Soway

Software operation instructions

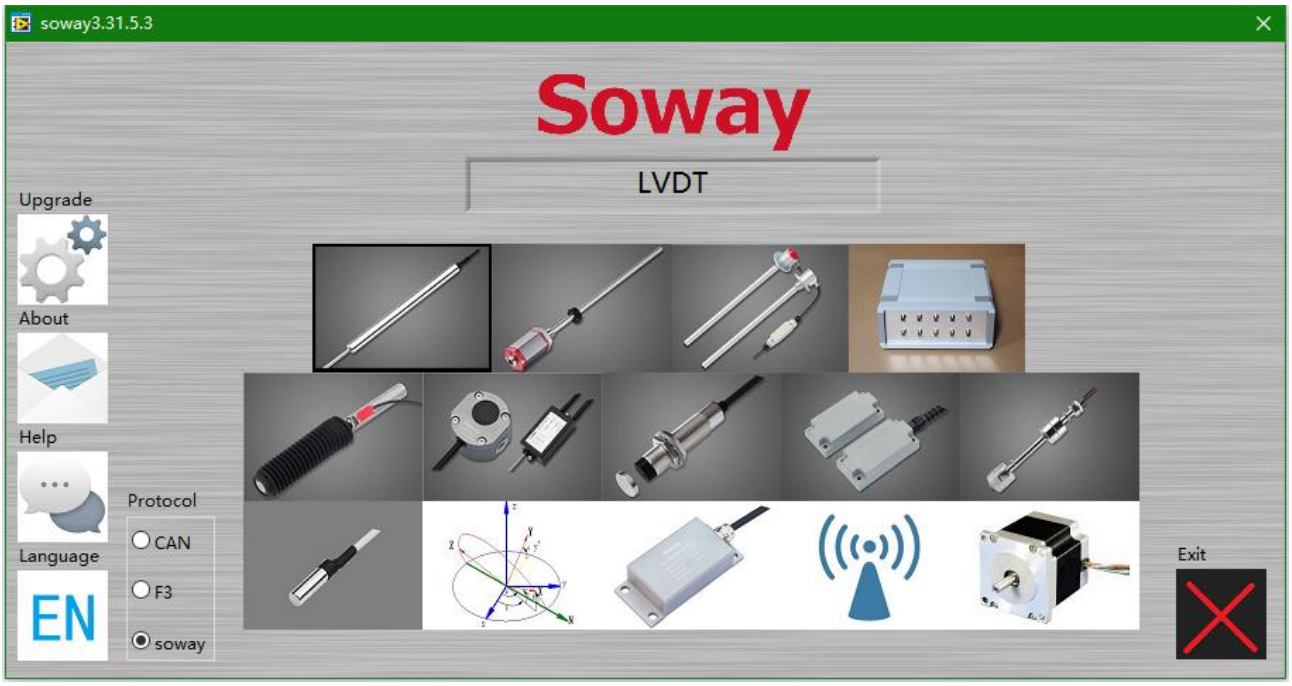
Soway3.31

Contents

Chapter 1 Introduction

1.1 Software version

The current software version is Soway3.31（or higher level）



1.2 The operating system

This software is only applicable to XP , WIN 7,WIN 8 or WIN 10。

Chapter 2 Installation

2.1 Unzip and run the installation package

After unzip, please right-click the file, select properties and compatibility, select "run as administrator"

2.1.1 The installation process

As shown in figure 2-1-1: click next until the finish. Software installed on the path by default:C:\Program Files (x86)\soway3.31.5\，It is recommended that you choose other path as shown in figure 2-1-2。

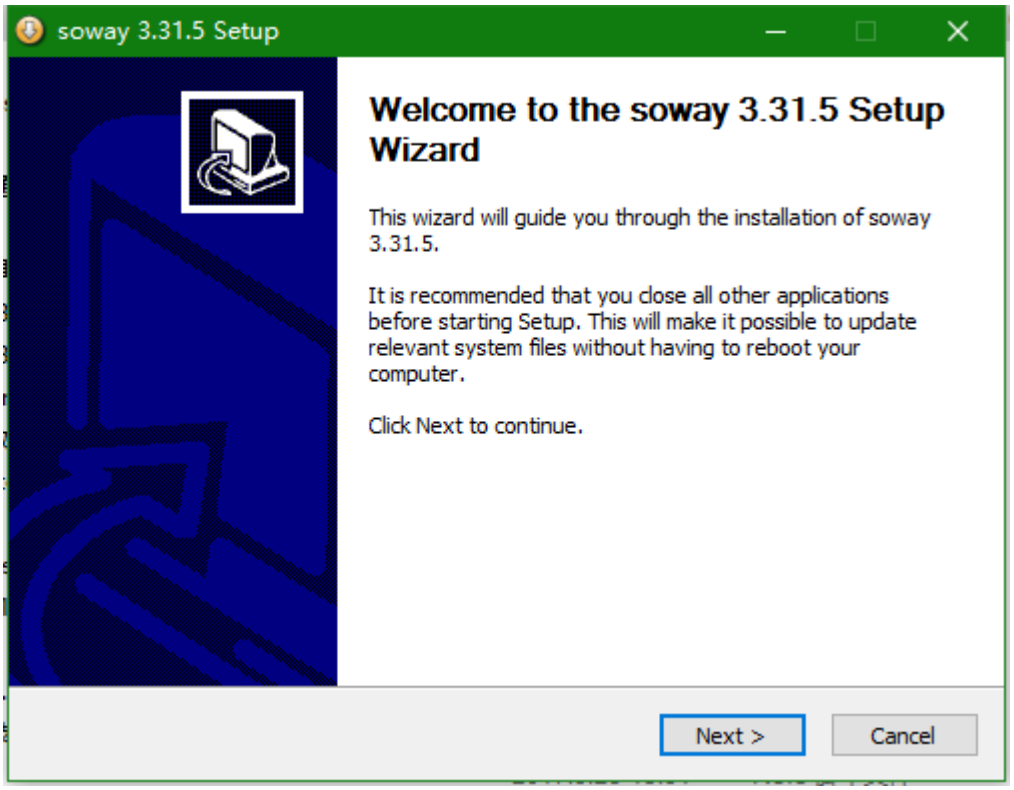


Figure 2-1-1

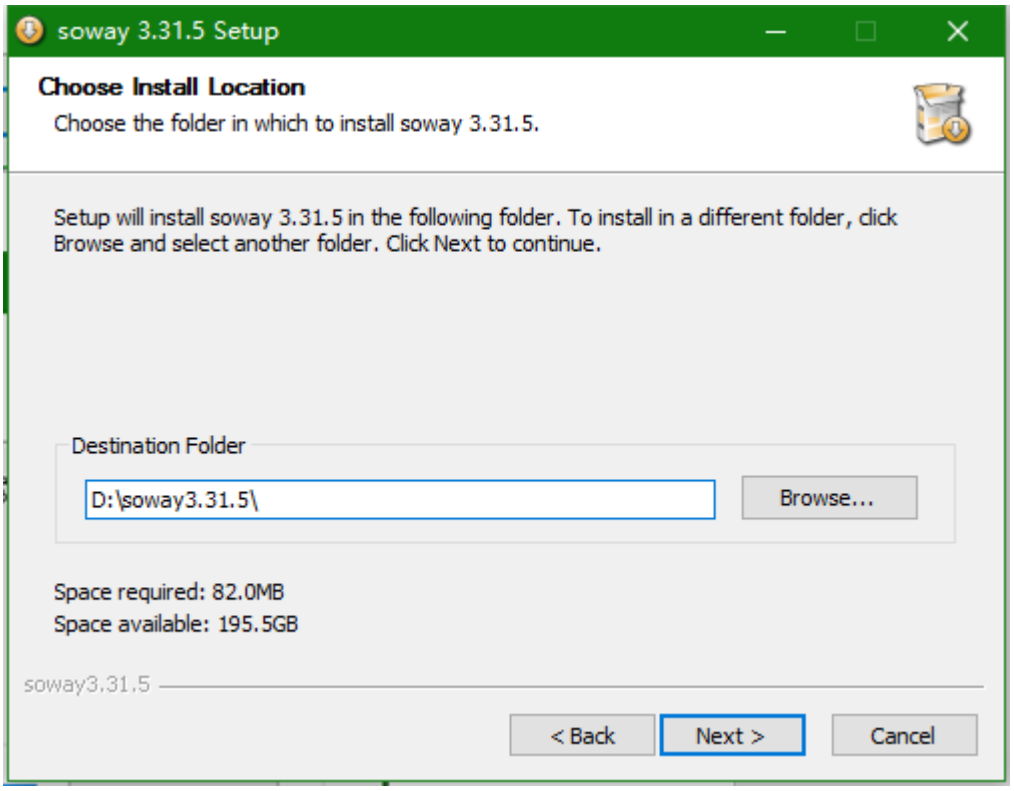


Figure 2-1-2

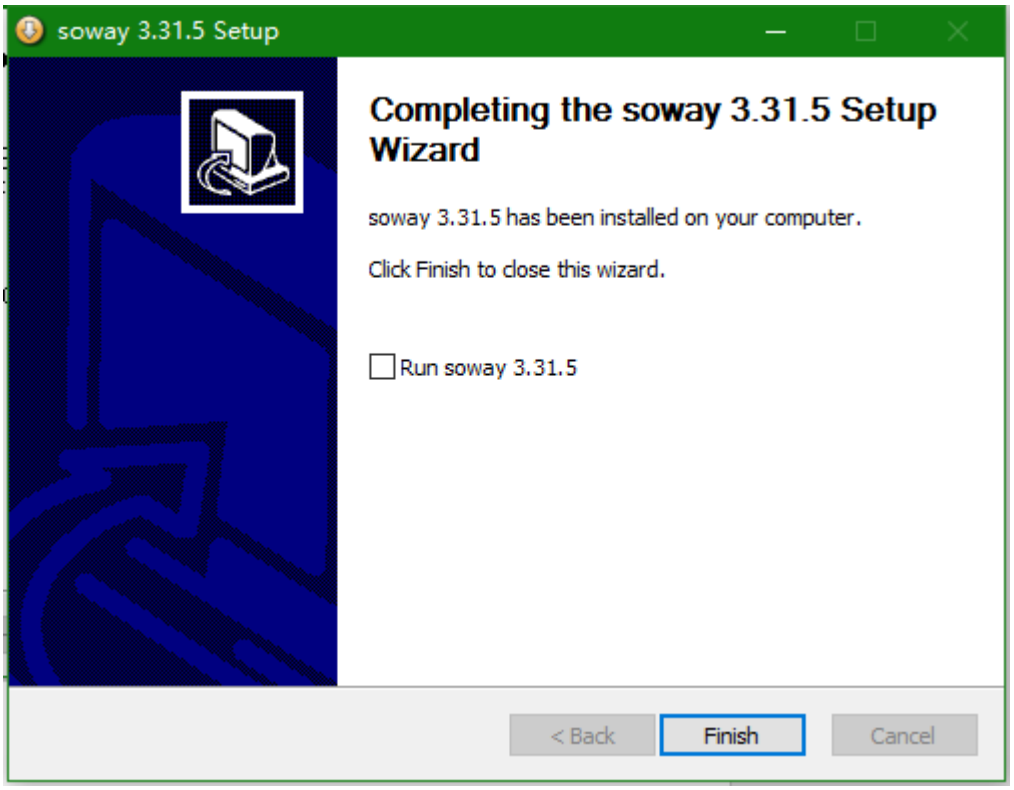


Figure 2-1-3

2.1.2 Before running the software

Windows 7 system, WIN 8, WIN 10, please: the right-click the desktop application icon - > properties - > compatibility - > select "run as administrator"

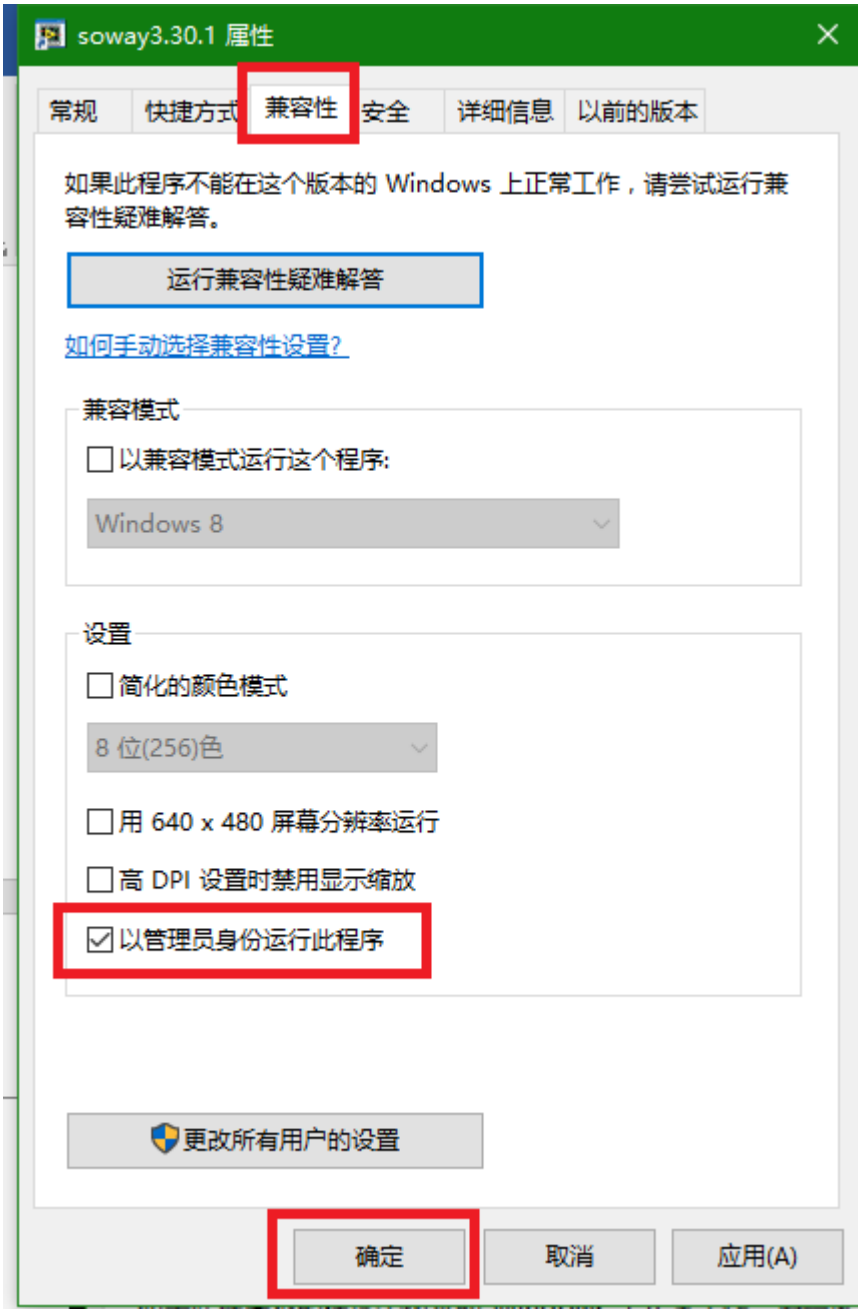


Figure 2-1-4

Chapter 3 Connect devices

3.1 Connect your device

When you use RS 485/232 output of the sensor, please in advance for the computer to install RS485/232 to USB communication cable driver, otherwise, the software can't identify your communication port.

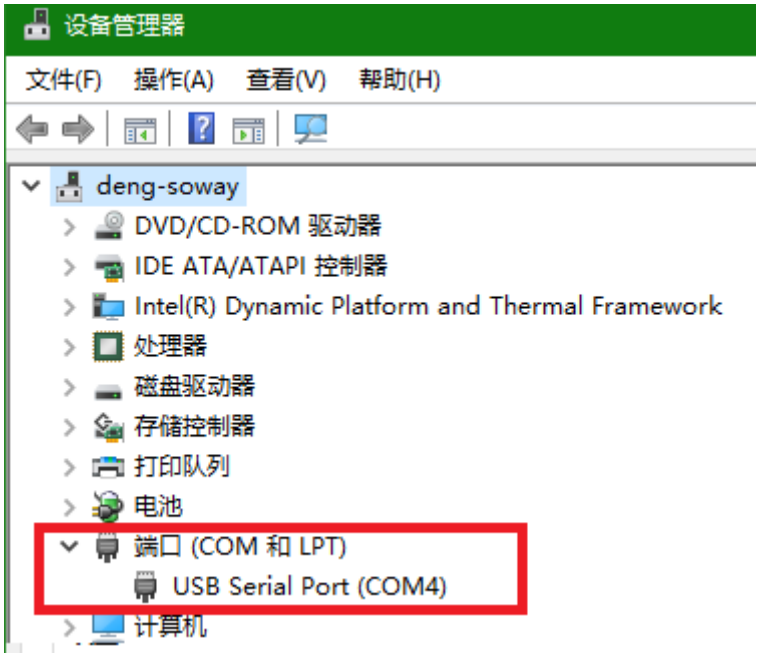


Figure 3-1-1

As shown in figure 3-1-1, in [my computer] - > [properties] - > [device manager], port (COM and LPT) can see your computer serial port cable port number.

3.2 Software usage

3.2.1 Select a product

After the sensor is connected, run the application, as shown in the figure：

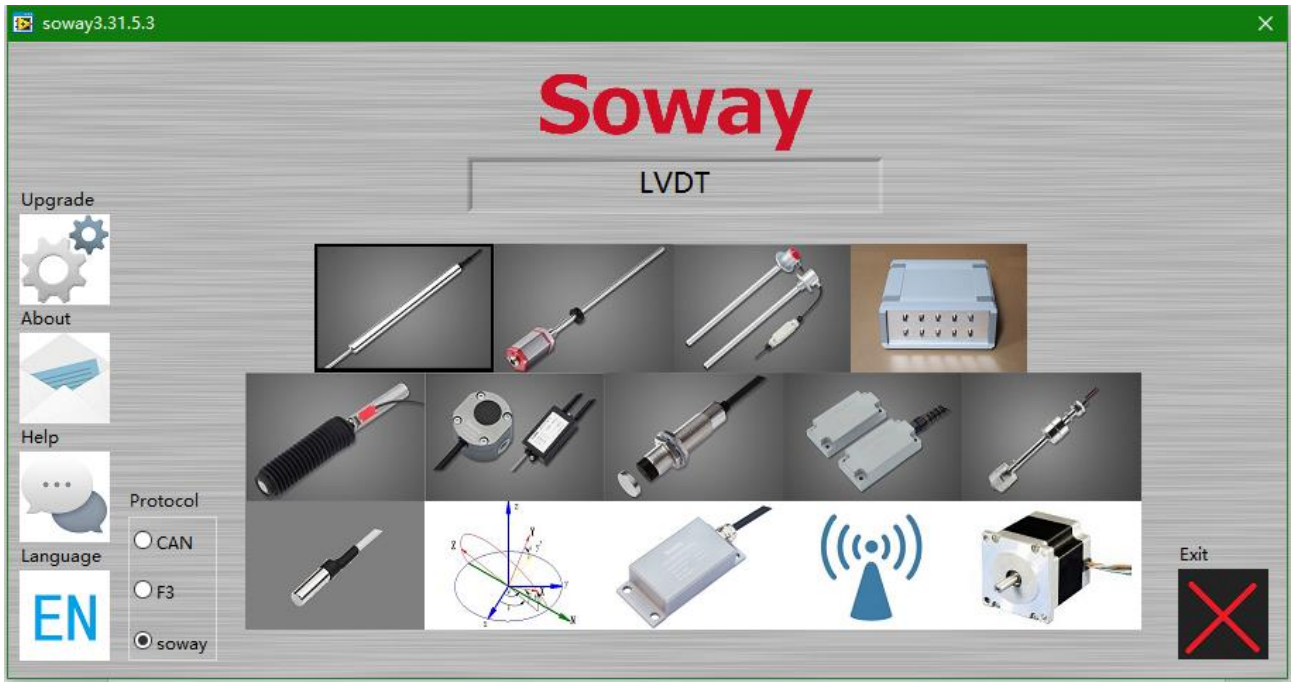


Figure 3-2-1

Upgrade： Click this button to enter the sensor program upgrade, The customer cannot use this

function

About： Click this button pops up a message window containing the letter for SOWAY tech company.

Help： Click this button will automatically open this software instruction in the software root directory, but some computer's PDF software can't be opened.， If you need to read this instruction manual, please open the software root directory /data folder Help_EN Englis

Language： Click this button to switch the software language, Chinese or English

Protocol： Please select according to the parameters of the product, usually SOWAY modbus protocol

- **CAN：** Some products use CAN communication, such as RFID, fuel consumption sensor
- **F3：** The default communication protocol for all Internet of Vehicles products are F3 protocol
- **soway：** Conventional products use SOWAY modbus protocol, such as LVDT, Magnetoscale, capacitance sensor
- The DAQ instrument use the USB drive of the acquisition card and has no RS485 output modbus protocol currently

3.2.2 Test page

The image buttons are the button for each product, and you click the corresponding button to enter the corresponding product test item.

An example：Now we test product LVDT, and click the LVDT button to enter the test page，This is shown in the figure 3-2-2 below .

After entering the test page, a serial communication setting window pops up，Please click the small button according to the COM port of your computer and select the correct COM，And select the baud rate of matching with the sensor, parity check, modbus protocol mode, the number of sensors connected to RS485, and click [OK] button to confirm.

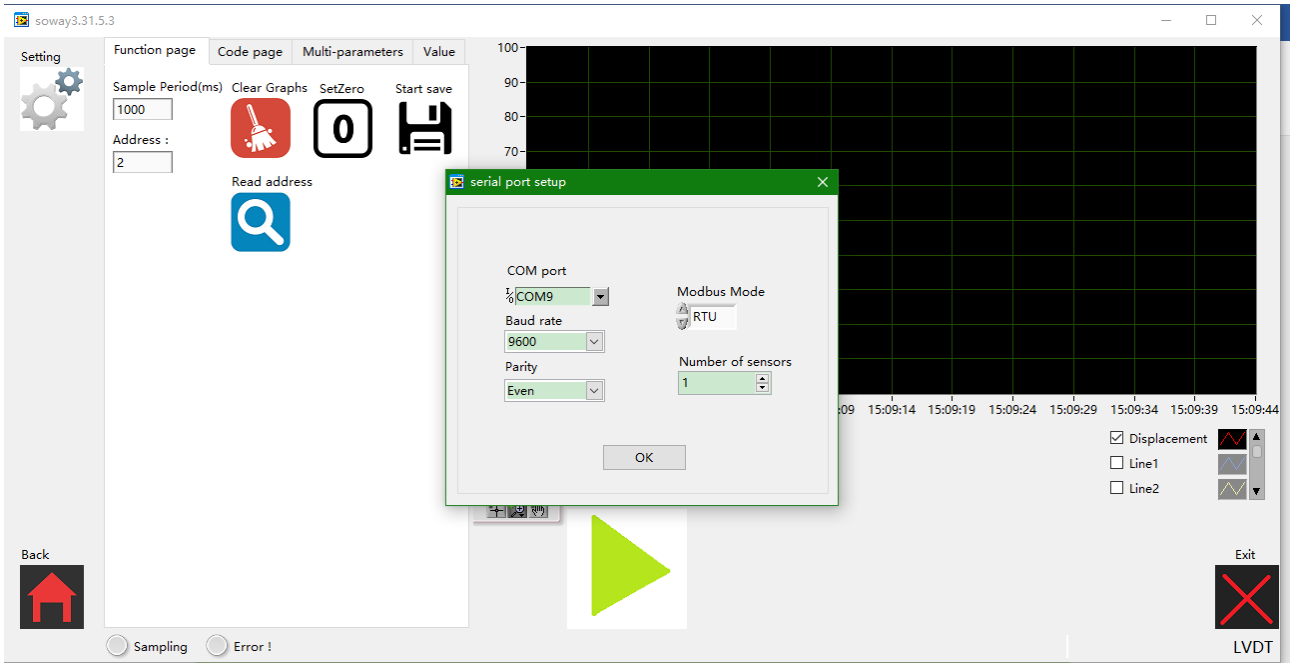


Figure 3-2-2

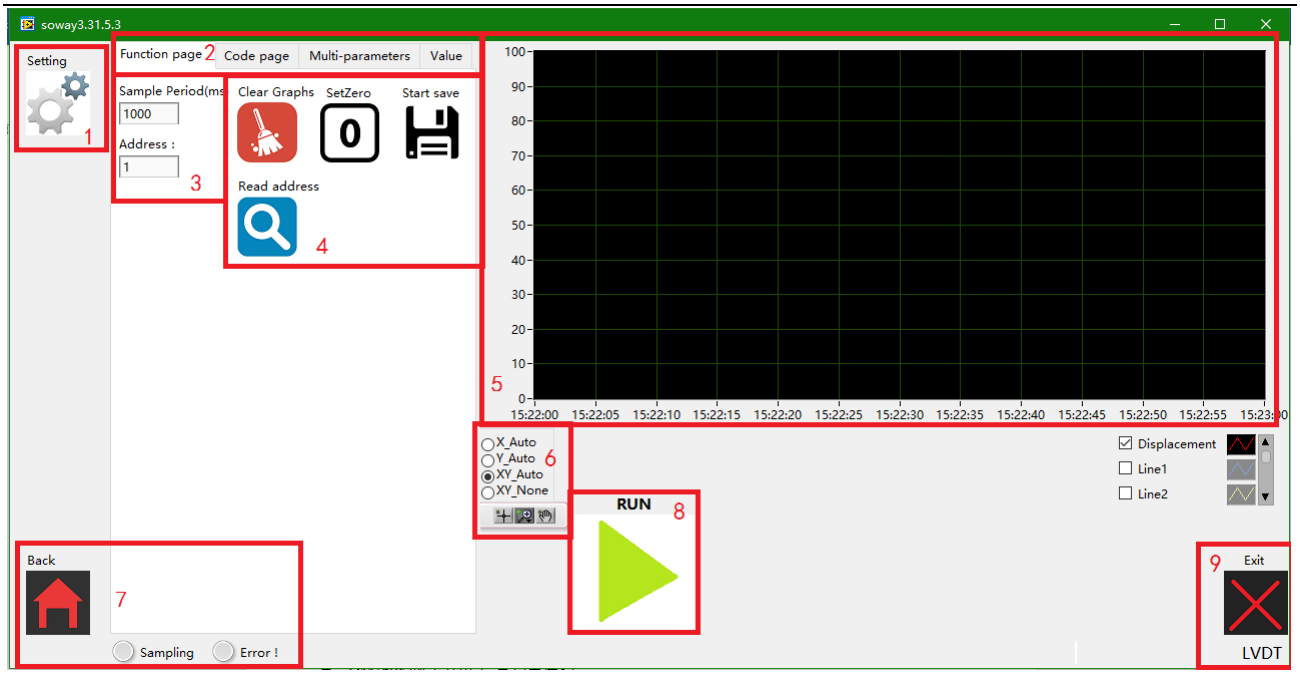


Figure 3-2-3

1 Setting： Click on this button to display the parameter Settings page. The current version contains two functions

- Sensor settings: Modify internal parameters of the sensor
- COM config: Reset the COM configuration

Figure 3-2-4

2 Task bar： Click on the corresponding taskbar to switch, and the current version only contains these functions.

- Function page：This page can set some basic parameters for testing:
  - Sample period ms：It takes ms as the unit and acquiesce the sensor value every 1000ms. This software sends a command to a single sensor per second.。When some products need to be read more than 1 command, the software within 1000ms to send and receive multiple commands on a single sensor, such as your connection is oil level sensor will send two commands :liquid level value and temperature. When using RS485 to access multiple sensors for collection, it is a default to send and receive commands one sensor per

1000ms，For example, five LVDT sensors are connected to RS485, and the data collection of these five sensors is about 5*1000ms= 5s. Entering this parameter can modify the sampling period, but the minimum allowable setting is 200ms.

- Address：Please enter the device address of the sensor with the current access line, and the default value is 1；This parameter is invalid when multiple sensors are connected to RS485.
- Multi Addresses：This input box is valid only if the number of sensors entered in the serial communication Settings exceeds one, You need to manually enter the device address of each sensor, separated by the "*" symbol, as shown below. The lower computer software in order to make configuration can stable operation for a long time, limit the waveform figure curve only up to 50, namely each round to send commands to send only 50, an LVDT sensor reads only a numerical, can batch sampling 50 sensor. It can sample 25 CapacitiveSensors to read liquid level and temperature by default.

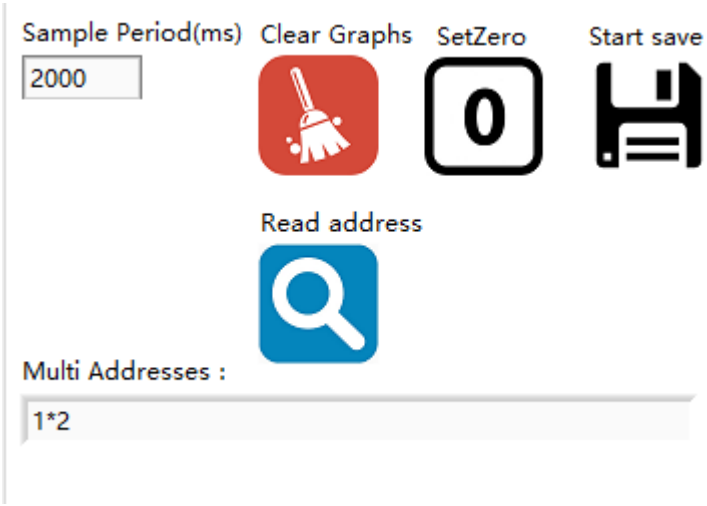


Figure 3-2-5

- Clear Graphs：Click this button to empty all the data of the waveform
- SetZero：Click this button to clear the displacement value (only for LVDT and Magnetoscale)，Click the button again to cancel the zero state. This is just software zero, which is the relative displacement value, it does not operate on the zero inside of the sensor.So when you close the software and run again, the displacement value is still absolute displacement.
- Start save ： After clicking this button, the software will save the data collected every time from now on, and the data is saved to the software root directory ,“record” folder, and the time to start the test is the filename. Click the button again to cancel the save.A sensor generates a file, and a multi-path sensor generates multiple files that add device addresses on the filename.
- Read address：Click this button, the software read sensor device address . The modbus protocol and RS485 bus regulations that it can only read one sensor device address, when multiple sensors access to RS485,you must remove the rest. Sensors to F3 are valid, the old version soway protocol does not support this function, such as the first half of 2017 and more Magnetoscale, long time ago, oil level sensor of RTU communication, customised

products, etc.

- Code page：This page displays the commands sent and received by the software, and more than 65536 characters are automatically emptied.
- Multi-parameters：It contains a table control that displays the return value of each command for a batch collection of sensors
- Value： This page displays the return value of the first sensor in a larger font, displaying the value of the sensor's four commands at most.Multiple sensor batch sampling is invalid.

5 Waveform： Shows the curves of all collected data.If communication failed then the return value was not displayed.When the software communicates with multiple sensors, if there is a communication error of the sensor, it is used to fill the curve with the last time it has been collected.

6 XY axis： At the bottom-left of the Waveform is X axis and Y axis adjustment button, you can also use the mouse to double-click directly on the Y axis of the Upper limit, change the scope of the Y axis .X axis fixed computer time for sampling, can not adjusted.

At the bottom right, the curve adjustment button is selected to indicate the selected curve, while the cancellation hides the corresponding curve.Click the curve color selection button to change the color of the curve.The mouse moves to the waveform diagram and then right click, there are more functions.

Curve control： Click on the small palm in the control, then move the mouse to the waveform diagram, and press the left mouse button to move the entire waveform.， Click the magnifying glass in the middle, and a selection box appears. After the selection, you can use the mouse to drag the curve in the waveform, zoom in and out of the curve or showlocal/whole.

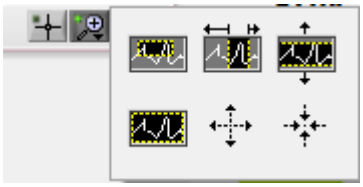


Figure 3-2-6

7 Back button： Click this button to return to the original product selection page

Status light： When the software is successfully collected, the sampling light (green). When data is not collected, or the communication fails, the error is bright (red).

8 RUN： Start test button,You press this button again to stop the program.

3.3 Sensor setting and Multichannel acquisition

3.3.1 Detailed description

COM config： The software will automatically identify your RS485/232 to USB COM port number, as shown in the COM6, When your computer is connected to multiple COM devices（Please look at [my computer]-> [device manager],->[port (COM and LPT)]），Click on the small triangle button of [COM port] and select the COM that connect to the sensor
as shown in 3-3-1：

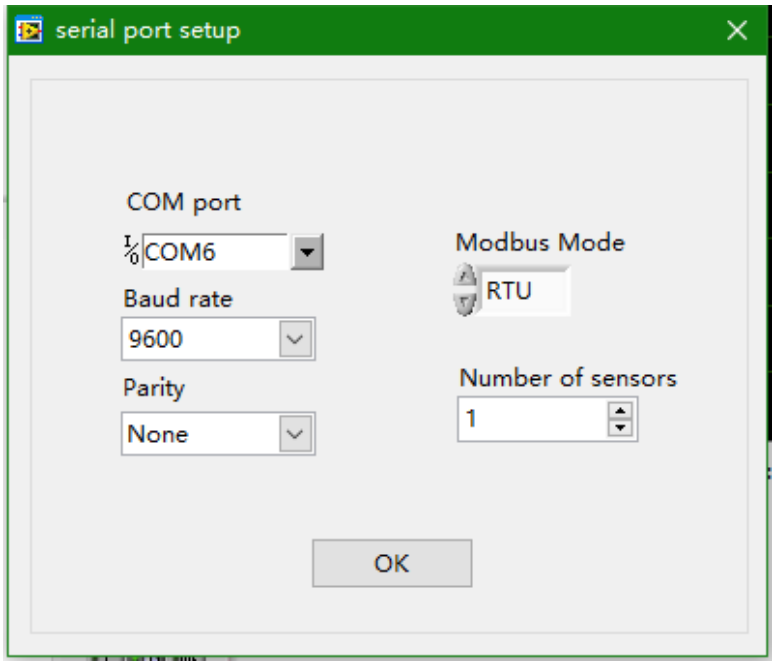


Figure 3-3-1

LVDT：The default serial port communication baud rate is 9600, Even check, RTU format; Except for custom

Magnetoscale：The default serial port communication baud rate is 9600, Even check, RTU format; Except for custom

Other products：The default serial port communication baud rate is 9600, None check, RTU format for soway ; ASCII format for F3,Except for custom

Other custom communication protocols, the current version of the software has not yet been added. The software automatically saves the serial communication parameters when the software was last closed.

RUN： If the wrong lamp is lit (red), the collection fails, possible reasons:

- **Error of device address of the sensor**
- **The COM port of RS485 is incorrect, and the RS485 serial driver of the computer is killed by other software or serial port hardware**
- **parity or baud rate Settings do not match**
- **The sensor does not work properly, and the wiring of the power supply or data cable may not be correct**
- **The quality of the RS485 to USB chip or circuit itself causes the failure of communication between the software and the sensor**

Save data： When opening the file, excel will report the file exception, please click [yes].

The first column of the table is the collection time, and the second column is the sensor data value

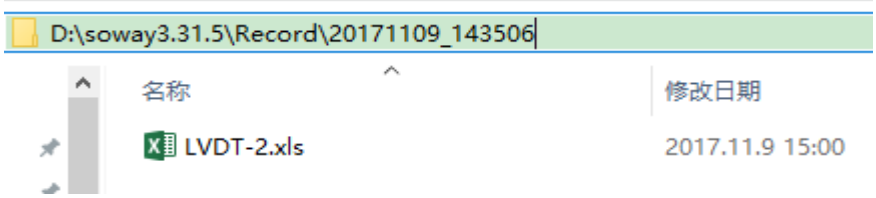


Figure 3-3-2

3.3.2 Multichannel acquisition

Click the "setting" button on the upper left, then click the "COM config". the serial COM and parity check are confirmed， Enter the Number of LVDT that you currently have access to 485 (maximum 50 software Settings) in the [Number of sensors].

Note: in the case of an LVDT, the same to other products, according to the MODBUS protocol, when you collect more than one sensor, please in advance for each device address changes and an LVDT confirmed that the sensor device address can't repeat, namely cannot have 2 LVDTs device address all are 1

3.3.3 Sensor settings

When you need to modify the internal parameters of the sensor, please read the protocol manual of the sensor, know the relevant parameters and function of the sensor.

Click the "Setting" button on the upper left of the software, and click on the " Sensor Settings " icon on the right side to enter the modified parameter page.

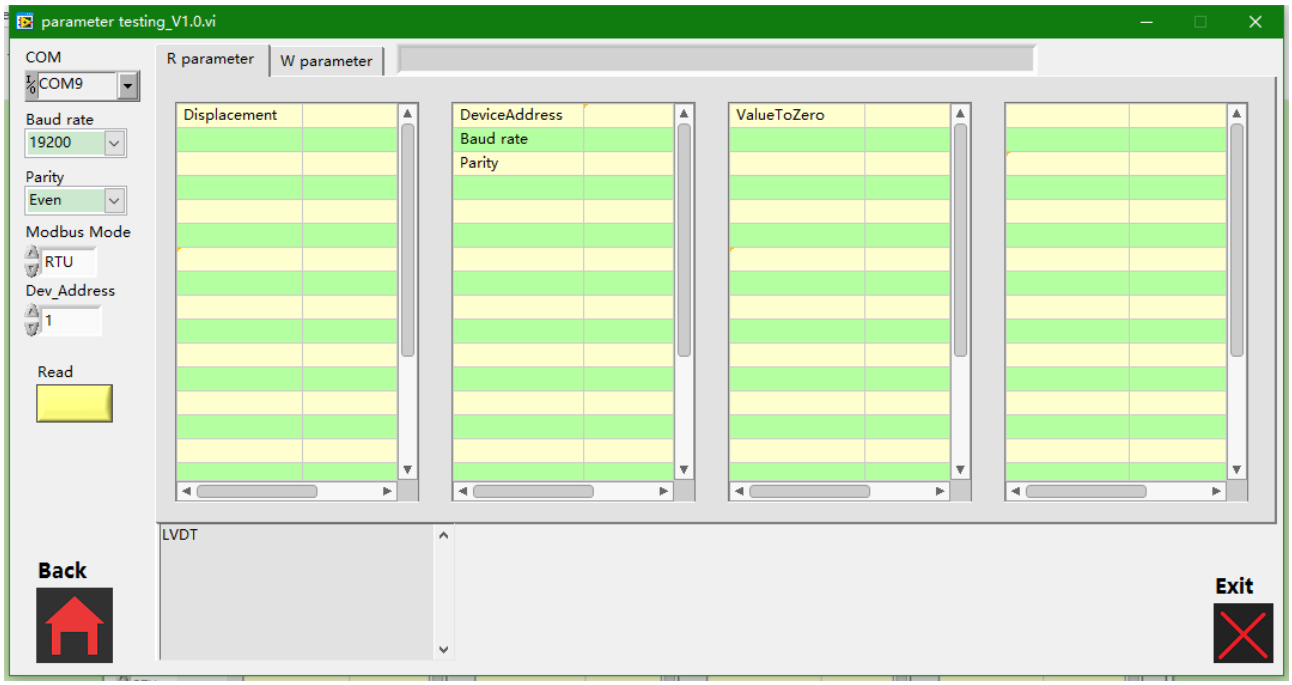


Figure 3-3-3

After determining the device address of the sensor, click the button to read the button. The software will automatically read all the parameters of the sensor.

If you forget the device address, please return to the previous page, test with the reading device address button, or consult the programming manual.

For detailed parameters, information sensor manager.

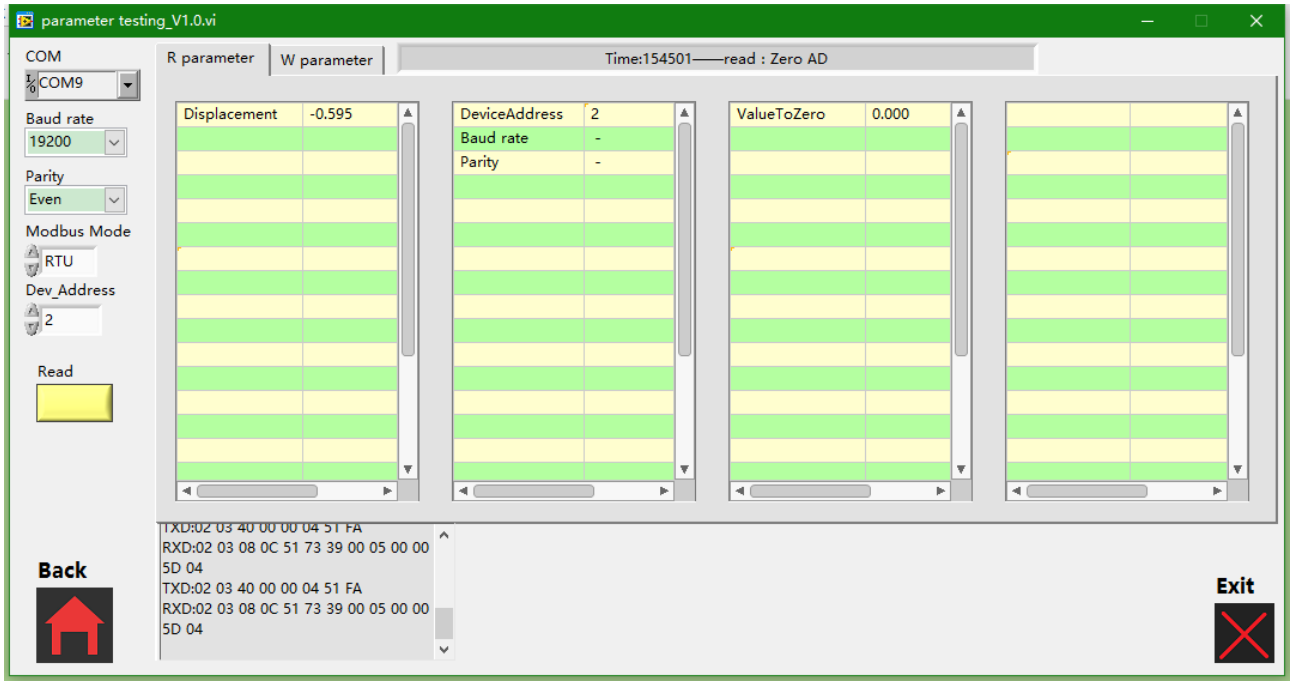


Figure 3-3-4

Note: in the first half of 2015 and earlier LVDT, the baud rate and parity of LVDT cannot be read / written (that is, the sensor program's internal parameters are not modifiable). These LVDT allow only changing the device address.

A: Communication parameter options

B: click here to switch read parameters and write parameters

C: parameter cell

read parameter：The mouse moves to the letter of the parameter you want to read, double-click the letter, you can read the corresponding value of the sensor, for example, you read the displacement value, the mouse moves to “Displacement”this cell, double-click:

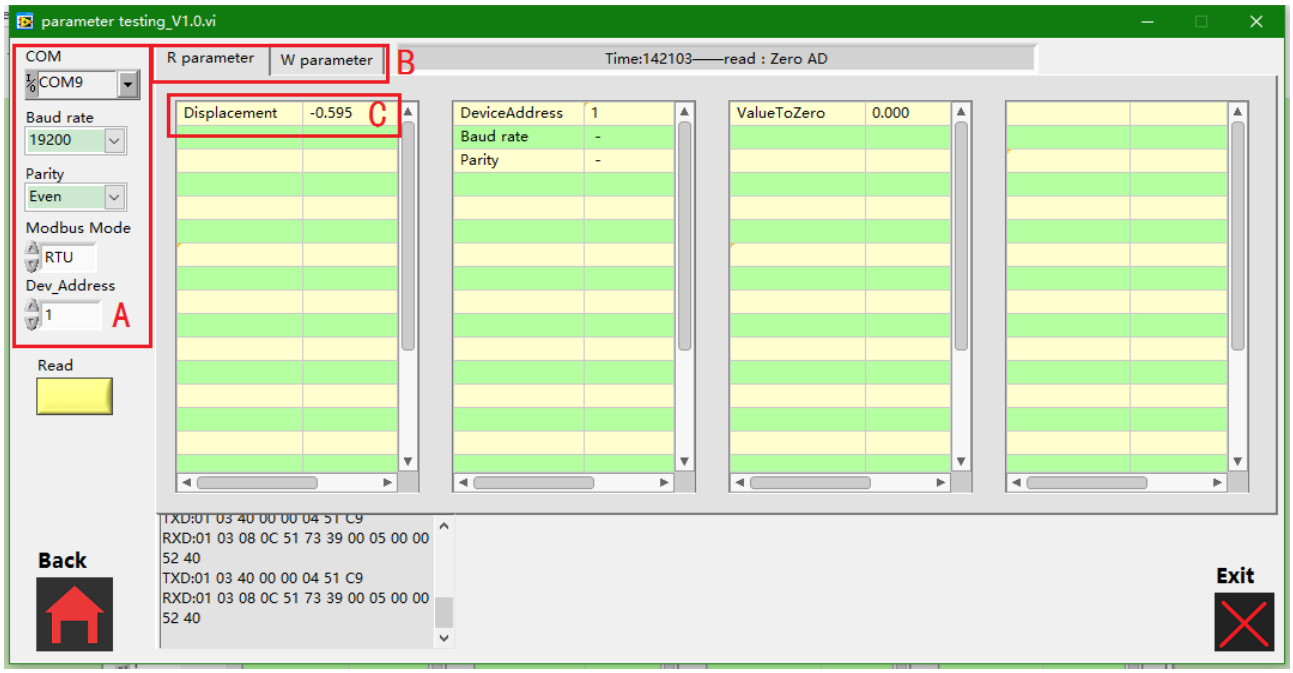


Figure 3-3-5

3.3.4 Modify device address

Click on the "write parameter" and switch to the write page:

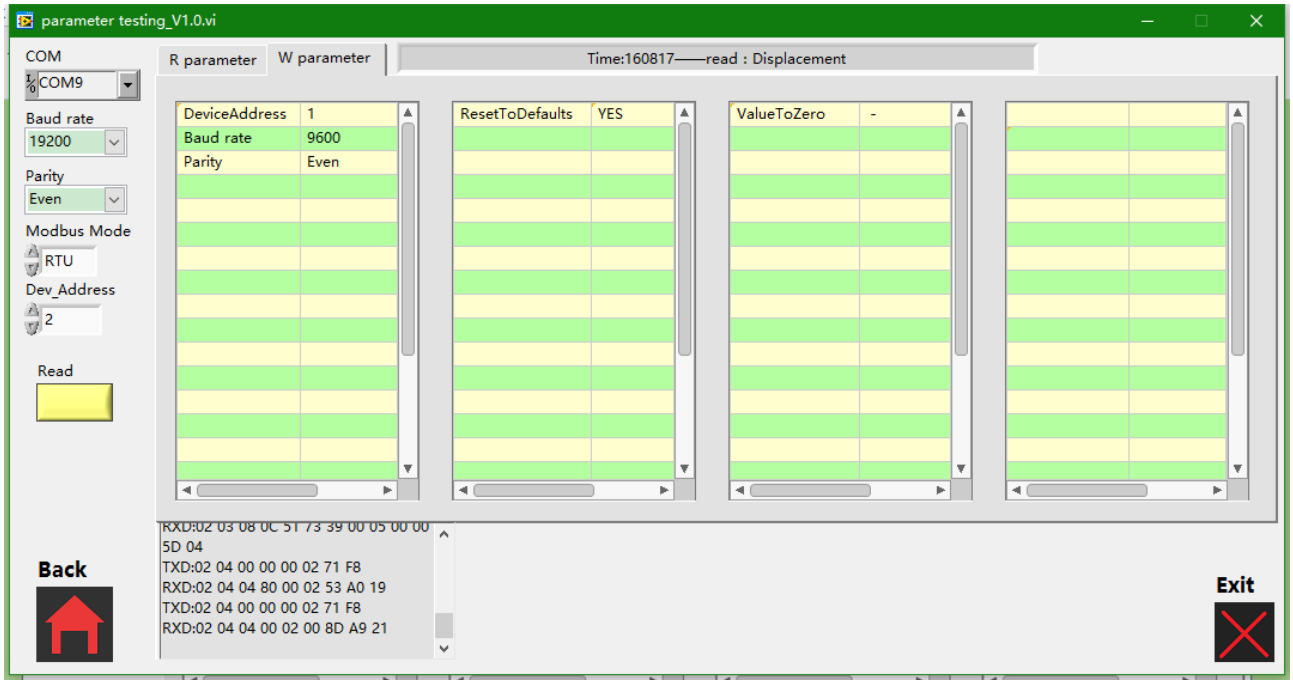


Figure 3-3-6

Move the mouse to the [address] of the equipment for the digital cell, double-click the digital input, you need to modify the device address number, such as 2, and then move the mouse to the [address] equipment of this cell, double-click can be completed.

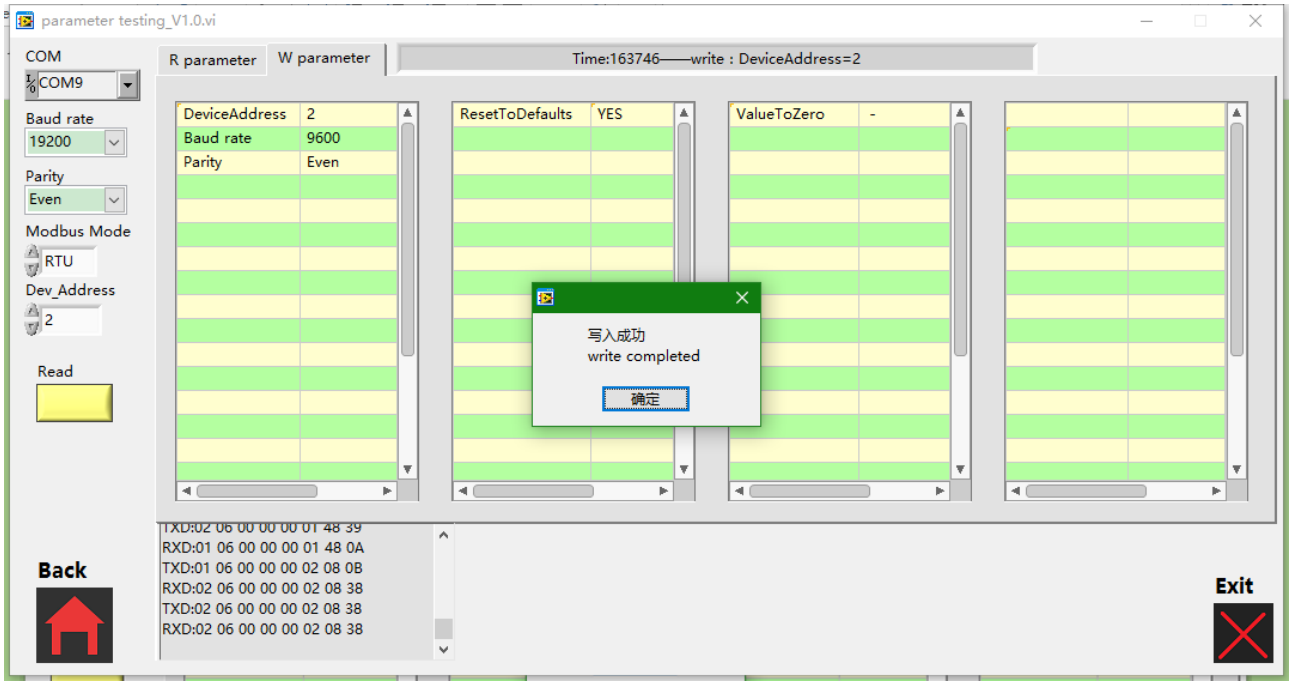


Figure 3-3-7

After you have successfully written the address, you can switch to the "read parameter" page, click the "read" button, or double-click the device address to see if you have successfully read the latest device address.

Most products need to send the flash unlock command before they can modify the parameters.

ResetToDefaults: restore the LVDT parameter to the original state of the factory.

Switch to the page to write parameters, double-click [**ResetToDefaults**], after the success of pop-up window : **ResetToDefaults** successfully

That is, the device address parameter of the LVDT is returned to the default value of 1, and the logic zero is changed back to 0.

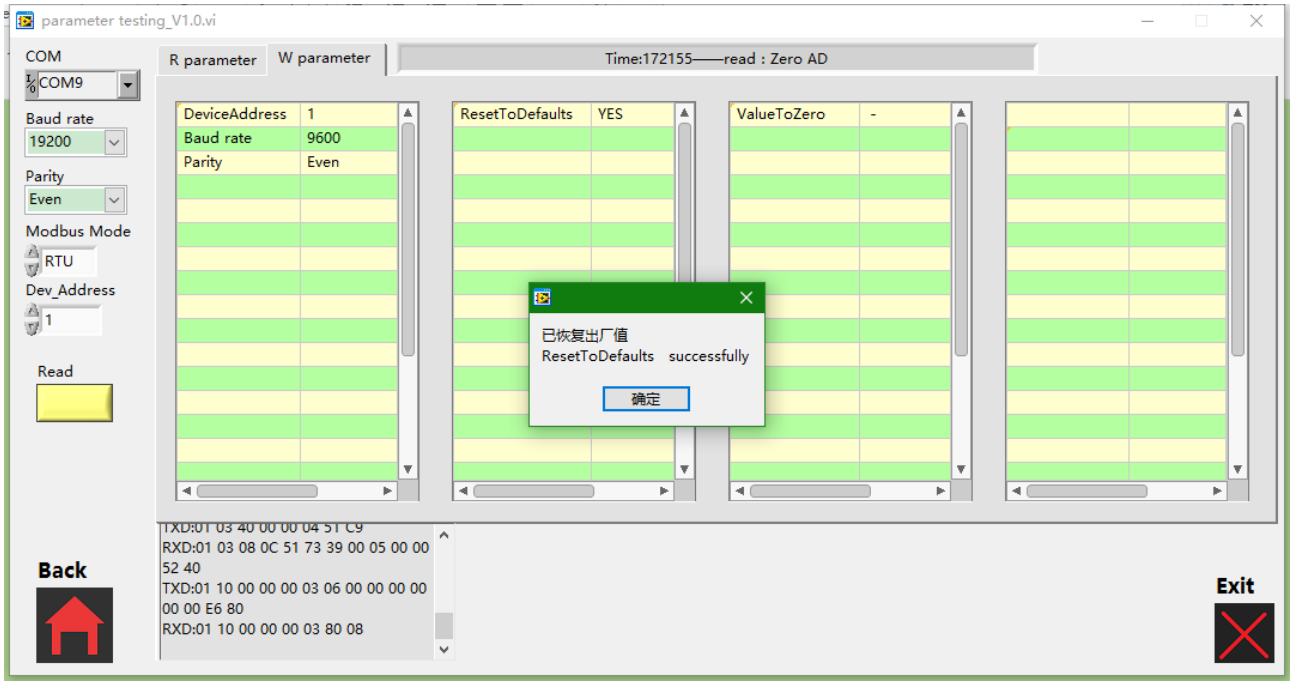


Figure 3-3-8

Many parameters need to be entered in the corresponding cell before you can double-click the command cell to send this command. Invalid data is invalid； Another parameter is the enumeration option. Click the parameter cell, the selection appears. After selecting, you can double-click the command cell to send this instruction.

Other sensor instructions operate the same way.

If you need to modify the other parameters of the sensor, please read the programming manual in detail or contact our electronic engineer to avoid your misoperation, resulting in the sensor can not be used properly!!

Chapter 4 Common problems and Solutions

1. software installation error:

Please shut down antivirus software and install / run the software as Administrator；

The installation failed, and the computer need .NET3.5 (more than 3.5) components:

The 32 bit operating system computer, please download Microsoft.NET-4.0-32 on the internet,

The 64 bit operating system computer, please download Microsoft.NET-4.0-64 on the Internet,

Or contact our engineer.

2. software and sensor can not connect:：

Please check your computer's COM port, and open the software, select the appropriate COM

Please check the power supply of the instrument is normal;

It may be the quality of communication data line. Please check the COM data line, change the 485 data line / install the 485 to USB driver；

Please check the baud rate of your communication settings and whether the parity check is consistent with the sensor;

Check if other software is taking up the COM port and closing other software that will take up the COM port；

It may be a computer hardware problem. The COM port collapsed. Please restart the computer, insert the RS485 data line, and reopen the software;

Unable to simultaneously test multiple sensors, read the address of each sensor, determine the sensor's device address without duplication, determine the software device address settings have been entered in the address of these sensors, separated by * symbols.