Remote Unit (Data Logger)

Measure / Record

- Temperature (Pt100/Pt1000)
- Thermocouple
- Humidity
- Voltage (4-20mA)
- Pulse
- Illuminance
- UV
- CO2

Wireless Communication

Base Unit

Data Collection

- Recorded Data Collection via Wireless Communication
- Warning Monitoring Function
- Monitoring Function

RTR-500DC
Portable Data Collector

RTR-500
Wireless Base Station

Viewing Graph on Site

USB Connection

Reading Data from a Graph and Spreadsheet

Monitoring for Warning and Current Readings on PC

Export

CSV
Versatile Next Generation Design for Today

The RTR-500 Series includes data loggers designed to measure and record a wide variety of items as well as a range of base stations to enable wireless collection of recorded data. The collected data can then be transmitted to a PC by a variety of methods such as USB, E-mail, or FTP.

Moreover, various functions, such as the monitoring of current readings and warning notification, make it a powerful data management system.
## Remote Units

### Wireless Data Logger

**Variety of Wireless Data Logger Selections to**

### Temperature

<table>
<thead>
<tr>
<th>Model</th>
<th>Measurement Range</th>
<th>Attached Module</th>
<th>Temperature Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTR-501 / RTR-501L</td>
<td>–40 to 80°C</td>
<td>Input Module (VIM-3010)</td>
<td>Thermistor</td>
</tr>
<tr>
<td>RTR-502 / RTR-502L</td>
<td>–60 to 155°C</td>
<td>Input Module (AIM-3010)</td>
<td></td>
</tr>
<tr>
<td>RTR-503 / RTR-503L</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Voltage

<table>
<thead>
<tr>
<th>Model</th>
<th>Measurement Range</th>
<th>Attached Module</th>
<th>Measurement Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTR-505-V / RTR-505-VL</td>
<td>0 to 22 V</td>
<td>Input Module (VIM-3010)</td>
<td>Minimum of 0.1 mV</td>
</tr>
<tr>
<td>RTR-505-mA / RTR-505-mAL</td>
<td>0 to 20 mA</td>
<td>Input Module (AIM-3010)</td>
<td></td>
</tr>
<tr>
<td>RTR-505-P / RTR-505-PL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pulse Count

<table>
<thead>
<tr>
<th>Model</th>
<th>Measurement Range</th>
<th>Signal Input</th>
<th>Attached Module</th>
<th>Attached Cable</th>
<th>Additional Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTR-505-P / RTR-505-PL</td>
<td>Pulse count 0 to 61,439</td>
<td>Contact Input / Voltage Input</td>
<td>Input Module (AIM-3010)</td>
<td>Input Cable (PIC-3150)</td>
<td>For use with Voltmeters, Flow Meters and Passage Counters</td>
</tr>
</tbody>
</table>

### Temperature / Humidity

| Model | Measurement Range | Attached Sensor | |
|-------|-------------------|-----------------||
| RTR-501 / RTR-501L | –40 to 80°C | Temperature Sensor (TR-5106) | |
| RTR-502 / RTR-502L | –60 to 155°C | Temperature / Humidity Sensor (TR-3310) | |

### Products with this mark comply with EN12830, the European Standard regarding Temperature recorders for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream. (Excluding L Type)

### L-type models (model names which include “ L ”) are designed with a large capacity battery pack. Battery life of the L type is four times longer than that of the normal type.
Meet Your Needs

**Temperature / Humidity High Precision Wide Range**

**RTR-507 / RTR-507L**
Measurement Range:
- Temperature: -30 to 80°C
- Humidity: 0 to 99 %RH
Attached Sensor:
- High Precision Temperature/Humidity Sensor (HHA-3101)

**Temperature - Pt100 / Pt1000**

**RTR-505-Pt / RTR-505-PtL**
Measurement Range:
- Temperature: -199 to 600°C
Attached Module: Input Module (PTM-3010)
Sensor sold separately (For details about Pt sensors see the T&D Web Site)

**Temperature - Thermocouple**

**RTR-505-TC / RTR-505-TCL**
Measurement Range:
- K: -199 to 1300°C
- J: -199 to 750°C
- T: -199 to 400°C
- S: -20 to 1700°C
Attached Module: Input Module (TCM-3010) (Please purchase sensor separately)

**Illuminance / UV Intensity / Temperature / Humidity**

**RTR-574 / RTR-574-H**
H - type comes with our high precision temp/humidity sensor.
Measurement Range:
- Illuminance: 0 to 130,000 lx
- UV Intensity: 0 to 30 mW/cm²
- Temperature: 0 to 55°C (H: -30 to 80°C)
- Humidity: 10 to 95 %RH (H: 0 to 99 %RH)
Display Range of Cumulative Measurement
- Illuminance: 0 lxh to 90 Mlxh
- UV Intensity: 0 mW to 62 W/cm²h
Attached Sensor:
- Illuminance UV Sensor ISA-3151
- Temperature / Humidity Sensor THA-3151 (H: High Precision Temp/Humidity Sensor HHA-3151)

**CO2 / Temperature / Humidity**

**RTR-576 / RTR-576-H**
H - type comes with our high precision temp/humidity sensor.
Measurement Range:
- CO2 Concentration: 0 to 9,999 ppm
- Temperature: 0 to 55°C (H: -30 to 80°C)
- Humidity: 10 to 95 %RH (H: 0 to 99 %RH)
Attached Sensor:
- CO2 Sensor: NDIR type
- Temperature / Humidity Sensor THA-3001 (H: High Precision Temperature/Humidity Sensor HHA-3151)
Base Unit equipped with GSM Cellular Phone Network Capabilities

Mobile Base Station - RTR-500GSM

- GSM communication makes it possible to gather recorded data and monitor for warnings even in environments where PCs or LAN connections aren’t possible.
- Warning Monitoring Function
  - Connect a GPS receiver to get location position info.
  - Select a power source to meet your situation: batteries, AC adaptor or external power source.

Number of Possible Registrations (One Base)
Remote Units: Up to 20
Repeaters: Up to 5 units per Group
Number of Groups: Up to 4 Groups

Application Examples
- Monitoring and Recording Temperature, Humidity and Location of Goods while in Transport
- Monitoring and Recording Temperature and Humidity in Distant Places where LAN Connection is Impossible
- Monitoring and Recording in Building and Environmental Temperature and Humidity in Situations where LAN Connections are not Possible or not Desirable

Note: At present, data loggers which are compatible with RTR-500GSM are as follows: RTR-501, RTR-502, RTR-503, RTR-505-PT, and RTR-505-TC. (including L types)

T&D Web Storage Compatible (see p.11)
Portable Data Collector - RTR-500DC

- From the RTR-500DC it is possible via wireless communication to make recording interval settings, and collect and save data.
- Includes a monitoring function whereby at a set interval the Collector communicates with data loggers and gathers current readings.
- An alarm buzzer sounds when a warning occurs.
- On the spot graphical viewing of recorded data.

Number of Possible Registrations (One Base)

Remote Units: Up to 32 units per Group
(For RTR-505 / 574 / 576 up to 16 units per Group)
Repeaters: Up to 15 units per Group
Number of Groups: Up to 7 Groups

Application Examples

- For Collecting Recorded Data and Monitoring Current Readings of Products while Moving on Production Lines
- For Collecting Recorded Data and Monitoring Current Readings of Packages in Cargo Compartments from a Truck’s Cabin
- For Collecting Recorded Data at Construction Sites and other Places where PCs are not Available
Remote Management via Network

Network Base Station - RTR-500NW (for wired LAN) / RTR-500AW (for wireless LAN - 802.11 b/g)

- The system is designed to allow for the automatic sending of recorded data to an e-mail or FTP server without the need for a PC.
- Current readings can be monitored via in-company LAN.
- Registering with our “T&D WebStorage Service” makes it possible to view current readings on a PC or mobile device.
- The warning monitoring function with notification via e-mail or external contact ensures that important warnings are never missed by those nearby or far away.
- Being able to make and change settings via a network provides increased flexibility.

Number of Possible Registrations (One Base)
Remote Units: Up to 100
Repeaters: Up to 10 units per Group
Number of Groups: Up to 10 Groups

Application Examples
- For Monitoring Temperature in Refrigerators and Freezers
- For Monitoring and Recording or Temperature, Humidity and Instrumentation Signals in Factories, Warehouses and other Building Facilities
- For Managing Temperature and Humidity in Server Rooms

![Network Base Station - RTR-500NW (for wired LAN) / RTR-500AW (for wireless LAN - 802.11 b/g) Diagram]
Wireless Base Station - RTR-500

- This system allows for the automatic collection of recorded data by simply connecting to a PC via USB.
- It is possible to check current readings and warning occurrences on the PC monitor or by e-mail.
- By using the supplied software, recorded data can easily be sent to an e-mail or FTP server.
- All Base Units can be set up to act as Repeaters.

Number of Possible Registrations (One Base)
Remote Units: Up to 32 units per Group
Repeaters: Up to 30 units per Group
Number of Groups: Up to 20 Groups

Application Examples
- For Temperature and Humidity Management in Blood and Pharmaceutical Storage
- For Temperature Management of Refrigerated and Frozen Goods at Supermarkets and Convenience Stores
- For Preservation and Prevention of Deterioration of Exhibits in Museums and other Exhibit Forums
Empowering Auto-Monitoring Functions

Never Miss Warning Notification System

Variety of Warning Notifications provides Reliable Oversight

Types of Warning Reports

- Communication Errors
- Warnings from Remote Units

Network

- E-mail

E-mail

- Warnings from Base Units

Table: Warnings from Remote Units

<table>
<thead>
<tr>
<th>Warnings from Remote Units</th>
<th>RTR-500NW</th>
<th>RTR-500AW</th>
<th>RTR-500DC</th>
<th>RTR-500GSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Limit / Lower Limit Exceeded</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>Settings can be made in each Remote Unit for &quot;Upper and/or Lower Limits&quot; and well as for &quot;Judgement Time&quot;. This ensures that every instantaneous exceeding is not counted as a warning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor Error</td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td>This type of notification helps prevent loss of measurements due to sensor disconnection, malfunction or wire breakage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote Unit Battery Level</td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td>This notifies the user that battery level is low before wireless communication can no longer be carried out.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table: Warnings from Base Units

<table>
<thead>
<tr>
<th>Warnings from Base Units</th>
<th>RTR-500NW</th>
<th>RTR-500AW</th>
<th>RTR-500DC</th>
<th>RTR-500GSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Input ON</td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
<td><img src="image15.png" alt="Image" /></td>
<td><img src="image16.png" alt="Image" /></td>
</tr>
<tr>
<td>It is possible to connect to an external device which has a warning output terminal to notify when a warning has occurred and the contact switches ON.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery from Warning Status</td>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
<td><img src="image19.png" alt="Image" /></td>
<td><img src="image20.png" alt="Image" /></td>
</tr>
<tr>
<td>This notifies the user when recovery from a warning has occurred; saving time and effort.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication Error Warnings</td>
<td><img src="image21.png" alt="Image" /></td>
<td><img src="image22.png" alt="Image" /></td>
<td><img src="image23.png" alt="Image" /></td>
<td><img src="image24.png" alt="Image" /></td>
</tr>
<tr>
<td>Wireless Communication Failures</td>
<td><img src="image25.png" alt="Image" /></td>
<td><img src="image26.png" alt="Image" /></td>
<td><img src="image27.png" alt="Image" /></td>
<td><img src="image28.png" alt="Image" /></td>
</tr>
<tr>
<td>This notifies the user that wireless communication has repeatedly failed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Range of Notification Tools means “No Miss” Management

- By E-mail / SMS
- With an External Alarm Device
- On a PC
- On a Data Collector

Note: SMS is supported by the RTR-500GSM only.
Monitor Measurement Readings from Any Location

Auto-Display of Current Readings at Set Interval

Via the Software

Measurement readings can be monitored using the dedicated software installed on the PC.

Note: Software is available for download from T&D Website.

On a Data Collector

It is possible to view Current Readings on the LCD screen of the data collector.

Via a Web Browser

Access Anytime Anywhere

T&D WebStorage Service

http://www.webstorage-service.com/

T&D WebStorage Service is a free web-based storage service provided by T&D Corporation. By sending downloaded recorded data to “T&D Web Storage”, it is possible to access your important data from anyplace in the world at any time you wish.

Registration is required to use T&D WebStorage Service.
Temperature Sensors for RTR-502 / 502L

Measurement Range: -60 to 155°C
Sensor Temperature Durability: -70 to 180°C
Accuracy: Avg. ± 0.3°C [-20 to 80°C], Avg. ± 0.5°C [-40 to -20°C / 80 to 110°C], Avg. ± 1.0°C [-60 to -40°C / 110 to 155°C]


Fluoropolymer Coated Sensor

**TR-5101**
Response Time (90%): Approx. 80 sec. (in air)

**TR-5106**
Response Time (90%): Approx. 80 sec. (in air)
Approx. 7 sec. (in agitated water)

Underwater Sensor

**TR-5530**
Response Time (90%): Approx. 150 sec. (in air)
Approx. 7 sec. (in agitated water)

**TR-5420**
Response Time (90%): Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)

**TR-5101**
Response Time (90%): Approx. 80 sec. (in air)

**TR-5530**
Response Time (90%): Approx. 150 sec. (in air)
Approx. 7 sec. (in agitated water)

**TR-5420**
Response Time (90%): Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)

Temperature Sensor Extension Cable for RTR-502 / 502L

**TR-2C30**
Waterproof Capacity: Splash proof (rated for use in daily life)
Temperature Durability: -25 to 60°C

Materials: 1. Vinyl Coated Electrical Wire

Note: Only one extension cable per sensor. Using an extension cable may lead to measurement errors of +0.3°C at room temperature, and +0.5°C at -50°C.

Temperature / Humidity Sensor for RTR-503 / 503L

**TR-3310**
Measurement Range *
Temperature: 0 to 55°C
Humidity: 0 to 99 %RH
Accuracies:
Temperature: ±0.3°C [0 to 50°C], ±0.5°C [at all other temperatures]
Humidity: ±5%RH (at 25°C, 50%RH)

**TR-3C30**
Waterproof Capacity: Splash proof (rated for use in daily life)
Temperature Durability: -25 to 60°C


* Do not expose to condensation, dampness, corrosive gases or organic solvents.


High Precision Temperature / Humidity Sensor for RTR-507 / 507L

**HBB-3101**
Measurement Range:
Temperature: -30 to 80°C
Humidity: 0 to 99 %RH
Measurement Resolution:
Temperature: ±0.1°C
Humidity: ±0.1 %RH
Accuracy (Temperature):
±0.3°C [0 to 50°C]
±0.5°C [at all other temperatures]
Accuracy (Humidity):
±2.5%RH [at 25°C, 10 to 80 %RH or 85 to 99 %RH]
±4%RH [at 25°C, 0 to 10%RH or 85 to 99 %RH]
At temperatures other than 25°C and ±3°C add ±0.1%RH per degree of difference from 25.
Humidity Hysteresis: ±1.5%RH or lower *1

Response Time (90%):
Temperature: Approx. 7 min.
Humidity: Approx. 20 sec.
Long Term Stability: ±1%RH/yr, ±0.1°C/yr (under normal operational conditions) *2


*1: When used in environments where temperature and humidity are over the values of 50°C 75%, 60°C 50%, 70°C 35%, and 80°C 25%, sensor hysteresis may fluctuate by values greater than ±1.5%RH.
*2: Do not expose to condensation, dampness, corrosive gases, or organic solvents or insecticide.

Temp/Humidity Sensor Extension Cable for RTR-507 / 507L

**TR-3C30**
Waterproof Capacity: Splash proof (rated for use in daily life)
Temperature Durability: -25 to 60°C

Materials: 1. Vinyl Chloride Coated Electrical Wire

Note: Only one extension cable per Temp/Humidity sensor.
## Input Modules for RTR-505 / 505L

**Materials:**
- Polycarbonate
- Vinyl Coated Electrical Wire

**Note:** Input Module is not water resistant.

### Thermocouple Module (RTR-505-TC / 505-TCL)
- **TCM-3010**
- **Compatible Sensors:** Thermocouple: Type K, J, T, S
- **Sensor Connection:** Miniature Thermocouple Connector
- **Operating Environment:**
  - Temperature: -40 to 80°C
  - Humidity: 90%RH or less (no condensation)

### Pt Module (RTR-505-Pt / 505-PtL)
- **PTM-3010**
- **Compatible Sensors:** Pt100 (3-wire), Pt1000 (3-wire)
- **Sensor Connection:** Screw Clamp Terminal Block; 3-Terminal
- **Operating Environment:**
  - Temperature: -40 to 80°C
  - Humidity: 90%RH or less (no condensation)

### 4-20mA Module (RTR-505-mA / 505-mAL)
- **AIM-3010**
  - **Measurement Range:** 0 to 20mA (Operational up to 40 mA)
  - **Accuracy:** ±0.05 mA + 0.3 % of reading (10 to 40 °C)
  - **Operating Environment:**
    - Temperature: -40 to 80°C
    - Humidity: 90%RH or less (no condensation)

### Voltage Module (RTR-505-V / 505-VL)
- **VIM-3010**
  - **Measurement Range:** 0 to 22 V
  - **Accuracy:** ±0.5 mV + 0.3 % of reading (10 to 40 °C)
  - **Measurement Resolution:** Minimum of 0.1 mV
  - **Operating Environment:**
    - Temperature: -40 to 80°C
    - Humidity: 90%RH or less (no condensation)

### Pulse Input Cable (RTR-505-P / 505-PL)
- **PIC-3150**

### Pt100 Sensor for RTR-505-Pt / 505-PtL
- **TR-3C30**
  - **Waterproof Capacity:** Splash proof (rated for use in daily life)
  - **Temperature Duriability:** -25 to 60 °C

- **Vinyl Chloride Coated Electrical Wire**

**Note:** Only one extension cable per input module.

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**RTR-500 Series - Options**

*Pt100 Sensor for RTR-505-Pt / 505-PtL*

For details about Pt100 Sensor, please visit the T&D Website.

**Note:** Pt100 Sensor is produced only upon receipt of order; therefore please allow four weeks from the time of order until shipping.
Sensors for RTR-574 / 576

Temperature / Humidity Sensor

THA-3001
- Measurement Range:*
  - Temperature: 0 to 45°C
  - Humidity: 10 to 95%RH (no condensation)
- Measurement Accuracy:
  - Temperature: ±0.5°C
  - Humidity: ±5%RH [at 25°C and 50%RH]
- Response Time (90%): Approx. 7 min.
- Materials: 1) Temp/Humidity Sensor 2) Polypropylene Resin

THA-3151
- Measurement Range:*
  - Temperature: 0 to 55°C
  - Humidity: 10 to 95%RH (no condensation)
- Measurement Resolution:
  - Temperature: 0.1°C
  - Humidity: 1%RH
- Accuracy:
  - Temperature: ±0.5°C
  - Humidity: ±5%RH [at 25°C and 50%RH]*
  - Humidity Hysteresis: ±1.5%RH or lower*2
- Response Time: Approx. 7 min.
- Humidity: Approx. 20 sec.
- Long Term Stability: ±0.1%RH/yr, ±0.01%/yr (under normal operational conditions)*1
- Materials: 1) Temp/Humidity Sensor 2) Polycarbonate 3) Vinyl Chloride Coated Electrical Wire

High Precision Temperature/Humidity Sensor

HHA-3151
- Measurement Range:
  - Temperature: -30 to 80°C
  - Humidity: 0 to 99%RH
- Measurement Resolution:
  - Temperature: 0.1°C
  - Humidity: 0.1%RH
- Accuracy (Temperature):
  - ±0.3°C [0 to 50°C]
  - ±0.5°C [at all other temperatures]
- Accuracy (Humidity):
  - ±0.5%RH [at 25°C, 10 to 85%RH]
  - ±1%RH [at 25°C, 0 to 10%RH or 85 to 99%RH]
- At temperatures other than 25°C and ±0°C, add ±0.1%RH per degree of difference from 25.
- Humidity Hysteresis: ±1.5%RH or lower*2
- Response Time (90%):
  - Temperature: Approx. 7 min.
  - Humidity: Approx. 20 sec.
- Long Term Stability: ±1%RH/yr, ±0.1%RH/yr (under normal operational conditions)*1
- Materials: 1) Temp/Humidity Sensor 2) Polycarbonate 3) Vinyl Chloride Coated Electrical Wire

Temperature / Humidity Sensor

THA-3151
- Measurement Range:*
  - Temperature: 0 to 55°C
  - Humidity: 10 to 95%RH (no condensation)
- Measurement Resolution:
  - Temperature: 0.1°C
  - Humidity: 1%RH
- Accuracy:
  - Temperature: ±0.5°C
  - Humidity: ±5%RH [at 25°C and 50%RH]*
  - Humidity Hysteresis: ±1.5%RH or lower*2
- Response Time (90%): Approx. 7 min.
- Materials: 1) Temp/Humidity Sensor 2) Polypropylene Resin 3) Vinyl Chloride Coated Electrical Wire

Illuminance/UV Sensor (RTR-574)

ISA-3151
- Measurement Range:
  - Illuminance: 0 lx to 130 klx
  - UV Intensity: 0 to 30 mW/cm²
- Measurement Resolution:
  - Illuminance: Minimum of 0.01 lx
  - UV Intensity: Minimum of 0.001 mW/cm²
- Accuracy:±0.3°C [0 to 50°C]
  - Illuminance: ±5% [10 lx to 100 klx]
  - UV Intensity: ±5% [0.1 mW/cm² to 30 mW/cm²]
  - Operating Environment: Temperature: -10 to 60°C
  - Humidity: ±60%RH or lower
- Materials: 1) Polycarbonate 2) Glass 3) Vinyl Chloride Coated Electrical Wire

Serial Communication Cable for RTR-574 / 576

TR-6C10
- For communication between RTR-500DC and RTR-574 / 576
- Note: Up to 3 extension cables can be connected to one sensor.

Sensor Extension Cable for RTR-574 / 576

TR-1C30
- Temperature Durability: -25 to 60°C
- Materials: 1) Vinyl Coated Electrical Wire

Communication Cable (RTR-500 , RTR-500DC)

TR-07C (Serial Communication Cable)
- For Communication with the Computer

External Power Cable (RTR-500GSM)

BC-0201
- Power Source Conditions:
  - Voltage: DC 8 - 34V
  - Current: MAX 2A
- Materials: 1) Connector: Housing/ XAP-02V-1, Contact/ SXA-01T-P0.6 (J.S.T. Mfg. Co., Ltd.)
  - 2) Cable: AWG#20, Red/ Plus (+), Black/ Minus (-)
Other Options for RTR-501 / 502 / 503 / 505 / 507

**Maintenance Set**

**TR-00P1**  
- Kit Contents:  
  - Rubber Packing (for the rear cover of the data logger)  
  - Silica Gel (drying agent)  
  - Double-sided Adhesive Tape (to fix the silica gel)  
  - Lock Screw (extra screws to tighten the rear cover of the data logger)

**TR-11P2**  
- Kit Contents:  
  - Lithium Battery (LS14250)  
  - Maintenance Set (TR-00P1)

**TR-500A1**  
- Input Voltage: DC 6 to 14V  
- Backup Power: Ni-MH Battery (in case of power loss)  
- Back-up Time: About 4 days  
- Charging Method: Trickle Charge  
- Operational Environment Temp: 0 to 60°C  
- Water Resistance: None  
- Weight: About 37g (without AC Adaptor)

**TRR-500B1**  
- Power: Lithium Battery x 1 (LS26500)  
- Battery Life: About 4 years  
- Waterproof Capability: Splash proof  
- Operating Temperature: -40 to 80°C  
- Weight: About 75g (including Lithium Battery)

**External Power Adaptor Kit**

**RTR-500NW / 500AW / 500 / 500DC**  
- AD-0638  
  - Cable Length: 1.8 m  
  - Input: AC 100 - 240V  
  - Output: DC 6V 500 mA  
  - Frequency: 50 / 60 Hz  
  - Plug Type: A  
- AD-0638-C  
  - Cable Length: 1.8 m  
  - Input: AC100 - 240 V  
  - Output: DC 6V 500 mA  
  - Frequency: 50 / 60 Hz  
  - Plug Type: C

**AC Adaptors for Base Units**

**RTR-500NW / 500AW / 500 / 500DC**  
- AD-0605  
  - Cable Length: 1.8 m  
  - Input: AC100 V (90 - 132 V)  
  - Output: DC 5V 2 A  
  - Frequency: 50 / 60 Hz  
  - Plug Type: A  
- AD-05C1  
  - Cable Length: 1.6 m  
  - Input: AC100 - 240V  
  - Output: DC 5 V 2 A  
  - Frequency: 50 / 60Hz  
  - Plug Type: C

**Wall Attachment**

**TR-05K3 (RTR-501 / 502 / 503 / 505 / 507)**  
- Accessories:  
  - Lock Screw x 2, Double-sided adhesive tape x 1  
- Operational Environment Temp: -40 to 80°C  
- Materials: Polycarbonate  
- TR-05K3L (for -L Types)  
  - Accessories:  
    - Lock Screw x 2, Double-sided adhesive tape x 1  
  - Operational Environment Temp: -40 to 80°C  
  - Materials: Polycarbonate  
  
**TR-07K2 (RTR-574)**  
- Accessories:  
  - Lock Screw x2, Double-sided adhesive tape x 1  
- Materials: Polycarbonate

**AT-76K1 (RTR-576)**  
- Accessories:  
  - Lock Screw x 2, Double-sided adhesive tape x 1  
- Materials: Aluminium

**TR-5WK1 (RTR-500NW / 500AW)**  
- Accessories:  
  - Lock Screw for fastening to wall x 2, Double-sided adhesive tape x 1, Lock Screw for fastening the device x 1  
- Materials: Polycarbonate

**Battery Set**

**TR-11P2**  
- Kit Contents:  
  - Lithium Battery [LS14250]  
  - Maintenance Set [TR-00P1]

Note:
- Depending on the amount of charge in the Ni-MH battery.
- When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.
- Battery Life varies depending on measuring environment, recording interval, transmission frequency, and ambient temperature. The battery life estimated here is calculated using a new battery under normal operating conditions and in no way should be understood as a guarantee of battery life.
- Operating temperature depends on the specifications for the data logger being used.

**Accessories:**
- Lock Screw x 2, Double-sided adhesive tape x 1
- Materials: Polycarbonate

**Materials:**
- Polycarbonate
- Aluminium
- Rubber
- Aluminium
- Polycarbonate
## RTR-500 Series - Specifications

### Remote Units (Data Logger)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature 1ch (Internal)</td>
<td>Temperature 1ch (External)</td>
<td>Temperature 1ch, Humidity 1ch (External)</td>
<td>Temperature 1ch, Humidity 1ch (External)</td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td>Thermistor</td>
<td>Thermistor</td>
<td>Thermistor, Polymer Resistance</td>
<td>Platinum Resistance, Electrostatic Capacitance</td>
</tr>
<tr>
<td>Measurement Units</td>
<td>°C, °F</td>
<td>°C, °F</td>
<td>°C, °F</td>
<td>°C, °F</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>-40 to 80 °C</td>
<td>-60 to 155 °C</td>
<td>0 to 95 %RH</td>
<td>-30 to 80 °C</td>
</tr>
</tbody>
</table>

### Operating Environment

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Range</th>
</tr>
</thead>
</table>
| Temperature | 40 to 80 °C (
| Humidity | 0 to 99 %RH |

### Measurement Accuracy

<table>
<thead>
<tr>
<th>RTR-500 Series</th>
<th>Thermistor</th>
<th>Thermistor</th>
<th>Thermistor, Polymer Resistance</th>
<th>Platinum Resistance, Electrostatic Capacitance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>Avg.±0.5 °C</td>
<td>Avg.±0.5 °C</td>
<td>Avg.±0.3 °C</td>
<td>±5 %RH</td>
</tr>
<tr>
<td></td>
<td>[at 25 °C, 50 %RH]</td>
<td>[at all other temperatures]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Logging Capacity

- **16,000 readings** |
- **8,000 data sets (One data set consists of readings for multiple channels)**

### 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)**

### LCD Display Items

- Measurements (alternating display for multiple channel devices), Battery Life Warning, etc.
- Measurements (alternating display), Battery Life Warning, etc.

### Communication Interfaces

- Wireless Communication (Short Range Radio Communication)
- FCC Part 15 Section 247 / IC RSS-210 (Frequency Range: 902 to 928 MHz, RF Power: 7 mW)
- ETSI EN 300 220 (Frequency Range: 869.7 to 870 MHz, RF Power: 5 mW)
- Optical Communication (proprietary protocol)

### Wireless Transmission Range

- Approx. 150 meters (500 ft) if direct and unobstructed

### Power

- Lithium Battery: LS14250 (x1) L Type: Large Capacity Battery Adaptor Kit (RTR-500B1) | *4 |
- External Power Adaptor Kit (RTR-500A1: sold separately)

### Battery Life

- About 10 months (L Type: About 4 years)

### Dimensions

- H 62 mm x W 47 mm x D 19 mm (excluding protrusions and sensor)
- H 62 mm x W 47 mm x D 46.5 mm (excluding protrusions and sensor)

### Weight

- Approx. 109 g (including battery / excluding sensor)

### Operating Environment

- **-40 to 80 °C (-30 to 80 °C during wireless communication)**
- **-40 to 80 °C (-10 to 80 °C during wireless communication)**

### Waterproof Capacity

- IP67: Immersion proof
- IP64: Splash proof (rated for use in daily life) | *7 |
- IP64: Splash proof (rated for use in daily life) | *7 |
- IP64: Splash proof (rated for use in daily life) | *7 |

### Accessories

- Temperature Sensor (TR-5106)
- Temperature / Humidity Sensor (TR-3310)
- Temperature / Humidity Sensor (HHB-3101)

### Compatible Base Units

| RTR-500, RTR-500NW / 500AW, RTR-500B5 | RTR-500, RTR-500NW / 500AW, RTR-500DC |

---

1. When used in environments where temperature and humidity are over the values of 50 °C 75%, 60 °C 50%, 70 °C 35%, and 80 °C 25%, sensor hysteresis may fluctuate by values greater than ±1.5%RH. Under certain circumstances, it may take some time to return to normal measurement capability.

2. Only “Endless” is available when using RTR-500W or RTR-500B5 for Windows.

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. When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.

5. Battery life varies depending upon the ambient temperature at which it is used, the recording interval, the frequency of communication, and the 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. When wireless communication is performed in an environment over 12°C, measurement may fail or may not be accurate.

7. This is the waterproof capacity of the data logger with the sensor connected.

The specifications listed above are subject to change without notice.
### Remote Units (Data Logger)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement Channels</strong></td>
<td>Temperature 1ch</td>
<td>Temperature 1ch</td>
<td>Voltage 1ch</td>
<td>4-20 mA 1ch</td>
<td>Pulse Count 1ch</td>
</tr>
<tr>
<td><strong>Sensor</strong></td>
<td>Theremocouple: Type K, J, T, S</td>
<td>Pt100, Pt1000 (3-wire)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Measurement Units</strong></td>
<td>°C, °F</td>
<td>°C, °F</td>
<td>V, mA</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td><strong>Measurement Range</strong></td>
<td>-199 to 1700 °C</td>
<td>-199 to 600 °C</td>
<td>0 to 22 V</td>
<td>0 to 20 mA (Operational up to 40 mA)</td>
<td></td>
</tr>
<tr>
<td><strong>Accuracy (*)</strong></td>
<td>Thermocouple Measurement ± (0.3 °C + 0.3 % rdg)</td>
<td>± (0.3 °C + 0.3 % rdg)</td>
<td>± (0.5 °C + 0.5 % rdg)</td>
<td>±(0.05 mA + 0.3 % rdg)</td>
<td></td>
</tr>
<tr>
<td><strong>Cold Junction Compensation</strong></td>
<td>±0.3 °C [10 to 40 °C]</td>
<td>± (0.5 °C + 0.3 % rdg)</td>
<td>± (1 °C + 0.3 % rdg)</td>
<td>± (0.1 mA + 0.3 % rdg)</td>
<td></td>
</tr>
<tr>
<td><strong>Cold Junction Compensation</strong></td>
<td>±0.5 °C [–40 to 10 °C / 40 to 80 °C]</td>
<td>[–40 to 10 °C / 40 to 60 °C]</td>
<td>[–40 to 10 °C / 40 to 80 °C]</td>
<td>[–40 to 10 °C / 40 to 80 °C]</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> The above temperatures [( _ _ °C)] are for the operating environment of the Input Module.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Measurement Resolution**
  - Type K, J, T: 0.1 °C
  - Type S: approx. 0.2 °C
  - 0.1 °C
  - 0.01 mA

- **Logging Capacity**
  - 16,000 readings

- **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) or One Time (Stop recording when capacity is full)

- **LCD Display Items**
  - Measurements, Battery Life Warning, etc.

- **Communication Interfaces**
  - Wireless Communication (Short Range Radio Communication)
  - FCC Part15 Section 247 / IC RSS-210 (Frequency Range: 902 to 928 MHz, RF Power: 7 mW)
  - ETSI EN 302 220 (Frequency Range: 869.7 to 870 MHz, RF Power: 5 mW)
  - Optical Communication (proprietary protocol)

- **Wireless Transmission Range**
  - Approx. 150 meters (500 ft) if direct and unobstructed

- **Power**
  - Lithium Battery: LS14250 (1*)
  - L Type: Large Capacity Battery Adaptor Kit (RTR-500B1) (4*)
  - External Power Adaptor Kit (RTR-500A1: sold separately)

- **Battery Life (**)**
  - About 10 months
  - L Type: About 4 years

- **Dimensions**
  - H: 62 mm x W: 47 mm x D: 19 mm
  - L Type: H: 62 mm x W: 47 mm x D: 46.5 mm
  - (excluding protrusions and Input Module)
  - Antenna length: 24 mm

- **Weight**
  - Approx. 56 g
  - L Type: approx. 109 g
  - (including battery / excluding Input Module)

- **Operating Environment**
  - –40 to 80 °C
  - (–30 to 80 °C during wireless communication)

- **Waterproof Capacity (**)**
  - IP64: Splash proof (rated for use in daily life)
  - Note: Input Module is not water resistant.

- **Accessories**
  - Input Module (TCM-3010)
  - Input Module (PTM-3010)
  - Input Module (VIM-3010)
  - Input Module (AIM-3010)
  - Input Module (PIC-3158)

- **Compatible Base Units**
  - RTR-500, RTR-500NW/500AW, RTR-500DC, RTR-500GSM

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1*: “rdg” stands for reading.
2*: Only “Endless” is available when using RTR-500W for Windows or RTR-500GSM for Windows.
3*: The included lithium battery (LS14250) is not sold in stores. Please purchase the optional battery set for low-temperature use (TR-11IP) for replacement.
4*: When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.
5*: Battery life varies depending upon the ambient temperature in which it is used, the recording interval, the frequency of communication, and the 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*: This is the waterproof capacity of the data logger with the Input Module connected.

The specifications listed above are subject to change without notice.
## RTR-500 Series - Specifications

### Remote Units (Data Logger)

<table>
<thead>
<tr>
<th></th>
<th>RTR-574</th>
<th>RTR-574-H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature/Humidity Sensor (External)</strong></td>
<td>THA-3151</td>
<td>HHA-3151 (High-Precision Type)</td>
</tr>
<tr>
<td><strong>Measurement Channels</strong></td>
<td>Temperature 1ch, Humidity 1ch</td>
<td>Temperature 1ch, Humidity 1ch</td>
</tr>
<tr>
<td><strong>Units of Measurement</strong></td>
<td>°C, °F</td>
<td>%RH</td>
</tr>
<tr>
<td><strong>Measurement Range</strong></td>
<td>0 to 55 °C, 10 to 95 %RH</td>
<td>-30 to 80 °C, 0 to 99 %RH</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>±0.5 °C</td>
<td>±0.5 %RH (at 25 °C, 50 %RH)</td>
</tr>
<tr>
<td><strong>Measurement Resolution</strong></td>
<td>0.1 °C</td>
<td>1 %RH</td>
</tr>
</tbody>
</table>

### Illuminance/UV Sensor (External)

| **Measurement Channels** | Illuminance: 1ch, UV Intensity: 1ch |
| **Units of Measurement** | Illuminance: lx, klx, UV Intensity: mW/cm² |
| **Measurement Range** | Illuminance: 0 lx to 130 klx, UV Intensity: 0 mW/cm² to 62 W/cm² |
| **Accuracy** | Illuminance: ±5 % (at 25 °C, 50 %RH) |
| **Relative Spectral Response** | Illuminance: Approximated to the CIE standard response function V(λ) |
| **Measurement Resolution** | Illuminance: Minimum of 0.01 lx, UV Intensity: Minimum of 0.001 mW/cm² |

### LCD Display Items

- Measurements: Illuminance / UV Intensity / Temperature / Humidity / Cumulative Illuminance / Cumulative amount of UV Light
- Display Pattern: Alternating or Fixed display
- Display Digits: Up to 4 digits

### Communication Interfaces

- Wireless Communication (Short Range Radio Communication)
- FCC Part 15 Section 247 / IC RSS-210 (Frequency Range: 902 to 928 MHz, RF Power: 7 mW)
- ETSI EN 300 220 (Frequency Range: 869.7 to 870 MHz, RF Power: 5 mW)
- USB Communication
- Serial Communication (RS-232C) *(4)*

### Wireless Transmission Range

Approx. 150 meters (500 ft) if direct and unobstructed

### Power

- AA Alkaline Battery (LR6) x 1

### Battery Life *(5)*

Approx. 4 months

### Dimensions

- H 55 mm x W 78 mm x D 16 mm (excluding protrusions)
- Antenna Length: 60 mm

### Weight

Approx. 68 g (including battery, excluding sensor)

### Operating Environment

- Temperature: -10 to 60 °C
- Humidity: 90 %RH or less (no condensation)

### Accessories

- Temperature / Humidity Sensor (THA-3151)
- Temperature / Humidity Sensor (HHA-3151)
- AA Alkaline Battery (LR6)
- USB Communication Cable (US-15C)
- Illuminance / UV Sensor (ISA-3151)
- User’s Manual Set (Warranty Included)

### Compatible Base Units

- RTR-500C, RTR-500NW/500AW, RTR-500DC

---

*1: When used in environments where temperature and humidity are over the values of 50°C 75%, 60°C 50%, 70°C 35%, and 80°C 25%, sensor hysteresis may fluctuate by values greater than ±1.5%RH. Under certain circumstances, it may take some time to return to normal measurement capability.

*2: Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.

*3: Only “Endless” is available when using RTR-500W for Windows or RTR-500GSM for Windows.

*4: For communication with the Data Collector RTR-500DC (Note: Optional serial communication cable TR-6C10 is required.)

*5: Battery life varies depending upon the ambient temperature in which it is used, the recording interval, the frequency of communication, and the 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. The specifications listed above are subject to change without notice.
Remote Units (Data Logger)

<table>
<thead>
<tr>
<th></th>
<th>RTR-576</th>
<th>RTR-576-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature/Humidity Sensor</td>
<td>THA-3151</td>
<td>HHA-3151 (High-Precision Type)</td>
</tr>
<tr>
<td>Thermistor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polymer Resistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platinum Resistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Capacitance</td>
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<td></td>
</tr>
<tr>
<td>Measurement Channels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature 1ch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity 1ch</td>
<td></td>
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<td>Temperature 1ch</td>
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<tr>
<td>Humidity 1ch</td>
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<td>Units of Measurement</td>
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<td></td>
</tr>
<tr>
<td>°C, °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%RH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%RH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement Range (°C)</td>
<td>0 to 55 °C</td>
<td>±0.5 °C</td>
</tr>
<tr>
<td>%RH</td>
<td>10 to 95 %RH</td>
<td>±5 %RH [±25 °C, 50 %RH]</td>
</tr>
<tr>
<td>Temperature 1ch</td>
<td>-30 to 80 °C</td>
<td>±0.3 °C [±at 25 °C, 50 %RH]</td>
</tr>
<tr>
<td>%RH</td>
<td>0 to 99 %RH</td>
<td>±0.5 °C [at all other temperatures]</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.5 °C</td>
<td>±4.0 %RH [±at 25 °C, 0 to 10 % or 85 to 95 %RH]</td>
</tr>
<tr>
<td>%RH</td>
<td>±5 %RH [±at 25 °C, 50 %RH]</td>
<td>±2.5 %RH [±at 25 °C, 10 to 85 %RH]</td>
</tr>
<tr>
<td>Measurement Resolution</td>
<td>0.1 °C</td>
<td>0.1 °C</td>
</tr>
<tr>
<td>Response Time (90%)</td>
<td>Approx. 7 min.</td>
<td>Approx. 7 min.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Minimum of 1 ppm</td>
<td></td>
</tr>
<tr>
<td>Logging Capacity</td>
<td>8,000 data sets</td>
<td></td>
</tr>
<tr>
<td>Recording Capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recording Interval</td>
<td>Select from 15 choices:</td>
<td></td>
</tr>
<tr>
<td>Recording Mode (°C)</td>
<td>Endless (Overwrite oldest data when capacity is full)</td>
<td>One Time (Stop recording when capacity is full)</td>
</tr>
<tr>
<td>LCD Display Items</td>
<td>Measurements, Battery Level, etc.</td>
<td></td>
</tr>
<tr>
<td>Communication Interfaces</td>
<td>Wireless Communication (Short Range Radio Communication)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FCC Part 15 Section 247 / IC RSSI-210 (Frequency Range: 902 to 928 MHz, RF Power: 7 mW)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ETSI EN 300 220 (Frequency Range: 868.7 to 870 MHz, RF Power: 5 mW)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>USB Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serial Communication (RS-232C) (**)</td>
<td></td>
</tr>
<tr>
<td>Wireless Transmission Range</td>
<td>Approx. 150 meters (500 ft) if direct and unobstructed</td>
<td></td>
</tr>
<tr>
<td>External Alarm Terminal (**)</td>
<td>Output Terminal: Open Drain Output (Voltage when OFF: DC less than 30V / Current when ON: less than 0.1 A / Resistance when ON: about 15 Ω)</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>AC Adaptor (AD-0638 or AD-0638-C), AA Alkaline Battery (LR6) x 4</td>
<td></td>
</tr>
<tr>
<td>Battery Life (**)</td>
<td>Approx. 2 days (batteries only without AC adaptor)</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>H 96 mm x W 66 mm x D 46 mm (excluding protrusions and sensor)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Antenna Length: 60 mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 220 g (including battery, excluding sensor)</td>
<td></td>
</tr>
<tr>
<td>Operating Environment</td>
<td>Temperature: 0 to 45 °C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humidity: 90 %RH or less (no condensation)</td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td>Temperature/Humidity Sensor (THA-3151)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temperature/Humidity Sensor (HHA-3151)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AA Alkaline Battery (LR6) x 4, AC Adaptor (AD-0638 or AD-0638-C), USB Communication Cable (US-195C), User’s Manual Set (Warranty Included)</td>
<td></td>
</tr>
<tr>
<td>Compatible Base Units</td>
<td>RTR-500, RTR-500W, RTR-500NW, RTR-500DC</td>
<td></td>
</tr>
</tbody>
</table>

**1:** Make sure to use the data logger within the operating environment as listed in the specifications.  
**2:** When used in environments where temperature and humidity are over the values of 50 °C, 75%, 60 °C, 50%, 70 °C, 35%, and 80 to 25% of capacity, the battery may not be usable. Specifications may vary with changes in temperature and humidity. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life. The specifications listed above are subject to change without notice.  
**3:** Stated values are the measurement accuracy of the CO2 sensor when Auto Calibration is operating properly. A change in atmospheric pressure directly influences the reading of CO2, which can cause measurement errors; a decrease in pressure by 10hPa results in a relative decrease in CO2 by 1.6%. In such a case, we recommend carrying out the *Atmospheric Pressure Correction* function found in the software supplied with the Base Unit.  
**4:** Only “Endless” is available when using RTR-500W for Windows or RTR-500GSM for Windows.  
**5:** For communication with the Data Collector RTR-500DC (Note: Optional serial communication cable TR-5C10 is required.)  
**6:** In order to use the external alarm terminal, please prepare a compatible connector: JST PAP-04V-S.  
**7:** Battery life varies depending upon the ambient temperature in which it is used, the recording interval, the frequency of communication, and the 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.
# RTR-500 Series - Specifications

## Base Unit

<table>
<thead>
<tr>
<th>RTR-500GSM</th>
<th>RTR-500NW / RTR-500AW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum Number of Registrations</strong></td>
<td><strong>Remote Units: 20 units</strong>&lt;br&gt;<strong>Repeaters: 5 units x 4 groups</strong></td>
</tr>
<tr>
<td><strong>Communication Interfaces</strong></td>
<td><strong>&lt;Between Base Unit(s) - (Repeaters) - Remote Unit(s)&gt;</strong>&lt;br&gt;- Wireless Communication ( short range radio communication )&lt;br&gt;- FCC Part15 Section247 / IC RSS-210 ( Frequency Range: 902 to 928 MHz, RF Power: 7 mW )&lt;br&gt;- ETSI EN 300 220 ( Frequency Range: 86.9 to 870 MHz, RF Power: 5 mW )</td>
</tr>
<tr>
<td><strong>Wireless Transmission Range</strong></td>
<td><strong>Approx. 150 meters (500 ft) if direct and unobstructed</strong></td>
</tr>
<tr>
<td><strong>External Alarm</strong></td>
<td><strong>Input/Output Terminal (1)</strong></td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td><strong>AA Alkaline Battery ( LR6 ) x 4</strong>&lt;br&gt;<strong>AC Adaptor ( AD-065S or AD-065C1 ) ( 5V, 2A )</strong></td>
</tr>
<tr>
<td><strong>Battery Life (3)</strong></td>
<td><strong>Expected battery life with only AA alkaline batteries:</strong>&lt;br&gt;- Approx. 10 days ( with warning report settings ON, without using GPS )&lt;br&gt;- H83 mm x W 102 mm x D 28 mm ( excluding antenna )&lt;br&gt;Antenna Length: 83 mm&lt;br&gt;Weight: Approx. 120 g&lt;br&gt;<strong>Temperature:</strong>&lt;br&gt;- 10 to 55 °C with external power connected&lt;br&gt;- 10 to 60 °C&lt;br&gt;<strong>Humidity:</strong>&lt;br&gt;- 90 %RH or less ( no condensation )&lt;br&gt;- 90 %RH or less ( no condensation )</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>H 86 mm x W 66 mm x D 39 mm ( excluding antenna )</strong>&lt;br&gt;Antenna Length: 109 mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td><strong>Approx. 220 g ( including batteries )</strong></td>
</tr>
<tr>
<td><strong>Operating Environment</strong></td>
<td><strong>Temperature: 10 to 55 °C ( -10 to 55 °C with external power connected )</strong>&lt;br&gt;<strong>Humidity: 90 %RH or less ( no condensation )</strong></td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td><strong>AA Alkaline Battery ( LR6 ) x 4</strong>&lt;br&gt;<strong>USB Communication Cable ( US-15C )</strong>&lt;br&gt;<strong>External Power Supply ( DCB - 3AV )</strong></td>
</tr>
<tr>
<td><strong>GPS Interface (4)</strong></td>
<td><strong>Connector: Mini DIN 8 Pin Female</strong>&lt;br&gt;<strong>Communication Standard: AN/SB / EIA / TIA-232-E</strong>&lt;br&gt;<strong>Geographic Coordinate System: WGS 84</strong>&lt;br&gt;<strong>Power Supply: 5 V MAX 100 mA</strong></td>
</tr>
<tr>
<td><strong>SIM Card (2)(5)</strong></td>
<td><strong>SIM card compatible with GSM ( Standard size )</strong>&lt;br&gt;<strong>US: GSM 850 MHz 1900 MHz</strong>&lt;br&gt;<strong>EU: GSM 900 MHz 1800 MHz</strong>&lt;br&gt;<strong>GPRS / General Packet Radio Service</strong></td>
</tr>
<tr>
<td><strong>Compatible OS (6)(7)</strong></td>
<td><strong>&lt;for US&gt;</strong>&lt;br&gt;- Microsoft Windows 8 32 / 64 bit English, Spanish&lt;br&gt;- Microsoft Windows 7 32 / 64 bit English, Spanish&lt;br&gt;- Microsft Windows Vista 32 bit ( SP1 or later ) English, Spanish&lt;br&gt;- Microsft Windows XP 32 bit ( SP3 or later ) English, Spanish&lt;br&gt;- Microsoft Windows XP 32 bit ( SP3 or later ) English, Spanish, French, German&lt;br&gt;- Microsft Windows XP 32 bit ( SP3 or later ) English, French, Italian&lt;br&gt;- Microsft Windows XP 32 bit ( SP3 or later ) English, French, German, Italian&lt;br&gt;- Microsft Windows XP 32 bit ( SP3 or later ) English, Spanish, French, German, Italian</td>
</tr>
</tbody>
</table>
The specifications listed above are subject to change without notice.
Our new easy-to-use high performance software “T&D Graph” gives you all the power you need for effective management and analysis of recorded data. It can also be used in conjunction with T&D WebStorage Service.

Open Only the Data you Need

It is possible to specify search conditions to find and open only the data you want from all recorded data stored in a local folder or in the T&D WebStorage Service. The merging of multiple sets of data is also possible.

Analyze

Use the filtering feature to get only the data you want to view and work with. Pre-designed filtering templates are provided; or create your own.

Save / Output

Use the text and figure editing feature to create memos and comments within graphs.

Save

Print

CSV format data