Data Logger for Cloud Storage

TR-7 Series

Thermo Recorder TR-72wf

REC ENDLESS DATA

Web

72 %

Thermo Recorder TR-71wf

REC ONETIME DATA

Web

71.0 ℃

DISPLAY   INTERVAL   REC/STOP

Network / USB Data Loggers **TR-7wf/nw** Series

Infrared / USB Data Loggers **TR-7Ui** Series

TANDD

Next Generation Data Loggers —

T&D Cloud Service Free of Charge!

T&D WebStorage Service

Automatic Data Upload

TR-7wf

TR-7nw

Access Point

Wireless LAN
(Data Upload)

Router / HUB

Wired LAN
(Data Upload)

Data Analysis using Graph Tools

Graph Display and Monitoring on Mobile Devices using "T&D Thermo"

Wireless/Wired LAN Operation enables...

- **Automatic data upload to T&D WebStorage Service**
- **Viewing data anywhere on mobile devices and PCs**
- **Sending alert notifications via email from T&D WebStorage Service**

# Built for Cloud Storage

Seamless Data Access

Automatic Data Upload via LAN

Equipped with a wireless LAN (TR-7wf) and a wired LAN (TR-7nw), the TR-7wf/nw series data loggers can automatically upload recorded data to "T&D WebStorage Service" at the set interval. "T&D WebStorage Service" is a cloud service provided by T&D free of charge. It enables the viewing of uploaded data on your PC or mobile device anytime, anywhere.

Direct Wireless Communication with Mobile Devices (TR-7wf)

T&D's new application "T&D Thermo" enables the use of mobile devices for making/changing device settings, downloading recorded data from the TR-71wf/72wf, and viewing graph on the screen. "T&D Thermo" is available for download free of charge.
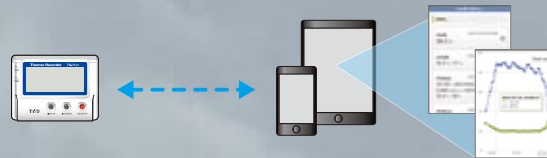
USB Connection to a PC

USB operation is also possible by connecting the data logger to your computer with the USB cable.

One and a Half Years of Operation with just Two Batteries

Battery-powered operation means the device can be placed anywhere without the need for AC power. Depending on the settings, the TR-7wf/nw series can be used continuously for up to 1.5 years before its batteries need to be replaced.

Get Temperature and Humidity in a Wider Range with Greater Accuracy

The TR-72wf-H and TR-72nw-H comes with a high precision temperature/humidity sensor. Features include a humidity measurement accuracy of ±2.5%, as well as the wide range measurement of temperature from -30 to 80 °C and humidity from 0 to 99%RH.

### Large Logging Capacity: 8000 Data Sets

One data set consists of readings for all channels in that type of unit. If set at a recording interval of 60 minutes, it gives the user one year's worth of measurements.

Easy Operation via Front Buttons

It is possible to start and stop recording, change recording interval, and make the auto-upload setting by using buttons on the device.

Application Examples
- For managing temperature and humidity in hospitals, museums, and temperature controlled warehouses
- Performance testing of humidity and heat control in housing
- For managing temperature and humidity in server rooms
- Recording temperature and humidity in subways and train cars

Data Analysis on PC using "T&D Graph"
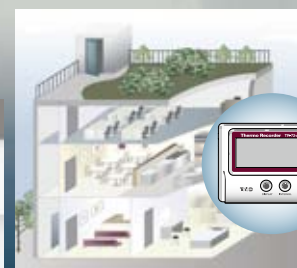
Easy-to-Use Data Loggers for Wide

Simultaneous Multi-Channel Measurement with One Device

Data Analysis using Graph Tools

Start Recording upon USB connection
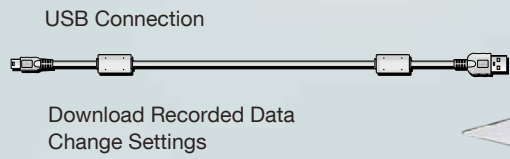
TR-73U
- Barometric Pressure
- Temperature
- Humidity

TR-74Ui / 74Ui-H
- Illuminance • UV Intensity
- Temperature • Humidity

TR-76Ui / 76Ui-H
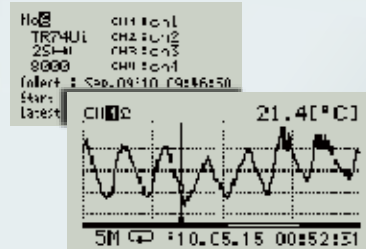- CO2 • Temperature
- Humidity

USB Connection

Download Recorded Data
Change Settings

Graph Display on a Data Collector

Infrared Communication

Serial Communication

Graph View

Simple startup upon connection to PC
- **Monitor multiple channels of data in trend graph**

Variety of Measurements

Transmit Recorded Data to PC via USB Connection

Easy USB connection, for one device or for as many devices as your PC has ports for, makes it easy to gather current readings from the connected device(s) to your computer and view those readings in the computer display.

Data Loggers for a Variety of Measurements

The TR-7Ui series data loggers are designed to simultaneously measure and record a variety of measurements. In addition to temperature and humidity, TR-73U can record barometric pressure, TR-74Ui models take care of Illuminance and UV intensity, and TR-76Ui models log CO_2 concentration.

Get Temperature and Humidity in a Wider Range with Greater Accuracy

The TR-74Ui-H, and TR-76Ui-H come with a high precision temperature/humidity sensor. Features include a humidity measurement accuracy of ±2.5%, as well as the wide range measurement of temperature from -30 to 80 °C and humidity from 0 to 99%RH.

Large Logging Capacity: 8000 Data Sets

One data set consists of readings for all channels in that type of unit. If set at a recording interval of 60 minutes, it gives the user one year's worth of measurements.

Application Examples

- For managing temperature and humidity in hospitals, museums, and temperature controlled warehouses
- Managing CO_2, temperature and humidity in schools: from kindergartens to universities
- For research studies on photosynthesis and growth of plants
- Measuring the degree of air tightness in packaging during transportation
- For management of illuminosity and UV light (to prevent deterioration of exhibits) in art museums and other exhibit forums
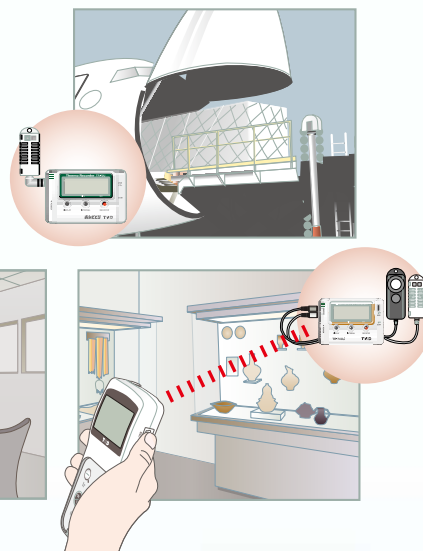
TR-7wf: Wireless LAN Type

Temperature (2ch)	Temperature / Humidity

°C °F ((•)) LAN USB

TR-71wf

Measurement Range
 Temperature:
  –40 to 110 °C (Supplied Sensor)
  –60 to 155 °C (Optional Sensor: Fluoropolymer
  Coated Type)
 Temperature Sensors (TR-0106 x 2) Included

°C °F %RH ((•)) LAN USB

TR-72wf

Measurement Range
 Temperature: 0 to 55 °C
 Humidity: 10 to 95 %RH
Temperature/Humidity Sensor (THA-3001)
Included

High Precision Type

°C °F %RH ((•)) LAN USB

TR-72wf-H

Measurement Range
 Temperature: –30 to 80 °C
 Humidity: 0 to 99 %RH
High Precision Temperature/Humidity Sensor
(HHA-3151) Included

TR-7nw: Wired LAN Type

Temperature (2ch)	Temperature / Humidity

°C °F LAN USB

TR-71nw

Measurement Range
 Temperature:
  –40 to 110 °C (Supplied Sensor)
  –60 to 155 °C (Optional Sensor: Fluoropolymer
  Coated Type)
 Temperature Sensors (TR-0106 x 2) Included

°C °F %RH LAN USB

TR-72nw

Measurement Range
 Temperature: 0 to 55 °C
 Humidity: 10 to 95 %RH
Temperature/Humidity Sensor (THA-3001)
Included

High Precision Type

°C °F %RH LAN USB

TR-72nw-H

Measurement Range
 Temperature: –30 to 80 °C
 Humidity: 0 to 99 %RH
High Precision Temperature/Humidity Sensor
(HHA-3151) Included

Temp/Humidity/Barometric-Pressure

hPa | **°C °F** | **%RH** | **USB Serial**

TR-73U

Measurement Range
Temperature:
–10 to 60 °C (Internal Sensor)
0 to 50 °C (Supplied Sensor)
–40 to 110 °C (Optional Sensor)
Humidity: 10 to 95 %RH (Supplied Sensor)
Barometric Pressure:
750 to 1100 hPa (Internal Sensor)
Temperature/Humidity Sensor (TR-3100) Included

Illuminance / UV Intensity / Temperature / Humidity

lx | **UV** | **°C °F** | **%RH** | **USB Serial IR**

TR-74Ui

Measurement Range
Illuminance: 0 lx to 130 klx
UV Intensity: 0 to 30 mW/cm^2
Temperature: 0 to 55 °C
Humidity: 10 to 95 %RH
Display Range of Cumulative Measurement:
Illuminance 0 lxh to 90 Mlxh
UV Intensity 0 mW to 62 W/cm^{2}h
Temperature/Humidity Sensor (THA-3151) and
Illuminance UV Sensor (ISA-3151) Included

High Precision Type

lx | **UV** | **°C °F** | **%RH** | **USB Serial IR**

TR-74Ui-H

Measurement Range
Illuminance: 0 lx to 130 klx
UV Intensity: 0 to 30 mW/cm^2
Temperature: –30 to 80 °C
Humidity: 0 to 99 %RH
Display Range of Cumulative Measurement:
Illuminance 0 lxh to 90 Mlxh
UV Intensity 0 mW to 62 W/cm^{2}h
Temperature/Humidity Sensor (HHA-3151) and
Illuminance UV Sensor (ISA-3151) Included

CO2 / Temperature / Humidity

CO2 ppm | **°C °F** | **%RH** | **USB Serial IR**

TR-76Ui

Measurement Range
CO2: 0 to 9,999 ppm
Temperature: 0 to 50 °C
Humidity: 10 to 95 %RH
Temperature/Humidity Sensor (THA-3001)
Included

CO2 ppm | **°C °F** | **%RH** | **USB Serial IR**

TR-76Ui-H

Measurement Range
CO2: 0 to 9,999 ppm
Temperature: –30 to 80 °C
Humidity: 0 to 99 %RH
Temperature/Humidity Sensor (HHA-3151) Included

Data Collector

Infrared Communication Type

USB Serial IR

TR-57DCi

Compatible Devices
Infrared Communication:
TR-74Ui / 76Ui (Including H Type)
Cable Communication:
TR-73U / 74Ui / 76Ui (Including H Type)
Storage Capacity:
Up to 256,000 readings
When downloading units at full logging capacity
10 units of TR-73U / 76Ui
7 units of TR-74Ui

• When downloading units at non-full logging capacity, it
can store and manage up to 250 downloading sessions.
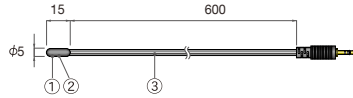• Not compatible with TR-7wf/ 7nw series loggers.

Options

Temperature Sensors for TR-71wf / 71nw / 73U

Measurement Range: –40 to 110°C, Sensor Temperature Durability: –50 to 115 °C,
Accuracy: Avg. ±0.3°C [–20 to 80°C], Avg. ±0.5°C [–40 to –20 °C / 80 to 110 °C]

Materials: ① Thermistor ② TPE Resin-Shielded Sensor ③ TPE resin-shielded wire ④ M3 Crimp Terminal ⑤ Compaction Tube ⑥ Stainless Pipe (SUS304) ⑦ Stainless Pipe (SUS316) *Only stainless section is water resistant.
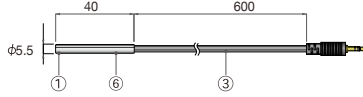
TR-0106
TPE Resin-Shielded Sensor
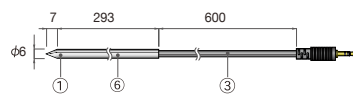Response Time（90%）:
  Approx. 190 sec.（in air）

TR-0206
Screw-down Sensor
Response Time（90%）:
  Approx. 210 sec.（in air）

TR-0306
Stainless Protection Sensor
Response Time（90%）:
  Approx. 11 sec.（in agitated water）

TR-0406
Stainless Protection Sensor
Response Time (90%):
  Approx. 15 sec. (in agitated water)

TR-0506
Stainless Protection Sensor
Response Time（90%）:
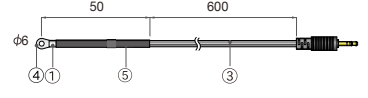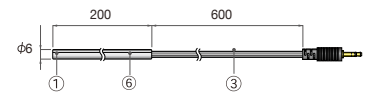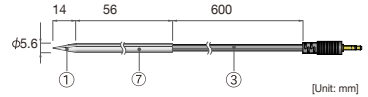 Approx. 10 sec.（in agitated water）

TR-0706
Stainless Protection Sensor
Response Time（90%）:
  Approx. 11 sec.（in agitated water）
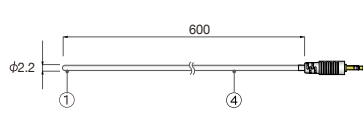
[Unit: mm]

Temperature Sensors for TR-71wf (Fluoropolymer Coated Type)

Measurement Range: –60 to 155°C, Sensor Temperature Durability: –70 to 180°C,
Accuracy: Avg. ±0.5°C [–40 to 80°C], Avg. ±1.0°C [–60 to –40°C / 80 to 100°C], Avg. ±2.0°C [100 to 155°C]

Materials: ① Thermistor ② Stainless Pipe (SUS316) ③ Fluoropolymer-Coated Compaction Tube ④ Fluoropolymer-Coated Electrical Wire
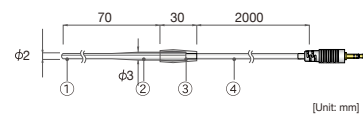
TR-1106
Fluoropolymer Coated Sensor
Response Time（90%）:
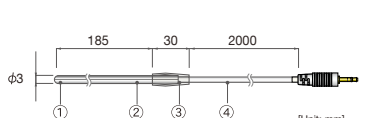 Approx. 80 sec.（in air）
  Approx. 7 sec.（in agitated water）

TR-1220
Stainless Protection Sensor
Response Time（90%）:
  Approx. 150 sec.（in air）
  Approx. 7 sec.（in agitated water）

[Unit: mm]

TR-1320
Stainless Protection Sensor
Response Time（90%）:
  Approx. 90 sec.（in air）
  Approx. 3 sec.（in agitated water）
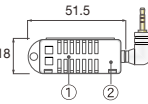
[Unit: mm]

Temperature / Humidity Sensors for TR-72wf / 74Ui / 76Ui / 77Ui

Materials: ① Temp/Humidity Sensor ② Polypropylene Resin ③ Polycarbonate ④ Vinyl Chloride Coated Electrical Wire
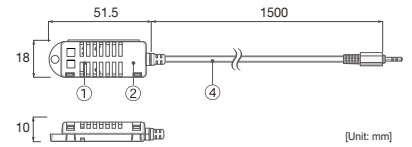
THA-3001
Measurement Range :
  Temperature: 0 to 55 °C
  Humidity: 10 to 95 %RH (no condensation*1)
Accuracy:
  Temperature: ±0.5 °C
  Humidity: ±5 %RH [at 25 °C and 50 %RH]
Response Time (90%): Approx. 7 min.
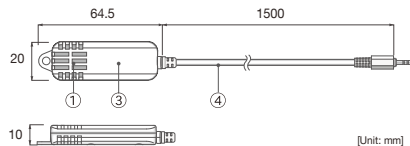
[Unit: mm]

THA-3151
Measurement Range :
  Temperature: 0 to 55 °C
  Humidity: 10 to 95 %RH
  (no condensation *1)
Accuracy:
  Temperature: ±0.5 °C
  Humidity: ±5%RH [at 25 °C and
  50 %RH]
Response Time (90%): Approx. 7 min.

[Unit: mm]

HHA-3151 : High Precision Type
Measurement Range :
  Temperature: –30 to 80 °C
  Humidity: 0 to 99 %RH
  (no condensation*1)
Accuracy:
  Temperature:
  ±0.3 °C [0 to 50 °C],
  ±0.5 °C [at all other temperatures]
  Humidity:
  ±2.5%RH [at 25°C, 10 to 85 %RH], ±4%RH [at 25°C, 0 to 10 %RH 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
Response Time (90%):
  Temperature: Approx. 7 min.
  Humidity: Approx. 20 sec.
Long Term Stability: ±1 %RH/yr, ±0.1 °C/yr (under normal operational conditions)

[Unit: mm]

*1: Do not expose to condensation, dampness, corrosive gases, or organic solvents (or insecticides for High Precision Temperature / Humidity Sensors).
*2: When used in environments where temperature and humidity are over the values of 50°C75%, 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 normal measurement capability.

Temperature / Humidity Sensors for TR-73U
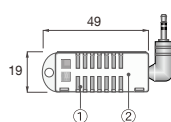
Measurement Range: Temperature 0 to 50 °C, Humidity 10 to 95 %RH
Accuracy: Temperature Avg. ± 0.3°C [0 to 50 °C], Humidity ±5%RH [at 25 °C and 50 %RH]
Materials: ① Temperature/Humidity Sensor ② Polypropylene Resin ③ Vinyl Coated Electrical Wire
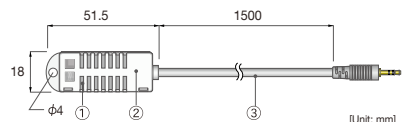
TR-3100
Response Time (90%):
  About 7 min.

[Unit: mm]

TR-3110
Response Time (90%):
  About 7 min.

[Unit: mm]

Illuminance / UV Sensor for TR-74Ui

ISA-3151

Measurement Range:
  Illuminance: 0 lx to 130 klx
  UV Intensity: 0 to 30 mW/cm^2
Accuracy *1:
  Illuminance: ±5 % [10 lx to
  100 klx at 25 °C, 50 % RH]
  UV Intensity: ±5% [0.1 to 30 mW/cm^2 at 25 °C, 50 %RH]
Relative Spectral Response:
  Illuminance: Approximated to the CIE standard response function V (λ).
 UV Intensity: 260 to 400 nm (UVA / UVB)
Operating Environment *2 :
  Temperature: −10 to 60 °C
  Humidity: 90 %RH or less (no condensation)

Materials: ① Polycarbonate ② Glass ③ Vinyl chloride-shielded wire
*1 : Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.
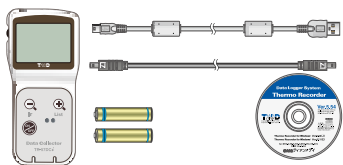*2 : Do not expose to condensation, dampness, corrosive gases, or organic solvents.
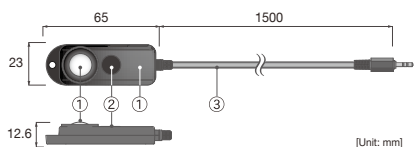
[Unit: mm]

Data Collector for TR-73U / 74Ui / 76Ui

TR-57DCi

Accessories:
  Software CD-ROM,
  USB Communication cable (US-15C),
  AAA Alkaline Battery x 2,
  Serial Communication Cable (TR-6C10)

Wall Attachment

TR-07K2

Accessories:
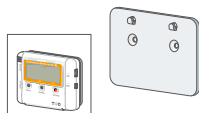 Lock Screw x 2,
  Double-sided adhesive tape
Compatible Unit:
  TR-71wf / 72wf / 71nw / 72nw/ 73U / 74Ui
  (Including H Type)

Materials: Polycarbonate

Note:
- Cracking may occur if polycarbonate is exposed to strong impact at temperatures of −30 °C or lower.

AT-76K1

Accessories:
  Lock Screw x 2,
  Double-sided adhesive tape
Compatible Unit: TR-76Ui (Including H Type)

Materials: Aluminum
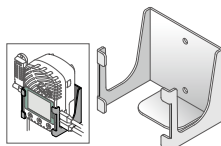
Software Set for TR-7wf / 7nw

SO-15C1

Contents:
  Software CD-ROM,
  USB Communication cable (US-15C)
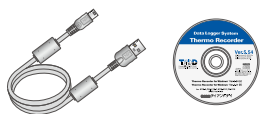
Sensor Extension Cable

Materials: ① Vinyl Coated Electrical Wire

TR-1C30

Temperature Durability:
  −25 to 60 °C
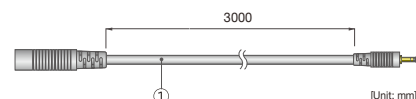
[Unit: mm]

Compatible Sensors:
  Temperature / Humidity Sensors (THA-3001, THA-3151, HHA-3151) *1
  Illuminance / UV Sensor (ISA-3151) *1
  Temperature Sensors (TR-1106, TR-1220, TR-1320, TR-0106, TR-0206, TR-0306, TR-0406, TR-0506, TR-0706) *2

*1: Possible to use up to three cables per sensor.
*2: Only one cable per sensor. Using an extension cable with the TR-73U may lead to measurement errors of +0.3 °C at room temperature, and +0.5 °C at −50 °C.

TR-5C10

Temperature Durability:
  −25 to 60 °C
Compatible Sensors:
  Temperature / Humidity Sensor
  TR-3100 *3
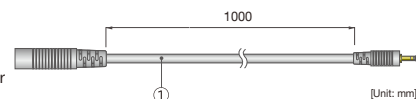
[Unit: mm]

*3: Only one cable per sensor.

Communication Cable

US-15C : USB Communication Cable
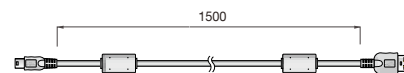
TR-6C10 : Serial Communication Cable

For communication between
TR-57DCi and TR-73U / 74Ui / 76Ui
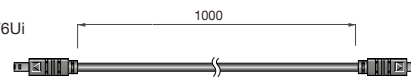
TR-07C : Serial Communication Cable

Connector Type:
  Specialized Connector D-sub 9 pin
For communication between
  PC and TR-73U / 74Ui / 76Ui
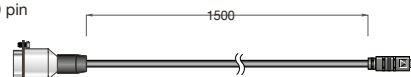
[Unit: mm]

AC Adaptors for TR-76Ui

AD-0638

Cable Length: 1.8m
Input: AC 100 - 240V
Output: DC 6V 500mA
Frequency: 50 / 60 Hz
Plug Type: A

AD-06C1

Cable Length: 1.8m
Input: AC 100 - 240V
Output: DC 6V 1.0 A
Frequency: 50 / 60Hz
Plug Type: C

Specifications

	TR-71wf / TR-71nw	TR-72wf / TR-72nw		TR-72wf-H / TR-72nw-H	
Measurement Channels	Temperature 2ch (Internal 1ch / External 2ch)	Temperature 1ch, Humidity 1ch (External)		Temperature 1ch, Humidity 1ch (External)	
Sensor	Thermistor	Thermistor	Polymer Resistance	Platinum Resistance	Electrostatic Capacitance
Measurement Units	°C, °F	°C, °F	%RH	°C, °F	%RH
Measurement Range — Internal Sensor	–10 to 60°C *1	-	-	-	-
Measurement Range — External Sensor	–40 to 110°C (Supplied Sensor) –60 to 155°C (Optional Sensor)	0 to 55 °C	10 to 95 %RH	-30 to 80 °C	0 to 99 %RH
Accuracy	Avg. ±0.3°C [–20 to 80 °C] Avg. ±0.5°C [–40 to –20 °C / 80 to 110 °C]	±0.5°C	±5 %RH [at 25°C, 50%RH]	±0.3°C [0 to 50°C] ±0.5°C [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	0.1°C	1 %RH	0.1°C	0.1 %RH
Responsiveness	Thermal Time Constant: Approx. 75 sec. Response Time (90%): Approx. 190 sec.	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	Response Time (90%): Approx. 20 sec.

LCD Display Items	Measurements (fixed or alternating display), Battery Warning Mark, etc.
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	Endless (Overwrite oldest data when capacity is full) One Time (Stop recording when capacity is full)
Auto-upload Interval	Select from 15 choices: OFF (No auto-upload), 1, 2, 5, 10, 15, 20, 30 min. or 1, 2, 3, 4, 6, 12, 24 hrs.
Communication Interfaces	Wireless LAN Communication for TR-7wf Standard: IEEE 802.11b Security *3 : WEP (64 bit/128 bit), WPA-PSK (TKIP) , WPA2-PSK (AES) WPS 2.0 : Push Button Configuration Protocol: HTTP *4, DHCP, DNS Wired LAN Communication for TR-7nw 100BASE-TX/10BASE-T (RJ45 Connector) Protocol: HTTP *4 , DHCP, DNS USB Communication USB 2.0 (Mini-B connector)
Power	AA Alkaline Battery x 2 (AA Ni-MH batteries may also be used), USB Bus Power (5V 200mA), PoE IEEE 802.3af (TR-7nw only)
Battery Life *5	With LAN communication: Approx. 10 days to 1.5 years (Ex: Approx. 10 days when Auto-upload Interval is 1 min, 1 yr when 1 hr, 1.5 yrs when 12 hrs or more) Without LAN communication: Approx. 1.5 years
Dimensions	H 58 mm x W 78 mm x D 26 mm
Weight	TR–7wf: Approx. 100 g (including batteries) TR–7nw: Approx. 110 g (including batteries)
Operating Environment	Temperature –10 to 60 °C Humidity 90 %RH or less (no condensation)
Accessories	Temperature Sensor (TR-0106) x 2 | Temperature/Humidity Sensor (THA-3001) x 1 | High Precision Temperature/Humidity Sensor (HHA-3151) x 1 AA Alkaline Battery (LR6) x 2, Registration Code Label, USB Mini-B Cable (US–15C), Manual Set (Warranty Included)
Software Compatible OS *6	TR-7wf/nw for Windows / T&D Graph (For PC) Microsoft Windows 8 32 / 64 bit *7 Microsoft Windows 7 32 / 64 bit Microsoft Windows Vista 32 bit (SP1 or later) T&D Thermo (For Mobile Devices) Android OS, iOS (For the compatible versions, please refer to our website.)
Display Languages *8	English

*1: When wireless LAN communication is used frequently, the measurement of the internal sensor may rise by around 0.3°C (TR–7wf only).

*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 normal measurement capability.

*3: The WPS feature is not available when WEP (64bit/128bit) or WPA-PSK (TKIP) is selected in Access Point Settings. If you wish to use the WPS feature, please select WPA2-PSK (AES) or disable wireless security.

*4: HTTP client. Proxy supported. (for firmware version 1.05 or above for TR-7wf).

*5: Battery life varies depending upon the frequency of communication, LAN environment, ambient temperature, recording interval, and battery performance. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.

*6: For installation, it is necessary to have Administrator (Computer Administrator) rights.

*7: If you are using Windows 8, please note that our software is designed to be used in "Desktop" mode only.

*8: 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.

	TR-73U		
Sensor	TR-3100 (External) *1		Barometric Pressure Sensor (Internal)
	Thermistor	Polymer Resistance	
Measurement Channels	Temperature 2ch	Humidity 1ch	Barometric Pressure 1ch
Measurement Units	°C, °F	%RH	hPa
Measurement Range	0 to 50 °C (Supplied Sensor) –40 to 110 °C (Optional Sensor)	10 to 95 %RH	750 to 1100 hPa
Accuracy	Avg. ±0.3 °C [0 to 50 °C]	±5 %RH [at 25 °C, 50 %RH]	±1.5 hPa
Measurement Resolution	0.1 °C	1 %RH	±0.1 hPa
Responsiveness	Response Time (90%): Approx. 7 min.		4 seconds or 40 seconds if recording interval is 10 sec. or more.

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	Endless (Overwrite oldest data when capacity is full) One Time (Recording automatically stops when capacity is full)
LCD Display Items	Measurements (fixed or alternating display), Battery Warning Mark, etc.
Communication Interfaces	USB Communication Serial Communication (RS-232C) *2
Power	AA Alkaline Battery (LR6) x 1
Battery Life *3	Approx. 10 months
Dimensions	H 55 mm x W 78 mm x D 18 mm
Weight	Approx. 62 g (including batteries)
Operating Environment	Temperature: –10 to 60 °C Humidity: 90 %RH or less (no condensation)
Accessories	Temperature/Humidity Sensor (TR-3100) x 1, AA alkaline battery (LR6), USB Communication Cable (US-15C), Software (CD-ROM), User's Manual Set (Warranty Included)
Software Compatible OS *4	Microsoft Windows 8 32 / 64 bit *5 Microsoft Windows 7 32 / 64 bit Microsoft Windows Vista 32 bit (SP1 or later)
Display Languages *6	English

*1: It is also possible to measure temperature with the internal sensor. However, the measurement range is restricted to the operating environment for the whole device.
*2: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications. (Note: Optional serial communication cable TR–07C is also required.)
*3: 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 a guarantee of actual battery life.
*4: For installation, it is necessary to have Administrator (Computer Administrator) rights.
*5: If you are using Windows 8, please note that our software is designed to be used in "Desktop" mode only.
*6: 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.

Specifications

	TR-74Ui		TR-74Ui-H	
Temperature / Humidity Sensor (External)	THA-3151		HHA-3151 (High-Precision Type)	
	Thermistor	Polymer Resistance	Platinum Resistance	Electrostatic Capacitance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Measurement Units	°C, °F	%RH	°C, °F	%RH
Measurement Range	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 [0 to 50 °C] ±0.5°C [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 *1
Measurement Resolution	0.1 °C		0.1 °C	
Responsiveness	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	Response Time (90%): Approx. 20 sec.

Illuminance / UV Sensor (External)	ISA-3151
Measurement Channels	Illuminance: 1ch UV intensity: 1ch
Measurement Units	Illuminance: lx, klx UV Intensity: mW/cm^2
Measurement Range	Illuminance: 0 lx to 130 klx UV Intensity: 0 to 30 mW/cm^2
Units of Cumulative Measurement	Cumulative Illuminance: lxh, klxh, Mlxh Cumulative amount of UV Light: mW/cm^{2}h, W/cm^{2}h
Display Range of Cumulative Measurement	Illuminance: 0 lxh to 90 Mlxh UV Intensity: 0 mW to 62 W/cm^{2}h
Accuracy	Illuminance: 10 lx to 100 klx: ±5 % [at 25 °C, 50 %RH] UV Intensity: 0.1 to 30 mW/cm^2: ±5 % [at 25 °C, 50 %RH] *2
Relative Spectral Response	Illuminance: Approximated to the CIE standard response function V (λ) UV Intensity: 260 to 400 nm (UVA / UVB)
Measurement Resolution	Illuminance: Minimum of 0.01 lx UV Intensity: Minimum of 0.001 mW/cm^2
Response Time (90%)	3 sec. (at recording interval of 1 sec.) 6 sec. (at other intervals)

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	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)
LCD Display Items	Measurements, Battery Life Warning, etc. - Measurements: Illuminance / UV Intensity / Temperature / Humidity / Cumulative Illuminance / Cumulative amount of UV Light - Display Pattern: Alternating or Fixed display - Display Digits: Up to 4 digits
Communication Interfaces	USB Communication, Serial Communication (RS-232C) *3, Infrared Communication (IrPHY 1.2 low power)
Power	AA Alkaline Battery (LR6) x 1
Battery Life *4	Approx. 6 months
Dimensions	H 55 mm x W 78 mm x D 18 mm
Weight	Approx. 62 g (including battery, excluding sensor)
Operating Environment	Temperature: -10 to 60 °C Humidity: 90 %RH or less (no condensation)
Accessories	AA alkaline battery (LR6), USB Communication Cable (US-15C), Illuminance/UV Sensor (ISA-3151), Temperature/Humidity Sensor (THA-3151 or HHA-3151), Software (CD-ROM), User's Manual Set (Warranty Included)
Software Compatible OS *5	Microsoft Windows 8 32/64 bit *6 Microsoft Windows 7 32/64 bit Microsoft Windows Vista 32 bit (SP1 or later)
Display Languages *7	English

*1: 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 normal measurement capability.
*2: Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.
*3: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications. (Note: Optional serial communication cable TR-07C is also required.)
*4: 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 a guarantee of actual battery life. When infrared communication function is enabled, battery life may be shortened if the unit is used under the inverter type fluorescent lighting.
*5: For installation, it is necessary to have Administrator (Computer Administrator) rights.
*6: If you are using Windows 8, please note that our software is designed to be used in "Desktop" mode only.
*7: 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.

	TR-76Ui		TR-76Ui-H	
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
Measurement Units	°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 [0 to 50 °C] ±0.5°C [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		0.1 °C	
Responsiveness	Response Time (90%): Approx. 7 min.		Response Time (90%): Approx. 7 min.	Response Time (90%): Approx. 20 sec.

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	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)
LCD Display Items	Measurements, Battery Level, etc. - Measurements: CO2 concentration, Temperature or Humidity (fixed or alternating display)
Communication Interfaces	USB Communication, Serial Communication (RS-232C) *4, Infrared Communication (IrPHY 1.2 low power) *5
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-0638 or AD-06C1), AA Alkaline Battery (LR6) x 4
Battery Life	Approx. 2 days (batteries only without AC adaptor) *7
Dimensions	H 96 mm x W 66 mm x D 46 mm (excluding protrusions and sensor)
Weight	214 g (including batteries, excluding sensor)
Operating Environment	Temperature: 0 to 45 °C, Humidity: 90 %RH or less (no condensation)
Accessories	AA Alkaline Battery (LR6) x 4, AC Adaptor (AD-0638 or AD-06C1), USB Communication Cable (US-15C), Temperature/Humidity Sensor (THA-3001 or HHA-3151), Software (CD-ROM), User's Manual Set (Warranty Included)
Software Compatible OS *8	Microsoft Windows 8 32/64 bit *9 Microsoft Windows 7 32/64 bit Microsoft Windows Vista 32 bit (SP1 or later)
Display Languages *10	English

*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 normal measurement capability.

*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 CO2 Recorder for Windows.

*4: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications. (Note: Optional serial communication cable TR-07C is also required.)

*5: If you wish to use infrared communication to download recorded data, it is necessary to purchase the Data Collector TR-57DCi (sold separately).

*6: In order to use the external alarm terminal, please prepare a compatible connector: JST PAP-04V-S.

*7: 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 a guarantee of actual battery life. Battery life may be shortened if the unit is used under inverter type fluorescent lighting.

*8: For installation, it is necessary to have Administrator (Computer Administrator) rights.

*9: If you are using Windows 8, please note that our software is designed to be used in Desktop mode only.

*10: We recommend using an operating system in the same language as the display language. Operation in different languages is not guaranteed.

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Specifications

	Data Collector TR-57DCi
Compatible Devices	TR–7Ui Series: TR–71Ui / 72Ui / 74Ui / 76Ui / 77Ui TR–7U Series: TR–71U / 72U / 73U TR–7S Series: TR–71S / 72S TR–5i Series: TR–51i / 52i / 55i-TC / 55i-Pt / 55i-V / 55i-mA / 55i-P TR–5S Series: TR–51S / 52S TR–5 Series: TR–51A / 52 RTR–5 Series: RTR–51 / 51A / 52 / 52A / 52Pt / 53 / 53A, RVR–52A (including L types) Others: VR–71

Storage Capacity	Up to 256,000 readings
	
	When downloading from units filled to logging capacity:
	  - 16 units of TR–71Ui / 72Ui / 77Ui
	  - 10 units of TR–73U / 76Ui
	  - 7 units of TR–74Ui
	  - 16 units of TR–51i / 52i
	  - 15 units of TR–55i
	
	When downloading from units of any type containing small amounts of data, it can store and manage up to 250 download sessions.

Communication Interfaces	<Between TR-57DCi - Data Logger(s)>
	Infrared Communication (IrPHY 1.2 low power):
	  TR–7Ui Series, TR–5i Series *1
	Serial Communication (RS–232C):
	  TR–7Ui / 7U / 7S Series, VR–71 *2
	Optical Communication (proprietary protocol):
	  TR–5i / 5S / 5 Series, RTR–5 Series
	
	<Between TR-57DCi - PC>
	USB Communication
	Serial Communication (RS–232C) *3

Power	AAA Alkaline Battery (LR03) x 2 AAA Ni-MH batteries, AC adaptor (AD–0638), or USB bus power may also be used.
Battery Life	About 100 days at 1 hour of daily use *4
Dimensions	H 125 mm x W 58 mm x D 25.8 mm (excluding protrusions)
Weight	Approx. 110 g (including batteries)
Operating Environment	Temperature: 0 to 50 °C Humidity: 90 %RH or less (no condensation)
Accessories	AAA Alkaline Battery (LR03) x 2, USB Communication Cable (US–15C), Serial Communication Cable (TR–6C10), Software (CD-ROM), User's Manual Set (Warranty Included)
Software Compatible OS *5	Microsoft Windows 8 32 / 64 bit *6 Microsoft Windows 7 32 / 64 bit Microsoft Windows Vista 32 bit (SP1 or later)
Display Languages *7	English

*1: Infrared Communication can be used only to download recorded data, and not to make recording settings.

*2: The following cables are necessary for serial communication with data loggers : TR-6C10 (included) for TR–7Ui/7U series, and TR-4C10 (optional) for TR–7S series and VR–71.

*3: The optional serial communication cable TR-07C is necessary for serial communication with PC.

*4: Battery life varies depending upon the ambient temperature in which it is used, 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 a guarantee of actual battery life.

*5: For installation, it is necessary to have Administrator (Computer Administrator) rights.

*6: If you are using Windows 8, please note that our software is designed to be used in "Desktop" mode only.

*7: We recommend using an operating system in the same language as the display language. Operation in different languages is not guaranteed.

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⚠ **Caution regarding safety**
For safe operation carefully read instructions before using the product.

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