



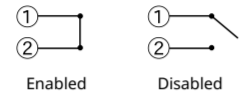
## Getting Ready to Use External Alarm Terminal

It is possible to connect an external device such as siren or lamp to the RTR-576. Please make sure to check specification details of the external alarm terminal before purchasing or getting an external device ready for connection.

### About the External Alarm Terminal (EXT ALM)

EXT ALM		
Enabling Warnings	① <b>Warning Output (Enable / Disable)</b>	Internal Pull-up: 3V 100 kΩ Maximum Input Voltage: 30V
	② <b>GND</b>	
Warning Output (OUT)	③ <b>Output Terminal (Warning Output)</b>	Open Drain Output Voltage when OFF: DC less than 30V Current when ON: less than 0.1A Resistance when ON: 15Ω
	④ <b>GND</b>	

The connection between ① and ② decides whether Warning Output is enabled or disabled. If a warning condition occurs while Warning Output is enabled, a connection between ③ and ④ will be established and a warning will be output.



### Alarm Connection Cable

The optional alarm connection cable (AC0101) is available. Please contact your local distributor for purchase.

Distributor List [tandd.com/purchasing/](http://tandd.com/purchasing/)

### Auto Calibration Function for CO2 Sensor

The CO2 sensor has a calibration function (auto/manual calibration) to compensate for sensor drift that can occur over time.

Auto calibration is designed to enable long-term accurate measurements by gradually adjusting the lowest measured CO2 concentration over a 180 hour period, to the global average concentration (atmospheric CO2 level of around 400 ppm). Please turn off auto calibration when continuously measuring in an environment where the CO2 concentration is always high or low.

- The factory default setting for auto calibration is ON.
- For the operation procedures including manual calibration, refer to the Help for your Base Unit. Manuals & Help Downloads [tandd.com/manual/](http://tandd.com/manual/)  
For RTR500BW / 500BM / 500BC, RTR-500NW / 500AW / 500MBS-A / 500 : See [RTR500B Series Help] - [RTR-574/576] - [Calibration/Adjustment Function].  
For RTR-500DC : See [RTR500DC Operation Guide] - [How to Use] - [Auto Calibration of CO2 Sensor]

### Cautions about using the Temperature-Humidity Sensors



- If extremely severe temperature changes occur, the humidity measurements may appear abnormal. Once the sensor's temperature becomes stable, the measurements will return to normal.
- Do not connect the sensor to any data logger other than those specified by T&D Corporation.
- Do not expose the sensor to a strong impact. This may adversely affect measurement accuracy and cause damage or malfunction.
- When the sensor is not to be used for a long period of time, please store it at normal temperature and humidity.
- Do not use the sensor on the human body.
- Do not expose to condensation, dampness, corrosive gases, or organic solvents.
- Continued use may cause a decrease in the sensor's accuracy and sensitivity even under normal operational conditions.
- This sensor is not water resistant. Do not allow the sensor to become wet. If the sensor gets wet, immediately remove the sensor from the unit and wipe it with a clean cloth as soon as possible. Then allow the sensor to dry in normal room temperature before using it again.
- When using the THA-3001/3151 sensor in an environment where the humidity is less than 30%RH, the measurements may sometimes fluctuate. This is not abnormal.

## Specifications

	RTR-576		RTR-576-S	
Temperature-Humidity Sensor				
Temperature - Humidity Sensor (External)	THA-3001		SHA-3151 (High-Precision Type)	
	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Measurement Units	°C, °F	%RH	°C, °F	%RH
Measurement Range (*1)	0 to 55 °C	10 to 95 %RH	-25 to 70 °C	0 to 99 %RH (*2)
Accuracy	±0.5 °C	±5 %RH at 25 °C, 50 %RH	±0.3°C at 10 to 40 °C ±0.5°C all other temperatures	±2.5 %RH at 15 to 35 °C, 30 to 80 %RH
Measurement Resolution	0.1 °C	1 %RH	0.1 °C	0.1 %RH
Responsiveness	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	
CO2 Sensor				
CO2 Sensor (Internal)	NDIR			
Measurement Channels	CO2 Concentration 1ch			
Measurement Units	ppm			
Measurement Range	0 to 9,999 ppm			
Accuracy	±(50 ppm + 5 % of reading) at 5,000 ppm or less (*3)			
Measurement Resolution	Minimum of 1 ppm			
Responsiveness	Response Time (90%): Approx. 1 min.			
Logging Capacity	8,000 data sets (One data set consists of readings for all channels in that type of unit)			
Recording Interval	Select from 15 choices: 1, 2, 5, 10, 15, 20, 30 sec. or 1, 2, 5, 10, 15, 20, 30, 60 min.			
Recording Mode (*3)	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)			
Communication Interfaces	Short Range Wireless Communication Frequency Range: 869.7 to 870MHz RF Power: 5mW Transmission Range: About 150 meters if unobstructed and direct USB 2.0 (Mini-B connector) Serial Communication (*4)			
External Alarm Terminal (*6)	Output Terminal: Open Drain Output (Voltage when OFF: DC less than 30V / Current when ON: less than 0.1A / Resistance when ON: about 15Ω)			
Power	AC Adaptor AD-06C1, AA Alkaline Battery LR6 x 4			
Battery Life (*7)	Approx. 2 days (batteries only without AC adaptor)			
Dimensions	H 96 mm x W 66 mm x D 46 mm (excluding protrusions and sensor) Antenna Length: 60 mm			
Weight	Approx. 125 g			
Operating Environment	Temperature: 0 to 45 °C Humidity: 90 %RH or less (no condensation)			
Compatible Base Units	RTR500BW, RTR500BM, RTR500BC, RTR-500DC, RTR-500NW/500AW, RTR-500MBS-A, RTR-500			

\*1: Make sure to use the data logger within the operating environment as listed in the specifications.

\*2: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below -20°C.

\*3: Stated value is the measurement accuracy of the CO2 sensor when Auto Calibration is operating properly. A change in atmospheric pressure directly influences the reading of CO2, which can cause measurement errors; a decrease in pressure by 10hPa results in a relative decrease in CO2 by 1.6%. In such a case, we recommend carrying out the "Atmospheric Pressure Correction" function found in the software for the Base Unit.

\*4: Only "Endless" is available when using the RTR500BW, RTR500BM, RTR-500NW/AW or RTR-500MBS-A as a Base Unit.

\*5: For communication with the Data Collector RTR-500DC (Note: Optional serial communication cable TR-6C10 is required.)

\*6: In order to use the external alarm terminal, please purchase the optional alarm connection cable (AC0101).

\*7: The listed battery life is based on the following usage conditions: Recording at 10 second (or longer) intervals, Current Readings Transmission every 10 minutes, and Recorded Data Transmission once a day. Battery life also varies depending on ambient temperature, radio environment, frequency of communication, etc.

The specifications listed above are subject to change without notice.

### Initial Settings

Recording Conditions	Recording Mode: Endless Recording Interval: 10 min.
LCD Display Pattern	Alternating Display

## Explanation of Symbols

### Explanation of Warning Symbols

	<b>DANGER</b>	These entries are actions that, if taken, may cause serious personal physical damage or death.
	<b>CAUTION</b>	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 should be carried out.
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### **DANGER** To Prevent Serious Accidents

- Do not disassemble, repair or modify the unit and accessories.
- Do not use the unit in any environment that is exposed to chemicals and harmful gases. Doing so may cause corrosion and/or other danger to the unit. Also, coming in contact with hazardous substances may cause bodily harm to the user or people nearby.
- This Unit is not waterproof. If water or a foreign object enters the case, immediately remove batteries and stop using it.
- Do not insert or replace batteries or sensors with wet hands.
- This unit has been designed for private and/or industrial use only. It should not be used in situations where strict safety precautions are necessary such as with medical equipment, or in systems directly or indirectly connected with human life or well-being.
- We shall not guarantee the unit's operation if it has been connected to a PC using a USB hub or a USB extension cable.
- Do not drop or expose the unit to a strong impact.
- Do not cut or process the sensor cables. Also, do not twist, pull on or swing any of the cords.
- To prevent damage to the unit from static electricity, remove static electricity from your body by touching metal around you (such as a door knob and window frame) before touching the unit.
- Place and store the unit and accessories out of the reach of children.
- Further, T&D is not responsible for any damage, malfunction or trouble, whether direct or indirect, caused by the use of our products.
- Do not use any power or sensors other than those specified by T&D Corporation.
- If the unit produces heat, emits smoke or a strange smell, or makes unusual noise, immediately unplug the AC adaptor, remove the batteries, and stop using it.

### **CAUTION** Do not place or store in the following areas:

- Areas exposed to direct sunlight
- Areas subject to high temperatures such as near fire or heating equipment
- Areas exposed to static electricity
- Areas exposed to strong magnetic fields
- Areas exposed to dampness
- Areas subject to condensation or wet areas
- Areas exposed to excessive vibration
- Areas exposed to excessive smoke, dust or dirt.

### **CAUTION** Other Precautions

- Use the unit in the specified operating environment. Do not use it for any purpose other than for which it was designed.
- Condensation may occur inside the case when a unit is moved from one environment to another where there is a great difference in temperature. Be careful to avoid condensation.
- Do not use the unit in wet areas or places exposed to water such as bathroom.
- Do not insert any foreign objects into any of the units' jacks.
- If the unit gets dirty, wipe it with a clean cloth.
- Please note that this User's Manual has been written based on the presupposition that details about set-up of any necessary equipment to enable network connection have 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.

### **CAUTION** 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 the Unit more than 30 cm away from walls or boards containing metal.
- If the Unit is 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 the Unit as near to doors as possible.
- As far as possible, keep the Unit away from noise-emitting sources.
- Equipment such as some industrial instruments, electronic devices or fluorescent lamps generate noise. Please place the Unit more than 1 meter away from such devices.
- Please place the Unit 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 grow, communication errors also increased.
- Do not place the Unit directly on the ground.
- Do not place Units which are using the same communication frequency channel in the same area. If the same channel is used for multiple units not only will more communication errors occur, but battery life will also be shortened.
- If there is a possibility that Units 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.

### Important Notices and Disclaimers

In order to properly use this product, please carefully read all documents that accompany the product before using.

- All rights of the attached documents belong to T&D Corporation. It is prohibited to use, duplicate and/or arrange a part or whole of the attached documents without the permission of T&D Corporation.
- Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.
- All registered trademarks, company names, product names and logos mentioned herein or for products being used are the property or registered property of T&D Corporation or of their respective owners.
- Specifications, design and other contents outlined in the attached documents are subject to change without notice.
- Please follow the safety precautions outlined in the attached documents carefully. We cannot guarantee nor are we responsible for safety if this product is used in any manner other than was intended.
- On-screen messages in the attached documents 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 the attached documents. T&D Corporation accepts no responsibility for any damage or loss of income caused by the use of our product.
- Accompanying documents cannot be reissued, so please keep them in a safe place.
- Please read the warranty and provisions for free repair carefully.

### Compliance Information

CE Statement

The RTR-500 Series products are in compliance with the Radio Equipment Directive 2014/53/EU.

The following standards have been applied:

<Safety and Health> EN 60950-1  
EN 50663  
<EMC> EN 301 489-1  
EN 301 489-3  
<Radio Spectrum> EN 300 220-2 (receiver category 2)

The full text of the EU declaration of conformity is available at the following internet address: <https://tandd.com/manual/pdf/doc-rtr500-series.pdf>

### Important Notices

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.

### For product information or questions contact us at:

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