COVID-19 VACCINE

10ml
injection only

Thermo Recorder
TR7Aseries

Thermo Recorder TR71A

REC ENDLESS DATA

Web
1   Max   71.0℃
     Min   7.1℃

T AND D   DISPLAY   INTERVAL   REC/STOP

Thermo Recorder TR75A

REC ENDLESS DATA

Web
1   Max   75.0℃
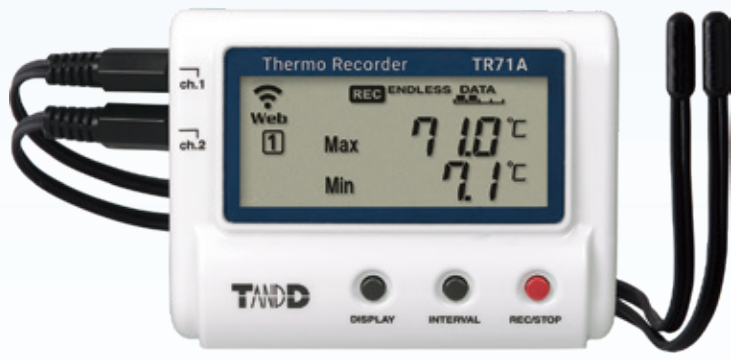   Min   -75.0℃

ThermoCouple
T AND D   DISPLAY   INTERVAL   REC/STOP
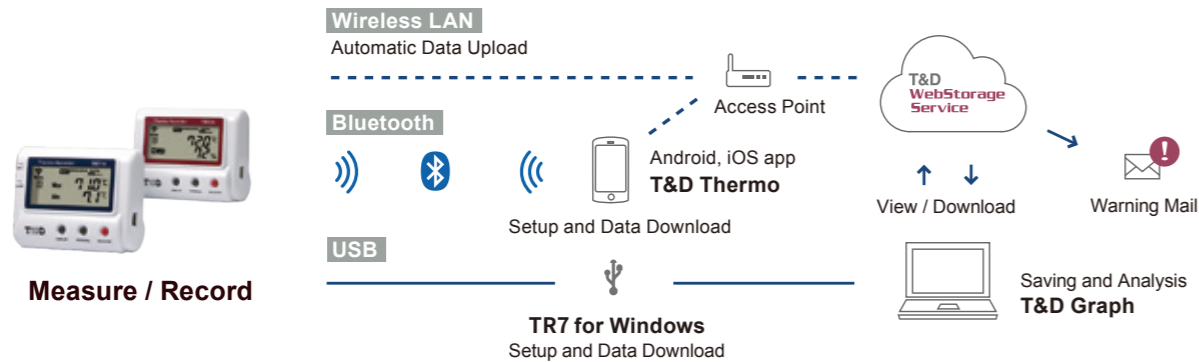
T AND D

TR7A series

TR71A
Temperature 2ch
Compliant with VFC Guidelines

TR72A
Temperature 1ch
Humidity 1ch

TR72A-S
Temperature 1ch
Humidity 1ch
High-Precision type

TR75A
Temperature 2ch
Thermocouple (K,J,T,E,S,R)*
Ultra Low Temperature
Compliant with VFC Guidelines
*Sensors not included

Wireless LAN
Automatic Data Upload

Bluetooth

USB

Access Point

T&D WebStorage Service

Android, iOS app
T&D Thermo
Setup and Data Download

View / Download

Warning Mail

Measure / Record

TR7 for Windows
Setup and Data Download

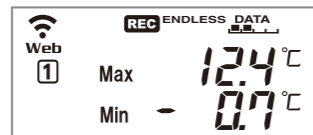Saving and Analysis
T&D Graph

For Easy Worldwide Access and Notification

Our new TR7A includes multi-communication methods and auto-upload of data to the cloud function plus a new 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

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

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

For Vaccine Temperature Management
[Vaccine Mode] settings for VFC
compatible models TR71A/75A
TR75A for ultra-low temperature

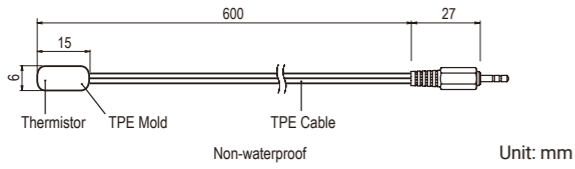| Specification		TR71A	TR72A		TR72A-S		TR75A
Measurement Channels		Temperature 2ch	Temperature 1ch, Humidity 1ch		Temperature 1ch, Humidity 1ch		Temperature 2ch
Sensor		Thermistor	Thermistor	Polymer Resistance	Thermistor	Polymer Resistance	Thermocouple: Type K, J, T, E, S, R (*1)
Measurement Units		°C, °F	°C, °F	%RH	°C, °F	%RH	°C, °F
Measurement Range	Internal Sensor	-10 to 60°C (*2)	-	-	-	-	-
	External Sensor	-40 to 110°C (Supplied Sensor) -60 to 155°C (Optional Sensor: Fluoropolymer Coated Type)	0 to 55 °C	10 to 95 %RH	-25 to 70 °C	0 to 99 %RH (*3)	Type K : -199 to 1370 °C Type J : -199 to 1200 °C Type T : -199 to 400 °C Type E : -199 to 1000 °C Type S : -50 to 1760 °C Type R : -50 to 1760 °C
Accuracy		(Supplied Sensor) Avg. ± 0.3°C at -20 to 80°C Avg. ± 0.5°C at -40 to -20°C, 80 to 110°C	±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	**Thermocouple Measurement (Sensor inaccuracies not included)** Type K, J, T, E : ±(0.5 °C + 0.3 % of reading) at -100°C or above Type S, R :±(1.5 °C + 0.3 % of reading) at 100°C or above **Cold Junction Compensation** ±0.5°C at 10 to 40 °C ±0.8°C other temperatures within the operating environment of the logger
Measurement Resolution		0.1°C	0.1 °C	1 %RH	0.1 °C	0.1 %RH	Type K, J, T, E : 0.1°C Type S, R : Approx. 0.2°C
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 min.					
Recording Mode		Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)					
Measurement Mode (TR71A/75A 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/WPA2-PSK(AES/TKIP) WPS 2.0 : Push Button Configuration Protocol (*5): 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					
Battery Life (*6)		Approx. 10 days to 15 months (*7)(*8)					
Dimensions		H 58 mm x W 78 mm x D 26 mm					
Weight		Approx. 55 g					
Operating Environment		Temperature: -10 to 60°C , 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, USB Mini-B Cable US-15C, Manual Set (Warranty Included)					
Software (*8)		**PC Software (Windows)** TR7 for Windows 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: CVaccine mode complies with the CDC (Centers for Disease Control and Prevention) requirements for vaccine management.
*5: Client function. HTTP(S) proxy supported.
*6: Battery life is highly dependant on the Auto-upload interval; at 1 min will give 10 days of usage, and at 12 hours or more will yield the maximum lifetime.
*7: Shows the estimated battery life with Bluetooth ON. It will be 1.2 times longer with Bluetooth OFF.
*8: Shows the estimated battery life with Auto-Upload ON.
The specifications listed above are subject to change without notice.

Temperature Sensors for TR71A

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

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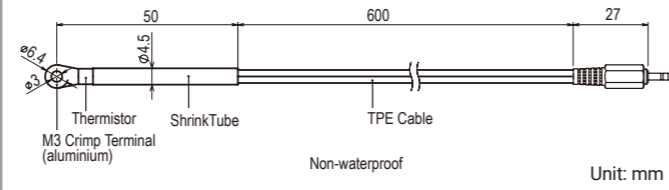Accuracy: Avg. ±0.5°C at -40 to 80°C, Avg. ±1.0°C at -60 to -40°C / 80 to 100°C, Avg. ±2.0°C at 100 to 155°C
Note: Can be extended by 3 meters with the Extension Cable TR-1C30 / TR-5C10

TPE Resin-Shielded Sensor

TR-0106

Non-waterproof
Unit: mm

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

Screw-down Sensor

TR-0206

Thermistor
M3 Crimp Terminal (aluminium)
ShrinkTube
TPE Cable
Non-waterproof
Unit: mm

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

Fluoropolymer Coated Sensor
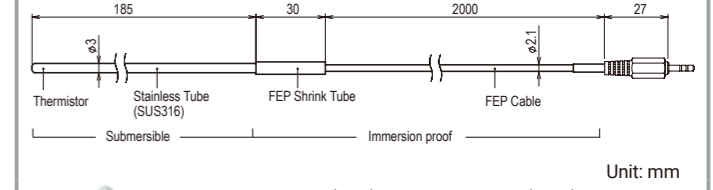
TR-1106

Thermistor
FEP Cable
Submersible
Unit: mm
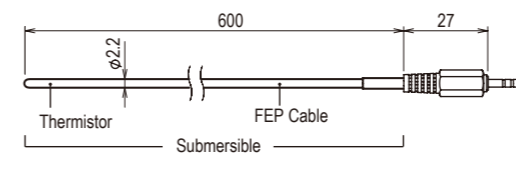
Response Time (90%): Approx. 80 sec. (in air)
Approx. 7 sec. (in agitated water)
Waterproof Capacity: Submersible

Stainless Protection Sensor

TR-1220

Thermistor
Stainless Tube (SUS316)
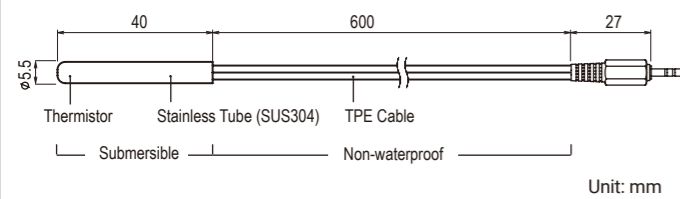FEP Shrink Tube
FEP Cable
Submersible
Immersion proof
Unit: mm

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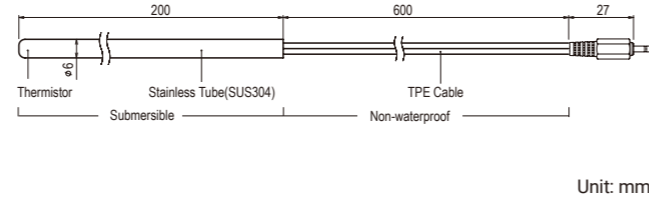Waterproof Capacity: Submersible (stainless protection tube), Immersion proof (cable)

TR-1320

Thermistor
Stainless Tube (SUS316)
FEP Shrink Tube
FEP Cable
Submersible
Immersion proof
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)
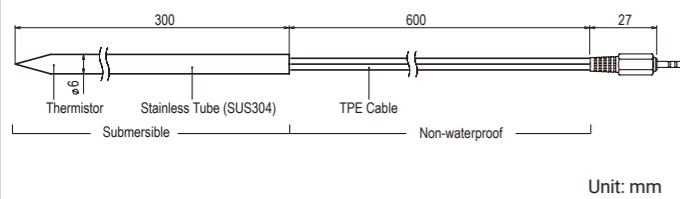
Stainless Protection Sensor

TR-0306

Thermistor
Stainless Tube (SUS304)
TPE Cable
Submersible
Non-waterproof
Unit: mm

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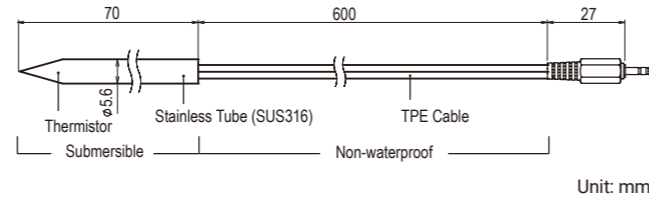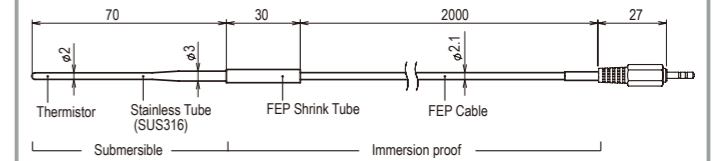Waterproof Capacity: Submersible (stainless protection tube)

TR-0406

Thermistor
Stainless Tube(SUS304)
TPE Cable
Submersible
Non-waterproof
Unit: mm

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

TR-0506

Thermistor
Stainless Tube (SUS304)
TPE Cable
Submersible
Non-waterproof
Unit: mm

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

TR-0706

Thermistor
Stainless Tube (SUS316)
TPE Cable
Submersible
Non-waterproof
Unit: mm

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

Temperature-Humidity Sensors for TR72A / 72A-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.
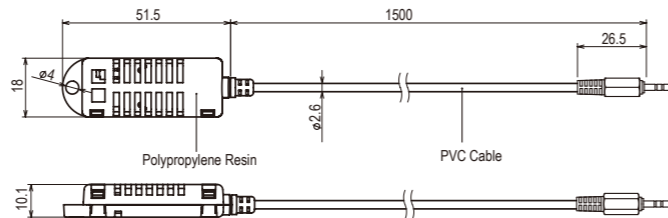Note: Can be extended by 9 meters with the Extension Cable TR-1C30 / TR-5C10

Temperature-Humidity Sensor
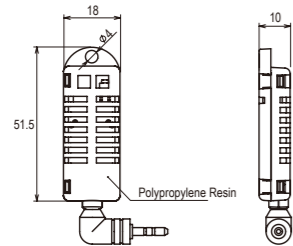
#### THA-3001

18
10
51.5

Polypropylene Resin

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

51.5   1500   26.5
18 ø4   ø2.6
Polypropylene Resin   PVC Cable
10.1

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

64.5   1500   26.5
20   ø2.6
ABS Resin   Halogen-Free Flame
Resistant Sheath Cable
10
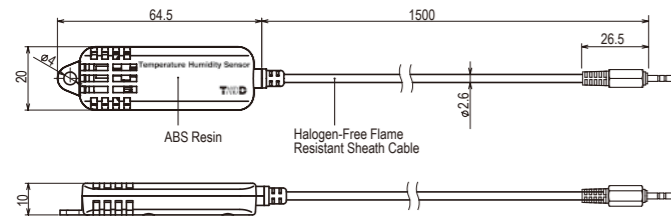
Unit: mm

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.
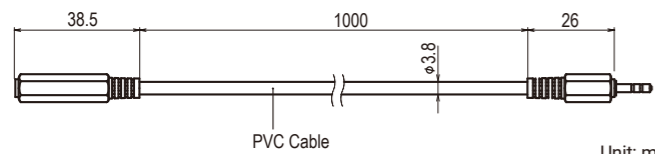Long Term Stability: ±1%RH/yr, ±0.1°C/yr

Sensor Extension Cables

TR-1C30
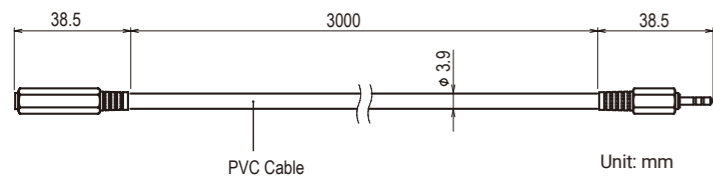
38.5   3000   38.5
ø 3.9
PVC Cable   Unit: mm

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

38.5   1000   26
ø3.8
PVC Cable   Unit: mm

AC Adaptors

AD-05A2   AC Adaptor (FCC)

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
Compatible Devices: Data Logger TR71A / 72A / 72A-S / 75A

AD-05C2   AC Adaptor (CE)

USB Mini-B Type

Input: AC100-240V
Output: DC5V, 1A
Frequency: 50 / 60 Hz
Cable Length: 1.5 m
Plug Type: C
Compatible Devices: Data Logger TR71A / 72A / 72A-S / 75A

Note: When using with TR7A 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:
RTR500BW for Windows (US/EU)
RTR500BM for Windows (US/EU)
RTR500BC for Windows (US/EU)
RTR-500DC for Windows (US/EU)
RTR-600 Settings Utility (US)
TR7 for Windows
CO2 Recorder for Windows
Illuminance UV Recorder for Windows
MCR for Windows
T&D Recorder for Windows
T&D Data Server
T&D Graph

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