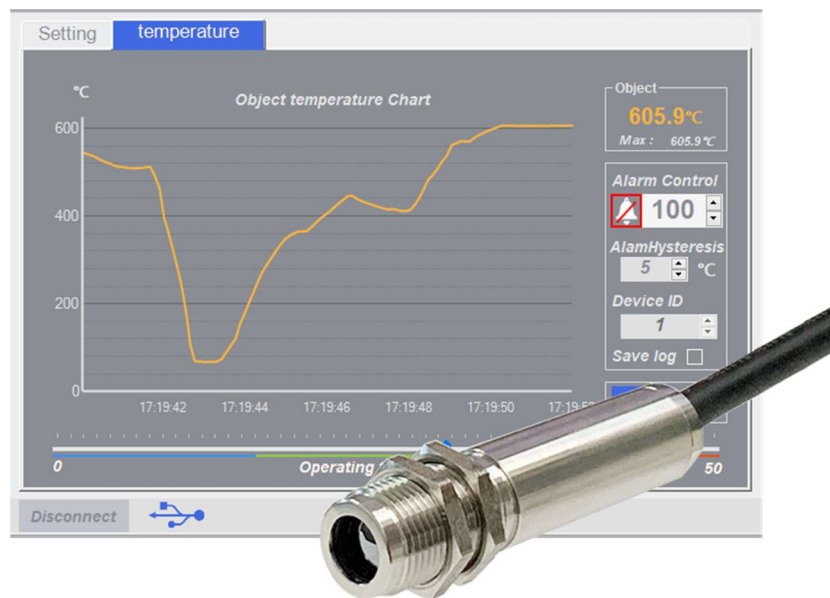


CT-N Series Test board

Manual



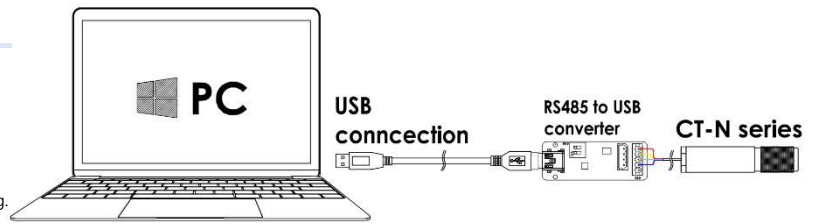
※ support model: CT-200N-485, CT-300N-485, CT-1000N-485

| | |
|---------------------------------------|---|
| 1. Features | 1 |
| 2. Requirements | 1 |
| 3. Driver installation and connection | 1 |
| 4. User interface | 2 |

The CT-N Series is a compact non-contact infrared thermometer for industry. All sensors have an adjustable emissivity setting and are capable of measuring a wide variety of target materials, and support RS-485 Modbus-RTU. A choice of products are available to measure small or large object at short or long distances. This Test Board supports easy connection and simple temperature measurement without any additional circuitry. Please refer to the datasheet for more detailed information.



Features

- ◇ Compact size, simple components.
- ◇ Easy monitoring on pc(windows 10 OS).
- ◇ Easy connection by USB.
- ◇ Free downloads of pc software and driver.
- ◇ Provides temperature display, chart view, alarm, and data logging.



Requirements

Hardware

| | | |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |
| CT-N Series x 1pc | RS485 to USB Converter x 1pc | USB mini B type 5pin Cable x 1pc |

Note: The color and shape of the product may differ from the pictures above.

software

- PC Software
- RS485 to USB Converter Driver

Driver installation and connection

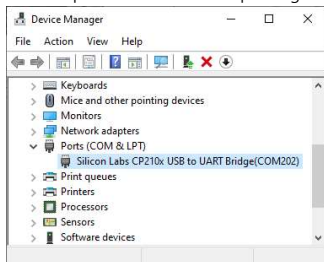
step1. Driver download & install.

- site address: <https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers>
- **CP210x Windows Drivers** download: https://www.silabs.com/documents/public/software/CP210x_Windows_Drivers.zip
- Note: Do not download the Universal Windows Driver. The Universal Windows driver has been reported to have malfunctioning issues on certain devices.

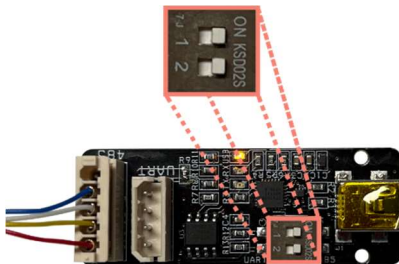
step2. Connect the "USB cable" and "RS485 Converter".

step3. Check the COM port number in "Device Manager" (Window key +X, M)

The COM port number differs depending on the PC environment.



step4. Check if all two slide switches of RS485 Converter are in the ON position.






step5. Unzip after downloading the PC program and execute: https://www.diwellshop.com/web/en/CT-N/CT-N_Testprogram.zip

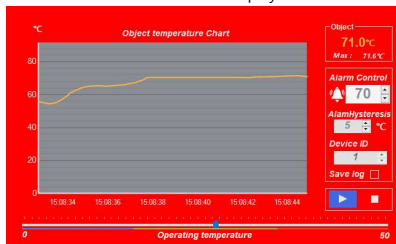
step6. Connect the CT-N thermometer and RS485 converter (refer to step4 picture)

User interface

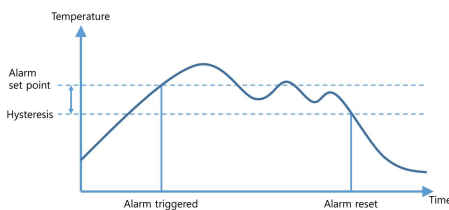
- Temperature tab

- ◇ Open COM port: Select the COM number (see previous page step3) and press the "Connect" button.
Note. The port connection status does not mean that the test board connection is successful. It's just that the port is open state.
- ◇ Read temperature: Click the play button. (▶)
- ◇ Stop reading: Click the stop button. (■)
- ◇ Alarm Control: Configure the settings for alarm.
 - Alarm Off: , On:  (Click the alarm icon, default: Off)
 - Alarm Set Point: The temperature at which the alarm is triggered. Minimum: 30°C. Maximum: 1000°C.

An alarm sound will be played. And the background of the Temperature View will stay red, until the alarm is reset. It can turn off the alarm manually. 



- Hysteresis: The temperature difference between the Alarm Set Point and the reset temperature. Please see the diagrams below for more information.
Minimum: 1°C, Maximum: 20°C.

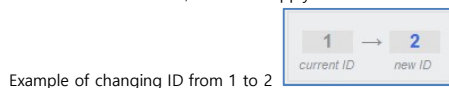


- Alarm Type: High, (The alarm is triggered when the temperature rises above the Alarm Set Point.)
- Alarm reset: The alarm is acknowledged and reset automatically when the temperature reaches the reset temperature.
- Q. Set Point: 70°C, Hysteresis: 5°C. What is the temperature at which the alarm automatically stops? A. less than 65°C

- ◇ Device ID: Modbus ID (factory default: 1)
- ◇ Data Logging: All data is saved as a text file in a subfolder "TEMPLOG". Logging can be started and stopped manually.
If the temperature exceeds the set point during data logging, an "A" character is added to the end of the data line.

- Setting tab

- ◇ ID setup: Enter a new Modbus ID, then click Apply button to save it to the sensor. Minimum: 1, Maximum: 200



- ◇ ID scan: It can be easily find ID by scanning.



- ◇ Emissivity: The CT-N is calibrated for an object emissivity of 0.97. It can be customized by the customer for any other emissivity in the range 0.1...1.0.
The emissivity value in the program is multiplied by 100. i.e. 97 means 0.97, 100 means 1.0, 10 means 0.1
※ When measuring metallic luster materials such as aluminum and copper, it is recommended to apply a black spray or a blackbody tape to the surface of the object.
- ◇ Average Filter: Number of average filter array elements. Affected by noise reduction of Object temperature and peak temperature measurement time.
minimum: 1(no averaging), maximum: 10

Additional information

Manufacturer: DIWELL Electronics Co., Ltd. (South Korea)

Technical support: <mailto:expoeb2@diwell.com>, <mailto:dsjeong@diwell.com>

Revision history

| Version | Date(Y,M,D) | Description |
|---------|-------------|---------------------------|
| 1.0.0 | 2022. 5. 9. | First version is released |
| | | |
| | | |
| | | |
| | | |