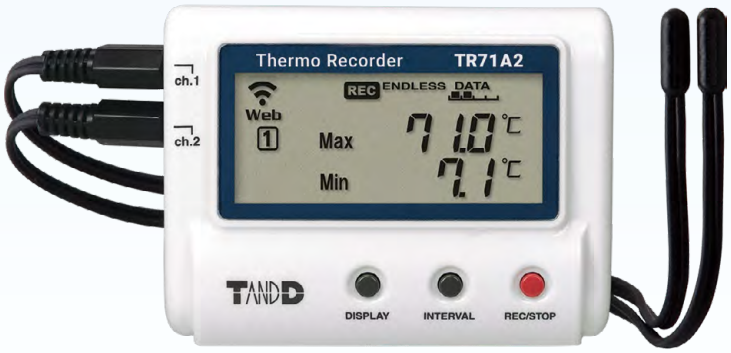
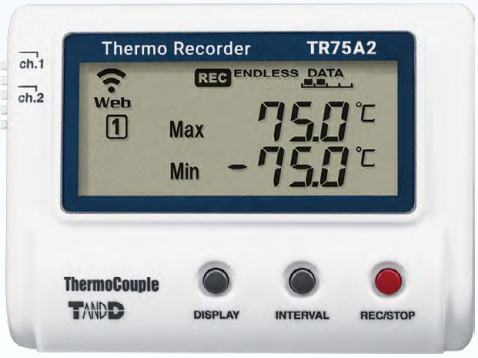
Thermo Recorder
TR7A2series





TANDD

TR7A2 series

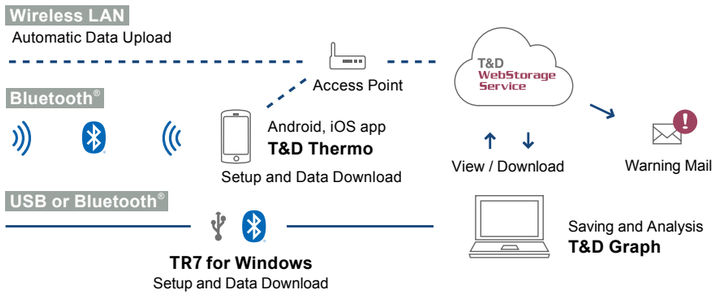
TR71A2
Temperature 2ch
Compliant with VFC Guidelines

TR72A2
Temperature 1ch
Humidity 1ch

TR72A2-S
Temperature 1ch
Humidity 1ch
High-Precision type

TR75A2
Temperature 2ch
Thermocouple (K,J,T,E,S,R)*
Ultra Low Temperature
Compliant with VFC Guidelines
*Sensors not included

Measure / Record



For Easy Worldwide Access and Notification

Our TR7A2 includes multi-communication methods and auto-upload of data to the cloud function plus an array of features and functions.

Two Tier Display Plus Warning Notification

View Measurements of Two Channels
View Upper and Lower Limit Alarms

MAX / MIN Display

Automatic clearing at regular intervals,
so you can see the max/min values for each day.

Large Storage Capacity 30,000 readings per channel

Can store up to 3.5 years of data in the device

Data Protection

Even if battery power is completely gone,
no recorded data will be lost.

Enhanced Security

Network communication with server via HTTPS
WPA2-EAP support for Wireless LAN

For Vaccine Temperature Management

[Vaccine Mode] settings for VFC
compatible models TR71A2/75A2
TR75A2 for ultra-low temperature

Specification		TR71A2	TR72A2		TR72A2-S		TR75A2
Measurement Channels		Temperature 2ch	Temperature 1ch, Humidity 1ch		Temperature 1ch, Humidity 1ch		Temperature 2ch
Sensor		Thermistor	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance	Thermocouple: Type K, J, T, E, S, R (*1)
Measurement Units		℃, ℉	℃, ℉	%RH	℃, ℉	%RH	℃, ℉
Measurement Range	Internal Sensor	-10 to 60 ℃ (*2)	-	-	-	-	-
	External Sensor	-40 to 110 ℃ (Supplied Sensor) -60 to 155 ℃ (Optional Sensor: Fluoropolymer Coated Type)	0 to 55 ℃	10 to 95 %RH	-25 to 70 ℃	0 to 99 %RH (*3)	Type K : -199 to 1370 ℃ Type J : -199 to 1200 ℃ Type T : -199 to 400 ℃ Type E : -199 to 1000 ℃ Type S : -50 to 1760 ℃ Type R : -50 to 1760 ℃
Accuracy		(Supplied Sensor) Avg. ± 0.3 ℃ at -20 to 80 ℃ Avg. ± 0.5 ℃ at -40 to -20 ℃, 80 to 110 ℃	±0.5 ℃	±5 %RH at 25 ℃, 50 %RH	±0.3 ℃ at 10 to 40 ℃ ±0.5 ℃ all other temperatures	±2.5 %RH at 15 to 35 ℃, 30 to 80 %RH	Thermocouple Measurement (Sensor inaccuracies not included) Type K, J, T, E : ± (0.5 + 0.003 × t) ℃ at -100 ℃ or above Type S, R : ± (1.5 + 0.003 × t) ℃ at 100 ℃ or above t = absolute value of measurement in ℃ Cold Junction Compensation ±0.5 ℃ at 10 to 40 ℃ ±0.8 ℃ other temperatures within the operating environment of the logger
Measurement Resolution		0.1 ℃	0.1 ℃	1 %RH	0.1 ℃	0.1 %RH	Type K, J, T, E : 0.1 ℃ Type S, R : Approx. 0.2 ℃
Responsiveness		(Supplied Sensor) Response Time (90 %): Approx. 190 sec.	Response Time (90 %): Approx. 7 min.		Response Time (90 %): Approx. 7 min.		-
Logging Capacity		30,000 data sets (One data set consists of readings for all channels.)					
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)					
Measurement Mode (TR71A2/75A2 only)		Normal Mode: Max/Min values and ALM display based on the readings on the LCD Vaccine Mode (*4): Max/Min values and ALM display based on the recorded values					
LCD Display Items		Measurements, ALM Display, Recording Status, Recording Mode,Battery Warning Mark, Communication Status, etc. - Measurements: Ch1 & Ch2 current values / Ch1 Max & Min values / Ch2 Max & Min values - Display Pattern: Alternating or Fixed display					
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 IEEE 802.11b/g/n (2.4GHz only) Security: WPA-PSK(AES/TKIP), WPA2-PSK(AES/TKIP), WPA2-EAP(AES/TKIP) WPS 2.0 : Push Button Configuration IEEE 802.1X Authentication: EAP-TLS, EAP-PEAP(MSCHAPv2) (*5) Protocol (*6): HTTP, HTTPS, SNTP, DHCP, DNS Bluetooth® Communication Bluetooth 4.2 (Bluetooth Low Energy) USB Communication USB 2.0 (Mini-B connector)					
Power		Battery: AA Alkaline LR6 x 2, AA Ni-MH x 2 External: USB Bus 5V 200mA, AC Adaptor (AD-05A2 or AD-05C2)(*7)					
Battery Life (*8)		Approx. 5 days to 18 months					
Dimensions		H 58 mm x W 78 mm x D 26 mm					
Weight		Approx. 55 g					
Operating Environment		Temperature: -10 to 60 ℃ , Humidity: 90 %RH or less (no condensation)					
Included Items		Temperature Sensor TR-0106 x 2	Temperature-Humidity Sensor THA-3001 x 1		High Precision Temperature-Humidity Sensor SHA-3151 x 1		(Sensor not provided)
		AA Alkaline Battery LR6 x 2, Registration Code Label, Manual Set (Warranty Included)					
Software (*9)		PC Software (Windows) TR7 for Windows (*10) T&D Graph T&D Data Server Mobile Application (iOS, Android) T&D Thermo					

*1: We do not handle the sale of Thermocouple sensors.
Compatible wire sizes are as follows. Single Wire : Ø0.32 to Ø0.65 mm (AWG 28 - 22), Twisted Wire : 0.08 to 0.32 mm2 (AWG 28 - 22), Ø0.12 mm or more in diameter, Stripping Length : 9 to 10 mm
*2: When Auto Upload is used frequently, the measurement of the internal sensor may rise by around 0.3 ° C.
When using external power, the data logger itself generates heat and the internal sensor will report a temperature much higher than ambient; we recommend using an external temperature sensor in this case.
*3: 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.
*4: Vaccine mode complies with the CDC (Centers for Disease Control and Prevention) requirements for vaccine management.
*5: When using EAP-PEAP, server certificate verification using the CA certificate is not available.
*6: Client function. Only HTTP proxy is supported (not HTTPS).
*7: The optional AC adaptor "AD-05A2" (Type A Plug) can be used in the USA and Canada, and "AD-05C2" (Type C Plug) in Europe. For usage in other countries, please contact your local distributor.
*8: Battery life is highly dependant on the Auto-Upload Interval; at 1 min will give 5 days of usage, and at 6 hours or more will yield the maximum lifetime.
Other influential factors include LAN environment, ambient temperature, recording interval, and battery performance. All estimates are based on operations carried out with AA Alkaline batteries and are in no way a guarantee of actual battery life.
*9: Free software download and information on OS compatibility is available on the Software page of our website at https://tandd.com/software/.
*10: TR7 for Windows requires a PC with Bluetooth capability (4.0 or above) or a USB communication cable (available as option: US-15C).

The specifications listed above are subject to change without notice.

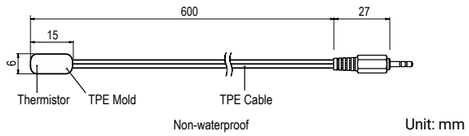
TR7A2 Series Options

Temperature Sensors for TR71A2

Measurement Range: -40 to 110°C
Accuracy: Avg. ±0.3˚C at -20 to 80˚C, Avg. ±0.5˚C at -40 to -20˚C / 80 to 110˚C
Note: Can be extended by 3 meters with the Extension Cable TR-1C30 / TR-5C10

TPE Resin-Shielded Sensor

TR-0106

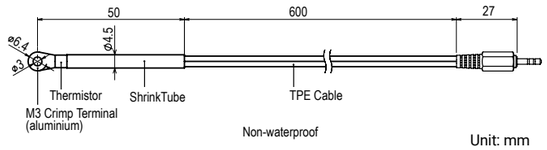


Unit: mm

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

Screw-down Sensor

TR-0206

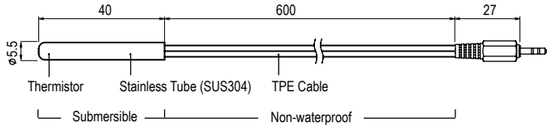


Unit: mm

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

Stainless Protection Sensor

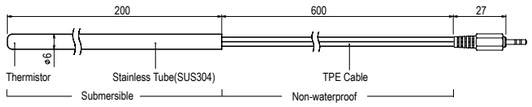
TR-0306



Unit: mm

Response Time (90%): Approx. 11 sec. (in agitated water)
Waterproof Capacity: Submersible (stainless protection tube)

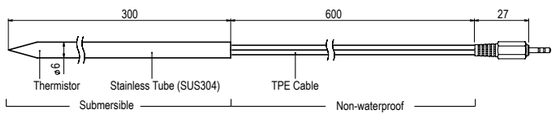
TR-0406



Unit: mm

Response Time (90%): Approx. 15 sec. (in agitated water)
Waterproof Capacity: Submersible (stainless protection tube)

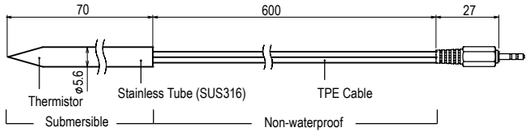
TR-0506



Unit: mm

Response Time (90%): Approx. 10 sec. (in agitated water)
Waterproof Capacity: Submersible (stainless protection tube)

TR-0706



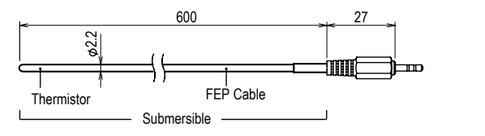
Unit: mm

Response Time (90%): Approx. 11 sec. (in agitated water)
Waterproof Capacity: Submersible (stainles sprotection tube)

Measurement Range: -60 to 155°C
Accuracy: Avg. ±0.5˚C at -40 to 80˚C, Avg. ±1.0˚C at -60 to -40˚C / 80 to 100˚C, Avg. ±2.0˚C at 100 to 155˚C
Note: Can be extended by 3 meters with the Extension Cable TR-1C30 / TR-5C10

Fluoropolymer Coated Sensor

TR-1106

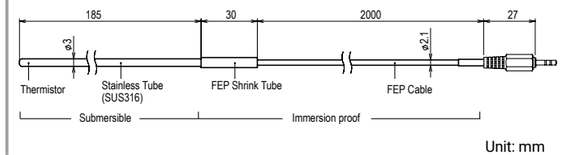


Unit: mm

Response Time (90%): Approx. 80 sec. (in air)
Approx. 7 sec. (in agitated water)
Waterproof Capacity: Submersible

Stainless Protection Sensor

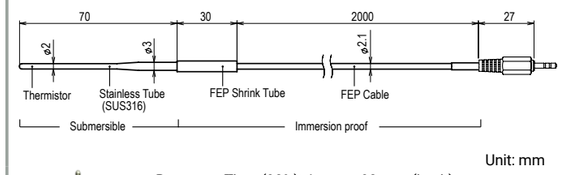
TR-1220



Unit: mm

Response Time (90%): Approx. 150 sec. (in air)
Approx. 7 sec. (in agitated water)
Waterproof Capacity: Submersible (stainless protection tube) , Immersion proof (cable)

TR-1320



Unit: mm

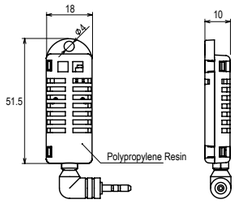
Response Time (90%): Approx. 90 sec. (in air)
Approx. 3 sec. (in agitated water)
Waterproof Capacity: Submersible (stainless protection tube) , Immersion proof (cable)

Temperature-Humidity Sensors for TR72A2 / 72A2-S

Conditions for Use:
Do not expose to condensation, dampness, corrosive gases or organic solvents.Continued use may cause a decrease in the sensor's accuracy and sensitivity even under normal operational conditions.
Note: Can be extended by 9 meters with the Extension Cable TR-1C30 / TR-5C10

Temperature-Humidity Sensor

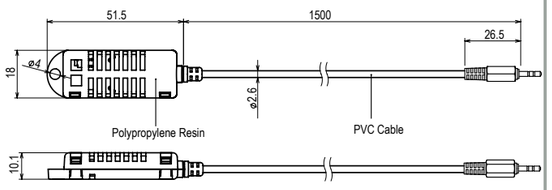
THA-3001



Unit: mm

Measurement Range: Temperature 0 to 55°C
Humidity 10 to 95%RH
Accuracy: Temperature: ±0.5°C
Humidity: ±5%RH at 25°C, 50%RH
Response Time (90%): Approx. 7 min.

THA-3151

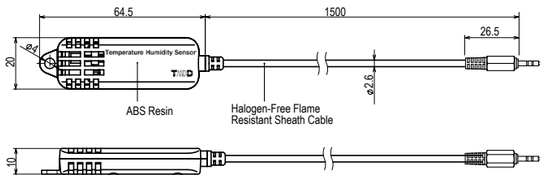


Unit: mm

Measurement Range: Temperature 0 to 55˚C
Humidity 10 to 95%RH
Accuracy: Temperature ±0.5°C
Humidity ±5%RH at 25°C, 50%RH
Response Time (90%): Approx. 7 min.

High Precision Temp-Humidity Sensors

SHA-3151

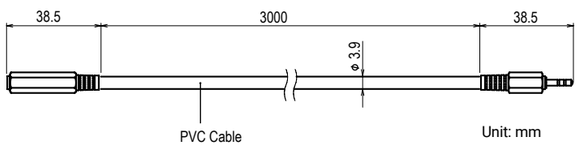


Unit: mm

Measurement Range: Temperature -25 to 70°C
Humidity 0 to 99%RH
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.
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
Response Time (90%): Approx. 7 min.
Long Term Stability: ±1%RH/yr, ±0.1°C/yr

Sensor Extension Cables

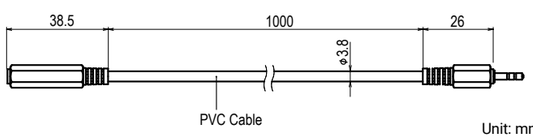
TR-1C30



Unit: mm

Temperature Durability: -25 to 60°C
Waterproof Capacity: None
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
Conditions for Use:
Temperature sensors can use up to 3 meters of extension cables.Temp-Humidity sensors can use up to 9 meters of extension cables.

TR-5C10



Unit: mm

AC Adaptors

AD-05A2 AC Adaptor (Type A Plug)

USB Mini-B Type
Input: AC 100 - 240 V
Output: DC 5 V, 1 A
Frequency: 50 / 60 Hz
Cable Length: 1.5 m
Plug Type: A

AD-05C2 AC Adaptor (Type B Plug)

USB Mini-B Type
Input: AC100-240V
Output: DC5V, 1A
Frequency: 50 / 60 Hz
Cable Length: 1.5 m
Plug Type: C

Note: When using with TR7A2 Series the logger body will become hot. Also note that the data logger itself will generate heat and the internal sensor will measure a temperature higher than actual; we recommend using an external temperature sensor.

Wall Attachment

TR-07K2

Included Items:
Lock Screws for fastening to wall,
Double-Sided Adhesive Tape

Communication Cable

US-15C For Communication with PC

USB Mini-B Type
Cable Length: 1.5m

Software for Purchase

SO-TD1 T&D Software

Software Included:
TR7 for Windows
T&D Data Server
T&D Graph
etc.

Note: Optional DVD-ROM that contains the Windows software for current T&D products. Software can be downloaded from T&D's Website, but for those who prefer, a DVD is available for purchase.

tandd.com

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VEGETABLE OIL INK

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