

Data Logger for Cloud Storage

TR-7wf Series



and Infrared / USB Data Loggers
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

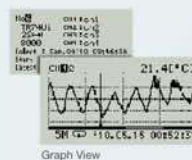
TR-76Ui / 76Ui-H
• CO₂ • Temperature
• Humidity

Data Analysis using Graph Tools

Start Recording upon USB connection

USB Connection
Download Recorded Data
Change Settings

Graph Display on a Data Collector



Infrared Communication

Serial Communication

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

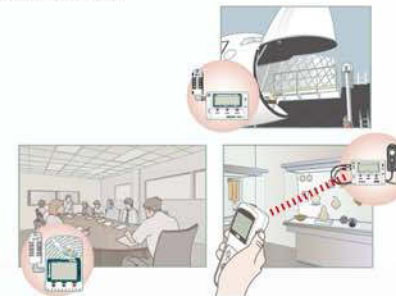
H-type models (model names which include "H") come with our high precision temperature/humidity sensor. Features include a humidity measurement accuracy of $\pm 2.5\%$, as well as the wide range measurement of temperature from -30 to 80 °C and humidity from 0 to 99%RH.

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)



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



TR-72wf

Measurement Range

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

High Precision Type



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



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



TR-74Ui

Measurement Range

Illuminance: 0 lx to 130 klx
 UV Intensity: 0 to 30 mW/cm²
 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/cm²h
 Temperature/Humidity Sensor (THA-3151) and
 Illuminance UV Sensor (ISA-3151) Included



High Precision Type



TR-74Ui-H

Measurement Range

Illuminance: 0 lx to 130 klx
 UV Intensity: 0 to 30 mW/cm²
 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/cm²h
 High Precision Temperature/Humidity Sensor
 (HHA-3151) and Illuminance UV Sensor
 (ISA-3151) Included

CO2 / Temperature / Humidity



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



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



TR-57DCi

Compatible Devices

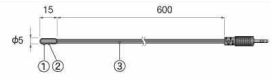
Infrared Communication: TR-74Ui / 76Ui
 (Including H Type)
 Cable Communication: TR-73U / 74Ui / 76Ui
 (Including H Type)
 Storage Capacity: Up to 256,000 readings
 When downloading units at full logging capacity:
 10 units of TR-73U, TR-76Ui
 7 units of TR-74Ui

- 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.

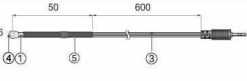
Temperature Sensors for TR-71wf / 73U

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.

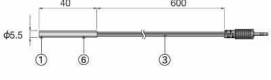
TR-0106
TPE Resin-Shielded Sensor
Response Time (90%) :
Approx. 190 sec. (in air)



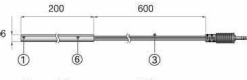
TR-0206
Screw-down Sensor
Response Time (90%) :
Approx. 210 sec. (in air)



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



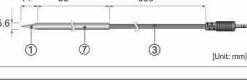
TR-0406
Stainless Protection Sensor
Response Time (90%) :
Approx. 15 sec. (in agitated water)



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



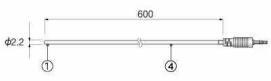
TR-0706
Stainless Protection Sensor
Response Time (90%) :
Approx. 11 sec. (in agitated water)



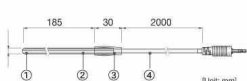
Temperature Sensors for TR-71wf (Fluoropolymer Coated Type)

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

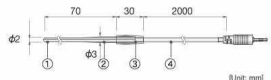
TR-1106
Fluoropolymer Coated Sensor
Response Time (90%) :
Approx. 80 sec. (in air)
Approx. 7 sec. (in agitated water)



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



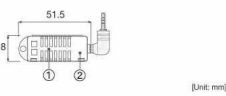
TR-1320
Stainless Protection Sensor
Response Time (90%) :
Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)



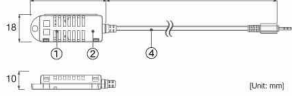
Temperature / Humidity Sensors for TR-72wf / 74Ui / 76Ui

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

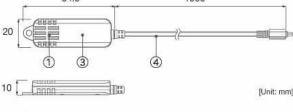
THA-3001
Measurement Range : (*1)
Temperature: 0 to 55 °C
Humidity: 10 to 95 %RH (no condensation)
Accuracy:
Temperature: ±0.5 °C
Humidity: ±5 %RH [at 25 °C and 50 %RH]
Response Time (90%) : Approx. 7 min.



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.



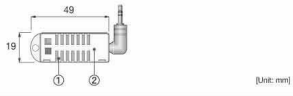
HHA-3151 : High Precision Type
Measurement Range: (*1)
Temperature: -30 to 80 °C
Humidity: 0 to 99 %RH
Accuracy:
Temperature: ±0.3 °C [0 to 50 °C],
±0.5 °C [at all other temperatures] 10
Humidity: ±2.5%RH [at 25°C, 10 to 85 %RH], ±4%RH [at 25°C, 0 to 10 %RH or 85 to 99 %RH]
At temperatures other than 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)



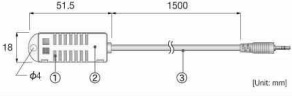
Temperature / Humidity Sensors for TR-73U

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.

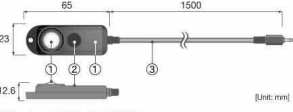


TR-3110
Response Time (90%) :
About 7 min.



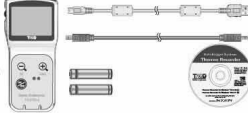
Illuminance / UV Sensor for TR-74Ui

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)
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.



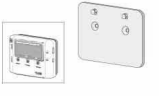
Data Collector for TR-73U / 74Ui / 76Ui

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

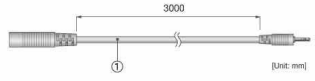
SO-15C1
Contents:
Software CD-ROM,
USB Communication cable (US-15C)



Sensor Extension Cable

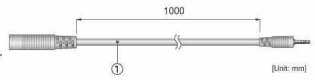
Materials: ① Vinyl Coated Electrical Wire

TR-1C30
Temperature Durability:
-25 to 60 °C



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.

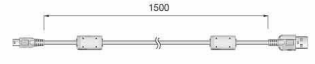
TR-5C10
Temperature Durability:
-25 to 60 °C
Compatible Sensors:
Temperature / Humidity Sensor
TR-3100 (*3)



*3: Only one cable per sensor.

Communication Cable

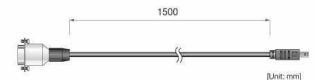
US-15C : USB Communication Cable



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



	TR-71wf	TR-72wf		TR-72wf-H	
Sensor (External) (*1)	TR-0106 Thermistor	THA-3001 Thermistor Polymer Resistance		HHA-3151 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 AA Alkaline Battery (LR6) x 2, Registration Code Label, Manual Set (Warranty Included)		Temperature/Humidity Sensor (THA-3001) x 1	High Precision Temperature/Humidity Sensor (HHA-3151) x 1	
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.

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