

MRS-100 Series

Digital Telemeter

NEW

	Strain measurement			Voltage measurement	Thermocouple measurement
Transmitter	 4ch-Strain Transmitter MRS-104A-S (Built-in antenna)	 1ch-Strain Transmitter MRS-101B-S (Built-in antenna)	 1ch-Strain Transmitter MRS-101A-SE (External antenna)	 1ch-Voltage Transmitter MRS-101B-V (Built-in antenna)	 1ch-Thermocouple Transmitter MRS-101B-T (Built-in antenna)
Receiver	 4ch-Receiver MRS-114A			 1ch-Receiver MRS-111B	
	4 channels			1 channel	

*Korean compatible models are available. Inquiries are welcome

Easy wireless strain and temperature measurement

- Easy operation without PC after initial setting
- Quarter-bridge 2-wire system, 3-wire system, and full-bridge system support
- Up to 64 channels in a system
- Certified in radio law in Japan, the USA, China, India, Thailand, Taiwan, EU (Depends on models)
- Hours of continuous use: Max. 34 h
(1ch-Strain Transmitter using LR03EJ, AAA cell × 2)

The MRS-100 series is a telemeter for various measuring environments, based on the digital modulation system. The MRS-100 series measures data of max. 50 m range (line of sight distance) wirelessly. Compact transmitter and easy installation in narrow space.

System content

Types	Models	Radio Certification							
		Japan	the USA	EU	Thailand	India	China	Taiwan	Korea ^{*1}
4ch-Strain Transmitter	MRS-104A-S	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1ch-Strain Transmitter	MRS-101B-S	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1ch-Strain Transmitter (External antenna)	MRS-101A-SE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
1ch-Voltage Transmitter	MRS-101B-V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1ch-Thermocouple Transmitter	MRS-101B-T	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4ch-Receiver	MRS-114A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1ch-Receiver	MRS-111B	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

^{*1} Korean compatible models are available. Inquiries are welcome.



MRS-104A-S Specifications

■ Hardware Specifications	
Measuring Targets	Strain gages (Full bridge system*), Strain gage transducers *Other bridge systems need bridge box or bridged adapter.
Channels	4
Compatible Bridge Resistance	120 to 1000 Ω
Gage Factor	2.00 fixed
Bridge Excitation	1 VDC
Measuring Range	1000, 2500, 5000, 10000, 25000 × 10 ⁻⁶ strain
Range Accuracy	Within ±0.15% FS *The above specifications apply to a stable temperature after warm up at 25 ± 5 °C for 30 minutes.
Balance Adjustment Range	±10000 × 10 ⁻⁶ strain
AD Resolution	16 bits
Sampling Frequencies	1 measurement channel at 4.8 kHz 2 measurement channels at 3.2 kHz 3 measurement channels at 2.4 kHz 4 measurement channels at 1.92 kHz
Temperature Stability	Zero point: Within ±0.05 × 10 ⁻⁶ strain per °C Sensitivity: Within ±0.01%/°C
Operating Temperature	-25 to 75 °C ¹
Operating Humidity	20 to 85% (Non-condensing)
Vibration Resistance	294.2 m/s ² (30 G), 10 to 500 Hz ¹
Shock Resistance	980.7 m/s ² (100 G), 11 ms or less, half sine wave ¹
Centrifugal Acceleration Resistance	980.7m/s ² (100G) ^{1,2,3,4}
Power Supply	2.2 to 4.4 VDC
Current Consumption	62 mA or less (Test conditions: Power supply 3.0 V, bridge resistance 120 Ω)
Hours of Continuous Use	Approx. 12 h [Lithium (CR2 manufactured by Panasonic)] Approx. 10 h [Ni-MH eneloop® (BK-4MCC, AAA cell × 2)] Approx. 13 h [Alkaline EVOLTA (LR03EJ, AAA cell × 2)] *Test conditions: 23 ± 5 °C, Bridge resistance 120 Ω
Dimensions	55 W × 10 H × 32.5 D mm * With adapter, excluding protrusions
Weight	Approx. 32 g * With adapter
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

Standard Accessories

Full-bridge adapter ADP-401 × 2, JCIS10-70 miniature screw (M2 × 4) × 3,
power adapter ADP-40P.
The above are installed in the transmitter.
Fastening bracket × 2, battery holder (AAA cell × 2) for checking operation , ID label

MRS-101B-S Specifications

■ Hardware Specifications	
Measuring Targets	Strain gages (Full bridge system*), Strain gage transducers *Other bridge systems need bridge box or bridged adapter.
Channels	1
Compatible Bridge Resistance	120 to 1000 Ω
Gage Factor	2.00 fixed
Bridge Excitation	1 VDC
Measuring Range	1000, 2500, 5000, 10000, 25000 × 10 ⁻⁶ strain
Range Accuracy	Within ±0.15% FS * The above specifications apply to a stable temperature after warm up at 25 °C±5 °C for 30 minutes.
Balance Adjustment Range	±10000 × 10 ⁻⁶ strain
AD Resolution	16 bits
Sampling Frequencies	4.8 kHz
Temperature Stability	Zero point: Within ±0.05 × 10 ⁻⁶ strain per °C Sensitivity: Within ±0.01%/°C
Operating Temperature	-25 to 75 °C
Operating Humidity	20 to 85% (Non-condensing)
Vibration Resistance	294.2 m/s ² (30 G), 10 to 500 Hz
Shock Resistance	980.7 m/s ² (100 G), 11 ms or less, half sine wave
Centrifugal Acceleration Resistance	29420m/s ² (3000G) ^{3,4}

Power Supply	2.2 to 4.4 VDC
Current Consumption	32 mA or less (Test conditions: Power supply 3.0 V, bridge resistance 120 Ω)
Hours of Continuous Use	Approx. 28 h [Lithium (CR2 manufactured by Panasonic)] Approx. 24 h [Ni-MH eneloop® (BK-4MCC, AAA cell × 2)] Approx. 34 h [Alkaline EVOLTA (LR03EJ, AAA cell × 2)] *Test conditions: 23±5°C, bridge resistance 120 Ω
Dimensions	47 W × 7 H × 20 D mm * With adapter, excluding protrusions
Weight	Approx. 17 g * With adapter
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

Standard Accessories

Full-bridge adapter ADP-11S, JCIS10-70 miniature screw (M2 × 4) × 1
The above are installed in the transmitter.
Battery holder (AAA cell × 2) for checking operation , ID label

MRS-101A-SE Specifications

■ Hardware Specifications	
Measuring Targets	Strain gages (Full bridge system*), Strain gage transducers *Other bridge systems need bridge box or bridged adapter.
Channels	1
Compatible Bridge Resistance	120 to 1000 Ω
Gage Factor	2.00 fixed
Bridge Excitation	1 VDC
Measuring Range	1000, 2500, 5000, 10000, 25000 × 10 ⁻⁶ strain
Range Accuracy	Within ±0.15% FS *The above specifications apply to a stable temperature after warm up at 25 ± 5 °C for 30 minutes.
Balance Adjustment Range	±10000 × 10 ⁻⁶ strain
AD Resolution	16 bits
Sampling Frequencies	4.8 kHz
Temperature Stability	Zero point: Within ±0.05 × 10 ⁻⁶ strain per °C Sensitivity: Within ±0.01%/°C
Operating Temperature	-25 to 75 °C ¹
Operating Humidity	20 to 85% (Non-condensing)
Vibration Resistance	29.42 m/s ² (3 G), 5 to 200 Hz ¹
Shock Resistance	294.2 m/s ² (30 G), 11 ms or less, half sine wave ¹
Power Supply	2.2 to 4.4 VDC
Current Consumption	32 mA or less *Test condition: Power supply 3.0 V, Bridge resistance 120 Ω
Hours of Continuous Use	Approx. 28 h [Lithium (CR2 manufactured by Panasonic)] Approx. 24 h [Ni-MH eneloop® (BK-4MCC, AAA cell × 2)] Approx. 34 h [Alkaline EVOLTA (LR03EJ, AAA cell × 2)] *Test condition: 23 ± 5 °C, Bridge resistance 120 Ω
Dimensions	35 W × 5.0 H × 19.5 D mm * With adapter, excluding protrusions
Weight	Approx. 10 g *With adapter
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

Standard Accessories

Adapter board ADP-01, JCIS10-70 miniature screw (M2 × 4) × 1.
The above are installed in the transmitter.
Battery holder (AAA cell × 2) for checking operation , ID label
Receiving antenna W1030, antenna harness

*1 If the ambient temperature exceeds 50 °C, it cannot be used in a vibration, shock, centrifugal acceleration by fixing the bolts in the body mounting holes.

*2 The specification of centrifugal acceleration is assumed for height (H) direction of the transmitter. Take measures to prevent scattering of the testproduct, various sensors, and transmitter for safety.

*3 The figures are when installed with our specified screws and torque.

*4 Under centrifugal acceleration environment, take measures to prevent scattering of the test product, various sensors, and transmitter for safety.



MRS-101B-V Specifications

■ Hardware Specifications	
Measuring Targets	Voltage
Channels	1
Input Resistance	Approx. 1 MΩ +1 MΩ
Absolute Input Voltage	Between D (+IN) and B (-IN): Within ±32 V Between D and E (SHIELD): Within ±16 V Between B and E: Within ±16 V *Exceeding the absolute input voltage may cause permanent damage to the product.
Measuring Range	5, 10 V
Range Accuracy	Within ±0.15% FS *The above specifications apply to a stable temperature after warm up at 25 ±5°C for 30 minutes
Balance Adjustment Range	Within ±5 V
AD Resolution	16 bits
Sampling Frequencies	4.8 kHz
Temperature Stability	Zero point: Within ±0.01% FS per °C Sensitivity: Within ±0.02%/°C
Operating Temperature	-25 to 75 °C
Operating Humidity	20 to 85% (Non-condensing)
Vibration Resistance	294.2 m/s ² (30 G), 10 to 500 Hz
Shock Resistance	980.7 m/s ² (100 G), 11 ms or less, half sine wave
Centrifugal Acceleration Resistance	29420 m/s ² (3000 G) * ^{3,4}
Power Supply	2.2 to 4.4 VDC
Current Consumption	Within 22 mA (Test conditions: Power supply 3.0 V)
Hours of Continuous Use	Approx. 38 h [Lithium (CR2 manufactured by Panasonic)] Approx. 33 h [Ni-MH eneloop® (BK-4MCC, AAA cell x 2)] Approx. 49 h [Alkaline EVOLTA (LR03EJ, AAA cell x 2)] *Test conditions: 23 ±5°C
Dimensions	47 W × 7 H × 20 D mm * With adapter, excluding protrusions
Weight	Approx. 17 g * With adapter
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

Standard Accessories

Voltage adapter ADP-11V, JCIS10-70 miniature screw (M2 × 4) × 1.
The above are installed in the transmitter.
Battery holder (AAA cell x 2) for checking operation, ID label

MRS-101B-T Specifications

■ Hardware Specifications	
Measuring Targets	Thermocouples
Channels	1
Compatible Thermocouples	K, T, N, J (Resistance of thermocouple: 500 Ω or less)
Measuring Range	
Measuring Range	Temperature Range
K1300	-200 to 1300°C
K500	-200 to 500°C
K100	-100 to 100°C
T400	-200 to 400°C
T100	-100 to 100°C
N1300	-200 to 1300°C
Measuring Range	Temperature Range
N500	-200 to 500°C
N100	-100 to 100°C
J1200	200 to 1200°C
J500	-200 to 500°C
J100	-100 to 100°C
Measuring Accuracy	
Ambient temperature	Measuring temperature
20 to 30°C	Below -50 °C
	-50 °C or more
0 to 50°C	Below -50 °C
	-50 °C or more
-25 to 75°C	Below -50 °C
	-50 °C or more
Telemeter measuring accuracy (Internal reference compensation mode)	
	Within ±0.4 %rdg ±2.0 °C
	Within ±0.1 %rdg ±1.5 °C
	Within ±0.4 %rdg ±2.8 °C
	Within ±0.1 %rdg ±2.5 °C
	Within ±0.4 %rdg ±3.8 °C
	Within ±0.1 %rdg ±3.5 °C
* The input terminal temperature is in equilibrium	
* The above specifications apply to a stable temperature after warm up for about 60 minutes.	
Check Functions	Burnout check
AD Resolution	16 bits
Sampling Frequency	50 Hz
Operating Temperature	-25 to 75 °C
Operating Humidity	20 to 85 % (Non-condensing)
Vibration Resistance	294.2 m/s ² (30 G), 10 to 500 Hz
Shock Resistance	980.7 m/s ² (100 G), 11 ms or less, half sine wave
Centrifugal Acceleration Resistance	29420 m/s ² (3000 G) * ^{3,4}
Power Supply	2.2 to 4.4 VDC

Current Consumption	24 mA or less (Test condition: Power supply 3.0 V.)
Hours of Continuous Use	Approx. 33 h [Lithium (CR2 manufactured by Panasonic)] Approx. 30 h [Ni-MH eneloop® (BK-4MCC, AAA cellx2)] Approx. 45 h [Alkaline EVOLTA (LR03EJ, AAA cellx2)] * Test condition :23± 5 °C
Dimensions	47 W × 7 H × 20 D mm * With adapter, excluding protrusions
Weight	Approx. 17 g * With adapter
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

Standard Accessories

Thermocouple adapter ADP-11T, JCIS10-70 miniature screw (M2 × 4) × 1.
The above are installed in the transmitter.
Battery holder (AAA cell x 2) for checking operation, ID label

MRS-114A, MRS-111B Specifications

■ Hardware Specifications											
Channels	MRS-114A: 4, 1 for combining with 1-channel transmitter. The number of connecting transmitters and receivers should be same. MRS-111B: 1										
Analog Output Voltage	±5 V/Full scale range										
Analog Output Accuracy	Within ±0.1% FS										
DA Resolution	16 bits										
DA Conversion Speed	When combination transmitter MRS-104A-S with receiver MRS-114A										
<table border="1"> <thead> <tr> <th>Measuring Channels</th><th>DA Conversion Speed</th></tr> </thead> <tbody> <tr> <td>1</td><td>4.8 kHz</td></tr> <tr> <td>2</td><td>3.2 kHz</td></tr> <tr> <td>3</td><td>2.4 kHz</td></tr> <tr> <td>4</td><td>1.92 kHz</td></tr> </tbody> </table>		Measuring Channels	DA Conversion Speed	1	4.8 kHz	2	3.2 kHz	3	2.4 kHz	4	1.92 kHz
Measuring Channels	DA Conversion Speed										
1	4.8 kHz										
2	3.2 kHz										
3	2.4 kHz										
4	1.92 kHz										
When combination transmitter MRS-101B-S, MRS-101A-SE, MRS-101B-V with receiver											
4.8 kHz											
When combination transmitter MRS-101B-T with receiver											
50 Hz											
Operating Temperature	0 to 50 °C										
Operating Humidity	20 to 85% (Non-condensing)										
Vibration Resistance	29.42 m/s ² (3 G), 5 to 200 Hz										
Shock Resistance	294.2 m/s ² (30 G), 11 ms or less, half sine wave										
Power Supply	10 to 16 VDC										
Current Consumption	MRS-114A: 280 mA or less MRS-111B: 250 mA or less										
Operating Switch	MUTE: Turn buzzer on/off. BAL: Execute balance adjustment. CHECK: Check sensor connection. START: Start measurement. STOP: Stop measurement. Tx OFF: Turn transmitter off. SLEEP: Set transmitter to sleep, wake-up after the set time.										
Indicator	Monitor transmitter battery in 3 steps. Monitor received signal strength in 3 steps. 7-segment LED: Indicate a frequency channel (0 to F) DATA: Light up in response to radio communication error/non-error. LOCK: Light up to indicate keys are locked.										
Dimensions	210 W × 35 H × 157.5 D mm (Excluding protrusions)										
Weight	MRS-114A: Approx. 600 g MRS-111B: Approx. 550 g										
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)										

Standard Accessories

Setting software MRS-10B, USB cable N-38 (1 m), BNC-BNC cable U-59 (Each channel, 1.5 m), ground wire P-72 (5 m), side hole suction cup (55 mm) × 2, fastening band × 2, extension cable for receiving antenna (2 m) E-02 × 2
AC adapter (AC power cable sold separately).
Select according to your country or region), high gain dipole antenna DA-DB-05RP-SMA-08 × 2, receiving antenna W1030 × 2

*1 If the ambient temperature exceeds 50°C, it cannot be used in a vibration, shock, centrifugal acceleration by fixing the bolts in the body mounting holes.

*3 The figures are when installed with our specified screws and torque.

*4 Under centrifugal acceleration environment, take measures to prevent scattering of the test product, various sensors, and transmitter for safety.



RF Specifications

Transceiver Frequency Channel	1 (Choose 1 channel from 16 channels using Setting software)							
Antennas	MRS-104A-S, MRS-101B-S, MRS-101B-V, MRS-101B-T: Built-in antenna MRS-101A-SE, MRS-114A, MRS-111B: Specified external (MAIN and SUB for diversity reception.)							
Radio Communication Frequency Band	2.4 GHz band							
Radio System	Digital modulation system							
Radio Certification	See table on P.3-23							
Communication Distance	50 m (Max. line of sight distance) For MRS-101A-SE, using attached receiving antennas W1030.							
Environment of Usage	Environment where the wireless LAN is not intermingled on the 2.4 GHz.							
Frequency Channel and Central Frequency								
Frequency Channel	CH 0	CH 1	CH 2	CH 3	CH 4	CH 5	CH 6	CH 7
Central Frequency (GHz)	2.405	2.410	2.415	2.420	2.425	2.430	2.435	2.440
Frequency Channel	CH 8	CH 9	CH A	CH B	CH C	CH D	CH E	CH F
Central Frequency (GHz)	2.445	2.450	2.455	2.460	2.465	2.470	2.475	2.480

Communication is not possible if there are multiple transmitters with the same radio Frequency Channel in the system.

Specifications in Combination with Receiver

Compatible Receiver	MRS-111B Firmware Ver. 3.01 or later MRS-114A Firmware Ver. 3.01 or later *MRS-104A-S cannot be used in combination with 1ch receiver.
Analog Output	±5 V/Full scale range
Combination Accuracy	Within ±0.2 %FS

Frequency Response and Delay Time

Measuring Channels	Sampling Frequencies	Frequency Response	Delay Time
1	4.8 kHz	DC to 370 Hz (Deviation+0.5, -1 dB) -3±1 dB (at 480 Hz)	11.1±0.3 ms (at DC to 480 Hz)
2	3.2 kHz	DC to 320 Hz (Deviation+0.5, -1 dB) -3±1 dB (at 466 Hz)	10.8±0.3 ms (at DC to 320 Hz)
3	2.4 kHz	DC to 240 Hz (Deviation+0.5, -1 dB) -3±1 dB (at 424 Hz)	9.8±0.3 ms (at DC to 240 Hz)
4	1.92 kHz	DC to 192 Hz (Deviation+0.5, -1 dB) -3±1 dB (at 376 Hz)	9.7±0.3 ms (at DC to 192 Hz)

Only 1 transmitter can be used in combination with 1 receiver.
No MRS-104A-S be used in combination with a 1-channel receiver.
2 or more measuring channels are for 4-channel transmitter with 4-channel receiver.

Combination Specifications of MRS-101B-T with Receiver

Compatible Receiver	MRS-114A Firmware Ver. 3.01 or later MRS-111B Firmware Ver. 3.01 or later	
Analog Output	±5 V/Full scale range	
Measuring Range	Temperature Range	Analog Output Voltage Range
K1300, N1300	-200 to 1300°C	-0.7692 to 5.000 V
K500, N500	-200 to 500°C	-2.000 to 5.000 V
K100, N100	-100 to 100°C	-5.000 to 5.000 V
T400	-200 to 400°C	-2.500 to 5.000 V
T100	-100 to 100°C	-5.000 to 5.000 V
J1200	-200 to 1200°C	-0.8333 to 5.000 V
J500	-200 to 500°C	-2.000 to 5.000 V
J100	-100 to 100°C	-5.000 to 5.000 V

Combination Accuracy

Ambient temperature	Measuring temperature	Measuring Accuracy (Combination with Transmitter and Receiver)
20 to 30°C	Below -50 °C	Within (±0.4 %rdg ± 2.0 °C) ±0.1 %FS
	-50 °C or more	Within (±0.1 %rdg ± 1.5 °C) ±0.1 %FS
0 to 50°C	Below -50 °C	Within (±0.4 %rdg ± 2.8 °C) ±0.1 %FS
	-50 °C or more	Within (±0.1 %rdg ± 2.5 °C) ±0.1 %FS
-25 to 75°C	Below -50 °C	Within (±0.4 %rdg ± 3.8 °C) ±0.1 %FS
	-50 °C or more	Within (±0.1 %rdg ± 3.5 °C) ±0.1 %FS

Example:
When the measurement range is T400 and measuring temperature 200 °C in ambient temperature 20 to 30 °C, the accuracy is within:
"200 °C × (±0.1%) + (± 1.5 °C) + 400 °C × (±0.1 %) = ± 2.1 °C".

Frequency Response	DC to 6 Hz (Dev. + 0.5, -1 dB), -3 dB ± 1 dB (at 10.5 Hz)
Delay Time	125 ± 25 ms (at DC to 10.5 Hz)

Setting Software MRS-10B Specifications

■Applicable Receivers	MRS-114A, MRS-111B
■Software Functions	
Setting Functions	Set the measuring range. Set the LEDs lighting level for monitoring transmitter supply voltage. Set the minimum voltage for operating transmitter. Set frequency channel. Set the sleep time of transmitter. (Max 10 days) Set data processing at the time of radio communication error.
Operation Functions	Execute balance adjustment. Check sensor connection. Display graph.
Inspection Function	Radio condition inspection
■Simple Data Memo Function*	
Outline	Function for checking operation before test
Save Format	CSV
Save Interval	MRS-104A-S, MRS-101B-S, MRS-101A-SE, MRS-101B-V: All data, 0.01, 0.1, 1 s MRS-101B-T: All data, 0.1, 1 s
Save Time	Save interval all data: 1, 5, 10, 30, 60 s Save interval 0.01, 0.1, 1 s: 1, 5, 10, 30, 60, 300, 600, 1800, 3600 s
■Operating Environment	
OS	Windows® 8.1, Windows® 10 (Japanese/English, 32/64 bits support)
CPU	Core i5, 2 GHz or advanced
Memory	4 GB or more
Interface	USB2.0 (Can also be operated in a USB3.0 port)
Display	1024 × 768 or more

*Simple recording function for operation check

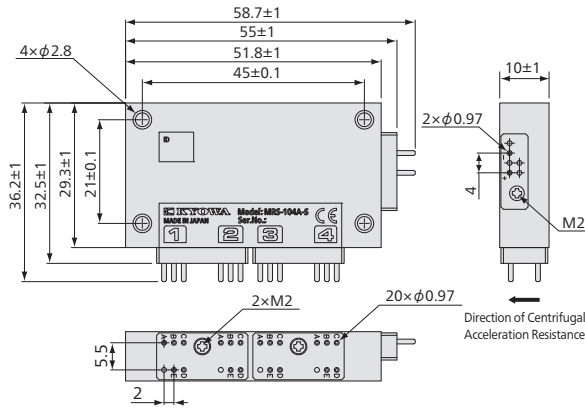


Optional Accessories&Standard Accessories

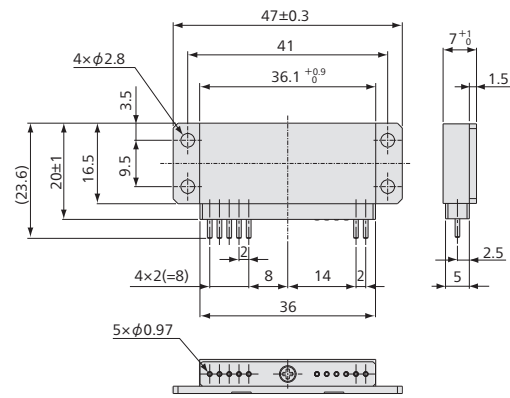
Ⓢ: Standard Accessories

	4ch-Strain Transmitter MRS-104A-S	Strain Transmitters		1ch-Voltage Transmitter MRS-101B-V	1ch-Thermocouple Transmitter MRS-101B-T	Receivers MRS-114A MRS-111B
		MRS-101B-S	MRS-101A-SE			
120-Ω quarter bridge 2-wire strain gages	ADP-402-120 4-channel measurement requires 2 units.	ADP-125-120 This is an integrated terminal for a DC power supply.	ADP-02-120 This is an integrated terminal for a DC power supply.			
120-Ω quarter bridge 3-wire strain gages	ADP-403-120 4-channel measurement requires 2 units.					
Strain-gage transducers	ADP-401 Ⓢ 4-channel measurement requires 2 units.	ADP-115 Ⓢ This is an integrated terminal for a DC power supply.	ADP-01 Ⓢ This is an integrated terminal for a DC power supply.			
Voltage signal				ADP-11V Ⓢ This is an integrated terminal for a DC power supply.		
Thermocouple					ADP-11T Ⓢ This is an integrated terminal for a DC power supply.	
MRS Junction Kits	MRS-J14A 	MRS-J11B 	MRS-J11A 	MRS-J11B 		
MRS Packaging Kit			MRS-P11A 			
Antennas			EXT-ANT1 W1030 Ⓢ DA-DB-05RP-SMA-08 Ⓢ Antenna harness		EXT-ANT1 W1030 Ⓢ EXT-ANT2 DA-DB-05RP-SMA-08 Ⓢ	
Extension cable for receiving antenna			E-02(2m) E-03(6m) (Not compliant with EU directives)		E-02(2m) Ⓢ E-03(6m) (Not compliant with EU directives)	
DC power supply	ADP-40P Ⓢ 					P-76
AC power supply						AC Adapters Ⓢ *AC power cable sold separately. Select according to your country or region
AC power cables	Japan: P-38 (Approx. 1.7 m) U.S.: P-39 (Approx. 1.9 m) India: P-40 (Approx. 1.9 m) EU: P-41 (Approx. 1.9 m) Thailand: P-42 (Approx. 1.9 m) China: P-43 (Approx. 1.8 m) Taiwan: P-44 (Approx. 1.9 m) *Korean compatible models are available. Inquiries are welcome.					

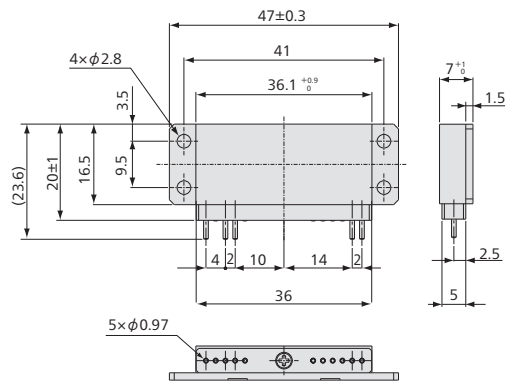
4ch-Strain Transmitter MRS-104A-S



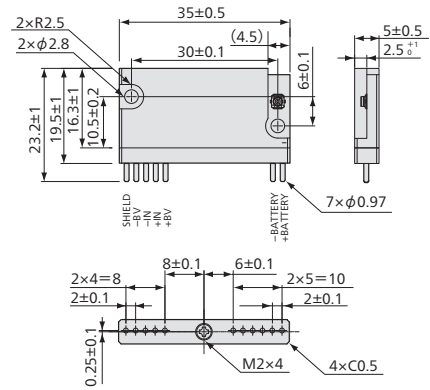
1ch-Strain Transmitter MRS-101B-S



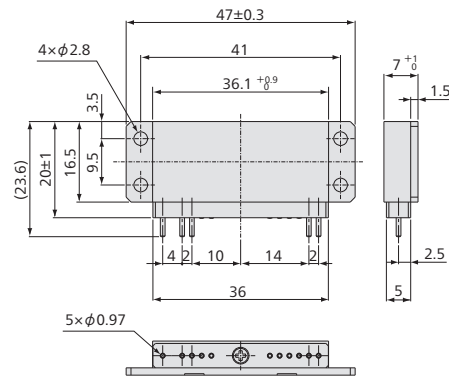
1ch-Voltage Transmitter MRS-101B-V



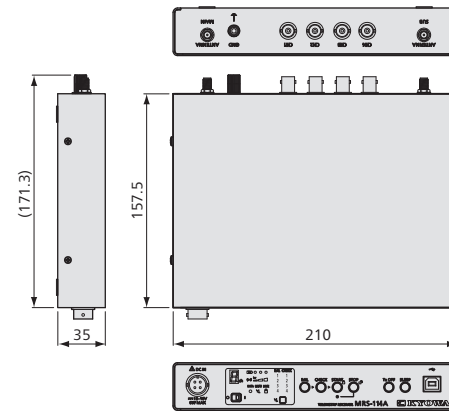
1ch-Strain Transmitter MRS-101A-SE



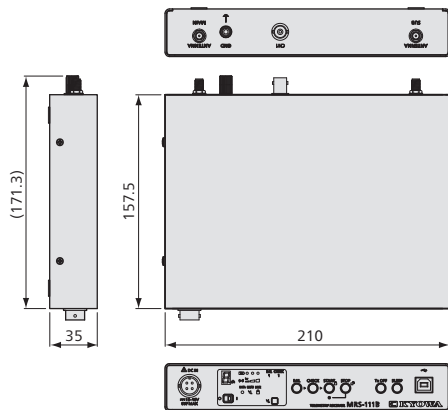
1ch-Thermocouple Transmitter MRS-101B-T



4ch-Receiver MRS-114A

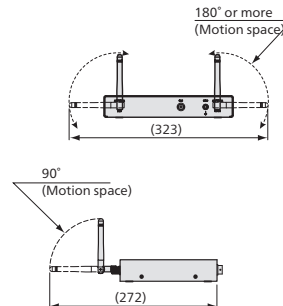


1ch-Receiver MRS-111B

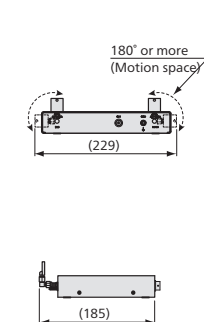


Antenna Moving Range

With antennas W1030
MRS-111B^{*2}



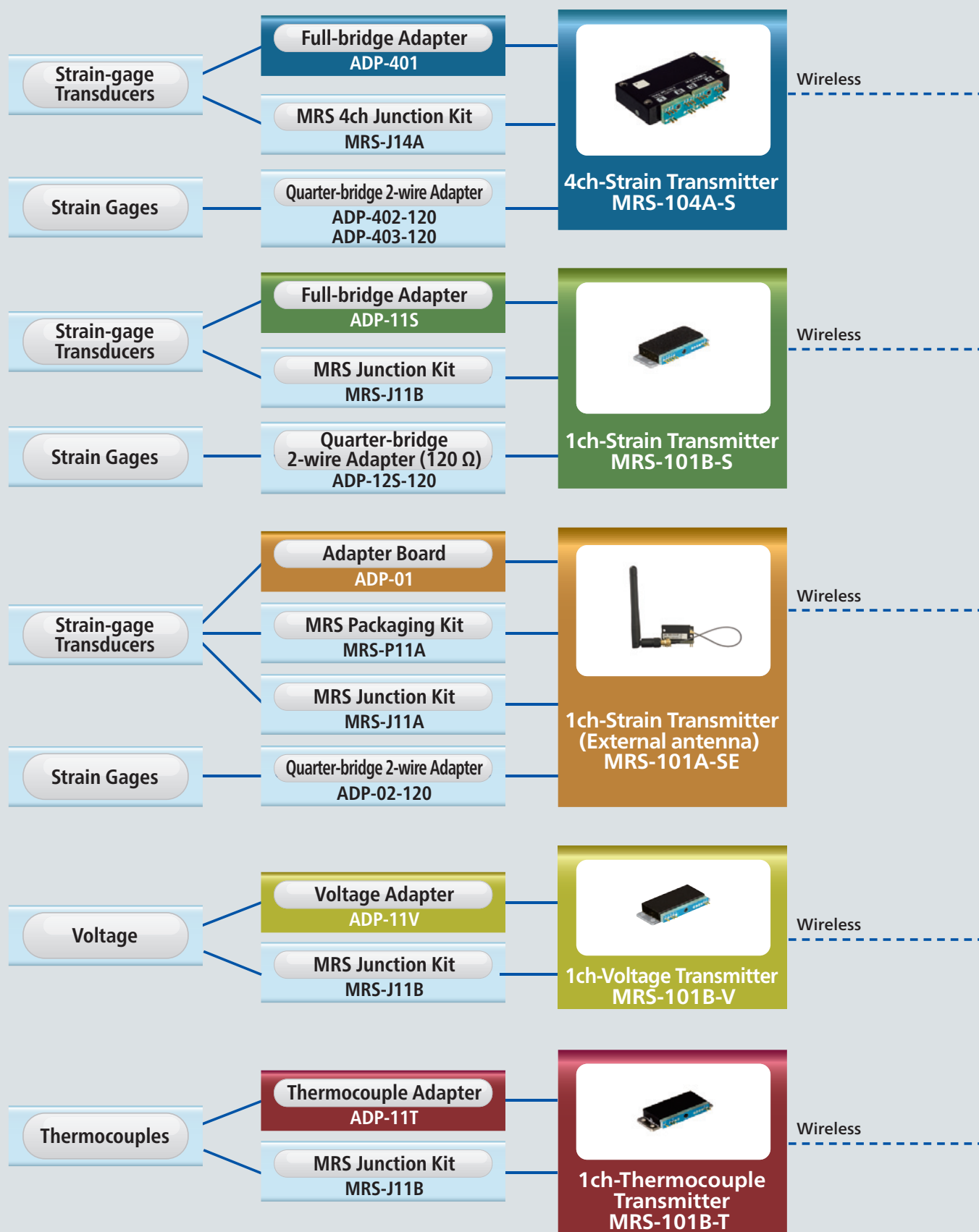
With antennas EXT-ANT1



^{*2} MRS-114A are the same in dimension.



Simplified Configuration of the MRS-100 Series



*The transmitter requires a power source.

*No MRS-104A-S be used in combination with a 1-channel receiver.

**1ch-Receiver MRS-111B**

USB Cable(Provided)

**PC****Setting Software
MRS-10B***Simple recording function
for operation check**PC****4ch-Receiver MRS-114A****Data Recorder**DC power cable
P-76

AC adapter

AC power cables
P-38~43MRS-111B/114A
Standard AccessoriesMRS-104A-S
Standard AccessoriesMRS-101B-S
Standard AccessoriesMRS-101A-SE
Standard AccessoriesMRS-101B-V
Standard AccessoriesMRS-101B-T
Standard Accessories