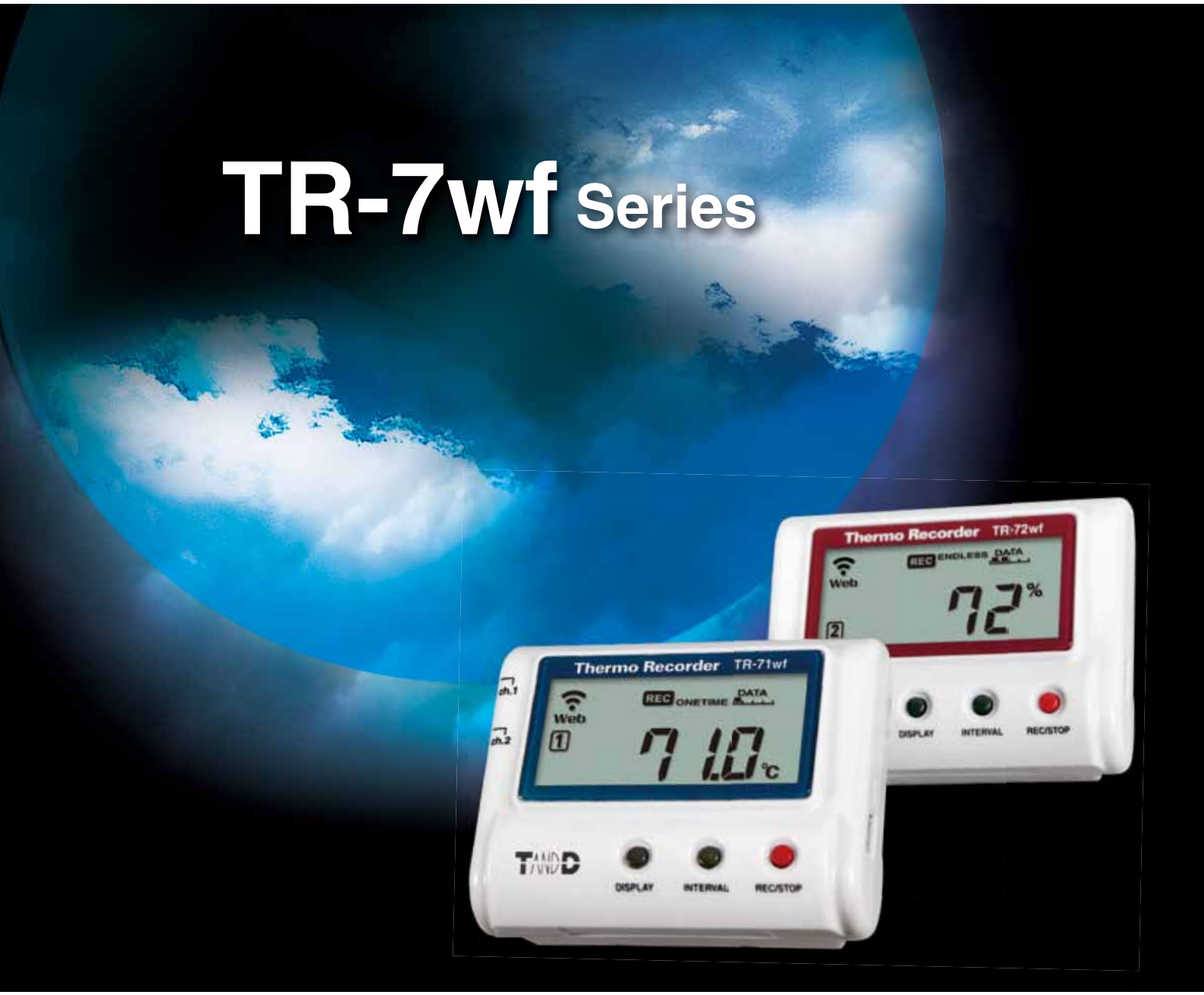
Data Logger for Cloud Storage

TR-7wf Series



and **Infrared / USB Data Loggers**

TR-7Ui Series

T&D

TR-7wf Series

Next Generation Data Loggers — Built for Cloud Storage

T&D Cloud Service Free of Charge!

Seamless Data Access

Automatic Data Upload

T&D WebStorage Service

Wireless LAN (Data Upload)

Access Point

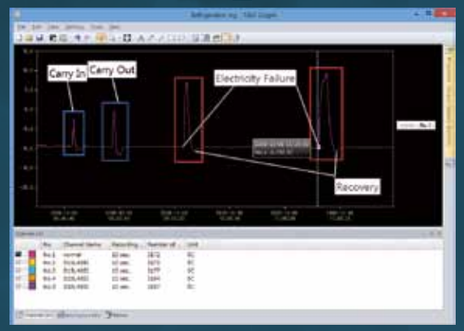
TR-71wf
• Temperature

TR-72wf / 72wf-H
• Temperature • Humidity

Data Analysis using Graph Tools

*Some screenshots are of applications still under development.

Graph Display and Monitoring on Mobile Devices using “ThermoWEB”



Data Analysis on PC using "T&D Graph"

Wireless LAN Operation enables...

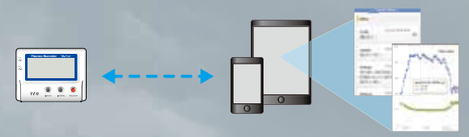
- **Automatic data upload to T&D WebStorage Service**
- **Viewing data anywhere on mobile devices and PCs**
- **Sending alert notifications via email from T&D WebStorage Service**

Automatic Data Upload via Wireless LAN

With a wireless LAN, the TR-71wf/72wf 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

T&D's new application "ThermoWEB" 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. "ThermoWEB" is available for download free of charge.



USB Connection to a PC

USB operation is also possible by connecting the TR-71wf/72wf to your computer with the USB cable (sold separately).

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-71wf/72wf 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 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

TR-7Ui Series

Easy-to-Use Data Loggers for Wide Variety of Measurements

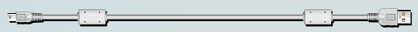
Simultaneous Multi-Channel Measurement with One Device

TR-73U
- Barometric Pressure
- Temperature • Humidity

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

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

Start Recording upon USB connection



USB Connection

Download Recorded Data
Change Settings

Data Analysis using Graph Tools

Graph Display on a Data Collector

Graph View

Simple startup upon connection to PC

- **Monitor multiple channels of data in trend graph**

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 CO2 concentration.

Get Temperature and Humidity in a Wider Range with Greater Accuracy

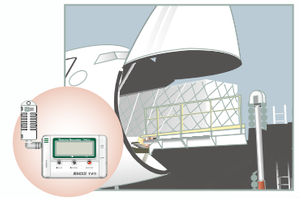
H-type models (model names which include "H") come with our high precision temperature/ humidity sensor. Features include a humidity measurement accuracy of ±2.5%, as well as the wide range measurement of temperature from -30 to 80 °C and humidity from 0 to 99%RH.

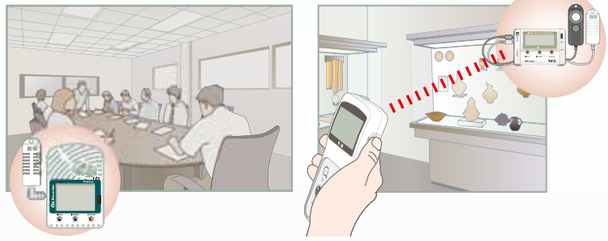
Large Logging Capacity: 8000 Data Sets

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 CO2, 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





Temperature (2ch)

°C °F LAN USB

TR-71wf

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

Temperature / Humidity

°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

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 50 °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
High Precision Temperature/Humidity Sensor
(HHA−3151) and Illuminance UV Sensor
(ISA−3151) Included

CO2 / Temperature / Humidity

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

High Precision Type

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
High Precision 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, TR−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 series loggers.

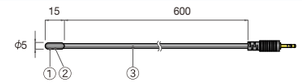
Temperature Sensors for TR-71wf / 73U

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 M3Screw Hole ⑤ Compaction Tube ⑥ Stainless Pipe (SUS304) ⑦ Stainless Pipe (SUS316) *Only stainless section is water resistant.

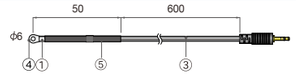
TR-0106

TPE Resin-Shielded Sensor
Response Time (90%):
Approx. 190 sec. (in air)



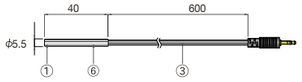
TR-0206

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



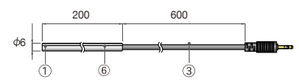
TR-0306

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



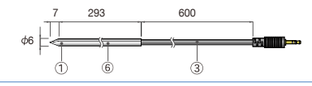
TR-0406

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



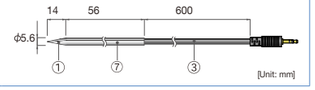
TR-0506

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]

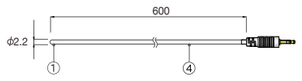
Temperature Sensors for TR-71wf (Fluoropolymer Coated Type)

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

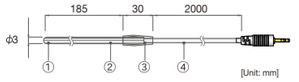
TR-1106

Fluoropolymer Coated Sensor
Response Time (90%):
Approx. 80 sec. (in air)
Approx. 7 sec. (in agitated water)



TR-1220

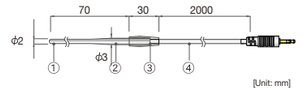
Stainless Protection Sensor
Response Time (90%):
Approx. 150 sec. (in air)
Approx. 7 sec. (in agitated water)



[Unit: mm]

TR-1320

Stainless Protection Sensor
Response Time (90%):
Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)



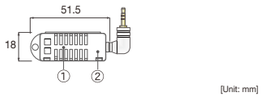
[Unit: mm]

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

Materials: ① Temp/Humidity Sensor ② Polypropylene Resin ③ Polycarbonate ④ Vinyl Chloride Coated Electrical Wire

THA-3001

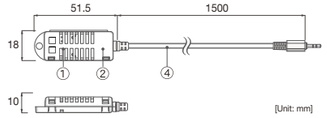
Measurement Range : (*1)
Temperature: 0 to 55 °C
Humidity: 10 to 95 %RH (no condensation)
Accuracy:
Temperature: ±0.5 °C
Humidity: ±5 %RH [at 25 °C and 50 %RH]
Response Time (90%): Approx. 7 min.



[Unit: mm]

THA-3151

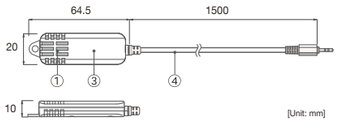
Measurement Range : (*1)
Temperature: 0 to 55 °C
Humidity: 10 to 95 %RH (no condensation)
Accuracy:
Temperature: ±0.5 °C
Humidity: ±5%RH [at 25 °C and 50 %RH]
Response Time (90%): Approx. 7 min.



[Unit: mm]

HHA-3151 : High Precision Type

Measurement Range: (*1)
Temperature: -30 to 80 °C
Humidity: 0 to 99 %RH
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) (*1)



[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.

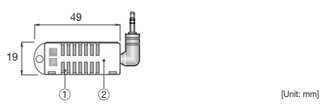
Temperature / Humidity Sensors for TR-73U

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

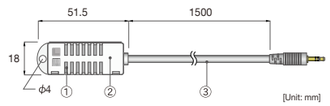
Response Time (90%):
About 7 min.



[Unit: mm]

TR-3110

Response Time (90%):
About 7 min.

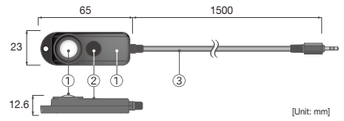


[Unit: mm]

Illuminance / UV Sensor for TR-74Ui

ISA-3151

Measurement Range:
Illuminance: 0 lx to 130 klx
UV Intensity: 0 to 30 mW/cm²
Accuracy: (*1)
Illuminance: ±5 % [10 lx to 100 klx at 25 °C, 50 % RH]
UV Intensity: ±5% [0.1 to 30 mW/cm² 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)



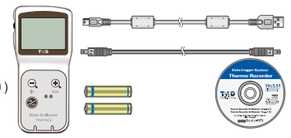
[Unit: mm]

Materials: ① Polycarbonate ② Glass ③ Vinyl Coated Electrical 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.

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

TR-57DCi

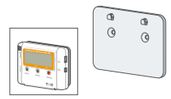
Accessories:
Software CD-ROM,
USB Communication cable (US-15C),
AAA Alkaline Battery x2,
Serial Communication Cable (TR-6C10)



Wall Attachment

TR-07K2

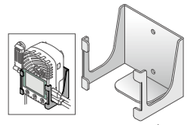
Accessories:
Lock Screw x2,
Double-sided adhesive tape
Compatible Unit:
TR-71wf / 72wf / 73U / 74Ui (Including H Type)
Materials: Polycarbonate



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-71wf / 72wf / 72wf-H

SO-15C1

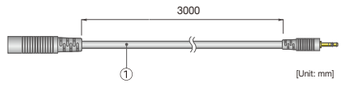
Contents:
Software CD-ROM,
USB Communication cable (US-15C)

Sensor Extension Cable

Materials: ① Vinyl Coated Electrical Wire

TR-1C30

Temperature Durability:
-25 to 60 °C



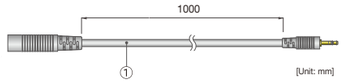
[Unit: mm]

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)

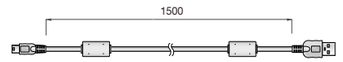


[Unit: mm]

*3: Only one cable per sensor.

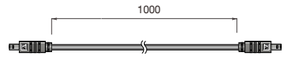
Communication Cable

US-15C : USB Communication Cable



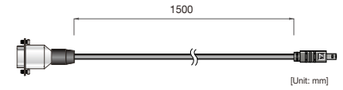
TR-6C10 : Serial Communication Cable

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]

	TR-71wf	TR-72wf		TR-72wf-H	
Sensor (External) (*1)	TR-0106	THA-3001		HHA-3151	
	Thermistor	Thermistor	Polymer Resistance	Platinum Resistance	Electrostatic Capacitance
Measurement Channels	Temperature 2ch	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Measurement Units	°C, °F	°C, °F	%RH	°C, °F	%RH
Measurement Range	-40 to 110 °C (Supplied Sensor) -60 to 155 °C (Optional Sensor: Fluoropolymer Coated Type)	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 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, DHCP, DNS USB Communication (*4) 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)
Battery Life (*5)	With wireless 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 wireless LAN communication: Approx. 1.5 years
Dimensions	H 58 mm x W 78 mm x D 26 mm
Weight	Approx. 100 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, Manual Set (Warranty Included)
Software Compatible OS (*6)	TR-7wf for Windows (For PC) Microsoft Windows 8 32 / 64 bit (*7) Microsoft Windows 7 32 / 64 bit Microsoft Windows Vista 32 bit (SP1 or later) Microsoft Windows XP 32 bit (SP3 or later) ThermoWEB (For Mobile Devices) Android 2.2 or later (May not work on all devices.) iOS 5.0 or later (iOS App will be released in Dec 2013.)
Display Languages (*8)	English

*1: With the TR-71wf, 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: 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: Optional USB Mini-B Cable US-15C is required for USB communication.
*5: Battery life varies depending upon the frequency of communication, wireless 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) Microsoft Windows XP 32 bit (SP3 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.

	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) Microsoft Windows XP 32 bit (SP3 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-0638-C), 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-0638-C), 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) Microsoft Windows XP 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) Microsoft Windows XP 32 bit (SP3 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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