



RTR-50 Wireless Communication Port

Notices

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- 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.
- We are not responsible for any malfunction or trouble caused by the use of our product or by any problem caused by the use of measurement results of our unit. Please be fully aware of this before using our product.
- Some of our products, which come under the category of strategic goods in foreign trade law, need the permission of the Japanese government to be exported outside of Japan.
- The Manual itself can be downloaded from our Home Page: <http://www.tandd.com>

Software User Agreement

Escape Clauses

- T&D Corporation does not guarantee the operation of RTR-50 for Windows®.
- T&D Corporation shall not accept any responsibility for any damage, whether direct or indirect, that results from the usage of T&D Recorder for Windows.
- Specifications of RTR-50 for Windows® may be subject to change and service may be terminated without advance notice to the user. In such a case, T&D Corporation shall not be responsible for any damages, whether direct or indirect, from the inability to use RTR-50 for Windows®.
- T&D Corporation has no obligation to correct any defects found in RTR-50 for Windows.

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- The Copyright for RTR-50 for Windows®, including the program and relevant documents, belongs solely to T&D Corporation.
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- Please do not attempt to make any changes or modifications to RTR-50 for Windows®.

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Safety Precautions and Instructions

To ensure safety be sure to obey all of the following warnings.





The following items should be strictly obeyed for the safe usage of this unit, and for protecting yourself and other people from bodily harm and / or damage to property. To ensure the proper use of our product, please read the following carefully and fully understand the contents.

Explanation of Symbols

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

	Denotes an important warning or caution.
	Denotes a forbidden action. Inside or near the symbol will appear another symbol giving details. (EX :  stands for DO NOT TAKE APART)
	Denotes an action that you must take.

DANGERS



Do not take apart, repair or modify the main unit.
Doing so may cause fire or electrocution.



Do not use this unit in wet or humid places, such as a bathroom.



If any smoke or strange smells are emitted from the unit,
immediately remove the batteries and stop using.
Continued use may cause fire or electrocution.

CAUTION



This unit is not water-resistant.
If the unit gets dirty, wipe it with a clean cloth and a mild detergent.



Please do not insert your fingers or any foreign objects into any of the devices' jacks.



Battery terminals may provide insufficient contact due to age or vibration.
This may lead to data loss.



Do not use any other batteries than those that are specified in this User's Manual.
It may cause a fire or other trouble including malfunction.



Do not use or store the Thermo Recorder in any of the following places. Doing so may cause electrocution, fire and / or other adverse effects to the device and / or your computer.

- Areas exposed to direct sunlight
This will cause the inside of the device to become overheated and may cause fire, deformation, and / or other damage including malfunction.
- Areas prone to strong magnetic fields
This may cause damage including malfunction.
- Areas exposed to water leakage
This may cause electrocution or other damage including malfunction.
- Areas exposed to excessive vibration
This may cause injury, malfunction, damage or loss of proper electrical contact.
- Areas near fire or exposed to excessive heat
This may cause damage including malfunction and deformation.
- Areas prone to smoke, dust and dirt
This may cause damage including malfunction.

Radio, EMC and Safety Regulations



This device complies with part 15 of the Federal Communications Commission (FCC) rules and with RSS-210 of the Industry Canada (IC). Operation is subject to the following conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

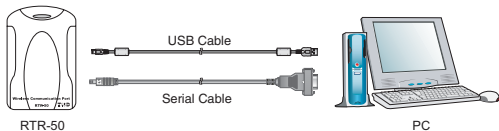
NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1. Introduction

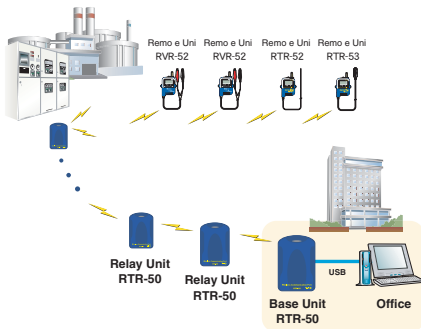
What is Wireless COMMUNICATION PORT RTR-50?

The Wireless COMMUNICATION PORT RTR-50 is a base unit designed to carry out wireless communication with our compact waterproof Wireless Data Loggers, RTR-5 Series (RTR-51/52/53/RVR-52) and to be connected to a computer via a USB or serial communication cable to gather data from and control the loggers. Also, by setting up an RTR-50 between the RTR-50 designated as the Base Unit and the RTR-5 Series Remote Data Logger unit, you can use any RTR-50 as a Relay Unit for wireless communication.



Application Examples

- For the gathering of recorded data via wireless communication from long distances and the controlling of data loggers in places where handling of data loggers is difficult or impossible
- For downloading recorded data and monitoring current readings from moving or rotating data loggers on production lines



* The communication range for each RTR-50 Relay Unit is up to 100m.

What is RTR-50 for Windows®?

Outline

The easy-to-use software, RTR-50 for Windows® offers a variety of useful functions for any RTR-5 series data logger: including control of data logger recording settings, data downloading, graph display, table creation, printing, and file output.

Using our exclusive short-wave wireless technology it is possible to carry out Remote Unit Registrations and make Operational Settings between an RTR-50 Base and any RTR-5 Series Data Logger via wireless communication. If you wish to use an RTR-50 as a Relay Unit, it is also possible to carry out Relay Unit Registration and make other Operational Settings.

Basic Functions

Wireless Communication

Start Recording / Download Data / Monitor Current Readings / Warning Alarm / Auto-Download / Get Remote Unit Status / Wireless Communication Test / Get Radio Wave Strength of Relay Unit / Get Remaining Battery Life in Relay Unit

Optical Communication---Carried out by placing a data logger (Remote Unit) face down on an RTR-50 (Base Unit).

Remote Unit Registration and/or Initialization / Start Recording / Download Data / Get Remote Unit Info

Direct Cable Communication---Communication carried out via cable between the computer and the Base Unit / Relay Unit(s) for the initial settings.

Relay Unit Registration and/or Initialization (Returning RTR-50 to Base Unit) / Relay Route Name Settings/ Communication Frequency Channel Settings / Get Remaining Battery Life

Data Operation

- Easy processing of the data downloaded from a Remote Unit into graphs, saving to files and/or printing.
- Convert the Remote / Relay Unit Registration Info to file format.
- Display current measurements in graph form, Warning Status Log
- The downloading of data can be set to be automatically carried out at a specified time or at a set interval of time.

Others

- Monitoring at each location for warnings is carried out and if any of the gathered data exceeds the set limit, a notification can be sent via e-mail.

To properly use this software, the following operational environment is necessary.

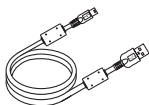
Compatible OS	Microsoft Windows® 98SE/Me (English) Microsoft Windows® XP/2000 (English)
Software	Microsoft Internet Explorer ver.5.01 or higher
PC / CPU	IBM Compatible equipped with more than Pentium 90MHz or NEC 98 Series USB Communication or Serial Communication (RS232-C D-sub 9pin)
Operating Environment	A Stable Windows® Operating Environment

Package Contents

The following items are included in the package:



RTR-50



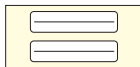
USB cable x 1



Software
CD-ROM



Manual x 1

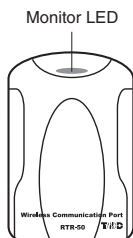


Name Seal*1

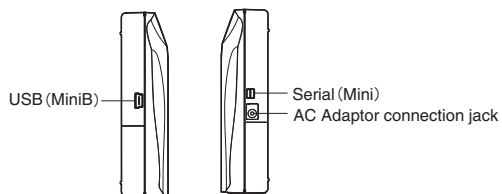
Part Names and Functions

Appearance Diagram

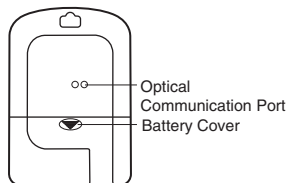
[Front]



[Left Side / Right Side]



[Rear]



2. Getting Ready

This section provides instructions on getting the RTR-50 ready to use.

General Procedure

- 1.** RTR-50 for Win をインストール

P.11

- 2.** RTR-50 本体を、USB またはシリアルポートに接続する。

USB ケーブル使用時 ----- USB ドライバのインストール/
通信ポートの設定
シリアルケーブル使用時 ----- 通信ポートの設定

P.10 ~

- 3.** RTR-50 本体をパソコンに接続する。

シリアル通信を行う場合は、事前に電池または
AC アダプタをセットする

P.10 ~

- 4.** RTR-50 for Win で子機 / 中継機の登録。光通信による各種設定

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- 5.** 子機 / 中継機の設置

P.28 ~

- 6.** RTR-50 for Win で、無線通信による各種設定

P.46 ~

- 7.** データ取得後、各グラフにてデータ管理 / 操作等

P.67 ~

Getting Ready

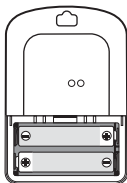
Install Batteries

For serial communication with your computer and to use as a Relay Unit, make sure to install batteries.

NOTE:

When the RTR-50 is connected by USB cable to your computer, there is no need to insert batteries.

Insert 2 AA alkaline batteries as shown in the figure.



NOTE:

- Always use two batteries of the same type.
- Make sure not to mistake + / -.
- A battery cannot be charged inside the RTR-50.

**The LED lamp will blink once when usable batteries are installed.*

Install RTR-50 for Windows®

- Is Windows® operating properly ?

If Windows® is not operating properly, RTR-50 for Windows® may not be installed correctly or it may not operate properly.

- Please quit all other applications.

If you are running other applications, make sure to quit them before installation. If you have any permanently active software, such as a virus check or scan program in your computer, make sure to also quit it.

1. Open Windows®.
2. Insert the attached CD-ROM in the CR-ROM drive.
In a few seconds, the [Install Program] window will appear.

**If that window does not automatically open, please, please open it by double clicking the CD-ROM icon in [My Computer] on your desktop.*

3. Select [RTR-50 for Windows®] and click the [Execute] button to start the installation.
4. Continue the installation by following the directions as they appear.

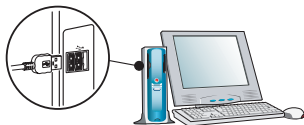
After installation has been completed, "RTR-50 for Windows®" will be registered in Windows' [Start] Menu.

When connecting the RTR-50 to your computer for direct communication to download or make setting changes, etc., please use the USB communication cable (provided) or the optional serial communication cable (TR-07C).

Connect the RTR-50 with a USB communication cable to your computer

1. Connect the RTR-50 with the provided USB communication cable (US-15C) to your computer.

**It is not possible to simultaneously use both RTR-57U and RTR-50.*



* Make sure that the USB cable is inserted fully, so as not to cause an improper connection.

2. Install the USB Device Driver

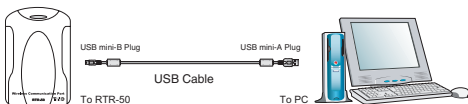
** For details about the driver installation, see the next section.*

Installing the USB Device Driver

You will need to install this driver in order to use the device with a USB cable and Windows. The USB device driver must be installed for communication via USB between your computer and an RTR-50. After installing the USB device driver, your computer will be able to detect and recognize RTR-50 devices that have been connected with a USB cable.

For Windows® XP

1. Turn on your computer and open Windows. After Windows has been completely started up, connect the supplied USB cable to a USB port on the RTR-50 and your computer.



2. Insert the attached CD-ROM in the CR-ROM drive. If the Installation Window opens, close it.
3. By connecting an RTR-50 unit to the USB cable already connected to your computer, the [Found New Hardware Wizard] will automatically open.
4. By checking [Install the software automatically (Recommended)] and clicking [Next], the software will automatically be installed.



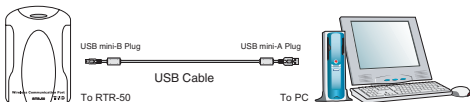
5. After completing installation, click the [Finish] button
Confirm the Connections (see p.18).

If the Driver is not automatically detected

Please search by specifying the place as “[Device Driver \ RTR-50] in the CD-ROM drive” and install manually from there.

For Windows® 2000

1. Turn on your computer and open Windows. After Windows has been completely started up, connect the supplied USB cable to a USB port on the RTR-50 and your computer.



2. Insert the attached CD-ROM in the CR-ROM drive. If the Installation Window opens, close it.
3. By connecting an RTR-50 unit to the USB cable already connected to your computer, the [Found New Hardware Wizard] will automatically open.
4. By clicking the [Next] button, a window will open where you can choose how you wish to find the driver file.



[Next]button

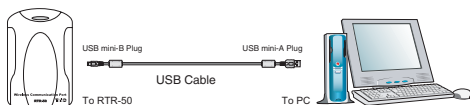
5. Check [Search for a suitable driver for my device (Recommended)] and click the [Next] button.
6. Check [CD-ROM drive] and then click the [Next] button.
7. Click [Next] to start the installation.
8. After completing installation, click the [Finish] button
Confirm the Connections (see p.18).

If the Driver is not automatically detected

Please search by specifying the place as “[Device Drive\ RTR-50] in the CD-ROM drive” and install manually from there.

For Windows® Me

1. Turn on your computer and open Windows. After Windows has been completely started up, connect the supplied USB cable to a USB port on the RTR-50 and your computer.



2. Insert the attached CD-ROM in the CR-ROM drive. If the Installation Window opens, close it.
3. By connecting an RTR-50 unit to the USB cable already connected to your computer, the [Add New Hardware Wizard] will automatically open.
4. By clicking the [Next] button, a window will open where you can choose how you wish to find the driver file.
5. Check [Automatic search for a better driver (Recommended)] and click the [Next] button.

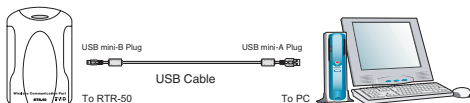


If the Driver is not automatically detected

Please search by specifying the place as “[Device Driver\ RTR-50] in the CD-ROM drive and install manually from there.

For Windows® 98SE

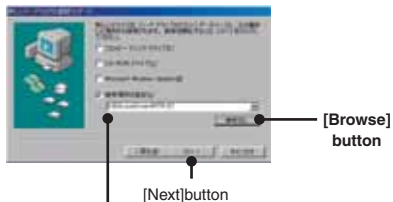
1. Turn on your computer and open Windows. After Windows has been completely started up, connect the supplied USB cable to a USB port on the RTR-50 and your computer.



2. Insert the attached CD-ROM in the CR-ROM drive. If the Installation Window opens, close it.
3. By connecting an RTR-50 unit to the USB cable already connected to your computer, the [Add New Hardware Wizard] will automatically open.
4. By clicking the [Next] button, a window will open where you can choose how you wish to find the driver file.
5. Check [Search for the best driver for your device (Recommended)] and click the [Next] button.

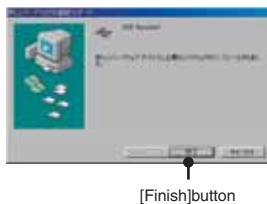


6. Place a check next to [Specify a location] and click the [Browse] button. Select "[Device Driver\RTR-50] in the CD-ROM drive" and click [Next].



Select "[Device Driver\RTR-50] in the CD-ROM drive"

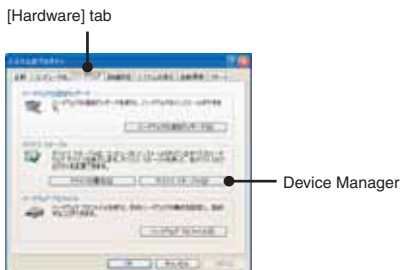
7. After completing installation, click the [Finish] button
Confirm the Connections (see p.19).



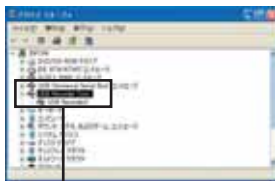
Confirming the USB Device Driver Connection to the Computer

Windows® XP / 2000

1. Open the [Control Panel] and double click on [System]; the [System Properties] will be displayed.
2. Click the [Hardware] Tab, and click the [Device Manager] button in the [Device Manager] Area.



3. In the Device Manager Window, check to see if [USB Recorder 2] is listed under [USB Recorder 2 COM].



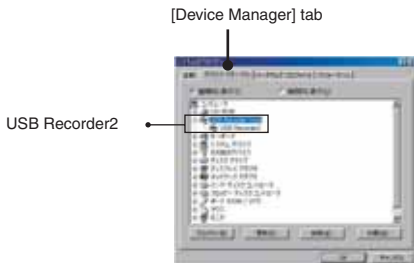
NOTE:

If the following tree items appear, see the "If USB Device Driver Installation Fails" (p.20).



Windows® Me/98SE

1. Open the [Control Panel] and double click on [System], the [System Properties] will be displayed.
2. In the Device Manager Window, check to see if [USB Recorder 2] is listed under [USB Recorder 2 COM].



NOTE:

If the following tree items appear, see the “If USB Device Driver Installation Fails” (p.21).



If USB Device Driver Installation Fails

If, during USB device driver installation, some trouble occurs that results in a failure to install properly, the following display will appear in the Device Manager.



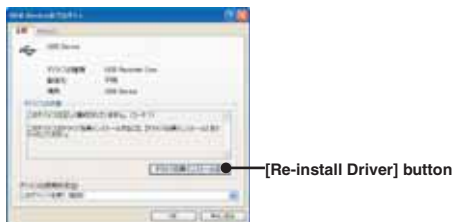
If this occurs, the USB device driver must be re-installed. Please follow the directions below to carry out the operation.

How to Re-install

1. In the Device Manager Window, right click on [USB Device] under [Other Devices] and then click on [Properties] to display the [USB Device Properties] Window.



2. In the [USB Device Properties] Window, click on the [Re-install Driver] button to display the Installation Window. Follow the directions to install.



Connecting the RTR-50 with a serial communication cable to your computer

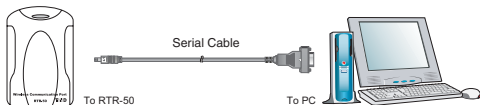
1. Connect to your computer using the optional serial communication cable (TR-07C).

**It is not possible to simultaneously use both RTR-57U and RTR-50.*

Examples of serial port marks



The connection cable is a D-SUB 9 pin female jack that should be connected to the place with such a marking.



NOTE:

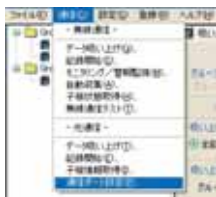
- Make sure to connect it to the correct place to ensure communication.
- Make sure that the cable is inserted fully, so as not to cause an improper connection.
- For Serial Communication make sure to insert 2 AA batteries or use the optional AC Adaptor (AD-0601).

2. Make Communication Port Settings.

For details about Communication Port Settings, see the next page.

Setting up the Communication Port

1. From the [Communication] Menu, select [COM Port Settings].



2. Place a check next to: [Serial Communication] when communicating via serial communication cable, [USB Communication] when communicating via USB. Then click the [Auto Detect] to automatically find an RTR-50 using the currently set communication method (USB or Serial).



3. After the search, if the message “An RTR-50 unit was detected” appears in the [Detection Results] box, settings have been successfully completed.

Click the [Close] button to close the Window.

NOTE:

- If the USB driver has not been properly installed, USB communication will not be possible.
- If no port is detected, see [Troubleshooting] on pages 103.

3.How to use “RTR-50 for Windows”

This section guides you through how to use the software, “RTR-50 for Windows” , included with each RTR-50 unit. The software is designed to allow for easy data processing, creation of Graphs and management of all settings and registrations necessary to create Remote Units and Relay Units.

Basic Functions

Open “RTR-50 for Windows”

From the list of programs in the Window’s Start Menu, click on [RTR-50 for Windows] - [RTR-50 for Windows] to open.



Explanation of Display

“RTR-50 for Windows” Main Window



Menu Bar

[File] Menu

Open Temp/Humidity Graph / Open Multi-scale Graph / Open Event Viewer / Open Remote Registration File / Save as... / Quit

[Communication] Menu

Wireless Communication:

Download Data/ Start Recording / Monitoring / Warning Monitoring / Auto Download / Get Remote Unit Status / Wireless Communication Test

Optical Communication:

Download Data / Start Recording / Get Remote Unit Info / Communication Port Settings

[Settings] Menu

Monitoring

Monitoring Graph Settings / View Warning Log / Warning Report Mail Settings / Mail Server Settings

Auto Download

View Auto Download Log

[Registration] Menu

Remote Unit / Relay Unit Registration

Remote Unit Group List

The Group and Remote Unit names will be displayed for all Remote Units that are registered to that Group in the [Remote Unit / Relay Unit Registration].

By right clicking on the Remote Unit icon, a menu will appear with commands for that type of unit.

Remote Unit Properties (Remote Unit Info List)

View Remote Unit Info for the unit(s) selected from the Remote Unit List.

Unit Type -----The type of unit (RTR-51/52/53 or RVR-52) for the selected Remote Unit(s) will be displayed.

Group Name -----The Group Name appears.

Frequency Channel -The Frequency Channel for communication between the Base Unit and the Remote Units appears.

Remote Unit Name--Displays the name of the selected Remote Unit.

Relay Route Name --Displays the Name of the Relay Route via which the Remote Units communicate.

Relay Route Frequency Channel Displays the Frequency Channel of the Relay Route via which the Remote Units communicate.

Relay Unit Number --Displays the No. of the Relay Unit via which the Remote Unit is connected.

CH1 Upper Limit -----Displays the Upper Limit set in [Monitoring / Warning Monitoring] for Warning Report.

CH1 Lower Limit -----Displays the Lower Limit set in [Monitoring / Warning Monitoring] for Warning Report.

CH2 Upper Limit*1 --Displays the Upper Limit set in [Monitoring / Warning Monitoring] for Warning Report.

CH2 Lower Limit*1 --Displays the Lower Limit set in [Monitoring / Warning Monitoring] for Warning Report.

Monitoring Interval---Displays the currently set Monitoring Interval.

Auto Download Interval Displays the currently set Auto Download Interval.

*1 : For RTR-53 only

Settings Area

There are four different types of Settings windows: [Download Data] Tab, [Start Recording] Tab, [Monitoring / Warning Monitoring] Tab, and [Auto Download] Tab.

Main Unit Info

Open the [Main Unit Info] in the [Help] menu to view the Version Info for the currently connected RTR-50 Unit. It is also possible to view the battery condition in the RTR-50 Unit.

Remote Unit / Relay Unit Registration

Basic Procedure for Registration

1. Connect an RTR-50 Unit with a USB or Serial communication cable to your computer.

**The default setting for an RTR-50 unit is as a Base Unit.*



For details about connecting the RTR-50 with a USB communication cable to your computer see p.12.

For details about connecting the RTR-50 with a Serial communication cable to your computer see p.22.

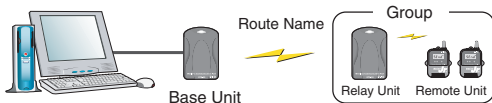
2. Register Remote Unit Name and Group Name.

Register all Remote Units to be placed.



For details about registering units as Remote Unit(s) see p.31.

3. Register Relay Unit Names and Relay Routes.

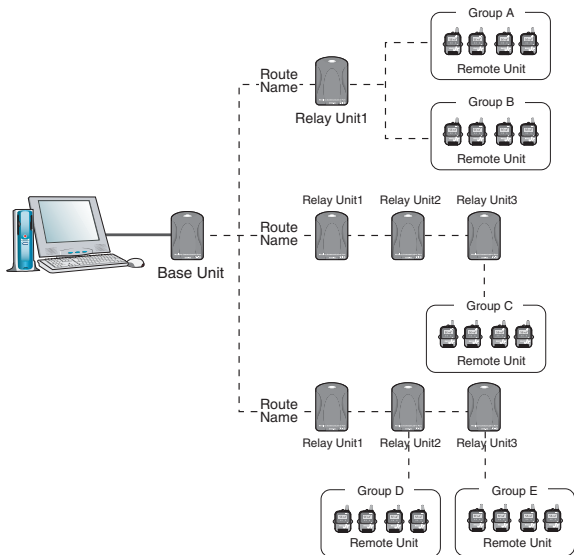


For details about Registering Relay Unit(s) see p.37.

NOTE:

There is no need to register a Relay Unit if there are no Relay Units between a Remote Unit and the RTR-50 Base Unit. However, if communication cannot be successfully carried out due to poor radio wave reception, please place Relay Unit(s) between the Remote Unit and the Base Unit.

Image of Relay Unit Registration



Once the registration of a Relay Unit is complete, a Relay Unit Number will automatically be assigned to each Relay Unit.

Also, when carrying out Relay Unit Registration it is possible to assign a "Relay Route Name" that can be used to make sure that data is transmitted through a multiple number of Relay Units in the specified route.

NOTE :

It is possible to set up so that more than one Relay Unit acts as a relay for the same Remote Units. However because wireless communication is carried out in Groups of Remote Units, the same Group will be relayed through different Relay Units causing inefficiency and an increase in the amount of communication time to more than necessary.

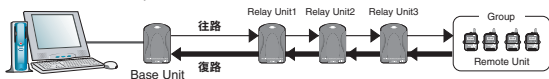
In order to reduce the communication time, please design Relay Routes so that a particular Group of Remote Units uses the same Relay Unit(s).

NOTE :

A Relay Unit Number will be automatically assigned to Relay Units in the order that they were registered to each Route.

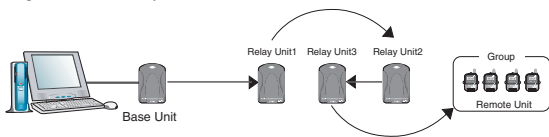
Communication among Relay Units will occur in sequence from the one that is closest to the Base Unit. Please keep that in mind when placing the Relay Units.

Example :

Communication Sequence Order

Communication will occur sequentially from the first Relay Unit as shown above.

If the Relay Units are not arranged in numerical sequence from the Base Unit, the communication route will be as seen below. This will cause not only the communication distance to increase but also the communication time to increase to longer than necessary.



4. After each Registration has been completed, please check the communication status by carrying out a "Wireless Communication Test."

Registering a Remote Unit

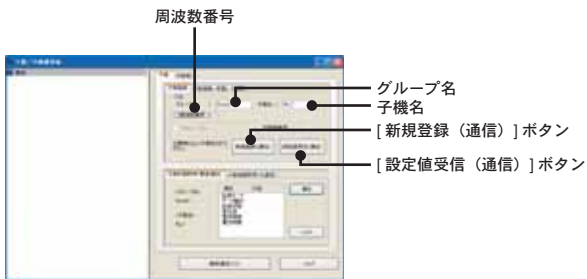
1. Connect the RTR-50 Main Unit with a USB or Serial Communication Cable to your computer.



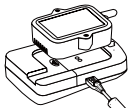
2. In the Main Window, click [Registration] – [Remote Unit / Relay Unit Registration].



3. The [Remote Unit / Relay Unit Registration] display will be opened in a new window.



4. Place the Remote Unit (data logger) you wish to register face down on top of the RTR-50. After entering the Group Name and Remote Unit name, click the [New Registration (Communication)] button.



**Up to 8 characters can be entered for Group Name / Remote Unit Name.
A distinction will be made between upper and lower case alphabet. Ex. abc123 and ABC123 will be treated as different.*

**In order to register a Remote Unit, it is also necessary to register a Group Name.*

5. When successful communication has occurred, the Remote Unit will be registered in the registration list at the left side of the Main Window.

The registered Remote Unit



**The registered Remote Unit(s) will appear as [Group Name / Remote Name].*

6. Register Remote Units Sequentially.



Communication Frequency Channel

- It is possible to set one Communication Frequency Channel (channel 0-21) to each Group.
- If no setting is made, an unused frequency channel will automatically be assigned. If there are no unused frequency channels, the channel that is used the least shall be automatically assigned.
- Communication Frequency Channel settings can only be made when registering a new Group. Once a Communication Frequency Channel setting has been made it cannot be changed.

[Get Settings (Communication)] Button

Clicking this button will receive the Registration Info for already registered Remote Units (current settings).

Place the Remote Unit (data logger) for which you wish to receive settings face down on top of the Base Unit and click the [Get Settings (Communication)] Button.

When successful communication has occurred, the Group Name and Remote Unit Name will appear.

If you wish to register the currently displayed Remote Registration Contents without any changes, click the [New Registration (Communication)] Button to add the received registration info.

Deletion and Initialization of Remote Units

Registered Remote Units can be deleted, initialized, or deleted in Groups

Click on the [Remote Unit] – [Remote Info / Delete / Initialize] Tab to open the [Remote Info / Delete / Initialize] window.

Remote Unit Deletion

Select the Remote Unit to be deleted from the registration list and click the [Delete Remote Unit] button.



Group Deletion

Select the Group to be deleted from the registration list and click the [Delete Group] button.

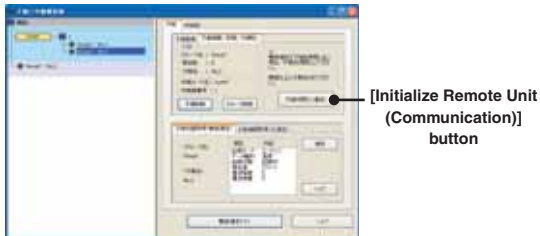
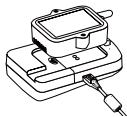
NOTE:

By deleting a Group, it will become impossible to communicate with all Remote Units registered to that Group. If you wish to carry out communication with any such units they must be re-registered or initialized.



Remote Unit Initialization

Place the Remote Unit that you wish to initialize on top of the Base Unit connected to your computer and click the [Initialize Remote Unit (Communication)] button.



NOTE :

- *By initializing, all info saved in the Remote Unit will be erased and will be returned to as it was when it left the factory.
The Default Settings are Group Name: Group 1 / Remote Unit: Sr001 / Communication Frequency: 0*
- *When initializing a currently registered Remote Unit, the Registration Info will also be erased from the registration list.*

Get Remote Unit Recording Settings (Wireless Communication)

It is possible to gather the current Remote Unit Recording Settings: Recording Mode / Type of Data / Recording Status / Current Readings / Radio Wave Strength / Battery Level by selecting [Get Remote Unit Recording Settings (Wireless Communication)].

Recording Mode -----The selected recording mode will be displayed: Endless or One Time. Endless Mode--- When the logger has reached its maximum number of readings (16,000 readings possible / 8,000 of Temp and Humidity for RTR-53), the oldest data reading will be overwritten and recording will continue. One-time Mode--- Recording will automatically stop when the logger has reached its maximum number of readings (16,000 readings possible / 8,000 of Temp and Humidity for RTR-53).
Type of Data -----Temperature, Humidity, Voltage, Pulse, Event can be viewed here.

Current Readings -----The currently recorded data is displayed here.

Radio Wave Strength-----Displays the Radio Wave Strength of wireless communication between Units.(0 – Weak < 5 – Strong)

Battery Level-----The remaining battery level for the Remote Unit will be displayed.(0 – No Battery < 5 – Full)

1. Check if the Base Unit is properly connected to the computer.
2. From the registration list, select the Remote Unit which you wish to view the Registration Recording Settings from and click the [Get Remote Unit Recording Settings (Wireless Communication)] Tab.

[Get Remote Unit Recording Settings (Wireless Communication)] Tab



3. Click the [Communication] button.

NOTE :

If a communication error has occurred, please check the communication status by carrying out a "Wireless Communication Test." (See p. 44 for details)

Get Remote Unit Info (Optical Communication)

It is possible to gather the current Remote Unit Info: Group Name / Frequency Channel / Remote Unit name / Registration Status by selecting [Get Remote Unit Info (Optical Communication)].

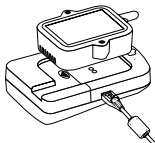
Group Name -----Group Name will be displayed.

Frequency Channel -Frequency Channel will be displayed.

Remote Unit Name--Remote Unit Name will be displayed.

Registration Status --Displays whether the Remote Unit has been registered in the Remote Unit Registration List or not.

1. Place the Remote Unit you wish to view the Registration Info from face down on the Base Unit that is connected to your computer.



2. Select the [Get Remote Unit Info (Optical Communication)] Tab and click the [Get Remote Unit Info (Communication)] button.

[Get Remote Unit Info (Optical Communication)] Tab

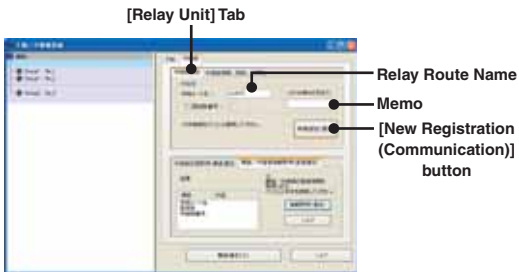


Registering a Relay Unit

1. Connect the Relay Unit you wish to register to your computer with a USB or Serial Communication Cable.



2. Click the [Relay Unit] Tab and enter a Relay Route Name. Then click the [New Registration (Communication)] button.



[Memo]

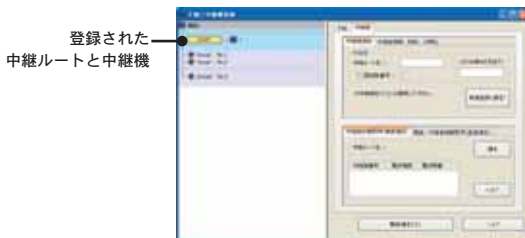
It is helpful to make a memo entry here in order to distinguish between Relay Units.

(Up to 8 characters can be entered.)

You may leave this field blank if not necessary and should note that changes cannot be made after registering a Relay Unit. If you wish to make changes, it is necessary to create the Relay Route again.

3. When successful communication has occurred, the Relay Route and Relay Unit will be registered.

**A Relay Unit Number for all registered Relay Units will be automatically assigned in the order that they were registered.(Not possible to change)*



The registered Relay Unit and Remote Unit Group will appear in different background colors so as to be easily distinguishable.

Connect a Remote Unit via Relay Unit(s)

1. From the Registration List, select the Remote Unit which you wish to connect to the Base Unit via Relay Unit(s). Then drag the Remote Unit to the Relay Unit to which you wish to connect and drop it.



2. The message [Relay Settings for Selected Remote Completed] will appear and the Remote Unit will be added under the location in the Relay Route in the Registration List.



Removing a Remote Unit from a Relay Route

1. Select the Remote Unit which you wish to remove from the Relay Route. Then drag the Remote Unit to the Base Unit Icon and drop it.
2. The location of the Remote Unit will be returned just under the Base Unit in the registration list.

**Also, by a right clicking the mouse and then clicking on [No Relay], the location of the Remote Unit will be returned to the Base Unit as above.*

Deletion and Initialization of Relay Units

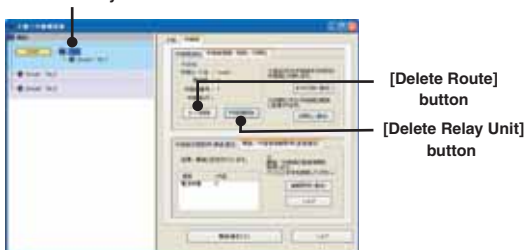
Registered Relay units can be deleted or initialized.

Click on the [Relay Unit] – [Relay Unit Info / Delete / Initialize] Tab to open the [Relay Unit Info / Delete / Initialize] window.

Relay Unit / Relay Route Deletion

Select the Relay Unit to be deleted from the registration list. Click the [Delete Relay Unit] if you wish to delete only the Relay Unit and click the [Delete Route] if you wish to delete the Relay Route.

Select the Relay Unit to be deleted



NOTE :

If you wish to delete a Relay Route, the location of all Remote Units belonging to it will be returned to just under the Base Unit in the Registration List.

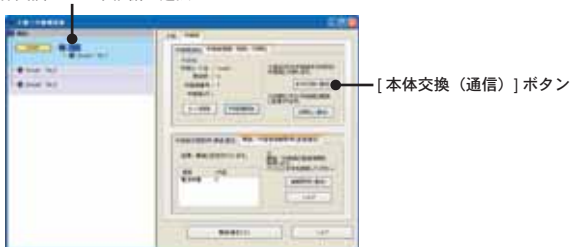
Relay Unit Replacement (For changing a Relay Unit with a new one due to malfunction or trouble)

Select the Relay Unit you wish to replace from the Registration List and connect the one you wish to newly register to your computer with a USB or Serial Communication Cable. Click the [Replace Unit] button.

注意：

登録内容は、前の中継機のを引き継ぎます。

本体交換したい中継機を選択



中継機の初期化（親機に戻す）

初期化したい中継機とパソコンを USB またはシリアルケーブルで接続し、[初期化（通信）] ボタンをクリックします。



注意：

初期化を行うと現在中継機に登録されている情報は全て削除され、初期状態（出荷時の状態）になります。

RTR-50の初期状態は、親機として設定されています。

中継機状態取得（無線通信）

指定されたルートの中継機状態を取得します。

中継機番号 -----各中継機の番号を表示します。

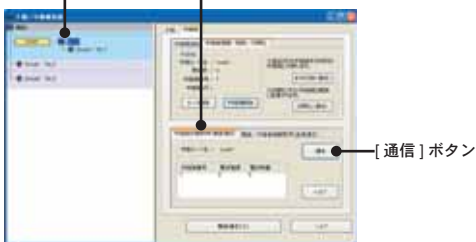
電波強度 -----各中継機間の電波強度を表示します。（0：弱い→5：強い）
* 自分より1つ PC に近い中継機（または親機）間の無線通信の電波強度です。

電池残量 -----各中継機の電池残量を表示します。（0：残量なし→5：新品）

1. 中継機状態を取得したい中継ルートを接続一覧から選択します。
2. [中継機状態取得]タブを選択し、[通信]ボタンをクリックします。

中継機を選択する

[中継機状態取得（無線通信）]タブ



3. 通信結果が表示されます。

注意：

通信に失敗した場合、[無線通信テスト]で電波の確認をしてください。（P.44 参照）

親機 / 中継機情報取得（直接通信）

登録されている、親機または中継機の情報を取得することができます。

親機の場合

電池残量 -----電池残量を表示します。(0：残量なし→5：新品)

中継機の場合

中継ルート名 -----中継ルート名を表示します。

周波数 -----中継機が属する中継ルートの周波数番号を表示します。

中継機番号 -----中継機番号を表示します。

電池残量 -----電池残量を表示します。(0：残量なし→5：新品)

1. 情報を取得したい親機または中継機をパソコンと USB またはシリアルケーブルで接続します。
2. [親機 / 中継機情報取得（直接通信）] タブを選択し、[情報取得（直接通信）] ボタンをクリックします。

[親機 / 中継機情報取得（直接通信）] タブ



3. 通信結果が表示されます。

無線通信テスト

1. [子機 / 中継機登録] ウィンドウの [無線通信テスト] ボタンをクリックします。



[無線通信テスト] ボタン




2. [全子機 / 全中継機をテストする] / [子機グループ] / [中継ルート] の3種類から検索方法を選択し、[通信開始] ボタンをクリックします。



- 全子機 / 全中継機をテストする ----- [通信開始] ボタンをクリックすると登録されている全ての子機と中継機の通信テストを行います。
- 子機グループ ----- 子機グループ名リストで選択されたグループの子機の電波強度を表示します。
- 中継ルート ----- [通信テストの指定] で "全てのルート" をチェックした場合は全てのルートを経由する中継機と子機の電波強度をテストします。"指定したルート" をチェックした場合は [中継ルート名] リストでテストしたい中継ルートを指定してください。
* 親機と直接通信する子機はテストしません。

3. テスト結果が右側のウィンドウに表示されます。



-  --- 通信成功 電波強度を縦線の本数で表示します。(Min:1 / Max:5)
中継機の場合は、中継機番号が1小さい中継機（中継機1の時は親機）との電波強度を表示します。
-  --- 通信失敗 通信をして通信が失敗した子機または中継機の場合に表示します。
-  --- 検索方法で指定されなかった（通信しなかった）子機または中継機の場合に表示します。

* 通信に失敗した場合は、子機 / 中継機の位置確認、電池残量の確認を行ってください。

吸い上げ設定

メイン画面より、子機 1 台、またはグループ一括でデータ吸い上げの設定ができます。

1. 子機 1 台の吸い上げの場合、左側の子機一覧から、吸い上げたい子機を選択します。グループ一括で吸い上げをしたい場合、子機一覧からグループ名フォルダを選択します。



2. 通信方法、吸い上げ条件を設定し、[吸い上げ] ボタンをクリックすると、吸い上げを開始します。吸い上げ結果は、画面上の [吸い上げ状況] に表示されます。

グループ/子機（無線通信のみ）

指定した子機のみ

子機リスト一覧で指定された子機 1 台のデータを吸い上げます。

グループ一括

子機リスト一覧で指定されたグループのデータを一括で吸い上げます。

注意：

* 吸い上げたファイルは自動的に RTR-50 for Windows をインストールしたフォルダに "グループ名_子機名_日付時刻_拡張子" というファイル名で保存されます。

吸い上げ条件

全記録データ

全記録データを吸い上げます。

吸い上げ時間指定

最終記録データから指定時間前までの記録データを吸い上げます。単位は 1 時間単位・1 日単位から選択することができます。吸い上げ時間を指定したときに指定された時間分のデータが記録されていない場合は、現在保存されている全記録データを吸い上げます。

吸い上げ状況（吸い上げた子機またはグループの情報を表示します）

グループ名	-----	吸い上げた子機のグループ名
子機名	-----	吸い上げ子機名
開始方法	-----	即時スタート/予約スタート
記録モード	-----	ワンタイム/エンドレス
開始日時	-----	記録を開始した日時
記録間隔	-----	記録データの間隔
データ種類	-----	温度/電圧/パルス/Event

注意：

- 光通信の場合のみ吸い上げ済みデータ量をプログレスバーで表示します。
- 子機本体が、記録予約中の時は記録データなしでエラーとなります。
- 記録開始から現時点までの記録データを吸い上げます。子機本体は、吸い上げ中及び吸い上げ後も継続して記録し続けます。
- 子機本体の記録データは、新たに記録をスタートすると消えてしまいます。又、吸い上げた記録データは、本アプリケーションを終了させたり、パソコンの電源をOFFにすると消えてしまいます。出来るだけ早くファイルに保存する事をおすすめします。
- 残量表示値が小さくなってきたり子機本体液晶にBATマークが表示されたら早めに電池交換を行って下さい。
尚、電池交換を行うと子機本体はリセットされ記録データが消失する場合があります。必要な記録データは吸い上げを行いファイルへ保存しておいて下さい。
- USB通信でデータ吸い上げ中にアプリケーションを強制終了した場合はUSB通信が不安定になる場合があります。そのような場合はUSBケーブルを挿し直してください。

[詳細設定] ボタン

吸い上げ前の設定、吸い上げ後の処理方法を選択できます。



必要な項目にチェックをして、[OK] ボタンをクリックすると、設定されます。

データ吸い上げ前の設定

通信時間の計算をする ----- 中継機を経由している場合に限り、全体の通信にかかる時間を通信状態ダイアログボックスに表示します。ただし、通信時間を表示するためには中継機と一度通信をする必要があるため1子機を吸い上げるために、およそ中継機台数 x 20 秒の時間が追加されます。通信時間を表示させたい場合にはチェックをつけてください。(中継機を経由していない場合は追加時間はなく、チェックの有無に関わらずおよその通信時間は表示されます。)

データ吸い上げ後の設定

自動的にグラフ表示する ----- 吸い上げたデータを自動的にグラフに表示します。データを保存したい場合には開いたグラフのファイルメニューから保存してください。

保存するファイル名を指定する --1 子機データを吸い上げた後に [ファイルを保存する] ダイアログボックスが表示されるので、保存したいファイル名を指定してください。グラフに表示したい場合には別途保存ファイルをグラフで開いてください。

保存するファイル名を指定しグラフに表示する

上記の [保存するファイル名を指定する]、[自動的にグラフを表示する] が順に実行されます。

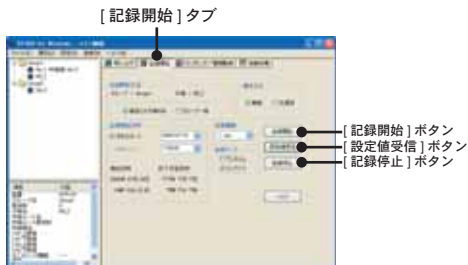
1 子機づつ自動的にファイルに名前をつけて共通フォルダに保存する

吸い上げたデータに自動的にファイル名をつけて (*グループ名 / 子機名 / 日付時刻_拡張子) 指定されたフォルダに格納されます。何も指定していない場合は自動的にアプリケーションをインストールしたフォルダに格納されます。グラフに表示したい場合には別途保存ファイルをグラフで開いてください。

記録開始設定

無線通信、もしくは光通信で、記録開始の設定ができます。
メイン画面の[記録開始]タブをクリックして、記録開始画面を開きます。

無線通信の場合



1. 子機 1 台の記録開始設定の場合、左側の子機一覧から設定したい子機を選択します。グループ一括で記録開始設定をしたい場合、子機一覧からグループ名フォルダを選択します。
2. 各設定をし、[記録開始]ボタンをクリックすると、設定が完了します。

[記録開始] ボタン

指定された条件で子機の記録を開始します。

*ただし、無線通信の場合で[無線通信による記録開始が禁止]されている子機に対しては記録を開始できません。詳しくは[詳細設定]ボタン (P.53) を参照してください。

*記録開始確認メッセージダイアログボックスを非表示設定にした場合、"Shift ボタン(キーボード)を押しながらマウス右クリック"をすると、次回記録開始時に再度確認メッセージダイアログボックスが表示されます。

[設定値受信] ボタン

選択した子機の設定値を受信して表示します。

[記録停止] ボタン

選択した子機、またはグループの記録を停止します。

*ただし、無線通信の場合で[無線通信による記録開始が禁止]されている子機に対しては記録を停止できません。

詳しくはお使いの子機の取扱説明書をご覧ください。

記録開始方法

- グループ -----子機リスト一覧で指定されたグループ名が表示されます。
子機 -----子機リスト一覧で指定された子機名が表示されます。
指定した子機のみ ---指定された子機 1 台の記録を開始します。
グループ一括 -----指定されたグループの子機全てに対して一括で記録を開始します。

記録開始日時

- 予約スタート -----子機本体が予約された日時より記録を開始します。記録開始日時の入力は年、月、日、時、分、秒の単位で行います。初期値はダイアログボックス起動時の日時が表示されます。(初期値は分未満を切り上げてあります。)
- 即時スタート -----子機本体が直ちに記録を開始します。記録開始日時の入力は必要ありません。
注意：
- 無線通信の場合には即時スタートはできません。また親機から子機までの通信時間を考慮して予約時間を設定してください。現在から通信にかかる時間を追加した時刻よりも予約開始時間が早い場合にはスタートできません。(エラーメッセージが表示されます。)
通信開始時間の目安はおおよそ1ルートあたり(中継機の台数 + 1) x 20 秒としてください。
また、グループ一括で開始する場合、中継機を経由する子機や親機と直接通信をする子機がある設定などの場合には一番通信時間の長い子機に対しての記録開始予約時間を設定してください。
- 現在日時 -----現在日時はパソコンのシステム日付を表示しています。予約スタートをする場合記録開始日時は現在日時より未来の時刻を設定してください。
- 予約日時 -----設定された記録間隔、記録開始日時より、予定終了日時を計算します。(但し、記録モードをエンドレスにした場合は表示されません。)

記録間隔

- 1 秒、2 秒、5 秒、10 秒、15 秒、20 秒、30 秒、
1 分、2 分、5 分、10 分、15 分、20 分、30 分、60 分から選択できます。

記録モード

- ワンタイムモード ---記録データ数が 16000 個 (RTR-53 は 8000 個) に到達すると本体液晶表示部に FULL が表示され、記録を停止します。
エンドレスモード ---記録データ数が 16000 個 (RTR-53 は 8000 個) を超えると、1 番古いデータから上書きし、記録を続けます。

光通信の場合



1. 機種を選択します。測定単位の設定
*RVR-52 を選択した場合は、測定単位の設定項目が表示されます。
2. 光通信の時のみ表示される [詳細設定] ボタンをクリックすると、無線通信のプロテクト画面が表示されます。(P53 参照)
3. 各設定をし、[記録開始] ボタンをクリックすると、設定が完了します。

[記録開始] ボタン

指定された条件で子機の記録を開始します。

* 記録開始確認メッセージダイアログボックスを非表示設定にした場合、"Shift ボタン(キーボード)を押しながらマウス右クリック" をすると、次回記録開始時に再度確認メッセージダイアログボックスが表示されます。

[設定値受信] ボタン

選択した子機の設定値を受信して表示します。

[記録停止] ボタン

選択した子機、またはグループの記録を停止します。

記録開始方法

グループ ----- 子機リスト一覧で指定されたグループ名が表示されます。

子機 ----- 子機リスト一覧で指定された子機名が表示されます。

指定した子機のみ --- 指定された子機 1 台の記録を開始します。

グループ一括 ----- 指定されたグループの子機全てに対して一括で記録を開始します。

記録開始日時

予約スタート ----- 子機本体が予約された日時より記録を開始します。記録開始日時の入力は年、月、日、時、分、秒 の単位で行います。初期値はダイアログボックス起動時の日時が表示されます。(初期値は分未満を切り上げてあります。)

即時スタート -----子機本体が直ちに記録を開始します。記録開始日時の入力には必要ありません。

注意：

- 無線通信の場合には即時スタートはできません。また親機から子機までの通信時間を考慮して予約時間を設定してください。現在から通信にかかる時間を追加した時刻よりも予約開始時間が早い場合にはスタートできません。(エラーメッセージが表示されます。)

通信開始時間の目安はおよそ1ルートあたり(中継機の台数 + 1) x 20 秒としてください。

また、グループ一括で開始する場合、中継機を経由する子機や親機と直接通信をする子機がある設定などの場合には一番通信時間の長い子機に対しての記録開始予約時間を設定してください。

- 通信の順序等は接続一覧の説明を参照してください。

現在日時 -----現在日時はパソコンのシステム日付を表示しています。予約スタートをする場合記録開始日時は現在日時より未来の時刻を設定してください。

予約日時 -----設定された記録間隔、記録開始日時より、予定終了日時を計算します。(但し、記録モードをエンドレスにした場合は表示されません。)

記録間隔

1 秒、2 秒、5 秒、10 秒、15 秒、20 秒、30 秒、

1 分、2 分、5 分、10 分、15 分、20 分、30 分、60 分から選択できます。

記録モード

ワンタイムモード ---記録データ数が 16000 個 (RTR-53 は 8000 個) に到達すると本体液晶表示部に FULL が表示され、記録を停止します。

エンドレスモード ---記録データ数が 16000 個 (RTR-53 は 8000 個) を超えると、1 番古いデータから上書きし、記録を続けます。

[詳細設定] ボタン (光通信時のみ)

無線通信による記録開始を禁止する

設定済み子機に対して無線通信で記録開始 / 停止が実行されても、その子機は記録が開始されません。

無線通信による記録開始を許可する

設定済み子機に対して禁止設定がある場合は、許可して無線通信で記録開始 / 停止ができるようになります。

注意：

[OK] ボタンをクリックすることで、今回の設定が次回の光通信記録開始時に有効になります。

測定単位（光通信のみ） *RVR-52 のみ表示されます。

電圧（本体液晶の単位は電圧 [V] となります。）

瞬時値 -----測定した瞬間の電圧を記録します。

平均値 -----指定された記録間隔中に測定された電圧の平均値を記録します。

パルス（本体液晶の単位はパルス [P] となります。）

立ち下がり -----パルスの立ち下がり記録します。

立ち上がり -----パルスの立ち上がり記録します。

イベント（本体液晶の単位はパルス < Hi or Lo > [P] となります。）

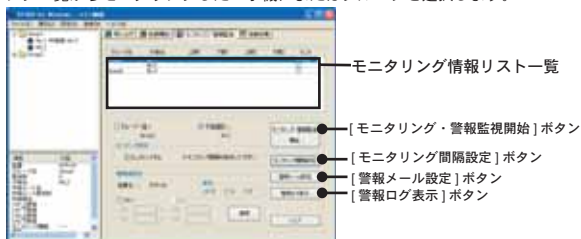
パルスイベントの時刻を記録します。

モニタリング / 警報監視設定

別ウィンドウで、リアルタイムモニタを開くことができます。

メイン画面の [モニタリング / 警報監視設定] タブをクリックして、モニタリング / 警報監視設定画面を開きます。

モニタリング一覧からモニタリングしたい子機、またはグループを選択します。



モニタリング情報リスト一覧

グループ名 -----登録済みのグループ名が表示されます。

子機名 -----登録済みの子機名が表示されます。

上限 1 -----チャンネル 1 の警報監視上限値が表示されます。

下限 1 -----チャンネル 1 の警報監視下限値が表示されます。

上限 2 -----チャンネル 2 の警報監視上限値が表示されます。

下限 2 -----チャンネル 2 の警報監視下限値が表示されます。

モニタ -----モニタリングをしたい子機にチェックをつけます。

[モニタリング設定]

モニタリングする

モニタリング情報リスト一覧と連動しています。チェックすると指定されている子機のモニタリング設定が変更されます。

間隔

モニタリング間隔設定ダイアログボックスで設定された間隔が表示されます。

モニタリング間隔は全グループ共通の間隔になります。

[モニタリング間隔設定] ボタン

モニタリング間隔を指定することができます。

"モニタリングする" にチェックして、[モニタリング間隔設定] ボタンをクリックし、

モニタリング間隔を設定します。



注意：

秒単位で設定する場合は 20 秒以上、分単位で設定する場合は 1 分以上に設定してください。

また、現在選択されている子機の通信にかかる時間以上の時間を指定してください。

[警報値設定]

警報値を設定する場合、一覧から子機を選択し、設定したい単位を選び、Ch.1 または Ch.2 をチェックして、数値を入力します。[適用] ボタンをクリックすると、設定が適用されます。

[警報メール設定] ボタン

警報値設定で、モニタリングデータが設定した数値を超えた場合、警報メールを送信することができます。[警報値が発生した場合、自動的にメールを送信する] にチェックをして、[OK] ボタンをクリックしてください。

メールの詳細設定は、[メール設定] で行います。

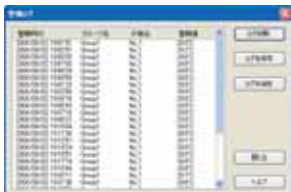
* メール設定については P61 を参照してください。



[警報ログ表示] ボタン

警報があった場合、全ての警報値のログを見ることができます。

警報ログ画面



- 警報時刻 -----警報が発生した時刻を表示します。
*ただし、1 モニタリングの通信が終了した時点の時刻で実際に警報が発生した時刻とは異なります。
- グループ名 -----警報が発生したグループ名を表示します。
- 子機名 -----警報が発生した子機名を表示します。
- 警報値 -----警報値を表示します。
*ただし、1 モニタリングの通信が終了した時点の警報値で通信中のデータの推移に関しては反映されません。

注意：

警報ログは最大 1000 個まで保存できます。1000 個以上警報が発生した場合には、アプリケーションをインストールしたフォルダに [現在時刻 + WarningLogList.wlf] というファイルが自動的に作成され、この画面のログ表示はクリアされ最初から表示されます。前回のログを参照したい場合には [ログを開く] ボタンでこのファイルを指定してください。ログを保存したい場合には [ログを保存] ボタンでログをファイルに保存してください。

[モニタリング・警報監視開始] ボタン

このボタンをクリックすることで、設定した値でのモニタリング / 警報監視画面が別ウィンドウで開きます。

注意：

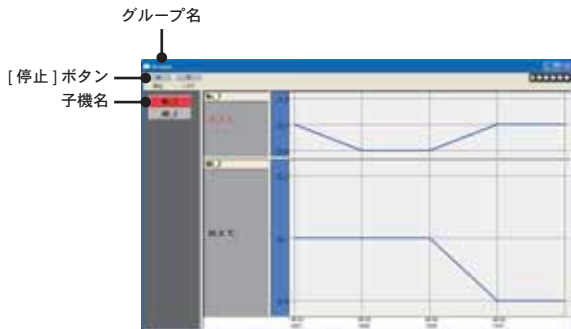
[モニタリング・警報監視開始] ボタンをクリックすると、登録されているグループの数分、モニタリング画面が別ウィンドウで開きます。

モニタリンググラフ画面

モニタリング・警報監視画面で各種設定をし、[モニタリング・警報監視]ボタンをクリックすると、モニタリング画面が別ウィンドウで開きます。

注意：

モニタリング画面は、登録されているグループの数分、別ウィンドウで開きます。



ウィンドウのタイトルにグループ名が表示されます。

注意：

- モニタリング中に子機の登録内容を変更しないようにしてください。
- モニタリング中には他の通信をすることはできません。一度停止ボタンを押してから、モニタリング画面を閉じてください。
- モニタリング時間中に自動収集時間になった場合には自動収集の間はモニタリング・警報監視が中断され自動収集が終了しだいモニタリングが再開されます。

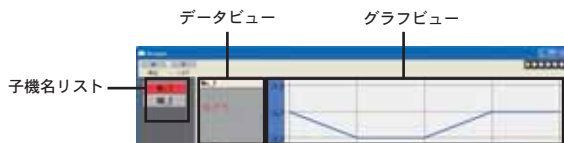
[停止]ボタン

モニタリング・警報監視を停止します。1つのウィンドウで[停止]ボタンを押すと、全てのグループのモニタリング・警報監視が停止されます。

*1つのウィンドウのモニタリング・警報監視だけを停止するということはできません。

モニタリンググラフ設定

モニタリンググラフの各種ビュー設定ができます。



[設定]メニューから[モニタリンググラフ設定]をクリックします。



子機名リストビュー設定

子機名リストの設定変更ができます。



フォント色 -----フォント色を設定します。

背景色 -----背景色を設定します。

警告ボタン色 -----警告ボタン色を設定します。

フォントサイズ -----フォントサイズを設定します。

プレビュー -----子機名リストビュー、データリストビュー、グラフビューの現在の設定をプレビューで表示します。

* 各リストの枠内をクリックすると各設定画面に切り替わります。

データビュー設定

背景色 -----グラフの背景色を設定します。

縦軸背景色 -----縦軸背景色を設定します。

高さ設定

自動設定 -----1 ウィンドウをモニタリング子機数分に（高さを）分割してグラフを表示します。

手動設定 (%) -----1 グラフの高さを現在のウィンドウの高さに対する割合で表示します。

*例えば、1 ウィンドウの高さが 400 の場合、設定値を 50% にすると 1 グラフの高さは 200 となりスクロールすることによって全てのグラフウィンドウを表示します。ただし、1 グラフの高さが 1 ウィンドウの高さ / 子機数よりも小さくなった場合には一番下のグラフの高さが大きくなります。

表示データ数 -----グラフ画面に表示される描画数を表示します。

*モニタリングが失敗している範囲はグラフ線が表示されません。

プレビュー -----子機名リストビュー、データリストビュー、グラフビューの現在の設定をプレビューで表示します。

*各リストの枠内をクリックすると各設定画面に切り替わります。

メール設定

メール送信に関する各種設定を行います。

[設定]メニューから[メール設定]をクリックします。

メール設定画面



注意：

- 電子メールを送信するには電子メールアドレスと送受信サーバー、ユーザー名、パスワードが必要になります。詳細はご使用のプロバイダーまでお問い合わせください。
- 本文の暗号化は行っていません。
- 警報メールの自動送信の場合に、インターネット接続操作（ダイヤルアップ等）は行っていませんので警報メールが送信される時点でインターネットに接続済み（常時接続等）になっている必要があります。

受信サーバー（POP3）-----POP Before SMTP を有効にする場合には、電子メールの受信サーバーを設定してください。

送信サーバー（SMTP）-----電子メールの送信サーバーを設定してください。

電子メールアドレス -----電子メールアドレスを設定してください。

ユーザー名 -----POP Before SMTP を有効にする場合には、電子メールアドレスのユーザー名とパスワードを指定してください。

パスワード -----POP Before SMTP を有効にする場合には、電子メールアドレスのユーザー名とパスワードを指定してください。

パスワードを保存する -----チェックをつけるとパスワードが保存されます。POP Before SMTP を有効にする場合にはパスワードを保存にチェックをつけてください。

POP Before SMTP を有効にする ---POP Before SMTP を有効にします。

* ご使用のサーバーによって POP Before SMTP の設定が異なります。詳細はご使用のプロバイダーにお問い合わせください。

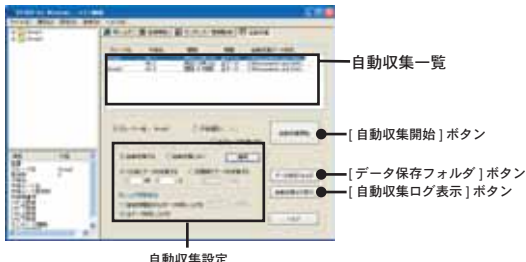
件名 -----このメールの題目を設定します。（空白可）

内容 -----このメールの内容を設定します。（空白可）

自動収集設定

メイン画面より、自動収集の設定ができます。[自動収集]タブをクリックして、自動収集画面を開きます。

自動収集一覧から、自動収集したい子機、またはグループを選択します。



[自動収集設定]

1. 自動収集するにチェックします。

2. データ収集間隔を選択します。

- 1日毎にデータを収集する --- 毎日、同じ時刻にデータを収集します。
- 定間隔でデータを収集する --- 指定された時間間隔でデータを収集します。

3. 吸い上げ期間を指定します。

指定時間前からのデータを吸い上げる --- 現在から指定した時間前までのデータを吸い上げます。本体に記録されているデータの時間よりも大きいデータを入力すると自動的に全データを吸い上げます。

全データを吸い上げる --- 吸い上げ済みのデータを含め、全てのデータを吸い上げます。

4. [適用] ボタンをクリックすると設定が適用され、自動収集一覧に表示されます。

[自動収集開始] ボタン

[自動収集設定] で設定した内容で、自動収集を開始します。

[自動収集開始] ボタンをクリックします。

*全てのグループで同じ設定にしたい場合は、[全グループ共通にする]にチェックをしてください。

注意：

モニタリング・警報監視機能が実行されている場合、自動収集している間は、モニタリング・警報監視が一時停止されます。自動収集完了後、再開されます。

[データ保存フォルダ] ボタン

自動収集されたファイルを保存するフォルダを選択します。

注意：

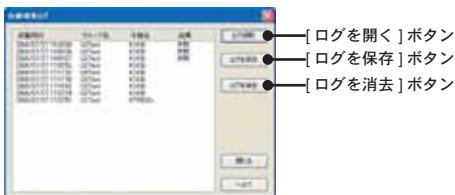
- グループごとに保存するフォルダを指定します。
- 保存フォルダを指定しない場合は、RTR-50 for Windows をインストールしたフォルダに自動的に保存されます。

[自動収集ログ表示] ボタン

自動収集ログの収集時間や、収集結果が表示されます。

注意：

自動収集ログは最大 1000 個まで保存できます。1000 個を超えた場合自動的にログが消去されます。ログを保存する必要がある場合は [ログを保存] ボタンでログファイルを保存してください。

ログ画面**自動収集ログ**

収集時刻 -----自動収集が時刻を表示します。

グループ名 -----自動収集が終了したグループ名を表示します。

子機名 -----自動収集が終了した子機名を表示します。
結果 -----成功の場合は空白、失敗の場合は” 失敗 ” と表示します。

[ログを開く] ボタン

保存してあるログファイル（拡張子 .gif）を開きます。

[ログを保存] ボタン

表示されているログを任意の場所に保存できます。

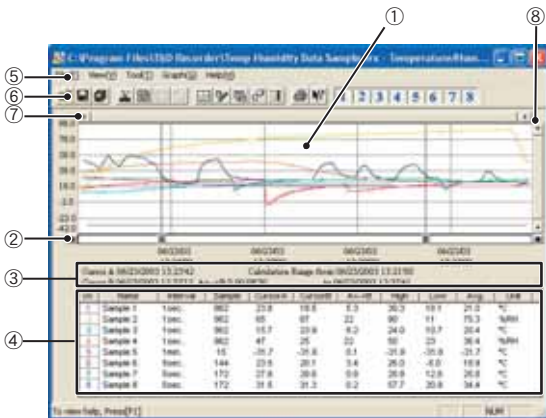
[ログを消去] ボタン

表示されているログを消去します。

4. Graph Operation

Temperature / Humidity Graph

Display Names and Functions



① Graph Area

The area in which the Graph is displayed. The horizontal axis shows time and the vertical axis shows temperature / humidity data.

② A / B Cursor Movement Buttons and A / B Cursor Buttons

By clicking one of the arrow buttons at either side of the bar, you can simultaneously move the A/B cursors. Click and drag the A or B button to move the cursor to the left or right.

③ A and B Cursor Position Information

The approximate date and time for the A and B cursor positions and the time difference between the A cursor and the B cursor is displayed.

④ Channel Info List Display

Displays data information for Channels 1 to 8. The list contains the following info: Channel Name, Recording Interval, Amount of Data, Data

Values for AB Cursor positions, the High, Low and Average values for the set calculation range.

⑤ Menu Bar

Click on the desired menu in the Menu Bar to set or display each function from which you can choose from an array of commands.

⑥ Toolbar

Buttons appear for frequently used commands.



- | | |
|---|--------------------------------|
| ① Open File | ⑨ Edit Recording Conditions |
| ② Overwrite Data | ⑩ Re-order Channels |
| ③ Save Data as... | ⑪ Erase Selected Channels Data |
| ④ Change Data Display Colors | ⑫ Vertical Axis Settings |
| ⑤ Data Display ON/OFF | ⑬ Print |
| ⑥ Return to Original Size | ⑭ Help |
| ⑦ Step-by-Step to Original | ⑮ Hide / View Channels |
| ⑧ Set High, Low, Avg. Calculation Range | |

⑦ Horizontal Gauge Bar and Button for Moving Horizontal Axis

By dragging the gauge you can move left and right to the data you want to be displayed. The time axis moves by clicking these arrow buttons.

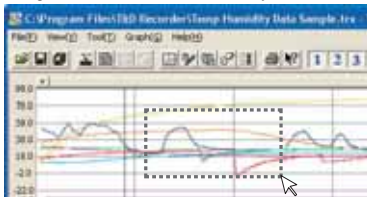
⑧ Vertical Gauge Bar and Button for Moving Vertical Axis

By dragging the gauge you can move up and down to the data you want to be displayed. The vertical axis moves up or down by clicking these arrow buttons.

Zooming In and Out on the Graph

Zoom in Using the Mouse

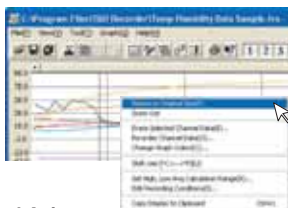
With the left button drag the mouse to outline the area you want to zoom in on.



Menu Display Using the Mouse

By right clicking on the graph, the Menu will be displayed. With [Return to Original Size] or [Step-by Step Return to Original] you can return both the vertical and horizontal axis back to show the entire graph.

-These operations can be carried out via commands in the [Graph] Menu or by clicking icons in the Toolbar.



About the Horizontal Axis

The entire graph shows in the horizontal axis the nearest data to the recording start time and the latest data nearest the recording finish time for each channel 1~8. This represents the full scale of the horizontal axis.

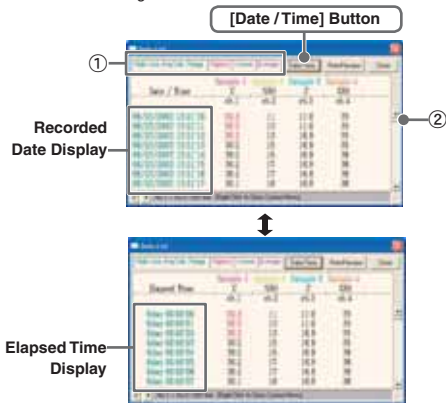
About the Vertical Axis

The entire graph shows in the vertical axis the lowest possible measurement value and the highest possible measurement value for channels 1~8. This represents the full scale of the vertical axis.

Data List Display

[Date / Time] Button

By clicking this button, you can shift the display between the recorded date and amount of elapsed time since recording started.

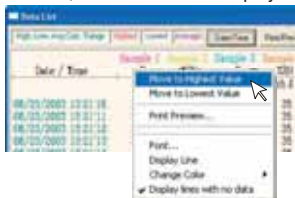


① This is a list of the data that was displayed in graph form. The highest value is in RED, lowest is in BLUE, and the average is in PINK.

② Scroll Bar: By dragging it up and down you can move to the data you want.

Menu Display Using the Mouse

By right clicking on the list, the Menu will be displayed.



Editing the Graph

Changing Graph Display Colors

You can change the letters used in the data list display for each channel between monochrome and channel color

Selected Channels ON/OFF

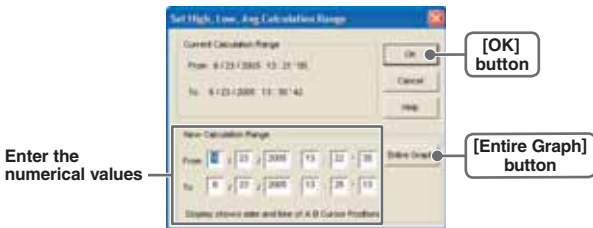
1. The channel numbers are displayed in the pull down menu of [Selected Channels ON/OFF].
2. Check the channel numbers you wish to display.

NOTE:

By clicking a Channel Number in the Toolbar, you can carry out the same operation.

Set High, Low, Average Calculation Range

1. Set the calculation range in the [Set High, Low, Avg. Calculation Range] box.
2. By clicking the [OK] button, the high, low, average calculation range of each channel data will be changed. On the graph display, the calculation range that you have set will be displayed.



[Entire Graph] Button

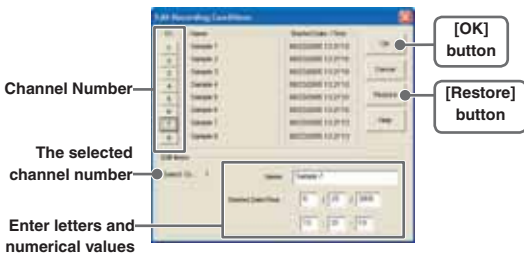
To make the Calculation Range that of the Entire Graph, click the "Entire Graph" button. The dates and times in the [Set High, Low, Avg. Calculation Range] box will be displayed as those of the entire graph.

Set by using the AB Cursors

In the Graph Display, open the [Set High, Low, Average Calculation Range] box adjusting the AB cursors to the desired start and end positions. The dates and times of those cursors will be displayed automatically.

Edit Recording Conditions

1. By clicking the [Ch.] button you wish to change, the information for that number will be displayed in the "Edit Items".
2. By clicking the [OK] button after changing, the setting will be completed.



Name: Up to 32 letters can be entered.

Starting Date/Time:

The month, day, year, hour, minute and second can be changed.

NOTE:

- If you wish to continue to change other channels, repeat the process as in 1.
- The [Restore] button is effective only during the setting, and cannot return to the condition it was after the [OK] button has been clicked.

Re-order Channel Data: From the [Tools] Menu

There are two ways for re-ordering.

- Move by dragging the channel number
- Move by selecting the channel number

【Move by dragging the channel number】

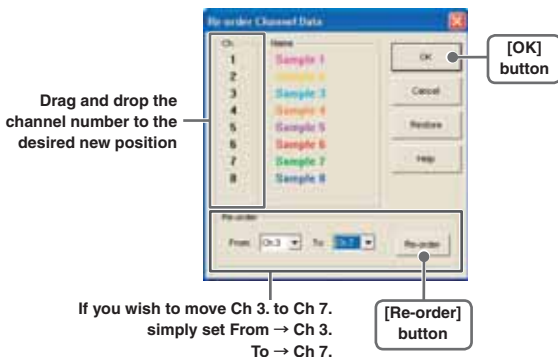
Click on the channel of data you wish to move and drag and drop it to the desired new channel position.

【Move by selecting the channel number】

1. Enter in From: __ , the channel number you wish to move from, and enter the channel number to which you want to move in To: __ .
2. By clicking the [Re-order] button, the movement will be completed.

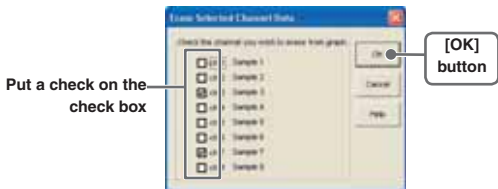
NOTE:

The [Restore] button is effective only during the setting, and cannot return to the condition it was by clicking the [OK] button.



Erase Selected Channel Data

1. Put a check on the channel number you wish to erase.
2. By clicking on the [OK] button, the deletion will be completed.



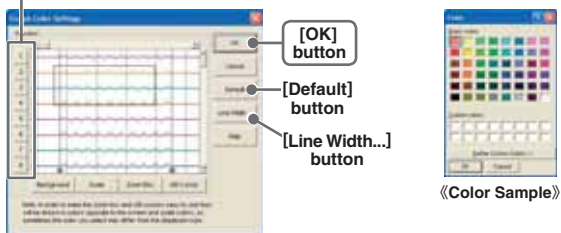
Shift Unit (°C / °F)

By clicking on [Shift Unit(°C / °F)], you can automatically change the temperature unit scale in the graph display and in the channel info list.

Change Graph Colors

1. Click the channel number of which you wish to change the color.
2. By clicking each button, color samples will be displayed. Choose the color you want and click the [OK] button.
3. After confirming the color, by clicking the [OK] button the change will be completed.

[Channel No.] button

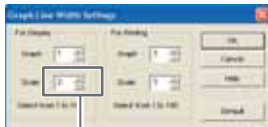


NOTE:

By clicking the [Return to Default] button, you will return to the color settings when the software was opened.

[Graph Line Width Settings] Button

Change the width of the data lines and the scale lines.



Every time you click on

- ▲ , the numerical value gets larger,
- ▼ , the numerical value gets smaller.

Copy Display to Clipboard: From the [Tools] Menu

By clicking [Copy Display to Clipboard], you can copy the currently displayed window to the clipboard and make use of the graph pasting in other software.

Graph : From the [Graph] Menu

Return to Original Size

Return from zooming in on one part of data

Zoom In / Zoom Out

Zooms in or out one step at a time

Move Cursor Right / Left

Simultaneously move the AB Cursors to the right or left.

Move Graph Right / Left

Move the graph display to the right or left.

Move Graph Up / Down

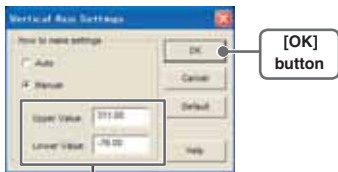
Move the graph display up or down.

Vertical Axis Settings (AUTO in Default Settings)

Set the vertical axis scale (temperature)

AUTO: The vertical axis will automatically be changed according to the values of the data.

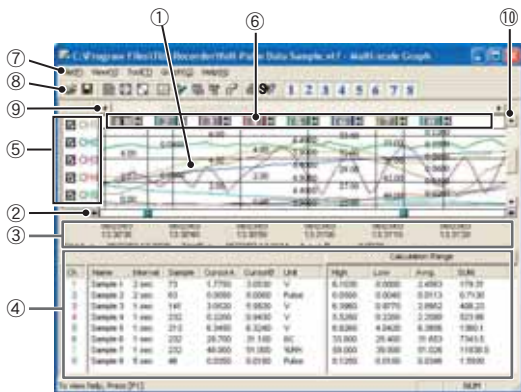
MANUAL: You can set the upper and lower values of the vertical axis scale.



Enter the range of the vertical axis scale.

Multi-scale Graph

Display Names and Functions



① Graph Area

The area in which the Graph is displayed. The horizontal axis shows time and the vertical axis shows the unit of data after having used the conversion equation to convert the original measured voltage.

② A / B Cursor Movement Buttons and A / B Cursor Buttons

By clicking one of the arrow buttons at either side of the bar, you can simultaneously move the A/B cursors. Click and drag the A or B button to move the cursor to the left or right.

③ A and B Cursor Position Information

The approximate date and time for the A and B cursor positions and the time difference between the A cursor and the B cursor is displayed.

④ Channel Info List Display

Displays data information for Channels 1 to 8. The list contains the following info: Channel Name, Recording Interval, Amount of Data, Data Values for AB Cursor positions, the High, Low and Average values for the set calculation range.

⑤ The Vertical Axis Display ON/OFF

Shift the vertical axis scale display ON/OFF.

⑥ Vertical Axis of Each Channel



The vertical axis scale is displayed for each channel. By clicking [▲▼], the axis can be scrolled for each channel.

⑦ Menu Bar

Click on the desired menu in the Menu Bar to set or display each function from which you can choose from an array of commands.

⑧ Toolbar

Buttons appear for frequently used commands.



- | | |
|---|-------------------------------|
| ① Open File | ⑧ Re-order Channels |
| ② Overwrite Data | ⑨ Merge Channel Data |
| ③ Data List Display | ⑩ Erase Selected Channel Data |
| ④ Return to Original Size | ⑪ Print Preview |
| ⑤ Step by Step to Original | ⑫ Help |
| ⑥ Set High, Low, Avg. Calculation Range | ⑬ Hide / View Channels |
| ⑦ Edit Recording Conditions | |

⑨ Horizontal Gauge Bar and Button for Moving Horizontal Axis

By dragging the gauge you can move left and right to the data you want to be displayed. The time axis moves by clicking these arrow buttons.

⑩ Vertical Gauge Bar and Button for Moving Vertical Axis

By dragging the gauge you can move up and down to the data you want to be displayed. The vertical axis moves up or down by clicking these arrow buttons.

Zooming In and Out on the Graph

Zoom in Using the Mouse

With the left button drag the mouse to outline the area you want to zoom in on.



Menu Display Using the Mouse

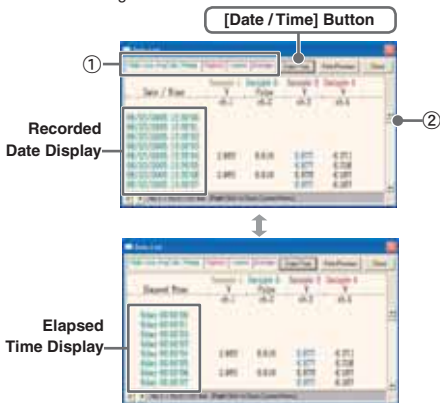
By right clicking on the graph, the Menu will be displayed. With [Return to Original Size] or [Step-by Step Return to Original] you can return both the vertical and horizontal axis back to show the entire graph.



Data List Display

[Date / Time] Button

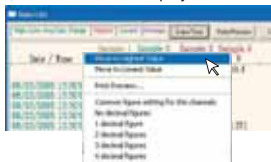
By clicking this button, you can shift the display between the recorded date and amount of elapsed time since recording started.



- ① This is a list of the data that was displayed in graph form.
The highest value is in RED, lowest is in BLUE, and the average is in PINK.
- ② Scroll Bar: By dragging it up and down you can move to the data you want.

Menu Display Using the Mouse

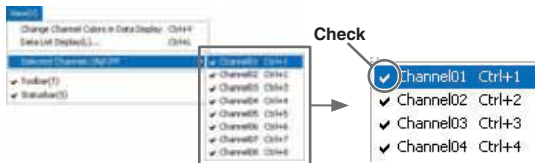
By right clicking on the list, the Menu will be displayed.



Editing the Graph

Selected Channels ON/OFF

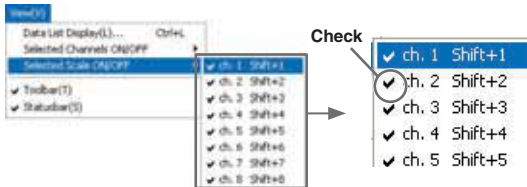
1. The channel numbers are displayed in the pull down menu of [Selected Channels ON/OFF].
2. Check the channel numbers you wish to display.



*By clicking a Channel Number in the Toolbar, you can carry out the same operation.

Scale Display ON/OFF

1. The channel numbers are displayed in the pull down menu of [Selected Scale ON/OFF].
2. Put a check next to the channel number(s) you wish to be displayed.



*You can also hide or view channel scales by checking or mchecking the channel number to the left of the graph.

Set High, Low, Average Calculation Range

1. Set the calculation range in the [Set High, Low, Avg. Calculation Range] box.
2. By clicking the [OK] button, the high, low, average calculation range of each channel data will be changed. On the graph display, the calculation range that you have set will be displayed.



[Entire Graph] Button

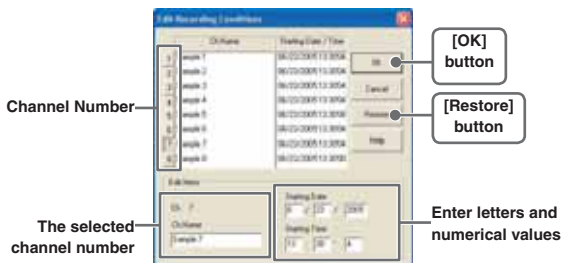
To make the Calculation Range that of the Entire Graph, click the "Entire Graph" button. The dates and times in the [Set High, Low, Avg. Calculation Range] box will be displayed as those of the entire graph.

Set by using the AB Cursors

In the Graph Display, open the [Set High, Low, Average Calculation Range] box adjusting the AB cursors to the desired start and end positions. The dates and times of those cursors will be displayed automatically.

Edit Recording Conditions

1. By clicking the [Ch.] button you wish to change, the information for that number will be displayed in the "Edit Items".
2. By clicking the [OK] button after changing, the setting will be completed.



Name: Up to 32 letters can be entered.

Starting Date/Time:

The month, day, year, hour, minute and second can be changed.

NOTE:

- If you wish to continue to change other channels, repeat the process as in 1.
- The [Restore] button is effective only during the setting, and cannot return to the condition it was after the [OK] button has been clicked.

Re-order Channel Data: From the [Tools] Menu

There are two ways for re-ordering.

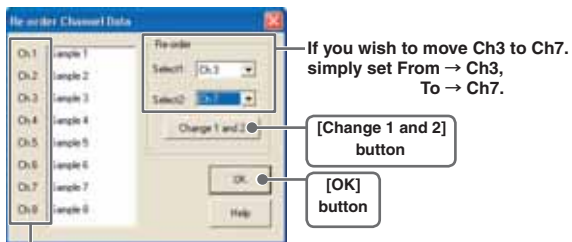
- Move by dragging the channel number
- Move by selecting the channel number

[Move by dragging the channel number]

Click on the channel of data you wish to move and drag and drop it to the desired new channel position.

[Move by selecting the channel number]

1. Enter in From: __ , the Channel number you wish to move from, and enter the Channel number to which you want to move in To: __ .
2. By clicking the [Re-order] button, the movement will be completed.



Drag and drop the channel number to the desired new position.

Merge Channel Data

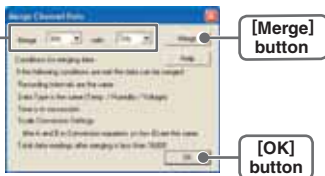
You can merge two different sets of data into one set of data.

1. Click the [▼] button, and select the channels you wish to merge.

The following kinds of data cannot be merged:

- Recording intervals are different
- Measurement times overlap (Merging is possible after adjusting the times in [Editing Recording Conditions])
- Data types are different (Merging is possible between same types of data; like temperature/humidity)

Ex: If you wish to merge
Ch.3 with Ch.7



2. By clicking the [Merge] button, the merging will be completed.
3. Click the [Close] button to finish the merging.

NOTE:

The channel number and other conditions of the merged data will become those conditions set in the channel that you selected in the second box.

Erase Selected Channel Data

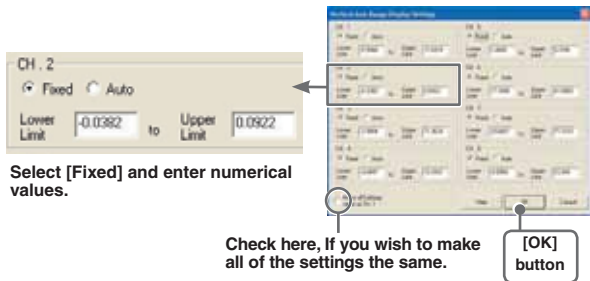
1. Put a check on the channel number you wish to erase.
2. By clicking on the [OK] button, the deletion will be completed.



Vertical Axis Range Display Settings

You can set the upper and the lower limits of the graph's vertical axis scale for each channel.

1. Check [Fixed] of the channel you wish to set.
2. Enter upper and lower limit values.
Set the lower limit at more than $-40,000$ and set the upper limit at less than $40,000$.
3. By clicking the [OK] button, the setting will be completed.



[Make all channel settings the same as Ch.1]

Set CH.1 [Fixed] and by putting a check on [Make all Settings the same as Ch.1]; all channel settings will be the same as CH.1 regardless of other channel settings.

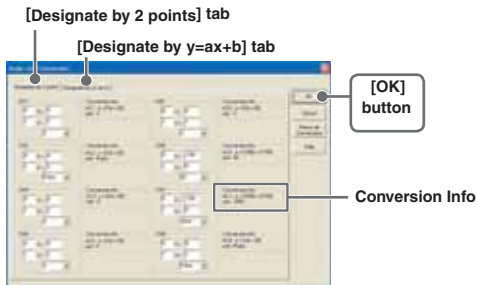
NOTE:

If you have put a check on [Fixed], the lines in the graph may exceed the boundaries of the graph.

Scale and Unit Conversion

You can convert the scale and the unit of downloaded data for each channel.

1. Select from [Designate by 2 points] tab or [Designate by $y=ax+b$] tab.



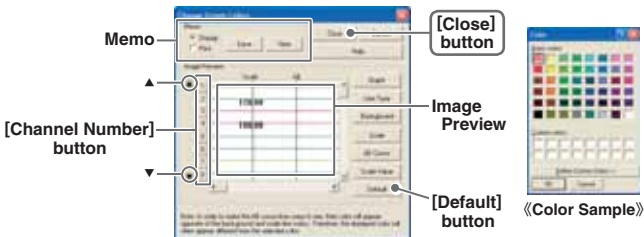
2. Set conversion formulas and units.
3. By clicking the [OK] button, the setting will be completed.

[Conversion Info]

Current conversion formulas and units are displayed here.

"y" indicates the data after conversion, and "x" indicates the voltage entering from the sensor.

Change Graph Colors



1. Click the [Channel Number] button, and click the button of the item that you wish to change.
 - When changing colors, click on a button to display the color samples. Choose the desired color and click the [OK] button to change the color.
 - If you wish to change line width, every time you click the [▲] button, the width gets wider, and every time you click the [▼] button, the width becomes more narrow.
2. Confirm the width in the image preview and click the [Close] button to complete the change.
 - By clicking the [Return to Default] button, the color settings will return to the Default Settings.

[Memo]

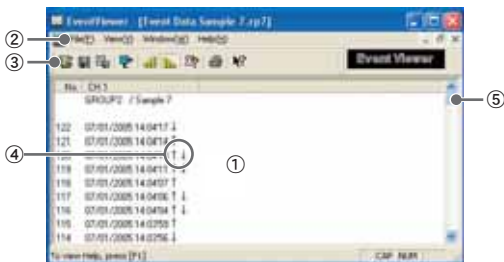
You can save the settings for Display and/or Print respectively.

1. Select "Display" or "Print".
2. By clicking the [Save] button, the settings will be saved.
 - By clicking the [View] button, you can see the settings that had been previously saved.



Event Viewer

Display Names and Functions



① Data Window

In the data window are displayed the Data Number, Channel Name, Recorded Date and Time, Rising Edge/Falling Edge.

② Menu Bar

Click on the desired menu in the Menu Bar to set or display each function from which you can choose from an array of commands.

③ Toolbar

Buttons appear for frequently used commands.



- | | | |
|---------------------|-------------------------------|---------------------------|
| ① Open File | ④ Shift Display | ⑦ File Info |
| ② Save Data as... | ⑤ Display in ascending order | ⑧ Print Preview and Print |
| ③ Save as Text File | ⑥ Display in descending order | ⑨ Help |

④ ↑ / ↓ / ↑↓

[↑] denotes rising pulse

[↓] denotes falling pulse

[↑↓] denotes a simultaneously occurring rising and falling pulse.

⑤ Scroll Bar

You can move up and down to the desired position in the graph.

Shift Display

You can shift the display between the recorded date and the amount of elapsed time from the last recorded data.



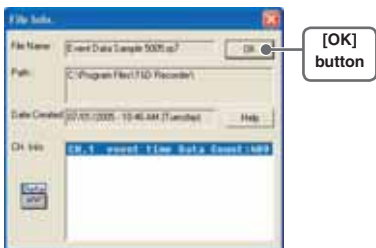
Shift Ascending / Descending

You can shift the display to view the recorded data either from the oldest to the newest or from the newest to the oldest.

Event Viewer:File Info

View File Info about data in the currently displayed data list.

1. Select [File Info] from the [View] Menu.
2. Click the [OK] button to return to the previous window.



File Name : File name of data currently in display

Path : Location where file is saved

Date Created : The date and time when the data file was created

CH. Info : Channel Number, Recording Method and Data Count

Event Viewer:Print Preview and Print

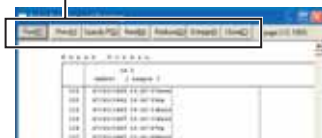
1. In the [File] Menu, select [Print Preview and Print].
2. In [Select Channel for Printing] the channel numbers and names will appear. Select the number of the channel(s) you wish to print and click [OK].

-It is possible to choose up to 4 channels at one time.



3. The [Print Preview] will appear. After confirming it is what you wish to print, click [Print] to start printing.

Button Functions



- [Print] Print box will appear and printing will begin
- [Previous] Preview the previous page
- [Specify P] Specify the page you wish to preview in the [Specify Page to be Viewed] box and a preview of that page will appear
- [Next] Preview the next page
- [Reduce] Reduce the size of the displayed page
- [Enlarge] Enlarge the size of the displayed page
- [Close] Close the Print Preview Window and return to the Main Window

Saving a File

If you have clicked [Display the graph after downloading recorded data], and you make any changes to the data after displaying, make sure to save those changes if necessary.

NOTE:

See p.62 for details about compatible data file types.

3 Ways to Save Files

In the [File] Menu, select [Overwrite All Data]

Will save any changes to file without changing File Name and Saving Location. The same operation can be carried out from [Save] in the Toolbar.

In the [File] Menu, select [Save All Data as...]

Save with a new File Name.

In the [File] Menu, select [Save Displayed Data]

Save only that data in the current display. This is handy when you wish to save only the desired data.

EX: [Save All Data as...]

1. Select [Save All Data as...] in the [File] Menu.
2. Specify the [Location] and enter a [File Name].
3. Click [Save] to complete the saving process.



Saving Event Viewer Data

In the [File] Menu, select [Save All Data as...]

Save with a new File Name.



1. Select [Save All Data as...] in the [File] Menu.
2. Specify the [Location] and enter a [File Name]
3. Click [Save] to complete the saving process.

Saving Data in Text File

By saving the recorded data as text file, you can create a file type that can be read by common spreadsheet software.

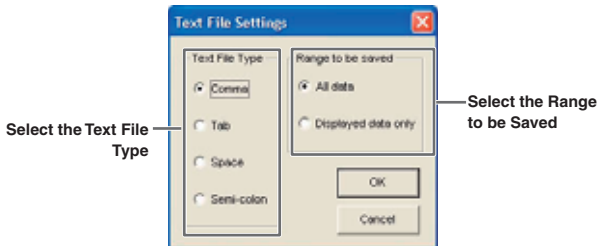
When saving Temp/Humid Graph and Multi-scale Graph data as Text File

1. Select [Save in Text File] in the [File] Menu.
2. Select the [Text File Type] and [Range to be Saved], and click [OK].
 - Comma, Tab, Space, and Semi-colon are codes used by common spreadsheet software, such as Excel and Lotus, when reading Text File to divide cells.
3. Designate the location to which the file should be saved and click [Save] to create and save the data as a Text File document.
 - The extension for the created file will be [.TXT].

NOTE:

- Text File cannot be read into T&D for Windows graphs.
- The display layout differs between the Temp/Humid Graph or the Multi-scale Graph.

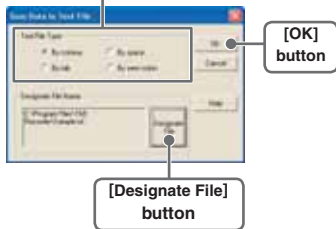
EX : Temp/HumidGraph Text File Settings Window



When saving Event Viewer data as Text File

1. Select [Save Data in Text File] in the [File] Menu.
2. Select the [Text File Type] and click [Designate File] and [OK].
 - Comma, Tab, Space, and Semi-colon are codes used by common spreadsheet software, such as Excel and Lotus, when reading Text File to divide cells.

Select the Text File Type



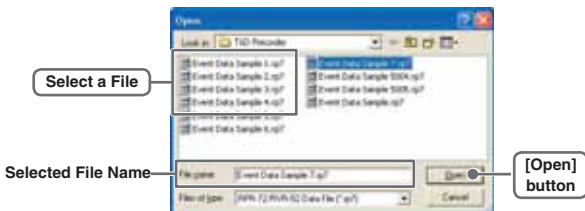
3. Designate the location to which the file should be saved by clicking [Designate File] and click [OK] to create and save the data as a Text File document.

NOTE:

- The extension for the created file will be [.TXT].
- Text File cannot be read into T&D for Windows graphs.

Opening a File with the Event Viewer

1. Open the Event Viewer from the RTR-57C/57U or RVR-52A [Graph] Menu.
2. In the Event Viewer Window under the [File] Menu, click [Open] and a list will appear.



Others

Others

Troubleshooting

Q : The computer won't communicate via the Serial Port. What should I do?

A : Try two or three times to find the port connection by using the Auto-detect function.

A : Check to make sure that the power of the main unit is ON.

A : Check to make sure that the connection is proper. Communication will take place only through the serial port (RS-232C) and will not work through the printer port or any other port.

A : Check to make sure that you can control the Thermo Recorder via the software.

A : If you have access to another computer, try seeing if communication works with the other computer.

A : If you have a computer with energy saving function settings, make sure that the serial port has not been turned off. Especially on NEC brand PC98 notebook computers the default setting maybe such.

A : Check to make sure that the serial port has not been rendered unusable by the BIOS setting.

A : Make sure that the serial port setting has not been made to render the port unusable. With some computers, especially all-in-one computers the serial port serves as the modem jack.

How to check

1. View in the Device Manager Window.

For Windows XP or 2000

1. On the Desktop, right click on [My Computer] and click on [Properties].
2. In the System Properties Window, click on the [Hardware] Tab, then click on the [Device Manager] button to view the Device Manager Window.

For Windows 98SE or ME

1. Open the [Control Panel] and double click on [System] to display the [System Properties].
2. Click the [Device Manager] Tab to view the Device Manager Window.

2. In the [Device Manager], click on [Port (COM&LPT)] and check to see if under that appears [Com Port (COM1)] or [Com Port (COM2)].

If a port appears, it should be usable.

- If a mark [!] or [×] appears next to the port, this communication port is unusable. If you cannot use a communication port please contact your computer company.
- To find out more details about an unusable communication port:
Select the port with a [!] mark, and then click on [Properties] to view the details about that port.

A : If your computer has an internal modem, make sure that the communication port is not being used by it. When the communication port is being used as the modem port, that port cannot be used. Either quit using the modem or use another port.



※ An example of the modem using a communication port (COM 1).

A : If your computer has no serial port, use a Serial-USB conversion cable and carry out communication via USB connection. We recommend [I.O DATA USB-RSAQ3] , [ELECOM UC-SGT] and [IOGEAR UC-232A] Serial-USB conversion cables. If you are using an NEC Lavie J Notebook Computer(NEC LJ-500), please use [I.O DATA USB-RSAQ3].

A : Sometimes communication will not work if a switch has been added to the serial port (RS-232C) or an extension cable has been added to the communication cable.

A : Check to see if some other communication software is in use.

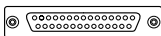
A : If your desktop computer has two serial ports, try connecting the communication cable to the other port and try communicating again.

Q : I can't get the communication cable connected to the computer. What should I do?

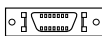
A : Please connect the communication cable provided with the Thermo Recorder into the serial port of your computer (D-SUB 9 pin male connector). If for some reason you cannot connect directly, please use an appropriate adapter (gender changer plug) as explained below.



«D-SUB 9 pin male»



«D-SUB 25 pin female»



«Half pitch 14 pin female»

- If the connector on your computer is a D-SUB 9 pin male then there is no need for an adapter.
- If the connector on your computer is a D-SUB 25 pin female then use an adapter (D-SUB 25 pin male to a D-SUB 9 pin male).
- If the connector on your computer is a Half pitch 14 pin female then use the adapter (Half pitch 14 pin male to a D-SUB 9 pin male) or a combination (Half pitch 14 pin male to D-SUB 25 pin male) and (D-SUB 25 pin female to a D-SUB 9 pin male).

Q : The date and the time of the recorded data are different from the actual date and time. Why?

A : The Thermo Recorder has no internal clock. When you set up a programmed recording start or when you download data, the date and time that are shown are taken from your computer's clock. If your computer's clock is not correct, it will affect the recorded data.

Specification

RTR-50 for Windows

対応機種	RTR-50・RTR-51・RTR-52・RTR-53・RVR-52
通信機能 :RTR-5	記録スタート (即時/予約)・記録停止・本体設定値読み込み (記録間隔・記録モード・電池残量・電波強度・現在値データ取得・無線通信による記録開始保護 設定可能)・記録データの吸い上げ
通信機能 :RVR-5	記録スタート (即時/予約)・記録停止 本体設定値読み込み (記録間隔・記録モード・電池残量・電波強度・現在値データ取得・電圧測定値の種類 <瞬時値 / 平均値 >) パルス測定の種類 (立ち上がり <Lo → Hi> / 立ち下がり <Hi → Lo> / 無線通信による記録開始保護 設定可能)・記録データの吸い上げ
通信機能 : RTR-50	子機, グループ等の設定・内容表示・周波数番号設定 データ報取得・データ情報表示・データ削除・データ吸い上げ ・上下限值の設定・モニタリング / 警報監視設定・グラフモニタリング・警報メール・自動収集
その他の機能	シリアルポート自動検出

Temp/Humidity Graph

Graph	Temp/Humidity Graphs for Each Channel (Zoom out / in and scroll) / Change Channel Colors / Turn ON and OFF Channel Display
Data Display	チャンネル名・記録間隔・データ数・最高値・最小値・平均値・単位 任意な 2 点 (AB カーソル位置) の温湿度 / 日時 任意な 2 点 (AB カーソル位置) 間の温湿度差の算出値
チャンネル数	8 チャンネル 同時表示 / 処理 (RTR-53 は 4 台、RTR-51/52 は 8 台分 混在処理可能)
Others	データ一覧表示・計算範囲 (期間) 設定・データメンテナンス チャンネル毎のデータ削除・チャンネル毎のデータ並び替え

Multi-scale Graph

Graph	チャンネル測定値の折れ線グラフ表示（マウスによるグラフの拡大/縮小/スクロール表示可能） チャンネル毎の表示カラー変更・チャンネル毎の表示/非表示切り替え
Data Display	チャンネル名・記録間隔・データ数・最高値・最小値・平均値・積算値・単位・任意な2点（ABカーソル位置）の測定値/日時・任意な2点（ABカーソル位置）間の時間の差 ss
チャンネル数	8チャンネル 同時表示/処理（RTR-53は4台、RTR-51/52・RVR-52は8台分混在処理可能）
Others	データ一覧表示・計算範囲（期間）設定・データメンテナンス チャンネル毎のデータ削除・チャンネル毎のデータ並び替え・縦軸フルスケール設定

Event Viewer

Event List	チャンネル毎のイベント時刻の一覧表示（マウス・キーボードによるスクロール表示可能） 波形の立ち上がり（Lo→Hi）/立ち下がり（Hi→Lo）
チャンネル数	64チャンネル 同時表示/処理（RVR-52のイベント時刻記録データのみ）
その他の機能	表示切り替え・昇順/降順切り替え

その他

印刷	グラフ印刷・データ一覧印刷
OS	Microsoft Windows 98SE/Me 日本語版 Microsoft Windows 2000/XP 日本語版
PC/CPU	Pentium 90MHz 以上搭載の AT 互換機または NEC 98 シリーズ USB 通信・RS-232C 通信（RS-232C D-Sub 9 ピン）が使用可能
動作環境	Microsoft Windows が正常に動作する環境

RTR-50

対応機種	RTR-5,RVR-5
機能	無線：データ吸上げ、モニタ表示、記録開始、無線中継機能 光通信：データ吸上げ、記録開始
電源	USB バスパワー、単三乾電池×2、AC アダプタ (AD-0601) [コネクタ EIAJ 電圧区分 2 タイプ]
インタフェース	USB [MiniB コネクタ] / シリアル [ミニシリアル] (19200bps)
無線通信方式	特定小電力無線 (ARIB STD-T67) 426MHz 帯 4 チャンネル
無線電送距離	約 100m (見通しの良い直線に於いて)
通信時間	無線通信：データ FULL で約 420 秒 (中継器未使用時) 中継器を使用する場合、中継器 1 台毎に上記の時間が加算されていきます。 光通信：データ FULL で約 160 秒
表示機能	緑 LED (無線通信、PC 通信時に点滅)
電池寿命	単三乾電池 x 2 の動作で 1 日 5 分間通信の中継器として使用した場合、約 6 ヶ月
本体寸法	95[mm] × 65[mm] × 24.5[mm] (高さ × 幅 × 厚さ)
本体質量	約 60g (電池含まず)
動作電圧	2.5V ~ 7.0V
消費電流	無線通信時 約 50mA
本体動作環境	温度 -10-60℃ (外部電源使用時 -30-60℃) 湿度 20-80%RH (結露しないこと)
付属品	USB ケーブル、ソフトウェア CD、取扱説明書
オプション	シリアルケーブル (TR-07C)、AC アダプタ (AD-0601)、外部電源ユニット (AD-0620)

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RTR-50 Wireless Communication Port

Published by T&D CORPORATION

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Wireless Communication RTR-50 Warrant

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

Statement of Limited Warranty

1. This product is warranted to be free from defects in materials and workmanship for a period of one (1) year following the date of purchase. Should the product fail to operate per specification in normal use during this period T&D will repair the unit or provide a replacement free of charge. T&D will not accept returns for any reason other than defects during the warranty period, and will not accept any product that has been misused, dropped, abused or inappropriately used or mistreated at any time.
2. This warranty is strictly limited to repair or replacement-in-kind for defective product. T&D makes no other warranty, either express or implied, and will not accept liability beyond the remedies stated herein. Specifically, T&D will not accept liability for direct, indirect, special, consequential or incidental damages arising from the use of this product.
3. Customers wishing to submit a defective product for repair or replacement during the warranty period should first contact the dealer from whom it was originally purchased. After receiving a return authorization the defective product should then be packaged along with a description of the difficulties being experienced, proof of purchase and all included accessories and materials, and returned it to the dealer. In the event of difficulty contacting the original dealer, customers should contact the nearest authorized T&D sales representative. A list of these can be found on the company's website, www.tandd.com, or it can be obtained by contacting TandD US directly.
4. This limited warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world. To the extent this limited warranty statement is inconsistent with local law, this statement shall be deemed modified to be consistent with such local law.
5. For further information relating to product repair or replacement, or for other service questions after the termination of the warranty period, customers should contact their local authorized T&D sales representative.