DATASHEET

RTR-500A2

T&D

Distributed by AKRIBIS

2025. 09

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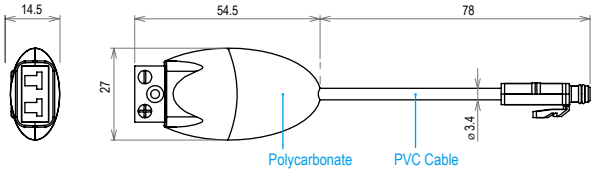
TCM-3010

Provided with TR-55i-TC

Thermocouple Module



[Unit: mm]

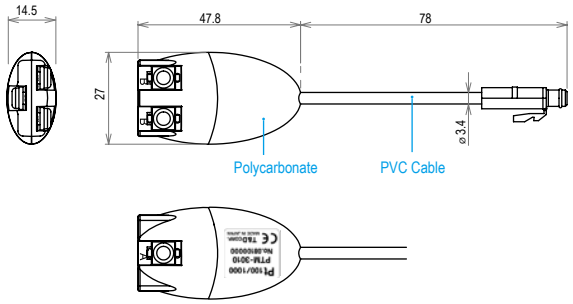
Compatible Sensors	Thermocouple: Type K, J, T, S	
Measurement Range	within the sensor heat-durability range only	
Measurement Resolution	Type K, J, T:0.1 °C Type S: about 0.2 °C	
Measurement Accuracy *	Cold Junction Compensation	-40 to 10 °C : ±0.5 °C 10 to 40 °C : ±0.3 °C 40 to 80 °C : ±0.5 °C
	Thermocouple Measurement	Type K, J, T: ±(0.3 + 0.003 × t) °C Type S: ±(1.0 + 0.003 × t) °C t = absolute value of measurement in °C
Operating Environment	Temperature -40 to 80 °C Humidity 90 %RH or less (no condensation)	
Input Terminal	Make sure to use a thermocouple sensor with a miniature thermocouple plug attached. T&D does not make available these plugs or sensors for sale.	
Note	Can be extended by 3 meters with the Extension Cable TR-3C30	

* Does not include inaccuracies of sensor actually connected.

PTM-3010

Provided with TR-55i-Pt

Pt Module



[Unit: mm]

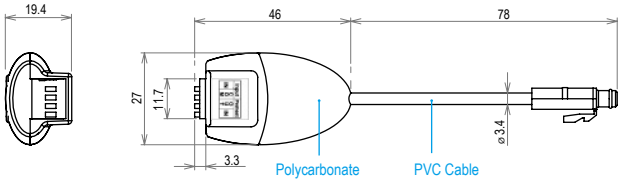
Compatible Sensors	Pt100 (3-wire, 4-wire) Pt1000 (3-wire, 4-wire)
Measurement Resolution	0.1 °C
Measurement Accuracy *1	Ambient Temperature of Input Module -40 to 10 °C : ±(0.5 + 0.003 × t) °C 10 to 40 °C : ±(0.3 + 0.003 × t) °C 40 to 80 °C : ±(0.5 + 0.003 × t) °C t = absolute value of measurement in °C
Input Terminal	M3.5 Screw Terminal Block with Square Washer (3 terminals*2)
Operating Environment	Temperature -40 to 80 °C, Humidity 90 %RH or less (no condensation)
Included Items	Protection Cover
Notes	Can be extended by 3 meters with the Extension Cable TR-3C30

*1: Does not include inaccuracies of sensor actually connected.
*2: In the case of a 4-wire sensor, one wire will be left unused.

VIM-3010

Provided with TR-55i-V

Voltage Module



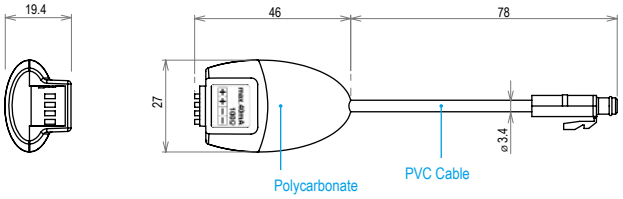
[Unit: mm]

Measurement Item	Voltage 0 to 22 V
Measurement Resolution	Up to 400 mV : 0.1 mV Up to 800 mV : 0.2 mV Up to 999 mV : 0.4 mV Up to 3.2 V : 1 mV Up to 6.5 V : 2 mV Up to 9.999 V : 4 mV Up to 22 V : 10mV
Measurement Accuracy	Ambient Temperature of Input Module -40 to 10 °C : ±1 mV + 0.5 % of reading 10 to 40 °C : ±0.5 mV + 0.3 % of reading 40 to 80 °C : ±1 mV + 0.5 % of reading
Preheat Function	Voltage Range (Preheating): 3 V to 20 V (up to 100 mA) Time Range (Preheating): 1 to 999 seconds (in units of one-second) Capacitor Load: 330 µF or less
Input / Preheat Terminal	Screwless Terminal Block (Push-in Type, 4 terminals)
Compatible Wires	AWG 28 – 22 Single wire: Ø0.32 – Ø0.64 mm, Twisted wire: 0.08 – 0.32 mm², Ø0.12 mm or more in diameter Recommended Wire Size: AWG 22
Operating Environment	Temperature -40 to 80 °C, Humidity 90 %RH or less (no condensation)
Operating Environment	Temperature: -40 to 80 °C, Humidity: 90 %RH or less (no condensation)
Note	Can be extended by 3 meters with the Extension Cable TR-3C30

AIM-3010

Provided with TR-55i-mA

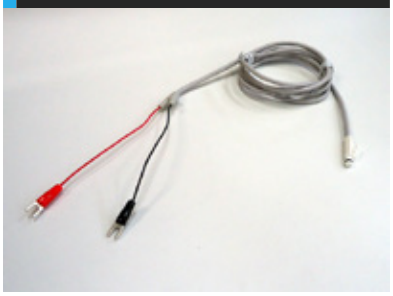
4-20mA Module



[Unit: mm]

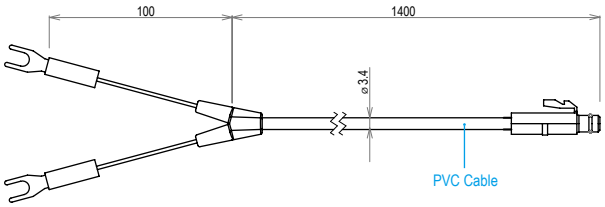
Input Resistance	0 to 20 mA Operational up to 40 mA
Measurement Resolution	0.01 mA
Measurement Accuracy	Ambient Temperature of Input Module -40 to 10°C : ±0.1 mA + 0.3 % of reading 10 to 40°C : ±0.05 mA + 0.3 % of reading 40 to 80°C : ±0.1 mA + 0.3 % of reading
Input Resistance	100 Ω ±0.3 Ω
Sensor Connection	Cable Insertion Connection: Plus (+) 2 Parallel Terminals, Minus (-) 2 Parallel Terminals: Total 4 Terminals
Input Terminal	Screwless Terminal Block (Push-in Type, 4 terminals)
Compatible Wires	AWG 28 – 22 Single wire: Ø0.32 – Ø0.64 mm, Twisted wire: 0.08 – 0.32 mm², Ø0.12 mm or more in diameter Recommended Wire Size: AWG 22
Operating Environment	Temperature -40 to 80 °C, Humidity 90 %RH or less (no condensation)
Note	Can be extended by 3 meters with the Extension Cable TR-3C30

PIC-3150



Provided with TR-55i-P

Pulse Input Cable

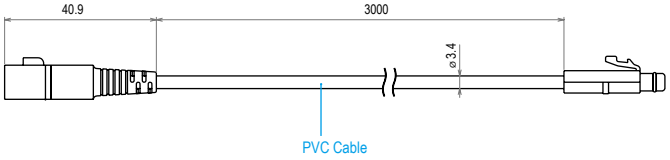


[Unit: mm]

Measurement Item	Pulse Count
Input Signal	Non-voltage Contact Input Voltage Input (0 to 27 V)
Detection Voltage	Lo: 0.5 V or less Hi: 2.5 V or more
Chattering Filter	ON: 15 Hz or less OFF: 3.5 kHz or less (when using square wave signals of 0-3 V or higher)
Response Polarity	Select either Lo → Hi or Hi → Lo
Maximum Count	61439 / Recording Interval
Input Impedance	Approx. 100 kΩ pull up
Input Terminal	M3.5 Y-type Crimp Terminal
Note	When connecting the cable to the measurement object, in order to wire properly make sure to match the terminal polarities (RD+, BK -)

TR-3C30

Input Module Extension Cable

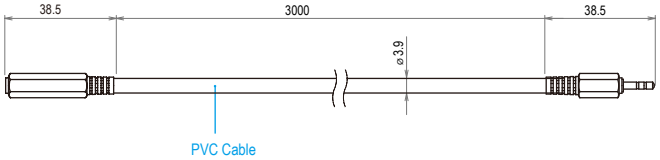


[Unit: mm]

Temperature Durability	-25 to 60 °C
Waterproof Capacity	Splash proof (rated for use in daily life)
Compatible Sensors / Modules	Temp-Humidity Sensor: SHB-3101 (Discontinued: HHB-3101) Input Module: TCM-3010, PTM-3010, VIM-3010, AIM-3010, PIC-3150
Conditions for Use	Only one cable per sensor or module.

TR-1C30

Sensor Extension Cable

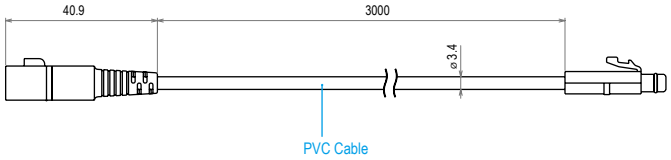


[Unit: mm]

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 (Discontinued: HHA-3151) Illuminance-UV Sensor: ISA-3151 Input Cable (Discontinued): VR-7101, VR-7102, VR-7103
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. Input cables can use multiple extension cables.

TR-2C30

Sensor Extension Cable

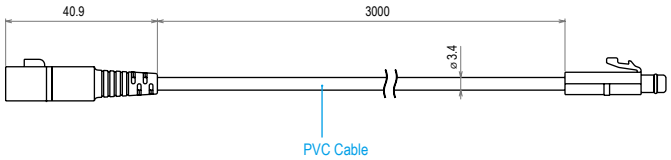


[Unit: mm]

Temperature Durability	-25 to 60 °C
Waterproof Capacity	Splash proof (rated for use in daily life)
Compatible Sensors	Temperature Sensor: TR-5101, TR-5106, TR-5220, TR-5320, TR-5420, TR-5530, TR-5620
Conditions for Use	Only one cable per sensor.

TR-3C30

Sensor / Input module Extension Cable

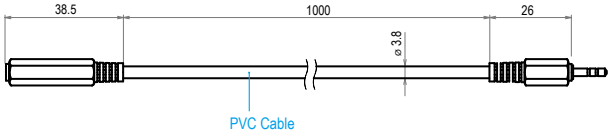


[Unit: mm]

Temperature Durability	-25 to 60 °C
Waterproof Capacity	Splash proof (rated for use in daily life)
Compatible Sensors / Modules	Temp-Humidity Sensor: SHB-3101 (Discontinued: HHB-3101) Input Module: TCM-3010, PTM-3010, VIM-3010, AIM-3010, PIC-3150, PMP-3200
Conditions for Use	Only one cable per sensor or module.

TR-5C10

Sensor Extension 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, TR-3100* (Discontinued: HHA-3151) Illuminance-UV Sensor: ISA-3151
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. * Only 1 extension cable for TR-3100

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
Compatible Devices:
Data Logger: TR71A2 / 72A2 (-S) / 75A2, TR-71nw / 72nw (-S) / 75nw, MCR-4V / 4TC
(Discontinued: TR71A / 72A (-S) / 75A, TR-71wb / 72wb (-S) / 75wb, TR-71wf / 72wf (-S/-H) / 75wf, TR-72nw-H)

AD-05C2 AC Adaptor (Type C Plug)

USB Mini-B Type
Input: AC 100-240 V
Output: DC 5V, 1 A
Frequency: 50 / 60 Hz
Cable Length: 1.5 m
Compatible Devices:
Data Logger: TR71A2 / 72A2 (-S) / 75A2, TR-71nw / 72nw (-S) / 75nw, MCR-4V / 4TC
(Discontinued: TR71A / 72A (-S) / 75A, TR-71wb / 72wb (-S) / 75wb, TR-71wf / 72wf (-S/-H) / 75wf, TR-72nw-H)

Note: When using with TR7 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.

AD-06A1 AC Adaptor (Type A Plug)

Provided with TR-76Ui (-S), RTR-576 (-S)

Input: AC 100-240 V
Output: DC 6 V, 500 mA
Frequency: 50 / 60 Hz
Cable Length: 1.8 m
Compatible Devices:
Base Unit: RTR500BC (Discontinued: RTR-500AW / 500NW, RTR-500, RTR-50, TR-57DCi, RTR-500DC, RTR-57C)
Data Logger: TR-76Ui (-S), RTR-576 (-S)
(Discontinued: TR-76Ui-H, RTR-576-H, TR-700W Series, RTR-7 Series)
External Power Adaptor Kit: RTR-500A2
(Discontinued: Kit RTR-05A1)

AD-06C1 AC Adaptor (Type C Plug)

Provided with TR-76Ui (-S) /RTR-576 (-S)

Input: AC 100-240 V
Output: DC6 V, 1 A
Frequency: 50 / 60 Hz
Cable Length: 1.8 m
Compatible Devices:
Base Unit: RTR500BC (Discontinued: RTR-500AW / 500NW, RTR-500, RTR-50, TR-57DCi, RTR-500DC, RTR-57U)
Data Logger: TR-76Ui (-S), RTR-576 (-S)
(Discontinued: TR-76Ui-H, RTR-576-H, TR-700W Series, RTR-7 Series)
External Power Adaptor Kit: RTR-500A2
(Discontinued: RTR-05A1)

AD-05A3 AC Adaptor (Type A Plug)

Input: AC 100-240 V
Output: DC5 V, 3 A
Frequency: 50 / 60 Hz
Cable Length : 1.2 m
Compatible Devices:
Base Unit: RTR500BM (Discontinued: RTR-500MBS-A, RTR-500GSM, RTR-5W, WS-2)
Battery Charger: RTR-600BD
Discontinued data logger: TR-7W Series, WDR-3

AD-05C1 AC Adaptor (Type C Plug)

Provided with RTR500BW

Input: AC 100-240 V
Output: DC 5 V, 2 A
Frequency: 50 / 60 Hz
Cable Length : 1.6 m
Compatible Devices:
Base Unit: RTR500BW, RTR500BM (Discontinued: RTR-500MBS-A, RTR-500GSM, RTR-5W, WS-2)
Discontinued data logger: TR-7W Series, WDR-3

AD-05A4 AC Adaptor (Type A Plug)

Provided with RTR500BW

Input: AC 100-240 V
Output: DC 5 V, 1 A
Frequency: 50 / 60 Hz
Cable Length: 1.8 m
Compatible Devices: Base Unit RTR500BW

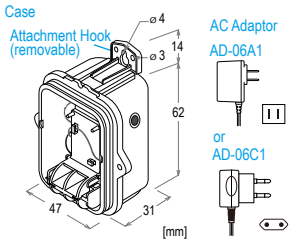
Note: The optional AC adaptor “Type A Plug” can be used in USA and Canada, and “Type C Plug” in Europe. For usage in other countries, please contact your local distributor.

Battery Power Supply Accessories

RTR-500A2 External Power Adaptor Kit

Internal Ni-MH battery provides about 4 days* of AC failure backup.
* Varies depending on the amount of charge in the Ni-MH battery.

Voltage Input: DC6V
Charging Method: Trickle Charge
Operational Temperature Range: 0 to 60 °C
Waterproof Capacity: None
Weight: About 37 g (without AC Adaptor)
Included Items:
AC Adaptor (AD-06A1 or AD-06C1), Case and Attachment Hook, Rubber Packing, Lock Screw x 2, Rubber O-ring
Compatible Devices:
TR42A / 43A, RTR502B / 503B / 505B / 507B (Discontinued: TR42, RTR-502 / 503 / 505 / 507S / 507)

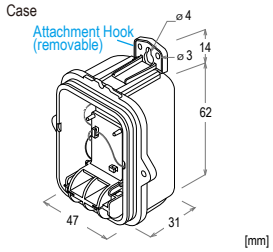


Note: RTR-500A2 should not be used with the RTR501B and TR41A as it will cause the RTR501B and TR41A to display a higher than actual temperature reading of up to 3 °C.

RTR-500B1 Large Capacity Battery Kit

About 4 years of battery life

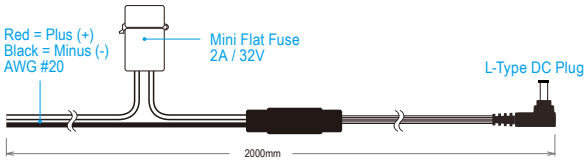
Power: Lithium Battery x 1 (LS26500) *1
Battery Life: About 4 years *2
Waterproof Capability: Splash proof
Operational Temperature Range:
-40 to 80 °C *3
Weight: About 75 g (including Lithium Battery)
Included Items:
Maintenance Set TR-00P1, Case and Attachment Hook
Compatible Devices:
TR41A / 42A / 43A, RTR501B / 502B / 503B / 505B / 507B (Discontinued: TR41 / 42, RTR-501 / 502 / 503 / 505 / 507S / 507)



*1: When using RTR-500B1 it is necessary to purchase Lithium Battery (LS26500). For details, contact your local authorized distributor.
*2: Battery Life varies depending on measuring environment, recording interval, transmission frequency, and ambient temperature. The battery life estimated here is calculated using a new battery under normal operating conditions and in no way should be understood as a guarantee of battery life.
*3: Operating temperature depends on the specifications for the data logger being used.

BC-0204 Battery Connection Adaptor

Power Source Conditions:
Voltage: input DC 9-38 V,output DC 5 V
Current: MAX 2 A
Compatible Devices:
Base Unit: RTR500BC, RTR500BM
Note: Prepare a battery that meets the above conditions.



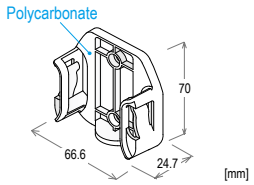
Maintenance Set

TR-00P1 Maintenance Set

Compatible Devices:
TR41A / 42A / 43A, RTR501B / 502B / 503B / 505B / 507B, TR-51i / 52i / 55i
Discontinued:
TR41 / 42, RTR-501 / 502 / 503 / 505 / 507S / 507, RTR-5 Series, TR-5S / 5 Series
Included Items:
Rubber Packing , Silica Gel, Double-Sided Adhesive Tape, Lock Screw

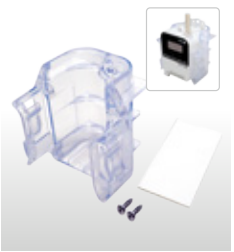
Wall Attachments

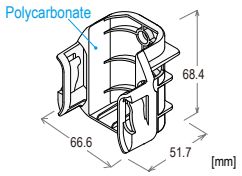
TR-05K3



Compatible Devices:
TR41A / 42A / 43A, TR-51i / 52i / 55i, RTR501B / 502B / 503B / 505B / 507B (Discontinued: TR41 / 42, RTR-501 / 502 / 503 / 505 / 507S / 507, RTR-51A / 52A / 53A, RTR-52Pt, RVR-52, TR-5S / 5 Series)
Operational Temperature Range:
-40 to 80 °C
Included Items:
Lock Screws for fastening to wall, Double-Sided Adhesive Tape

TR-05K3L

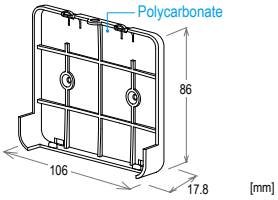




Compatible Devices:
RTR501BL / 502BL / 503BL / 505BL / 507BL, TR41A / 42A / 43A*, TR45* (Discontinued: TR41 / 42*, RTR-501L / 502L / 503L / 505L / 507SL / 507L, RTR-51AL / 52AL / 53AL, RTR-52PtL, RVR-52L)
Operational Temperature Range:
-40 to 80 °C
Included Items:
Lock Screws for fastening to wall, Double-Sided Adhesive Tape
* TR41A / 42A / 43A / 41 / 42: Can be used when attaching Large Capacity Battery Kit or External Power Adaptor Kit.

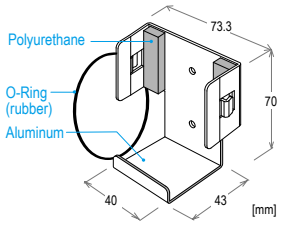
Note: Cracking may occur if polycarbonate is exposed to strong impact at temperatures of -30 °C or lower

TR-5WK1



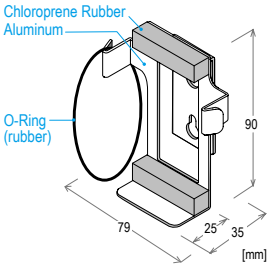
Compatible Devices:
Data Collector: RTR500BW (Discontinued: RTR-500NW / 500AW, RTR-5W, WS-2)
Discontinued data logger WDR-3
Included Items:
Lock Screws for fastening to wall, Lock Screw for fastening the device, Double-Sided Adhesive Tape

TR-5GK1



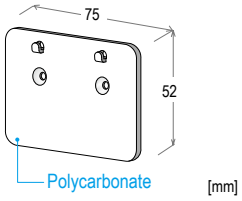
Compatible Device:
RTR500BM (Discontinued: RTR-500MBS-A)
Included Items:
O-Ring, Lock Screws, Double-Sided Adhesive Tape

AT-50K1



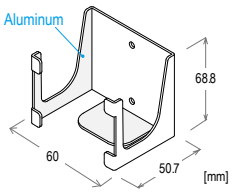
Compatible Device:
RTR500BC (Discontinued: RTR-500)
Included Items:
O-Ring, Lock Screws, Double-Sided Adhesive Tape

TR-07K2



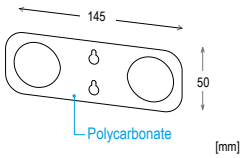
Compatible Devices:
TR71A2 / 72A2 (-S) / 75A2, TR-71nw / 72nw (-S) / 75nw, TR-74Ui (-S) / 73U, RTR-574 (-S) (Discontinued: TR71A / 72A (-S) / 75A, TR-71wb / 72wb (-S) / 75wb / 71wf / 72wf (-S/-H) / 75wf, TR-72nw-H, TR-74Ui-H, RTR-574-H, TR-700W Series, TR-71Ui / 72Ui / 77Ui, TR-71U / 72U)
Included Items:
Lock Screws for fastening to wall, Double-Sided Adhesive Tape

AT-76K1



Compatible Devices:
TR-76Ui (-S), RTR-576 (-S) (Discontinued: TR-76Ui-H, RTR-576-H)
Included Items:
Lock Screws for fastening to wall

AT-32K2



Compatible Device:
TR32B (Discontinued: RTR-322)
Included Items:
Lock Screws for fastening to wall

Communication Cables

US-15C

USB Mini-B Cable

For Communication with PC
Cable Length: 1.5 m

TR-07C

Serial Communication Cable

For Communication with PC
Cable Length: 1.5 m
Connector: D-sub 9 pin

PC ⇔ Data Logger TR-74Ui (-S) / 76Ui (-S) / 73U (Discontinued: TR-74Ui-H / 76Ui-H)
Base Unit: RTR500BC (Discontinued: TR-57DCi, RTR-500DC, RTR-500)

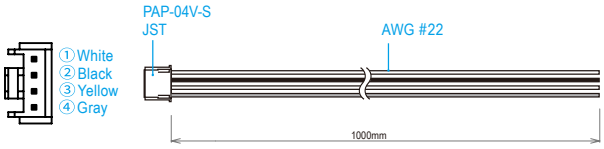
Note: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications.

Cable

AC0101

Alarm Connection Cable

Compatible Devices:
Base Unit: RTR500BM (Discontinued: RTR-500MBS-A)
Data Logger: RTR-576 (-S) , TR-76Ui (-S) (Discontinued: RTR-576-H, TR-76Ui-H)



Note: Please refer to "RTR500B series Help" or "TR-76Ui Operation Guide" before use. https://tandd.com/manual/

Antennas

CSR-0011

Antenna for RTR500B Series Base Units

Antenna Length: 135 mm
Connector: RP-SMA
Compatible Devices:
RTR500BW, RTR500BC, RTR500BM

CEL-0151

Extension LTE Antenna

Antenna Length: 88.5 mm
Cable Length: 1.5 m
Connector: RP-SMA
Compatible Devices: RTR500BM

SO-TD1

T&D Software

Software Included:

- RTR500BW for Windows (US / EU)
- RTR500BM for Windows (US / EU)
- RTR500BC 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.