Wireless Thermo Recorder RTR-52Pt Warranty

Customer's name: Address: Phone No.:	
Dealer's name: Address: Phone No.:	
Guarantee period	12 months from date of purchase
Date of purchase	

Provisions for Free Repair

1. If the unit does not work properly despite the fact that the customer used it properly and in line with the User's Manual, the unit shall be repaired free of charge through the distributor from which the unit was purchased.
2. If the customer requests free repair because of trouble within the warranty period, bring or send the unit along with the warranty to the dealer. A service charge may be added if a repairperson must be sent out to the place of use for repair.
3. If you have moved after purchasing, or the product was received as a gift, or there are some difficulties contacting the shop from which you purchased the unit, please contact us directly for service.
4. Free repair is not available in the following cases even though it is within the warranty period:
   a:Trouble or damage was caused by careless operation, natural disaster, fire, public pollution, or use of a power source other than specified.
   b: If repair, adjustment, disassembly or modification of the unit has been carried out by a person other than a T&D authorized engineer.
   c:Trouble or damage was caused by transportation, movement or dropping of the unit after purchase.
   d:Failure to submit the Warranty or failure to fill in all items required in the Warranty.
5. The Warranty cannot be reissued.
   This Warranty only promises customers free repair within the period and conditions clarified in this Warranty. Therefore, the customer's legal rights will not be limited by this Warranty. For further information on repair and other service questions after the termination of the warranty period, contact your dealer.

⚠ Wireless Regulations

Radio, EMC and Safety Regulations

CE

- RTR-5 Series complies with technical specifications required under EN 301 489-3 (with battery and AC Adaptor), EN 300-220-3 and EN 60950:2000.
- Allowed to use in : A.B.D.DK.F.I.P.S.SW.UK.N.NL. CH.FIN.AUS.NZ

Wireless Thermo Recorder
RTR-52Pt

Wireless Temperature Data Logger

User's Manual

Thank you for purchasing this product.
Carefully read and fully understand these instructions before using this unit.

T&D CORPORATION

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Homepage: http://www.tandd.com/

Product Specifications

	RTR-52Pt
Measurement Channels	1 Temperature Channel
Measurement Range	-199.9 ～ 600℃
Adaptable sensor	Pt100 / Pt1000 (with 3 wires)
Measuring current	1mA/Pt100 0.21mA/Pt1000
Measurement Display Resolution	0.1℃
Measurement Accuracy (at 0 ～ 50℃)	± 0.3℃ (-199.9 to 80℃) ± 0.5℃ (80 to 450℃) ± 1.0℃ (450 to 600℃) Sensor accuracy is not included.
Recording Interval	1, 2, 5, 10, 15, 20, 30 seconds, 1, 2, 5, 10, 15, 20, 30, 60minutes, Total of 15 choices
Recording Capacity	16,000 Readings × 1 Channel
Recording Mode	Endless (Overwrite oldest data when capacity is full) One-time (Stop reading when capacity is full)
LCD Display Items	Current Readings, Recording Settings, Battery Life Warning, Over Measurement Range Warning, Unit
Power	Lithium Battery (LS14250(SAFT)) × 1
Battery Life	Approx. 6 months (Battery life depending on measurement environment, recording interval and battery performance)
Wireless Method	ETSIEN 300-220
Transmission Distance	Up to 100 meters (May vary with conditions)
Interface	Wireless Communication (RTR-57U) Optical Communication (RTR-57U)
Communication Speed	When downloading data (Wireless) Approx. 2,000 readings per minute [Collection of a full unit of data=Approx. 420 seconds (optical communication=Approx. 160 seconds)]
Water Resistance *1	IP64 (rated for use in daily life)*2
Dimensions	H62 x W47 x D19mm (excluding protrusions / antenna length 20mm)
Weight	Approx. 56g. (including 1 lithium battery)
Unit Temp. Resistance	－ 40℃ to 80℃ *3
Accessories Included:	Sensor Adaptor (RTR-05P1) × 1, Lithium Battery (LS14250 (SAFT)) × 1, Tube × 1, Strap × 1, User's Manual (Warranty) × 1

*1 : Not for continued immersion.
*2 : The water resistance rating with the sensor adaptor connected is IP64.
*3 : Radio commnication can not be operated at below -30 ℃ degrees or less.

◆ Notices about this User's Manual

- Please read this manual carefully before using the product.
- All rights of this User's Manual belong to T&D Corporation. It is prohibited to use, duplicate and/or arrange a part or whole of this User's Manual without the permission of T&D Corporation.
- Please follow the safety precautions carefully. We cannot guarantee nor are we responsible for safety if this product is used in any manner other than was intended.
- T&D Corporation accepts no responsibility for any malfunction of and/or trouble with this product or with your computer that is caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair of the attached warranty.
- T&D Corporation accepts no responsibility for any result or effects from using this User's Manual.
- Figures and illustrations in this manual may be slightly simplified and may differ from the actual product.
- On screen messages, figures or illustrations in this manual may vary slightly or be simplified from the actual messages and product.
- We sincerely hope that the contents of this manual are true and complete. If you find any information to have been omitted, or if the information within is confusing or mistaken please, contact your retailer or T&D Corporation.
- Microsoft®, Windows® and WindowsNT® are registered trademarks of Microsoft Corporation USA and are binding in the USA and all other countries. Company names and product names are trademarks or registered trademarks of each company.
- The Warranty that comes with this Manual can not under any cicumstance be reissued, so please keep it in a safe place. The Manual itself can be downloaded from our Website: http://www.tandd.com

◆ Safety Precautions and Instructions

*Please carefully observe the following safety measures when using our product.

To prevent any loss or damage to our customers, other people and/or property, and to ensure the proper use of our products we ask that before using our product you carefully read, understand and follow the safety rules and precautions for our products as outlined below.

【Explanation of Warning Symbols】

⚠ DANGER	These entries are actions that absolutely under no circumstance should be taken. The taking of such an action may cause serious personal physical damage or death.
⚠ CAUTION	These entries are actions that if taken may lead to physical injury or damage to persons or things.

【Explanation of Picture Symbols】

△	This symbol denotes an important warning or caution. Inside or near the symbol will appear another symbol giving details. (EX: ⚠ stands for ELECTROCUTION)
⃠	This symbol denotes a forbidden action. Inside or near the symbol will appear another symbol giving details. (EX: Ⓢ stands for DO NOT TAKE APART)
●	This symbol denotes an action that you must take. Inside or near the symbol will appear another symbol giving details. (EX: ❗ stands for TAKE PLUG OUT OF SOCKET)

⚠ DANGER

**Do not take apart, repair or modify the main unit.
It may cause fire, electrocution or damage. Ask the shop where you purchased the products or T&D Corporation to carry out any repairs.**

**If any smoke or strange smells are emitted from the unit, immediately cease using it.
Continued use may cause fire, electrocution or damage.**

Do not use any batteries other than those that are recommended. It may cause fire or damage.

If water or a foreign object enters the case, immediately cease using it.

Store all batteries, sensors and Thermo Recorder units out of the reach of children. It is dangerous to swallow batteries.

Please be careful when using in overly hot or cold environments, touching the units may cause burns or frostbite.

The RTR-52Pt is a devices to measure temperature. Do not use this unit for any purpose other than temperature measurement.

⚠ CAUTION

We are not responsible for any malfunction or trouble caused by the use of our product or by any problem caused by the malfunction of our unit. Please be fully aware of this before using our product.

This product has been designed for private or industrial use only. It is not for use in situations where strict safety precautions are necessary such as in connection with medical equipment whether directly or indirectly.

Do not drop or expose the unit to strong impact.

**The case material of this unit is susceptible to certain organic solvents and oils, such as vegetable oil. Prolonged exposure to these substances can cause cracking of the case and will void the manufacturer's warranty.
When using this unit in environments where such oils are present, please insure that it is protected from contact through use of a polyethylene bag or other means.**

Do not put your fingers or foreign matter into the sensor connection.

Battery terminals may provide insufficient contact due to age or vibration. Please be careful not to lose data due to insufficient contact.

Battery life depends on the measurement environment, communication frequency, recording interval and battery quality.

**Remove batteries from any unit that is not to be used for a long period of time.
Batteries left in a unit not being used for a long time may leak and cause a malfunction.**

**Avoid using the lithium batteries, LS 14250 for long periods at temperatures over 60℃ .
The battery life may be significantly decreased.**

**Operate the units with the latest version of "T&D Recorder for Windows®(RTR-5 EU) ".
The latest version software can be downloaded from our Website.**

Pay attention to water leakage or foreign objects entering into the unit case as in the following cases.
- The case was closed with dust, hair, etc., on the rubber packing or in the groove for the packing.
- The rubber packing was damaged. (In this case, please purchase the optional maintenance set.)
- The unit suffered from significant temperature change while wet. especially if the temperature change was from high to low.

**Do not use or store the unit in places such as listed below:
It may cause electrocution, fire or damage to the unit or to your computer.**
- Areas exposed to direct sunlight
- Areas exposed to water or high-pressure water flow.
- Areas exposed to organic solvents, corrosive gas and oils.
- Areas exposed to strong magnetic fields
- Areas exposed to static electricity.
- Areas exposed to fire or overheating.
- Areas exposed to excessive dust or smoke.

When using Sensor Adaptor RTR-05P1, please take note of the following:
- This sensor adaptor is not waterproof. Only use in an environment where there is no condensation or possibility of wetness.
- When connecting the sensor, please follow the connection diagram on the terminal block. Please make sure to securely tighten the screws to the terminal block so as there is no chance of becoming unfastened.

**Cracks may develop in the unit casing if it comes into contact with hazardous substances such as oil products.
When using the unit in such an environment, protect the unit by placing it inside a polyethylene bag.**

Wireless Thermo Recorder RTR-52Pt

1. Outline

Thermo Recorder RTR-52Pt is a Data Logger designed to be used with a platinum resistor (Pt100/Pt1000) sensor for measuring and recording temperature. The data recorded with the RTR-52Pt can easily be downloaded via special short wave wireless communication to an RTR-57U Data Collector, where the data can be saved. Then it is possible to download the data to your computer for data analysis and management with our exclusive software. Communication between units can be done via optical communication, as well as wireless communication.

Basic Functions of RTR-52Pt

■ Wireless Communication Function

Via special short wave radio communication recorded data can be downloaded from an RTR-52Pt unit and saved to the RTR-57U Data Collector Unit. Recording settings and recording start can also be controlled via wireless communication.

● Wireless Communication can occur between an RTR-52Pt Unit and an RTR-57U Unit within a range of up to about 100 meters, if unobstructed and direct.

NOTE:
In order to collect data via wireless communication, it is necessary to register via computer the RTR-52Pt unit as a Remote Unit in the RTR-57U Unit you wish to use. For details about making these settings, please see the Help Menu in "T&D Recorder for Windows" or the User's Manual for "T&D Recorder for Windows".

● Wide Temperature Measurement Range

The RTR-52Pt with a platinum resistor (Pt100/Pt1000) sensor can measure and record in a wide range of -199.9 to 600℃ .

■ Setting the Recording Conditions

The recording conditions include [Recording Mode], [Recording Interval], [Start Recording Date and Time] and [Unit of Temperature]. Detailed instructions on how to change these settings are provided in the User's Manual for either the RTR-57U.

● Recording Mode: Select from two types of Recording Mode

ONE-TIME MODE:
When the data capacity of 16,000 readings is reached, the LCD display will indicate [FULL] and recording will stop.
ENDLESS MODE:
When the data capacity of 16,000 readings is reached, the data will be erased in order from the oldest data first and recording will continue.
*Below is an estimate of the amount of time it will take for the unit to become [FULL] in the ONE-TIME MODE.
Calculation Example:
30sec (recording interval) x 16,000 readings (capacity limit) = 480,000 seconds = about 5 days and 13 hours.

Recording Interval	1 second	30 seconds	15 minutes	60 minutes
Time period	4 hours 26 min.	5 days 13 hours	166 days 16 hours	1 year 10 months

■ Starting and Stopping Recording

You can make settings to control the starting and stopping of recording.
NOTE:
- By starting a new recording, all data previously stored in the data logger unit will be erased.
- If you want to save the data make sure to download it and save it in an RTR-57U Unit or in your computer before starting a new recording.

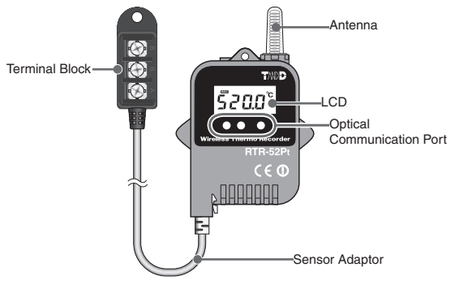
■ Downloading Data = (Data Collection)

After downloading you can save the data into files and folders, create graphs, make data tables, create text file format files for use with popular spreadsheet software, and print graphs and tables.

■ Setting Upper and Lower Limits

By making upper and lower limit settings you can check your recorded data as it is downloaded for data that exceeds the set limits.

Part Names and Functions

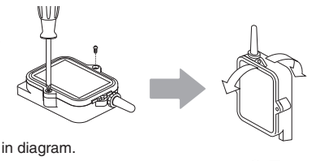


2. Getting Started

◆ Insert the batteries

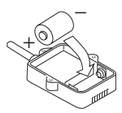
1. Remove the screws and take off the back case.

● Make sure to use the proper size and type of screwdriver. (A #1 Slot Screwdriver is best compatible with these screws.)



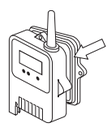
2.Insert the battery in its tube and place in unit as in diagram.

● Make sure that + and - are correct.



3. Check the rubber packing for any cuts or scratches and replace the cover as it was when opened.

● Make sure no water or foreign objects get inside the case.
● If dirt or scratches are present on the rubber packing, water resistance will be reduced.
● Be sure to fasten the cover tightly.
● Make sure not to over tighten the screws.
(Tightening Torque: About 20N-cm – 30N-cm [2kgf-cm – 3kgf-cm])



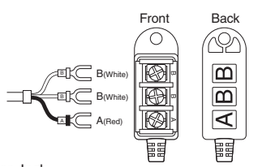
*If nothing appears on the LCD Display, please follow the above instructions again.

◆ Connect the Temperature Sensor

1. Loosen the screws of the terminal block.

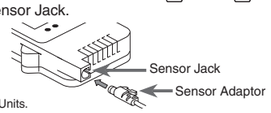
2. Connect the sensor terminals to the terminal block as instructed in the diagram on the terminal block.

● Securely tighten the screws to the terminal block.



3. Connect the Sensor Adaptor to the RTR-52Pt Logger's Sensor Jack.

● Make sure that the sensor is properly connected by inserting it until you hear a clicking sound.



*The RTR-52Pt factory default sensor type is "Pt100".
In order to use a Pt1000 sensor, change the settings using the software "T&D Recorder for Windows" that is provided with RTR-57U Data Collector Units. (Please use the latest version of the software.)

NOTE:
- When changing batteries make sure to carefully read "5. Changing Batteries".
- Upon first installation of the batteries, measuring and recording will automatically begin at the factory set default recording settings: (Recording Interval: 10 minutes / Endless Mode / Immediate Start)
- After replacing the batteries the settings will return to the most recent recording settings.
- If necessary make changes to the default recording settings according to your usage and needs. If you are going to be using wireless communication it is necessary to register the [Group Name] and [Remote Unit Name] information at this time. See "3. Settings and Communication"

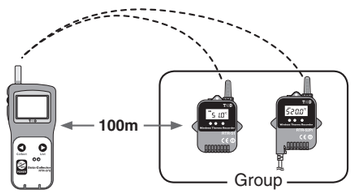
3. Settings and Communication

To start and stop recording, make or change the various recording settings and/or collect data please see the following instructions.

For details about how to change settings and about communications please see the User's Manual that comes with the RTR-57U. You can also find detailed information in the User's Manual that accompanies the software (Thermo Recorder for Windows) and in the Help Menu of the software.

◆ Using Wireless Communication with an RTR-57U Unit

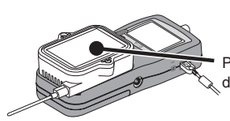
By registering an RTR-52Pt unit as a Remote Unit of an RTR-57U, it is possible to carry out wireless data communication (special short wave radio) allowing you to start and stop recording, make recording condition settings and collect data without having to handle the RTR-52Pt units.



- If you are going to be using wireless communication it is necessary to register the [Group Name] and [Remote Unit Name] information in the RTR-57U units.
- The wireless communication range, if unobstructed and direct, is about 100 meters. In some cases communication cannot take place even within 100 meters. Please check first by carrying out the wireless communication test with the remote units.

◆ Optical Communication with an RTR-57U

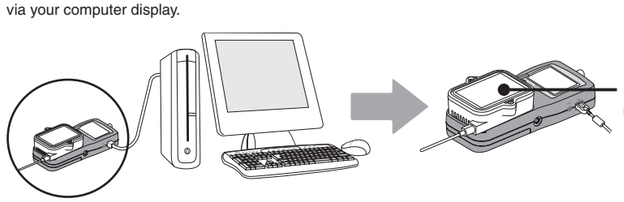
By simply placing an RTR-52Pt unit face down on an RTR-57U you can carry out recording start settings and changes, as well as, collect recorded data via optical communication.



Place the RTR-52Pt unit face down on the RTR-57U

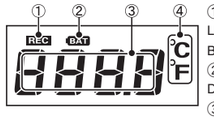
◆ Communication with your Computer

By placing an RTR-52Pt unit face down on an RTR-57U unit that is connected to your computer, you can make any necessary recording conditions settings and changes, start recording and download recorded data easily via your computer display.



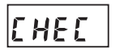
Place the RTR-52Pt unit face down on the RTR-57U

4. About the LCD Display



① Recording Status. (REC)
LIT UP: displayed during recording or when FULL of data.
BLINKING: displayed when waiting for a programmed recording to start.
② Low Battery Life Warning Indicator:
Displayed when time to change the battery.
③ Unit of Temperature Measurement: select from ℃ (Celsius) or °F (Fahrenheit)
④ Temperature Measurement Display

● Check



This is displayed under the following conditions: after purchasing and putting in the batteries for the first time, if the battery terminals +/- were mistaken and a short occurred, or if the batteries are replaced after having been taken out for a long period. If this is displayed, all data that had been stored in the main unit has been erased.

● Full Memory

If recording under the ONE-TIME MODE, when the data readings reach the upper limit of 16,000 readings, recording will stop and this will be displayed intermittently with the current temperature.

● Wireless Transmission

This will be displayed when transmitting data to an RTR-57U unit via wireless communication.

● No Sensor Connected

Displayed when a sensor has not been connected or the wire has been broken. Measurement and recording will continue and battery power consumed.

● Measurement Over Range

Temperature display blinks when the temperature goes below -199.9℃ or above 600℃ . While blinking, measuring and recording still continue. However, note that the displayed temperature should be used only as a rough guide. When the temperature cannot be displayed, a blinking [----] sign will appear.

Note:
Use in cold environments may cause the display to be difficult to read; this is not a malfunction.
For details about the display during battery changing see: "5. Changing Batteries"

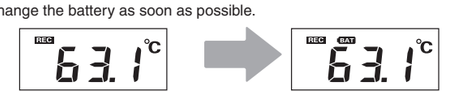
5. Changing Batteries

NOTE: After removing the old batteries, replace them with new batteries within 1 minute.

1. When the battery power becomes low, the [BAT] indicator will appear on the LCD display.

Once the [BAT] indicator appears please change the battery as soon as possible.

Recording: OK
Wireless Communication: OK
Data Download: OK



- The recorded data will remain saved.
- If at this time a new battery is placed in the unit, recording will continue.
- After changing the battery, the [BAT] indicator will disappear in a short time.

2. If you do not change the battery and continue using the unit, the temperature display will intermittently display [bAtt]. Please change the battery at once.

Recording: OK
Wireless Communication: No
Data Download: No

- The recorded data will remain saved.
- If at this time a new battery is placed in the unit, recording will continue and downloading of saved data can be done.
- After changing the battery, the temperature display will return to displaying only the temperature after which the BAT indicator will disappear a short time later.

3. If you do not change the battery even under conditions in 2 above, the REC indicator will disappear and temperature display area will display [SLP]. ("SLP" stands for "Sleep Mode".)

Recording: No
Wireless Communication: No
Data Download: No

- Recording will stop and recorded data until this point will be saved.
- If at this time a new battery is placed in the unit, downloading of saved data can be done. To start recording again please set the recording conditions via your computer or RTR-57U and begin recording. See "1. Outline"
- After changing the battery, the temperature display will return to displaying the temperature.

4. If you do not change the battery even under conditions in 3 above, the display will go blank.
- All of the recorded data will be erased.
- If at this time a new battery is placed in the unit, [CHEC] will appear on the display after which recording will begin again using the previously set recording conditions.