

## Data Acquisition Module: Communication Protocol

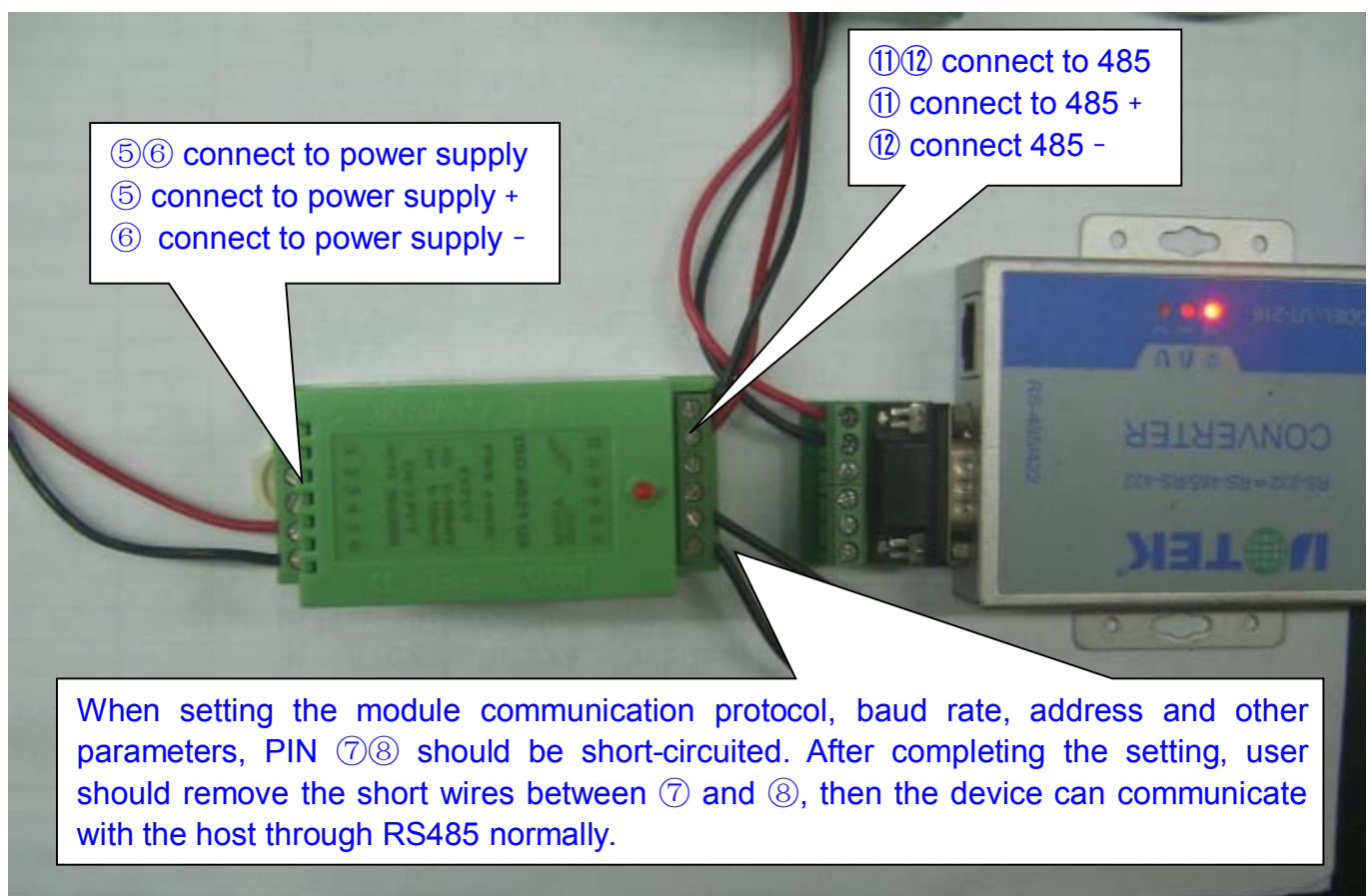
### (ASCII/MODBUS RTU) Setting Manual

Sunyuan 4-20mA analog to RJ45/RS232/RS485 series A-D Conversion data acquisition modules and RS232/RS485 to 4-20mA analog signal DA series data acquisition products support ASCII character or MODBUS RTU communication protocol. User can calibrate the precision by software, program the module address and baud rate, etc. Through setting the software, user can use that data acquisition modules to collect various types of sensor signals to PLC, DCS or computer to monitor application environment or control remote equipments.

The data acquisition devices are widely used in Ethernet analog /digital RJ45 interface data acquisition, RS232/RS485 interface bus and industrial automation controlling system, measuring and monitoring various types of analog sensor signals, measuring small signals (accuracy is better than 0.05%) and signal long-distance transmission without distortion in industrial site, remote anti-interference isolated control, etc. Based on the requirements of external communication equipments, user can set the device to ASCII or MODBUS RTU communication protocol. Taking ISO4021 series data acquisition device for example, this manual presents the details about how to set ASCII characters or MODBUS RTU communication protocol through real connection diagram in industrial site. For the setting methods of the other series (SYAD Series/ISO AD Series) data acquisition devices, please refer to the setting methods of ISO4021.

#### Setting Steps:

I. Connect the power supply line of ISO4021 to communication line (RS485 interface), short-circuit PIN7 and PIN8 (as shown in the pictures below).

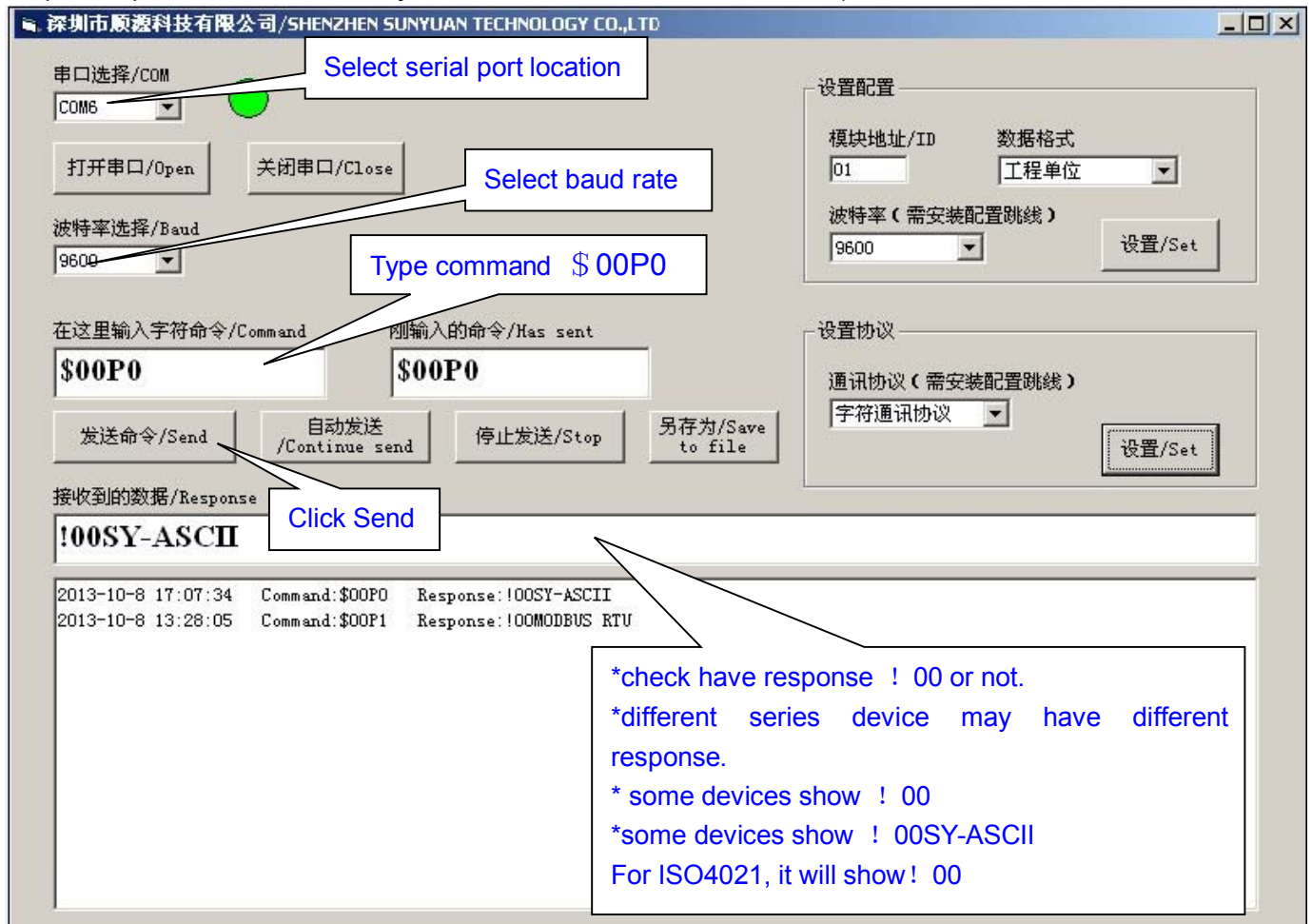


**Note:**In the picture above, the external power supply between PIN5 and PIN6 is 8-50V, when the communication interface is RS485, the positive terminal of RS485 should be connected to DATA + , the negative terminal of RS485 should be connected to DATA - , and RS232 &RS485 cannot operate at the same time. PIN8 is the configuration terminal CONFIG, user should connect CONFIG PIN to PIN7 when setting the communication protocol.

**II. Software setting** (user can set the device to ASII character protocol or MODBUS RTU protocol.)

1. Set ISO4021 to ASCII character protocol

As shown in the pictures below, run the software Sunyuan Test, select communication serial port (based on the actual serial port of user’s computer) and baud rate 9600, input command “ \$ 00P0”, click “Send”, if the “Response” frame shows “ ! 00”, it indicates that the device has successfully been set to ASCII character protocol. Then user should off the power supply, remove the short wires between PIN7 and PIN8 (if there is no response, please check whether you have done the correct connection).

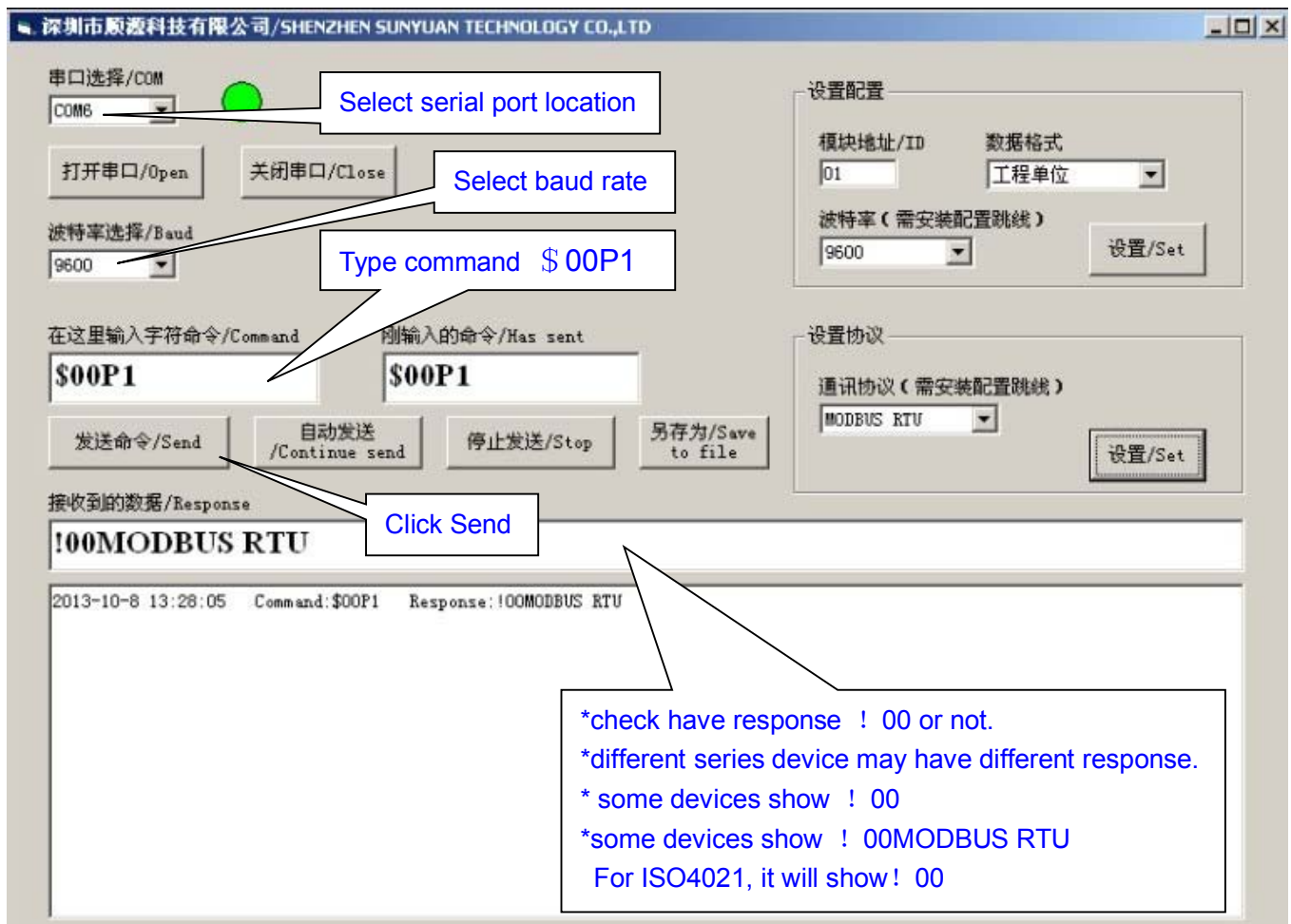


In the picture above, “串口选择/COM” the serial port no depends on the actual port no of users’ computer, it may not the COM6.

“波特率选择/Baud”--user can select one of the following numbers: 1200/4800/9600/19200/62500, the baud rate is higher, the communication speed is faster.

2. Set ISO4021 to MODBUS RTU protocol.

As shown in the pictures below, run the software Sunyuan Test, select communication serial port (based on the actual serial port of user’s computer) and baud rate 9600, input command “ \$ 00P1”, click “Send”, if the “Response” frame shows “ ! 00”, it indicates that the device has successfully been set to MODBUS RTU protocol. Then user should off the power supply, remove the short wires between PIN7 and PIN8 (if there is no response, please check whether you have done the correct connection).



In the picture above, “串口选择/COM” the serial port no depends on the actual port no of users’ computer, it may not be the COM6.

“波特率选择/Baud”--user can select one of the following numbers: 1200/4800/9600/19200/62500, the baud rate is higher, the communication speed is faster.

**For Sunyuan ISO4021/ISODA/ISOAD/SYAD** series devices, user not only can set communication protocol by software, but also can re-set the module address, baud rate, calibration status and data format. When setting the communication protocol, baud rate, and address, etc, user should connect the CONFIG PIN with GND to make the device into configuration status first, then user can set them accordingly. When the device communicates with the host normally, user should remove the short wire between CONFIG PIN and GND. For details, please check the product data sheet.