

1ch Transmitter for digital telemeter

MRS-101B-S/V NEW

Renewed Strain Transmitter and Voltage Transmitter

- ✓ Expand wireless certified countries and regions
- ✓ Better handleability

*Centrifugal acceleration resistance 3000 G

regardless of temperature and installation directions

- ✓ Better transmission performance by changing the antenna design



MRS-101B-S



MRS-101B-V

Line-up

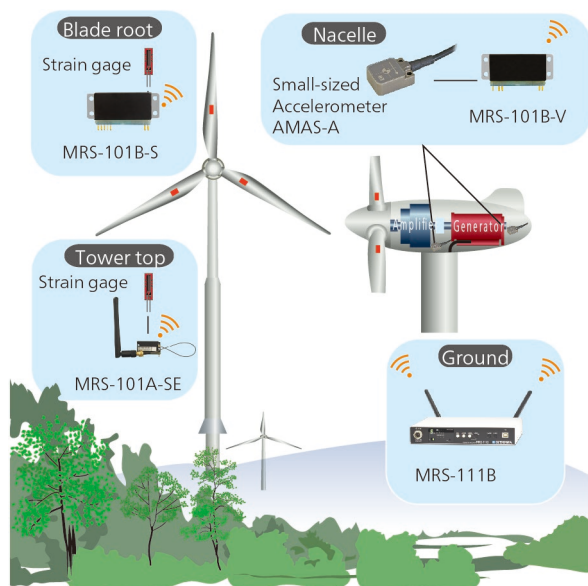
Transmitters	Measuring Targets	Channels	Compatible Receivers	Radio Certification ^{*2} (In combination with receiver ^{*3})	Shock Resistance	Centrifugal Acceleration Resistance
MRS-101B-S	Strain gages (Full-bridge system ^{*1}) Strain-gage transducers	1	MRS-111B MRS-114A	Japan, USA, China, India, Thailand, Taiwan and EU	980.7 m/s ² (100 G)	29420 m/s ² (3000 G)
MRS-101B-V	Voltage					

^{*1} Other bridge systems need bridge box or bridged adapter.

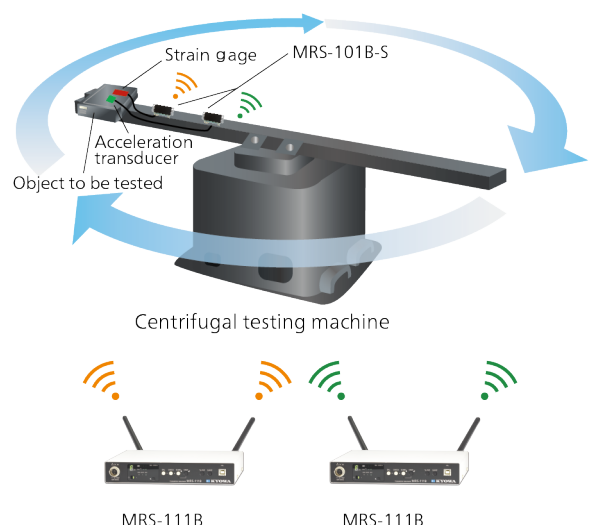
^{*2} Korean compatible models are available. Inquiries are welcome.

^{*3} Please check the website for details on the receivers and the Setting Software. It must be updated.

Applications



Strain & vibration measurements of wind power generators



Centrifugal acceleration testing

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

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

* AMAS-A require power supply.

Specifications

Hardware Specifications

Models	MRS-101B-S	MRS-101B-V
Measuring Targets	Strain gages (Full-bridge system*), strain-gage transducers *Other bridge systems need bridge box or bridged adapter.	Voltage
Channels	1	
Input Impedance	-	Approx. (1 MΩ +1 MΩ)
Compatible Bridge Resistance	120 to 1000 Ω	-
Gage Factor	2.00 fixed	-
Bridge Excitation	1 VDC	-
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	1000, 2500, 5000, 10000, 25000 × 10 ⁻⁶ strain	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	±10000 × 10 ⁻⁶ strain	Within ±5 V
AD Resolution	16 bits	
Sampling Frequencies	4.8 kHz	
Temperature Stability	Zero point: Within ±0.05 × 10 ⁻⁶ strain /°C Sensitivity: Within ±0.01%/°C	Zero point: Within ±0.01% FS /°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) * The figures are when installed with our specified screws and torque. * Use a shatterproof cover for safety.	
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	22 mA or less *Test condition: Power supply 3.0 V
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	Approx. 38 h [Lithium (CR2 manufactured by Panasonic)] Approx. 33 h [Ni-MH eneloop® (BK-4MCC, AAA cell × 2)] Approx. 49 h [Alkaline EVOLTA (LR03EJ, AAA cell × 2)] *Test condition: 23 ±5 °C
Dimensions	47 W × 7 H × 20 D mm (With an adapter, excluding protrusions)	
Weight	Approx. 17 g (With an adapter)	
Compliance	Directive 2014/53/EU (RED) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)	

RF Specifications

Transceiver Frequency Channel	1 (Choose 1 channel from 16 channels using Setting Software)
Antenna	Built-in antenna
Radio Communication Frequency	2.4 GHz band
Radio System	Digital modulation system
Radio Certification	Japan, USA, China, India, Thailand, Taiwan and EU
Communication Distance	50 m (Max. line of sight distance)
Environment of Usage	Environment where the wireless LAN and the Bluetooth®, etc. are not intermingled on the 2.4 GHz.

Frequency Channel and Central Frequency (GHz)

Frequency Channel	0	1	2	3	4	5	6	7
Central Frequency	2.405	2.41	2.415	2.42	2.425	2.43	2.435	2.44

Frequency Channel	8	9	A	B	C	D	E	F
Central Frequency	2.445	2.45	2.455	2.46	2.465	2.47	2.475	2.48

Specifications in Combination with Receiver

Compatible Receivers	MRS-111B firmware ver. 3.01 or later MRS-114A firmware ver. 3.01 or later
Analog Output	±5 V/Range Full Scale
Combination Accuracy	Within ±0.2%FS
Frequency Response	DC to 370 Hz (Deviation +0.5, -1 dB) , -3 ±1 dB (At 480 Hz)
Delay Time	11.1 ±0.3 ms (DC to 480 Hz)

* Please check the accessories on the website for details.

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Safety Precautions

- Be sure to observe the safety precautions given in the instruction manual, in order to ensure correct and safe operation.
- Do not use in locations subject to significant water, dampness, steam, dust, or flammable gases.
Doing so may lead to fire, electrical shock, or malfunction.

- Specifications and designs are subject to change without notice.
- Please contact us if using the detailed products for special applications.
- Detailed company and product names are the trademarks or registered trademarks of their respective owners.
- The warranty details can be found on the "Product Warranty" attached to the product and on the following website.
www.kyowa-ei.com/eng/company/quality/warranty.html
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