Wireless Data Recorder RTR-505

User's Manual

Thank you for purchasing our product.
Carefully read this instruction manual before using this Unit.

Outline of RTR-505

- **External Input Model Type**
  - (Please proof read for use in daily life [RTR-500A])
  - RTR-500 DC is a basic logger design and is easy to use.
  - This model is a unit for wireless communication to download recorded data.

Part Names

- **Module**
- **Module Jack**

1. Installing the Battery

1. Remove the screws and open the cover.
   - Make sure to use the proper size and type of screwdriver. (Phillips head #1 screwdriver is recommended.)

2. Insert the included battery.
   - Do not remove the battery from its tube casing.

3. Check the rubber packing for any cuts or scratches and close the cover as it was when opened.
   - Dust or defects on the packing can adversely affect the waterproof capacity; in this case, remove the dust or replace the packing if it is damaged.
   - Be sure to completely close the cover.
   - Make sure the screws are tight. (Appropriate Tightening Torque: 200m to 300m [20kgf cm to 30kgf cm])

**Notes about Battery Installation**

- After inserting the battery for the first time, nothing may appear or occur for about 10 seconds; this is not a malfunction.
- If a new battery has been installed and nothing appears in the display, please remove and reinstall the battery.
- When inserting a battery, make sure no water or foreign objects get inside the case.
- Make sure that + and - are in the correct direction.

**About Lithium Batteries**

- When using an LS14250 type Lithium battery, even though a new battery has been inserted, the battery warning mark may remain on for a short time. This is due to a special characteristic of the battery. Note that the longer the battery has been in storage, the longer the amount of time, from 10 minutes to about 1 hour, the battery warning mark will remain. If during that time the Base Unit is used to get the current status of the Remote Unit, the remaining battery level will show that the level is low.
- The estimated battery life of the Lithium Battery LS14250 is about one month when data is downloaded. If the estimated battery life is less than 10 minutes, the battery should be replaced.

- The specifications listed above are subject to change without notice.

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2. Connecting an Input Module

Insert an Input module into the record module jack. Once the Unit recognizes the module, the LCD display will change as shown below and recording will start. (If you have purchased an RTR-505-P, the Unit has been set by default to start recording upon installation of the battery.)

- **The factory default settings are as follows:** Recording Interval: 10 minutes, and Recording Mode: Endless.

3. How to Read the LCD Display

- **When being used in very hot or cold environments the display may become difficult to read. This is not a malfunction.**

**Basic LCD Display**

- **Device Name** RTR-505/-505L
- **Unit of Measurement** The-unit-of-measurement-for-the-display-will-appear.
- **Operational Status** The-recording-status-will-appear.
- **Sensor Type** Thermocouple Sensor: K, J, T, S

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Measurement Interval</th>
<th>Set-Model Number</th>
<th>Battery-Life- (Recording-Interval:-10-seconds-or-longer)</th>
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<td>RTR-505-TC</td>
<td>Thermocouple Module (TCM-2010)</td>
<td>About-10-months</td>
<td>RTR-505-TC</td>
</tr>
<tr>
<td>RTR-505-P</td>
<td>Voltage Module (PM-2010)</td>
<td>About-10-months</td>
<td>RTR-505-P</td>
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<tr>
<td>RTR-505-RA</td>
<td>Voltage Module (PM-2010)</td>
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<tr>
<td>RTR-505-VM</td>
<td>Voltage Module (PM-2010)</td>
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<td>RTR-505-VM</td>
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<tr>
<td>RTR-505-P</td>
<td>Pulse Module (PM-4020)</td>
<td>About-10-months</td>
<td>RTR-505-P</td>
</tr>
</tbody>
</table>

**Example of Display**

- **Display varies depending upon the model being used.**

**RTR-505-TC (Thermocouple)**

- Temperature measurement (Unit: °F / °C) will be displayed. Sensor type will be displayed under the measurement; the factory default setting is Type K.

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**RTR-505-V (Voltage)**

- Voltage measurement (Unit: V / mV) will be displayed. Due to the wide measurement range, the Unit has been set by default to adjust the decimal point automatically to display the measurement in V. By using the software included with the Base Unit, you can change the sensor type.

**RTR-505-P (Pulse)**

- There are two display methods for the pulse measurement. By using the software included with the Base Unit, you can change the display method.

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- Estimated Battery Life

- When a battery warning mark appears, try to replace the battery with a new one as soon as possible.
- In a normal temperature environment, where recorded data is downloaded once a day or if monitoring is carried out once every ten minutes:
  - The estimated battery life of the Lithium Battery LS14250 is about ten months if recorded data is downloaded once a day or if monitoring is carried out once every ten minutes:
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Other Marks or Messages on Display

Logging Capacity FULL

When Recording Mode has been set to “One-Time” and the Unit reaches its logging capacity of 16,000 readings, recording will automatically stop and in the LCD the measurement word “FULL” will alternately appear.

Estimation of time until “FULL” is displayed

- Displayed time is approximate.
- The measurement and the word “FULL” will alternately appear.

Data Transmission via Wireless Communication

The measurement and the word “SEnd” will alternately appear when data is being sent via wireless communication to the Base Unit. Recording will continue during wireless transmission.

Check

If this appears, all data that was stored in the Unit will have been erased.

This message will appear under the following conditions:

- The first time a battery was inserted after purchase.
- When the battery is replaced after having been taken out for a long period.
- When the battery is replaced after the battery power has been lost.

Input Module Unrecognized (factory default)

This will appear if, after purchasing, the Input Module has never been connected to the Unit. (No display for default.)

Note that a RTR-505-P has been used to measure Pulse by default, therefore the unit “I” will be displayed.

Input Module Unconnected or Damaged

This will appear if the Unit cannot confirm a connection with the Input Module after recognizing it. (unit of display)

If nothing is displayed after reconnecting the sensor to the Unit, there is a possibility that the sensor or the Unit has been damaged.

Sensor Unconnected or Damaged

This will be displayed when a sensor has not been connected to the module of the wire has been broken. Recording is in progress and so is battery consumption.

If nothing appears on display after reconnecting the sensor to the Unit, there is a possibility that the sensor or the Unit has been damaged.

Measurement Range Exceeded

The message “OL” will appear if an measurement exceeds the measurement range.

Display Range Exceeded

When monitoring voltage in "milli-range", the measurement in the LCD display will flash if it exceeds the display range of the Unit.

In order to properly use this product, please carefully read this manual before using.

T&D Corporation shall in no manner whatsoever take responsibility for any malfunction of and/or product damage caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair outlined in the attached warranty.

This product has been designed for private and/or industrial use only. It is not for use in environments where strict safety and accuracy are required, such as in connection with precision equipment, whether industrial or otherwise.

Module is replaced, it is necessary to re-make any desired adjustment settings to be performed in the Adjustment Tools application.

Please be fully aware of this before using the product.

Safety Precautions and Instructions

* Please carefully observe the following safety measures when using our products.

To prevent any loss or damage to our customers, other people and/or property, and to ensure the proper use of our products we ask that before using our product you carefully read, understand and follow the safety rules and precautions for our products as outlined below.

FCC Statement

This device complies with Part 15 of the Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

IC Statement

This device complies with RSS-210 of the Industry Canada (IC). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Important Notice

Wireless products cannot be used in countries other than those where these products have been approved for use, according to that country's wireless regulations. T&D Corporation shall in no manner whatsoever take responsibility for the usage of these products, nor be liable in any manner for any legal consequences stemming from the usage of these wireless products in unapproved areas.

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4. Registering as a Remote Unit (Communication with a PC)

In order to download data from the Unit via wireless communication or change recording settings in the Unit, it is necessary to register a RTR-905 as a Remote Unit (solid state) to the Base Unit.

For details about available operations via wireless communication or how to make recording settings, see the introductory Guide included with the Base Unit or see the Help application included with the Remote Unit.

Communication with a PC enables the following:

By using a software included with the Base Unit, it is possible to carry out Remote Unit registration, change recording settings in the Unit, download recorded data to a PC, and view downloaded data.

Communication with a PC can be established in the following ways:

A. Using a software included with the Base Unit, it is possible to make any desired adjustment settings to be written into the newly connected module.

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DANGER

Do not take apart, repair or modify the Unit.

Do not use any other batteries than those that are specified in this manual.

Do not insert metal objects into the battery terminals.

If water or a foreign object enters the case, immediately remove the battery and cause it to drain.

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CAUTION

The battery used is an industrial type (non-rechargeable) battery. Use only the battery indicated in this manual.

When using the Unit in a low temperature environment (below -20°C), the battery’s chargeable capacity will be reduced to about 80%, and when using under normal temperature conditions.

If the Unit has condensation on the inside of the case, it may cause malfunction or damage.

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NOTICE

The User is responsible for ensuring that all necessary steps have been taken to ensure the proper use of this product.

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Interference to radio or television reception may cause malfunction of the Unit.

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WARNING

Do not use or store the Unit in places such as listed below. It may result in malfunction or unexpected accidents.

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NOTICE

This product may not be used in the following situations:

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NOTICE

When making “Adjustment Settings” in the Adjustment Tools application, the adjustment values will be saved to the Input Module. Therefore, when an Input Module is replaced, it is necessary to re-make any desired adjustment settings to be written into the newly connected module.

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NOTICE

Press the [Exit] key for 5 seconds to save any entered settings and turn the Unit off.

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