

Continental[®]

Refrigerator

OPERATIONS MANUAL



Remote Temperature Logger

WiFi / Bluetooth / USB Monitoring & Alert System

SCAN this code
to download manual



Please fill in the following information for your Data Logger, carefully read the instructions in this manual and file it for future reference.

SERIAL NO. _____

REGISTRATION CODE _____

1-800-523-7138

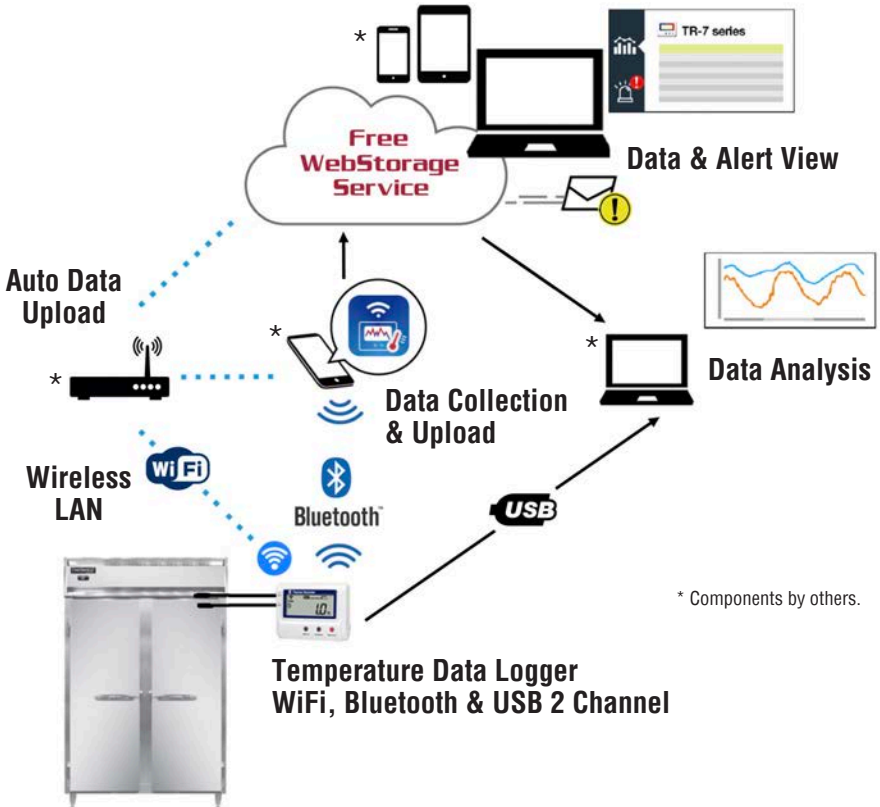
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REMOTE TEMPERATURE DATA LOGGER SYSTEM OVERVIEW



Continental's Remote Temperature Logger System provides automatic monitoring and reporting of equipment temperatures through built-in WiFi, Bluetooth, or USB connectivity. There are no monthly fees — data can be viewed on the free cloud-based WebStorage Service, a smart device, and/or uploaded to the user's computer.

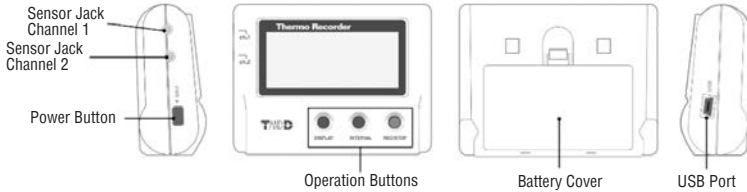
Features of the System include:

- "Always On" monitoring of 2 temperatures per Logger, 24 hours a day, 365 days a year
- Wireless communications via built-in WiFi and Bluetooth
- Wired communications available via USB cable connection (for additional security)
- Free mobile app provides access to logger settings and data from phones, tablets or other smart devices
- Free cloud-based WebStorage Service can also be used to access data and logger settings
- Data can be downloaded to generate reports for food safety plans and HACCP compliance
- Automatic adjustable temperature alarm notifications via email or text messaging
- Equipment model and serial number can be recorded for asset management tracking

DATA LOGGER SAFETY SPEC SHEET

SAFETY PRECAUTIONS AND INSTRUCTIONS

The following items should be strictly obeyed for the safe usage of this product, and for protecting yourself and other people from bodily harm and/or damage to property.



Explanation of Symbols

Warning Symbols



DANGER

These entries are actions that absolutely under no circumstance should be taken. The taking of such an action may cause serious personal physical damage or death.



CAUTION

These entries are actions that if taken may lead to physical injury or damage to persons or things.

Picture Symbols



Denotes an important warning or caution.



Denotes a forbidden action.



Denotes an action that should not be carried out.



DANGER

To Prevent Serious Accidents



Do not disassemble, repair, or modify the unit and/or accessories.



Do not use the unit in any environment that is exposed to chemicals and harmful gases. Doing so may cause corrosion and/or other danger to the unit. Also, coming in contact with hazardous substances may cause bodily harm to the user or people nearby.



This product is not water resistant. If water or a foreign object enters the case, immediately remove batteries and stop using it.



Do not touch the unit or AC adaptor during thunder and lightning, as this may cause electrocution.



Do not handle the unit, remove batteries or cables with wet hands.



This product has been designed for private and/or industrial use only. It should not be used in situations where strict safety precautions are necessary such as with medical equipment, or in systems directly or indirectly connected with human life or well-being.



Do not drop or expose the unit to strong impact.



Do not cut or process the cords for the communication cables. Also, do not twist, pull on or swing any of the cords.



To prevent damage to the unit from static electricity, remove static electricity from your body by touching metal around you (such as a door knob and window frame) before touching the unit.



Place and store the unit and accessories out of reach of children.



We are not responsible for any damage, malfunction, or trouble, whether direct or indirect, caused by the use of this product.

DATA LOGGER SAFETY SPEC SHEET (cont'd)



Do not use any battery, sensor, or cable other than those specified by Continental Refrigerator.



Do not put anything on top of the cable or the unit. This may cause overheating.



Do not disconnect the USB cable during USB communication. Doing so may cause adverse effects to the unit and/or PC.



Make sure that sensor and cable plugs are all inserted fully, so as not to cause an improper connection. Also, when unplugging the cable from the unit, do not pull the cord, but hold the connector to disconnect.



If the unit produces heat, emits smoke or a strange smell, or makes unusual noise, immediately remove the batteries and stop using it. Also, unplug the unit from the PC.



If the unit is not to be used for a long period of time, remove batteries. Leaving batteries inside the unit may cause battery leakage and malfunction. Install new batteries when starting or re-starting to use the unit.



CAUTION Do not place or store in the following areas:

- Areas exposed to direct sunlight
- Areas subject to direct flames or heaters, as well as areas in which hot air accumulates and creates extremely high temperatures
- Areas exposed to static electricity
- Areas exposed to strong magnetic fields
- Areas exposed to water leakage
- Areas subject to condensation or wet areas
- Areas exposed to excessive vibration
- Areas exposed to excessive smoke, dust, or dirt



CAUTION Other Precautions

- Use the unit in the specified operating environment. Do not use it for any purpose other than for which it was designed.
- Condensation may occur inside the case when the unit is moved from one environment to another where there is a great difference in temperature.
- Do not use the unit in wet areas or places exposed to water such as a bathroom.
- When connecting the unit to your PC, make sure to follow all warnings and directions from your computer manufacturer.
- We shall not guarantee the unit's operation if it has been connected to a PC using a USB hub or a USB extension cable.
- Do not insert any foreign objects into any of the units' jacks.
- If the unit gets dirty, wipe it with a clean cloth.
- Make sure to remove dust and dirt from plugs of any cables.
- Battery terminals may provide insufficient contact due to age or vibration. This may lead to data loss.
- Please note that this document has been written based on the presupposition that details about contracts with an Internet provider, specific network environments, and the set-up of any necessary equipment to enable network connection has already been taken care of by the User and that connection has been confirmed as workable. Continental Refrigerator shall not be responsible for any damages which a contractor, a user, or a third party may suffer, whether direct or indirect, due to the inability to communicate or use communication devices.



CAUTION Notices about Sensors

- Do not connect any sensor to the unit other than those specified by Continental Refrigerator.
- Make sure to use sensors within the measurement range indicated in the specifications for that sensor.
- Do not connect the sensor to any data loggers other than those specified by Continental Refrigerator.
- Do not expose the sensor to a strong impact. This may adversely affect measurement accuracy and cause damage or malfunction.
- When the sensor is not to be used for a long period of time, please store it at normal temperature and humidity.
- The included sensor is not water resistant. If the sensor gets wet, immediately remove the sensor from the unit and wipe it with a clean cloth as soon as possible. Then allow the sensor to dry in normal room temperature before using it again.
- Do not use the sensor on the human body.

QUICK ONLINE SETUP

(For Custom Online Setup Instructions, see **page 10**)

AUTOMATIC DATA UPLOAD TO THE CLOUD

This function enables the logger to automatically upload recorded data to WebStorage Service, where data is available for viewing. Here, settings can also be changed. This procedure requires wireless LAN/WiFi, as well as a smartphone or tablet with Bluetooth capabilities. If Bluetooth capabilities are not available, the logger will need to be connected via USB to a PC in order to establish a WiFi connection (see **page 11** for details).

The setup process will require the logger's Serial Number and Registration Code which can be found on the cover of this manual. This information can also be found on the stickers on the logger. If you lose your logger's information, open the software "TR-7wb/nw for Windows" (download instructions can be found on **page 11**) and connect your logger via USB to the computer. The connected logger and its Serial Number and Registration Code will appear in the main window.

NOTE: The app supports Android OS 4.4 or later and iOS 10.0 or later. The maximum number of readings that can be viewed/downloaded differs depending on the access method and the logger's Recording Interval setting. See **page 29** for details.

STEP 1: CREATING A WEBSTORAGE SERVICE ACCOUNT & DEVICE REGISTRATION

In order to view the recorded data on a Web browser, it is necessary to register devices to WebStorage Service in advance:

1. Access WebStorage Service from the Web browser on your PC or mobile device using the following link: <http://www.webstorage-service.com/>.
2. Click [Create Account] to go to the Registration page, and follow the directions to complete the registration. If you already have your User ID, go to the next step.
3. Login by entering the registered User ID and Password. Be sure to record your ID and Password for future use.
4. In the Dashboard window click [Add a Device].
5. On the Add a Device page, enter the logger's Serial Number and Registration Code, then click [Add]. The Serial Number and Registration Code can be found on the cover of this manual.

STEP 2: WIRELESS LAN SETTINGS

1. Download the free "T&D Thermo" app on your smartphone or tablet. "T&D Thermo" is available in the Apple Store for iOS devices and the Google Play Store for Android devices.
2. Open the app and tap [+ Add] to open the Add Device screen.
3. Select the desired device in the list of Nearby Bluetooth Devices to autofill the Serial Number. If the device is not visible, enter the Serial Number manually. Enter the Registration Code manually. Then tap [Apply].
4. Enter your WebStorage Service account information.
5. Return to the main screen by clicking [< Back] and selecting the device you want to connect to WiFi. You will be brought to that device's screen.
6. Tap [Bluetooth]. Make sure you are within Bluetooth range of the device.
7. Once the connection is complete, select Network Settings. Turn on Wireless LAN.
8. Select Network 1 then "Add by Search."
9. Select the WiFi network to which you want to connect. Enter in the network password then tap [OK]. If successful, the device will now be connected to WiFi. See Troubleshooting Guide on **page 28** for any connection errors.

QUICK ONLINE SETUP (cont'd)

STEP 3: CHANGING DEVICE SETTINGS

(For detailed instructions on changing device settings through your WebStorage Service account, see **page 15**)

1. From the Web browser on your PC or mobile device, log on to your WebStorage Service account.
2. In the Devices tab, select the [Settings] button for the appropriate logger.

The screenshot shows the 'Device Settings' interface. The left sidebar has 'Devices' highlighted. The main area shows a table of registered devices:


Serial Number [Model]	Device Name	Rec. Interval	Upload Interval	Warning Settings	Group Name	Settings
[TR-72wF]	Kitchen	2 min	10 min	ON	TANDO_D EMO	Settings
[TR-71wF]	Office (2F)	2 min	15 min	ON	TANDO_D EMO	Settings

Setting which can be changed include:

- **Device Info:** Device Name, Group Name, Recording Interval, Recording Mode, Auto-Upload Interval, Channel Name, Time Difference, Unit of Temperature
- **Warning Settings:** Lower Limit, Upper Limit, Judgement Time, Sensor Warning, Battery Warning

STEP 4: VIEWING AND SAVING DATA

(For detailed instructions on Viewing and Saving Data through your WebStorage Service account, see **page 22**)

1. From the Web browser on your PC or mobile device, log on to your WebStorage Service account.
2. In the Data View window, select [ Chart] to view the data collected by the device. Data may not be available right after setup.
3. Here you can download data in multiple file formats, including a CSV file. You can also use the free "T&D Graph" software to view and download data, which is available for download from the following link: <https://tandd.com/software/td-graph.html>.



QUICK BLUETOOTH® SETUP

(For Custom Bluetooth Setup Instructions, see [page 13](#))

SMARTPHONE OVER BLUETOOTH: SETUP AND DOWNLOAD

By using the “T&D Thermo” app, it is possible to change device settings, download recorded data, and view recorded data directly from your smartphone or tablet via Bluetooth. Please note that the app supports Android OS 4.4 or later and iOS 10.0 or later. If no data is to be uploaded to the cloud, then WiFi is not required.


STEP 1: DEVICE REGISTRATION

1. Install “T&D Thermo” to your smartphone or tablet. “T&D Thermo” is available on the Apple Store for iOS devices and the Google Play Store for Android devices.
2. Open the app. On the main screen, tap [ Add] to open the Add Device screen. Make sure you are within Bluetooth range of the logger.
3. Select the desired device in the list of Nearby Bluetooth Devices to autofill the Serial Number. If the device is not visible, enter the Serial Number manually. Enter the Registration Code manually. Then tap [Apply]. The Serial Number and Registration Code can be found on the cover of this manual. If you lose your logger’s information, open the software “TR-7wb/nw for Windows” (Download instructions can be found on [page 11](#)) and connect your logger via USB to the computer. The connected logger and its Serial Number and Registration Code will appear in the main window.
4. Repeat same process for all devices you wish to add. Tap [ Back] to return to main screen.

STEP 2: GRAPH DISPLAY AND DEVICE SETTINGS

(For detailed instructions on Viewing Data through the “T&D Thermo” app, see [page 24](#))

(For detailed instructions on Changing the Settings through the “T&D Thermo” app, see [page 20](#))

1. Tap the device in the device list screen to open the device info screen.
2. By tapping the [ Bluetooth] icon in the bottom bar, the device settings screen will open and display downloaded data in graph form.




Beneath the graph is the device settings area where you can change recording, name, warning, network, and security settings, etc.

NOTE: Warning alarms will only display when the app is in use and open on the device list screen. The device block will be red instead of white when a warning alarm is present.

STEP 3: SAVING AND SHARING RECODED DATA

(For detailed instructions on Downloading and Sharing Recorded Data through the “T&D Thermo” app, see [page 24](#))

Downloaded data can be saved to a file and shared via email, WebStorage account, or other methods.

1. Tap [ Save] at the top right corner of the screen to save graph data. Then press [ Back] in the top left corner to return to the device information screen.
2. Tap [ Files] in the bar at the bottom of the device information screen to open the file list.
3. Select a file and tap the desired icon in the toolbar. The icons in the toolbar allow you to take actions on the selected data file such as sending to WebStorage Service, sending via email, and saving directly to your smartphone. Any files sent to WebStorage Service can be viewed online in the Download tab in your account.

DEFAULT SETTINGS

START RECORDING TAB	
Recording Start Date & Time	Immediate
Recording Interval	1 min.
Recording Mode	Endless
Group Name	Model #
Device Name	Serial #
Channel 1 Name	Cab Tem_Rtn Air
Channel 2 Name	Amb_Cond Air In

AUTO-UPLOAD SETTINGS TAB	
Upload Interval	1 h.
Warning Settings	
Upper Limit	Ch1: 4.4 °C (40°F) Ch2: 43.3 °C (110°F)
Lower Limit	Ch1: -28.9 °C (-20°F) Ch2: 15.6 °C (60°F)
Sensor Warning	Ch1: ON Ch2: ON
Judgement Time	Ch1: 60 min. Ch2: 60 min.
Battery Warning	ON
Time Settings	
Time Difference	UTC-05:00
Daylight Savings Time	ON

All settings can be adjusted by the user. All default settings are suggestions. Please note the following:

- The maximum number of readings that can be viewed/downloaded differs depending on the access method and the logger's Recording Interval setting. See **page 29** for details.
- Upload Interval has a large affect on the battery life of the logger (if it is not connected to an external power supply), as shown in the table below.

Auto Upload Interval	Approx. Battery Life
1 min.	10 days
1 hr.	1 year
12 hrs. or more	15 months

CUSTOM SETUP

Your device can be setup using two methods:

1. Online, which requires WiFi and either a:
 - a. Software download on a Windows device
 - b. Bluetooth connection on a smart device
2. Through your smartphone, which requires Bluetooth capabilities

For either method, multiple devices can be registered.

To do this, you will need your device Serial Number and Registration Code, which are provided on the cover of this manual. If this information is misplaced, you can find it by following Steps 10 through 13 below, which requires your device to be connected to your computer and the “TR-7wb/nw for Windows” software. The Serial Number and Registration Code can be found in the Item list under the Connected Devices box.

SETTING UP YOUR DEVICE ONLINE AND CONNECTING TO WIFI

In this section, you will create an account and register your device online through the WebStorage Service Website. Once this is completed, you will then need to connect the logger to WiFi. This can be done using the “TR-7wb/nw for Windows” software with a USB connection OR through Bluetooth on a smart device.

1. Using your browser go to <http://www.webstorage-service.com/>. This can be done on your Smartphone, Tablet, or PC.
2. Click on the [New User Registration] link located along the top row of the page.
3. Enter required information. Then click [Submit].

NOTE: The email address provided will also be the default email address to which warning notifications will be sent, if enabled.

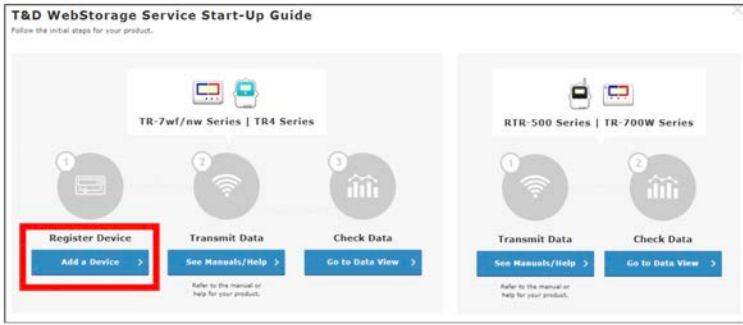
4. Your User ID will be sent to the provided email address.
5. After receiving the User ID, use it and the Password you chose to log in to your account. You will be taken directly to the Dashboard, as shown in **Figure 1**.

Now that your account is activated, you will not have to redo these steps. Follow the steps below to register a device or multiple devices.

6. Click the [Add a Device] button as shown in **Figure 1**.
7. Enter the Serial Number and Registration Code of your device, then click [Add]. You should see an “Added Successfully” notice. If not, check that the Serial Number and Registration Code were entered correctly.
8. Click on the [Back to Registered Devices List] link.
9. You should now see your logger listed in the table with a status of Waiting for First Data.

CUSTOM SETUP (cont'd)

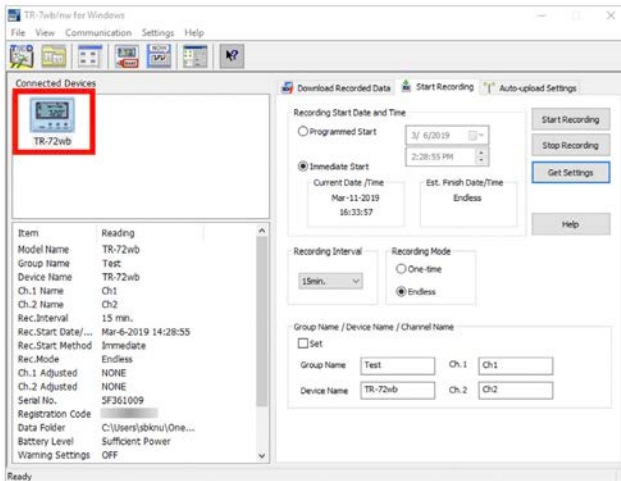
Figure 1: WebStorage Service Dashboard and Add a Device Button



Now your device needs to be connected to WiFi. This can be done through your smart device (see page 14) or through your PC. To connect your logger to WiFi through your PC:

10. Use this link: <https://tandd.com/software/tr7wb/nw/win.html> and follow the steps to download and install the “TR-7wb/nw for Windows” software.
- NOTE:** This software is only compatible with Windows operating systems.
11. Open the “TR-7wb/nw for Windows” software.
12. Connect the logger to your PC via the provided USB connection cable.
13. The device should show up in the software under Connected Devices, as shown in **Figure 2**.

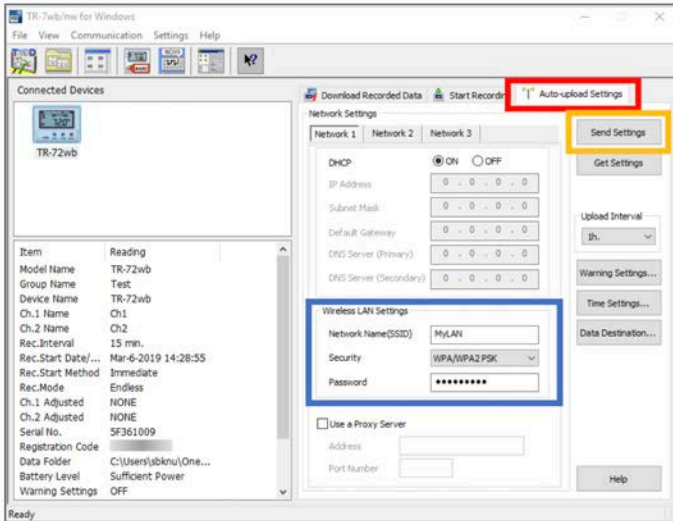
FIGURE 2: Device Connected to Software





CUSTOM SETUP (cont'd)

14. Click on the [Auto-Upload Settings] tab as shown in **Figure 3**.
15. In the Wireless LAN Settings section, enter the Network Name (SSID) and Password of your WiFi, as shown in **Figure 3**. See **Troubleshooting Guide** on **page 28** for any connection errors.
16. Once completed, click the [Send Settings] button, as shown in **Figure 3**.

FIGURE 3: Auto-Upload Settings Tab, Wireless LAN Settings & Send Settings



17. A window will pop-up with the message “All network settings will be sent together,” click [OK].
18. A second window will pop-up with the message “Network settings sent successfully,” click [OK].
19. On the device, look for the WiFi and Web icons in the top left corner of the device screen.
 - a. The WiFi icon looks like this: 
 - b. The Web icon looks like this: 
20. When you click the [Send Settings] button in Step 16, you will see that both the WiFi and the Web icons will start to blink. After about 15 seconds the logger will attempt to connect to the WebStorage Service through the WiFi Access Point. While this is in progress you will see the WiFi icon stop blinking and begin to scroll vertically. When the process has completed, after about 5 seconds or so, one of three conditions will be reflected in the icons:
 - a. **The WiFi icon and the Web icon are both solid.** The connection process was successful. The logger was able to connect with the WebStorage Service server through the LAN and Internet.
 - b. **The WiFi icon and the Web icon both continue to blink.** The connection attempt to the Access Point (or router) failed.
 - c. **The WiFi icon is solid and the Web icon continues to blink.** The logger has connected successfully with the WiFi Access Point but was not able to log onto the WebStorage Service server. This is almost always a firewall issue.

CUSTOM SETUP (cont'd)

CONNECTING YOUR DEVICE TO YOUR SMARTPHONE

This requires a device with Bluetooth capabilities. You can also connect your logger to WiFi using your smartphone.

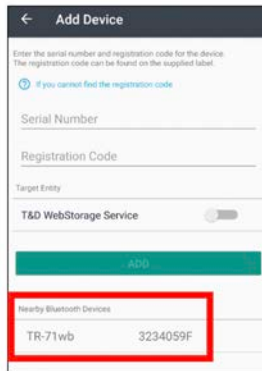
1. Download the “T&D Thermo” app. Its icon is shown in **Figure 1**.

FIGURE 1: T&D Thermo App Icon



2. Open the app. Accept the request to access your phone’s Bluetooth.
3. The app screen will have a banner along the bottom. Click [+ Add].
4. Enter the Serial Number and Registration Code of your device. If the Device Type and Serial Number shows under the Nearby Bluetooth Devices, select it (as shown **Figure 2**). This will fill in the Serial Number. The Registration Code will need to be manually added for security. Both the Serial Number and Registration Code can be manually added.

FIGURE 2: Nearby Bluetooth Devices

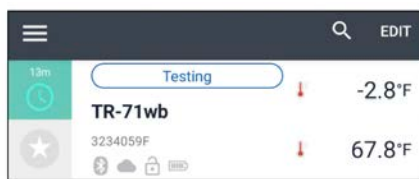


5. To monitor the device on your phone, make sure that the Bluetooth Connection option under Target Entity is turned on. By turning on the “T&D WebStorage Service” in the Target Entity field, the registered device will be connected to your WebStorage account.
6. Once the required information is entered, click [Add] or [Apply]. If you selected “T&D WebStorage Service”, then you will be asked to enter your User ID and Password.
7. You will be asked to confirm the device you want to register, as well as the User ID (if you provided one). If the information is correct, click [OK].
8. If you would like to add other devices, repeat steps 4 through 6.

CUSTOM SETUP (cont'd)

- Once all devices are added, click the [Back] button on the top banner of the screen.
- Your device(s) will show on your main screen, as shown in **Figure 3**.

FIGURE 3: Main App Screen with Added Device(s)



If you want your logger connected to WiFi, either follow the steps below to connect via your smartphone, or refer to **page 14** to connect via your PC using the provided USB cable.

TO CONNECT YOUR LOGGER TO WIFI THROUGH BLUETOOTH ON YOUR SMART DEVICE:

- Click on the device on the main screen.
- Click [Bluetooth]. Make sure you are within Bluetooth range of the unit. You will be brought to the device settings screen.
- Select [Network Settings].
- Turn Wireless LAN ON, then select [Network 1].
- Select [Add by Search] from the window.
- Select the WiFi network you would like to use.
- Enter the WiFi password and click [OK].
- You will be asked to carry out a connection test. Click [OK].
- You will see the “Testing connection...” notification on your screen.
- Once the WiFi is properly connected, you will see the message “Connection to the server succeeded” under Network Status. See **Troubleshooting Guide** on **page 28** for any connection errors.

ADJUSTING SETTINGS

This section describes different methods of altering your devices settings, using the following 3 options:

- a. WebStorage Service Online
- b. “TR-7wb/nw for Windows” software
- c. “T&D Thermo” app on your smartphone

These settings include:

- a. Device Name – How the device will show in your account (ex. Salad Bar Refrigerator)
- b. Group Name – How the device will be grouped in your account (ex. Mfg. Cafeteria)
- c. Recording Interval – How often the device records temperature information
- d. Recording Mode (One-Time or Endless)
- e. Auto-Upload Interval – How often the stored data on the device is transferred
- f. Time Difference (from UTC, GMT) / Daylight Savings Time (ON/OFF)
- g. Temperature Units (°F or °C)
- h. Channel Names
 - Channel 1 - Cabinet Temperature (Return Air)
 - Channel 2 - Ambient Temperature
- i. Warning - Receive a warning via email, text message and/or on your smartphone for the following conditions:
 - Lower Limit Temperature
 - Upper Limit Temperature
 - Judgement Time - the period that the condition remains active before an alert is generated
 - Sensor Warning - issues warning when the sensor is defective or disconnected from the logger
 - Battery Warning - warning if batteries are low
- j. Bluetooth Lock (only accessible via the “T&D Thermo” app) - Set a password to prevent unauthorized access to this logger from other mobile devices
- k. Data Destination (only accessible via the “TR-7wb/nw for Windows” software and the “T&D Thermo” app) - This must be set to the “T&D WebStorage Service” server.

NOTE: The default settings of the logger are listed on **page 9**.

CHANGING SETTINGS THROUGH YOUR WEBSTORAGE SERVICE ONLINE ACCOUNT


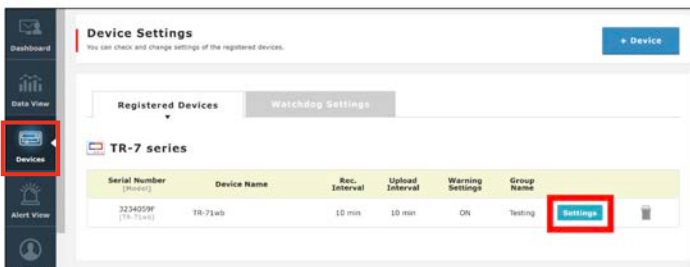
1. In your account, select [ Devices] from the banner on the left side of the screen, then click [Settings], as shown in **Figure 1**.

FIGURE 1: Settings Button on the Device Tab



ADJUSTING SETTINGS (cont'd)

- A new window will open, as shown in **Figure 2**. This Figure also shows the settings that can be adjusted.

FIGURE 2: Settings Window and Send Settings Button

Device Info (Settings received: Apr-06-2020 12:31:13 UTC) Remove Device Reset Data

TR-71wb Serial No. 3234059F / Firmware : Ver. 1.05

Device Name : Group Name :

Rec Interval : Rec Mode :

Auto-upload Interval : It is recommended to set auto-upload interval longer than the recording interval.

Time Difference : : Daylight Saving Time : Temp Unit :

Channel Settings

Ch Name	Adjustment
Ch.1 <input type="text" value="Freezer"/>	No setting
Ch.2 <input type="text" value="Kitchen"/>	No setting

Warning Settings (Temperature: -76~311F)

	Lower Limit	Upper Limit	Sensor Warning	Judgement Time
Ch.1	<input checked="" type="checkbox"/> -9.9 F	<input checked="" type="checkbox"/> 52.0 F	<input type="text" value="ON"/>	<input type="text" value="5 min"/>
Ch.2	<input type="checkbox"/> 32.0 F	<input type="checkbox"/> 122.0 F	<input type="text" value="OFF"/>	<input type="text" value="30 sec"/>

Battery Warning

Start recording when the settings are applied. (All previously recorded data in the data logger will be erased when recording starts.)

- Once all of the settings are entered, click [Send Settings], as shown in **Figure 2**.

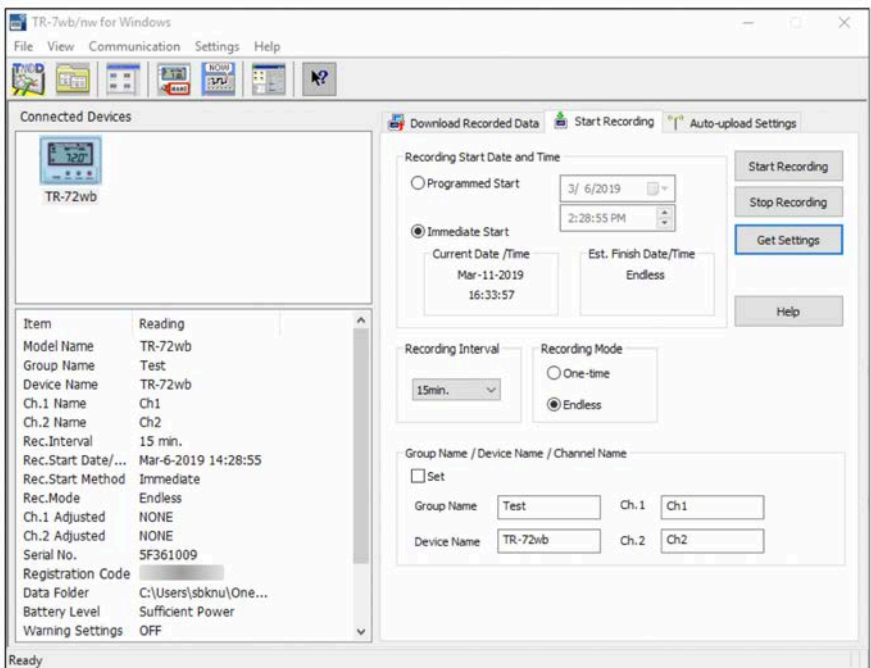
ADJUSTING SETTINGS (cont'd)

CHANGING SETTINGS THROUGH THE TR-7wb/nw FOR WINDOWS SOFTWARE

NOTE: Make sure to click [Get Settings] in each window to view the current logger settings on the software.

1. **Figure 1** shows the settings that can be adjusted on the Start Recording tab.
2. Once all of the settings are entered, click [Start Recording].

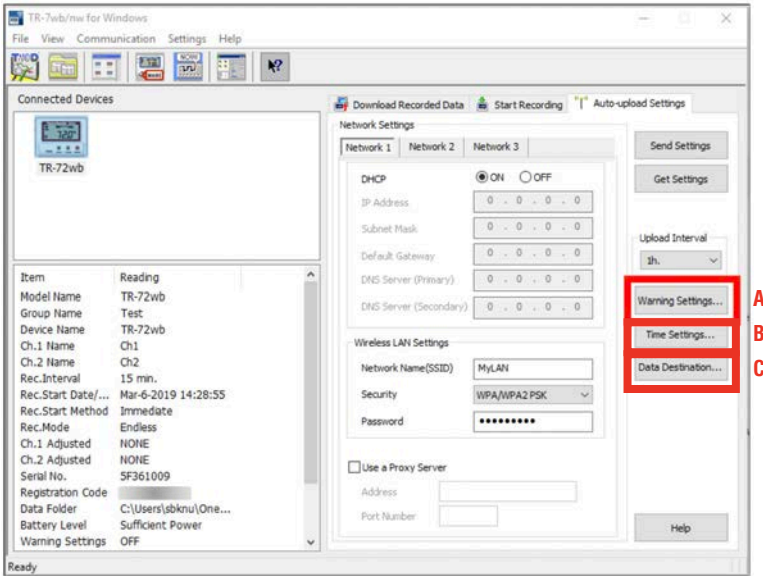
FIGURE 1: Start Recording Tab



ADJUSTING SETTINGS (cont'd)

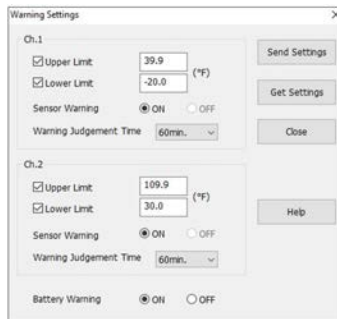
3. Open the Auto-Upload Settings tab. Click on [Warning Settings] button, as shown in **Figure 2A**.
4. **Figure 3** shows the Warning Settings that can be entered.

FIGURE 2: Warning Settings Button



5. Once all of the settings are entered, click [Send Settings]. Once the transmission is successfully completed, click [OK] in the pop-up window. Then click [Close].

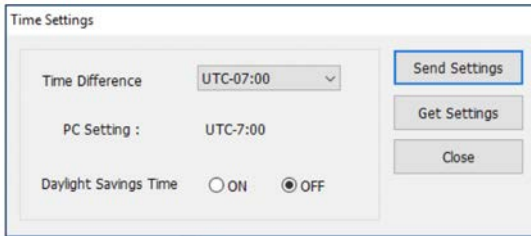
FIGURE 3: Send Settings Button



ADJUSTING SETTINGS (cont'd)

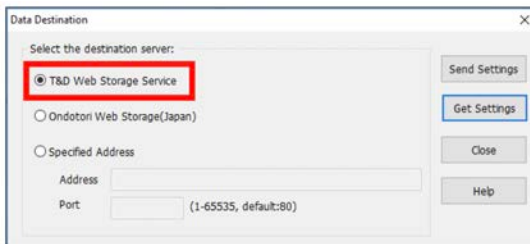
6. On the Auto-Upload Setting Tab, click on the Time Settings button, as shown in **Figure 2B**.
7. **Figure 4** shows the Time Settings that can be entered.
8. Once the desired settings are entered, click [Send Settings]. Once the transmission is successfully completed, click [OK] in the pop-up window. Then click [Close].

FIGURE 4: Time Settings Window



9. The Auto-Upload Settings tab is also where you can define your Data Destination. Click on the [Data Destination] button, as shown in **Figure 2C**.
10. A window will open (see **Figure 5**). Make sure that "T&D WebStorage Service" is selected as the destination server, as shown in **Figure 5** and click [Send Settings]. Once successfully completed, click [OK] in the pop-up window, then click [Close].

FIGURE 5: Data Destination Window



ADJUSTING SETTINGS (cont'd)

CHANGING SETTINGS THROUGH THE T&D THERMO APP ON YOUR SMARTPHONE

1. When you open app, device list page will show. Click on the device you would like to manage.
2. You will see the main screen for that device.
3. Click [Bluetooth] to start communication with the device.

Note: If your logger is connected to WiFi and your WebStorage Service account, you can select the [WebStorage] icon to change most settings as well.

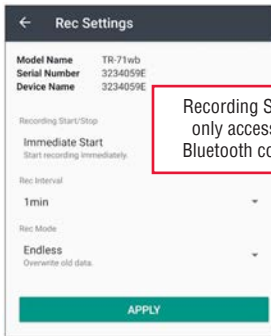
4. Device settings screen will open and display a graph of collected data, as shown in **Figure 2**.

FIGURE 2: Device Settings Screen



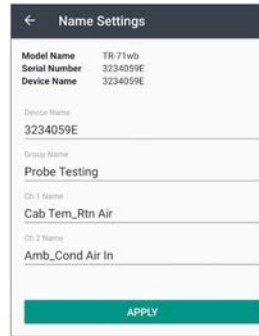
5. The following Figures display the settings available in each section.

FIGURE 3: Rec Settings



Recording Start/Stop only accessible via Bluetooth connection

FIGURE 4: Name Settings



ADJUSTING SETTINGS (cont'd)

FIGURE 5: Warning Settings

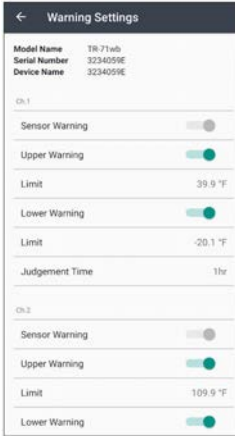


FIGURE 6: Warning Settings



FIGURE 7: Network Settings

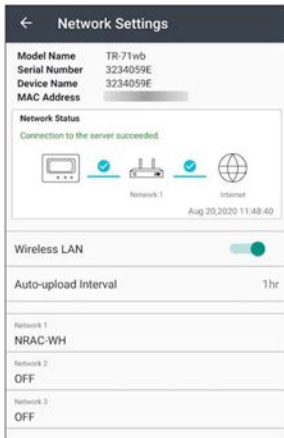
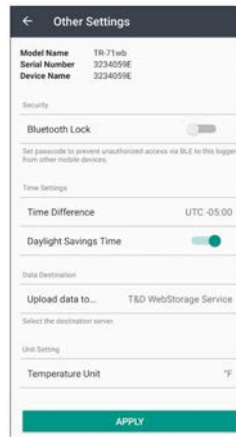




FIGURE 8: Other



Bluetooth Lock & Data Destination only accessible via Bluetooth connection

ADJUSTING SETTINGS (cont'd)

6. In the Settings Table, you can view all of the settings for your device.
7. To adjust the warning notification, you will receive on your smart phone, go back to the main screen and select [ Menu] button.
8. Select [ App Settings].
9. In the App Settings screen, select [Warning Notification].
10. You will be brought to the Warning Notification screen. Here, you can choose to have your phone display an audible alarm and/or vibrate based on your Warning Settings. If an audible alarm is turned on, then the volume can be adjusted and the alarm sound chosen.

NOTE: You will only receive these alarms if the app is in use and open to the device list page.

DATA VIEWING & DOWNLOADING

This section describes the different methods through which your data can be viewed and downloaded using the following three options:

- a. WebStorage Service Online
- b. "T&D Graph" software - only compatible with Windows operating systems
- c. "T&D Thermo" app on your smartphone

NOTE: The maximum number of readings that can be viewed/downloaded differs depending on the access method and the logger's Recording Interval setting. See **page 29** for details.

WEBSTORAGE SERVICE ONLINE ACCOUNT

Viewing Data



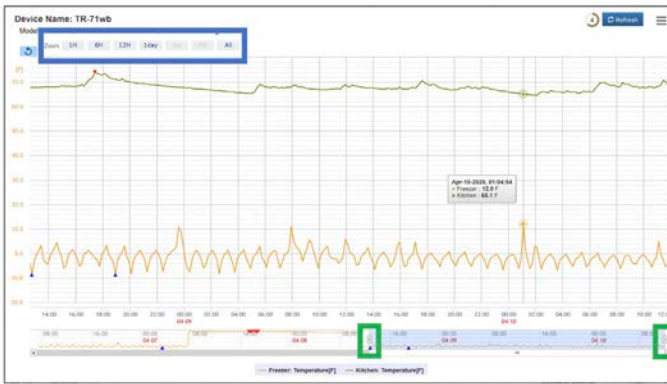
1. In your WebStorage Service account, click [ Data View] from the banner on the left side of the page.
2. Click on [ Chart] in the Details column in the row of the device that you would like to view.
3. A new window will open, as shown in **Figure 1**, where the following graph operations can be carried out:
 - a. Cursor Line/Date & Time/Measurement – Hover your mouse over the data that you would like to view. A box will populate near your cursor with the appropriate information.
 - b. To move cursor line – Move mouse
 - c. To adjust Date & Time View – There are multiple methods for this:
 - i. Select the amount of time you would like to view from one of the options on the top left corner (as shown in **Figure 1**). Note that the graph will display that section of time from the most recent data point.
 - ii. Adjust sides of the blue bar along the bottom of the screen, as shown in **Figure 1**

FIGURE 1: Chart View (i.) Time Adjustment (ii.) Time Adjust



Downloading Your Data

4. Click the [≡ Menu] button in the top right corner.
5. From this menu, you can select from the following downloading options:
 - a. Print chart
 - b. PNG image
 - c. PDF document
 - d. SVG vector image
 - e. CSV file
6. All downloaded files can be found in your computer’s Downloads folder.

T&D GRAPH FOR WINDOWS SOFTWARE

Viewing Data

1. On your PC, go to <https://tandd.com/software/td-graph.html> to download the T&D Graph software. Follow the steps to install the software. Once completed, open the software.
2. Click on [File], then select WebStorage Service.
3. Enter your WebStorage Service User ID and Password into the window and click [Login].



NOTE: If you would like your User ID and Password to be saved, select [Save User ID and Password] from the drop down under “For next login...”. If this is selected, your User ID will show up under the Login screen the next time the WebStorage Service option is selected. Simply double click on your user ID for future logins.

4. Your device list should show in the window, as shown in **Figure 1**.

FIGURE 1: Device List in T&D Graph Software

Device	Serial Number	Base Unit Name	Group Name	Name	Time of first data sample	Time of last data sample
TR-71wf	32120880		Foam Room	PA43N TR-71wf	2020-08-19 07:31:15	2020-08-19 13:08:15
TR-71wb	3234059A		SW27	Lab Area	2020-07-11 23:02:06	2020-08-21 08:09:34
TR-71wb	3234059E		Probe Testing	3234059E	2020-07-13 10:18:53	2020-08-20 09:13:54
TR-71wb	3234059F		1FN	Foam Tape	2020-07-17 01:54:28	2020-08-21 07:36:21

DATA VIEWING & DOWNLOADING (cont'd)

5. Double click a device row to open the device graph in another window.
6. To change the view of the graph, use the [ Magnifying Glass] in the top tool bar operations. Once selected, click and drag the mouse to zoom. After using the magnifying glass, use [ Display Entire Graph] button to revert the graph to its original form.




Downloading Data

7. In the graph window, click [File] from the menu.
8. From here, you can save your data as a CSV file or as a graph file (.trg).




Note: Data saved as (.trg) files can only be opened using the T&D Graph application and cannot be opened in other graph applications.

T&D THERMO APP ON YOUR SMARTPHONE




Viewing Data

1. Click on the device that you would like to manage.
2. You will be brought to the device screen.
3. Click on the [ Bluetooth] icon in bottom the task bar to start communication with the device OR, if your app is connected to your WebStorage account, you can click on the [ WebStorage] icon.
4. Device settings screen will open and display a graph of collected data.
5. By rotating your mobile device, the graph will go into full screen mode (make sure this option is enabled in your phone settings), and the following graph operations can be carried out:
 - a. Cursor Line / Date & Time / Measurement - Long press anywhere on graph to display cursor line, date & time, and measurement information. Cursor line will go to nearest measurement point
 - b. To move cursor line - Long press a different part of the graph or while pressing down slide left or right
 - c. To move Temperature Scale Line - Slide up or down
 - d. Zoom in and out - Pinch in or out anywhere on the graph
6. Number of readings - to change your view based on the number of readings, click [ Settings] in the top right corner of the screen. Here you can select the Graph Display Count and select the number of readings you would like to view.

Downloading and Sharing Recorded Data

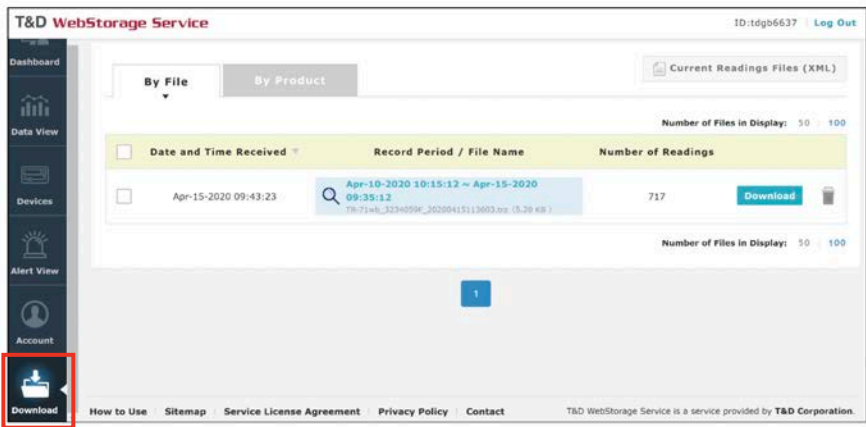
7. In the top right corner of your screen, click [ Download]:
 - a. The number of readings that will be downloaded will be determined by the settings set using the [ Settings] icon.
 - b. All data recorded by the logger since the previous download will be stored as a new file
8. To view downloaded data, go back to the device screen by clicking [< Back] and selecting [ Files].
9. You will be brought to the Files List page.
10. Each instance of saved data will be visible. When selected, the graph view will update with the appropriate data. The icon to the left of the data selection shows the means with which the data was saved (either through WebStorage or Bluetooth).

DATA VIEWING & DOWNLOADING (cont'd)

11. The following operations can be performed with each instance of saved data:
 - a. Share via an email attachment using the [ Email] icon
 - b. Export to other Apps on your smartphone using the [ Share] icon
 - c. Upload to WebStorage Service online using the [ WebStorage Service] icon

NOTE: Data files sent to WebStorage Service will appear in the Downloads section of your WebStorage Service account page, as shown in **Figure 1**. If the Download button is selected, the downloaded data can only be viewed using the “T&D Graph” software on your PC. For details on how to view your data with this software, go to the “T&D Graph” software for Windows section of this Manual on **page 23**. You can also view your data in graph form by clicking on the Record Period/File Name of the file. Once opened, the data can be downloaded in other file formats that do not require the graph software, such as a CSV file.

FIGURE 1: Files List Screen



DATA LOGGER SPEC SHEET

Measurement Channels		Temperature 2ch
Sensor		Thermistor
Measurement Units		°C, °F
Measurement Range	Internal Sensor	-10 to 60°C (*1)
	External Sensor	-40 to 110°C (Supplied Sensor)
Accuracy		Avg. ±0.3°C at -20 to 80°C Avg. ±0.5°C at -40 to -20°C, 80 to 110°C
Measurement Resolution		0.1°C
Responsiveness		Thermal Time Constant: Approx. 75 sec. Response Time (90%): Approx. 190 sec.
Logging Capacity		8,000 data sets (one data set consists of readings for all channels in that type of unit)
Recording Interval		Select from 15 choices: 1, 2, 5, 10, 15, 20, 30 sec. or 1, 2, 5, 10, 15, 20, 30, 60 min.
Recording Mode		Endless (Overwrite oldest data when capacity is full) / One Time (stop recording when capacity is full)
Auto-upload Interval		Select from 15 choices: OFF (No auto-upload), 1, 2, 5, 10, 15, 20, 30 min. or 1, 2, 3, 4, 6, 12, 24 hrs.
Communication Interfaces		Wireless LAN Communication: - Standard: IEEE 802.11b/g/n - Security (*2): WEP (64bit/128bit), WPA-PSK(TKIP), WPA2-PSK(AES) - WPS 2.0: Push Button Configuration - Protocol: HTTP(*3), DHCP, DNS Bluetooth Communication - Bluetooth 4.2 (Bluetooth low energy)
Power (*4)		Battery: AA Alkaline x 2 External: USB Bus (5V 200mA), AC Adaptor (AD-05A2 or AD-05C2)
Battery Life (*5)		Approx. 10 days to 15 months (*6)
Dimensions		H 58 mm x W 78 mm x D 26 mm
Weight		Approx. 55 g
Operating Environment		Temperature -10 to 60°C, Humidity 90 %RH or less (no condensation)
Software		TR-7wb/nw for Windows, T&D Graph, T&D Data Server, T&D Thermo
Compatible OS		PC Software (*7): - Microsoft Windows 10 32 / 64 bit - Microsoft Windows 10 32 / 64 bit - Microsoft Windows 7 32 / 64 bit Mobile Application: - Android OS, iOS (for the compatible versions, please refer to the software page of T&D Web site)
Display Languages (*8)		English

DATA LOGGER SPEC SHEET (cont'd)

NOTES:

1. When Auto Upload is used frequently, the measurement of the internal sensor may rise by around 0.3°C. When using external power, the data logger itself generates heat and the internal sensor will report a temperature much higher than ambient; we recommend using an external temperature sensor in this case.
2. If you wish to use the WPS feature, set the security type of the wireless LAN access point to "WPA2-PSK(AES)" or "None".
3. HTTP client. Proxy supported.
4. When using external power, the internal temperature of the logger rises.
5. Battery life is highly dependent on the Auto-upload interval; at 1 min will give 10 days of usage, and at 12 hours or more will yield the maximum lifetime. Other influential factors include LAN environment, ambient temperature, recording interval, and battery performance. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.
6. Shows the estimated battery life with Bluetooth and Auto-Upload ON. It will be 1.2 times longer with Bluetooth OFF. Also shows the estimated battery life with Auto-Upload ON.
7. For installation, it is necessary to have Administrator (Computer Administrator) rights.
8. We recommend using an operating system in the same language as the display language. Operation in different languages is not guaranteed.

The specifications listed above are subject to change.

TROUBLESHOOTING GUIDE

Q: Why am I receiving an error when I try to connect to my logger through Bluetooth on the app?

A: First, check to make sure that your smart device has its Bluetooth capabilities enabled. If so, make sure that you are close enough to the logger for it to properly make a Bluetooth connection. Bluetooth connection requires the devices to be within about 30 feet of each other.

Q: Why don't I see any data in my WebStorage Service account?

A1: If you recently setup your logger – When the logger is first setup, data won't be shown on your WebStorage Service account until the Upload Interval is met. If your Upload Interval is one hour, you will need to wait one hour before any data will be visible on your account. Until then, on the Devices tab, your device will read "Waiting for first data" where you would see the "Settings" option. All of the information for your logger, except for the Serial Number, will be blank as well.

A2: If you waited the time of the Upload Interval – Be sure that the Data Destination of the logger is set to the "T&D WebStorage Service" server and not to the Japanese server. If the wrong server is selected the unit will appear to be functioning normally but no data from it will show up in your account. This setting can be changed through the "T&D Thermo" app in the "Other Settings" category by connecting to settings via Bluetooth or through the PC software, as shown on [page 19](#).

Q: Why don't I receive warning notifications on my smart device?

A: Warning notifications will only be received when the device list display is open. This is the screen that appears when the app is first opened. You can also check and adjust your warning notification settings in your App Settings, as described in the Setting section of the Data Logger Manual.

Q: I made changes to the logger settings online, but they aren't reflected in the app (or vice versa). Why?

A: Changed settings will be applied to the logger when it communicates with your WebStorage Service account. The frequency of this communication is the same as the Upload Interval time. Before that communication is complete, you will see a clock icon between the Device Name and the Rec. Interval in the table on the Devices tab, as shown below. This clock will disappear once the settings have been updated.



Q: Why is the time stamp of my data off by one hour?

A1: Using WebStorage Service online - On the Data View tab, select the "Clock Display Settings" button. Here you can select Yes or No for the "Display using Daylight Savings Time info?" option.

A2: Using the T&D Graph software - In the graph window, select Settings, then "Date Format Settings..." Here you can check or uncheck the "Display time in Daylight Savings Time" option.

Note: If the logger is used in an area that observes Daylight Saving Time, make sure to toggle this option on and off with each change of the clocks. For example, this option should be on during the summer and off throughout the winter.

Q: Why can't my device connect to the Internet?

A: First, ensure the correct security protocol option is selected in the settings. The choices are: None, WEP, WPA and WPA2 / AES. These are the only security protocols with which the logger is compatible. The logger will not connect with networks using other security protocols, including token-based Enterprise level protocols.

A1: Via the TR-7wb/nw for Windows software - When you click the Send Settings button, you will see both the Wi-Fi and Web icons on the logger will start to blink. After about 15 seconds the logger will attempt to connect to the WebStorage Service through the Wi-Fi Access Point. While this process is in progress you will see the Wi-Fi icon stop blinking and begin to scroll vertically. When the process has completed, after about 5 seconds or so, one of three conditions will be reflected in the icons:

- Wi-Fi icon and Web icon are both on solid - The connection process was successful. The logger was able to connect with the WebStorage Service server through the WLAN and Internet.
- Wi-Fi icon and Web icon both continue to blink - Connection attempt to the Access Point (or router) failed.
- Wi-Fi icon is solid and Web icon continues to blink - logger has connected successfully with the wireless Access Point but was not able to log onto WebStorage Service server. This is almost always a firewall issue.

A2: Via the T&D Thermo app/Bluetooth - If the connection is not successful and the error reads:

- "Connection to access point failed" and/or "Connection to access point failed (Setting value reception error)" – Check Network Name and Password and try again.
- "Connection to access point failed (Server error)" – Check security protocol for the Internet.
- "Connection to access point failed (Can't resolve server address)" or error relating to the DNS – This is most likely a firewall issue.

FREQUENTLY ASKED QUESTIONS

Q: How long will be data be available for viewing/downloading?

A: Different quantities of data can be viewed/downloaded from different locations. Table 1 below shows the maximum number of readings that can be viewed/downloaded depending on the method you are using. Table 2 shows the approximate storage capacity of each location, depending on the Recording Interval. The faster the Recording Interval, the more often you will need to download your data to prevent any data loss. The default Record Interval for the logger is 1 minute.

Table 1

Location	Max Readings View Download	Max Readings per Channel
"T&D Graph" Software	See Table 2	See Table 2
Browser (Online)	30,000	15,000
T&D Thermo" App: Bluetooth	16,000	8,000
T&D Thermo" App: Cloud	See Table 2	See Table 2

Table 2

Recording Interval	Approximate Storage Period		
	"T&D Graph" Software or "T&D Thermo" App: Cloud	Browser (Online)	"T&D Thermo" App: Bluetooth
1 sec.	1 day	4 hours	2 hours
2 sec.	2 days	8 hours	4 hours
5 sec.	3 days	21 hours	11 hours
10 sec.	6 days	42 hours	22 hours
15 sec.	9 days	3 days	33 hours
20 sec.	12 days	3 days	44 hours
30 sec.	20 days	5 days	3 days
1 min.	30 days	10 days	6 days
2 min.	80 days	21 days	11 days
5 min.	200 days	52 days	28 days
10 min.	450 days	104 days	56 days
15 min.	450 days	156 days	83 days
20 min.	450 days	208 days	111 days
30 min.	450 days	313 days	167 days
1hr.	450 days	450 days	333 days

Q: How do I receive alarm warnings via email and text message?

A: On the Account tab in your WebStorage Service account, select Set Warning Recipients. The administrator email should already be listed. To add another email, type in the email address and select "Add." If you would like to receive a warning alarm via text, the email address that you will need to use is dependent on your cellular provider. Type in the appropriate address and select "Add."

Q: How do I change the temperature units to °F or °C?

A1: Online – On the Devices tab in your WebStorage Service account, select the settings of the logger that you would like to change. This will open up a new window. In the Device Info section, select the appropriate units from the drop down next to "Temp Unit." Be sure to click "Send Settings" when finished.

A2: On the App – Select the logger that you are interested in. If you are within Bluetooth range, you can select the Bluetooth icon. You can also select the WebStorage icon if your device is setup to your account and connected to WiFi. Select the "Other Settings" option. Under Unit Settings, you can change the Temperature Unit from °F to °C or vice versa. Be sure to click "Apply" when finished.

FREQUENTLY ASKED QUESTIONS (cont'd)

Q: How long will the logger's batteries last?

A: The logger's Upload Interval is the single largest factor in determining the logger's battery life. The Upload Interval is the frequency at which the logger uploads its readings to the WebStorage Service. It can be set from once a minute to once a day. The shorter the interval, the quicker the batteries will deplete. If a shorter upload interval is required, and changing batteries becomes burdensome, the unit can be externally powered through the USB connector by a standard cell phone charger. Please refer to the table below for approximate battery life for different Upload Intervals. **NOTE:** The battery life will be 1.2 times longer with the Bluetooth turned off.

Upload Interval	Battery Life
1 minute	~10 days
1 hour	~1 year
12 hours or more	~15 months



For Technical Questions:

Please contact T&D's technical support service

Available from 8am to 5pm EST

Phone: 440-490-4829

Email: birwin@dataloggerinc.com

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