[Tele thermo R]
Telemetry Receiver (WTR-100R)

Easy Measure

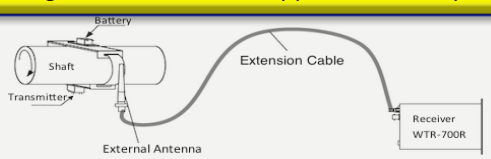
【Measurement Made Easy】
Ready to use
Easy to use for anyone
Carry & use anywhere

[Application Examples]
- ◆ Automobile: Drive/Propeller Shaft
- ◆ Motor: Internal Temperature
- ◆ Turbo: Torque/Rotational Fluctuation/Temp.
- ◆ Mill Roll: Torque/Bend/Tem.
- ◆ Wind Mills: Torque/Blade Stress
- ◆ Blending Machines: Torque Monitoring
- ◆ Ship: Horse Power
- ◆ Brakes: Temperature
- ◆ Train: Wheel Torque/ Load/ Lateral Force

[Features]
- ■ Small/Low Power Consumption/Low Price
- ◆ Fully Digital - High Noise Immunity
- ◆ Outstanding wireless performance
- ◆ T.C./Strain/Voltage/IEPE/Displacement
- ◆ High Operating Temperature (125 deg.C)
- ◆ Wireless Authentication - US/EU/Japan
- ◆ High Functionality
  - ・ Auto Zero/Battery Voltage Monitoring
  - ・ Antenna Mode (Single or Double) Selection
  - ・ Sampling Speed Selection
  - ・ Low Power (Sleep Function of Transmitter)

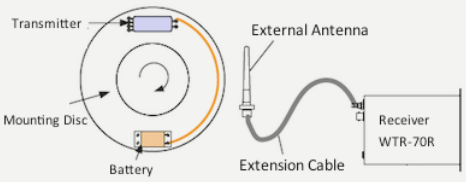
[***Tele thermo R***] has strong wireless intensity, and better wireless performance than conventional FM telemeters. As the wireless tends to propagate in a straight line, the product uses reflections by metals to improve the wireless performance. The conventional FM telemeters need to wrap the sending antenna around the rotating body, but [***Tele thermo R***] can spare the trouble; simply fix the transmitter and the battery to the rotating body, and place the receiving antenna at a safe location near the rotating body. Refer to the examples below:

Single Antenna Mode - Application Examples



Rotating Shaft (standard)

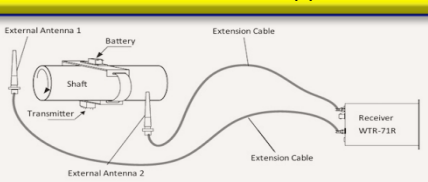
This is an example of attaching the transmitter to a rotating shaft, and receiving the signal by the receiver. The transmitter and the battery pack are screwed to an aluminum bracket, and the bracket is fixed to the shaft by a metal belt.
As there's only one antenna, the transmitter becomes invisible from the receiver at some rotation angle. Still, by wireless reflection from the objects around the shaft, the signal can be received. Adjust the location or angle of the receiving antenna to get a better signal.



Rotating Disc (standard)

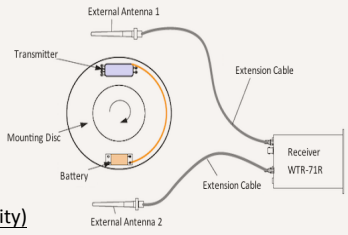
In the case of rotating disc, there is no dead angle if you place the receiver at the front side of the disc. But the angle between the sending and the receiving antenna changes. At right angle, the gain becomes minimum and it becomes difficult to receive the signal. Just like the case of the rotating shaft, the wireless reflection from the surrounding objects can be used. Adjust the location and angle of the receiving antenna to get a better signal.

Double Antenna Mode - Application Examples



Rotating Shaft (diversity)

If the diameter is large (>100mm), reflection from the surrounding objects is not enough to have a good wireless connection. The diversity configuration using WTR-71R can solve the issue. Place the two antennas on the both sides of the shaft to make one antenna visible from the transmitter at any rotation angle, and with the direction in parallel with the chip antenna. In order to use the reflection from the surrounding objects, adjust the best location and angle of receiving antennas to get a better signal.

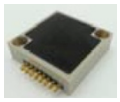
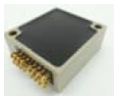


Rotating disc (diversity)

When the receiving antenna is at right angle with the sending antenna, the gain becomes minimum and it becomes difficult to receive the signal.
In that case, place the two antennas at right angle (not like the above picture), It can avoid the both antennas become at right angle at the same time with the sending antenna.
In order to use the reflection from the surrounding objects, adjust the best location and angle of receiving antennas to get a better signal.

[Specifications] – Specifications are subject to change without notice.

■ Transmitter - Specifications

Type	1-ch Transmitter		2-ch	4-ch Temp.	4-ch Strain
	Standard	Slim	Thin	Thin	Thin
Model	WTR-100S&T	WTR-101S&T	WTR-102S&T	WTR-104T	WTR-104S
Input	TC (B/E/J/K/N/R/S/T), Strain Gauge, or other input.				
Input Range	TC: Full Range Strain: ±10000με (option for other range)				
Resolution/ Accuracy	TC Resolution: ±0.1deg.C Accuracy: <±1.5deg.C				
	Strain Resolution: ±1με Accuracy: <±0.05%FS				
Stability	TC Zero Point Drift: <±0.03deg.C Sensitivity Change: <±0.005%/deg.C				
	Strain Zero Point Drift: <±0.03με/deg.C Sensitivity Change: <±0.003%/deg.C				
Sampling	TC: 50times/s Strain: >4800times/s				
Centrifugal	>3000G				
Power	External Supply (Battery/Inductive Power): DC 3.2 - 5V				
Consumption	TC: 12mA S: 25mA(350Ω)/32mA(120Ω)		TC: 20mA S: 40mA	TC: 25mA	S: 90mA (350Ω)
Run Time	TC: 80H S: 35H(350Ω)/25H(120Ω)		TC: 40H S: 20H	30H	10H (350Ω)
Installation Temp.	-30 to 125 deg.C				
Antenna	Ext.&Chip	Chip antenna only			
Dimensions [WDH]/Weight	20x20x17mm /21g	17x35x7.5mm /9.5g	30x39x8mm /20g	35x35x10mm /19g	39x39x15 /26g
Note	Low Price Good wireless	Thin type for narrow space	Thin type for narrow space	Thin type for narrow space	Thin type for narrow space
Photo					

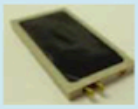
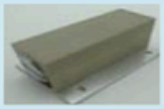
■ Wireless Spec.

Channels	Max. 12 channels
Method/Distance	2.4GHz band, specific low-power modem/10m (Free space)

■ Receiver- Specifications

Channels	1-4 channels
Model	WTR-100R-* (*: 1-4)
Display	4 digits (Temp/Strain Direct or Power voltage)
Function	Display and output transmitted data
	Single or double mode
	Power consumption control
	Sampling speed change
Output	±10V (set by PC connection)
PC Interface	USB (Setting for range/data collection/wireless channel)
Dimensions	200[W]x100[D]x25[H]
Weight	About 330g
Power	DC 9-18V, <2W AD Adaptor attached
Environment	0 t0 50 deg.C, 10-90% RH (no condensation)
Option	CAN/LAN
Photo	

■ Battery Box for Transmitter

Type	AAA Replace	AAA Replace (SW)	Thin Replace	Thin Charge	Ultra Thin Charge	AA Replace
Model	WTR-B2	WTR-B2S	WTR-B3	WTR-B4	WTR-B5	WTR-B6
Battery Time	TC: 80H S: 30H (@120Ω)		TC: 40H S: 12H	TC: 20H S: 6H	TC: 12H S: 5H	TC: 160H S: 60H
Charge Function	No			400 times	400 times	No
Centrifugal	1000G					
Battery	Lithium: LS14250		Coin Lith.:TLH2450	Lithium (Dedicated)	Lithium (Dedicated)	Lithium: LS14500
Battery Replacement	Yes			No		Yes
Operating Temp.	-30 to 80℃		-30 to 125℃	-20 to 60℃		-30 to 80℃
Dimensions [WDH]	22x35x25mm	22x43x23mm	51x31x14mm	30x40x10mm	24x45x5mm	42x61x23
Photo						

■ Battery (Lithium)

Model	Maker	Type/Ratings	Dimensions	Photo
LS14250	SAFT	1/2 AA, 3.6V, 1.1Ah	Φ14.2, L25.4/9g	
LS14500		AA, 3.6V, 2.6Ah	Φ14.4, L50/17g	
TLH2450	TADILAN	Coin, 3.6V, 0.55Ah	Φ24, L6.5/9g	

■ Antenna and Others

Name	Transmitter Cable	Antenna Bracket	Small-size Antenna
Model	WTR-EXT-□m	WTR-LK	WTR-AN2-□m
Photo			

■ Product List

Name	Model	Note
1-ch Standard Transmitter	WTR-100S&T	
1-ch Slender Transmitter	WTR-101S&T	
2-ch Transmitter	WTR-102S&T	
4-ch Transmitter	WTR-104S&T	
Receiver	WTR-100R-*B	*B: # of channels
Battery Box (Replace)	WTR-B2	
Thin Battery Box (Replace)	WTR-B3	
Thin Battery Box (Charge)	WTR-B4	AC adaptor attached
Battery Box (Charge)	WTR-B5	AC Adaptor attached
Battery Box (Replace+SW)	WTR-B2S	
Battery Box (Replace)	WTR-B6	
Receiving Antenna Extension Cable: 3m	WTR-EXT-3m	
Cable: 5m	WTR-EXT-5m	
Cable: 10m	WTR-EXT-10m	
Cable: 15m	WTR-EXT-15m	
Small-size Antenna (Cable□m)	WTR-ANT2-□m	Specify cable length
Replace Battery (1/2 AA)	LS14250	
Replace Battery (AA)	LS14500	
Replace Battery (Coin)	TLH-2450	

Easy Measure Co., Ltd.
E-mail : info@easy-measure.co.jp
http://www.easy-measure.co.jp/en/