Sinexcel MODBUS Application

Brief Introduction

MODBUS is an application layer protocol and widely used in industrial control. It is the de facto industry standard.

Sinexcel provides both MODBUS RTU and TCP/IP communication. RTU is realized by RS485 interface and TCP/IP by Ethernet port. Using Modbus, customers can realize following functions:

1) Acquire the status and alarm information;
2) Acquire data like analog value, waveform, histogram and manufacturer information;
3) Set the parameters of the device.

For more details, please refer to Sinexcel Modbus protocol.
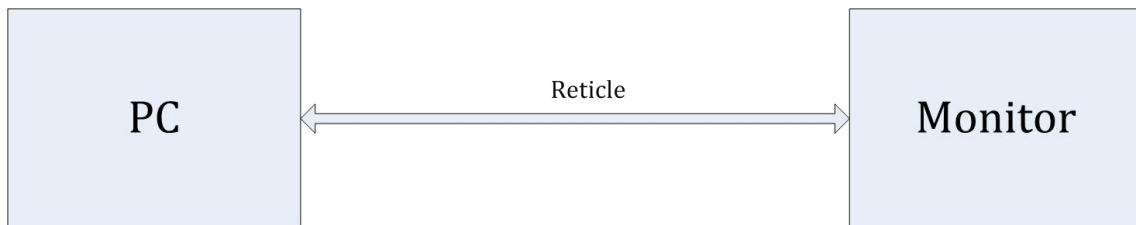
Physical Connection

Following is instructions on establishing connection between PC and modules via MODBUS
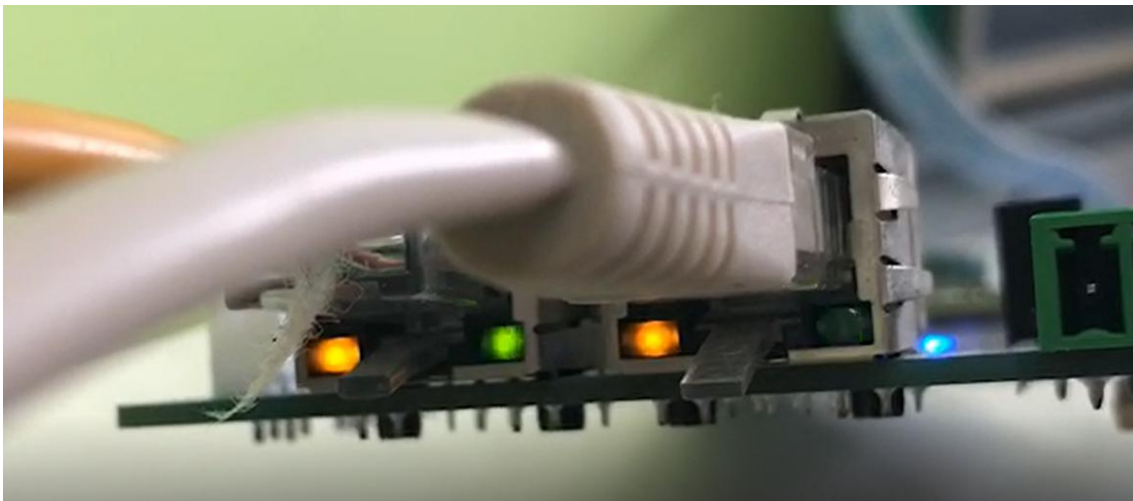
MODBUS TCP/IP

For LCD modules, Ethernet connection is optional. An extra dry contact board is needed. For 7-inch HMI, the Ethernet port is on the side of it.

Ethernet connection has two types:

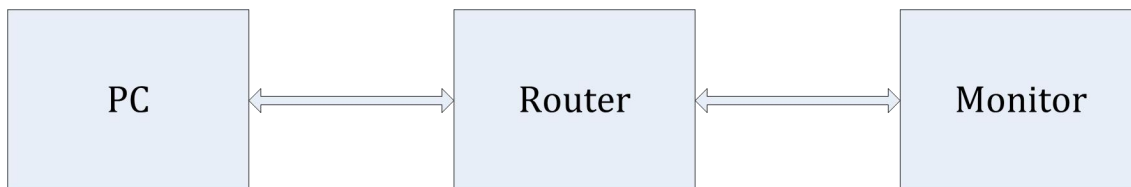### 1.Monitor connects with PC directly via reticle

1. Make sure the reticle is firmly connected with the monitor. After the reticle is successfully connected, the green LED light on the port will flicker.

2. Set the IP address and Subnet Mask manually on the monitor. Make sure they are on the same network segment with the PC.

3. Ping the address.

4. After successfully Ping the address, use the software modbuspoll for debugging. To establish the connection, the IP address should be the one of monitor and the port should be 1025.
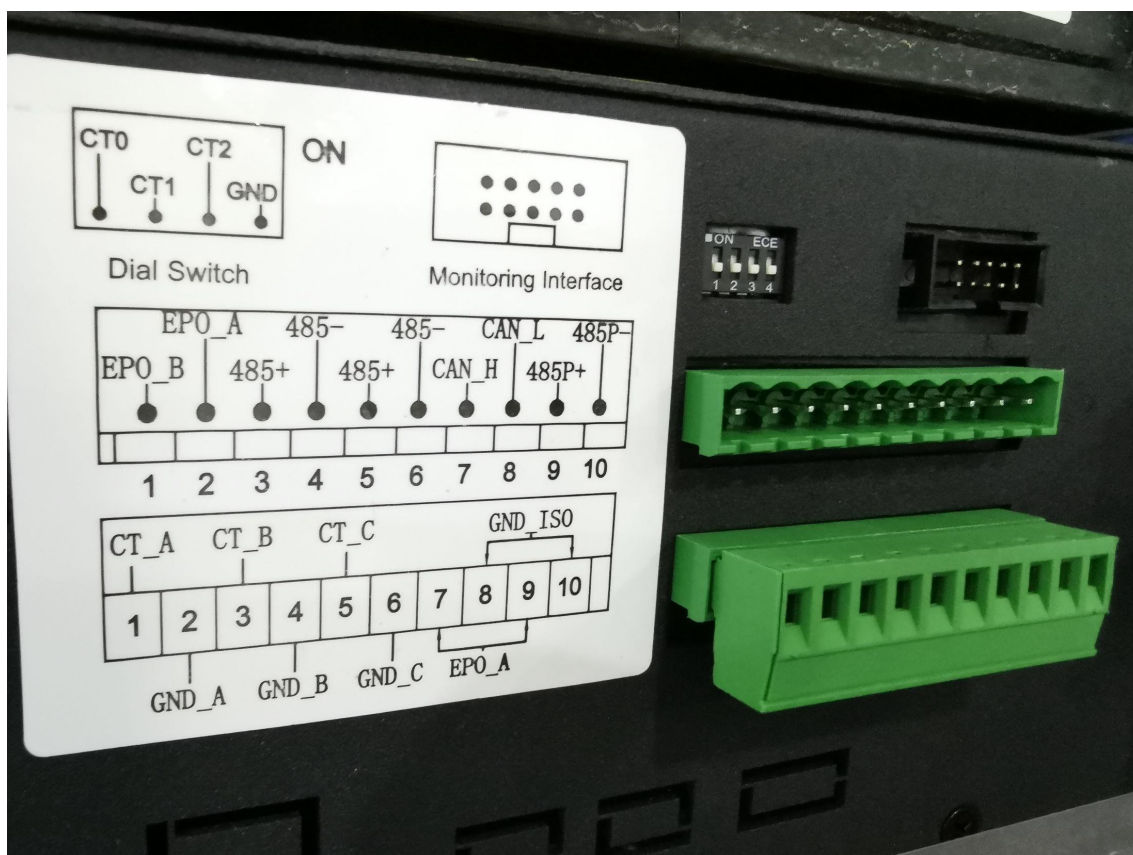
2.Monitor connects with PC via router

1. Make sure the reticle is firmly connected with the monitor. After the reticle is successfully connected, the green LED light on the port will flicker.

2. The router will assign IP address to PC automatically. Set the IP address, Mask and gateway manually on the monitor and make sure they are on the same Network segment as the ones of PC.

3. Ping the address.

4. After successfully Ping the address, use the software modbuspoll for debugging. To establish the connection, the IP address should be the one of monitor and the port should be 1025.
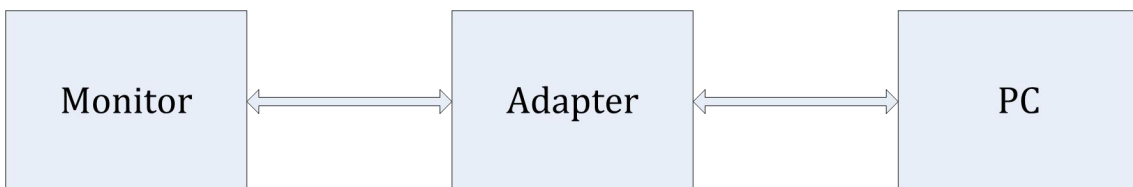
MODBUS RTU

RS485 is a standard function for all Sinexcel products. For single units, RS485 interfaces are on the back side. For the 7-inch HMI, they're on the right side, and 485_3A and 485_3B are for remote control.

If were to connect with PC, an adapter is needed, like 485 to 232 adatper or 485 to USB adapter.
Monitor connects with PC via adapter

Monitor	⟺	Adapter	⟺	PC

1.   Make sure devices are firmly connected.
2.   Set the Baud rate on the monitor.
3.   Use instrument like modbuspoll for commission. The Baud rate should match the one set on the monitor. The port should match the one the unit is connected to, which is shown in the device manager.