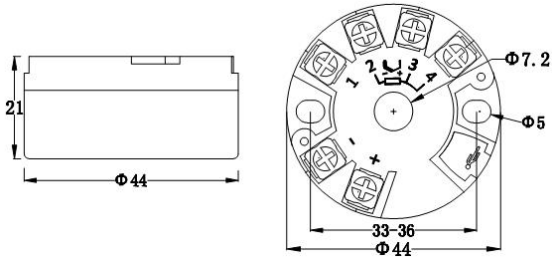


Intelligent Temperature Transmitter



Features

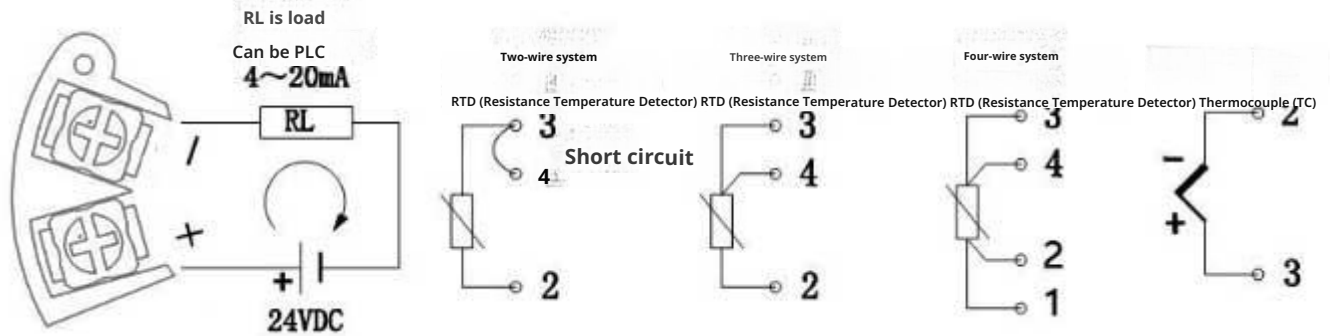
Features

- Supports multiple sensor inputs via configuration;
- Measures resistance temperature detectors (RTD), thermocouples (TC), and linear resistance;
- 4~20 mA two-wire output, transmission accuracy 0.1% FS;
- Wide power supply 12V ~ 40VDC (Load resistance $\leq 100 \Omega$ at 12V);
- Built-in cold junction compensation;

Wiring

Diagram

Connection Diagram



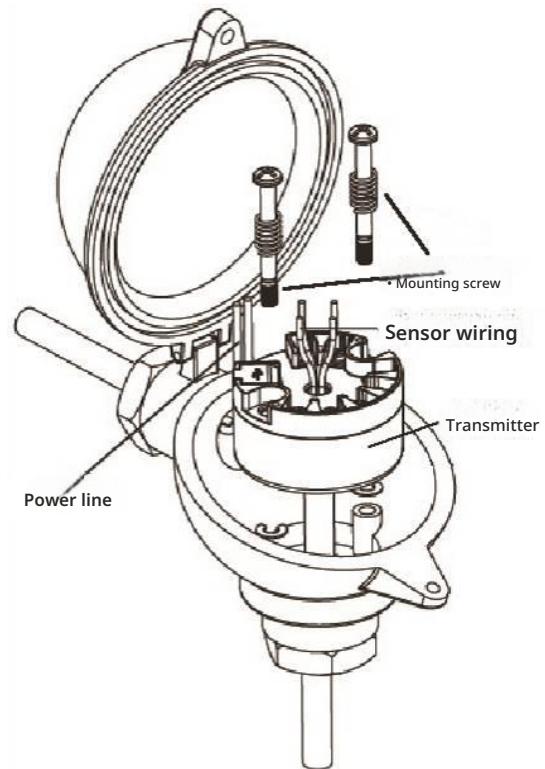
Technical Parameters

Specifications

Cold junction compensation range	-20~60℃
Cold junction compensation accuracy	±1℃
Output signal	4~20mA
Load resistance	$\leq 500 \Omega$ ($U_s = 24V_{dc}$)
Overflow alarm output current	Upper limit 22mA; lower limit 3.8mA
Open-circuit alarm output current	22mA
Supply voltage	12~40VDC
Transmission accuracy (20℃)	0.1%FS
Temperature drift	0.01%FS/℃
Response time	90% of the final value reached within 1 second
Operating Ambient Temperature	-40~80℃
Protection Rating	IP00; IP66 (installation)
Installation Area	Type B Top Box Mounting
Dimensions	$\phi 44 \times 21mm$

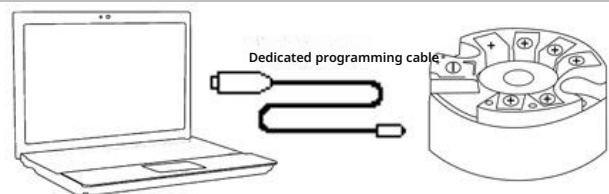
Installation Diagram

Installation diagram



Configuration Method

Configuration



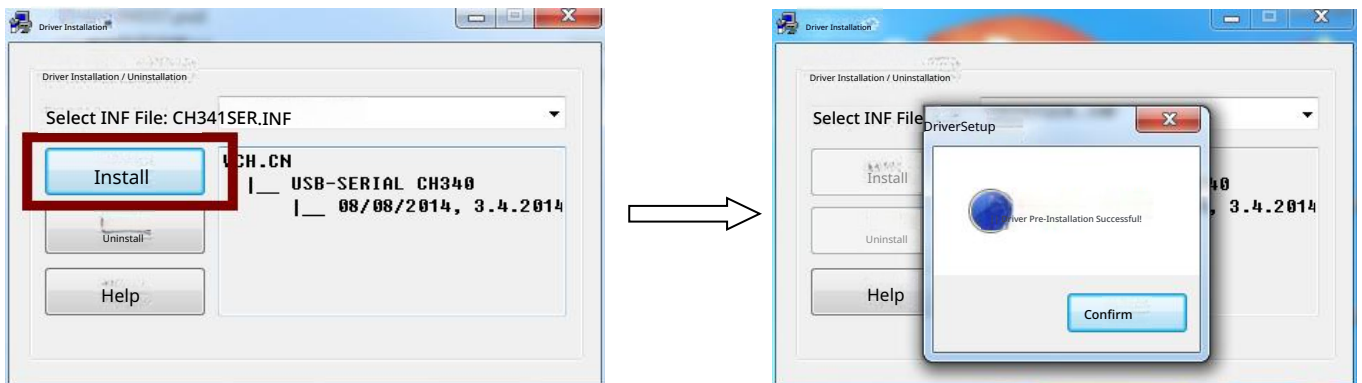
Sensor Type		Temperature Measurement Range	Minimum Temperature Difference
RTD	Pt100	-200~800℃	10℃
	Cu50	-50~150℃	10℃
Thermocouple	K	-270~1372℃	50℃
	J	-210~1200℃	50℃
	R	-50~1768℃	500℃
	S	-50~1768℃	500℃
	B	0~1800℃	500℃
	E	-270~1000℃	50℃
	T	-270~400℃	50℃
	N	-200~1300℃	50℃

Factory Default PT100 -200~800℃

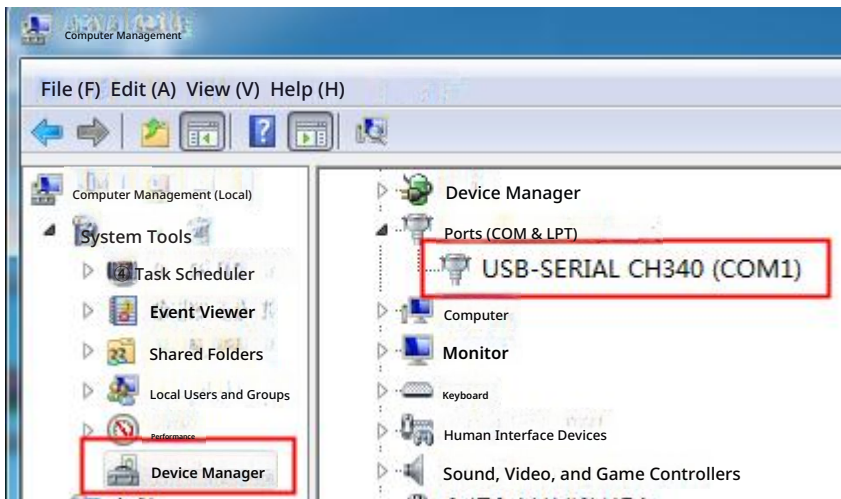
Configuration Software Instructions

1. Programming Cable Driver Installation

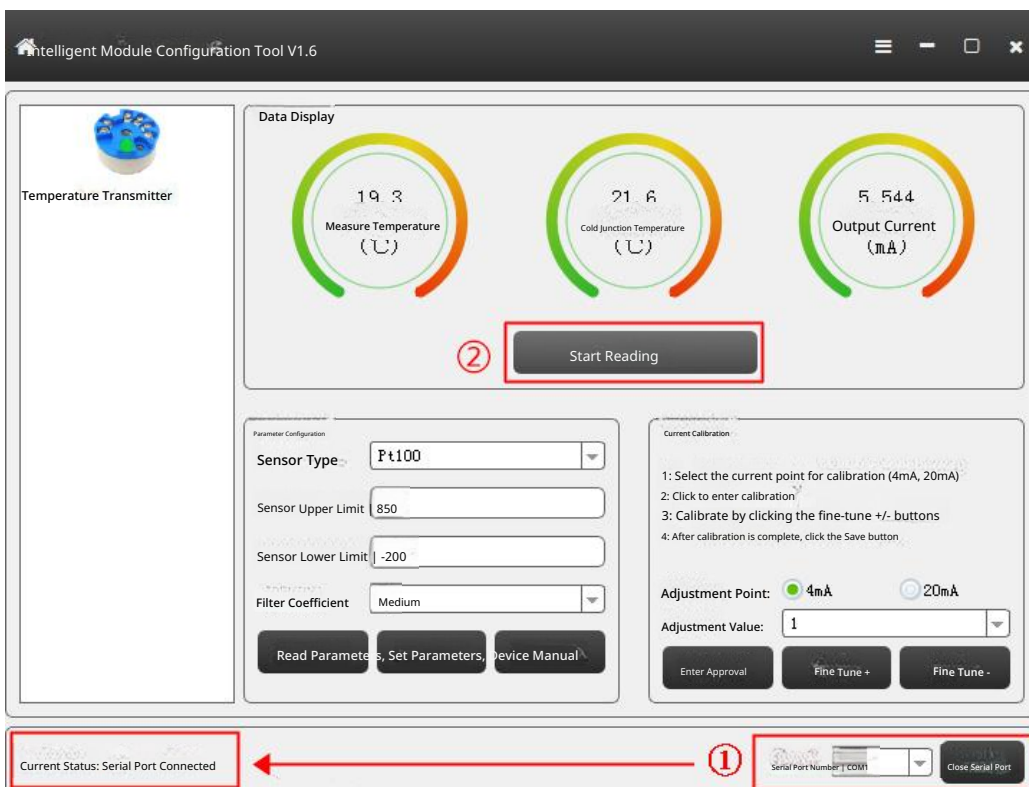
Download the driver from the official website, unzip it, and double-click to run “GB-T100Programming Cable Driver.exe” .



Connect the programming cable to the computer and open “Device Manager”; the following image indicates successful installation.



2. Configuration Software Instructions



Double-click the file “【Gongbei Electronics】 Intelligent Module Configuration Tool.exe” to open the interface shown above.

(Note: If 360 software flags it as a Trojan, please add it to the trusted list. We have not paid protection fees to 360, so it forcibly flags the software as a Trojan.) Note: Once the transmitter is installed with the temperature probe and connected to the computer via the programming cable, no external 24V power supply is required to read the current temperature value.

Follow the steps above; the software will automatically search for serial ports. Select the serial port corresponding to the programming cable and click 'Open Serial Port.' The status bar will show 'Serial Port Connected.' Then click 'Start Reading,' and the data display area will present the measured values.



Measured temperature: the temperature of the object at the measurement end of the temperature probe.

Cold junction temperature: the temperature of the transmitter itself. It is used in thermocouple temperature measurement to calculate cold junction compensation.

3 . Configuration Method:

参数配置

传感器类型 Pt100

传感器上限值 850

传感器下限值 -200

滤波系数 中

读取参数 设置参数 设备手册

电流校准

1: 选择需要校准的电流点 (4mA, 20mA)
2: 点击进入校准
3: 通过点击微调+/-按钮, 进行校准
4: 校准完成后, 点击保存按钮

调整点: 4mA 20mA

调整量: 10

电流校准 微调+ 微调-

Assuming the serial port is already connected, select the sensor type via the “Sensor Type” option. Set the maximum temperature measurement range by specifying the sensor’s upper and lower limits. For example, when measuring outdoor temperatures in the Northeast region, set the upper limit to 50 degrees and the lower limit to -50 degrees. When the temperature is -50 degrees, the transmitter outputs 4mA current; when the temperature is 50 degrees, the transmitter outputs 20mA. The smaller the upper and lower limits, the higher the resolution and the greater the measurement accuracy. The ‘Filter Coefficient’ indicates the degree of filtering applied to the sampled values. Setting it to ‘High’ results in a slower temperature response with reduced fluctuations. Setting it to ‘Low’ results in faster measurement but greater fluctuations. The default setting is ‘Medium.’

Click the ‘Set Parameters’ button to input the current settings into the transmitter. Click ‘Read Parameters’ to retrieve the configured values from the transmitter.

4 . Current Calibration:

Fine-tune the 4-20mA output current to achieve more accurate measurements. The calibration process requires an external 24V power supply and an ammeter connected in series within the circuit.

Note: This product has been calibrated at the factory. Repeat calibration is not recommended.

Step 1: Select the adjustment point. You may choose either 4mA or 20mA; the following example uses the 4mA adjustment point.

Step 2: Click the “Enter Calibration” button; the transmitter will forcibly output the adjustment point current value of 4mA.

Step 3: Use the “Fine Tune + ” and “Fine Tune - ” buttons to adjust the output until the series ammeter displays 4mA.

Step 4: Click the “Save” button; the status bar will indicate the save was successful, as shown below.

当前状态: 校准参数保存成功!

The transmitter will stop outputting 4mA and restore the output current corresponding to the current measured temperature.

Note: Output current calibration can indirectly adjust the measured temperature value.