Network Base Station

RTR-500NW
RTR-500AW

Introductory Manual

Thank you for purchasing our product. This manual explains in brief how to get an RTR-500NW/500AW unit ready for use and how to install the software.

> Details about how to use the software "RTR-500W for Windows" and its functions can be found in the software "Operation Guide (Help)".

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Registering Devices and Making Settings

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Notices

Carefully read this manual so that you can properly use this product.

T&D Corporation accepts no responsibility for any malfunction of and/or trouble with this product or with your computer that is caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair of the attached warranty.

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- Company names and product names are trademarks or registered trademarks of each company.
- Specifications, design and other contents 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 this 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 Website:
  http://www.tandd.com/

Software User Agreement

Disclaimers

- T&D Corporation does not guarantee the operation of RTR-500W for Windows.
- T&D Corporation shall not accept any responsibility for any damage, whether direct or indirect, that results from the usage of RTR-500W for Windows.
- Specifications of RTR-500W 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-500W for Windows.
- T&D Corporation has no obligation to correct any defects found in RTR-500W for Windows.

Copyright

- The Copyright for RTR-500W 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 inquires 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 RTR-500W for Windows.

Safety Precautions and Instructions

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.

Before using this 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.
●	Denotes an action that must be taken.

⚠ DANGER

When installing and using this Unit, make sure to follow all warnings and directions from your computer manufacturer.

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

If water or a foreign body enters the Unit, immediately disconnect AC adaptor and communication cables, and stop using.
Continued use may cause fire or electrocution.

Do not use this Unit in wet or humid places, such as a bathroom.
Doing so may cause fire, electrocution, and/or malfunction.

Store the Unit, AC adaptor and communication cables out of the reach of children.
Not doing so may result in unexpected accidents and injury from playing with or swallowing parts.

Do not connect any communication cables connected to the Unit to telephone line outlets.
Continued use may cause fire or electrocution.

If any smoke or strange smells are emitted from the Unit, immediately disconnect the power and communication cables.
Continued use may cause fire or electrocution.

Do not drop the Unit, or expose it to a strong impact. If that happens, immediately disconnect the power and communication cables and stop using.
Continued use may cause fire or electrocution.

Make sure to periodically remove dust and dirt from the AC adaptor plug. When performing maintenance please make sure to disconnect the plug from the outlet.
If dust accumulates on the plug, moisture may cause poor insulation and result in fire.

Do not unplug the AC adaptor with wet hands.
This may cause electrocution.

⚠ CAUTION

⚠ Please note that this Introductory Manual has been written based on the presupposition that details about contracts with an Internet provider, specific network environments and the set-up of any other necessary equipment to enable network connection has already been taken care of by the User and that connection has been confirmed as workable.

T&D Corporation shall not be responsible for any damages which a contractor, a user or a third party may suffer, whether direct or indirect, due to the inability to communicate or use communication devices.

Further, T&D is not responsible for any damage, malfunction or trouble, whether direct or indirect, caused by the use of our products.

This Unit has been designed for private and/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.

Harmful gases or chemicals may cause corrosion and/or other danger to the Unit. Also, coming in contact with hazardous substances, may cause harm to people handling the Unit. Therefore, do not use or store the Unit in any environment that is exposed to chemicals and/or harmful gases.

This Unit is not waterproof.

If the Unit gets dirty, wipe it with a clean cloth.

Do not store, leave, or use the Unit in any place exposed to direct sunlight, high temperature, extremely low temperatures, or high humidity.

This may cause deformation to both the outside casing and the inside. It may also cause condensation on the inside of the Unit leading to fire or electrocution.

Please do not insert fingers or foreign objects into cable connection jacks.

Make sure that all cable plugs are inserted fully, so as not to cause an improper connection. Also, when unplugging cables from the Unit, do not pull the cord, but hold the connector to disconnect.

Do not cut or process the cords for the AC adaptor or the communication cables. Also, do not twist, pull on or swing any of the cords.

Do not use an AC adaptor other than one that is specified for use with the Unit.

It may cause fire or malfunction.

Do not put anything on top of the AC adaptor.

This may cause overheating.

To prevent damage to the Unit from static electricity, remove static electricity from your body by touching metal around you (door knob, window frame) before touching the Unit.

Static electricity may cause not only damage to the Unit, but may cause breaks in or a loss of data.

Do not disconnect the communication cable during wireless communication or LAN communication.

This may harmfully effect the Unit or your PC.

T&D cannot guarantee the Unit's operation if it has been connected to a PC using a USB hub or a USB extension cable.

Do not use or store the Unit in the following places:This may cause electrocution, fire and/or other adverse effects to the Unit and/or other surrounding devices.

Areas exposed to direct sunlight

This will cause the inside of the Unit 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 static electricity.

This may cause damage including malfunction.

Areas exposed to excessive vibration

This may cause injury, malfunction, damage or loss of proper electrical contact.

Areas that are not flat or level

This may cause the Unit to fall and result in injury and/or damage.

Areas exposed to fire or overheating.

This may cause damage including malfunction and deformation.

Areas prone to fire, smoke, dust and dirt

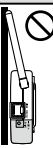
This may cause damage including malfunction.

Notes and Precautions for Installing Wireless Communication Devices

When installing wireless communication devices take special care in selecting locations so as to ensure proper communication.
Note that even after a successful installation, due to changes in environmental conditions, communication errors may occur when restarting the system.

As far as possible, try to keep wireless communication devices away from metals and set them up in high unobstructed positions.

- Please take note that in many instances, walls, floors, stairs, fences and desks will contain metals. In order to carry out communication between indoor and outdoor Units, please locate indoor Units near a window so that radio waves can be easily transmitted.
- Please install these devices more than 30cm away from walls or boards containing metal.
- If wireless communication Units are placed in a metal container such as a freezer or refrigerator, the possible wireless communication range will be shortened. In most cases radio waves are transmitted via doors and door openings so place devices as near to doors as possible.



Place so that the antenna is away from objects or walls.

As far as possible, keep the devices away from noise-emitting sources.

- Equipment such as some industrial instruments, electronic devices or fluorescent lamps generate noise. Please place Units more than 1 meter away from such devices.
- Please place Units more than 1 meter away from computers and other devices which emit noise.
- Keep all wires as far away from wireless communication devices as possible. Please be careful about placing near any wiring or cables such as power supply cables, telephone wires or LAN cables.

Objects which contain lots of water, such as plants or soil, absorb radio waves. We highly recommend that such materials should not be placed between or near wireless communication Units.

- When measuring temperature in a greenhouse it has been reported that as plants grew, communication errors also increased.
- Do not place Units directly on the ground.

Do not place devices which are using the same communication frequency channel in the same area.

- If the same channel is used for multiple devices not only will more communication errors occur, but battery life will also be shortened.
- If there is a possibility that devices with the same frequency channel will be in wireless communication at the same time, please make sure to make changes to the frequency channels so they are not the same.

After having made an installation, check the wireless signal strength.

- The supplied software application includes a feature to check for wireless signal strength. In the RTR-500W Settings Utility in the "Wireless Route Settings" menu it is possible to check click signal strength.
- Note that by moving Units 20 cm in any direction may result in communication results being significantly changed.
- If no change occurs after moving the Units to several nearby locations, we strongly suggest adding one or more Repeaters (RTR-500) to enhance communication.

⚠ Compliance Information

CE Statement

CE

This device complies with technical specifications required under EN 301 489 (with battery and AC Adaptor), EN 300-220, and EN 60950-1.

⚠ Important Notice

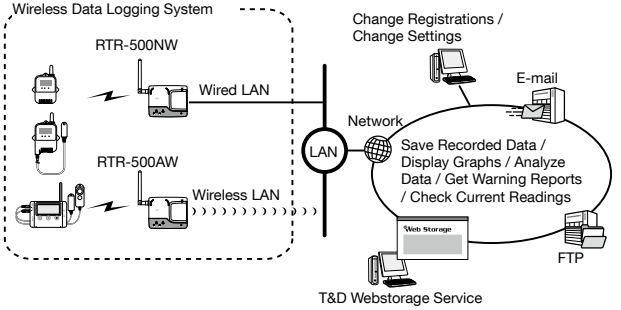
Wireless products cannot be used in countries other than where those products have been approved for use, according to that country's wireless regulations.
T&D Corporation shall in no manner whatsoever take responsibility for the usage of these products, nor be liable in any manner for legal consequences stemming from the usage of these wireless products in unapproved areas.

Features of RTR-500NW/500AW

Please note that this Introductory Manual has been written based on the presupposition that details about contracts with an Internet provider, specific network environments and the set-up of any other necessary equipment to enable network connection has already been taken care of by the User and that connection has been confirmed as workable.

T&D Corporation shall not be responsible for any damages which a contractor, a user or a third party may suffer, whether direct or indirect, due to the inability to communicate or use communication devices.

RTR-500NW/500AW are LAN enabled communication base stations designed to carry out wireless communication with our RTR-500 Series Data Loggers.



After having registered an RTR-500NW/500AW as a Base Unit and making various settings, the Unit will automatically carry out a series of actions according to settings.

It can be set up to periodically download recorded data and current readings from Remote Units, and send this data via e-mail to specified addresses, or by FTP to a server including T&D's WebStorage Service. Moreover, the Unit can be set up to monitor for warnings and send warning reports via e-mail.

RTR-500NW is for use with a wired LAN

RTR-500AW is for use with a wireless LAN (802.11b/g)

Make Registration Changes via Network

After making initial settings via USB it is possible to make all registration changes and settings via network.

Monitoring Current Readings and Viewing Recorded Data via Web Browser

By sending recorded data or current readings to the T&D WebStorage Service it is possible to check and share data via a web browser. T&D WebStorage Service is a free web-based storage service provided by T&D Corporation. For details, follow the link below.

T&D Web Storage Service
http://www.webstorage-service.com/

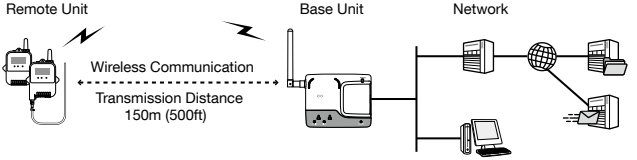
What are "Base Units", "Remote Units" and "Repeaters"?

Base Unit: RTR-500NW / RTR-500AW

Base Unit collects via wireless communication current readings and data measured by and recorded in Remote Units as well as monitors for warnings.

Remote Unit: RTR-501 / 502 / 503 / 505 / 507S / 574 / 576

A Remote Unit is a Data Logger designed to measure and record various items such as temperature, humidity and so on. The wireless communication range between a Remote Unit and a Base Unit, if unobstructed and direct, is about 150 meters [500 ft].



RTR-501 / 502 ---------- Temperature
RTR-503 / 507S ---------- Temperature and Humidity
RTR-574 ---------- Illuminace, UV Intensity, Temperature, and Humidity
RTR-576 ---------- CO_2 Concentration, Temperature, and Humidity
RTR-505 *
RTR-505-TC / 505-Pt --- Temperature
RTR-505-V ---------- Voltage
RTR-505-mA ---------- 4-20mA (Current)
RTR-505-P ---------- Pulse

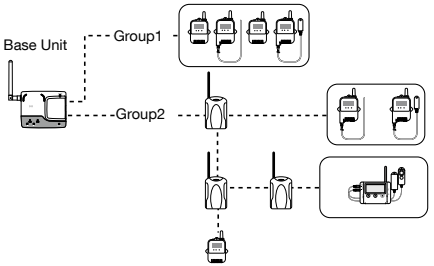
* RTR-505-TC, 505-Pt, 505-V, 505-mA, and 505-P are collectively referred to as the "RTR-505".

Repeater: RTR-500

If wireless communication cannot successfully be carried out due to obstacles, or if you wish to extend the wireless communication range, please add Repeater(s) between Remote Unit(s) and the Base Unit.

About Registration

It is first necessary to register Remote and Repeater Units (where needed) to a Base Unit. It is possible to register them into Groups by place or by purpose. A Wireless Communication Frequency Channel is then assigned to each Group to help avoid interference and poor transmission. Remote Units and Repeaters cannot be registered to more than one Group.



Basic Procedure Flow

The following shows the basic flow of procedures.
Details about contracts with an Internet provider, specific network environments and the set-up of any other necessary equipment to enable a network connection should be taken care of by the User. Before getting started the connection should be confirmed as workable.
(M) denotes items found in this Manual.

Getting Ready

1. **Getting the Base Unit Ready and Checking the Network**
   (M) Checking the Package Contents and Inspecting the Unit
2. **Installing the Software**
   (M) Precautions before Installation and Installation Procedure
   (M) Software Operating Environment
3. **Installing the USB Device Driver**
   (M) Installation Procedure
   (M) Checking the USB Device Driver for Base Units, Remote Units and Repeaters
4. **Getting Ready the Remote Units and Repeaters (where necessary)**
   Follow directions in the User's Manual that accompanies the Remote Unit or Repeater.

Registering Devices and Making Settings (using software)

Use the "Settings Utility" application to make Base Unit Settings, Remote Unit Settings, Repeater Settings, Current Readings Settings, Warning Report Settings, and Auto-Download Settings. For details, please see the "Operation Guide" or "Help" menu in the "RTR-500W Settings Utility ".

(M) Opening Applications and the Operation Guide
(M) Registering Devices and Making Settings
(Checking Base Units before making Settings / Connecting Remote Units for Registration)

Starting Operation

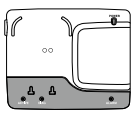
Notes about Operation
(M) Connecting the AC Adaptor
(M) Useful Features and Functions
(M) LED Lamp Display
(M) External Contact Output / Input Terminals
(M) Product Specifications, Other

Getting Ready

This section explains what needs to be done before registrations and settings can be made.

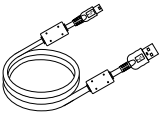
Package Contents

Please check that he following items are included in the package:

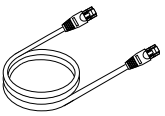


RTR-500NW or RTR-500AW

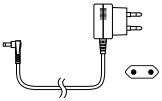
Antenna



USB Mini-B Cable (US-15C)



LAN Cable (LN-20W)
*Only use for RTR-500NW



AC Adaptor (AD-06C1)

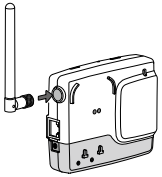
Software CD-ROM

Introductory Manual (This Manual including warranty)

Make sure to install the software before connecting the Unit to a PC with the USB cable.

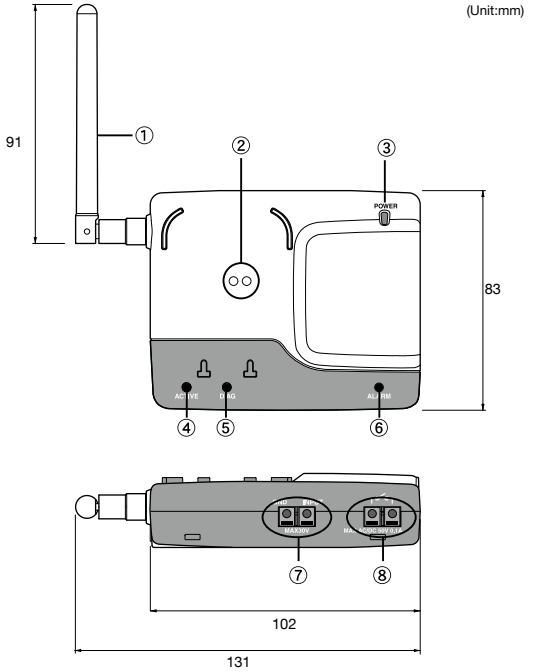
Connecting the Antenna

Connect the supplied antenna to the antenna connector.



Appearance Diagram and Part Names

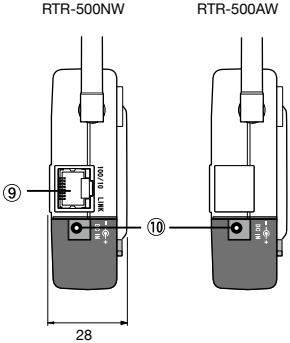
Front and Bottom



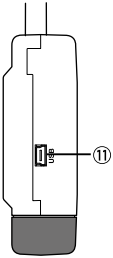
① Antenna
② Optical Communication Area
③ POWER LED
④ ACTIVE LED
⑤ DIAG (Diagnosis) LED
⑥ ALARM LED
⑦ External Input Terminal
⑧ External Output Terminal

Sides

Right



Left



(Unit:mm)

⑨ LAN Cable Connector (RTR-500NW only)
⑩ AC Adaptor Jack
⑪ USB Mini Connector (Mini-B)

From hereafter in this manual, RTR-500NW/500AW units will be referred to as the "Unit".

Installing the Software

Make sure to install the software before connecting the Unit to a PC with the USB cable.

If you have connected a Unit to your computer before installing the USB device driver, make sure to click the [Cancel] button in the Wizard window when it pops up on the computer display. Then disconnect the USB cable from the Unit.

Before Installing the Software

Is Windows working properly?

If Windows is not operating properly, the software may not be installed correctly or it may not operate properly.

Make sure to check that the OS you are running and "RTR-500W for Windows"are compatible.

Microsoft Windows 10 32 / 64 bit

Microsoft Windows 8 32 / 64 bit

Microsoft Windows 7 32 / 64 bit

Microsoft Windows Vista 32 bit (SP1 or later)

For details about the necessary operating environment, see page 37.

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.

To install "RTR-500W for Windows", it is necessary to have Administrator rights (Computer Administrator) for the computer in which you wish to install it.

RTR-500W for Windows Installation Procedure

1. Start Windows and login using a User Account with Administrator (Computer Administration) rights.
2. Place the CD-ROM into your CD or DVD drive.
3. The [Install Program] window will appear.

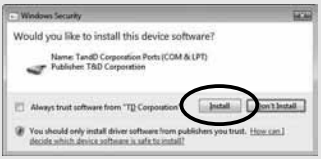
If the [Auto Play] window appears:
Click on [Run start.exe].

If the [Install Program] window does not appear automatically:
Click on the [start.exe] icon in the CD/DVD drive.

4. Select “Install RTR-500W for Windows” and click the [Execute] button to start the installation.

5. Follow the directions as they appear to complete the installation.

If a window appears such as the one below during installation, choose [Install] .



6. After installation, “RTR-500W for Windows” will appear in the Windows Start Screen or Start Menu.

Installing the USB Driver

Have you already installed the supplied software?

Before connecting a Unit to a PC with a USB cable make sure to install the supplied software first.

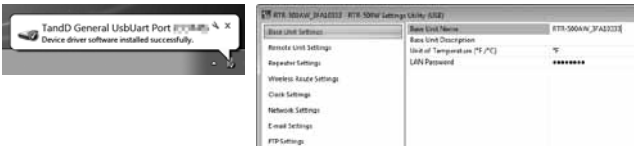
If the Base Unit is not an RTR-500W, please follow directions for installing the USB Device Drivers found in the Introductory Manual that came with the Base Unit you are using.

1. Open the “RTR-500W for Windows” from the Start Screen or Start Menu.

2. Open the RTR-500W Settings Utility.
3. Connect the Unit with the supplied USB cable to your computer. The USB driver installation will start automatically.

Do not connect a Unit to your computer until the software has been installed.
It is not necessary to connect the AC adaptor at this point.

4. After the USB driver installation is completed, the factory default settings will be displayed automatically in the settings window.



Registering Devices and Making Settings

This section explains a few items that need to be checked before registering devices and making settings and the basic processes of both.

About Applications and the Operation Guide

How to Open

Open the “RTR-500W for Windows” from the Start Screen or Start Menu.

Operation Guide:
This provides detailed information related to the software in general, including "Basic Procedures" and "Troubleshooting". For details about how to use each application or description of the menus, open [Help] in the application menu.

Other Items

RTR-500W Settings Utility :
This allows the user to make Base Unit settings, Register Remote Units and Repeaters, Check Signal Strength, make settings for the Downloading of Recorded Data, the Monitoring of Current Readings and Warning Monitoring. This application is also used to Start and Stop Recording in Remote Units.

Temperature/Humidity Graph, Multi-Scale Graph :
These graph applications help users view downloaded data from Remote Units in graph and table form, as well as print or convert into text file data.

T&D WebStorage Service :
Click here to open the T&D WebStorage Service website. Current readings and previously recorded data can be accessed via Internet by using T&D WebStorage Service.

Introductory Manual :
Introductory Manual :
This document is available in PDF file format.

Help for Unit Recognition Failure :
Click here for information on how to check and install the USB driver.

Update Information :
Click here for Information about software and firmware updates.

Registering Devices and Making Settings

This section briefly explains in sequence what needs to be done in order to carry out registration of devices and the making of settings.

1. Base Unit Settings

Before making initial settings please confirm the following:

☐ Is the Unit connected to a PC with the USB cable?

☐ Are the "POWER" and "ACTIVE" LED lamps on the Unit both lighted up?

☐ Is the PC clock showing the correct date and time?

By opening the "RTR-500W Settings Utility" from the Applications Menu, the settings window will automatically be opened.

Base Unit Settings Items

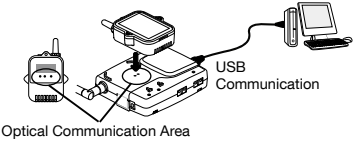
Settings are made for the Base Unit Name, Unit of Temperature, LAN Password, and so on

2. Remote Unit Registration

1. After having completed the Base Unit Settings, in the RTR-500W Settings Utility, open the [Remote Unit Settings] Menu.
2. When the direction appears in the application window connect the Data Logger to enable communication with the Base Unit and/or PC.
   - Only carry out Remote Registration on one Unit at a time; do not connect multiple Units at the same time.

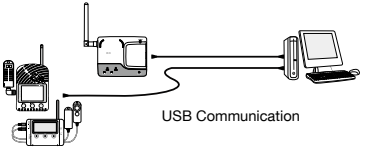
RTR-501 / 502 / 503 / 505 / 507S (Optical Communication)

Place a Data Logger (Remote Unit) face down on the Base Unit connected to your PC so that the optical communication areas meet.



RTR-574 / 576 (USB Communication)

With a USB cable, connect the Data Logger (Remote Unit) to your PC.



Remote Unit Registration Items

Items that are registered into the Remote Unit include Group Name, Remote Unit Name, Frequency Channel Settings, Recording Mode Settings, Warning Monitoring Settings, Auto-Download Settings and so on.

If the screen does not change after connecting RTR-574/576,

the USB driver installation may not have been installed correctly. Please see [Help for Unit Recognition Failure] and check the USB driver.

3. Base Unit Operational Settings

Next please make all Base Unit operational settings from the Menu of the RTR-500W Settings Utility.

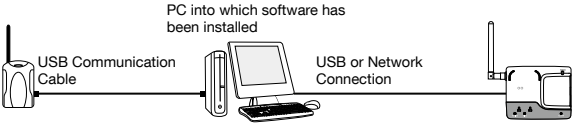
Settings Menu

The following operational settings are made here: Wireless Route Settings, Clock Settings, Network Settings, E-Mail Settings, FTP Settings, Send Current Readings Settings, Warning Report Settings, and Auto-Download Settings.

4. Repeater Registration (Only if necessary)

Repeaters can be registered to help increase range and improve wireless communication. It is also possible to register a Repeater to a Base Unit via a network connection.

1. In the RTR-500W Settings Utility, open the [Repeater Unit Settings] Menu.
2. When the direction appears in the application window, connect the Repeater with a USB communication cable to the computer.



Repeater Registration Items

Settings are made for Group Name and Frequency Channel

After all registrations and settings have been completed, place the Base Unit, Remote Units and Repeaters in their actual positions and carry out signal strength tests to test transmission.

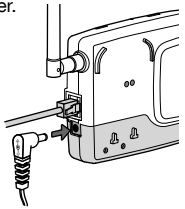
Notes about Operation

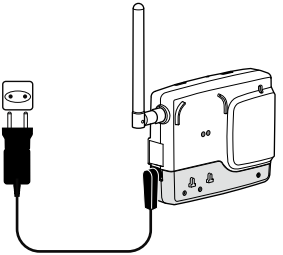
This section explains a few items that should be remembered when carrying out operation.

Connecting the AC Adaptor

When ready for actual operation, disconnect the USB cable from the Base Unit and supply power by connecting to the supplied AC adaptor.

When using RTR-500NW, please connect the LAN cable to the HUB before supplying power.





About the supplied AC adaptor (AD-06C1)
Input: AC100-240V
Output: DC6V 1.0A
Frequency: 50/60Hz
Cable length: 1.8m
Plug Type: C

LED Lamps before Starting Operation

At this point if the Unit is properly running, after having supplied power all the LED lamps should come on and after a short time the POWER and ACTIVE LED lamps should remain on.

- For details about the other LED lamps see page 30 of this Manual.

Changing Settings during Operation

It is possible to make changes to settings by either connecting the Unit to the same computer used when making the initial registration with a USB cable or via a network connection.

When making changes to settings keep the following two points in mind.

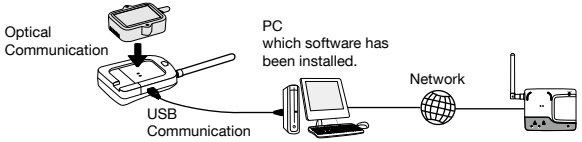
- While the Unit is connected via USB cable to the PC, the processing of recorded data (downloading / sending) as well as warning monitoring cannot be carried out.
- When making changes via a network connection there are some items such as Network Settings, LAN Password Changes or Initialization, which are restricted from being changed.

Registering a Remote Unit via Network Connection

It is possible to register additional Remote Units to a Base Unit via a network connection. This can be done by sending the Remote Unit info for the unit you wish to add to the Base Unit over the network to which it is connected.

For RTR-501 / 502 / 503 / 505 / 507S (Use RTR-500 Optical Communication)

Use an RTR-500 connected to your PC to send the registration info via optical communication to your PC for transfer via network to the target Base Unit.

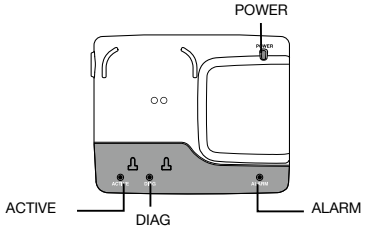


For RTR-574 / 576 (Use Direct USB Connection)

Send the registration info directly to PC via a USB connection for transfer to the target Base Unit.

- When making registrations do not connect more than one Remote Unit at a time to the PC.
- For details about operations please see the "Help" menu in the "RTR-500W Settings Utility".

LED Lamp Display



LED Status ● ON ☼ BLINKING ○ OFF	Description
● ACTIVE	・Network communication available ・Connected via USB
☼ ACTIVE	・Network communication in progress (wireless communication with Remote Unit) ・USB communication in progress
● DIAG	・Initializing after power turned ON ・FTP or E-mail transmission failed
○ ☼ ACTIVE DIAG	・Clock Settings not completed ・Clock settings have been reset (power failure and so on) ・No Remote Units have been registered ・FTP or E-mail settings have not been properly made ・No Settings for autonomic operations such as monitoring have been made
☼ ☼ ACTIVE DIAG	・Failed to connect to wireless LAN access point (only RTR-500AW) ・IP address cannot be received from DHCP server
● ALARM	・A measurement has exceeded the set upper or lower limit ・A Remote Unit wireless error has occurred ・The contact input is ON ・There is trouble in the Remote Unit (battery level is low, a sensor connection is poor, etc…)

External Contact Output / Input Terminals

What is the External Contact Output?

When the "ALARM" LED lamp goes on, the external output simultaneously goes ON. If you wish to connect a buzzer, light or other warning device to the external output terminal please see the following important information.

Output Terminal Specifications (during warning)

Voltage when OFF: AC/DC 50V or less

Current when ON: 0.1A or less

Resistance when ON: 35Ω

What is the External Contact Input?

Detection checks for an external electronic signal (ON / OFF); and when an ON signal is detected a warning report mail is sent. If you wish to connect a surveillance system sensor such as a motion sensor, light sensor, or open/close sensor to the external input terminal please see the following important information.

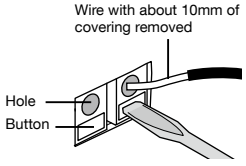
Input Terminal Specifications

Internal Pull-up: 3V 100kΩ

Maximum Input Voltage: 30V

Installing and Removing Wires

1. Use a flat-head screwdriver to press down on the terminal button and insert the wire into the hole.
2. Pull the screwdriver away and make sure that the wire cannot become dislodged.
3. When removing, do not forcibly pull on the wire, but use a screwdriver to push down on the button as done when installing and gently pull the wire out of the hole.



Fit Wires	Single wire: ø1.0 (AWG18) Twisted wire: 0.75mm2
Useable Wires	Single Wire: ø0.4 to 1.0mm (AWG26 to 18) Twisted wire: 0.3 to 0.75mm^2 (AWG22 to 20) Cable core diameter: ø0.18mm or more
Stripping Length	about 10mm

FAQ

Q&A about the Unit RTR-500NW/500AW

Q1: Can this be used in any country in the world?

A: The RTR-500NW/500AW uses special Short Range Wireless Communication that is subject to local rules and regulations for the area in which it is being used. This Unit cannot be sold or used in countries other than where the wireless units have been approved for use.

T&D Corporation shall in no manner whatsoever take responsibility for the usage of these products, nor be liable in any manner for legal consequences stemming from the usage of these wireless products in unapproved areas.

Q2: I want to use the Unit outdoors, is the Unit waterproof, moistureproof and dustproof?

A: The RTR-500NW/500AW is not waterproof, moistureproof, or dustproof. If you wish to use outdoors place the Unit in some type of case out of which cables can be passed or protect the Unit from water and dust by some other means.

Q3: What is necessary for me to use an RTR-500NW/500AW over a network?

A: You will need some device through which you can physically connect the RTR-500NW/500AW to a Network and also a server to act as the recipient of data and warnings.

Details about what is necessary will depend on your operating environment but please see the following for some simple points to check

Necessary for a Physical Connection

- LAN Cable (for RTR-500NW)
- Wireless LAN Access Point (for RTR-500AW)
- HUB, Router, and so on (as necessary)

For connecting an RTR-500NW/500AW to the Internet

- For using a provider's e-mail sever or FTP server it is necessary to have all the necessary server addresses and mail authentication settings from your provider.
- If you are not using your provider's server, it is necessary to prepare your own e-mail server and/or FTP server, or use T&D's WebStorage Service.

For using an RTR-500NW/500AW
without connecting to the Internet

- It will be necessary to prepare an e-mail server and/or and FTP server within your network. If it difficult to set up a server, you may want to purchase a storage device with a built-in FTP server function.

The settings necessary for connecting to a network vary greatly. Please contact your network administrator for details.

Q4: How can I return the RTR-500NW/500AW back to its original factory default settings?

A: Connect the target RTR-500NW/500AW to your PC with a USB cable. In the RTR-500W Settings Utility, under the [Operations] Menu, select [Return Base Unit to Factory Default Settings] and the settings will be returned to the default factory ones.

Factory Default Settings

Base Unit Name	(device name)_(serial number)
Unit of Temperature	°C
LAN Password	password
DHCP	ON
Communication Port	62500

Notes: If DHCP can not be used, the following IP Address and Subnet Mask will be assigned as the default settings.

IP Address	192.168.5.100
Subnet Mask	255.255.0.0

Q5: If there is a blackout or other loss of power, are the settings still saved in the RTR-500NW/500AW?

A: If there is a loss of power including from a blackout, all settings, addresses and registration info are saved. However, note that, if the power outage lasts for more than one day the clock settings may be reset. If the clock settings have not been set to be automatically adjusted, it will be necessary to re-make clock settings after the recovery of power.

Q6: Can I view the RTR-500NW/500AW MAC address?

A: The MAC address for the RTR-500NW/500AW can be found under the [Settings Table] Menu in the "Settings Window" of the RTR-500W Settings Utility.

Q&A about Settings

Q1: The computer does not seem to recognize the USB connected RTR-500NW/500AW , why not?

A: Please check the following items.

Checking the RTR-500NW/500AW

- Check the USB connection between the computer and the RTR-500NW/500AW. If there is a proper working connection the ACTIVE LED (green) on the RTR-500NW/500AW should be ON.

Checking your Computer

- Make sure that the software has been installed properly and is working.
- Use your computer's Device Manager to check whether or not the USB device driver has been installed properly. (Please see [Help for Unit Recognition Failure])
- Connect a different USB device (mouse, digital camera, etc...) other than an RTR-500NW/500AW Unit to your PC and see if it operates properly.
- If your PC has more than one USB Port, try connecting the USB cable to a different port.
- If you have access to another computer, try seeing if communication works with the other computer.
- Check to make sure that not more than one RTR-500NW/500AW is connected at the same time. If there are more than one connected at the same time, the connected Units cannot be recognized.

If after checking and trying the above there is no improvement please contact the dealer where the product was purchased.

Q2: The Remote Unit is not being recognized, what should I do?

A: Please check the following items.

For RTR-501 / 502 / 503 / 505 / 507S

- Check to make sure that the computer is recognizing the connected RTR-500NW/500AW .
- Make sure that the Remote Unit is face down on the RTR-500NW/500AW and that the optical communication areas are aligned properly.
- Make sure that there is sufficient battery power in the Remote Unit in question.
  The battery level can be confirmed by looking at the LCD display on the Remote Unit. When the battery power has become low, the "BAT" indicator will appear on the LCD display.
  If warning monitoring has been set to ON, when battery level becomes low, a warning report mail will be issued and sent.

For RTR-574 / 576

- Check the USB connection between the computer and the RTR-574 / 576.
- Make sure that the supplied software has been installed properly and is working.
- Use your computer's Device Manager to check whether or not the USB device driver has been installed properly. (Please see [Help for Unit Recognition Failure])
- Connect a different USB device (mouse, digital camera, etc...) other than an RTR-574 or RTR-576 to your PC and see if it operates properly.
- If your PC has more than one USB Port, try connecting the USB cable to a different port.
- If you have access to another computer, try seeing if communication works with the other computer.
- Check to make sure that not more than one RTR-574 or RTR-576 is connected at the same time. If more than one unit is connected at the same time, the connected units cannot be recognized.
- Make sure that there is sufficient battery power in the Remote Unit in question.
  The battery level can be confirmed by looking at the LCD display on the Remote Unit. When the battery power has become low, the "BAT" indicator will appear on the LCD display.
  If warning monitoring has been set to ON, when battery level becomes low, a warning report mail will be issued and sent.

If after checking and trying the above there is no improvement please contact the dealer where the product was purchased.

Product Specifications

Unit	
Compatible Devices	Remote Units: RTR-501 / 502 / 503 / 507S / 574 / 576 / 505-TC / 505-Pt / 505-V / 505-mA / 505-P (Including L Type and S Type) Repeater: RTR-500
Maximum Number of Registrations	Remote Units: 100 units (*1) Repeaters: 10 units x 10 groups
Communication Interfaces	<Between Base Unit(s) - (Repeaters) - Remote Unit(s)> - Short Range Wireless Communication ETSI EN 300 220 (Frequency Range: 869.7 to 870MHz, RF Power: 5 mW) - Optical Communication With compatible Remote Units except RTR-574, RTR-576 <Between Base Unit - PC> - RTR-500NW: Wired LAN RJ45 Connector 100 Base-TX / 10 Base-T AutoMDI / MDI-X - RTR-500AW: Wireless LAN Internal wireless LAN antenna, IEEE 802.11b / g WEP(64bit/128bit) / WPA-PSK(TKIP) / WPA2-PSK(AES) - USB Communication (For Setup)
Wireless Transmission Range	Approx. 150 meters (500 ft) if direct and unobstructed
Communication Time	Data Download Time from RTR-500 Series Remote Unit (for 16,000 readings) - Via wireless communication: About 2 min. The same amount of time will be necessary for each Repeater.
External Alarm Input/Output Terminal	<Input Terminal: Contact Input> Internal Pull-up: 3V 100kΩ Maximum Input Voltage: 30V <Output Terminal: Photo Mos Relay Output> Voltage when OFF: AC/DC 50V or less Current when ON: 0.1A or less Resistance when ON: 35Ω
Communications Protocol	SMTP (POP before SMTP, SMTP-AUTH <LOGIN>), FTP, SNTP, DHCP, DNS
Power	AC Adaptor AD-06C1
Dimensions	H 83 mm x W 102 mm x D 28 mm (excluding antenna) Antenna Length: 87.3 mm
Weight	Approx. 120 g
Operating Environment	Temperature: -10 to 60 °C Humidity: 90 %RH or less (no condensation)

*1: For RTR-574 and RTR-576, registration of one unit will be counted as two units.

Software (RTR-500W for Windows)

Operating Environment

Compatible OS (*1)	Microsoft Windows 10 32 / 64 bit Microsoft Windows 8 32 / 64 bit Microsoft Windows 7 32 / 64 bit Microsoft Windows Vista 32 bit (SP1 or later)
Display Languages (*2)	English, Spanish, French, German, Italian

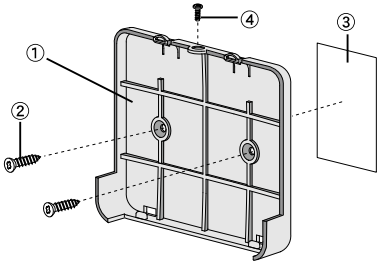
*1: For installation, it is necessary to have Administrator (Computer Administrator) rights.
*2: We recommend using an operating system in the same language as the display language. Operation in different languages is not guaranteed.
The specifications listed above are subject to change without notice.

Options

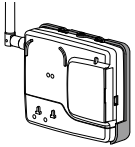
Wall Attachment

TR-5WK1
① Materials: PC Resin
② Screw for fastening to wall x 2
③ Double-sided Tape x 1
④ Screw for fastening Unit x 1

Dimensions:
W106 x H86 x D17.8mm
Screw holes: 2 - ø3.2mm



Usage Figure



Product Support
For support, please contact the distributor from which you purchased the product.

A list of distributors can be found at:
http://www.tandd.com/purchasing/

Product Information
Product information can be found at:
http://www.tandd.com/product/

Network Base Station RTR-500NW/500AW

Introductory Manual

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Network Base Station RTR-500NW/500AW Warranty

☐ RTR-500NW ☐ RTR-500AW	
Guarantee Period	1 year from date of purchase
Date of Purchase	
Customer's name Address Phone No.	
Distributor's name Address Phone No.	
Object of Repair	Main Unit (excluding sensors and any other options.)
Method of Repair	Send in for Repair

Provisions for Free Repair

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

T&D Corporation