



T&D Recorder for Windows® (TR-7xU)

User's Manual

Thank you for purchasing our product.
Carefully read this instruction manual
before using this unit.

Distributed by MicroDAQ.com, Ltd.
www.MicroDAQ.com
(603) 746-5524

■ Notices about this User's Manual

In order to properly use this product, please carefully read this manual before using. T&D Corporation accepts no responsibility for any malfunction of and/or trouble with this product or with your computer that is caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair outlined in the attached warranty.

- All rights of this User's Manual belong to T&D Corporation. It is prohibited to use, duplicate and/or arrange a part or whole of this User's Manual without the permission of T&D Corporation.
- Microsoft® and Windows® are registered trademarks of Microsoft Corporation USA and are binding in the USA and all other countries. Company names and product names are trademarks or registered trademarks of each company.
- Specifications, design and other contents outlined in this manual are subject to change without notice.
- On screen messages in this manual may vary slightly from the actual messages.
- Please notify the shop where you purchased this product or T&D Corporation of any mistakes, errors or unclear explanations in this manual. T&D Corporation accepts no responsibility for any damage or loss of income caused by the use of our product.
- This product has been designed for private or industrial use only. It is not for use in situations where strict safety precautions are necessary such as in connection with medical equipment, whether directly or indirectly.
- 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.
- This User's Manual cannot be reissued, so please keep it in a safe place.
- Please read the warranty and provisions for free repair carefully.

Software User Agreement

■ Escape Clauses

- T&D Corporation does not guarantee the operation of T&D Recorder 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 T&D Recorder 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 T&D Recorder for Windows.
- T&D Corporation has no obligation to correct any defects found in T&D Recorder for Windows.

■ Copyright

- The Copyright for T&D Recorder for Windows, including the program and relevant documents, belongs solely to T&D Corporation.
- The reprinting or redistribution for commercial purposes whether in part or in whole, in magazines or as a part of any product is strictly forbidden without the expressed consent of T&D Corporation. Any inquiries concerning commercial redistribution should be directed to the Sales Department of T&D Corporation.
- Please do not attempt to make any changes or modifications to T&D Recorder for Windows.

Table of Contents

Introduction

- Software User's Agreement. ii
- What is T&D Recorder for Windows® ? 1

Getting Ready

- Getting Started: The Basic Operations 3
- Installing the Software 5
- Using the Software 7
- Connecting the Data Logger to your Computer
 - Connecting with USB Cable 9
 - Connecting the USB cable to the TR-71U/72U unit. 10

Basic Functions

- TR-71U/72U
 - The Main Window 11
 - Starting Recording 12
 - Downloading Recorded Data 14
 - Other Functions. 16

Temperature / Humidity Graph

- Display Names and Functions 25
- Graph Maintenance
 - Changing the Method of Graph Display 29
 - Operating the Graph. 35

Other Functions

- Saving Recorded Data 37
- Creating Text File. 38
- Opening Saved Files 39
- Reinstalling the Software 40

Other

- Troubleshooting 41
- Specifications. 45

What is T&D Recorder for Windows® ?

◆ An Overview

T&D Recorder for Windows is a software program that enables you to easily make recording settings for our data loggers, download recorded data from the loggers, and then process that data into graphs, tables and /or save that data to files or print. Upon opening T&D Recorder for Windows, a launcher program will appear with several icons lined up. By clicking on an icon, a settings/communication display for the selected type of device or a graph display will appear.

In order to use the software, the following operational environment is necessary

OS	Microsoft Windows 98/Me Microsoft Windows NT 4.0 (USB communication not possible) Microsoft Windows 2000/XP
PC/CPU	IBM Compatible Pentium 90MHz or above USB Communication/Serial Communication (RS-232C D-Sub pin) possible
Memory	16MB or above
Hard Disk	4 MB or more of available space (more space necessary for data)
Monitor	VGA (SVGA (800×600) or above) /256 or more colors possible is necessary

◆ Basic Functions

● Recording Settings

Settings can be made for recording conditions such as channel name, recording interval, and recording mode. By making a recording start (date and time) setting in the main unit(s), the unit(s) will begin recording at that time on that date.

● Graph Display / Printing

● Simultaneous Display of 8 Ch. of Data

It is possible to display up to 8 channels of downloaded data in 1 graph.

● Zoom-in on Data by Mouse

By simple mouse operations, you can easily zoom in and out on data as well as change the display.

● View the High, Low, and Average Calculations for any Specified Period

Make settings to specify the calculation range you desire and view the high, low and average value for that range in each channel displayed in the graph.

- **Graph Printing**

It is possible to print in full-color the graph as you see it on display.

- **Data List Display / Printing**

You can view the data displayed in the graph window as a list and then choose to print.

- **View in Easy to Distinguish Colors**

In the data list, the highest value will appear in red, the lowest in blue, and the average in pink.

- **Printing the Data List**

It is possible to print the entire list as displayed or to select pages for printing.

- **Creating Text File**

It is possible to convert the data for a specified range (time period) to common text file format (CSV type format), so that it can be exported to spreadsheet software such as Excel or Lotus.

Getting Started: The Basic Operations

TR-71U/TR-72U



Connecting the Unit to your Computer

Connect the USB cable and set up so that the data logger and your computer can communicate.



Installing the USB Device Driver

By installing the USB device driver, your computer will be able to recognize a TR-71U/72U unit when it is connected. For more details about how to install the driver, see the TR-71U/72U Hardware Manual.



Installing the Accompanying Software

After installing T&D Recorder for Windows®, the 「TR-71U/TR-72U Quick Start Program」 will automatically open each time you start up Windows.



Making Recording Start Settings

NOTE:

Before making Recording Start settings, make sure that your computer's date and time are correct. If your computer's date and time are incorrect it will have adverse effects on the starting time for recording.



Downloading Recorded Data

By making settings in [Detailed Settings] before downloading, you can specify whether or not you wish to display a graph upon downloading, as well as, specify file names for saving files.

NOTE:

Before making Recording Start settings, make sure that your computer's date and time are correct. If your computer's date and time are incorrect it will have adverse effects on the starting time for recording.

Installing the Software

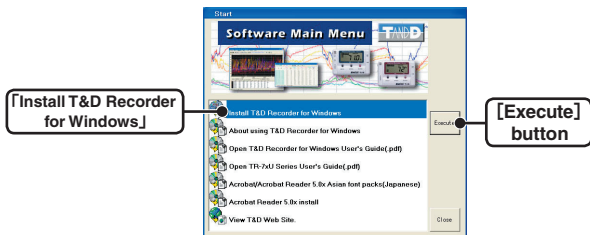
● Is Windows® operating properly ?

If Windows is not operating properly, T&D Recorder for Windows may not be installed correctly or it may not operate properly.

● Please quit all other applications.

If other programs are open, please close and quit all of them, making sure to quit all Quick Start programs such as a virus checker.

1. Open Windows.
2. Place the accompanying CD-ROM into your CD-ROM drive. In a few seconds, the 「Install Program」 window will appear.
 - If that window does not automatically open, please open it by double clicking the CD-ROM icon in 「My Computer」 on your desktop.



3. Select [Install T&D Recorder for Windows] and click the [Execute] button to start the installation.
4. To continue installation, follow the directions as they appear.

After installation has been completed the program 「T&D Recorder for Windows」 should appear in the [Start] Menu and the [TR-71U/72U Quick Start] will be registered in the [Start] Menu's [Start up] Program.

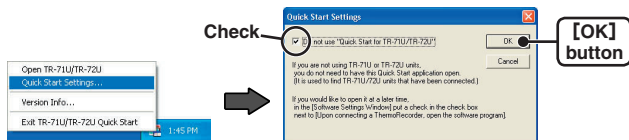
◆ What is TR-71U/TR-72U Quick Start ?

The 「TR-71U/TR-72 Quick Start」 is activated automatically each time you open Windows. It searches for and detects any USB connected TR-71U/72U unit and upon detection automatically opens the TR-71U/72U software program (Settings Display).

● Disabling the auto activation of the TR-71U/TR-72 Quick Start

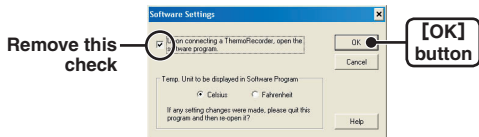
[From the Taskbar]

1. Click the Quick Start icon in the task tray and click on [Quick Start Settings].
2. Place a check next to [Do not use Quick Start for TR-71U/TR-72U] and click the [OK] button.



[From the Software]

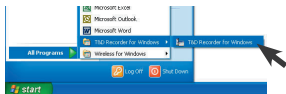
1. Click the TR-71U/72U icon in the Main Window. Then, in the Settings Display, under the [Settings] Menu select [Software Settings].
2. Remove the check from [Upon connecting a Thermo Recorder, open the software program], and click the [OK] button.



Using the Software

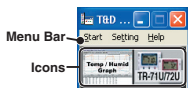
◆ How to Open

To open, in the Windows Start Menu, under Programs, click [T&D Recorder for Windows®].



◆ Main Window

Upon opening [T&D Recorder for Windows], a launcher program will appear with several icons lined up. By clicking on an icon, a graph display or a settings/communication display for the selected type of device will appear.



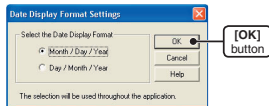
● Menu Bar

The menus along the bar contain various helpful commands. From each menu, you can select commands to view or make settings for each of the device types.

[Setting] Menu: Date Display Format Settings

The date format chosen will be applicable for all sections of the software including graphs and setting displays.

1. In the [View] Menu, select "Date Display Format Settings".
2. Check either "Month/Date/Year" or "Date/Month/Year".



3. By clicking the [OK] button, the setting will be completed.

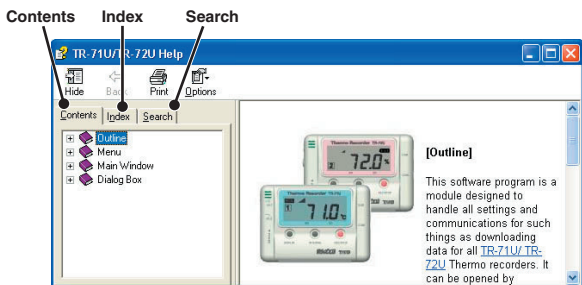
● Icons

By clicking an TR-71U/72U icon, you can open the Settings and Communication Display.


You can also open the Settings and Communication Display from the [Start] Menu in the Menu Bar.

◆ **For more detailed assistance on using the software, see the Help menu contained in the software.**

- By clicking on [Help] in the Menu Bar and then [Search by Topic] you will find three tabs (Contents, Index, and Search) to click on to help you search for the topic you are unsure about or have questions about.



[Contents]


By clicking on the classified topic  mark you will find explanations concerning that topic.

[Index]

Select a keyword from the keyword list and by clicking the [Display] button, the explanation for that topic will appear.

[Search]

Enter the keyword you wish to search for and click [Start Search]. All topics containing that keyword will be displayed. Select a topic and click the [Display] button to display the explanation for that topic.

- By clicking on the [Help] button in any dialog box, the explanation for that dialog box will appear.
- By clicking the  Toolbar in the Graph Display, you can then view explanations for menus, icons, and objects in the Main Window by clicking the question mark arrow on those items.

Connecting the Data Logger to your Computer

◆ Connecting a communication cable to your computer

Connect the USB cable (US-15C) to your computer.

USB Port Mark



The USB cable is a USB A plug ⇔ USB mini-B plug type.
Please connect to a place with this kind of mark.



USB mini-B plug

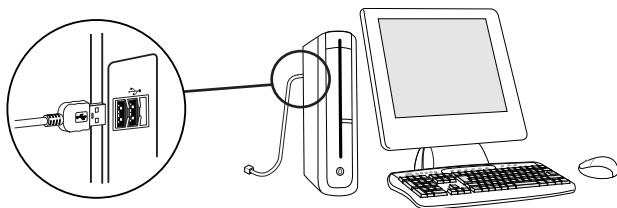


To the data logger

USB A plug



To your computer

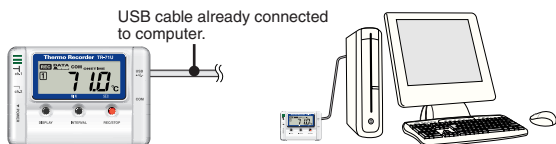


※ It is necessary to install a USB device driver. Please see the **Hardware User's Manual** for details about installation.

● To ensure proper communication, make sure that the USB cable connection is secure.

◆ Connecting the USB cable to the TR-71U/72U unit.

1. Connect the USB cable that is connected to your computer to the TR-71U/72U unit.

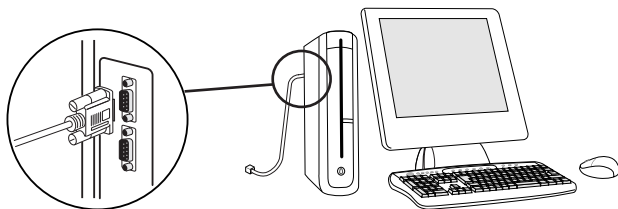


※ To communicate with a TR-71U/72U unit via serial communication cable, please use our optional serial communication cable TR-07C.

Examples of Serial Port Marks



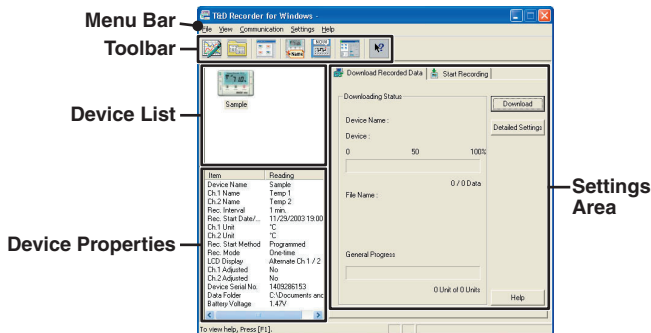
The communication cable jack is a D-Sub 9 pin male type.
Please connect to a place with this kind of mark.



- If the place of connection is incorrect, communication will not occur.
- To ensure proper communication, make sure that the communication cable connection is secure.

TR-71U/72U: Display Names and Functions

◆ The Main Window



● Menu Bar

The menus along the bar contain various helpful commands. From each menu, you can select commands to view or make settings for each of the device types.

● Toolbar

The commands that are used most frequently have been arranged as buttons.

● Device List

TR-71U/72U units connected to the computer by USB cable will be displayed as icons here. In order to make recording settings or download recorded data, it is necessary to first select a device from the device list. The type of icon used in the display can be changed in the [View] Menu.

● Device Properties

Information about the device selected in the device list will be displayed here. If more than one data logger has been selected no information will be displayed.

● Settings Area

By clicking on the [Download Recorded Data] tab or the [Start Recording] tab, you can open the settings display for that function.

TR-71U/72U: Starting Recording

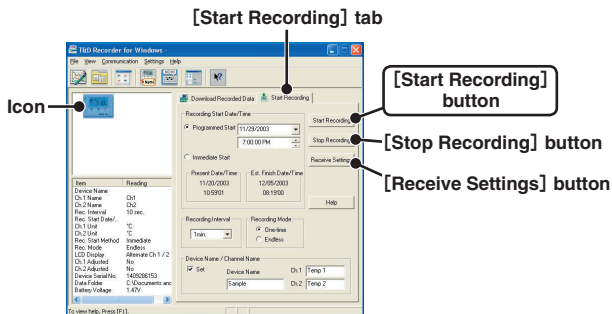
◆ Connect a TR-71U/72U unit to your computer so that communication can occur.

※ Please see p 9 -13 for more information about how to connect.

The first time you connect it is necessary to install the USB device driver.
For information about how to install the device driver please see the Hardware User's Manual.

◆ Setting the Recording Conditions.

1. In the Main Window, click on the [TR-71U/72U] icon.
2. Click on the icon of the data logger you wish to make settings for.
3. Click the [Start Recording] tab, and make the necessary settings.



● Recording Start Date/Time <Selections: Programmed Start / Immediate Start>

Programmed Start: recording will start on the specified date and time.

Immediate Start: recording will start immediately upon completion of settings.

● Recording Interval <Selections: 1,2,5,10,15,20,30 seconds and 1,2,5,10, 15,20,30, 60 minutes>

Click on ▼ and select the desired recording interval from the drop-down list.

● **Recording Mode <Selections: One-time/ Endless>**

One-time : When the possible number of recorded data readings (8000 readings per channel) is reached, recording stops.

Endless : When the possible number of recorded data readings is reached, the oldest data is overwritten and recording continues.

● **Device Name / Channel Name**

Make settings for each data logger concerning the device names and channel names.

Device Name : Up to 16 characters

Channel Name : Up to 8 characters

- 4 . After having completed the recording conditions settings, transmit the settings to the data logger by clicking the [Start Recording] button.
- 5 . After the transmission has been completed, a message will appear; click the [OK] button to activate the settings.

● **[Stop Recording] button**

Clicking this button will stop a recording session already in progress.

● **[Receive Settings] button**

Clicking this will allow you to view recording conditions settings and recording status information from the data logger.

TR-71U/72U: Downloading Recording Data

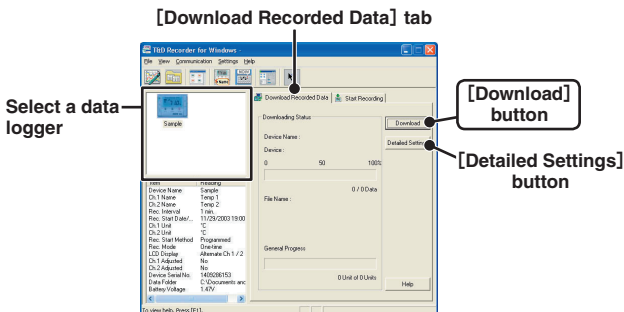
◆ Connect a TR-71U/72U unit to your computer so that communication can occur.

※ Please see p 9-13 for more information about how to connect.

The first time you connect it is necessary to install the USB device driver. For information about how to install the device driver please see the Hardware User's Manual.

◆ Downloading Recorded Data.

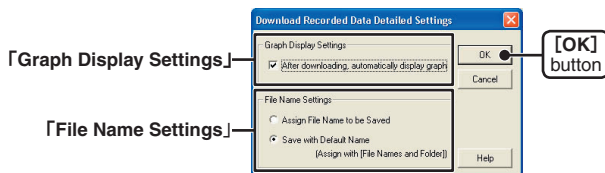
1. In the Main Window, click on the [TR-71U/72U] icon.
2. Click on the icon of the data logger you wish to download data from.
3. Click the [Download Recorded Data] tab



4. If you wish to automatically display the graph upon the completion of downloading, click the [Detailed Settings] button to make such a setting.
※ For more information about Detailed Settings see page 21.
5. Click the [Download] button to begin downloading data.
6. After downloading has been completed a graph will be displayed.

● [Detailed Settings] button

Make settings about how to process downloaded recorded data.



【Graph Display Settings】

By checking here, the graph for the downloaded data will automatically appear after downloading is completed.

Up to 8 channels of data can be simultaneously displayed.

NOTE:

If there are more than 8 channels of data, that data cannot be displayed automatically and must be opened from the data file.

【File Name Settings】

You can choose to save downloaded data using a default file name or by assigning a name each time.

1. Choose the type of processing you desire.

2. By clicking the [OK] button the setting will be completed.

※ You can specify the type of default file name under [File]—[File Names and Folders].

TR-71U/72U: Other Functions

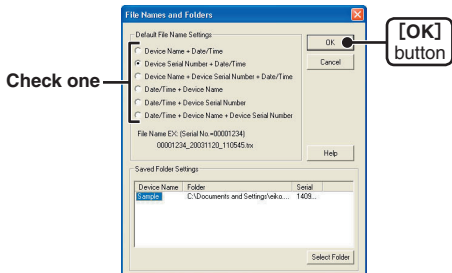
◆ [File] Menu : [Open Temp/Humidity Graph]

Opens the Temperature / Humidity Graph

◆ [File] Menu : [File Names and Folders]

Specify how you wish the files to be named upon downloading recorded data. Also you can select in which folder to save data for each device.

[Default File Name Settings]



1. Check which type of file name you wish to save data.

Example:

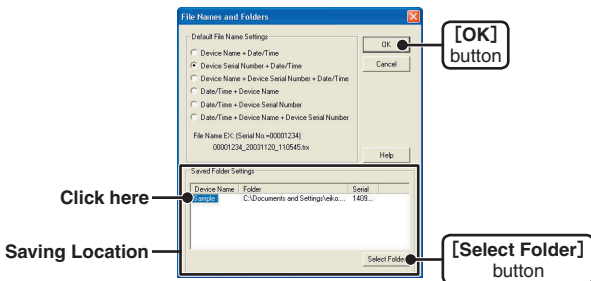
Device Name:Refrigerator/Serial No.:00001234/Date and Time:2003/05/12(yyyy,mm,dd) at 14:30:15/with Data Format Extension:TRX

- Device Name+Date/Time : Refrigerator_20030512_143015.trx
- Serial Number+Date/Time : 00001234_20030512_143015.trx
- DeviceName+SerialNumber+Date/Time : Refrigerator_00001234_20030512_143015.trx
- Date/Time+Device Name : 20030512_143015_Refrigerator.trx
- Date/Time+Serial Number : 20030512_143015_00001234.trx
- Date/Time+Device Name+Serial Number : 20030512_143015_Refrigerator_00001234.trx

2. By clicking the [OK] button, the settings will be completed

【Folder Settings】

Assign a saving location for the data file.



1. The TR-71U/TR-72U connected by USB cable to your computer will appear in the list.
2. Click the name of the device and then click the [Select Folder] button.
3. The [Browse Folders] dialog box will appear where in you can select the folder into which you wish to save the data, then click [OK].
4. A [Data Folder] will then appear under Device Properties in the Main Window.

The default setting will create and save data to a folder with the device's serial number in the folder where T&D Recorder for Windows was installed.

◆ 「View」 Menu : Large Icon / Small Icon

Changes the icon size in the Device List between large and small.



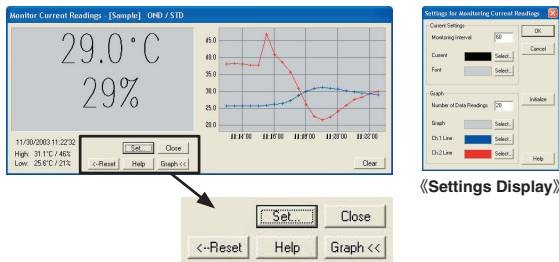
《Large Icon》



《Small Icon》

◆ 「Communication」 Menu : Monitor Current Readings

You can monitor at set intervals the current readings of data logger or loggers selected from the device list and have those readings displayed.



《Settings Display》

[Settings] button: This opens a window where settings can be made for the display colors and the monitoring interval for current readings.

[Close] button: Quit the Monitoring of Current Readings

[Reset] button: Click to reset the display for highest and lowest measurements; the new display will show highest and lowest measurements from the time of resetting.

[Graph] button: Click this to hide or view the graph.

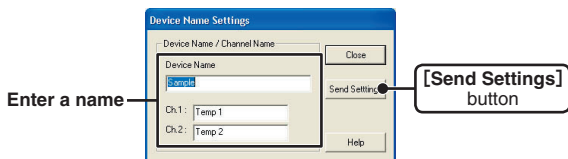
[Clear] button: Clicking this will clear the graph and a new graph will be drawn from that point.

◆ 「Communication」 Menu : Search for TR-71U/TR-72U

If a TR-71U or TR-72U is connected, but does not show up in the Device List, click this to search for Thermo Recorders by scanning the USB ports.

◆ 「Settings」 Menu : Device Name Settings

Settings can be made for Device Names and Channel Names.

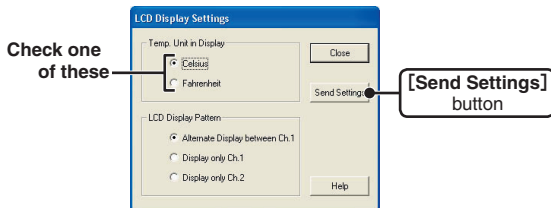


1. Enter a name.
 - Device Name: up to 16 characters
 - Channel Name: up to 8 characters.
2. By clicking the [Send Settings] button, the changes will be completed.

◆ 「Settings」 Menu : LCD Display Settings

Settings can be made for the Thermo Recorder's LCD display, such as, changing the temperature unit and turning the display on or off.

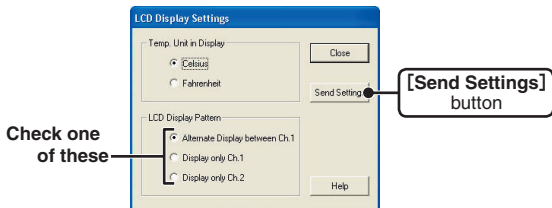
[Temp Unit in Display]



1. Check either Celsius (°C) or Fahrenheit (°F).
2. By clicking the [Send Settings] button, the changes will be completed.

【LCD Display Pattern】

You can select the LCD display from 3 patterns: Alternate display between Ch. 1 and Ch. 2, Display Ch. 1 only, or Display Ch. 2 only.



- 1 . Check one of the patterns.
- 2 . By clicking the [Send Settings] button, the changes will be completed.

◆ 「Settings」 Menu : Adjustment

By setting adjustment values beforehand, you can record and display the post-adjusted measurement values. You can choose from two adjustment methods: 1-point and 2-point. Adjustment will be carried out using an adjustment equation of $Y = aX + b$; where X is the pre-adjusted measurement value and Y is the post-adjusted value.

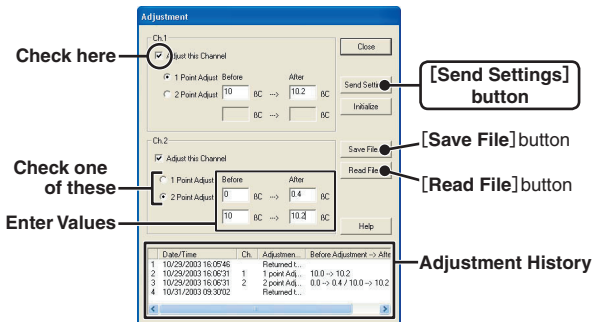
● Rough Guidelines for Adjustment

- 1 point Adjustment: Use when measuring in a range of $\pm 20^{\circ}\text{C}$.
- 2 point Adjustment: Use when measuring in a wide range.

NOTE:

- When adjusting at 2 points, make sure the difference in points is at least 10°C .
- When measuring in a wide range and adjusting at 2 points, make sure that the adjustment values reflect the range you are measuring.
- We cannot guarantee that after carrying out adjustment the measuring accuracy will improve for all measuring ranges.

1. Check the channel you wish to adjust.



2. Check either [1 Point Adjustment] or [2 Point Adjustment].

[1 Point Adjustment]

This adjustment method changes only the offset (b) where the slope (a) is considered 1.

For example, TR-71U is measuring 10°C, but the standard says the actual measurement should be 10.2°C. Enter 10 in the Before Adjustment box and 10.2 in the After Adjustment box. The conversion equation will be $Y = X + 0.2$ and for all measurements an adjustment to the offset of +0.2 will be made.

[2 Point Adjustment]

The adjustment equation will be calculated from two points: the slope (a) and the offset (b).

For example, the TR-71U reads 0°C when the standard thermometer reads 0.4°C, and TR-71U reads 10°C when the standard says the true measurement is 10.2°C. In this case the slope (a) is $10.2 - 0.4 / 10 - 0 = 0.98$. The offset is 0.4, so the conversion equation becomes $Y = 0.98X + 0.4$. The range of the slope is $0 < a <= 2$. Entries are valid to one decimal point, but after calculation up to four digits are valid for the slope and offset.

- 3.** Enter the adjustment values.
- 4.** By clicking the [Send Settings] button, the adjustment settings will be completed.
 - The data logger can store up to 4 adjustment values, the adjustment history will display up to 4 channels at one time.

● [Save File] button

Assign a name to the adjustment setting values and save them to a file.

● [Read File] button

Read adjustment setting values from a saved file.

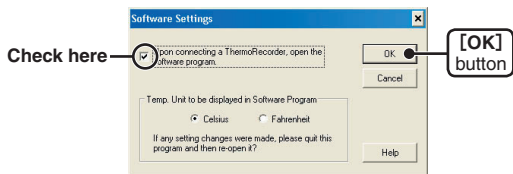
◆ 「Settings」 Menu : Software Settings

General software settings for TR-71U/TR-72U can be made here.

【Upon connecting a Thermo Recorder, open the Software Program】

This setting opens the software program upon the connection of a TR-71U/TR-72U unit via USB cable. If the setting is ON, the Quick Start Program will periodically communicate with the device driver and upon the detection of a USB connection will open the main software program.

1. Place a check next to [Upon connecting a Thermo Recorder, open the Software Program].

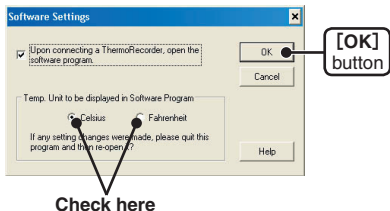


2. Click [OK] to complete the setting.

【Temp. Unit to be displayed in Software Program】

Select whether to use Celsius or Fahrenheit as the displayed unit of temperature when monitoring current readings and using the adjustment function.

1. Check either unit of temperature (Celsius or Fahrenheit).



2. Click [OK] to complete the setting.
3. After completing settings, please close the TR-71U/72U program and reopen it to make settings effective.

Temperature/Humidity Graph

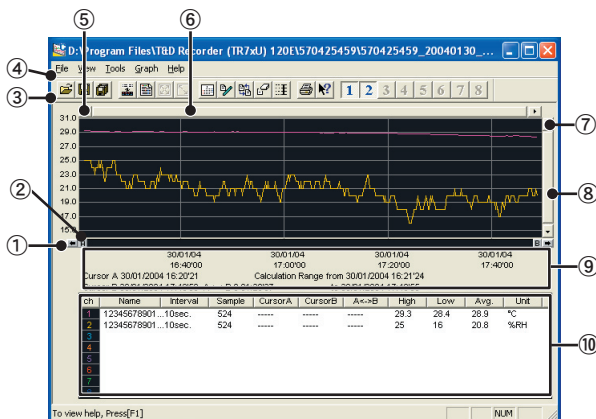
◆ How to Open

- Open the Graph display by clicking the icon [Temp/Humid Graph] in the Main Window.



- To open the graph program, click on [Open Temp/Humidity Graph] in the Settings/Communication Display under the [File] Menu
- If you have checked [After downloading, automatically display graph] in the detailed settings, the graph program will automatically open.

◆ Display Names and Functions



① **A and B Cursor Movement Buttons**

By clicking the arrow buttons, you can simultaneously move the A/B cursors.

② **A and B Cursor Buttons**

Click and drag the A or B button to move the cursor to the left or right.

③ **Toolbar**

Buttons appear for frequently used commands.

④ **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.

⑤ **Button for Moving Horizontal Axis**

The time axis moves by clicking these arrow buttons.

⑥ **Horizontal Gauge Bar**

By dragging the gauge you can move left and right to the data you want to be displayed.

⑦ **Button for Moving Vertical Axis**

The vertical axis moves up or down by clicking these arrow buttons.

⑧ **Vertical Gauge Bar**

By dragging the gauge you can move up and down to the data you want to be displayed.

⑨ **A and B Cursor Position Information**

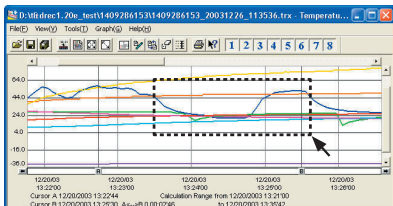
The approximate date and time for the A and B cursor positions and the time difference between the A cursor and the B cursor is displayed.

⑩ **Channel Info List Display**

The detailed data info for each channel 1 to 8 is displayed below the Graph Display.

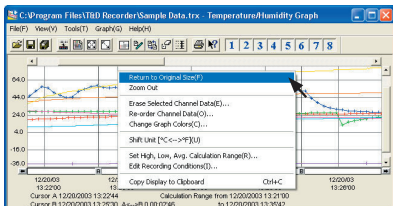
● Zoom in Using the Mouse

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.

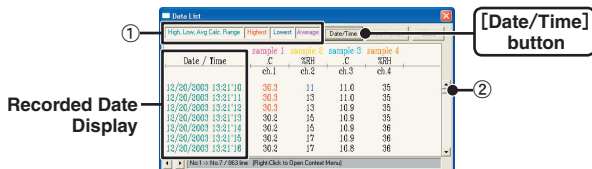


◆ Data List Display : From the [View] Menu

This is a list of the data that was displayed in graph form.

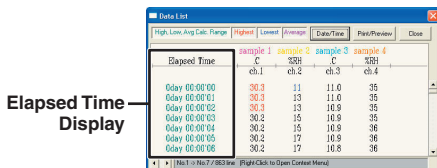
● [Date/Time] Button

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



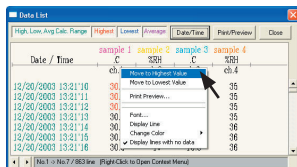
① The highest value is in RED, lowest is in BLUE, and the average is in PINK.

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.



Graph Maintenance

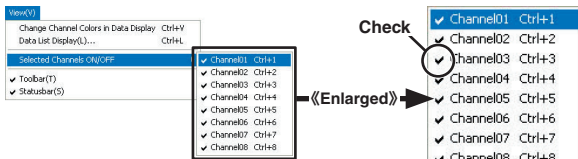
■ Changing the Method of Graph Display

● Changing graph display colors : From the [View] Menu

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

● Selected Channels ON/OFF : From the [View] Menu

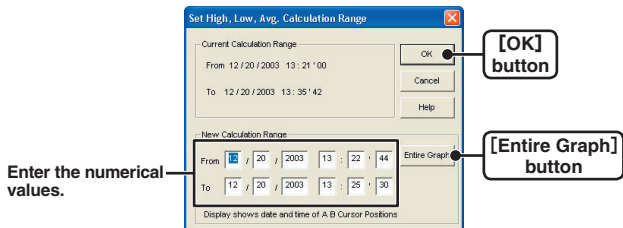
1. By moving the mouse to [Selected Channels ON/OFF], the channel numbers are displayed.
2. Click the channel number you wish to view or hide.



※ The same operation can be done by clicking on the channel number icons in the Toolbar.

● Set High, Low, Average Calculation Range : From the [Tools] Menu

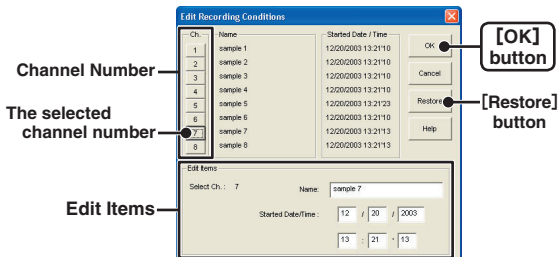
1. Set the calculation range in the [Set High, Low, Avg. Calculation Range] box.



- By clicking the [Entire Graph] button, the dates and times for the entire graph will be displayed.
 - If in the graph display, you place the A cursor at the position for the beginning of the calculation range and the B cursor at the end of the range, those dates and times will appear as the new range in the [Set High, Low, Average Calculation Range] Display when it is opened.
2. By clicking the [OK] button, the high, low, and average values for each channel of data in the list will be changed. In the graph display, the data for the calculation range that you have set will be displayed.

● Edit Recording Conditions : From the [Tools] Menu

1. By clicking the [Ch.] button of the channel you wish to edit, the [Name] and [Started Date/Time] in the "Edit Items" display will show info for that channel number.



- Name: Up to 32 letters can be entered.
 - Starting Date/Time: The month, day, year, hour, minute and second can be changed.
2. By clicking the [OK] button after changing, the setting will be completed.
- If you wish to continue to change other channels, repeat the process as in 1.
- ※ The [Restore] button is only effective while making changes. After clicking the [OK] button the settings cannot be restored to the original settings.

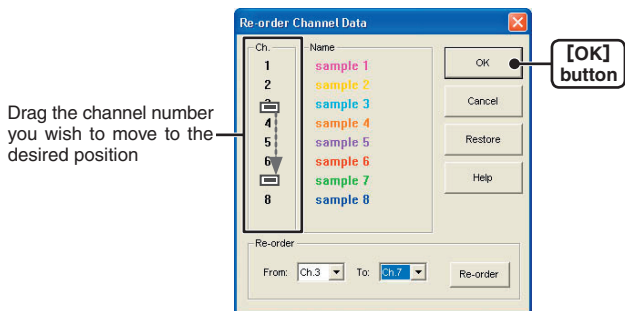
● Re-order Channel Data: From the [Tools] Menu

You can re-order the data during graph display.

There are two methods to use when re-ordering channels: [Re-order by Dragging a Channel Number] and [Specify the Channel Numbers to be Moved].

【Re-order by Dragging a Channel Number】

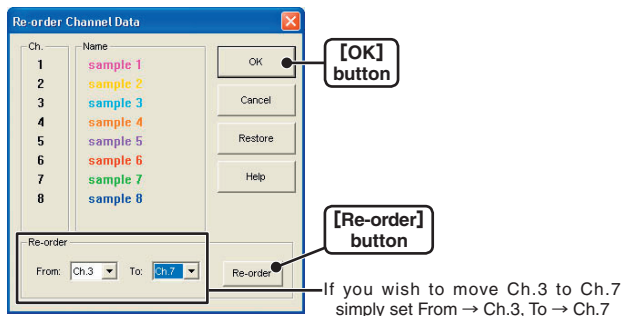
Drag the channel number you wish to move to the newly desired channel number position and drop it.



[Specify the Channel Numbers to be Moved]

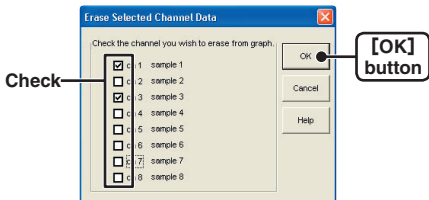
1. Specify the channels to be moved From: (original position)
To: (desired position).
2. Click [Re-order] button to complete the re-ordering process.

※ The [Restore] button is only effective while making changes. After clicking the [OK] button the settings cannot be restored to the original settings.



● Erase Selected Channel Data : From the [Tools] Menu

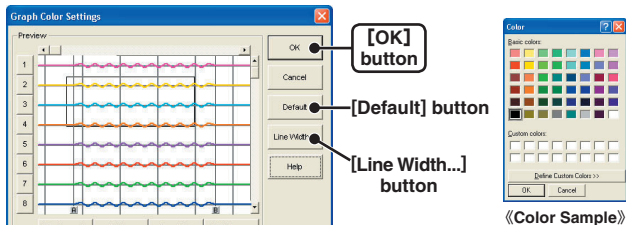
1. Put a check on the channel number you wish to erase.
2. By clicking on the [OK] button, the deletion will be completed.



● Shift Unit (°C / °F) : From the [Tools] Menu

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 : From the [Tools] Menu

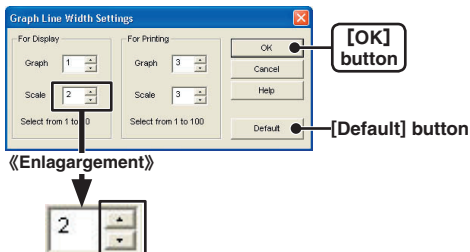


1. Click the channel number of which you wish to change the color.
2. By clicking each button, color samples will be displayed. Choose the color you want and click the [OK] button.
3. After confirming the color, by clicking the [OK] button the change will be completed.

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

【Graph Line Width Settings】

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



- Every time you click on ▲, the numerical value gets larger.
- Every time you click on ▼, the numerical value gets smaller.

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

● 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 by pasting to other software.

■ Operating the Graph : [Graph] Menu

● Return to Original Size

Clicking here will return the graph to its original size.

● 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.

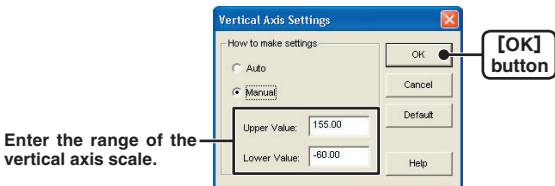
● Vertical Axis Settings (AUTO in Default Settings)

Set the vertical axis scale (temperature)

1. Check either [Auto] or [Manual].

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.



2. Click [OK] to complete the settings.

Saving Recorded Data

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.

■ 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...]

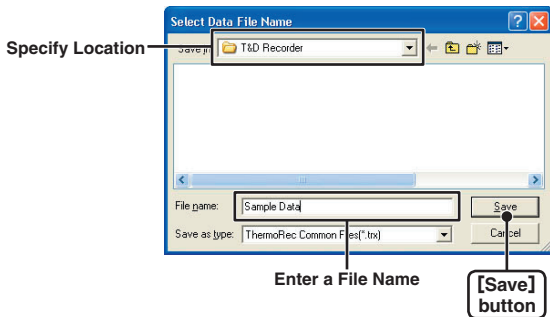
Save with a new File Name.

● 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. Click [Save All Data as...] in the [File] Menu.
2. Specify the [Location] and enter a [File Name].

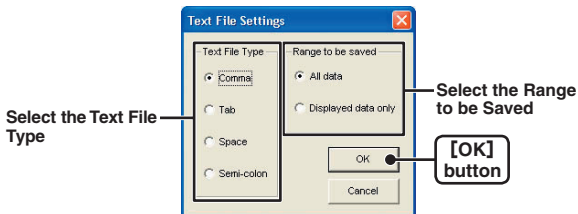


3. Click [Save] to complete the saving process.

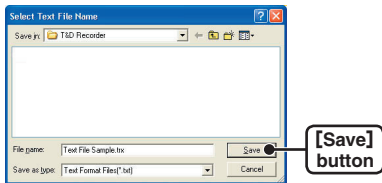
Creating Text File

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

1. Click [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.



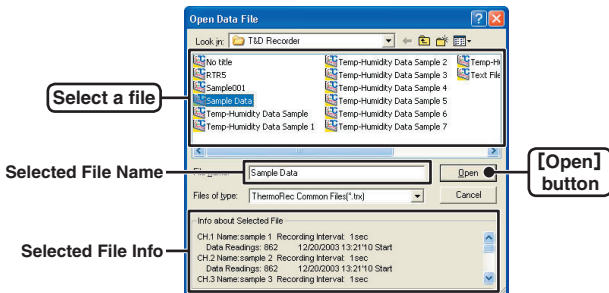
- The extension for the created file will be [.txt].

※ Text File cannot be read into T&D for Windows graphs.

Opening Saved Files

To open a previously saved file, designate the file name to open it.

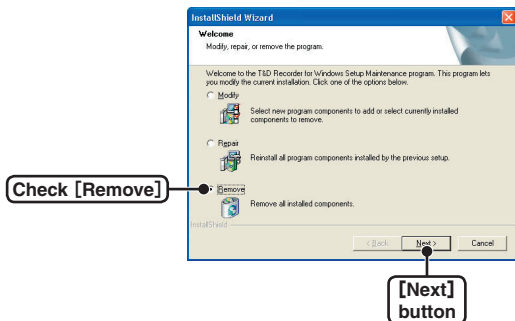
1. Click [Open] in the [File] Menu
2. Select the name of the data you wish to open and click [Open] to view the data in graph form.



Reinstalling the Software

Before reinstalling or updating the software, make sure to carry out the uninstall program first. Before you begin the uninstall program, first make sure to quit all T&D Recorder for Windows programs.

1. In the Windows Control Panel, click on [Add/Remove Programs].
2. From the list of currently installed programs, select [T&D Recorder for Windows] and click the [Add / Remove] button.
3. The [Install Shield Wizard] will appear. Check [Remove], and click [Next].



4. Follow the directions to Uninstall.
 5. To reinstall, follow the directions to [Install].
- Even after uninstalling, saved data files will still remain in the folders and locations they were saved in. Also, saved Remote Unit registration info may still remain. If you wish to delete all of these data and registration files, make sure to delete all of the relevant folders after uninstalling but before reinstalling.

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.

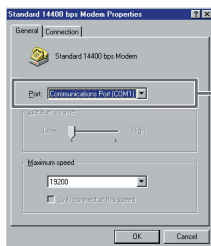
For Windows XP or 2000

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 XP or 98

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-RSAQ2」 and 「ELECOM UC-SGT」 Serial-USB conversion cables. If you are using an NEC Lavie J Notebook Computer (NEC LJ-500), please use 「I.O DATA USB-RSAQ2」

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.

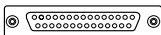
A: If your desktop computer has two serial ports, try connecting the communication cable to the other port and try communicating again.

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

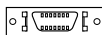
A : Please connect the communication cable provided with the Thermo Recorder into the serial port of your computer (D-SUB 9 pin male connector). If for some reason you cannot connect directly, please use an appropriate adapter (gender changer plug) as explained below.



《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.

Specifications

Compatible Devices	TR-71U • TR-72U
Communication Functions	Recording Start (Immediate Start/Programmed Start) • Recording Stop • Main Unit Settings (Recording Interval • Recording Method • Upper and Lower Limits • Permission to Start Recording by Wireless Communication) • Downloading of Recorded Data
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	Channel Name • Recording Interval • Number of Readings • Highest, Lowest and Average Reading • Unit of Measurement • AB Cursor Dates/Times and Data Readings • Calculated Difference between Cursor A and B
Number of Channels	8 Channel Simultaneous Display and Processing Possible to process mixed data from TR-71U and TR-72U units. (up to 4units.)
Others	Data List Display • Calculation Range Settings • Data Maintenance • Edit Recording Conditions • Delete Data by Channel • Re-order Data by Channel
Others	Serial Port Auto Find Function
File Output	T&D Common Data File • Text File (CSV, etc) • (Selected Range or File for Entire Period)
Printing	Graphs/Tables
Compatible	
OS	Microsoft Windows® 98/Me Microsoft WindowsNT® 4.0 (USB communication not possible) Microsoft Windows® 2000/Xp
PC/CPU	IBM Compatible with higher than Pentium 90MHz Serial Port (RS232-C D-sub 9pin)
Memory	More than 16 MB
Hard Disk	More than 4MB of free space (Data will need more space)
Monitor	VGA (640 × 480) more than 256 colors

■ For product information or questions contact us at:

T&D CORPORATION

5652-169 Sasaga Matsumoto, Nagano Japan 399-0033

Tel: +81-263-27-2131

Fax: +81-263-26-4281

E-mail: overseas@tandd.co.jp

Office Hours: Monday to Friday 9:00-12:00/13:00-17:00
(GMT +9:00 Tokyo Time)

[Home Page]

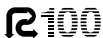
We have opened an English Homepage called "T&D Online" for your convenience. Here you can find information about our company, news, products, upcoming events, software and user's Manual downloads, as well as, other support. Please stop by and see what we have to offer.

<http://www.tandd.jp/>

T&D Recorder for Windows User's Manual

Published by T&D CORPORATION

© Copyright 2002-2004 T&D Corporation. All rights reserved.



This is printed on 100% recycled paper.

