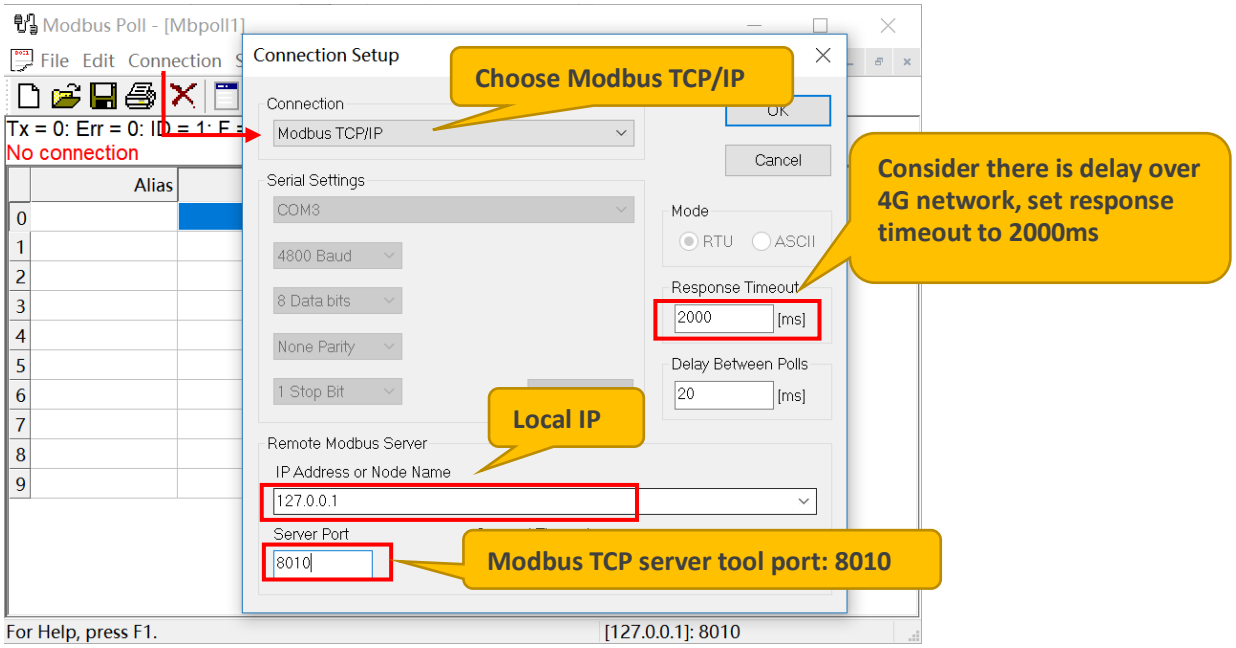


After 4G module connect up, Modbus TCP server tool show the connection.



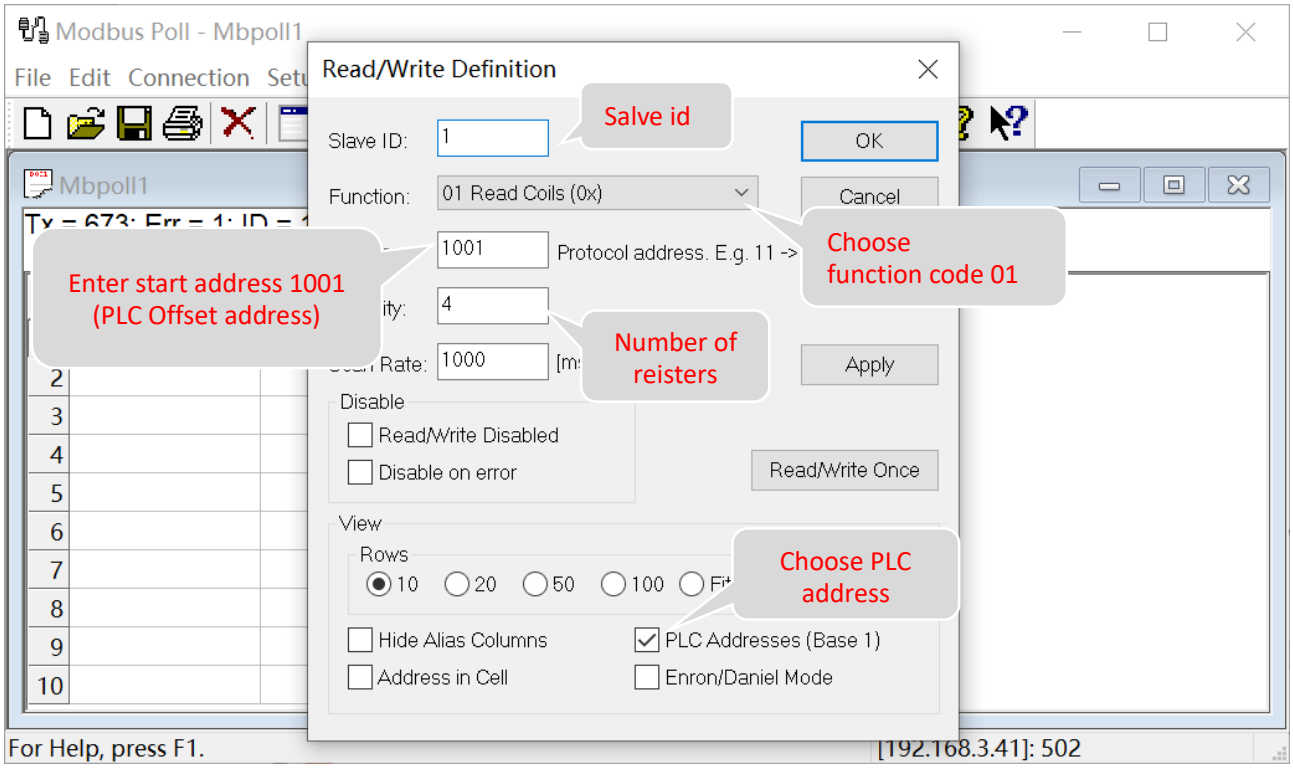
3. Test by Modbus poll

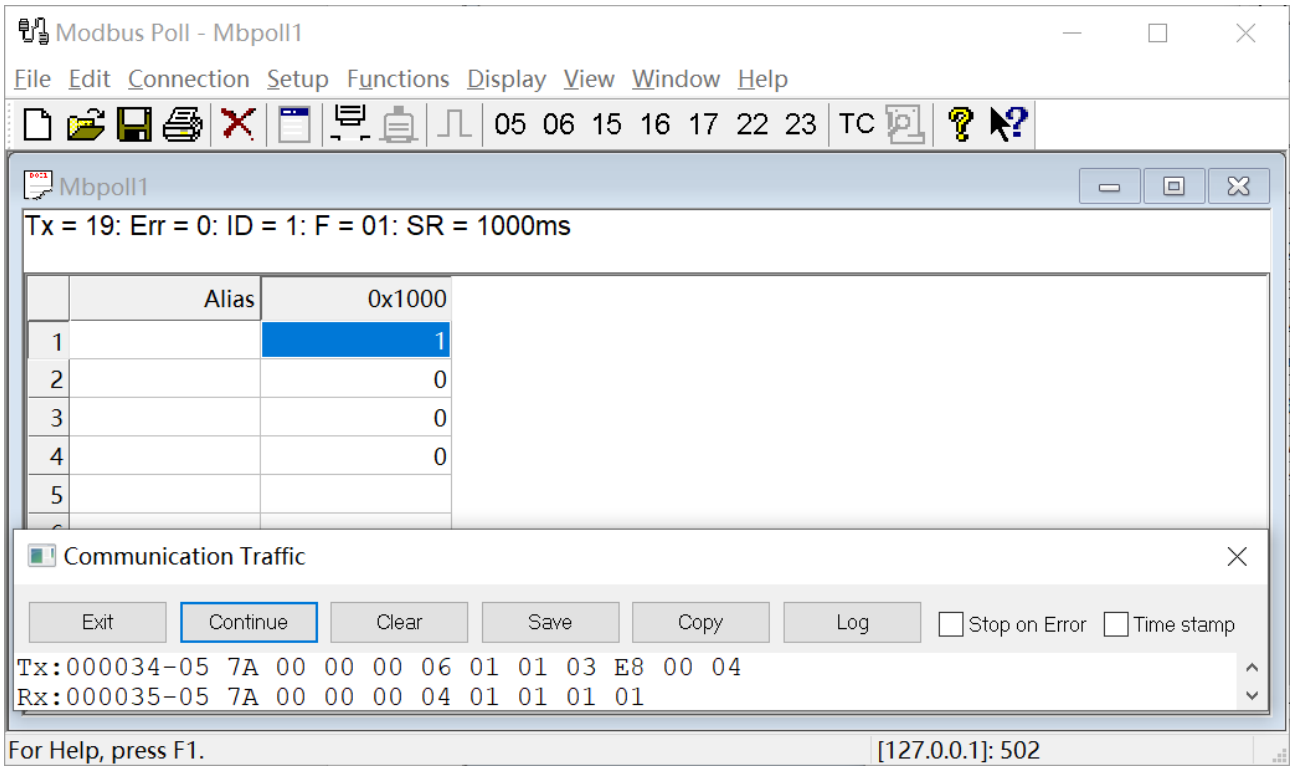
Run Modbus Poll in the same server



1) Read digital input

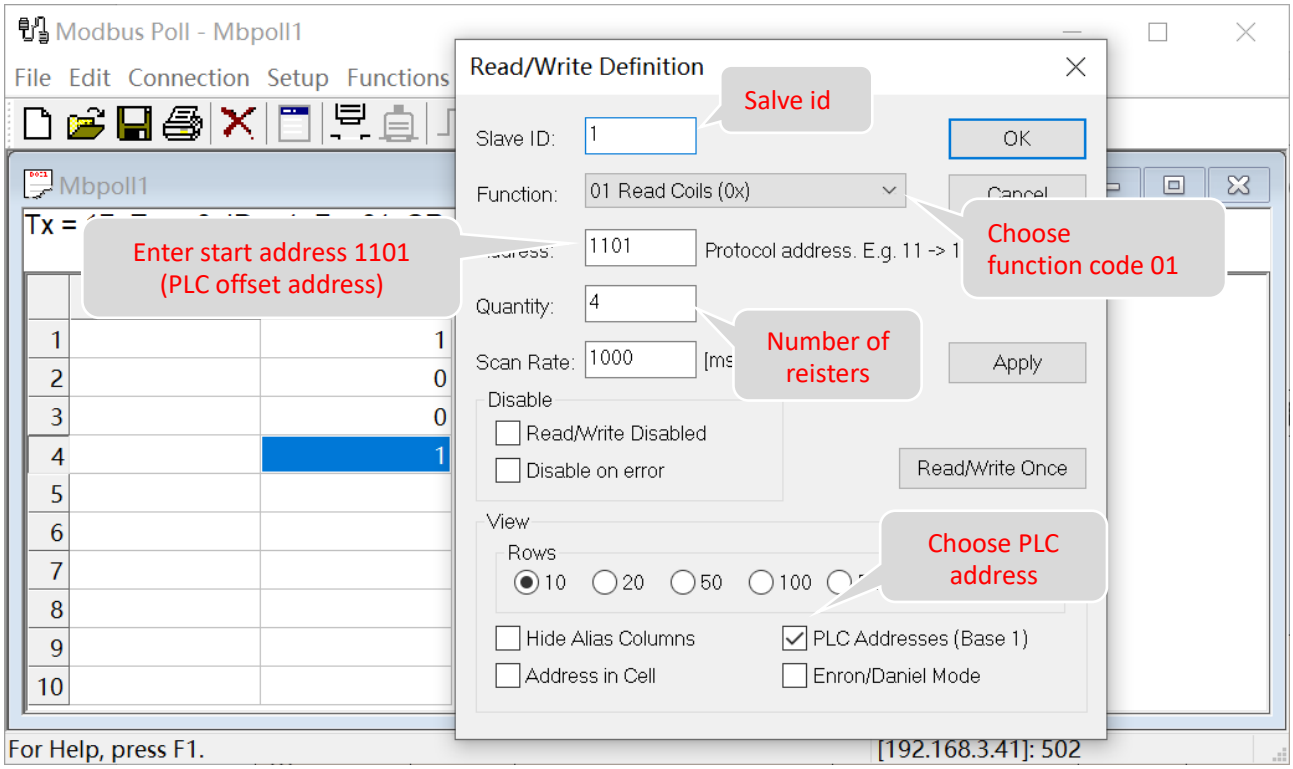
Fox example, read 4 channels of Di, slave id=1

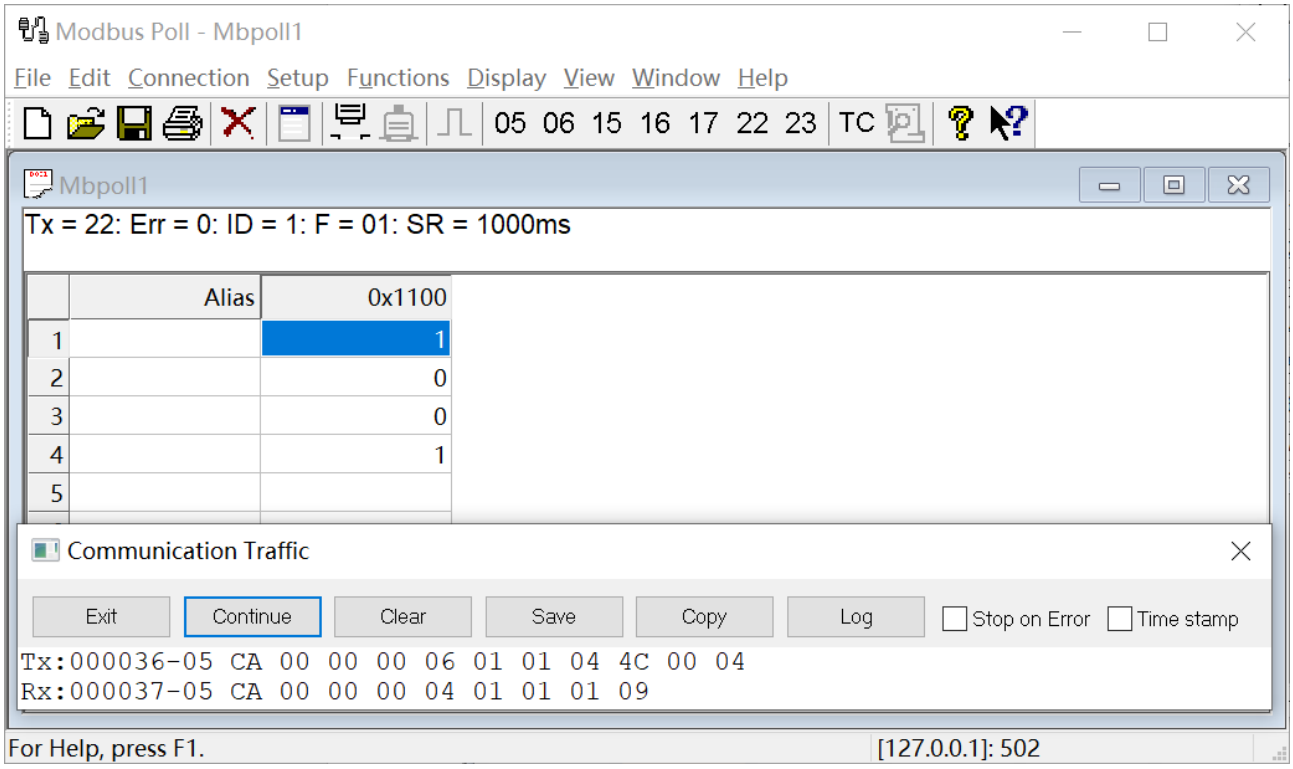




2) Read digital output

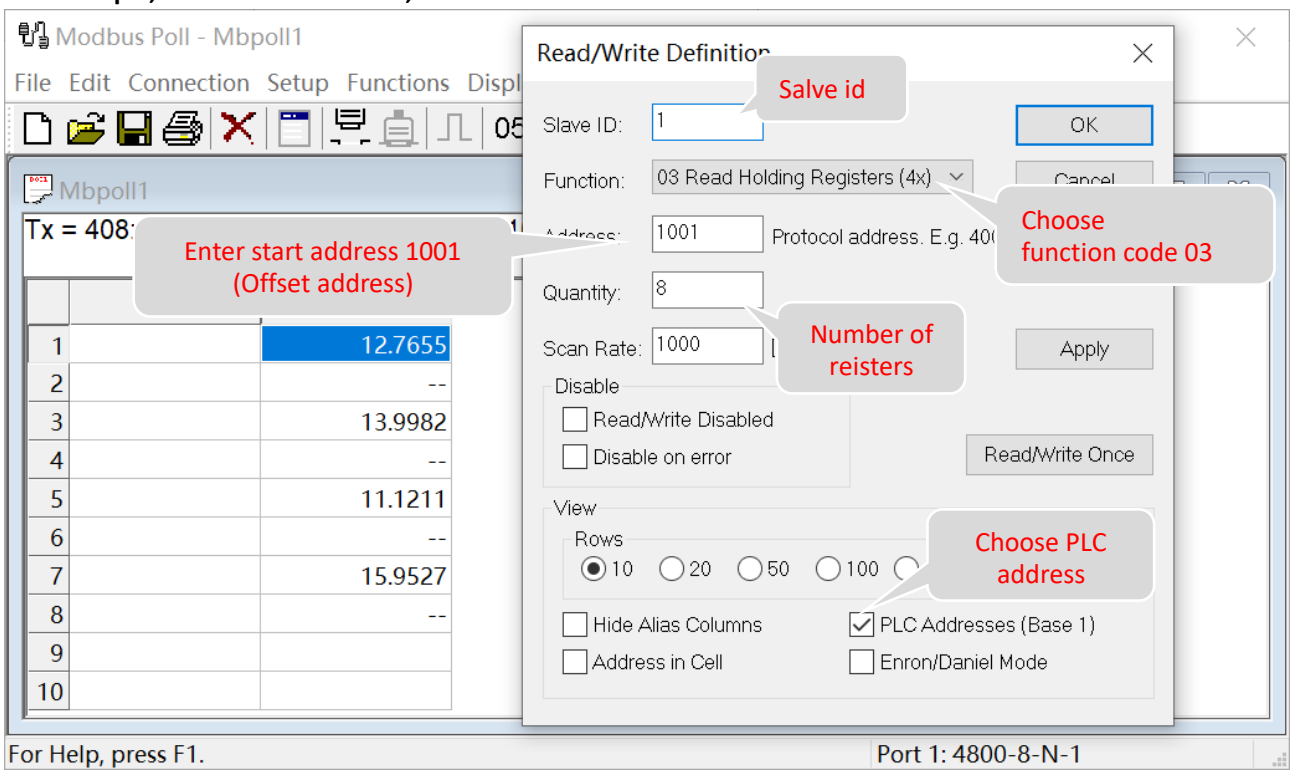
Fox example, read 4 channels of Do, slave id=1



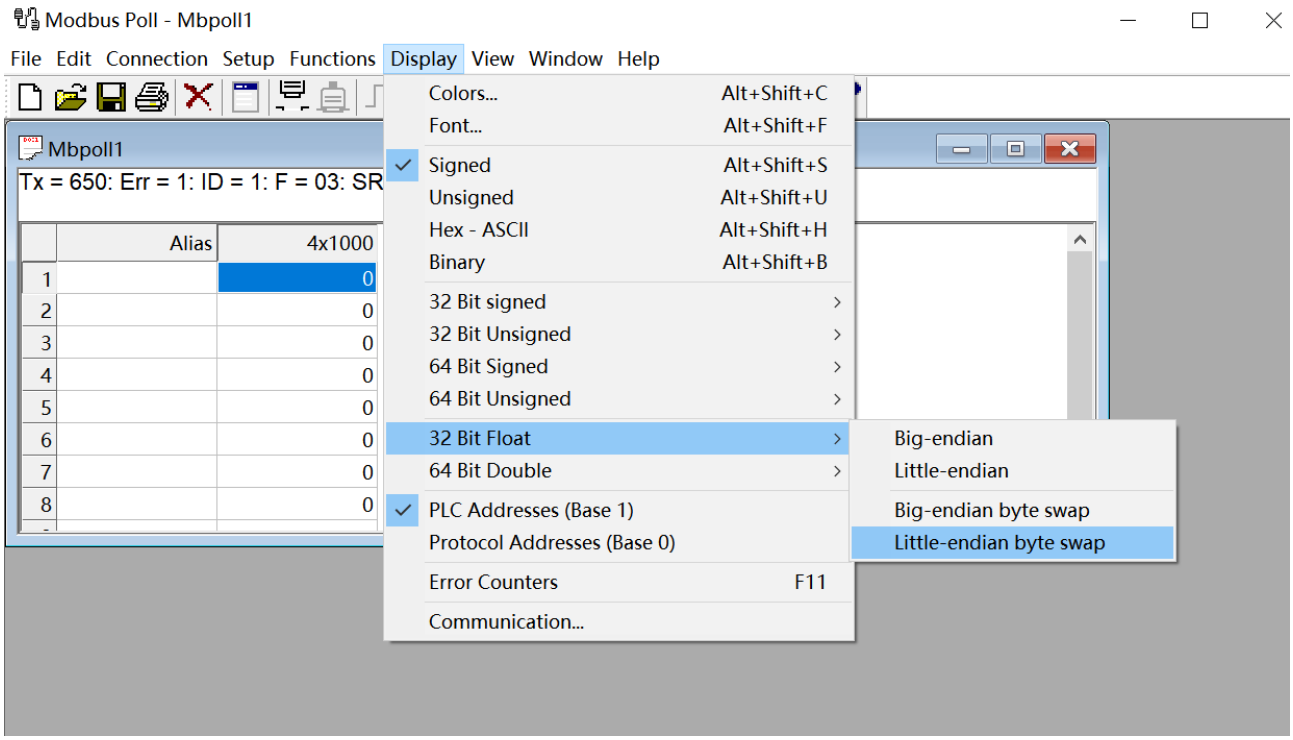


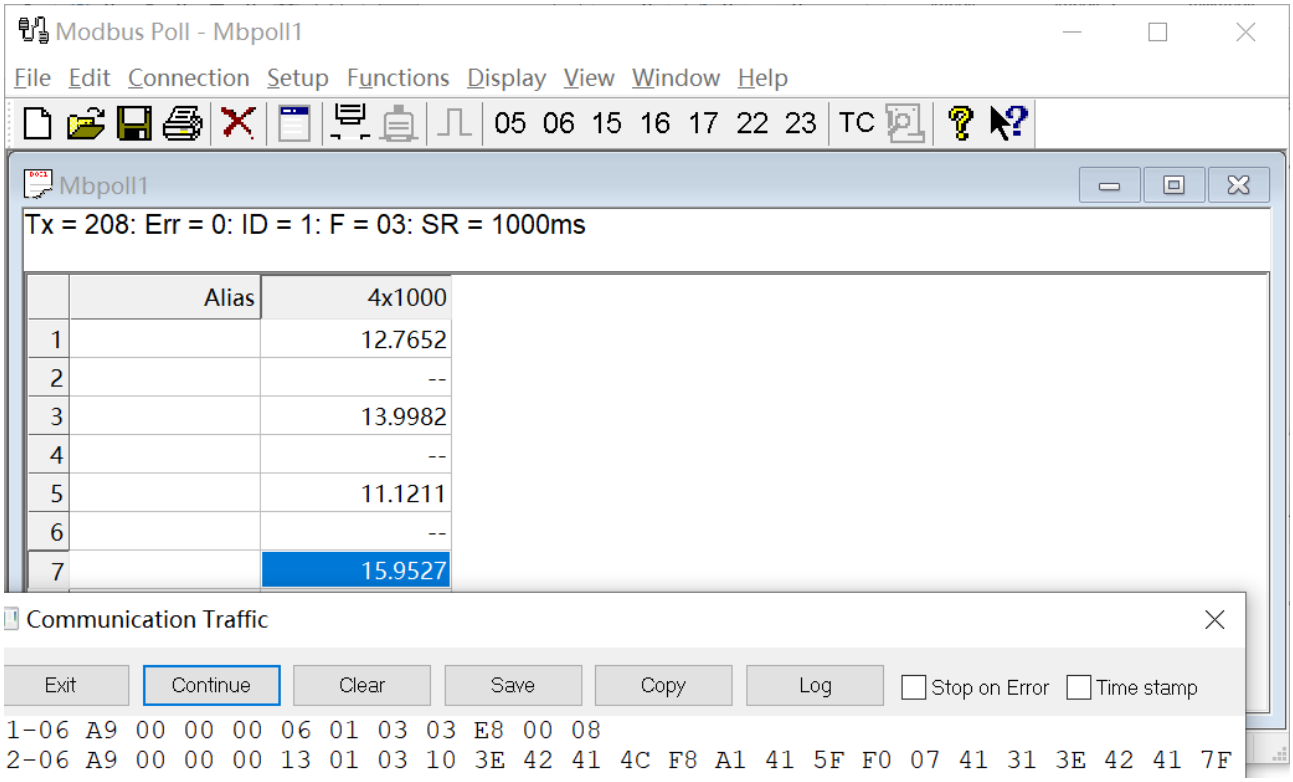
3) Read analog input

Fox example, read 4 channels of Ai, slave id=1



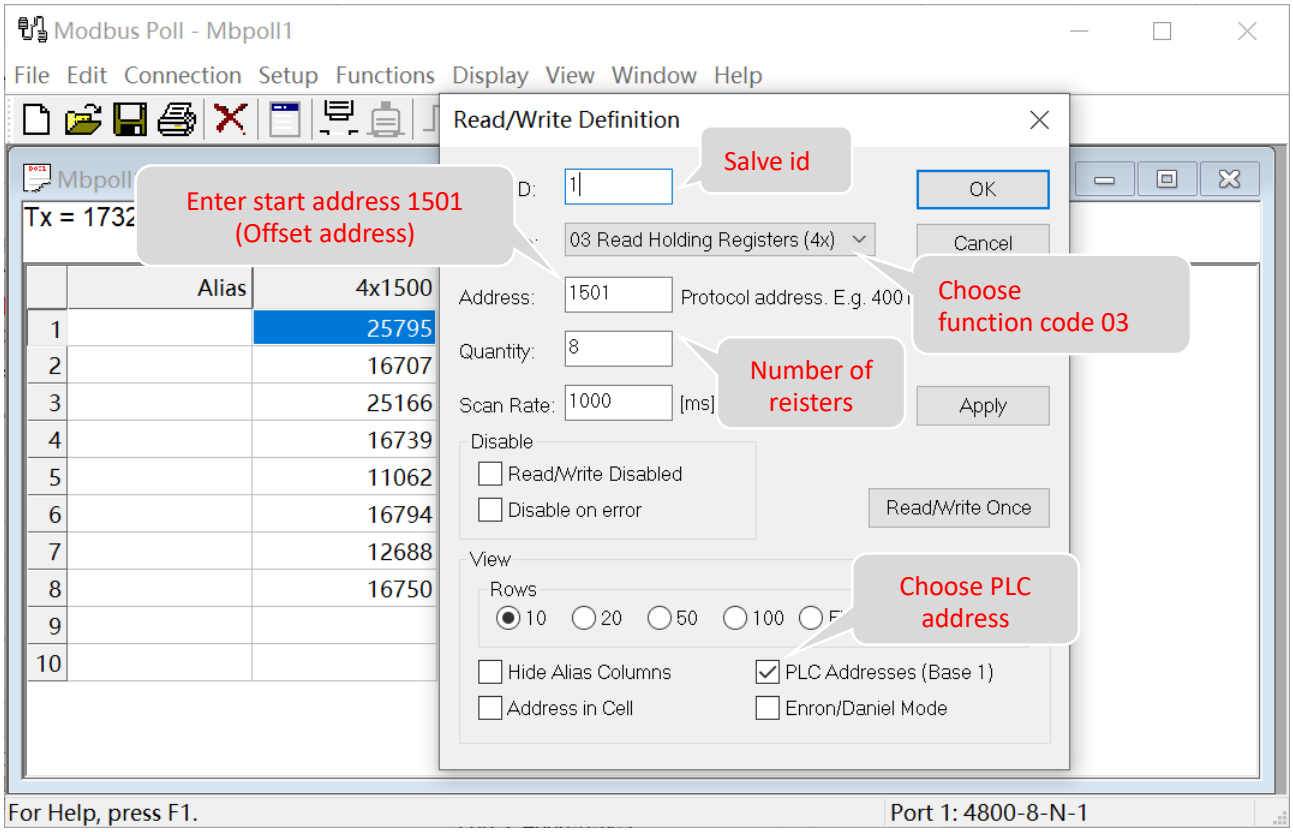
Choose 32 Bit Float



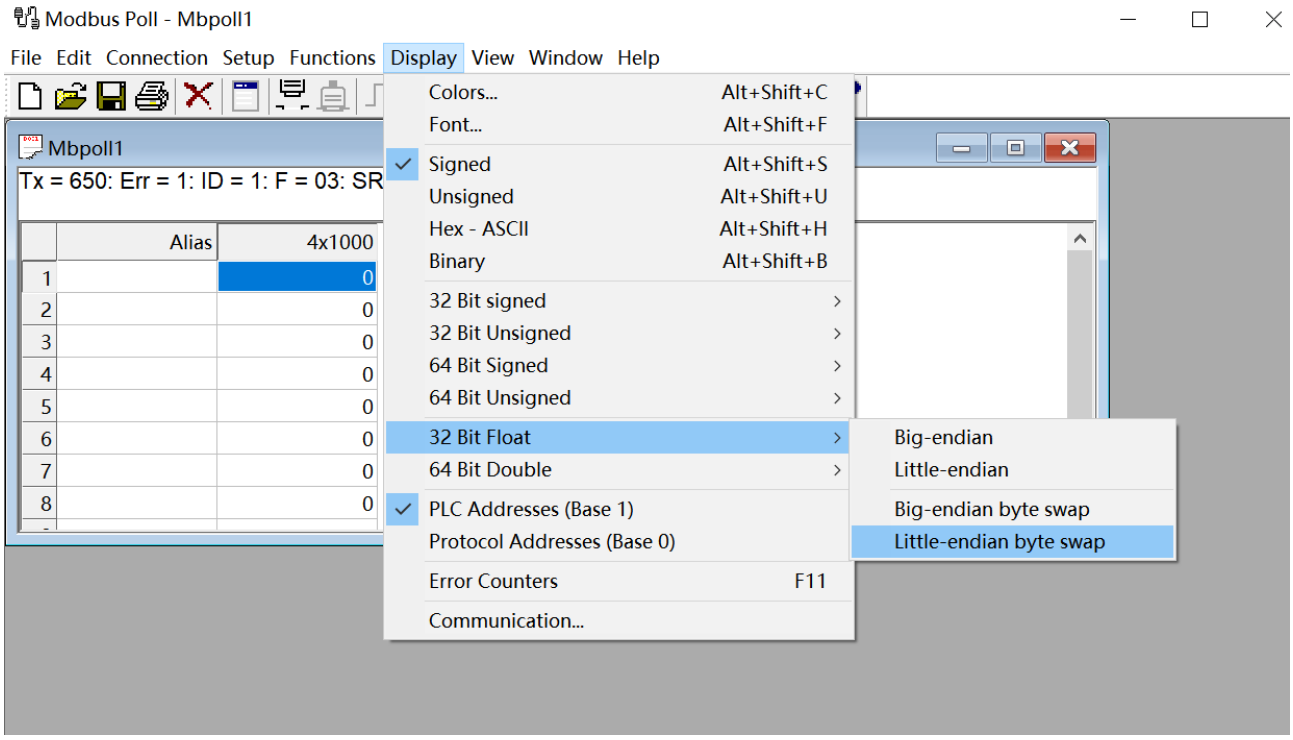


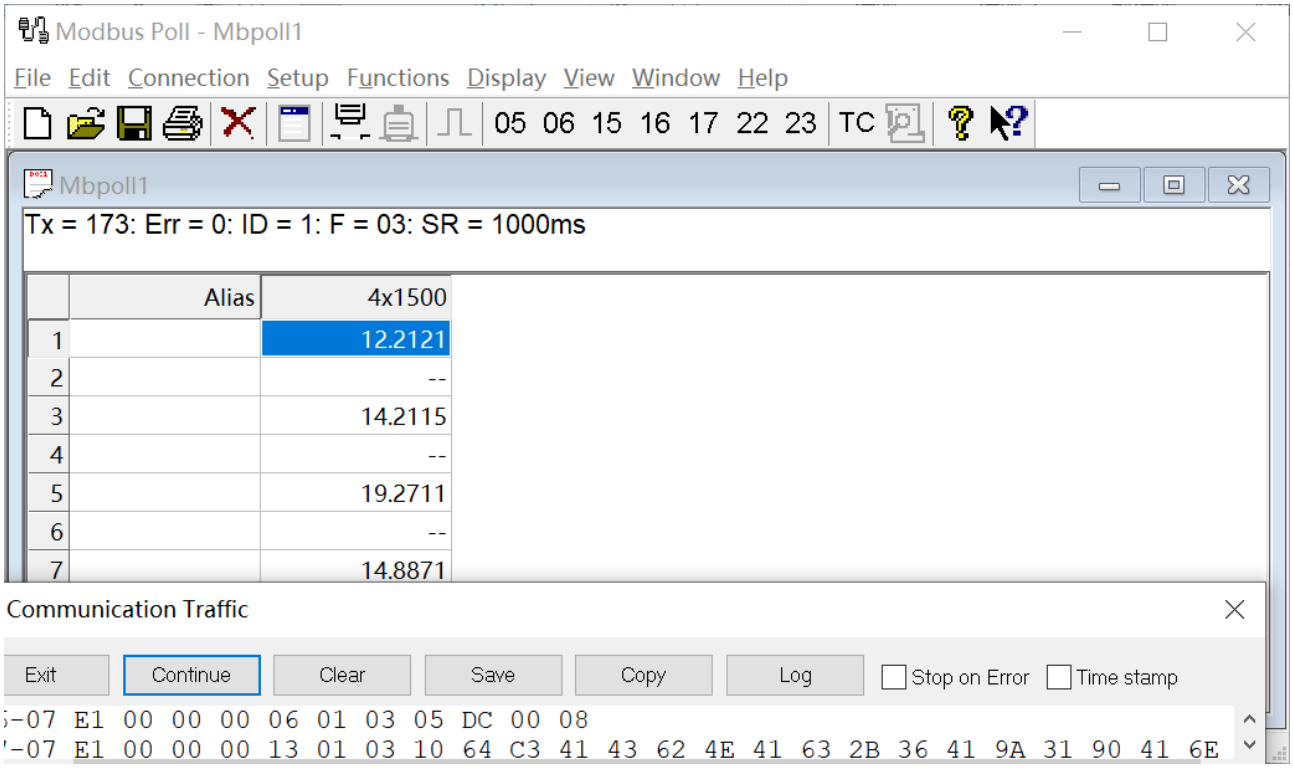
4) Read temperature input

Fox example, read 4 channels of Ti, slave id=1

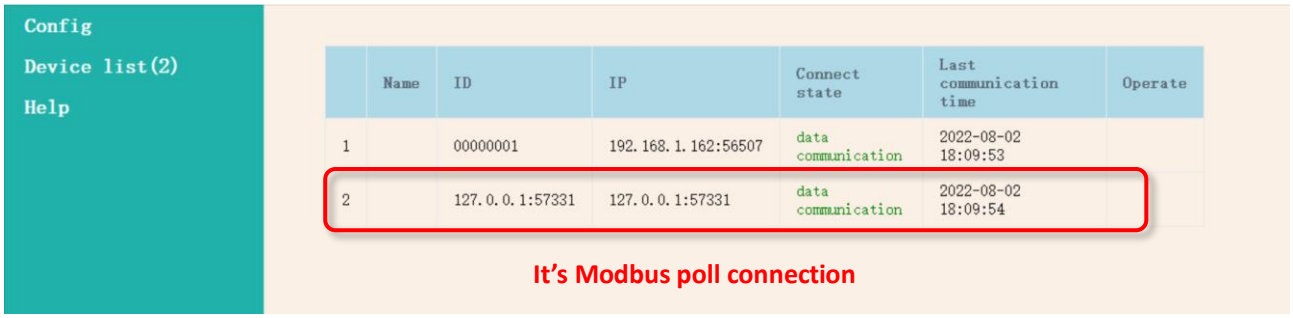


Choose 32 Bit Float





Modbus poll connection is shown in Modbus TCP to RTU tool



It's Modbus poll connection