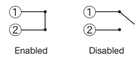
Getting Ready to Use External Alarm Terminal

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)

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

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.



About the Compatible Connector

The JST Connector PAP-04V-S is compatible with the external alarm terminal. For questions concerning sales of the connector, please directly contact JST Mfg. Co., Ltd.
http://www.jst-mfg.com/

Auto Calibration Function for CO2 Sensor

What is "Auto Calibration" ?

Auto calibration is a function designed to enable long-term accurate measurements for the RTR-576 by gradually adjusting the lowest measured weekly CO2 concentration to the global average concentration (atmospheric CO2 level of 400 ppm).

- The factory default setting for auto calibration is ON.

Turning ON and OFF Auto Calibration

Turn off auto calibration (*1) when continuously measuring in an environment where the lowest weekly CO2 concentration differs greatly from the global average concentration of 400 ppm. In this case, to ensure accurate measurement results, periodically place the RTR-576 in fresh air outside and check if the measured CO2 concentration values are close to 400 ppm or not. If not, we recommend that you carry out manual calibration (*2).

*1: To change the settings, it is necessary to download "Adjustment Tools" application (free) from our website at http://www.tandd.com/support/download/software/

*2: The measurement of the CO2 sensor may have a slow drift. It is recommended to perform manual calibration about once a month. For details of the manual calibration procedure, please refer to the Adjustment Tools Help which you can access from the "Help" button in the application window.

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.
- Continued use may cause a decrease in the sensor's accuracy and sensitivity even under normal operational conditions.
- Do not expose to condensation, dampness, corrosive gases, or organic solvents (or insecticides for High Precision Temperature/Humidity Sensors).
- 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.

Options

Temperature/Humidity Sensor: THA-3151

Measurement Range:
Temperature 0 to 55°C, Humidity 10 to 95 %RH
Measurement Resolution:
Temperature 0.1°C, Humidity 1 %RH
Accuracy:
Temperature ± 0.5°C,
Humidity ± 5 %RH (at 25°C and 50%RH)
Response Time (90%) : Approx. 7 min.
Cable Length: 1.5 m

High Precision Temperature/Humidity Sensor: HHA-3151

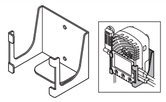
Measurement Range:
Temperature -30 to 80°C, Humidity 0 to 99 %RH
Long Term Stability:
± 1%RH/yr, ± 0.1°C/yr
Cable Length: 1.5 m

Sensor Extension Cable: TR-1C30

Possible to use up to three extension cables per temperature / humidity sensor

Compatible Sensor:
THA-3001, THA-3151, HHA-3151
Temperature Durability: -25 to 60°C
Material: Vinyl Coated Electrical Wire
Cable Length: 3 m

Wall Attachment: AT-76K



Material: Aluminum
Accessories: Screw x 2

Serial Communication Cable: TR-6C10

For communication between RTR-500DC and RTR-576

Cable Length: 1.0m

Specifications

	RTR-576		RTR-576-H	
Temperature / Humidity Sensor				
Temperature/Humidity Sensor (External)	THA-3001		HHA-3151(High-Precision Type)	
	Thermistor	Polymer Resistance	Platinum Resistance	Electrostatic Capacitance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Units of Measurement	°C, °F	%RH	°C, °F	%RH
Measurement Range (*1)	0 to 55 °C	10 to 95 %RH	-30 to 80 °C	0 to 99 %RH
Accuracy	±0.5 °C	±5 %RH [at 25 °C, 50 %RH]	±0.3°C [at 0 to 50 °C] ±0.5°C [at all other temperatures]	±2.5 %RH [at 25 °C, 10 to 85 %RH] ±4.0 %RH [at 25 °C, 0 to 10 % or 85 to 99 %RH] At temperatures other than 25 °C and ≧ 0 °C, add ±0.1 %RH per degree of difference from 25. Humidity Hysteresis: ±1.5 %RH or lower (*2)
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.	Response Time (90%): Approx. 20 sec.
CO2 Sensor				
CO2 Sensor (Internal)	NDIR			
Measurement Channels	CO2 Concentration 1ch			
Units of Measurement	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 (*4)	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)			
Communication Interfaces	Wireless Communication (Short Range Radio Communication) FCC Part15 Section247 / IC RSS-210 (Frequency Range: 902 to 928 MHz, RF Power: 7 mW) USB Communication Serial Communication (RS-232C) (*5)			
Wireless Transmission Range	Approx. 150 meters (500 ft) if direct and unobstructed			
External Alarm Terminal	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-0638), AA Alkaline Battery (LR6) x 4			
Battery Life (*6)	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. 220 g (including battery, excluding sensor)			
Operating Environment	Temperature: 0 to 45 °C Humidity: 90 %RH or less (no condensation)			
Compatible Base Units	RTR-500, RTR-500NW/500AW, RTR-500DC			

*1: Make sure to use the data logger within the operating environment as listed in the specifications.
*2: When used in environments where temperature and humidity are over the values of 50°C 75%, 60°C 50%, 70°C 35%, and 80°C 25%, sensor hysteresis may fluctuate by values greater than ±1.5%RH. Under certain circumstances, it may take some time to return to nor.
*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 10 hPa result.
*4: Only "Endless" is available when using RTR-500W for Windows.
*5: For communication with the Data Collector RTR-500DC (Note: Optional serial communication cable TR-6C10 is required.)
*6: Battery life varies depending upon the ambient temperature in which it is used, the recording interval, the frequency of communication, and the battery performance. All estimates are based on operations carried out with a new battery and are in no way.
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

⚠ DANGER	These entries are actions that, if taken, 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 should be carried out.

⚠ 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 grew, 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. 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 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.
- Windows Vista is either a registered trademark or trademark 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

FCC Statement
This device complies with Part 15 of the Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
Caution:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note about Antenna Usage
This device has been designed to operate with the supplied antenna only. Use of any other antenna is strictly prohibited.

IC Statement
This device complies with RSS-210 of the Industry Canada (IC). Operation is subject to the following two conditions: (1) This device may not cause harmful interference; and (2) This device must accept any interference received, including interference that may cause undesired operation.
Ce dispositif est conforme à la norme RSS 210 d'Industrie Canada.
L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

This radio transmitter (IC 5558A-50040) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
Le présent émetteur radio (IC 5558A-50040) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Name	Type	Gain	Impedance
RTR-576 Antenna (Included)	Dipole	0 dBi	50 ohm

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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We have opened an English Website for your convenience. Here you can find information about our company, news, products, upcoming events, software and Introductory Manual downloads, as well as, ther support. Please stop by and see what we have to offer.

Wireless CO2 Recorder RTR-576 Warranty

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