

Wireless Data Loggers

RTR-501/502/503: Data Loggers Built to Work and Last in Harsh Environments

RTR-501 / 501L: Temperature



The RTR-501 with internal sensor provides optimum waterproof and dustproof capabilities. This is the perfect Data Logger for use in harsh environments: whether that may be indoor frozen or refrigerated storage or high humidity, high dust outdoor applications.

Measurement Range

-40 to 80 °C

Water Resistance

Immersion proof
Not submersible

Temperature Sensor

Internal Temperature Sensor

RTR-502 / 502L: Temperature



We offer a variety of optional sensors to meet your needs; from ones with stainless protection to those that can be used in water. For details see the Optional Sensors page.

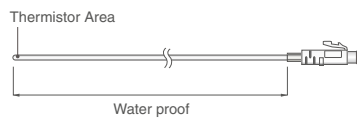
Measurement Range

-60 to 155 °C

Water Resistance

Splash proof (rated for use in daily life when the sensor is connected. Not for continued immersion.

Temperature Sensor : TR-5106 (Included)



Water Resistance:
The fluoropolymer-coated section is waterproof. Other sections are immersion proof

RTR-503 / 503L: Temperature and Humidity



The RTR-503 uses a sensor that measures and records both temperature and humidity.

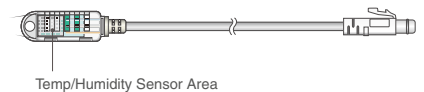
Measurement Range

Temperature : 0 to 55 °C
Humidity: 10 to 95%RH

Water Resistance

Splash proof (rated for use in daily life when the sensor is connected. Not for continued immersion.

Temperature / Humidity Sensor : TR-3310 (Included)



Water Resistance: None

RTR-505: For Measuring Signals from Multiple Types of Sensors and Instruments

RTR-505-TC / RTR-505-TCL: Thermocouple

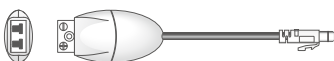


RTR-505-TC is a type of Data Logger supplied with the Input Module which supports the following types of thermocouple sensors: K, J, T, and S. It is possible to measure and record temperature in a range of -199 to 1700 °C.

Measurement Range

K: -199 to 1300 °C
J: -199 to 750 °C
T: -199 to 400 °C
S: -20 to 1700 °C

Input Module : TCM-3010 (Included)



RTR-505-Pt / RTR-505-PtL: Pt

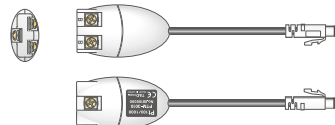


RTR-505-Pt is a Data Logger which supports Pt100 (3-wire) and Pt1000 (3-wire) sensors.

Measurement Range

-199 to 600 °C

Input Module : PTM-3010 (Included)



RTR-505-V / RTR-505-VL: Voltage



RTR-505-V is a Data Logger designed to measure and record voltage signals from various types of sensors and measuring devices. Two types of recording method (instantaneous or average) are available to be chosen from. It is equipped with a preheat function that transmits a preheat signal synchronized with the recording interval to turn sensors or other devices ON and OFF.

Measurement Range

0 to 22 V

Note: Currently, this product is not compatible with RTR-500GSM

Input Module : VIM-3010 (Included)



RTR-500 Series - Options

Temperature Sensors for RTR-502 / 502L

Possible Temperature Measurement Range: - 60 to 155 °C ,
Sensor Temperature Durability: -70 to 180 °C
Temp Measurement Accuracy: Average +/-0.3 °C (-20 to 80 °C), Average +/-0.5 °C (-40 to -20 °C / 80 to 110 °C), Average +/-1.0 °C (-60 to -40 °C / 110 to 155 °C)
Materials: ① Thermistor ② Stainless pipe (SUS316) ③ Fluoropolymer Compaction Tube ④ Fluoropolymer Coated Electrical Wire ⑤ Fluoropolymer Coated 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)

Water Immersible Sensor

TR-5530
Response Time (90%):
Approx. 150 sec. (in air)
Approx. 15 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)

Temperature Sensor Extension Cable

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

* Do not expose to condensation, dampness, corrosive gases or organic solvents.
Materials: ① Temperature/Humidity Sensor ② Polypropylene Resin ③ Vinyl Coated Electrical Wire

For RTR-501 / 502 / 503 / 505

Maintenance Set

TR-00P1
Contents:
Rubber Packing
Silica Gel
Double-sided Adhesive Tape
Lock Screw x 2

Battery Set

TR-11P2
Contents:
Lithium battery SAFT(LS14250)
Tube
Maintenance Set (TR-00P1)

External Power Adaptor Kit

RTR-500A1
Voltage Input: DC6V
Back-up Power:
Ni-MH Battery (In case of power loss)
Back-up Time: 1 day
Charging Method: Trickle Charge
Operating Temperature: 0 to 60°C
Waterproof Capacity: None
Weight: about 37g (without AC Adaptor)
Kit Contents:
External Power Adaptor
AC Adaptor (AD-0638 or AD-0638-C)
Attachment hook
Rubber Packing (small) for AC Adaptor jack
and Maintenance Set (TR-00P1)

Remote Unit				
Product	RTR-501/501L	RTR-502/502L	RTR-503/503L	
Measurement Channels	Temperature 1ch (Internal)	Temperature 1ch (External)	Temperature 1ch, Humidity 1ch (External)	
Sensor	Thermistor	Thermistor	Thermistor	Polymer Resistance
Measurement Units	°C, °F	°C, °F	°C, °F	%
Measurement Range	-40 to 80 °C	-60 to 155 °C	0 to 55 °C	10 to 95 %RH
Accuracy	Avg.±0.5 °C	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)	Avg.±0.3 °C	±5 %RH (at 25 °C, 50 %RH)
Measurement Resolution	0.1 °C	0.1 °C	0.1 °C	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.	
Logging Capacity	16,000 readings	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 (*1)	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	Wireless Communication (Short Range Radio Communication) FCC Part15 Section247 / 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 (*2) or CR2 (*3) x 1 L Type: Large Capacity Battery Adaptor Kit (RTR-500B1) (*4) External Power Adaptor Kit (RTR-500A1: sold separately)			
Battery Life (*5)	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 sensor) Antenna length: 24 mm			
Weight	Approx. 56 g L Type: approx. 109 g (including battery / excluding sensor)			
Operating Environment	-30 to 80 °C (The environmental operating range of the logger unit is -40 to 80°C, but wireless communications cannot be utilized in an environment less than -30°C.)			
Waterproof Capacity	IP67 (immersion proof)	IP64: Splash proof (rated for use in daily life) (*6)	IP64: Splash proof (rated for use in daily life) (*6) Note: Sensor is not water resistant.	
Accessories	-	Temperature Sensor (TR-5106)	Temperature/Humidity Sensor (TR-3310)	
	Tubed Lithium Battery (LS14250) or Large Capacity Battery Adaptor Kit (RTR-500B1), Strap, User's Manual (Warranty Included)			
Compatible Base Units	RTR-500, RTR-500NW/500AW, RTR-500DC, RTR-500GSM			

*1: Only "Endless" is available when using RTR-500W for Windows or RTR-500GSM for Windows.

*2: The included lithium battery (LS14250) is not sold in stores. Please purchase the optional battery set for low-temperature use (TR-11P2) for replacement.

*3: Only use the CR2 within temperature range of -20 to 60°C, avoiding exposing the CR2 to excessive vibration such as transportation.

*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.

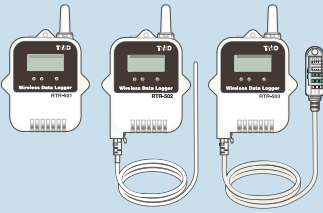
*6: This is the waterproof capacity of the data logger with the sensor connected.

The specifications listed above are subject to change without notice.

System Setup

Remote Unit

RTR-501 / 502 / 503
(Sensor Included)



RTR-505

(Input Module or
Input Cable Included)



Power



Lithium Battery
inserted into a tube
(LS14250 (SAFT))
Included



RTR-500A1
External Power
Adaptor Kit
Sold Separately

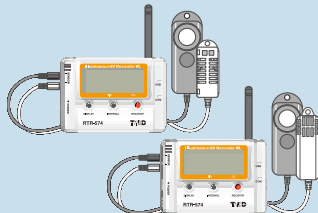


RTR-500B1 *
Large Capacity
Battery Adaptor Kit
Sold Separately

* When using RTR-500B1 it is necessary
to purchase Lithium Battery (LS26500).

RTR-574

(Sensor Included)



Power

AA Alkaline Battery x1
Included

Base Unit

RTR-500GSM



Power

AA Alkaline
Battery x 4
Included



or
AC Adaptor
Sold Separately
AD-0605 or AD-05C1



or
External Power Cable
BC-0201
Included



Software



USB Cable (US-15C)



Install

Purchase Extra Items Separately for RTR-500GSM

We do not handle or sell these items.

SIM Card
**Required item
for operation**



External Output / Input
Compatible Connector



External Power
Supply



Voltage : DC 8-34V
Current : MAX 2A

GPS Receiver



Install
Connect

Base Unit / Repeater

RTR-500



Power

Software



USB Cable (US-15C)



Use as a Repeater
AA Alkaline
Battery x2
Not Included



AC Adaptor
Sold Separately
AD-0638 or
AD-0638-C

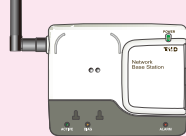


Install
Connect

Install
Connect

Base Unit

RTR-500NW
RTR-500AW



Power

Software



USB Cable (US-15C)



LAN Cable for 500AW (LN-20W)



AC Adaptor
Sold Separately
AD-0638 or
AD-0638-C



Connect

Base Unit

RTR-500DC



Power

Software



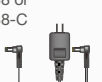
USB Cable (US-15C)



AAA Alkaline
Battery x2
Not Included



AC Adaptor
Sold Separately
AD-0638 or
AD-0638-C



Install
Connect

Install
Connect



Initial Settings
Function Settings

* It is not possible to
simultaneously connect
more than one Base Unit to
a PC.



Some devices such as a hub, wireless
LAN access point, server, and so on are
sold separately and may be necessary
to connect to a local network. T&D does
not manufacture or sell these items.



Initial Settings
Function Settings

T&D Website

For product information, software update and FAQ ;

<http://www.tandd.com/>



Caution regarding safety

For safe operation carefully read instructions before using the product.

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