USER GUIDE

# RTR-602S

T&D

Distributed by AKRIBIS

**Wireless Food Core Temperature Data Logger**

**RTR-600 Series**

# RTR-602 User's Manual

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

RTR-602S RTR-602L RTR-602ES RTR-602EL

Common Accessories: Manual Set (Warranty Included)

In this manual, RTR-602S, RTR-602L, RTR-602ES, and RTR-602EL are referred to as "RTR-602", "Remote Unit(s)", or simply as "device(s)".

T&D Corporation

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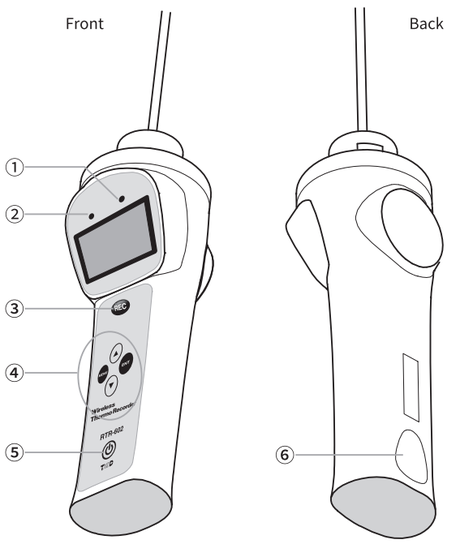
## RTR-602 Specifications

| | |
|---|---|
| Measurement Channels | Temperature 1ch |
| Sensor | Platinum Resistance (Pt1000) |
| Measurement Units | °C , °F |
| Measurement Range | -60 to 250°C |
| Accuracy | ±0.5°C at -10 to 150°C<br>±1.0°C at -60 to -10°C, 150 to 250°C |
| Measurement Resolution | 0.1°C |
| Responsiveness | Response Time (90%):<br>Approx. 60 sec. (in air) / Approx. 3 sec. (in agitated water) |
| Measurement / Display Interval | 0.5 seconds |
| Recording Items | Temperature, Measurement Time, User, Item, Judgment Result |
| Logging Capacity | 1,800 readings |
| Recording Mode | Endless (Overwrite oldest data when capacity is full) |
| Communication Interfaces | Short Range Wireless Communication<br>Frequency Range: 902 to 928MHz<br>RF Power: 7mW<br>Transmission Range: About 50 meters (if unobstructed and direct)<br>Optical Communication |
| Communication Time | Data Download Time (for 1,800 readings): Approx. 2 minutes<br>An additional 30 seconds should be added for each Repeater. (*1) |
| Power | Built-in Ni-MH Battery (Non-Contact Charging System) (*2) |
| Battery Life | Approx. 24 hours (for Continuous Operation with Backlight Always ON) |
| Dimensions | H 181.3 mm × W 53.5 mm × D 53.5 mm (excluding sensor)<br>Sensor Length: Short type 135 mm, Long type 310 mm<br>Cable Length: 900 mm |
| Weight | RTR-602S (Short Sensor) Approx. 200 g<br>RTR-602L (Long Sensor) Approx. 210 g<br>RTR-602ES (Cable Type Short Sensor) Approx. 250 g<br>RTR-602EL (Cable Type Long Sensor) Approx. 260 g |
| Operating Environment | -10 to 60°C |
| Waterproof Capacity | IP68: Submersible |
| Software (*3) | PC Software (Windows)<br>Base Unit/Repeater Settings: RTR500BW for Windows<br>Remote Unit Settings: RTR-600 Settings Utility |
| Compatible Base Units / Repeaters | Base Units: RTR500BW, RTR500BC (*4)<br>Repeaters : RTR500BC<br>Other devices (*5) |

*1: When using RTR500BW as Base Unit and RTR500BC as Repeater. Depending upon conditions it may take up to an additional 2 minutes.
*2: A Battery Charge Dock (RTR-600BD) needs to be purchased separately.
*3: Free software download and information on OS compatibility is available on the Software page of our website at https://tandd.com/software/.
*4: Customers wishing to use the RTR500BC or RTR-500 as a Base Unit, please contact your local distributor for the communications protocol specifications to write your own software.
*5: Also compatible with the following discontinued products: RTR-500NW/AW, RTR-500.
The specifications listed above are subject to change without notice.

## Before Using this Product

- The RTR-602 Units function as Remote Units. They require Base Units to carry out wireless communication. Before getting ready and setting up the Remote Unit, make sure to first get ready and setup the Base Unit(s).
- To use RTR-602, it is necessary to make operation settings via the software "**RTR-600 Settings Utility**".
  For details about the operation settings via the software, refer to the "**RTR500BW+RTR-600 Setup Guide** (PDF)". Both the software and manual can be downloaded from the T&D Website.
- To carry out setup of RTR-602, a Battery Charge Dock with USB communication function "RTR-600BD" (sold separately) is also necessary.




## Part Names and Functions

| | |
|---|---|
| ① LED (Orange) | By pressing the <REC> button, the lamp will turn on when a temperature measurement is recorded. |
| ② Judgment LED (Red / Green) | The Judgment result of temperature measurement will be shown. Out of Range: Red LED will blink. Within Range: Green LED will blink. |
| ③ <REC> Button | When this button is pressed, the Temperature, Date / Time, User Name, Item, and Judgment Result at the time of pressing are recorded into the RTR-602. |
| ④ Operation Buttons | |
| <ENT> | Press to enter the settings menu or confirm a setting. |
| <MENU> | By pressing this button, the menu will be displayed. Also, press to return to the previous screen. |
| ▲▼ | Press to move the arrow cursor up and down or scroll the screen. |
| ⑤ Power Button | Press to turn the power ON or OFF. The automatic power-off function automatically turns off the power after about five minutes of inactivity. |
| ⑥ Optical Communication Area | Do not shield the communication area with a tape as it may cause communication errors. |

## Sensor Tip Shape

Each sensor type has a different tip shape: the long type sensor has a round tip; and the short type sensor has a sharp tip (for piercing target object).

Sensor Materials: Stainless Steel (SUS316)
Handgrip Materials: Flame-retardant PPE/PA6 (Temperature Durability: About 170°C)
Cable Materials: Fluoropolymer Coated Electrical Wire Cable Length: 900 mm

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## Safety Precautions and Instructions

**To ensure safety obey all of the following warnings.**

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. Before using this product, please read the following carefully and fully understand the contents.

**Warning Symbols**

| | |
|---|---|
| ⚠ DANGER | Failure to follow the instructions with this symbol could cause serious injury or even death. |
| ⚠ CAUTION | Failure to follow the instructions with this symbol could cause personal injury or physical damage to equipment. |

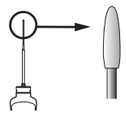
### ⚠ DANGER To Prevent Serious Accidents

**DO NOT USE THIS PRODUCT IN WAYS OTHER THAN ITS INTENDED PURPOSE**

This product has been designed to measure the temperature of food and liquids. Do not use it for any purpose other than for which it was designed.

Because the sensor has a sharp tip, there is a risk of accidentally stabbing people and/or objects. Do not use the sensor for any purpose other than measuring the temperature of objects for which it was designed.

**PLACE AND STORE IN A SAFE PLACE**



Avoid placing the unit in unstable areas exposed to vibration, slippery surfaces, or within reach of small children. When not in use, put a cover on the sensor tip and store in a safe place.

**CLEAN and STERILIZE UNITS BEFORE AND AFTER USE**

Before and after using, please clean to remove any substances attached to the surface and sterilize the units in order to prevent the growth of bacteria.

**If a unit gets dirty or oily, wipe it with a clean cloth dipped in alcohol.**

NEVER use an acid, alkaline, or chlorine based detergent. This will cause harm to the electric components in the unit or the battery charger.

**DO NOT TOUCH SENSOR IMMEDIATELY AFTER MEASUREMENT**

Please be careful when using in extreme hot or cold environments; touching the unit may cause burns or frostbite.

### ⚠ CAUTION Other Precautions

- Do not disassemble, repair or modify the unit and/or accessories.
- Do not forcibly insert the sensor into hard objects such as frozen food. It may cause to sensor breakage, leading to unexpected accidents and injury.
- Do not cut or process the sensor cables. Also, do not twist, pull or swing any of the cables.
- To prevent damage to the unit from static electricity, remove static electricity from your body before touching the unit.

### Disclaimers

In order to properly use this product, please carefully read all documents that accompany the product before using.

- All rights of this document and attached documents belong to T&D Corporation (hereinafter referred to as "the Company"). It is prohibited to use, duplicate and/or arrange a part or whole of them without the permission of the Company.
- All registered trademarks, company names, product names and logos mentioned herein or for products being used are the property of the Company or of their respective owners.
- Specifications, design and other contents outlined in this document are subject to change without notice.
- Please follow the safety precautions outlined in this document carefully. We cannot guarantee nor are we responsible for safety if this product is used in any manner other than was intended.
- On-screen messages in this documents may vary slightly from the actual messages.
- Please notify the distributor where you purchased this product or the Company of any mistakes, errors or unclear explanations in this document and attached documents.
- The Company's liability for the product shall be limited to repair or replacement in accordance with our free repair policy, as stated on the included warranty card. The Company shall not be liable for any lost profits, business interruption, other consequential damages, indirect damages, punitive damages, or damages based on a claim for compensation from a third party that the Customer incurs as a result of a failure or malfunction of the product. However, if due to the Company's intentional or gross negligence the Customer suffers damages, the Company shall be liable for damages up to the amount paid by the Customer for such product.
- Please read the warranty and provisions for free repair carefully.

### Information Regarding Product Disposal

- This product contains recyclable Ni-MH batteries.
- If you wish to dispose of the unit, please contact your local distributor.

### Compliance Information

This device complies with part 15 of FCC Rules and Innovation, Science and Economic Development Canada's licence-exempt RSS(s). 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.

*Le présent appareil est conforme à la partie 15 des règles de la FCC et aux normes des CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

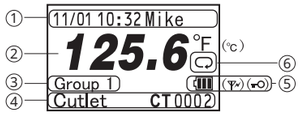
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## How to Read the LCD Display

### Top Screen

By turning the power to ON, the Top Screen, such as below, will appear.




① Current Date (MM/DD), Time (HH:MM), and User Name

A maximum of 8 characters can be displayed for a user name. Up to 62 users can be registered.

② Current Temperature (°F/°C)

③ Work Group Name

A maximum of 8 characters can be displayed as a work group name. Up to 31 groups can be registered, each of which can have a maximum of 7 users and 15 items.

④ Measured Item and Count No.

The item being measured and a count number to show how many times this item has been measured are shown here. A maximum of 12 characters can be displayed for a measured item. Up to 63 items can be registered. The count number will be reset to zero every time a Work Group Table is sent to the RTR-602 via software.
The above screen shows the temperature of a cutlet that has been measured two times.

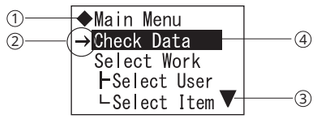
⑤ Icons (Battery Level / Communication Antenna / Button Lock)

| | |
|---|---|
| | This icon shows the remaining amount of battery power. When the battery is too low to measure temperature, the "Please charge batteries" message will appear. |
| | This icon appears during wireless communication with the Base Unit. |
| | This icon appears when "Button Lock" is set to ON in the software. Button operation will be OFF for all buttons except for the <REC> and Power buttons. |

⑥ Recording Mode (Endless)

### Main Menu Screen

By pressing the <MENU> button, the Main Menu will appear as shown below.




① Menu Title

② Cursor

Use ⊕ ⊖ buttons to move the arrow cursor up and down.

③ ▲▼

Use ⊕ ⊖ buttons to scroll the screen up and down.

④ Currently Selected Item (Highlighted)

## Details about the LED Light (when REC is pressed)

### Orange LED: ON (Normally)

Normally the orange LED turns on, and the recorded temperature is displayed.

After about three seconds, the orange LED turns off and the display automatically returns to the top screen.

### Orange LED: Blinking ("Wait for Temp")

When the "Wait for Constant Temp Settings" has been set to ON in the software and temperature is not stable, the orange LED blinks meaning a recording is pending*.

Do not remove the sensor from an object being measured while "Wait for Temp" is on display and the orange LED is blinking.

* If the temperature is not stabilized even after 15 seconds have elapsed, recording will not be performed and you will be returned to the top screen.

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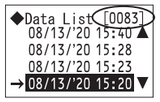
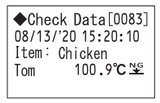
## Menu Contents




**[Check Data] > [Data List] > [Check Data]**

By selecting the [Check Data] menu, all recorded data in the Remote Unit is displayed in a list in descending order (from newest to oldest data). Select data by moving the cursor and press the <ENT> button to view detailed information.

The left screen shows the 83rd data reading highlighted by the cursor.

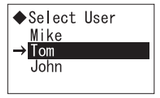



Details of the selected data (date (mm/dd/yy) and time (hh:mm:ss) of recorded data, measured item, user name, measurement, and judgment result) will be displayed.

OK Judgment OK

NG Lower Limit Error

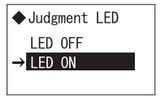
NG Upper Limit Error




**[Select User] / [Select Item]**

Select from the list of Users and Items setup in the software.

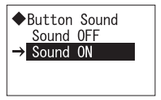
If you have registered Work Groups, it is also possible to select from the [Select Work] menu.




**[Judgment LED]**

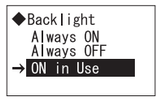
By setting to "LED ON", the Judgment LED will blink when a measurement exceeds the set upper or lower limit*.

* Upper and lower limits can be set using the software.



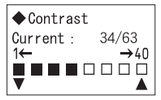

**[Button Sound]**

Turn ON or OFF the beep which sounds when a button is pressed.



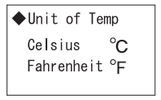

**[Backlight]**

The "ON in Use" option will backlight the display for three seconds only during operation.



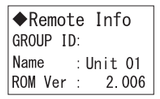

**[Contrast]**

Use ⊕ ⊖ to adjust the contrast of the display.




**[Unit of Temp]**

Select Celsius [°C] or Fahrenheit [°F].




**[Remote Info]**

The Group ID* and Remote Unit Name can be viewed here for the unit being used.

* The Group ID is automatically assigned upon registering a Remote Unit.

## Message Display

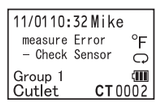
### Settings Change Message

If any settings changes have been made via wireless communication to the unit in use, a notification message will be displayed for about two seconds. After that, you will be automatically returned to the top screen.

This message will be displayed regardless of what settings have been made in the unit.

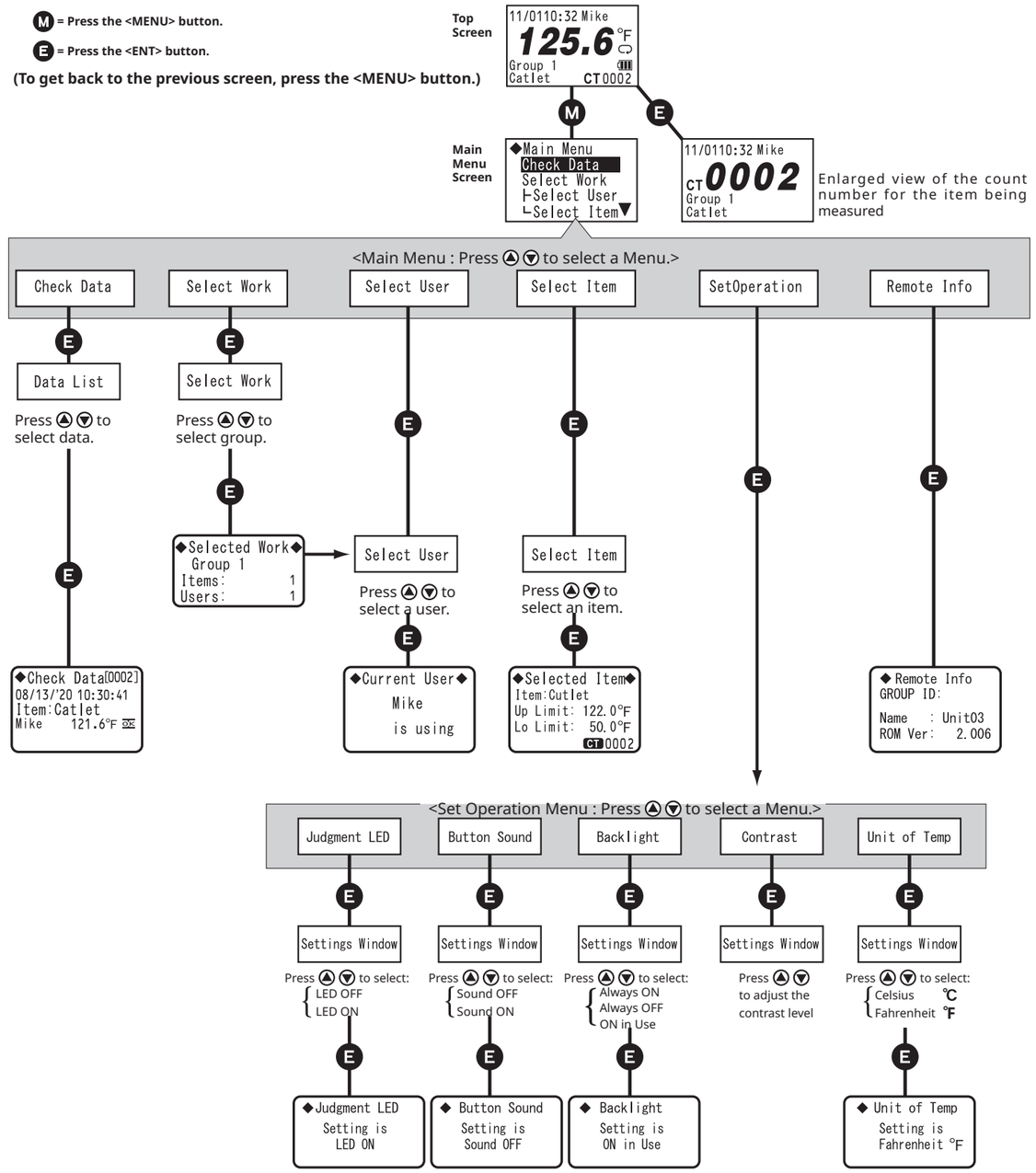
Even when the power is off, the unit will automatically turn on to display the message.

### Sensor Error Message



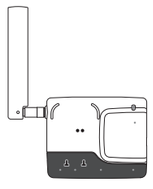

Please contact your local distributor if you see this message.

## Operations Table

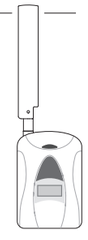


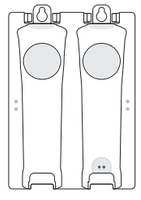

### Compatible Base Units / Repeaters

Network Base Station
RTR500BW
(Wired/Wireless LAN Type)



Wireless Base Station / Repeater
RTR500BC



### Battery Charger (with USB communication)

Battery Charge Dock
RTR-600BD