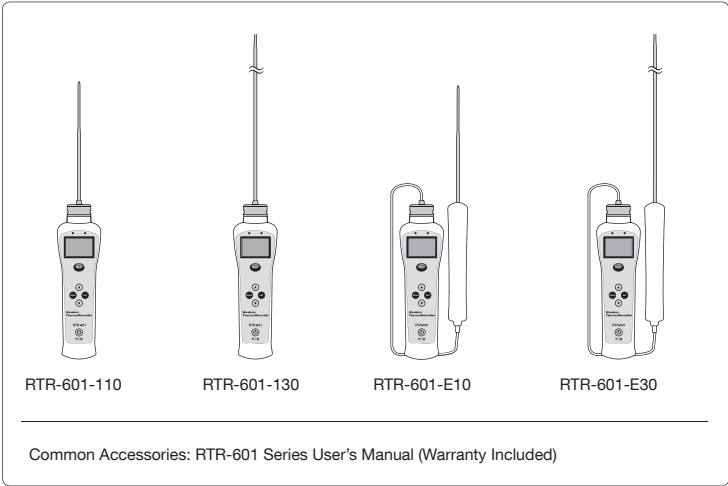# Wireless Food Core Temperature Data Logger
RTR-601 Series Users Manual

T AND D

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

RTR-601-110   RTR-601-130   RTR-601-E10   RTR-601-E30

Common Accessories: RTR-601 Series User's Manual (Warranty Included)

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Specifications

Measurement Channels	Temperature 1ch
Sensor	Platinum Resistance (Pt1000)
Measurement Units	°C , °F
Measurement Range	–60 to 250°C
Accuracy	±0.5°C [–10 to 150°C] ±1.0°C [–60 to –10°C / 150 to 250°C]
Measurement Resolution	0.1°C
Responsiveness	Thermal Time Constant: Approx. 12 sec. (in air) Approx. 2 sec. (in agitated water) Response Time (90%): Approx. 60 sec. (in air) Approx. 3 sec. (in agitated water)
Measurement / Display Interval	0.5 sec.
Recording Items	Temperature, Measurement Time, User, Item, Judgement Result
Logging Capacity	1,800 readings
Recording Mode	Endless (Overwrite oldest data when capacity is full)
LCD Display Items	Temperature, Current Date/Time, User, Item, Battery Level, etc.
Communication Interfaces	Wireless Communication (Short Range Radio Communication) FCC Part15 Section247 / IC RSS–210 (Frequency Range: 902 to 928MHz, RF Power: 7mW)
Wireless Transmission Range	Approx. 50 meters if direct and unobstructed
Power	Two included AAA Ni–MH batteries (Non–Contact Charging System) (*1)
Battery Life	Approx. 24 hours (for Continuous Operation with Backlight Always ON)
Dimensions	H 165 mm × W 49.8 mm × D 37 mm (excluding sensor) Sensor Length: Short type 135 mm, Long type 310 mm
Weight	RTR-601-110 (Short Sensor) Approx. 135 g RTR-601-130 (Long Sensor) Approx. 150 g RTR-601-E10 (Cable Type Short Sensor) Approx. 185 g RTR-601-E30 (Cable Type Long Sensor) Approx. 200 g
Operating Environment	–10 to 60°C
Waterproof Capacity	IP68: Submersible
Accessories	User's Manual (Warranty Included)
Compatible Base Units / Repeaters	Base Units: RTR–500NW / 500AW / 500 (*2) Repeater : RTR–500

*1: A Battery Charge Dock (RTR-6BD) needs to be purchased separately.
*2: Customers wishing to use the RTR-500 as a Base Unit, please contact your local distributor for the communications protocol specifications to write your own software.
The specifications listed above are subject to change without notice.

Before Using this Product

- The RTR-601 Series 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-601 Series Units, it is necessary to make operation settings via the software **"RTR-500W for Windows (for RTR-601)"**. Please download the software and manual from the T&D Website. [HOME > Support > Downloads > Software or Manuals]
  (1) Software for aid in making Operational Settings: **"RTR-500W for Windows (for RTR-601)"**
  (2) Manual for help in making Settings: **"RTR-500NW/500AW Introductory Manual for Use with RTR-601 Series"**
- To carry out setup of RTR-601 Series Units, a Battery Charge Dock with USB communication function "RTR-6BD" (sold separately) is also necessary.
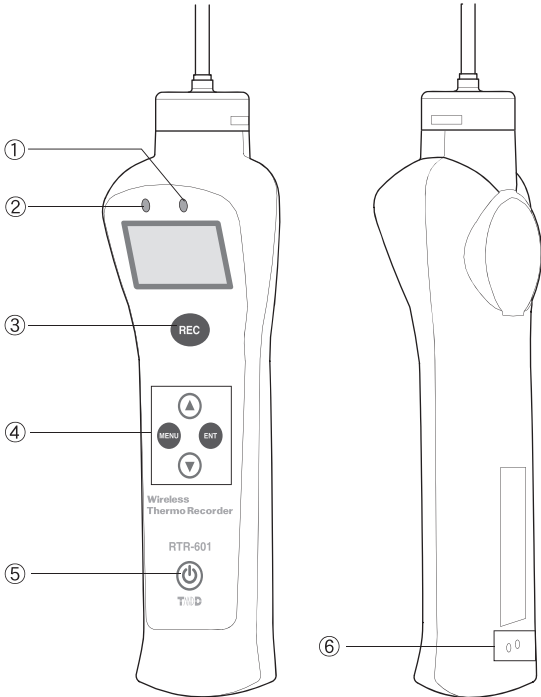
Part Names and Functions

①	LED (Orange)	By pressing the <REC> button, the lamp will turn on when a temperature measurement is recorded.
②	Judgement LED (Red / Green)	The judgement 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 Judgement Result at the time of pressing are recorded into the RTR-601.
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	Communication Area	Do not shield the communication area with a tape as it may cause communication errors.

RTR-601 Series is referred to as simply the "RTR-601", "unit" or "Remote Unit" in this document.

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

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.

⚠ DANGER — Failure to follow the instructions with this symbol could cause serious injury or even death.

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.

ASID
ALKALINE
CHLORINE

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 — Failure to follow the instructions with this symbol could cause personal injury or physical damage to equipment.

- 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.
- We are not responsible for any damage, malfunction or trouble, whether direct or indirect, caused by the use of our product.
- To prevent damage to the unit from static electricity, remove static electricity from your body before touching the unit.

Important Notices and Disclaimers

- In order to properly use this product, please carefully read all attached documents before using. T&D Corporation accepts no responsibility for any malfunction of and/or trouble with this product or with your computer that is 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.
- All rights of the attached documents belong to T&D Corporation. It is prohibited to use, duplicate and/or arrange a part or whole of the attached documents without the permission of T&D Corporation.
- All registered trademarks, company names, product names and logos mentioned herein or for products being used are the property of T&D Corporation or of their respective owners.
- Specifications, design and other contents outlined in the attached documents are subject to change without notice.
- Please follow the safety precautions outlined in the attached documents 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 the attached documents may vary slightly from the actual messages.
- Please notify the shop where you purchased this product or T&D Corporation of any mistakes, errors or unclear explanations in the attached documents.
  T&D Corporation accepts no responsibility for any damage or loss of income caused by the use of our product.
- Accompanying documents cannot be reissued, so please keep them in a safe place.

Information Regarding Product Disposal

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

RTR-601 Series Warranty

Warranty Period	1 year from date of purchase
Date of Purchase	
Customer's name	
Address	
Phone No.	
Distributor's name	
Address	
Phone No.	
Object of Repair	Main Unit (excluding sensors.)
Method of Repair	Send in for Repair

Provisions for Free Repair

1. If the unit does not work properly despite the fact that the customer used it properly and in line with the manual, the unit shall be repaired free of charge through the distributor which sold the unit.
2. If the customer requests free repair because of trouble within the warranty period, bring or send the unit along with the warranty to the distributor.
3. If you have moved after purchasing, or there are difficulties contacting the distributor from which you purchased the unit, please contact T&D directly for service.
4. Free repair is not available in the following cases even though it is within the warranty period:
   1. Trouble or damage was caused by careless operation, natural disaster, fire, public pollution, or use of a power source other than specified.
   2. If repair, adjustment, disassembly or modification of the unit has been carried out by a person other than a T&D authorized engineer.
   3. Trouble or damage was caused by transportation, movement or dropping of the unit after purchase.
   4. Failure to submit the warranty or failure to fill in all items required in the warranty.
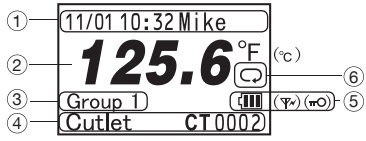   5. The warranty cannot be reissued.

This warranty only promises customers free repair within the period and conditions clarified in this warranty. Therefore, the customer's legal rights will not be limited by this warranty. For further information on repair and other service questions after the termination of the warranty period, contact your distributor.

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How to Read the LCD Display

Top Screen

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

```
① 11/01 10:32 Mike
②    125.6 °F     (°C)
③ Group 1                ⑥
④ Cutlet      CT0002     ⑤
```
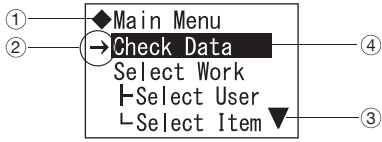
① Current Date/Time and User Name
② Current Temperature (°F/°C)
③ Work Group Name

A maximum of 12 characters can be displayed as a work group name.

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 8 characters can be displayed for a measured item. The count number will be reset to zero every time a Work Group Table is sent 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 ◆Main Menu
② →Check Data           ④
     Select Work
     ├Select User
     └Select Item  ▼      ③
```

① Menu Title
② Cursor

Use ⊙ ⊙ to move the arrow cursor up and down.

③ ▲ ▼

Use ⊙ ⊙ to scroll the screen up and down.

④ Currently Selected Item (Highlighted)

Details about the LED Light (when REC is pressed)
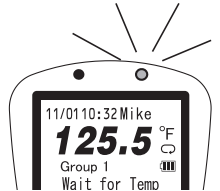
Orange LED: ON (Normally)

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

```
11/0110:32 Mike
130.2 °F
Group 1
Recorded Temp
```

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*.

```
11/0110:32 Mike
125.5 °F
Group 1
Wait for Temp
```

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.

Menu Contents

```
◆Data List[0083]
 11/01/13 15:40 ▲
 11/01/13 15:28
 11/01/13 15:23
→11/01/13 15:20 ▼
```

[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.

```
◆Check Data[0080]
 11/01/13  15:40:13
 Item: Chicken
 Tom     100.9℃ NG
```

Details of the selected data (date and time of recorded data, measured-item, user name, and judgement result) will be displayed.

OK Judgement OK
NG Lower Limit Error
NG Upper Limit Error

```
◆Select User
 Mike
 Tom
 John
```

[Select User] / [Select Item]

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

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

```
◆Judgment LED
 LED OFF
→LED ON
```

[Judgement LED]

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

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

```
◆Botton Sound
 Sound OFF
→Sound ON
```

[Button Sound]

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

```
◆Backlight
 Always ON
 Always OFF
→ON in Use
```

[Backlight]

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

```
◆Contrast
 Current :   34/63
 1←          →40
 ▼  ■■■■□□□□  ▲
```

[Contrast]

Use ⊙ ⊙ to adjust the contrast of the display.

```
◆Unit of Temp
 Celsius    ℃
 Fahrenheit °F
```

[Unit of Temp]

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

```
◆Remote Info
 GROUP ID:
 Name   : Unit 01
 ROM Ver : 2.006
```

[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.
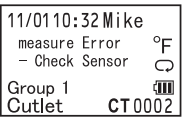
Message Display

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.

```
Settings
were Changed
```

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

```
11/0110:32 Mike
 measure Error °F
 − Check Sensor
Group 1
Cutlet    CT0002
```
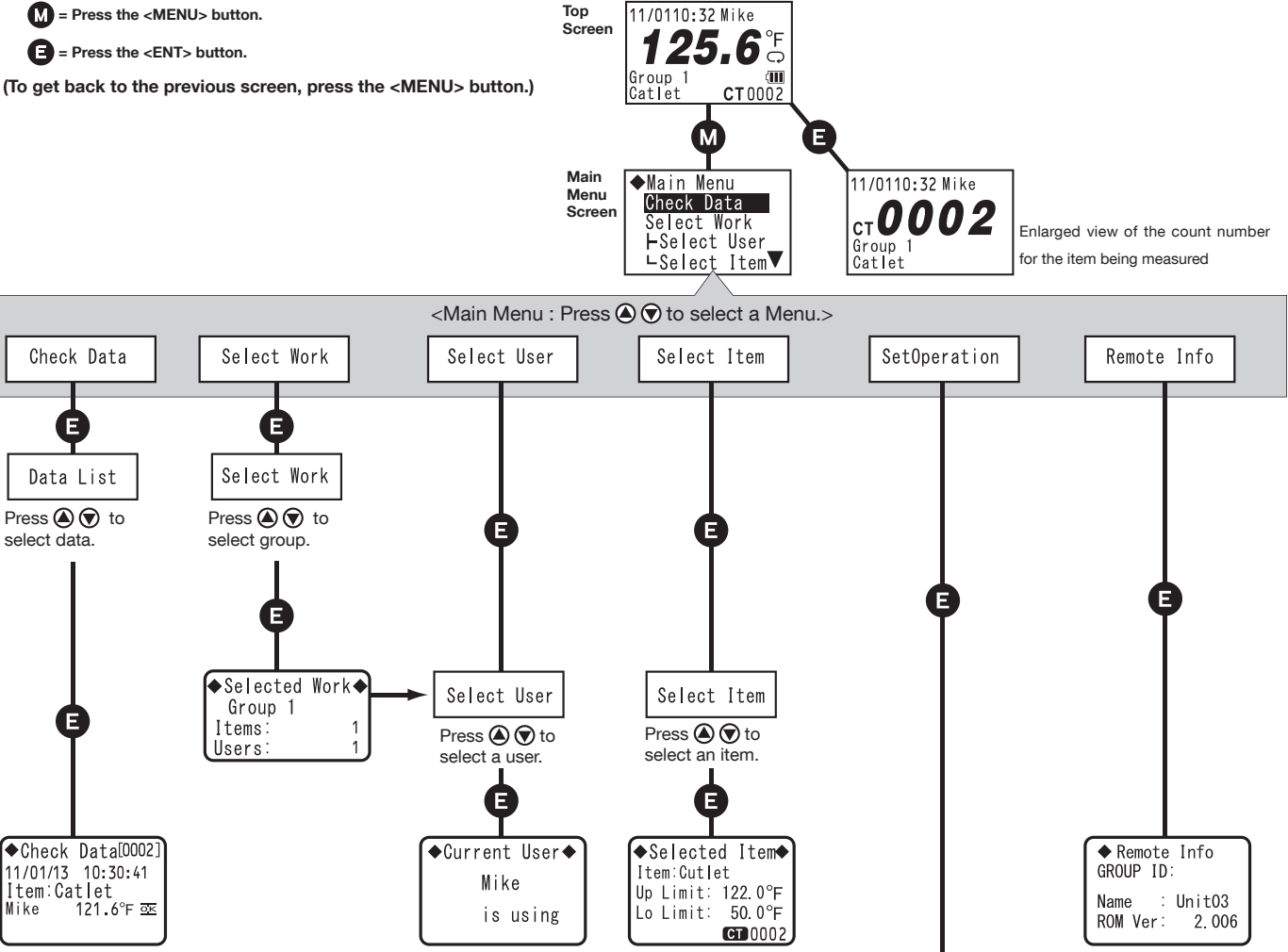
Please contact your local distributor if you see this message.

Operations Table

M = Press the <MENU> button.

E = Press the <ENT> button.

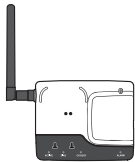(To get back to the previous screen, press the <MENU> button.)

Top Screen
```
11/0110:32 Mike
  125.6 °F
Group 1
Catlet    CT0002
```

M **E**

Main Menu Screen
```
◆Main Menu
 Check Data
 Select Work
 ├Select User
 └Select Item ▼
```

```
11/0110:32 Mike
CT 0002
Group 1
Catlet
```
Enlarged view of the count number for the item being measured

<Main Menu : Press ⊙ ⊙ to select a Menu.>

| Check Data | Select Work | Select User | Select Item | SetOperation | Remote Info |

E (Check Data)
```
Data List
```
Press ⊙ ⊙ to select data.

E (Select Work)
```
Select Work
```
Press ⊙ ⊙ to select group.

E
```
◆Selected Work◆
   Group 1
 Items:      1
 Users:      1
```

```
Select User
```
Press ⊙ ⊙ to select a user.

```
Select Item
```
Press ⊙ ⊙ to select an item.

E
```
◆Check Data[0002]
 11/01/13  10:30:41
 Item:Catlet
 Mike    121.6°F OK
```

E
```
◆Current User◆
     Mike
   is using
```

E
```
◆Selected Item◆
 Item:Cutlet
 Up Limit: 122.0°F
 Lo Limit:  50.0°F
          CT0002
```

E
```
◆Remote Info
 GROUP ID:
 Name   : Unit03
 ROM Ver:  2.006
```

<Set Operation Menu : Press ⊙ ⊙ to select a Menu.>

| Judgment LED | Button Sound | Backlight | Contrast | Unit of Temp |

E (Judgment LED)
```
Settings Window
```
Press ⊙ ⊙ to select:
[LED OFF
[LED ON

E
```
◆Judgment LED
  Setting is
  LED ON
```

E (Button Sound)
```
Settings Window
```
Press ⊙ ⊙ to select:
[Sound OFF
[Sound ON

E
```
◆ Button Sound
  Setting is
  Sound OFF
```

E (Backlight)
```
Settings Window
```
Press ⊙ ⊙ to select:
Always ON
Always OFF
ON in Use

E
```
◆ Backlight
  Setting is
  ON in Use
```

E (Contrast)
```
Settings Window
```
Press ⊙ ⊙ to adjust the contrast level

E (Unit of Temp)
```
Settings Window
```
Press ⊙ ⊙ to select:
[Celsius   ℃
[Fahrenheit °F

E
```
◆ Unit of Temp
  Setting is
  Fahrenheit °F
```

Compatible Base Units / Repeaters

Network Base Station
RTR-500NW (Wired LAN Type)
RTR-500AW (Wireless LAN Type)

Wireless Base Station / Repeater
RTR-500

Battery Charger for RTR-601 (with USB communication)

Battery Charge Dock
RTR-6BD