USB Connectable Loggers

for Variety of Measurements

TR-7Ui Series

T&D

Easy-to-Use Data Loggers for Wide Variety

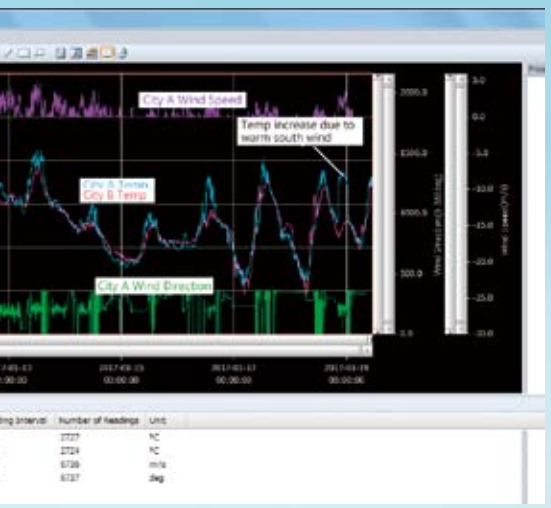
Temp / Humidity / Barometric-Pressure (1ch each)

TR-73U

Illuminance / UV Intensity / Temperature / Humidity (1ch each)

TR-74Ui / 74Ui-S:High-Precision Type

# of Measurements



Easy Data Download to PC via USB

The USB connection makes it easy not only to transfer recorded data directly from the data logger to your computer, but to monitor current readings on the PC screen.

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, barometric pressure, Illuminance and UV intensity, and CO2 concentration are available.

High-Accuracy Measurement with "-S" Type Models

TR-74Ui-S and TR-76Ui-S come with our new high precision temperature and humidity sensor, which has high environmental resistance and allows for reliable and accurate measurement in harsh environments.

Large Logging Capacity: 8000 Data Sets

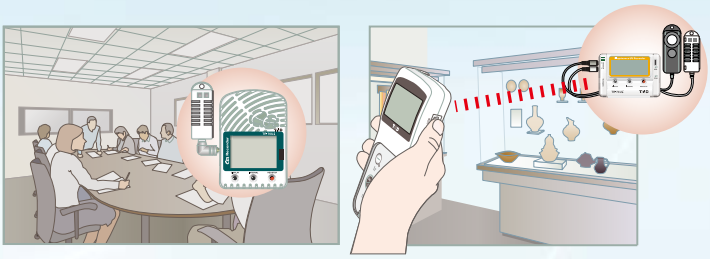
One data set consists of readings for all channels in that type of unit. If set at a recording interval of 60 minutes, it gives you one year's worth of measurements.

Free-of-Charge Software

For setup and data analysis, all necessary software is available for free download from our website.

Application Examples

- Managing temperature and humidity in hospitals, museums, and temperature controlled warehouses
- Managing CO2, temperature and humidity in schools: from kindergartens to universities
- Research studies on photosynthesis and growth of plants
- Measuring the degree of air tightness in packaging during transportation
- Management of illuminosity and UV light (to prevent deterioration of exhibits) in art museums and other exhibit forums



CO2 / Temperature / Humidity (1ch each)

TR-76Ui / 76Ui-S:High-Precision Type

S-type

Data Collector

TR-57DCi

Note:
This series does not require the use of Data Collection Devices.

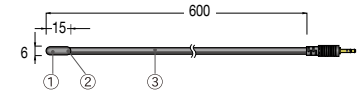
Temperature Sensors for TR-73U

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

Materials: ① Thermistor ② TPE Mold ③ TPE Cable ④ M3 Crimp Terminal (aluminium) ⑤ ShrinkTube ⑥ Stainless Tube (SUS304) ⑦ Stainless Tube (SUS316)

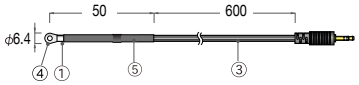
TR-0106 TPE Resin-Shielded Sensor

Response Time (90%):
Approx. 190 sec. (in air)
Waterproof Capacity: None



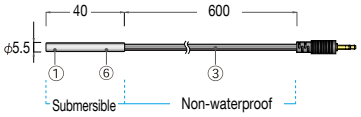
TR-0206 Screw-down Sensor

Response Time (90%):
Approx. 210 sec. (in air)
Waterproof Capacity: None



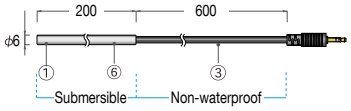
TR-0306 Stainless Protection Sensor

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



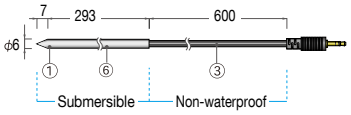
TR-0406 Stainless Protection Sensor

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



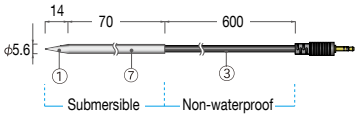
TR-0506 Stainless Protection Sensor

Response Time (90%):
Approx. 10 sec. (in agitated water)



TR-0706 Stainless Protection Sensor

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



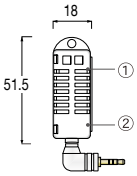
[Unit: mm]

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

Materials: ① Temp-Humidity Sensor Polypropylene Resin ③ ABS Resin ④ PVC Cable ⑤ Halogen-Free Flame Resistant Sheath Cable

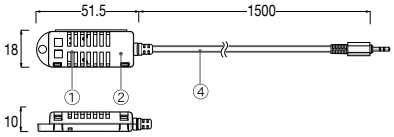
THA-3001

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.



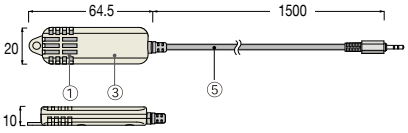
THA-3151

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.



SHA-3151 High Precision Type

Measurement Range :
Temperature: –25 to 70°C,
Humidity: 0 to 99%RH *1
Accuracy:
Temperature:
±0.3°C at 10 to 40°C,
±0.5°C all other temperatures
Humidity: ±2.5%RH at 15 to 35°C / 30 to 80%RH
Long Term Stability : ±1%RH / yr, ±0.1°C/yr*2
Responsiveness : Response Time (90%): Approx. 7 min.



[Unit: mm]

*1: Do not expose to condensation, dampness, corrosive gases or organic solvents.
*2: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below –20°C.

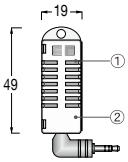
Temperature-Humidity Sensors for TR-73U

Measurement Range: Temperature 0 to 50°C, Humidity 10 to 95%RH
Accuracy: Temperature Avg. ±0.3°C at 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

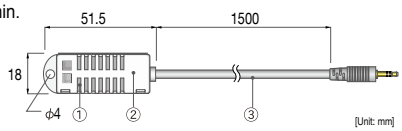
TR-3100

Response Time (90%): Approx. 7 min.



TR-3110

Response Time (90%): About 7 min.



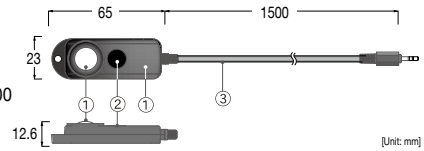
[Unit: mm]

Illuminance-UV Sensor for TR-74Ui

Materials: ① Polycarbonate ② Glass ③ Vinyl chloride-shielded wire

ISA-3151

Measurement Range:
Illuminance: 0 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/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)



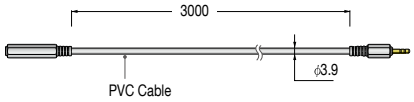
[Unit: mm]

*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.

Sensor Extension Cable

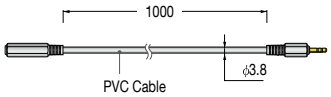
Compatible Sensors:
Temperature Sensor: TR-1106, TR-1220, TR-1320, TR-0106, TR-0206, TR-0306, TR-0406, TR-0506, TR-0706
Temp-Humidity Sensor: THA-3001, THA-3151, SHA-3151, TR-3100*
Illuminance-UV Sensor: ISA-3151
Temperature Durability:–25 to 60°C
Waterproof Capacity: None
Note: Conditions for Use Temperature sensors can use up to 3 meters of extension cables. Temp-Humidity sensors and Illuminance-UV sensors can use up to 9 meters of extension cables.

TR-1C30



TR-5C10

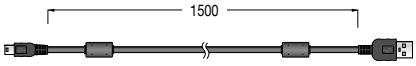
* Only 1 extension cable for TR-3100



[Unit: mm]

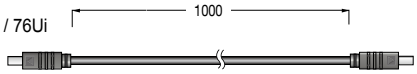
Communication Cable

US-15C USB Communication Cable



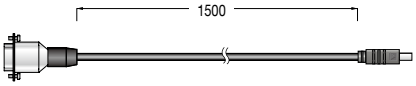
TR-6C10 Serial Communication Cable

For communication between TR–57DCi and TR–73U / 74Ui / 76Ui (Including S Type)



TR-07C Serial Communication Cable

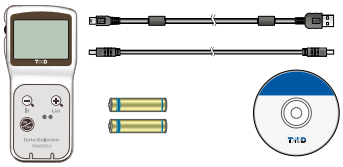
For communication between PC and TR–73U / 74Ui / 76Ui (Including S Type)
Connector Type:
Specialized Connector D-sub 9 pin



Data Collector

TR-57DCi

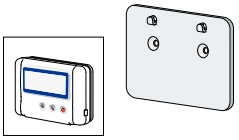
Accessories:
USB Communication cable (US-15C), Serial Communication Cable (TR-6C10), Software CD-ROM, AAA Alkaline Battery x 2



Wall Attachment

TR-07K2

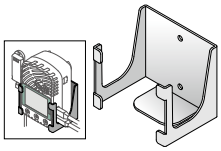
Accessories:
Lock Screw x 2,
Double-sided adhesive tape
Compatible Unit:
TR-73U / 74Ui (Including S Type)
Materials: Polycarbonate



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

AT-76K1

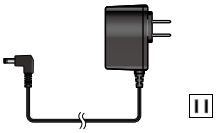
Accessories:
Lock Screw x 2,
Double-sided adhesive tape
Compatible Unit: TR–76Ui (Including S Type)
Materials: Aluminum



AC Adaptors for TR-76Ui

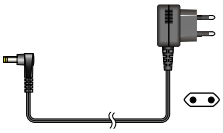
AD-06A1

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



	TR-73U		
Sensor	Temp-Humidity Sensor TR-3100 *1		Barometric Pressure Sensor (Internal)
	Thermistor	Polymer Resistance	
Measurement Channels	Temperature 1ch	Humidity 1ch	Barometric Pressure 1ch
Units of Measurement	°C, °F	%RH	hPa
Measurement Range	0 to 50°C (Supplied Sensor) −40 to 110°C (Optional Sensor)	10 to 95%RH	750 to 1100hPa
Accuracy	Avg. ±0.3°C at 0 to 50°C	±5%RH at 25°C, 50%RH	±1.5hPa
Measurement Resolution	0.1 °C	1 %RH	0.1hPa
Responsiveness	Response Time (90%): Approx. 7 min.		4 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. / 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 (fixed or alternating display), Battery Warning Mark, etc.
Communication Interfaces	USB Communication Serial Communication: RS-232C*2
Power	AA Alkaline Battery x 1
Battery Life *3	Approx. 10 months
Dimensions	H 55 mm x W 78 mm x D 18 mm
Weight	Approx. 40 g
Operating Environment	Temperature: −10 to 60 °C Humidity: 90 %RH or less (no condensation)
Accessories	AA Alkaline Battery LR6, USB Mini-B Cable US-15C, Temperature-Humidity Sensor TR-3100 x 1, Software CD-ROM, User's Manual Set (Warranty Included)
Software	T&D Recorder for Windows (TR-5, 7xU)
Compatible OS *4	Microsoft Windows 10 32/64 bit Microsoft Windows 8 32/64 bit Microsoft Windows 7 32/64 bit
Display Languages *5	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 multiple factors including ambient temperature, recording interval, frequency of communication, 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.
*4: For installation, it is necessary to have Administrator (Computer Administrator) rights.
*5: 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-S	
Temperature-Humidity Sensor	THA-3151		SHA-3151 (High-Precision Type)	
	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Units of Measurement	°C, °F	%RH	°C, °F	%RH
Measurement Range	0 to 55°C	10 to 95%RH	−25 to 70°C	0 to 99%RH *1
Accuracy	±0.5°C	±5 %RH at 25°C, 50%RH	±0.3°C at 10 to 40°C ±0.5°C all other temperatures	±2.5%RH at 15 to 35°C, 30 to 80%RH
Measurement Resolution	0.1°C	1%RH	0.1°C	0.1%RH
Responsiveness	Response Time (90%): Approx. 7 min.			

Illuminance-UV Sensor	ISA-3151
Measurement Channels	Illuminance: 1ch UV intensity: 1ch
Units of Measurement	Illuminance: lx, klx UV Intensity: mW/cm²
Measurement Range	Illuminance: 0 lx to 130 klx UV Intensity: 0 to 30 mW/cm²
Units of Cumulative Measurement	Cumulative Illuminance: lxh, klxh, Mlxh Cumulative amount of UV Light: mW/cm²h, W/cm²h
Display Range of Cumulative Measurement	Illuminance: 0 lxh to 90 Mlxh UV Intensity: 0 mW to 62 W/cm²h
Accuracy	Illuminance 10 lx to 100 klx: ±5% at 25°C, 50%RH UV Intensity 0.1 to 30 mW/cm²: ±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/cm²
Responsiveness	Response Time (90%): 3 sec. at recording interval of 1 sec. or 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 Infrared Communication: IrPHY 1.2 low power*3 Serial Communication: RS-232C*4	
Power	AA Alkaline Battery x 1	
Battery Life*5	Approx. 6 months	
Dimensions	H 55 mm x W 78 mm x D 18 mm	
Weight	Approx. 40 g	
Operating Environment	Temperature: −10 to 60°C Humidity: 90 %RH or less (no condensation)	
Accessories	Illuminance-UV Sensor ISA-3151, Temperature-Humidity Sensor THA-3151	Illuminance-UV Sensor ISA-3151, High Precision Temperature-Humidity Sensor SHA-3151
	AA Alkaline Battery LR6, USB Mini-B Cable US-15C, Software CD-ROM, User's Manual Set (Warranty Included)	
Software	Illuminance UV Recorder for Windows	
Compatible OS*6	Microsoft Windows 10 32/64 bit Microsoft Windows 8 32/64 bit Microsoft Windows 7 32/64 bit	
Display Languages*7	English	

*1: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below −20°C.
*2: Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.
*3: If you wish to use infrared communication to download recorded data, it is necessary to purchase the Data Collector TR-57DCi (sold separately).
*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: Battery life varies depending upon multiple factors including ambient temperature, recording interval, frequency of communication, 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. When infrared communication function is enabled, battery life may be shortened if the unit is used under the inverter type fluorescent lighting.
*6: For installation, it is necessary to have Administrator (Computer Administrator) rights.
*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-S	
Temperature-Humidity Sensor	THA-3001		SHA-3151 (High-Precision Type)	
	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance
Measurement Channels	Temperature 1ch	Humidity 1ch	Temperature 1ch	Humidity 1ch
Units of Measurement	°C, °F	%RH	°C, °F	%RH
Measurement Range *1	0 to 55°C	10 to 95%RH	−25 to 70°C	0 to 99%RH *2
Accuracy	±0.5°C	±5 %RH at 25°C, 50%RH	±0.3°C at 10 to 40°C ±0.5°C all other temperatures	±2.5%RH at 15 to 35°C, 30 to 80%RH
Measurement Resolution	0.1°C		0.1°C	
Responsiveness	Response Time (90%): Approx. 7 min.			

CO2 Sensor (Internal)	NDIR
Measurement Channels	CO2 Concentration 1ch
Units of Measurement	ppm
Measurement Range	0 to 9,999 ppm
Accuracy	±(50 ppm + 5% of reading) at 5,000 ppm or less*3
Measurement Resolution	Minimum of 1 ppm
Responsiveness	Response Time (90%): Approx. 1 min.
Logging Capacity	8,000 data sets (One data set consists of readings for all channels in that type of unit.)
Recording Interval	Select from 15 choices: 1, 2, 5, 10, 15, 20, 30 sec. or 1, 2, 5, 10, 15, 20, 30, 60 min.
Recording Mode	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 Infrared Communication: IrPHY 1.2 low power*4 Serial Communication: RS-232C*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-06A1 or AD-06C1), AA Alkaline Battery x 4
Battery Life	Approx. 2 days (batteries only without AC adaptor)*7
Dimensions	H 96 mm × W 66 mm × D 46 mm (excluding protrusions and sensor)
Weight	Approx. 120 g
Operating Environment	Temperature: 0 to 45°C Humidity: 90 %RH or less (no condensation)
Accessories	Temperature-Humidity Sensor THA-3151 / High Precision Temperature-Humidity Sensor SHA-3151
	AA Alkaline Battery LR6 x 4, AC Adaptor AD-06A1 or AD-06C1, USB Mini-B Cable US-15C, Software CD-ROM, User's Manual Set (Warranty Included)
Software	CO2 Recorder for Windows
Compatible OS *8	Microsoft Windows 10 32/64 bit Microsoft Windows 8 32/64 bit Microsoft Windows 7 32/64 bit
Display Languages *9	English

*1: Make sure to use the data logger within the operating environment as listed in the specifications.
*2: When continually used in environments with temperatures above 60°C, accuracy of humidity measurements will decrease over time. Also, humidity cannot be measured at temperatures below -20°C.
*3: Stated value is the measurement accuracy of the CO2 sensor when Auto Calibration is operating properly. A change in atmospheric pressure directly influences the reading of CO2, which can cause measurement errors; a decrease in pressure by 10hPa results in a relative decrease in CO2 by 1.6%. In such a case, we recommend carrying out the "Atmospheric Pressure Correction" function found in CO2 Recorder for Windows.
*4: If you wish to use infrared communication to download recorded data, it is necessary to purchase the Data Collector TR-57DCi (sold separately).
*5: 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.)
*6: In order to use the external alarm terminal, please prepare a compatible connector: JST PAP-04V-S.
*7: Battery life varies depending upon multiple factors including ambient temperature, recording interval, frequency of communication, 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. 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: 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.

	Data Collector TR-57DCi
Compatible Devices	TR-7Ui Series: TR-74Ui / 76Ui / 73U (including S types) TR-5i Series: TR-51i / 52i / 55i-TC / 55i-Pt / 55i-V / 55i-mA / 55i-P
Storage Capacity	Up to 256,000 readings When downloading from units filled to logging capacity: - 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) - Optical Communication: TR-5i Series - Infrared Communication (IrPHY 1.2 low power*1): TR-74Ui, TR-76Ui and TR-5i Series - Serial Communication (RS-232C*2): TR-7Ui Series, Between TR-57DCi - PC - USB Communication - Serial Communication (RS-232C*3)
Power	AAA Alkaline Battery x 2, AAA Ni-MH Battery x 2, USB bus power, AC adaptor AD-06A1 or AD-06C1
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. 90 g
Operating Environment	Temperature: 0 to 50 °C Humidity: 90%RH or less (no condensation)
Accessories	AAA Alkaline Battery LR03 x 2, USB Mini-B Cable US-15C, Serial Communication Cable TR-6C10, Software CD-ROM, User's Manual Set (Warranty Included) x 1
Software	T&D Recorder for Windows (TR-5, 7xU)*5
Compatible OS*6	Microsoft Windows 10 32/64 bit Microsoft Windows 8 32/64 bit Microsoft Windows 7 32 / 64 bit
Display Languages*7	English
Other	The Microsoft .NET Framework 3.5 SP1 is required.

*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 series.
*3: The optional serial communication cable TR-07C is necessary for serial communication with PC.
*4: Battery life varies depending upon multiple factors including ambient temperature, frequency of communication, 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.
*5: For TR-74Ui and TR-76Ui, only the data downloaded via TR-57DCi can be used with "T&D Recorder for Windows (TR-5, 7xU)".
*6: For installation, it is necessary to have Administrator (Computer Administrator) rights.
*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.

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2019.04 16304650007 (5th Edition)