Bluetooth® Data Logger
TR4 Series Features and Specs

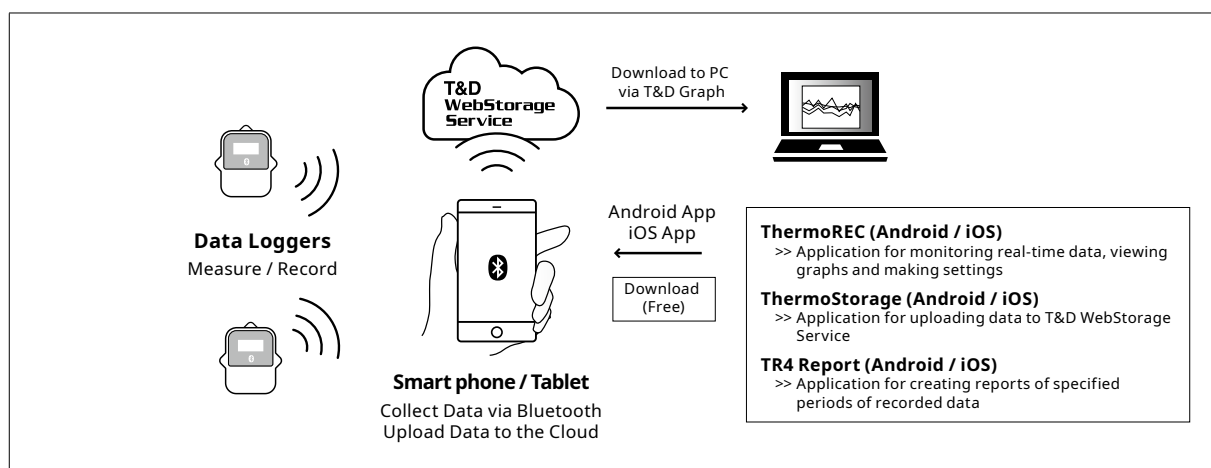| Measurement Item	Data Collection	Data Access	Warning Notification
Temperature	Smart phone/Tablet (via Bluetooth)	Smart phone/Tablet WebStorage Service	None

The TR4 series temperature data loggers feature Bluetooth technology and allow setup, data download, monitoring and graph view from smartphones and tablets. Downloaded data can then be uploaded to the free cloud-based "T&D WebStorage Service" for analysis using a browser or graph software. It is also possible to generate PDF reports using a dedicated mobile application.

TR41 and TR42 come with a temperature sensor (TR41 is built-in type) and are waterproof.

TR45, for use with thermocouple and Pt sensors, is versatile and suitable for specialized applications.

Data Loggers
Measure / Record

Smart phone / Tablet
Collect Data via Bluetooth
Upload Data to the Cloud

T&D WebStorage Service

Download to PC via T&D Graph

Android App
iOS App

Download (Free)

ThermoREC (Android / iOS)
>> Application for monitoring real-time data, viewing graphs and making settings

ThermoStorage (Android / iOS)
>> Application for uploading data to T&D WebStorage Service

TR4 Report (Android / iOS)
>> Application for creating reports of specified periods of recorded data

Model Number	Measurement Item	Measurement Range		Notes
TR41	Temperature 1ch (Internal Sensor)	−40 to 80 ℃		Gradual Response Time Immersion Proof
TR42	Temperature 1ch (External Sensor)	−60 to 155 ℃		Quick Response External Sensor (included) Splash Proof (rated for use in daily life) Wide Selection of Optional Sensors
TR45	Temperature 1ch (Thermocouple / Pt sensor supported)	Thermocouple	−199 to 1760 ℃	For use with Thermocouple Sensor Types: K, J, T, S, R
		Pt	−199 to 600 ℃	Supports 3-wire & 4-wire Pt 100/1000 Sensor Optional Pt100 sensors with selectable pipe dimensions and cable lengths

Common Features

Bluetooth Connection with Smartphone

Bluetooth allows easy communication between mobile devices and loggers in range. Use the dedicated apps for settings, monitoring, graphs, data upload to the cloud, and report creation.

15 Recording Intervals and Large Logging Capacity for Long-Term Recording

One logger can measure and record up to 16000 readings. Select from 15 recording interval choices from 1 second to 60 minutes.
If set at a 60-minute recording interval, that gives you 666 days of non-stop consecutive recording.
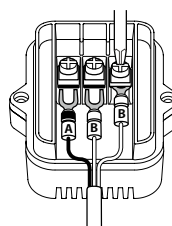
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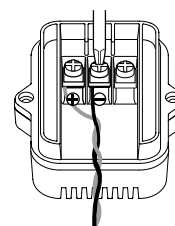
TR45 Features

Each Logger is both Thermocouple/Pt Sensor Compatible

The screw terminals on the back of the data logger make it possible to connect either Thermocouple or Pt sensors.

Pt sensor

Thermocouple sensor

TR4 Series Specifications

	TR41	TR42	TR45	
Measurement Channels	Temperature 1ch	Temperature 1ch	Temperature 1ch	
Sensor	Thermistor (Internal)	Thermistor	Thermocouple Type K, J, T, S, R (Not provided)	Pt100, Pt1000 (3-wire, 4-wire*1) (Available as option)
			Connection Terminal (M3.5)	
Measurement Units	°C, °F	°C, °F	°C, °F	
Measurement Range	−40 to 80 °C	−60 to 155 °C	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	Thermocouple Measurement (Sensor inaccuracies not included) K, J, T : ±(0.5 °C + 0.3 % of reading) at −100°C or above S, R : ±(1.5 °C + 0.3 % of reading) at 100°C or above Cold Junction Compensation ±0.5 °C *at 10 to 40 °C ±0.8 °C *at −40 to 10 °C, 40 to 80 °C Note: The temperature range shown above (*) represents the operating environment of the logger.	±(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	K, J, T 0.1 °C S, R 0.2 °C	0.1 °C
Responsiveness	Thermal Time Constant: Approx. 15 min. Response Time (90%): Approx. 35 minutes	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)	-	–

Logging Capacity	16,000 readings
Recording Interval	Select from 15 choices: 1, 2, 5, 10, 15, 20, 30 sec. or 1, 2, 5, 10, 15, 20, 30, 60 min.
Recording Mode	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)
LCD Display Items	Measurements, Recording Status, Battery Life Warning, etc.
Communication Interfaces	Bluetooth 4.1 (Bluetooth low energy)
Power	Lithium Battery LS14250 x 1
Battery Life (*2)	Approx. 1 month (*3) to 1.5 years (*4) ⫶ Approx. 1 month (*3) to 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	Temperature: -40 to 80 °C (-25 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
Accessories	- ⫶ Temperature Sensor TR-5106 ⫶ Cable Clamp
	Lithium Battery LS14250, Registration Code Label, Strap, User's Manual (Warranty Included)
Data Collection Devices	Smartphone, Tablet

*1: In the case of a 4-wire sensor, one wire will be left unused.
*2: Battery life varies depending upon multiple factors including ambient temperature, recording interval, usage of applications, 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.
*3: Estimated minimum battery life when recording data at an interval of 1 second and constant graph display in the app.
*4: Estimated maximum battery life when recording data at an interval of more than 10 seconds and graph display in the app of less than 3 minutes a day.
*5: This is the waterproof capacity of the data logger with the sensor connected.
The specifications listed above are subject to change without notice.