

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 Module Type Splash proof (rated for use in daily life)

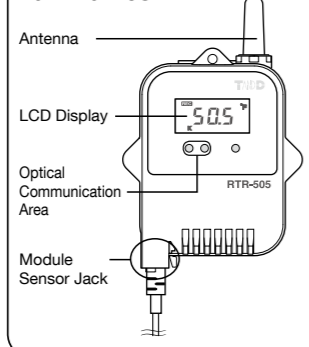
RTR-505 is a Data Logger designed to measure and record different items depending on the Input Module to be connected: temperature (Thermocouple/Pt), voltage, 4-20mA, and pulse. The body is splash proof (rated for use in daily life), which can be placed in an environment between -40 and 80°C. Recorded data can be automatically collected from the RTR-505 via wireless communication with the Base Unit (sold separately), and also viewed in graph and table form as well as printed out by using the supplied software.

Package Contents:

Data Logger (RTR-505), Tubed Lithium Battery (LS14250), Input Module(*), Strap, User's Manual (this manual including warranty)

* An Input Module included in the package differs depending upon which "set model" has been purchased.

Part Names



Specifications

Device Name	RTR-505
Measurement Items (*1)	Temperature / Voltage / 4-20mA / Pulse
Recording Intervals	Select from 15 choices: 1, 2, 5, 10, 15, 20, and 30 sec. / 1, 2, 5, 10, 15, 20, 30, and 60 min.
Logging Capacity	16,000 Readings
Recording Mode (*2)	Endless / One Time (Factory Default Setting: Endless)
LCD Displayed Items	Measurement, Recording Status, Recording Mode, Battery Life Warning, Unit of Measurement, Full (Logging Capacity FULL), Sensor Unconnected, Input Module Unconnected, Measurement Range Exceeded, Display Range Exceeded)
Communication Interfaces	Wireless Communication / Optical Communication
Wireless Communication Specifications	
RF Power	7mW
Radio Standard Specifications	FCC Part15 Section247 / IC RSS-210 Frequency Range : 902 to 928MHz
Transmission Range	About 150 meters (500 ft) (if direct and unobstructed)
Communication Speed	About 2 min. (when downloading 1 unit at full logging capacity)
Optical Communication Speed	About 160 sec. (when downloading 1 unit at full logging capacity at 2400bps)
Power	Lithium Battery (LS14250) / Lithium Battery (CR2) (*3)
Battery Life (*4)	About 10 months (for temperature measurement)
Waterproof Capacity	Splash proof (rated for use in daily life) (*5)
Dimensions	H62xW47xD19mm (excluding protrusions and sensor)
Weight	About 56g (including battery / excluding Input Module)
Operating Environment	Operating Temperature Range: - 30 to 80°C (The operating temperature range and measurement range is -40 to 80°C, but wireless communication cannot occur in an environment of less than -30°C.)
Other	A Base Unit is required (sold separately). (Compatible Base Units: RTR-500NW, RTR-500AW, RTR-500, RTR-500DC)

(*1) Measurement items other than Pulse will have different measurement range depending on the Input Module and sensor to be connected. For details, see the User's Manual included with the Input Module.

(*2) When using RTR-500NW or RTR-500AW as a Base Unit, only "Endless" can be selected.
(*3) The included lithium battery (LS14250) is not sold in stores. Please purchase the optional battery set for low-temperature use (TR-11P2) for replacement.

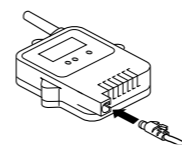
(*4) Battery life varies depending upon the connected Input Module, measuring environment, frequency of communication, Unit settings, and battery performance. For details, see "Estimated Battery Life" in this manual.

(*5) This is the waterproof capacity of a Unit with an Input Module connected. Note that sensor connector of the Input Module is not water resistant.

2. Connecting an Input Module

Insert an Input Module into the 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.



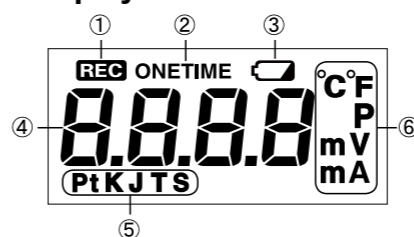
Make sure that the module is completely inserted until you hear a "click" sound.

Set Model Number	Measurement Item	Input Module	LCD Displayed Items (see the following section #3)
RTR-505-TC	Temperature (Type K, J, T, S)	Thermocouple Module (TCM-3010)	Measurement, Unit of Measurement, Sensor Type, Operational Status
RTR-505-Pt	Temperature (Pt100, Pt1000)	Pt Module (PTM-3010)	Measurement, Unit of Measurement, Sensor Type, Operational Status
RTR-505-V	Voltage	Voltage Module (VIM-3010)	Measurement, Unit of Measurement, Operational Status
RTR-505-mA	4-20mA	4-20mA Module (AIM-3010)	Measurement, Unit of Measurement, Operational Status
RTR-505-P	Pulse	Pulse Input Cable (PIC-3150)	Measurement, Unit of Measurement, Operational Status

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



- ① [REC] Mark The recording status will appear.
ON: Recording in progress
BLINKING: Waiting for programmed start
- ② [ONETIME] Mark When the recording mode is set to "One Time", this mark will appear. The factory default setting is "Endless" and this mark will not appear.
- ③ Battery Warning Mark When it is time for the battery to be replaced, this mark will appear.
- ④ Measurements and Messages Area The type of sensor connected to or set in the Unit will appear.
Measurements or operational messages will appear here.
- ⑤ Sensor Type Thermocouple Sensor: K, J, T, S
Platinum Thermal Resistance Sensor: Pt (Pt100), PtK (Pt1000)
- ⑥ Unit of Measurement The unit of measurement for the display will appear.

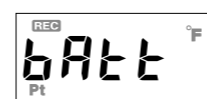
Battery Replacement

1. When it is time for the battery to be replaced, a battery warning mark will appear.



Please replace the battery as soon as possible if this mark appears.

2. If you do not change the battery and continue using the Unit, the measurement display will intermittently display [bAtt].



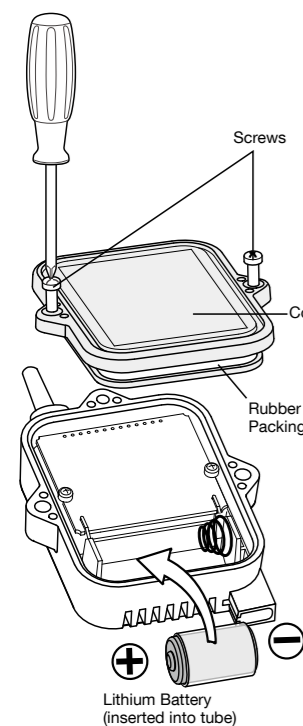
- After this point the downloading of data can no longer be done via wireless communication.
- Without changing the battery and attempting to use optical communication to download recorded data, the communication may be broken and if so all recorded data may be lost.
- Recording will be continued.

3. If the battery is further left unchanged, the display will automatically shut off.



If, at this time, a new battery is placed in the Unit, [CHEC] will appear on the display after which recording will begin again using the previously set recording conditions. Note however that all previously recorded data will have been lost.

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.

- If using a CR2 lithium battery, the tube is not necessary.

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 not to over tighten the screws.

(Appropriate Tightening Torque: 20N-cm to 30N-cm(2Kgf-cm to 3Kgf-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 reinsert 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

- Lithium batteries CR2 sold in stores may also be used, but if you are using in an environment below -20°C, above 60°C, or in a situation such as transportation where continued vibration is likely to occur, we strongly suggest the purchase and use of the our lithium battery LS14250. (Please purchase the optional battery set TR-11P2 which includes an LS14250.)
- 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 on. 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 battery level is low.
- Please store the lithium battery LS14250 in a place that is 20°C or less.
- When changing a CR2 battery, we strongly suggest changing the rubber packing and the drying agent. Please purchase the maintenance set TR-00P1 sold separately.

