USER GUIDE

TR45

T&D

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Bluetooth® Thermo Recorder

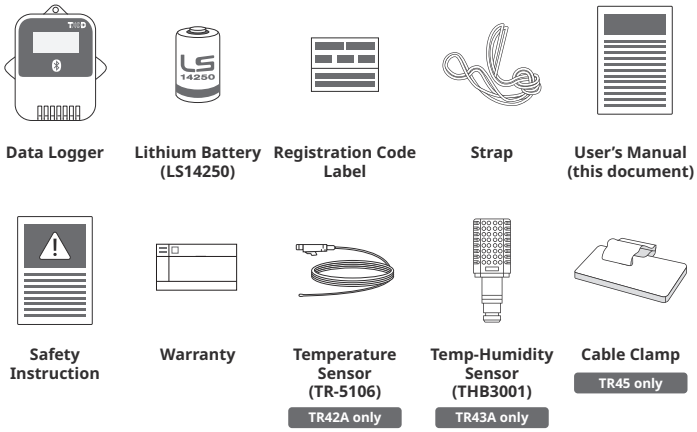
TR4A series

User's Manual

Model No. TR41A, TR42A, TR43A, TR45

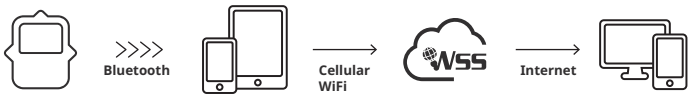
Package Contents

Before use, please confirm that all of the contents are included.



Introduction

The TR4A series enables data collection and management using dedicated mobile device applications. By using our free cloud service, you can access collected data using a web browser and analyze with the T&D Graph Windows application.



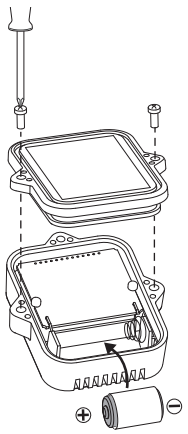
The following applications are supported:

T&D Thermo
Mobile app for device configuration, data collection and graphing, data upload to the cloud, and report creation.

TR4 Report
Specialized mobile app for report generation

Device Preparation

Battery Installation

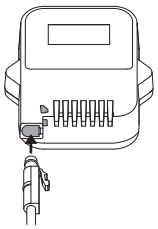


Recording will begin upon insertion of the battery.

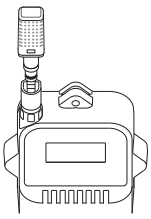
Default Settings
Recording Interval: 10 minutes
Recording Mode: Endless

Sensor Connection

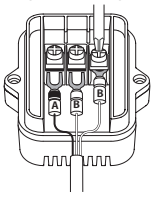
TR42A
Temp Sensor (Included)



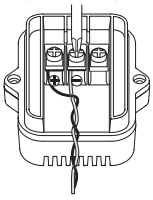
TR43A
Temp-Humidity Sensor (Included)



TR45
Pt Sensor (Not Included)



TR45
Thermocouple Sensor (Not Included)



The LCD Display

REC : Recording Status

ON: Recording in progress
OFF: Recording stopped
BLINKING: Waiting for programmed start

ONETIME : Recording Mode

ON (One Time): Upon reaching logging capacity, recording automatically stops. (The measurement and the [FULL] sign will alternately appear in the LCD.)

OFF (Endless): Upon reaching the logging capacity, the oldest data is overwritten and recording continues.

Default Settings
Recording Interval: 10 minutes
Recording Mode: Endless

: Battery Warning Mark

When this appears, replace the battery as soon as possible. A low battery may cause communication errors.

*** If the battery is left unchanged until the LCD display goes blank, all recorded data in the logger will be lost.**

PtKJTSR : Sensor Type (TR45)

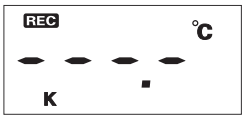
Pt: Pt100, **PtK**: Pt1000, **KJTSR**: Thermocouple Type

Default Setting: Thermocouple Type K
*** Make sure to set your sensor type in the T&D Thermo App.**

COM : Communication Status

Blinks while communicating with the application.

Messages



Sensor Error
Indicates that the sensor is not connected or the wire is broken. Recording is in progress and so is battery consumption.

*** If nothing appears on display after reconnecting the sensor to the device, there is a possibility that the sensor or the device has been damaged.**

Logging Capacity FULL
Indicates that the logging capacity (16,000 readings*) has been reached in One Time mode, and recording has been stopped.

*** 8,000 temperature and humidity data sets for TR43A**

Low Battery (TR41A, TR42A, TR43A)
This appears if, after the battery warning mark is displayed, no action is taken and the battery level becomes lower. (The measurement and the [bAtt] sign will alternately appear in the LCD.)

*** Bluetooth communication is now stopped.**
*** If the battery is left unchanged until the LCD display goes blank, all recorded data in the logger will be lost.**

Recording Intervals & Maximum Recording Times

Estimated Time until Logging Capacity (16,000 readings) is Reached

Rec Interval	1 sec.	30 sec.	1 min.	10 min.	60 min.
Time Period	About 4 hours	About 5 days	About 11 days	About 111 days	About 1 year and 10 months

*** TR43A has a capacity of 8,000 data sets, so the period is half of that above.**

Refer to the HELP for operational details.
https://manual.tandd.com/tr4a/

T&D WebStorage Service

T&D WebStorage Service (hereinafter referred to as "WebStorage") is a free cloud storage service provided by T&D Corporation.

It can store up to 450 days of data depending on the recording interval set for the device. Using in conjunction with the "T&D Graph" software allows for downloading stored data from the WebStorage for analysis on your computer.

A new WebStorage account can also be created through the T&D Thermo App.
Refer to "T&D Thermo (Basic Operations)" in this document.

T&D WebStorage Service Registration / Login
https://webstorage-service.com/

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T&D Thermo (Basic Operations)

1 Download the App

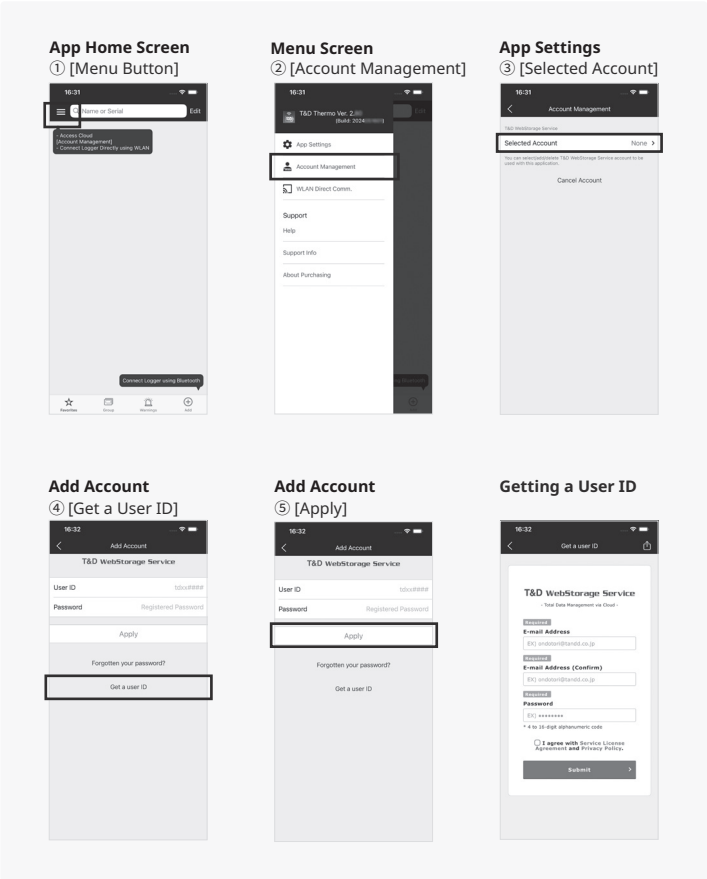
1.1 "T&D Thermo" is available for free download from the App Store or Google Play Store.

2 Set up a T&D WebStorage Service Account

2.1 If you don't use the WebStorage: Go to Step 3.1
In order to send data to the WebStorage, it is necessary to add an account to the App.

2.2 If you don't have a WebStorage account:
Tap ① [Menu Button] on the upper left corner of the app home screen → ② [Account Management] → ③ [Selected Account] → ④ [Get a User ID] to create a new account. Go back to the home screen and tap ① [Menu Button] → ② [Account Management] → ③ [Selected Account] → ⑤ [Apply] after entering the account information you created.

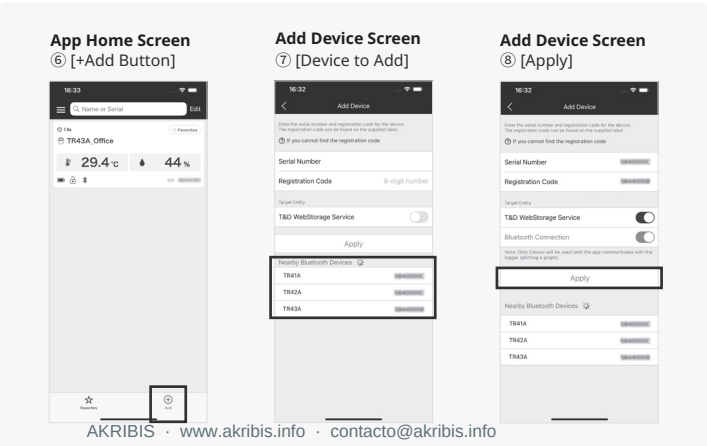
2.3 If you already have a WebStorage account:
Tap ① [Menu Button] on the upper left corner of the app home screen → ② [Account Management] → ③ [Selected Account] → ⑤ [Apply] after entering your account information.



3 Add a Device to the App

3.1 Tap ⑥ [+Add Button] in the lower right corner of the home screen to open the Add Device screen. The app will automatically search for nearby devices and list them at the bottom of the screen. Select and tap the device to add from the list of Nearby Bluetooth Devices. (⑦ [Device to Add])

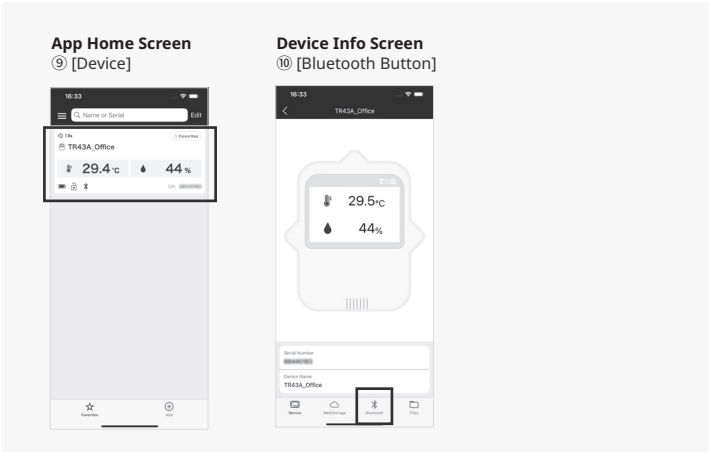
3.2 Enter the registration code (that can be found on the label supplied with the product), then tap ⑧ [Apply].
When the device is successfully added, it will be listed on the home screen.
(If you have lost Registration Code Label *1)



4 Collect Data from the Logger

4.1 In the list on the home screen, tap the target ⑨ [Device] to open the Device Info screen. When you tap the ⑩ [Bluetooth Button], the app will connect to the device, collect data and plot a graph.

4.2 If a WebStorage account is set up (Step 2):
The data collected in Step 4.1 will be automatically uploaded to the WebStorage.



Refer to the HELP for more details about the functions and screens of the T&D Thermo App.
https://manual.tandd.com/thermo/

TR4 Report

TR4 Report is a mobile application that collects recorded data and generates a report for a specified period. The generated report can be printed, saved or shared via email or apps that can handle PDF files.
It also includes the MKT (Mean Kinetic Temperature)*2 and the judgment result whether or not the set limit values※ have been exceeded.

※This setting is used to show if measurements in the report are within specified range, and does not function as a warning notification.

Refer to the HELP for operational details.
https://manual.tandd.com/tr4report/

T&D Graph

T&D Graph is a Windows software that contains a variety of useful functions including the ability to read and merge multiple data files, display recorded data in graph and/or list form, and save or print data graphs and lists .
It allows access to data stored in the T&D WebStorage Service for data analysis by inserting shapes and posting comments and/or memos on the displayed graph.
It also has a feature to calculate the MKT (Mean Kinetic Temperature)*2

Refer to the HELP for operational details.
https://cdn.tandd.co.jp/glb/html_help/tdgraph-help-eng/

Note

*1 The registration code can be found by opening the back cover of the logger.

*2 Mean Kinetic Temperature (MKT) is a weighted non-linear average that shows the effects of temperature variations over time. It is used to aid evaluation of temperature excursions for temperature-sensitive goods during storage and transportation.

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