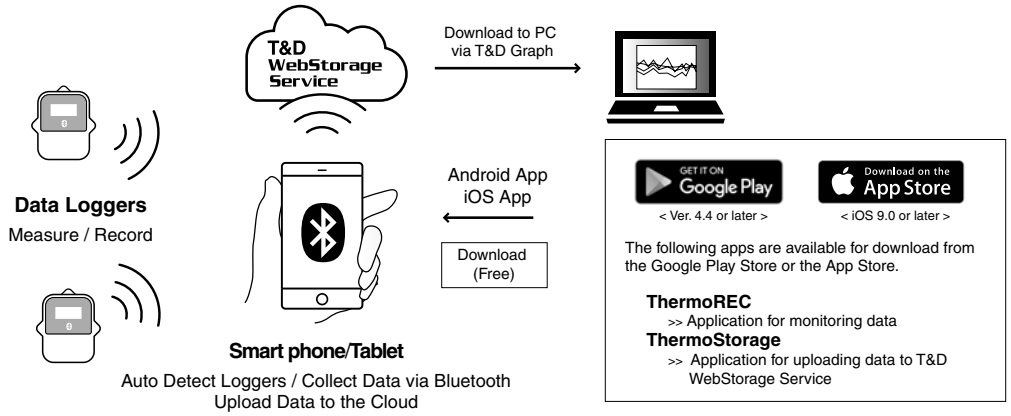
Feb. 2018

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

TR4 series temperature data loggers come equipped with Bluetooth low energy technology. We have designed two dedicated apps to take advantage of this technology. “ThermoREC” with automatic refresh allows for real–time monitoring of important temperature changes. “ThermoStorage” enables the uploading of recorded data from a collection of loggers to our free cloud storage service “T&D WebStorage Service”.



Model Number	Measurement Item	Measurement Range		Notes
TR41	Temperature 1ch (Internal Sensor)	−40 to 80 °C		Gradual Response Time Immersion Proof
TR42	Temperature 1ch (External Sensor)	−60 to 155 °C		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 °C	For use with Thermocouple Sensor Types: K, J, T, S, R
		Pt	−199 to 600 °C	Supports 3-wire & 4-wire Pt 100/1000 Sensor Optional Pt100 sensors with selectable pipe dimensions and cable lengths

Common Features

Easy Bluetooth Communication between Data Loggers and Smartphone/Tablet

Automatically detect data from the Bluetooth loggers by simply opening the mobile app.

Use the dedicated apps for real-time monitorng, graphs and auto-upload. Uploaded data can be shared via our free cloud service “T&D WebStorage Service“.

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

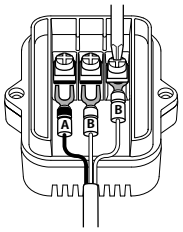
One logger can measure and record up to 16000 readings.
Select from 15 recording interval choices from 1 second to 60 minutes.
If set at a 60-minute recording interval, that gives you 666 days of non-stop consecutive recording.

TR45 Features

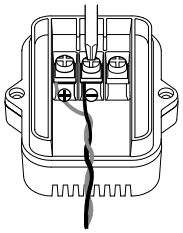
Each Logger is both Thermocouple/Pt Sensor Compatible

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 Bluetooth Data Logger

	TR41	TR42	TR45	
Measurement Channels	Temperature 1ch	Temperature 1ch	Temperature 1ch	
Sensor	Thermistor (Internal)	Thermistor (External)	Thermocouple Type K, J, T, S, R	Pt100, Pt1000 3-wire, 4-wire (*1)
			Connection Terminal (M3.5)	
Measurement Units	°C, °F	°C, °F	°C, °F	
Measurement Range	−40 to 80 °C	−60 to 155 °C	K -199 to 1370 °C J -199 to 1200 °C T -199 to 400 °C S -50 to 1760 °C 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	±(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
			Note: The temperature range shown above (*) represents the operating environment of the logger.	
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%): about 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 4.0 (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 ㎜ x W 47㎜ x D 19 ㎜		H 62 ㎜ x W 47㎜ x D 26.5 ㎜
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		
application	ThermoREC (Android 4.4 or later , iOS 9.0 or later) ThermoStorage (Android 4.4 or later , iOS 9.0 or later)		

*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.