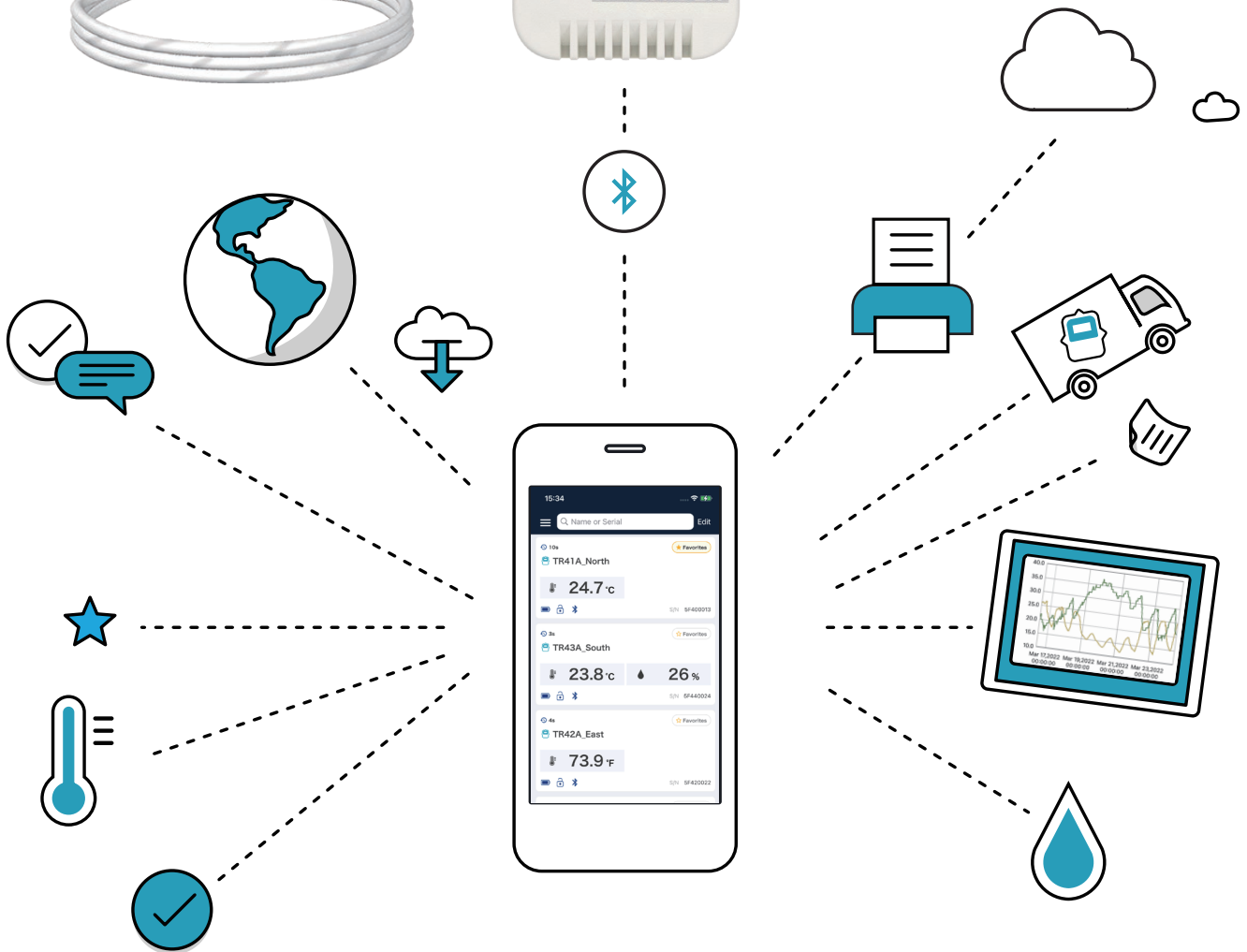


Easy Access to Your Data via Smartphone

# Bluetooth® Thermo Recorder TR4A series



# TR4A + Mobile Device = Quick Anywhere Anytime Access



## Easy Data Management via Bluetooth

### Easy Temperature/Humidity Measurement

The battery-powered TR4A series can be used for measurement at any site. Select a model according to your needs such as measurement items, range, and responsiveness.

### Easy Data Download with Smartphone

The T&D Thermo App automatically detects your logger via Bluetooth. Once connection is established, recorded data can be downloaded directly with graphic view and configuration using your mobile device.

### Store Data in the Cloud

Recorded data retrieved by the mobile device can be uploaded to the cloud storage (T&D Webstorage Service) for anytime, anywhere access from a smartphone, tablet, or PC.

### Data Report Generation

Using the mobile app T&D Thermo or TR4 Report, you can create a data report in PDF format, which can then be printed, shared, or emailed.

### Compact, Robust Design for Tough Environments

Their palm-sized compact design with robust body expands the possibilities of installation locations. Built-in sensor type for extra durability and water protection (IP67) also available.

## T&D's Free-of-Charge Cloud Service

### T&D WebStorage Service for Anywhere Anytime Access



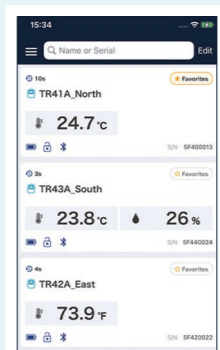
<https://www.webstorage-service.com/>

## Apps and Software for Your Needs

### iOS / Android T&D Thermo



Allows for smartphones/tablets to configure logger settings, collect and save data, display graphs, create reports, and upload to the cloud-based T&D WebStorage Service.



### iOS / Android TR4 Report



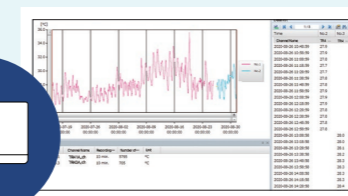
Specialized mobile app for generating PDF reports of recorded data for printing, emailing, saving and sharing.



### Windows T&D Graph



Allows access to data stored in the T&D WebStorage Service for data analysis on a Windows PC. Multiple data files can be loaded, graphed, combined and saved.



## Line Up Bluetooth Thermo Recorder



**TR41A**  
Internal Sensor for Better Water Protection  
Temperature 1ch (Internal Sensor)  
-40 to 80 °C  
IP67 Immersion Proof



**TR42A**  
External Sensor for Quick Response  
Temperature 1ch (External Sensor)  
-60 to 155 °C  
IP64 Splash proof (rated for use in daily life)  
Optional Sensors Available



**TR43A**  
Temperature / Humidity Measurement  
Temperature 1ch 0 to 55 °C  
Humidity 1ch 10 to 95 %RH  
IP64 : Splash proof (rated for use in daily life)  
\* Note that the temperature-humidity sensor is not water resistant.



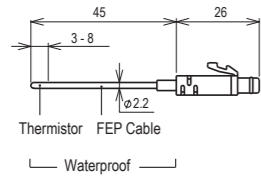
**TR45** Thermocouple Pt100/Pt1000  
Both TC/PT Sensor Compatible Unit  
Temperature 1ch (Thermocouple/PT Sensor)  
-199 to 1760 °C (depending on sensor type)  
Sensors Not Included

## Temperature Sensors for TR42A

Measurement Range: -60 to 155 °C  
 Accuracy: 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  
 Note: Can be extended by 3 meters with the Extension Cable TR-2C30

### Fluoropolymer Coated Sensor

#### TR-5101

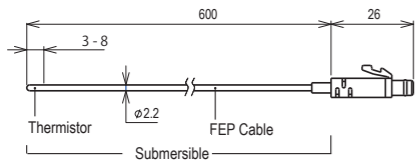


[Unit: mm]

Response Time (90 %): Approx. 80 sec. (in air)  
 Waterproof Capacity: Cable is waterproof



#### TR-5106



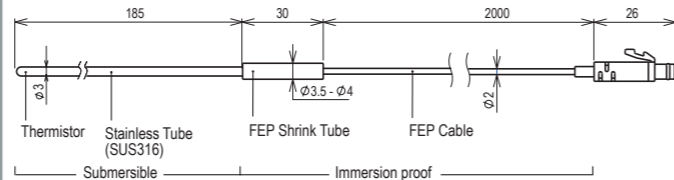
[Unit: mm]

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



### Stainless Protection Sensor

#### TR-5220

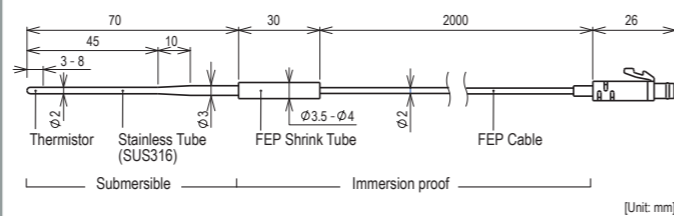


[Unit: mm]

Response Time (90 %): Approx. 150 sec. (in air)  
 Approx. 7 sec. (in agitated water)  
 Waterproof Capacity: Submersible (stainless protection tube),  
 Immersion proof (cable)



#### TR-5320

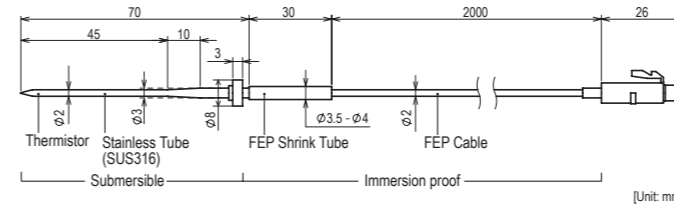


[Unit: mm]

Response Time (90 %): Approx. 90 sec. (in air)  
 Approx. 3 sec. (in agitated water)  
 Waterproof Capacity: Submersible (stainless protection tube),  
 Immersion proof (cable)



#### TR-5420

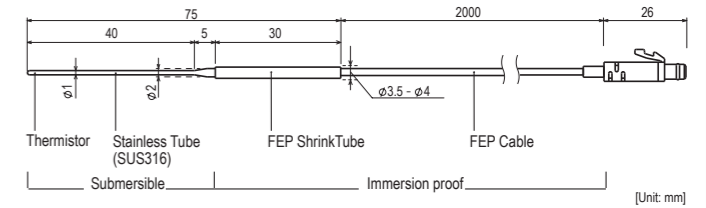


[Unit: mm]

Response Time (90 %): Approx. 90 sec. (in air)  
 Approx. 3 sec. (in agitated water)  
 Waterproof Capacity: Submersible (stainless protection tube),  
 Immersion proof (cable)



#### TR-5620 High Sensitivity Ultra-thin Sensor

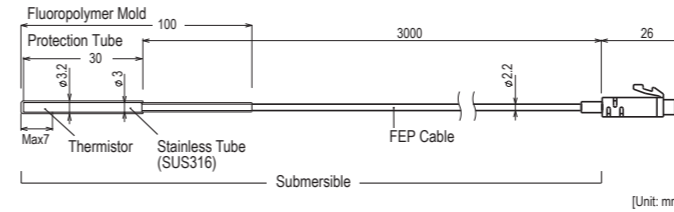


[Unit: mm]

Response Time (90 %): Approx. 50 sec. (in air)  
 Approx. 1 sec. (in agitated water)  
 Waterproof Capacity: Submersible (stainless protection tube),  
 Immersion proof (cable)



#### TR-5530 Underwater Sensor



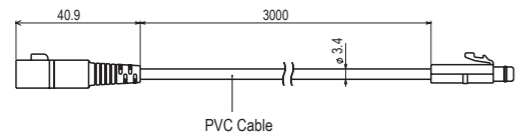
[Unit: mm]

Response Time (90 %): Approx. 150 sec. (in air)  
 Approx. 15 sec. (in agitated water)  
 Waterproof Capacity: Submersible (stainless protection tube),  
 Immersion proof (cable)



### Extention Cable for Temperature Sensor

#### TR-2C30



[Unit: mm]

Temperature Durability: -25 to 60 °C  
 Waterproof Capacity: Splash proof (rated for use in daily life)  
 Conditions for Use: Only one cable per sensor.

## Pt Sensors for TR45



Model Number

TR-8000 - 0.0 - 0000 - 00M

A
B
C
D

To order, create the model number by selecting A, B, C, and D (See below).

- A** Sensor Type (3 digits)
- B** Protection Tube Diameter (2 digits)
- C** Protection Tube Length (2-4 digits)
- D** Cable Length (1-2 digits)

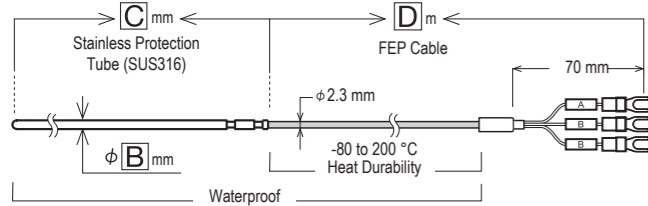
Sensor Device	Pt100
Electrical Current	2 mA
Insulation Resistance	DC100 V over 100 MΩ (TR-8130 is over 10 MΩ at DC500 V)
Conductor	3 wire type
Range of Error	$\pm(0.15 + 0.002 \times t)$ °C t = absolute value of measurement
Waterproof Capacity	TR-8200: Waterproof Others: Only stainless protection tube is water resistant.

Our sensors are produced only upon order, therefore please allow four weeks from time of order until shipping. The thermistor (temperature detection section) is mounted in the tip of the sensor.

### A Sensor Type (Select from 4 types)

#### TR-8200 Waterproof Type

Measurement Range: -50 to 200 °C  
Response Time (90 %)\*: Approx. 13 sec. (In agitated water)

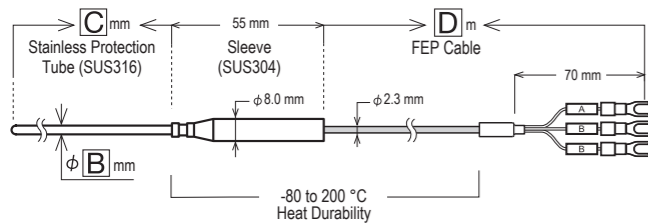


#### TR-8210 Regular Type

Measurement Range: -200 to 300 °C  
Response Time (90 %)\*: Approx. 6 sec. (In agitated water)

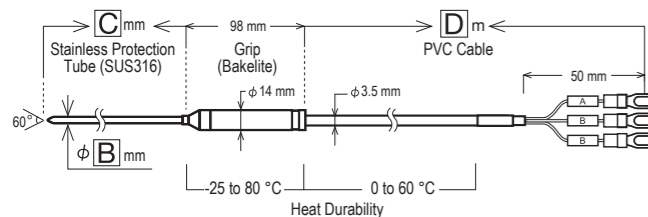
#### TR-8220 Low to High Temp Type

Measurement Range: -200 to 500 °C  
Response Time (90 %)\*: Approx. 6 sec. (In agitated water)



#### TR-8130 Handy Type

Measurement Range: -50 to 200 °C  
Response Time (90 %)\*: Approx. 6 sec. (In agitated water)



\* Stated Response Time (90 %) is for sensors with a protection tube diameter of  $\phi 3.2$ .  
\* Insulation Resistance of TR-8130 is over 10 MΩ at DC500 V.

### B Protection Tube Diameter

$\phi$ B mm	A Sensor Type			
	TR-8200	TR-8210	TR-8220	TR-8130
2.0	-	○	-	-
2.3	-	○	-	-
3.0	○	○	-	-
3.2	◎	◎	◎	◎
4.8	○	○	○	○
6.0	○	○	-	-
6.4	-	-	○	-

◎ Recommended ○ Available - Not Available

### C Protection Tube Length

TR-8220: 50 to 2000 millimeters  
Others: 50 to 1000 millimeters  
Can be specified in 50 mm units.

### D Cable Length

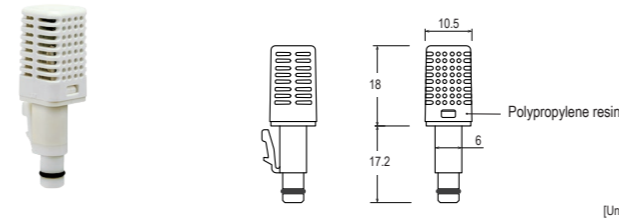
1 to 99 meters  
Can be specified in 1 m units.

## Temperature-Humidity Sensors for TR43A

Measurement Range: Temperature 0 to 55 °C, Humidity 10 to 95 %RH  
Conditions for Use: 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.

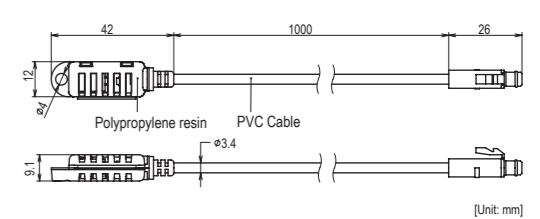
Note: These sensors do not support the use of an extension cable.

### THB3001



Accuracy: Temperature  $\pm 0.5$  °C,  
Humidity  $\pm 5$  %RH at 25 °C, 50 %RH  
Response Time (90 %): Approx. 11 min.

### TR-3310



Accuracy: Temperature Avg.  $\pm 0.3$  °C,  
Humidity  $\pm 5$  %RH at 25 °C, 50 %RH  
Response Time (90 %): Approx. 7 min.

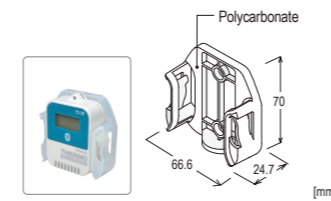
## Wall Attachments

Included Items: Lock Screws for fastening to wall, Double-Sided Adhesive Tape

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

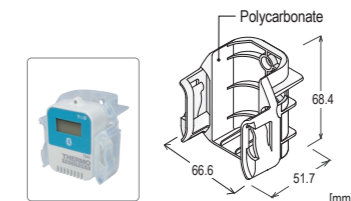
### TR-05K3

for TR41A / 42A / 43A



### TR-05K3L

for TR41A / 42A / 43A, TR45

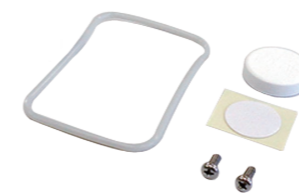


Note: TR41A / 42A / 43A Can be used when attaching Large Capacity Battery Kit or External Power Adaptor Kit.

## Other Options

### TR-00P1

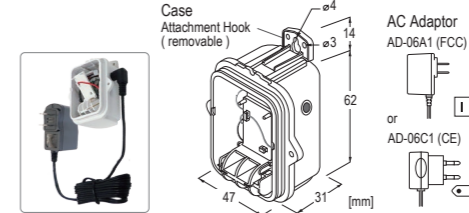
Maintenance Set for TR41A / 42A / 43A



Included Items:  
Rubber Packing, Silica Gel,  
Double-Sided Adhesive Tape,  
Lock Screws

### RTR-500A2

External Power Adaptor Kit for TR42A / 43A



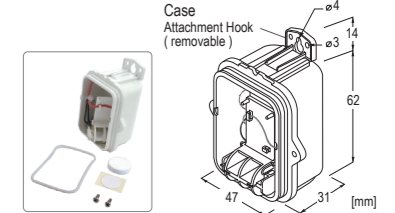
Voltage Input: DC6V  
Backup Power: Ni-MH Battery (In case of power loss)  
Back-up Time: About 4 days\*  
Charging Method: Trickle Charge  
Operating Temperature: 0 to 60 °C  
Waterproof Capacity: None  
Weight: About 37 g (without AC Adaptor)  
Included Items: AC Adaptor (AD-06A1 or AD-06C1), Case and Attachment Hook, Rubber Packing, Lock Screws, Rubber O-ring

\* Varies depending on the amount of charge in the Ni-MH battery.

Note: RTR-500A2 should not be used with the TR41A as it will cause the TR41A to display a higher than actual temperature reading of up to 3 °C.

### RTR-500B1

Large Capacity Battery Kit for TR41A / 42A / 43A



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 75 g (including Lithium Battery)  
Included Items: Maintenance Set TR-00P1, Case and Attachment Hook

\*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.

Specification	TR41A	TR42A	TR43A		TR45	
Measurement Channels	Temperature 1ch	Temperature 1ch	Temperature 1ch, Humidity 1ch		Temperature 1ch	
Sensor	Thermistor (Internal)	Thermistor	Thermistor	Polymer Resistance	Thermocouple: Type K, J, T, S, R *1 (Not provided)	Pt100, Pt1000 3-wire, 4-wire *2 (Available as option)
Measurement Units	°C, °F	°C, °F	°C, °F	%RH	Connection Terminal (M3.5)	
Measurement Range	-40 to 80 °C	-60 to 155 °C	0 to 55 °C	10 to 95 %RH	Type K : -199 to 1370 °C Type J : -199 to 1200 °C Type T : -199 to 400 °C Type S : -50 to 1760 °C Type R : -50 to 1760 °C	-199 to 600 °C
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	±0.5 °C	±5 %RH at 25 °C, 50 %RH	<b>Thermocouple Measurement (Sensor inaccuracies not included)</b> Type K, J, T : ±(0.5 °C + 0.3 % of reading) at -100 °C or above Type S, R : ±(1.5 °C + 0.3 % of reading) at 100 °C or above  <b>Cold Junction Compensation</b> ±0.5 °C *at 10 to 40 °C ±0.8 °C *at -40 to 10 °C, 40 to 80 °C	±(0.3 °C + 0.3 % of reading) *at 10 to 40 °C  ±(0.5 °C + 0.3 % of reading) *at -40 to 10 °C, 40 to 80 °C
Measurement Resolution	0.1 °C	0.1 °C	0.1 °C	1 %RH	Type K, J, T : 0.1 °C Type S, R : Approx. 0.2 °C	0.1 °C
Responsiveness	Response Time (90 %) : Approx. 35 min.	Response Time (90 %) : Approx. 80 sec. (in air) Approx. 7 sec. (in agitated water)	Response Time (90 %) : Approx. 11 min.		-	-
Logging Capacity	16,000 readings	16,000 readings	8,000 data sets (One data set consists of readings for multiple channels.)		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 (alternating display for multiple channel devices), Recording Status, Battery Life Warning, etc.					
Communication Interfaces	Bluetooth 4.2 (Bluetooth Low Energy)				Bluetooth 4.1 (Bluetooth Low Energy)	
Communication Time	Data Download Time (full logger) : Approx. 15 seconds				Data Download Time (full logger) : Approx. 30 seconds	
Power	Lithium Battery (LS14250) x 1					
Battery Life *3	Approx. 1.5 years *4				Approx. 1 year *4	
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 26.5 mm (excluding protrusions and sensor)	
Weight	Approx. 45 g				Approx. 50 g	
Operating Environment	-40 to 80 °C -30 to 80 °C during wireless communication				Temperature : -40 to 80 °C (-25 to 80 °C during wireless communication) Humidity : 90 %RH or less (no condensation)	
Waterproof Capacity	IP67: Immersion proof	IP64: Splash proof (rated for use in daily life) *5			None	
Included Items	-	Temperature Sensor TR-5106	Temp-Humidity Sensor THB3001		Cable Clamp	
Software *6	Mobile Applications (iOS, Android) T&D Thermo, TR4 Report PC Software (Windows) T&D Graph				Mobile Applications (iOS, Android) T&D Thermo, ThermoREC, ThermoStorage, TR4 Report PC Software (Windows) T&D Graph	

\*1: We do not handle the sale of Thermocouple sensors.

\*2: In the case of a 4-wire sensor, one wire will be left unused.

\*3: Battery life varies depending upon multiple factors including ambient temperature, 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.

\*4: Estimated battery life when recording data at an interval of more than 10 seconds and collecting data once a day.

\*5: This is the waterproof capacity of the data logger with the sensor connected. Note that the temperature-humidity sensor is not water resistant.

\*6: Free software download and information on OS compatibility is available on the Software page of our website at <https://tannd.com/software/>.

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URL : <https://tannd.com/>



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