Wireless Data Logging System

RTR500B series

CE

T&D

Wireless Brings Freedom

Versatile Next Generation Data Logging System

The RTR500B Series consists of data loggers (Remote Units) designed to measure and record a wide variety of measurements and four types of data collectors (Base Units) to enable wireless collection of recorded data.
Automated data collection is performed by using a robust wireless communications protocol, after which the data is sent to a server or cloud storage using various methods depending on the application and environment.
With some new features added, the evolution of T&D wireless logging system continues.

Collect / Transfer (Base Unit)

The data transfer method varies depending upon the model.

Network Base Station
RTR500BW

Mobile Base Station
RTR500BM

Wireless Base Station
RTR500BC

Portable Data Collector
RTR-500DC

Wireless Communication

Auto-Download

Measure / Record (Remote Unit)

Temp / Humidity / Illuminance / UV / CO2 / Voltage / 4- 20mA / Pulse

RTR500B Series Features

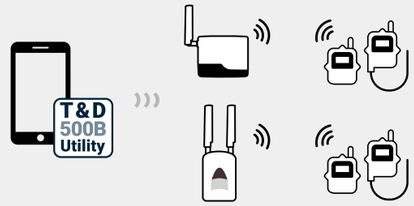
Improved Security and Usability

HTTPS Compatibility

Security has been improved with the addition of encrypted communication capability.

Compatible Devices:
RTR500BW, RTR500BM

Setup Utility App for Mobile Devices



The mobile app "T&D 500B Utility" enables you to register devices and make settings without a PC. The User-friendly wizard function leads you step by step through initial setup.

Compatible Devices:
RTR500BW, RTR500BM, RTR501B/502B/503B/505B/507B, RTR500BC (As Repeater)

Auto Wireless Route Settings

When used in conjunction with Repeaters, the Base Unit will automatically select the best route to ensure stable wireless communication with less errors.

Compatible Devices:
RTR500BW, RTR500BM, RTR501B/502B/503B/505B/507B, RTR500BC (As Repeater)

Cloud Service Compatibility

By adding your Base Unit to the cloud-based "T&D WebStorage Service", data recorded by the registered Remote Units can be automatically uploaded and managed collectively. It is now also possible to change settings via cloud.

Compatible Devices:
RTR500BW, RTR500BM

Data Analysis and Graphing Tool

"T&D Graph" is a high performance graph software for effective management and analysis of recorded data. It can also be used in conjunction with T&D WebStorage Service.

Variety of Wireless Data Logger Selections to Meet Your Needs

Temperature

RTR501B/501BL

Internal Sensor for Better Water Protection

Temperature: -40 to 80°C
IP67: Immersion Proof

RTR502B/502BL

External Sensor for Quick Response

Temperature: -60 to 155°C
IP64: Splash proof (rated for use in daily life)

Temperature / Humidity

RTR503B/503BL

Measure Temp and Humidity Simultaneously

Temperature: 0 to 55°C
Humidity: 10 to 95%RH
IP64: Splash proof (rated for use in daily life)

Temperature / Humidity

RTR507B/507BL

For High-Precision and Wide-Range Measurement

Temperature: -25 to 70°C
Humidity: 0 to 99%RH
IP64: Splash proof (rated for use in daily life)

Temperature / Voltage / 4-20mA / Pulse Count

(Modules Sold Separately)

RTR505B/505BL

Multi-Functional Logger Selection of Five Modules

Pt100/Pt1000: -199 to 600°C
Thermocouple: -199 to 1760°C
Voltage: 0 to 22 V
4-20mA: 0 to 20mA
Pulse count: 0 to 61,439 (Input Frequency: 0 to 3.5 kHz)
IP64: Splash proof (rated for use in daily life)

Illuminance/UV Intensity/Temperature/Humidity

RTR-574/574-S

For Measuring Temp/Humidity plus Illuminance and UV

Illuminance: 0 to 130,000 lx
UV Intensity: 0 to 30 mW/cm2
Temperature: 0 to 55°C (S: -25 to 70°C)
Humidity: 10 to 95%RH (S: 0 to 99%RH)

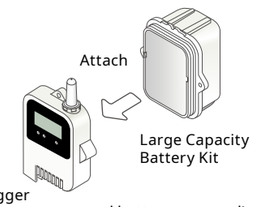
CO2 / Temperature / Humidity

RTR-576/576-S

For CO2 Measurement in Living Environment

CO2 Concentration: 0 to 9,999 ppm
Temperature: 0 to 55°C (S: -25 to 70°C)
Humidity: 10 to 95%RH (S: 0 to 99%RH)

L Type



L-type models (model names which include " L ") are designed with a large capacity battery kit. Battery life of the L type is four times longer than that of the normal type.

Data Collector Features

	Data Transfer	Data View	Power	Warning Notification System	
				Warning Method	Warning Items
RTR500BW **Network Base Station** 	Wired LAN Wireless LAN	T&D's Cloud Service (Refer to P.12) Internet	AC Adaptor POE	Web Browser E-mail External Alarm Output Device Alerm (LED Light)	Upper / Lower Limits Sensor Error Remote Unit Battery Level Wireless Comm Error
RTR500BM **Mobile Base Station** 	Cellular Network (4G / LTE)	T&D's Cloud Service (Refer to P.12) Internet	AC Adaptor AA Alkaline Battery x4 (LR6) External Power Supply (DC 9-38V)	Web Browser E-mail / SMS External Alarm Input/Output	Upper / Lower Limits Sensor Error Remote Unit Battery Level Contact Input ON Wireless Comm Error
RTR500BC **Wireless Base Station** 	USB	PC (Software) T&D's Cloud Service (Refer to P.12)	AC Adaptor USB Bus Power AA Alkaline Battery x2 (LR6)	Software E-mail	Upper / Lower Limits Sensor Error Remote Unit Battery Level Wireless Comm Error
RTR-500DC **Portable Data Collector** 	USB	Device Display (Graphical)	AAA Alkaline Battery x2 (LR03)	Device Display Device Alarm (Buzzer)	Upper / Lower Limits Sensor Error

Base Unit
Data Collector

Remote Management via Network

RTR500BW Network Base Station
With Wireless/Wired LAN Capabilities

Improved Security
Communicate with the server via HTTPS

User Friendly Mobile App
Make settings from mobile devices via Bluetooth or cloud; PC software is also available

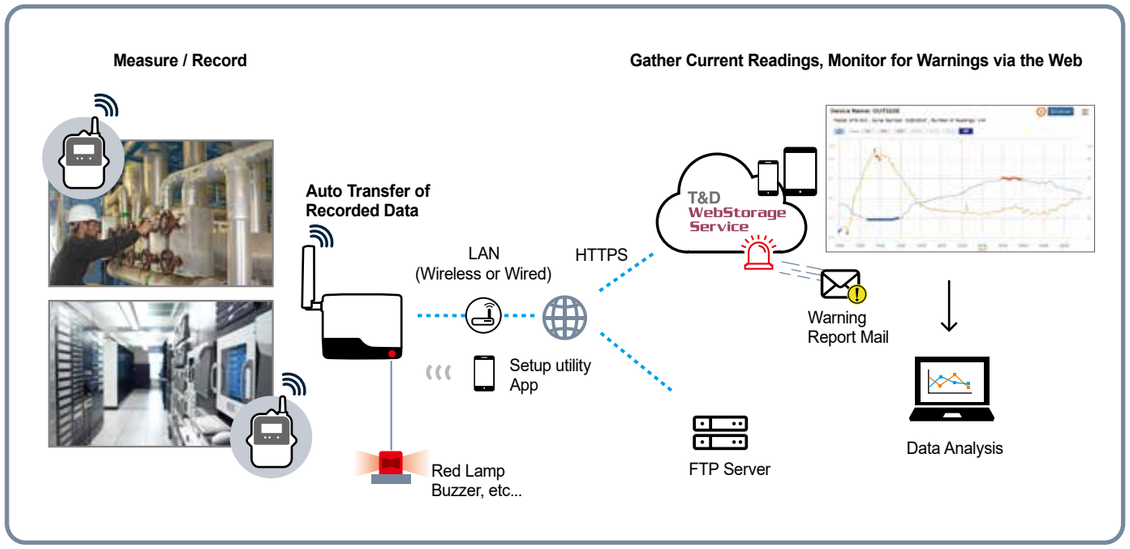
Open APIs Available
T&D provides APIs for T&D's cloud WebStorage Service, which allows users to retrieve data directly from the service

Automatic Wireless Routings
The best route is automatically selected to ensure stable communication

Number of Possible Registrations

Remote Units: Up to 50
Repeaters: Up to 10 units per Group
Number of Groups : Up to 4 Groups

T&D WebStorage Compatible (see p.12)



Base Unit
Data Collector

Direct USB Connection to PC

RTR500BC Wireless Base Station
Wireless Repeater

Auto-Download and Monitoring via PC
By using the software running on a PC, RTR500BC monitors registered loggers for out-of-limit conditions and provides email notifications

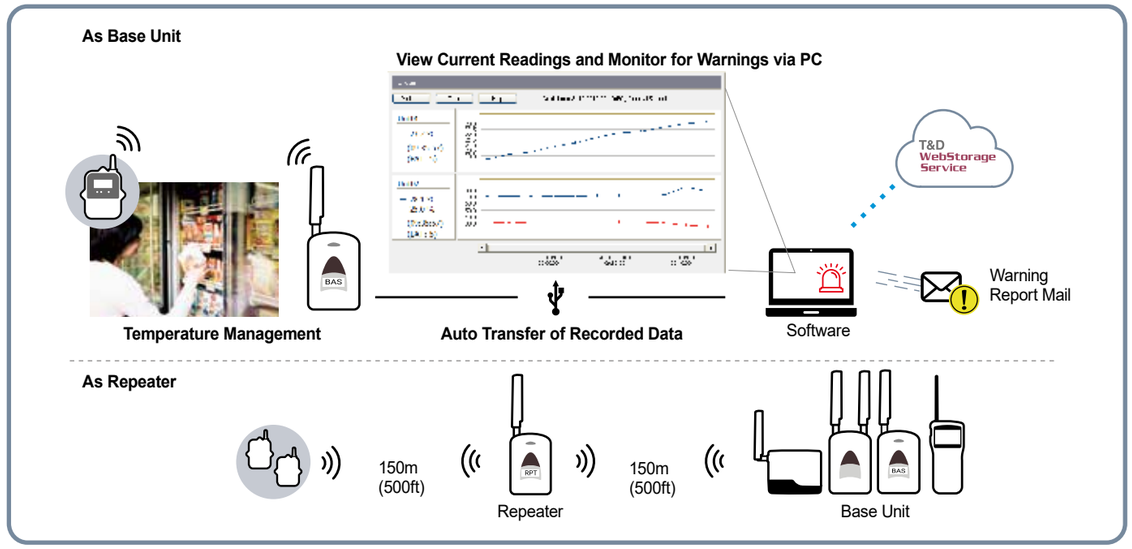
Upload Data to Cloud or Email
Downloaded data can be sent to email or server at scheduled intervals

As a Wireless Repeater
Can be used as a Repeater to extend the wireless communication range

Number of Possible Registrations

Remote Units: Up to 32 units per Group
(For RTR-574 and RTR-576, registration of one unit will be counted as two units.)
Repeaters: Up to 30 units per Group
Number of Groups : Up to 20 Groups

T&D WebStorage Compatible (see p.12)



Base Unit
Data Collector

Remote and Transport Monitoring Solution

RTR500BM Mobile Base Station
With 4G Connectivity

Data Transmission via Mobile Network
Data collected from data loggers can be automatically uploaded to T&D WebStorage Service or sent by email

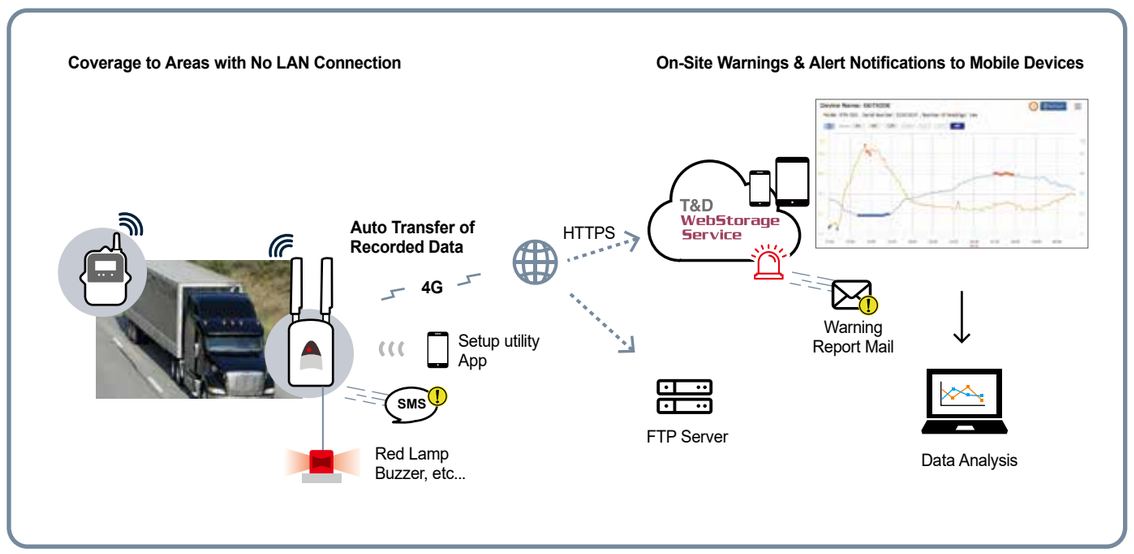
Possible to Connect to 12/24V Battery
An optional external battery connection adaptor enables operation where AC power is not available

Automatic Wireless Routings
The best route is automatically selected to ensure stable communication

Number of Possible Registrations

Remote Units: Up to 20
Repeaters: Up to 5 units per Group
Number of Groups : Up to 4 Groups

T&D WebStorage Compatible (see p.12)



Base Unit
Data Collector

Easy Data Collection, Easy Graph Display, No Computer Necessary

RTR-500DC Portable Data Collector

Graphical Display on the Screen
For immediate on-the-spot checking of downloaded data

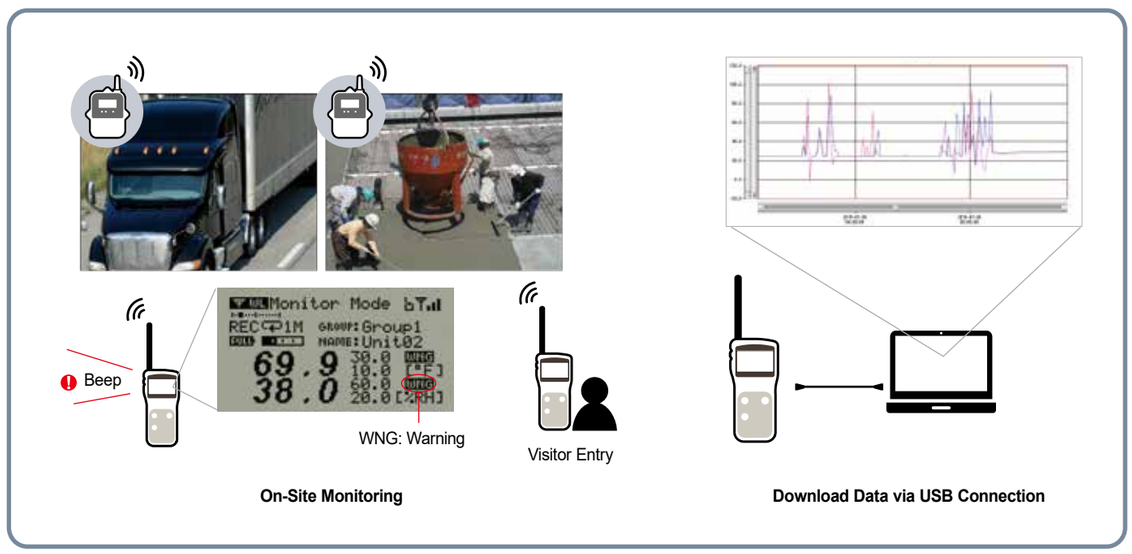
Operating Same Remote Units via Multiple RTR-500DC Units

Share the Remote Unit registration info between multiple data collectors; "Visitor Entry" function allows for communicating with the Remote Unit which has been registered to another RTR-500DC.

USB Connection for Data Transfer to PC
Downloaded data is stored internally and can then be uploaded to a PC

Number of Possible Registrations

Remote Units: Up to 32 units per Group
(For RTR505B, RTR-574, and RTR-576, registration of one unit will be counted as two units.)
Repeaters: Up to 15 units per Group
Number of Groups : Up to 7 Groups



T&D WebStorage Service

Access Data
Anytime, Anywhere
Available Free of Charge!

T&D WebStorage Service is a free cloud storage service for T&D data loggers.
By making settings in compatible products for the automatic transmission of data,
it is possible to access your important data any time, anywhere from PC or mobile devices.
Let our cloud service do the work for you!

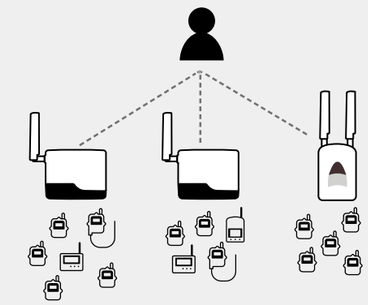
Now!

Access the online demo
webstorage-service.com/demo/

Completely Free!
Get Started Now

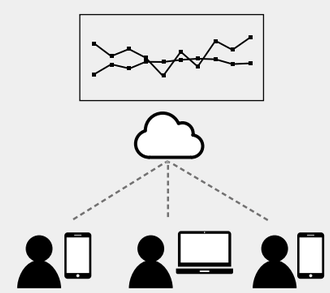
A single email address and password gets you into everything T&D WebStorage Service offers. No cost APIs are also available.

Manage All Your Devices in One Account



Monitor recorded data of multiple loggers in your account via browser. View and download data in graphical form or in a list.

Share Data on the Cloud



Efficiently share data for analysis and reporting, etc.
A read-only access privilege is also available.

24/7 Alert Monitoring

T&D WebStorage Service monitors your important data and notifies you via alert view on the web browser or via email when a warning event occurs.

The amount and period of data storage period vary depending on the model. Please read the Serviece Details of Service License Agreement before using.

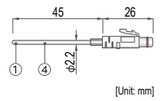
Temperature Sensors for RTR502B / 502BL

Measurement Range: -60 to 155˚C,
Sensor Temperature Durability: -70 to 180˚C
Accuracy (TR-5620 excluded): Avg. ±0.3˚C at -20 to 80˚C, Avg. ±0.5˚C at -40 to -20˚C / 80 to 110˚C, Avg. ±1.0˚C at -60 to -40˚C / 110 to 155˚C
Materials: ① Thermistor ② Stainless Tube (SUS316) ③ FEP Shrink Tube ④ FEP Cable ⑤ Fluoropolymer Mold

Fluoropolymer Coated Sensor

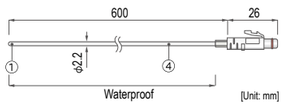
TR-5101

Response Time (90%):
Approx. 80 sec. (in air)



TR-5106

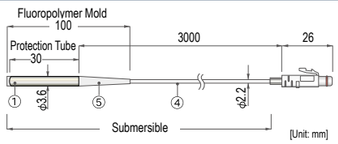
Response Time (90%):
Approx. 80 sec. (in air)
Approx. 7 sec. (in agitated water)



Underwater Sensor

TR-5530

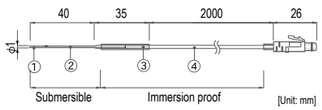
Response Time (90%):
Approx. 150 sec. (in air)
Approx. 15 sec. (in agitated water)



High Sensitivity Ultra-thin Sensor

TR-5620

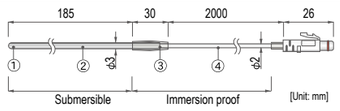
Accuracy
Avg. ±0.5˚C at -20 to 60˚C
Avg. ±1.0˚C at -60 to -20˚C, 60 to 80˚C
Avg. ±2.0˚C at 80 to 155˚C
Response Time (90%):
Approx. 50 sec. (in air)
Approx. 1 sec. (in agitated water)



Stainless Protection Sensor

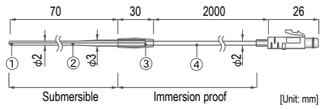
TR-5220

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



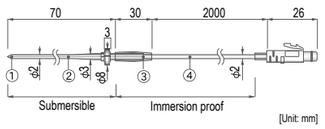
TR-5320

Response Time (90%):
Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)



TR-5420

Response Time (90%):
Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)



Pt100 Sensor for RTR505B / 505BL

TR-81 ## - #.# - #### - ##M
A B C D

A: Sensor Type (2 digits)
B: Protection Tube Diameter (2 digits)
C: Protection Tube Length (2 - 4 digits)
D: Cable Length (1 - 2 digits)

Sensor Device	Pt100	Range of Error	± (0.15 + 0.002 × t)°C t = absolute value of measurement
Electrical Current	less than 2mA		
Insulation Resistance	DC500V over 10MΩ	Water Resistance	None (only stainless protection tube is wter resistant)
Conductor	3 wire type		

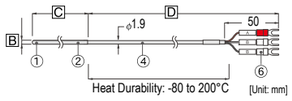
Note: The thermistor (temperature detection section) is mounted in the tip of the sensor.

To order, create the model number by selecting A , B , C , D (See below). Pt100 Sensors are produced only upon receipt of order; therefore please allow four weeks from the time of order until shipping.

A Sensor Type

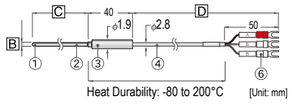
TR-81 0 0 (Economical Type)

Measurement Range: -50 to 200°C
Thermal Constant Time:
Approx. 4.5 sec.* (in agitated water)



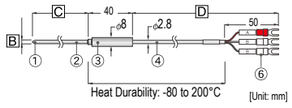
TR-81 1 0 (Regular Type)

Measurement Range: -200 to 350°C
Thermal Constant Time:
Approx. 2 sec.* (in agitated water)



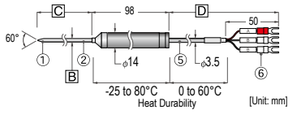
TR-81 2 0 (Low to High Temp Type)

Measurement Range: -200 to 500°C
Thermal Constant Time:
Approx. 2 sec.* (in agitated water)



TR-81 3 0 (Handy Type)

Measurement Range: -50 to 200°C
Thermal Constant Time:
Approx. 2.5 sec.* (in agitated water)



* Stated thermal constant time is for sensors with a protection tube diameter of φ3.2.

Materials: ① Sensor (Pt100) ② Stainless Protection Tube (SUS316) ③ Sleeve (SUS304) ④ FEP Cable ⑤ PVC Cable ⑥ Crimp Terminals

B Protection Tube Diameter

	TR-8100	TR-8110	TR-8120	TR-8130
φ 2.0	-	○	-	-
φ 2.3	○	○	-	-
φ 3.0	○	○	-	-
φ 3.2	◎	◎	◎	◎
φ 4.8	○	○	○	○
φ 6.0	○	○	-	-
φ 6.4	-	-	○	-

◎ Recommended ○ Avaiable - Not available

C Protection Tube Length

The protection Tube is available in 50 millimeter units in lengths from 50 millimeter to 2000 millimeters.

D Sensor Cable Length

The sensor cable is available in 1 meter units in lengths from 1 meter to 99 meters.

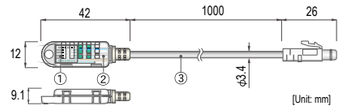
Temperature / Humidity Sensors

Note: Do not expose to condensation, dampness, corrosive gases, or organic solvents. Continued use may cause a decrease in the sensor's accuracy and sensitivity even under normal operational conditions.

for RTR503B / 503BL

TR-3310

Measurement Range :
Temperature: 0 to 55°C
Humidity: 10 to 95%RH
Accuracy:
Temperature: Avg.± 0.3°C
Humidity: ±5%RH at 25°C, 50%RH
Response Time (90%):
Approx. 7 min.

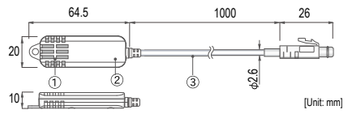


Materials: ① Temp/Humidity Sensor ② Polypropylene Resin ③ PVC Cable

for RTR507B / 507BL

SHB-3101 (High Precision Type)

Measurement Range:
Temperature: -25 to 70˚C
Humidity * :
0 to 99%RH at 0 to 60˚C
Measurement Resolution:
Temperature: 0.1˚C
Humidity: 0.1%RH
Accuracy (Temperature):
±0.3˚C at 10 to 40˚C
±0.5˚C all other temperatures
Accuracy (Humidity):
±2.5%RH at 15 to 35˚C, 30 to 80%RH
Response Time (90%): Approx. 7 min.
Long Term Stability: ±1%RH/yr, ±0.1˚C/yr



* When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below -20°C.

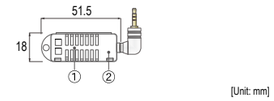
Materials: ① Temp/Humidity Sensor ② ABS Resin ③ Halogen-Free Flame Resistant Seath Cable

for RTR-574/576

Materials: ① Temp/Humidity Sensor ② Polypropylene Resin ③ PVC Cable ④ ABS Resin ⑤ Halogen-Free Flame Resistant Sheath Cable

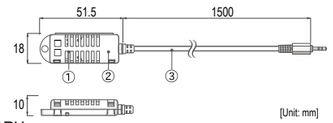
THA-3001

Measurement Range :
Temperature: 0 to 55°C
Humidity: 10 to 95%RH (no condensation)
Accuracy:
Temperature: ±0.5°C
Humidity: ±5%RH at 25°C, 50%RH
Response Time (90%): Approx. 7 min.



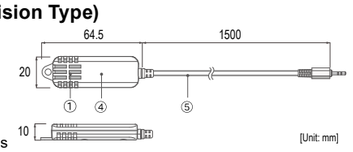
THA-3151

Measurement Range :
Temperature: 0 to 55°C
Humidity: 10 to 95%RH (No condensation)
Accuracy:
Temperature: ±0.5°C
Humidity: ±5%RH at 25°C, 50%RH
Response Time (90%): Approx. 7 min.



SHA-3151 (High Precision Type)

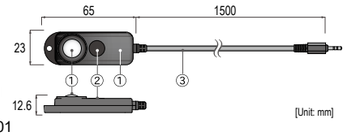
Measurement Range:
Temperature: -25 to 70°C
Humidity*: 0 to 99%RH
Accuracy
Temperature:
±0.3°C at 10 to 40°C
±0.5°C all other temperatures
Humidity:
±2.5%RH at 15 to 35°C, 30 to 80%RH
Response Time (90%): Approx. 7 min.
Long Term Stability: ±1%RH/yr, ±0.1°C/yr



Illuminance / UV Sensor for 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:
Illuminance 10 lx to 100 klx: ±5% at 25°C, 50%RH
UV Intensity* 0.1 to 30 mW/cm² : ±5% at 25°C, 50%RH
Operating Environment :
Temperature: -10 to 60°C
Humidity: ±90%RH or lower
* Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.



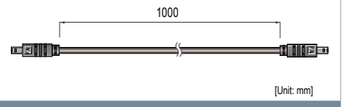
Materials: ① Illuminance Sensor (Polycarbonate) ② UV Sensor (Glass) ③ PVC Cable

Serial Communication Cable

RTR-500DC / RTR-574 / 576

TR-6C10

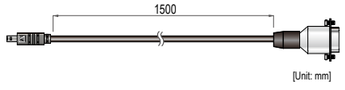
For communication between RTR-500DC and RTR-574 / 576 (including S type)



RTR500BC / RTR-500DC

TR-07C

For Communication with the Computer

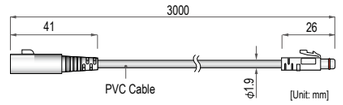


Sensor Extension Cable

RTR502B / 502BL

TR-2C30

Waterproof Capacity:
Splash proof
(rated for use in daily life)
Temperature Durability:
-25 to 60˚C

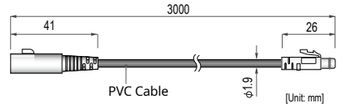


Note: Only one extension cable per Temperature sensor.

RTR505 / 505B / 507 / 507BL

TR-3C30

Waterproof Capacity:
Splash proof (rated for use in daily life)
Temperature Durability:
-25 to 60˚C

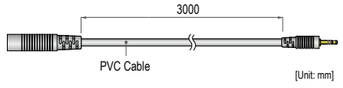


Note: Only one cable per Temp/Humidity sensor or module.

RTR-574 / 574-S / 576 / 576-S

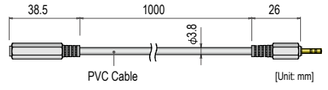
TR-1C30

Temperature Durability:
-25 to 60°C



TR-5C10

Temperature Durability:
-25 to 60°C



Note: Temp-Humidity sensors and Illuminance-UV sensors can use up to 9 meters of extension cables.

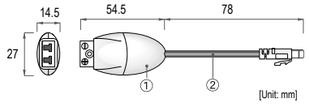
Input Modules for RTR505B / 505BL

Note: Input Module is not water resistant.

Materials: ① Polycarbonate ② PVC Cable ③ M3.5 Crimp Terminal

Thermocouple Module

TCM-3010

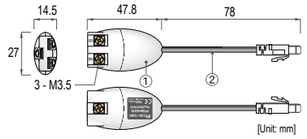


Compatible Sensors: Thermocouple: Type K, J, T, S
Measurement Range: within the sensor heat-durability range only
Measurement Resolution: Type K, J, T 0.1°C, Type S about 0.2°C
Measurement Accuracy *
Cold Junction Compensation:
-40 to 10°C: ±0.5°C, 10 to 40°C: ±0.3°C , 40 to 80°C: ±0.5°C
ThermocoupleMeasurement:
Type K, J, T : ±0.3°C+0.3% of reading, Type S :± 1°C+0.3% of reading
Operating Environment:
Temperature -40 to 80°C, Humidity 90%RH or less (no condensation)
Sensor Connection:
Make sure to use a thermocouple sensor with a miniature thermocouple plug attached. T&D does not make available these plugs or sensors for sale.

* Does not include inaccuracies of sensor actually connected.

Pt Module

PTM-3010

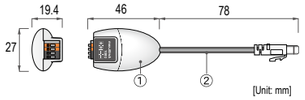


Compatible Sensors:
Pt100 (3-wire, 4-wire), Pt1000 (3-wire, 4-wire)
In the case of a 4-wire sensor, one wire will be left unused.
Measurement Resolution: 0.1°C
Measurement Accuracy *
Ambient Temperature of Input Module
-40 to 10°C: ±0.5°C + 0.3% of reading
10 to 40°C: ±0.3°C + 0.3% of reading
40 to 80°C: ±0.5°C + 0.3% of reading
Operating Environment:
Temperature -40 to 80°C, Humidity 90%RH or less (no condensation)
Accessories: Protection Cover

* Does not include inaccuracies of sensor actually connected.

4-20mA Module

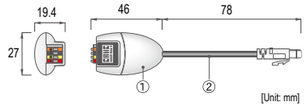
AIM-3010



Input Resistance: 0 to 20mA (Operational up to 40 mA)
Measurement Resolution: 0.01mA
Measurement Accuracy:
Ambient Temperature of Input Module
-40 to 10°C: ±0.1mA+0.3% of reading, 10 to 40°C: ±0.05mA+0.3% of reading,
40 to 80°C: ±0.1mA+0.3% of reading
Input Resistance: 100Ω ±0.3Ω
Sensor Connection: Cable Insertion Connection: Plus(+) 2 Parallel Terminals,
Minus(-) 2 Parallel Terminals: Total 4 Terminals
Compatible Wires: Single wire:
ϕ0.32 to ϕ0.65mm (AWG28 to AWG22), ϕ0.65mm (AWG22) recommended
Twisted wire: 0.32mm2 (AWG22), ϕ0.12mm or more in diameter
Strip length: 9 to 10mm
Operating Environment: Temperature: -40 to 80°C , Humidity: 90%RH or less (no condensation)

Voltage Module

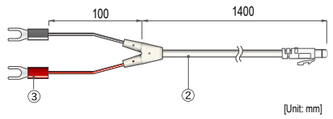
VIM-3010



Measurement Item: Voltage 0 to 22V
Measurement Resolution:
Up to 400mV : 0.1 mV, Up to 800mV : 0.2 mV, Up to 999mV : 0.4mV,
Up to 3.2V : 1 mV, Up to 6.5V : 2 mV, Up to 9.999V: 4mV, Up to 22V : 10mV
Measurement Accuracy:
Ambient Temperature of Input Module
-40 to 10°C: ±1mV+0.5% of reading, 10 to 40°C: ±0.5mV+0.3% of reading
40 to 80°C: ±1mV+0.5% of reading
Preheat Function:
Voltage Range (Preheating): 3V to 20V100mA
Time Range (Preheating): 1 to 999 seconds (in units of one-second)
Capacitor Load: 330μF or less
Operating Environment: Temperature: -40 to 80°C , Humidity: 90%RH or less (no condensation)

Pulse Input Cable

PIC-3150



Software CD-ROM

SO-B1

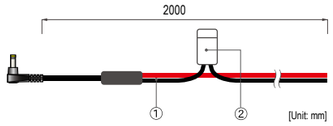
Included Software
RTR500BW for Windows
RTR500BC for Windows
RTR500BM for Windows
RTR-500DC for Windows
T&D Graph
RTR500BW for Windows (for RTR-601) *

* US only

External Battery Connection Adaptor for RTR500BM

BC-0204

Power Source Conditions:
Input: DC9 - 38V
Output: DC 5V / 2A



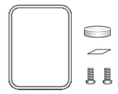
Materials: ① Cable: AWG#20, Red/ Plus (+), Black/ Minus (-)
② Flat mini-fuse: 2A / 32V

Other Options for RTR501B / 502B / 503B / 505B / 507B

Maintenance Set

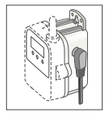
TR-00P1

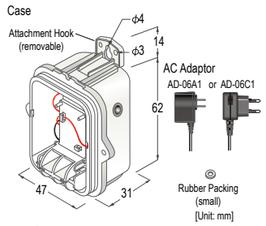
Included:
Rubber Packing (for the rear cover of the data logger)
Silica Gel (drying agent)
Double-Sided Adhesive Tape (to fix the silica gel)
Lock Screw (extra screws to tighten the rear cover of the data logger)

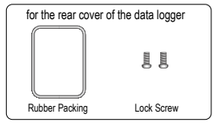


External Power Adaptor Kit

RTR-500A2





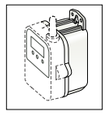


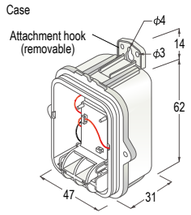
Input Voltage: DC 6V
Backup Power:
Ni-MH Battery (In case of power loss)
Back-up Time: About 4 days *
Charging Method: Trickle Charge
Operational Environment Temp: 0 to 60°C
Water Resistance: None
Weight: About 37g (without AC Adaptor)
Included:
AC Adaptor (AD-06A1 or AD-06C1) ,
Case, Rubber Packing , Lock Screw

* Varies depending on the amount of charge in the Ni-MH battery.
Note: RTR-500A2 should not be used with the RTR501B.

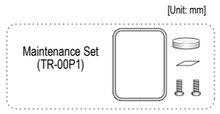
Large Capacity Battery Kit

RTR-500B1





Power: Lithium Battery x 1 (LS26500) (*1)
Battery Life: about 4 years (*2)
Waterproof Capability: Splash proof
Operating Temperature: -40 to 80 ˚C (*3)
Weight: about 75g (including Lithium Battery)
Included:
Maintenance Set TR-00P1,
Case



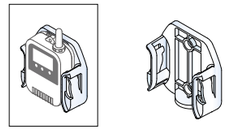
*1: When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.
*2: Battery Life varies depending on measuring environment, recording interval, transmission frequency, and ambient temperature. The battery life estimated here is calculated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

Wall Attachment

Note: Cracking may occur if polycarbonate is exposed to strong impact at temperatures of -30°C or lower.

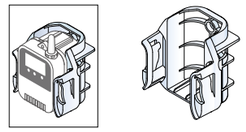
TR-05K3 (for RTR501B/502B /503B/505B/507B)

Included:
Lock Screw x 2,
Double-Sided Adhesive Tape x 1
Operational Environment Temp:
-40 to 80°C
Materials: Polycarbonate



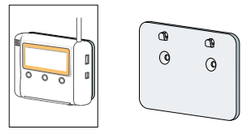
TR-05K3L (for L Types)

Included:
Lock Screw x 2,
Double-Sided Adhesive Tape x 1
Operational Environment Temp:
-40 to 80°C
Materials: Polycarbonate



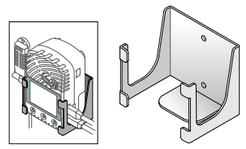
TR-07K2 (for RTR-574/574-S)

Included:
Lock Screw x2,
Double-Sided Adhesive Tape x 1
Materials: Polycarbonate



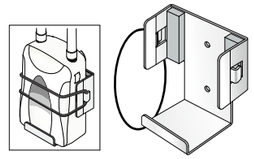
AT-76K1 (for RTR-576/576-S)

Included:
Lock Screw x 2,
Double-Sided Adhesive Tape x 1
Materials: Aluminum



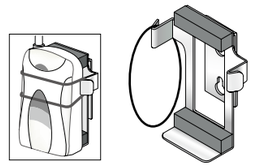
TR-5GK1 (for RTR500BM)

Included:
O-Ring (rubber) x 1
Lock Screw x 2
Double-Sided Adhesive Tape x 1
Materials: Aluminum



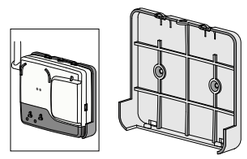
AT-50K1 (for RTR500BC)

Included:
O-Ring (rubber) x 1
Lock Screw for fastening to wall x 2,
Double-Sided Adhesive Tape x 1
Materials: Aluminum



TR-5WK1 (for RTR500BW)

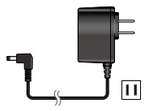
Included:
Lock Screw for fastening to wall x 2,
Double-Sided Adhesive Tape x 1,
Lock Screw for fastening the device x 1
Materials: Polycarbonate



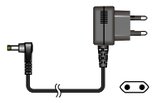
AC Adaptors

RTR500BC, RTR-500DC, RTR-576

AD-06A1 (FCC)
Cable Length: 1.8m
Input: AC 100-240V
Output: DC 6V 500mA
Frequency: 50 / 60Hz
Plug Type : A

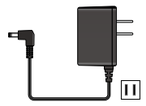


AD-06C1 (CE)
Cable Length: 1.8m
Input: AC 100-240V
Output: DC 6V 1.0A
Frequency: 50 / 60Hz
Plug Type: C

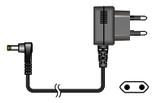


RTR500BW

AD-05A4 (FCC)
Cable Length: 1.8m
Input: AC 100-240V
Output: DC 5V 1A
Frequency: 50 / 60Hz
Plug Type : A

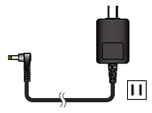


AD-05C1(CE)
Cable Length: 1.6m
Input: AC100-240V
Output: DC 5V 2A
Frequency: 50 / 60Hz
Plug Type: C

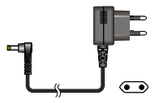


RTR500BM

AD-05A3(FCC)
Cable Length: 1.2m
Input: AC100-240V
Output: DC 5V 3A
Frequency: 50 / 60Hz
Plug Type : A



AD-05C1(CE)
Cable Length: 1.6m
Input: AC100-240V
Output: DC 5V 2A
Frequency: 50 / 60Hz
Plug Type: C



Remote Units (Data Logger)

	RTR501B / 501BL	RTR502B / 502BL	RTR503B / 503BL		RTR507B / 507BL	
Measurement Channels	Temperature 1ch	Temperature 1ch	Temperature 1ch, Humidity 1ch		Temperature 1ch, Humidity 1ch (High Precision Type)	
Sensor	Thermistor (Internal)	Thermistor	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance
Measurement Units	°C,°F	°C,°F	°C,°F	%RH	°C,°F	%RH
Measurement Range	-40 to 80°C	-60 to 155°C	0 to 55°C	10 to 95%RH	-25 to 70°C	0 to 99%RH (*1)
Accuracy	Avg.±0.5°C	Avg.±0.3°C at -20 to 80°C Avg.±0.5°C at -40 to -20°C, 80 to 110°C Avg.±1.0°C at -60 to -40°C, 110 to 155°C	Avg.±0.3°C	±5%RH at 25°C, 50%RH	±0.3°C at 10 to 40°C ±0.5°C all other temperatures	±2.5%RH at 15 to 35°C, 30 to 80%RH
Measurement Resolution	0.1°C	0.1°C	0.1°C	1%RH	0.1°C	0.1%RH
Responsiveness	Thermal Time Constant: Approx. 15 min. Approx. 25 min. (L Type) Response Time (90%): Approx. 35 min. Approx. 47 min. (L Type)	Thermal Time Constant: Approx. 30 sec. (in air) Approx. 4 sec. (in agitated water) Response Time (90%): Approx. 80 sec. (in air) Approx. 7 sec. (in agitated water)	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	
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 (*2)	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)					
LCD Display Items	Measurements (alternating display for multiple channel devices), Battery Life Warning, etc.					
Communication Interfaces	Short Range Wireless Communication <For US> Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed Bluetooth 4.2 (Bluetooth Low Energy) (*3) Optical Communication					
Power	Lithium Battery LS14250 x 1 L Type: Large Capacity Battery Kit RTR-500B1 (*4) External Power Adaptor Kit RTR-500A2 (*5)					
Battery Life (*6)	Approx. 10 months L Type: About 4 years					
Dimensions	H 62mm x W 47mm x D 19mm L type: H 62mm x W 47mm x D 46.5mm (excluding protrusions and sensor) Antenna length: 24mm					
Weight	Approx. 50g L Type: approx. 65g					
Operating Environment	-40 to 80°C -30 to 80°C during wireless communication					
Waterproof Capacity	IP67: Immersion proof	IP64: Splash proof (rated for use in daily life) (*7)				
Accessories	-	Temperature Sensor TR-5106	Temp-Humidity Sensor TR-3310		High Precision Temp-Humidity Sensor SHB-3101	
	Lithium Battery LS14250 or Large Capacity Battery Kit RTR-500B1, Strap (Not included with L type models), Manual Set (Warranty included)					
Compatible Base Units	RTR500BC, RTR500BW, RTR500BM RTR-500DC, RTR500MBS-A, RTR-500NW/AW (*8)(*9) RTR-500 (*9)					

*1: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below -20°C.
*2: Only "Endless" is available when using the RTR500BW, RTR500BM, RTR-500NW/AW or RTR500MBS-A as a Base Unit.
*3: Bluetooth is available when using the RTR500BW or RTR500BM as a Base Unit and making device settings in the mobile app (T&D 500B Utility).
*4: When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.
*5: RTR-500A2 should not be used with the RTR501B, as it will cause the RTR-501 to display a higher than actual temperature reading of up to 3°C.
*6: Battery life depends on several factors, including ambient temperature, radio environment, frequency of communication, recording interval, and quality of the battery being used. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.
*7: This is the waterproof capacity of the data logger with the sensor connected. Note that the temperature-humidity sensor is not water resistant.
*8: A firmware update is required to a RTR500B series compatible version.
*9: A software update is required to a RTR500B series compatible version.
The specifications listed above are subject to change without notice.

RTR500B Series - Specifications

Remote Units (Data Logger)

	RTR505B/505BL
Measurement Item	Temperature, Voltage, 4-20mA, or Pulse Count (*1)
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 (*2)	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)
LCD Display Items	Measurements (alternating display for multiple channel devices), Battery Life Warning, etc.
Communication Interfaces	Short Range Wireless Communication <For US> Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed Bluetooth 4.2 (Bluetooth Low Energy) (*3) Optical Communication
Power	Lithium Battery LS14250 x 1 L Type: Large Capacity Battery Kit RTR-500B1 (*4) External Power Adaptor Kit RTR-500A2
Battery Life (*5)	Approx. 10 months L Type: About 4 years
Dimensions	H 62mm x W 47mm x D 19mm L type: H 62mm x W 47mm x D 46.5mm (excluding protrusions and sensor) Antenna length: 24mm
Weight	Approx. 50g L Type: approx. 65g
Operating Environment	-40 to 80°C -30 to 80°C during wireless communication
Waterproof Capacity	IP64: Splash proof (rated for use in daily life) (*6)
Accessories	Lithium Battery LS14250 or Large Capacity Battery Kit RTR-500B1, Strap (Not included with L type models), Manual Set (Warranty included)
Compatible Base Units	RTR500BC, RTR500BW, RTR500BM RTR-500DC, RTR-500MBS-A, RTR-500NW/AW (*7)(*8) RTR-500 (*8)

*1: Measurement item depends on the input module (sold separately).
*2: Only "Endless" is available when using the RTR500BW, RTR500BM, RTR-500NW/AW or RTR-500MBS-A as a Base Unit.
*3: Bluetooth is available when using the RTR500BW or RTR500BM as a Base Unit and making device settings in the mobile app (T&D 500B Utility).
*4: When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.
*5: Battery life depends on several factors, including ambient temperature, radio environment, frequency of communication, recording interval, and quality of the battery being used. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.
*6: Input module (sold separately) is not water resistant.
*7: A firmware update is required to a RTR500B series compatible version.
*8: A software update is required to a RTR500B series compatible version.
The specifications listed above are subject to change without notice.

Remote Units (Data Logger)

	RTR-574		RTR-574-S	
	Illuminance-UV Sensor			
Sensor	ISA-3151			
Measurement Channels	Illuminance: 1ch UV Intensity: 1ch			
Units of Measurement	Illuminance: lx, klx UV Intensity: mW/cm^2			
Measurement Range	Illuminance: 0 lx to 130 klx UV Intensity: 0 to 30 mW/cm^2			
Units of Cumulative Measurement	Cumulative Illuminance: lxh, klxh, Mlxh Cumulative amount of UV Light: mW/cm^{2}h, W/cm^{2}h			
Display Range of Cumulative Measurement	Illuminance: 0 lxh to 90 Mlxh UV Intensity: 0 mW to 62 W/cm^{2}h			
Accuracy	Illuminance: 10 lx to 100 klx: ±5% at 25°C, 50%RH UV Intensity: 0.1 to 30 mW/cm^2 : ±5% at 25°C, 50%RH (*1)			
Relative Spectral Response	Illuminance: Approximated to the CIE standard response function V (λ) UV Intensity: 260 to 400 nm (UVA / UVB)			
Measurement Resolution	Illuminance: Minimum of 0.01 lx UV Intensity: Minimum of 0.001 mW/cm^2			
Responsiveness	Response Time (90%): 3 sec. at recording interval of 1 sec. 6 sec. at other intervals			
	Temperature-Humidity Sensor			
Sensor	THA-3151		SHA-3151 (High-Precision Type)	
	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Units of Measurement	°C, °F	%RH	°C,°F	%RH
Measurement Range	0 to 55°C	10 to 95%RH	-25 to 70°C	0 to 99%RH (*2)
Accuracy	±0.5°C	± 5%RH at 25°C, 50%RH	±0.3°C at 10 to 40°C ±0.5°C all other temperatures	±2.5%RH at 15 to 35°C, 30 to 80%RH
Measurement Resolution	0.1°C	1%RH	0.1°C	0.1%RH
Responsiveness	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	
Logging Capacity	8,000 data sets (One data set consists of readings for all channels in that type of unit.)			
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 (*3)	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. - 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	Short Range Wireless Communication <For US> Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed USB 2.0 (Mini-B connector) Serial Communication: RS-232C (*4)			
Power	AA Alkaline Battery LR6 x1			
Battery Life (*5)	Approx. 4 months			
Dimensions	H 55 mm x W 78 mm x D 18 mm (excluding protrusions) Antenna Length: 60 mm			
Weight	Approx. 45 g			
Operating Environment	Temperature: -10 to 60°C Humidity: 90%RH or less (no condensation)			
Accessories	Temperature-Humidity Sensor THA-3151		Temperature-Humidity Sensor SHA-3151	
	AA Alkaline Battery LR6, USB Mini-B Cable US-15C, Illuminance-UV Sensor ISA-3151, Manual (Warranty Included)			
Compatible Base Units	RTR500BC, RTR500BW, RTR500BM RTR-500DC, RTR500MBS-A, RTR-500NW/AW, RTR-500			

*1: Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.
*2: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below -20°C.
*3: Only "Endless" is available when using the RTR500BW, RTR500BM, RTR-500NW/AW or RTR-500MBS-A as a Base Unit.
*4: For communication with the Data Collector RTR-500DC (Note: Optional serial communication cable TR-6C10 is required.)
*5: Battery life varies depending upon multiple factors including ambient temperature, radio environment, recording interval, frequency of communication, and 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)

	RTR-576		RTR-576-S	
	CO2 Sensor (Internal)			
Sensor	NDIR			
Measurement Channels	CO2 Concentration 1ch			
Units of Measurement	ppm			
Measurement Range	0 to 9,999 ppm			
Accuracy	±(50 ppm + 5% of reading) at 5,000 ppm or less (*1)			
Measurement Resolution	Minimum of 1 ppm			
Responsiveness	Response Time (90%): Approx. 1 min.			
	Temperature-Humidity Sensor			
Sensor	THA-3001		SHA-3151 (High-Precision Type)	
	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Units of Measurement	°C, °F	%RH	°C,°F	%RH
Measurement Range (*2)	0 to 55°C	10 to 95%RH	-25 to 70°C	0 to 99%RH (*3)
Accuracy	±0.5°C	±5%RH at 25°C, 50%RH	±0.3°C at 10 to 40°C ±0.5°C all other temperatures	±2.5%RH at 15 to 35°C, 30 to 80%RH
Measurement Resolution	0.1°C	1%RH	0.1°C	0.1%RH
Responsiveness	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	
Logging Capacity	8,000 data sets (One data set consists of readings for all channels in that type of unit.)			
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 (*4)	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)			
LCD Display Items	Measurements, Battery Level, etc. - Measurements: CO2 concentration, Temperature or Humidity (fixed or alternating display)			
Communication Interfaces	Short Range Wireless Communication <For US> Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: Approx. 150 meters (500 ft) if direct and unobstructed USB 2.0 (Mini-B connector) Serial Communication: RS-232C (*5)			
External Alarm Terminal (*6)	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)			
Power	AC Adaptor AD-06A1 or AD-06C1, AA Alkaline Battery LR6 x 4			
Battery Life (*7)	Approx. 2 days (batteries only without AC adaptor)			
Dimensions	H 96 mm x W 66 mm x D 46 mm (excluding protrusions and sensor) Antenna Length: 60 mm			
Weight	Approx. 125 g			
Operating Environment	Temperature: 0 to 45°C Humidity: 90%RH or less (no condensation)			
Accessories	Temperature-Humidity Sensor THA-3001		Temperature-Humidity Sensor SHA-3151	
	AA Alkaline Battery LR6 x 4, AC Adaptor AD-06A1 or AD-06C1, USB Mini-B Cable US-15C, Manual (Warranty Included)			
Compatible Base Units	RTR500BC, RTR500BW, RTR500BM RTR-500DC, RTR500MBS-A, RTR-500NW/AW, RTR-500			

*1: Stated value is 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.
*2: Make sure to use the data logger within the operating environment as listed in the specifications.
*3: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below -20°C.
*4: Only "Endless" is available when using the RTR500BW, RTR500BM, RTR-500NW/AW or RTR-500MBS-A as a Base Unit.
*5: For communication with the Data Collector RTR-500DC (Note: Optional serial communication cable TR-6C10 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 multiple factors including ambient temperature, radio environment, recording interval, frequency of communication, and 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.

Base Unit

	RTR500BW
Compatible Devices	Remote Units: RTR501B / 502B / 503B / 505B / 507B, RTR-501 / 502 / 503 / 507S / 574 / 576 / 505-TC / 505-Pt / 505-V / 505-mA / 505-P (*1) (Including L Type and S Type) Repeaters: RTR500BC RTR-500 (*1)
Maximum Number of Registrations	Remote Units: 50 units Repeaters: 10 units x 4 groups
Communication Interfaces	Short Range Wireless Communication <For US>Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct Wired LAN (RJ45 connector 100 Base-TX/10 Base-T) Wireless LAN (IEEE 802.11 a/b/g/n, WEP(64bit/128bit) / WPA-PSK(TKIP) / WPA2-PSK(AES) Bluetooth 4.2 (Bluetooth Low Energy) For Settings USB 2.0 (Mini-B connector) For Settings Optical Communication (proprietary protocol)
External Output Terminal	<Output Terminal: PhotoMOS Relay Output> OFF-State Voltage: AC/DC 50V or less ON-State Current: 0.1 A or less ON-State Resistance: 35Ω
Communication Protocol (*2)	HTTP, HTTPS, FTP, SNTP, DHCP
Power	AC Adaptor AD-05A4 or AD-05C1 PoE IEEE 802.3af
Dimensions	H 83 mm x W 102 mm x D 28 mm (excluding antenna) Antenna Length: 115 mm
Weight	Approx. 130 g
Operating Environment	Temperature: -10 to 60°C Humidity: 90%RH or less (without condensation)
Accessories	Antenna, USB Mini-B Cable US-15C, AC Adaptor AD-05A4 or AD-05C1, Registration Code Label, Manual Set (Warranty Included)
Software	RTR500BW for Windows, T&D Graph, T&D 500B Utility
Compatible OS	PC Software (*3) Microsoft Windows 10 32 / 64 bit English Microsoft Windows 8 32 / 64 bit English Microsoft Windows 7 32 / 64 bit (SP1 or later) English Mobile Application Android OS, iOS (Check compatibility on the Software page of our website)

*1: RTR-500 Series loggers and Repeaters do not have Bluetooth capability.
*2: Client Function.
*3: For installation, it is necessary to have Administrator (Computer Administrator) rights.
The specifications listed above are subject to change without notice.

	RTR500BM
Compatible Devices	Remote Units: RTR501B / 502B / 503B / 505B / 507B, RTR-501 / 502 / 503 / 507S / 574 / 576 / 505-TC / 505-Pt / 505-V / 505-mA / 505-P (*1) (Including L Type and S Type) Repeaters: RTR500BC RTR-500 (*1)
Maximum Number of Registrations	Remote Units: 20 units Repeaters: 5 units x 4 groups
Communication Interfaces	Short Range Wireless Communication <For US>Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct LTE Communication <For US> LTE-FDD: B2/B4/B12 WCDMA: B2/B5 <For EU>LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800MHz Bluetooth 4.2 (Bluetooth Low Energy) For Settings USB 2.0 (Mini-B connector) For Settings Optical Communication (proprietary protocol)
External Input/ Output Terminal (*2)	<Input Terminal: Contact Input> Internal Pull-up: 3V 100kΩ Maximum Input Voltage: 30V <Output Terminal: PhotoMOS Relay Output> OFF-State Voltage: AC/DC 50V or less ON-State Current: 0.1 A or less ON-State Resistance: 35Ω
Communication Protocol (*3)	HTTP, HTTPS, FTP
Power	AC Adaptor (AD-05A3 or AD-05C1) External Battery Connection Adaptor BC-0204 (DC 9-38V) AA Alkaline Battery LR6 x 4
Battery Life (*4)	Expected battery life with only AA alkaline batteries: Approx. 3 days under the following conditions (only one Remote Unit and no Repeaters, warning monitoring ON, downloading data once a day, sending current readings at a 10 minute interval)
Dimensions	H 96 mm x W 65.8 mm x D 39 mm (excluding antenna) Antenna Length (Cellular/Local): 135 mm
Weight	Approx. 130 g
Operating Environment	Temperature: -10 to 60°C Humidity: 90%RH or less (without condensation)
Accessories	AA Alkaline Battery LR6 x 4, Antenna x 2 (Cellular/Local), USB Mini-B Cable US-15C, AC Adaptor AD-05A3 or AD-05C1, Registration Code Label, Manual Set (Warranty Included)
GPS Interface (*5)	Connector: SMA Female Jack Power Supply: 3.3V
SIM Card	nano SIM Card (*6)
Software	RTR500BM for Windows, T&D Graph, T&D 500B Utility
Compatible OS	PC Software (*7) Microsoft Windows 10 32 / 64 bit English Microsoft Windows 8 32 / 64 bit English Microsoft Windows 7 32 / 64 bit (SP1 or later) English Mobile Application Android OS, iOS (Check compatibility on the Software page of our website)

*1: RTR-500 Series loggers and Repeaters do not have Bluetooth capability.
*2: In order to use the external terminal, please prepare a compatible connector: JST PAP-04V-S
*3: Client Function.
*4: Battery life depends on several factors, including number of warning reports sent, ambient temperature, radio environment, frequency of communication, and quality of the battery being used. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.
*5: In order to use the GPS function (to attach geographical positioning info to current readings data), please purchase a compatible GPS antenna (SMA Male Plug).
*6: Please prepare a contracted SIM card separately.
*7: For installation, it is necessary to have Administrator (Computer Administrator) rights.
The specifications listed above are subject to change without notice.

Base Unit / Repeater

	RTR500BC
Compatible Devices	Remote Units: RTR501B / 502B / 503B / 505B / 507B, RTR-501 / 502 / 503 / 507S / 574 / 576 / 505-TC / 505-Pt / 505-V / 505-mA / 505-P (Including L Type and S Type) Repeaters: RTR500BC, RTR-500
Maximum Number of Registrations	Remote Units: 32 units (*1) x 20 groups Repeaters: 30 units x 20 groups
Communication Interfaces	Short Range Wireless Communication <For US>Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct Bluetooth 4.2 (Bluetooth Low Energy) (*2) USB 2.0 (Mini-B connector) Optical Communication (proprietary protocol) Serial Communication (RS-232C) (*3)
Communications Protocol(*4)	SMTP (POP before SMTP, SMTP-AUTH <LOGIN / PLAIN / CRAM-MD5>, SMTP over SSL/TLS, STARTTLS), FTP
Power	USB Bus Power, AA Alkaline Battery LR6 x 2, AC Adaptor AD-06A1 or AD-06C1 (*5)
Battery Life (*6)	As a Repeater: Approx. 6 months (When downloading full data once a day with one Repeater)
Dimensions	H 96 mm x W 65.8 mm x D 24.4 mm (excluding antenna) Antenna Length: 135 mm
Weight	Approx. 80 g
Operating Environment	Temperature: -10 to 60°C (when using AA batteries) -30 to 60°C (when using AC adaptor) Humidity: 90%RH or less (no condensation)
Accessories	Antenna, USB Mini-B Cable US-15C, Manual Set (Warranty Included)
Software	RTR500BC for Windows, T&D Graph
Compatible OS (*7)	Microsoft Windows 10 32 / 64 bit English Microsoft Windows 8 32 / 64 bit English Microsoft Windows 7 32 / 64 bit (SP1 or later) English

*1: For RTR-574 and RTR-576, registration of one unit will be counted as two units.
*2: Bluetooth is available when using the RTR500BW or RTR500BM as a Base Unit and making device settings in the mobile app (T&D 500B Utility).
*3: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications. (Note: Optional serial communication cable TR-07C is also required.)
*4: The protocol is implemented in the software RTR500BC for Windows.
*5: Please prepare two AA batteries or an AC Adaptor when using the RTR500BC as a Repeater.
*6: Battery life depends on several factors, including ambient temperature, radio environment, frequency of communication, and quality of the battery being used. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.
*7: For installation, it is necessary to have Administrator (Computer Administrator) rights.
The specifications listed above are subject to change without notice.

	RTR-500DC
Compatible Devices	Remote Units: RTR501B / 502B / 503B / 505B / 507B, RTR-501 / 502 / 503 / 507S / 574 / 576 / 505-TC / 505-Pt / 505-V / 505-mA / 505-P (Including L Type and S Type) Repeaters: RTR500BC, RTR-500
Maximum Number of Registrations	Remote Units: 32 units (*1) x 7 groups Repeaters: 15 units x 7 groups
Storage Capacity	When downloading from units filled to logging capacity: 15 units of RTR501B / 502B / 503B / 505B / 507B, RTR-501 / 502 / 503 / 505 / 507S 7 units of RTR-574 10 units of RTR-576 When downloading from units of any type containing small amounts of data, it can store and manage up to 250 download sessions.
Communication Interfaces	Short Range Wireless Communication <For US>Frequency Range: 902 to 928MHz RF Power: 7mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct <For EU> Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct USB 2.0 (Mini-B connector) Optical Communication (proprietary protocol) Serial Communication (RS-232C) (*2) (*3)
Power	AAA Alkaline Battery LR03 x 2, AAA Ni-MH Battery x 2, AC Adaptor AD-06A1 or AD-06C1, USB bus power
Battery Life (*4)	Expected battery life with 2 AAA alkaline batteries: Monitoring Current Readings and Remote Unit Status: 96 hours of continuous use (For communication without Repeaters at 60 second intervals) Monitoring Radio Waves: 32 hours of continuous use Downloading Data via Wireless Communication: 730 consecutive sessions (When downloading RTR501B at full logging capacity, without Repeaters, with LCD backlight Off)
Dimensions	H 125 mm x W 58 mm x D 26.3 mm (excluding antenna) Antenna Length: 109 mm
Weight	Approx. 105 g
Operating Environment	Temperature: 0 to 50°C Humidity: 90%RH or less (no condensation)
Accessories	AAA Alkaline Battery LR03 x 2, USB Mini-B Cable US-15C, Manual (Warranty Included)
Software	RTR-500DC for Windows
Compatible OS (*5)	Microsoft Windows 10 32 / 64 bit English Microsoft Windows 8 32 / 64 bit English Microsoft Windows 7 32 / 64 bit (SP1 or later) English

*1: For RTR505B and RTR-505/574/576 units, registration of one unit will be counted as two units.
*2: Optional communication cable TR-6C10 is required for serial communication with RTR-574 and RTR-576.
*3: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications. (Note: Optional serial communication cable TR-07C is also required.)
*4: Battery life varies depending upon multiple factors including ambient temperature, radio environment, frequency of communication, and 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.
*5: For installation, it is necessary to have Administrator (Computer Administrator) rights.
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