

Strain Measurement Unit

WM2000SA



**Measures Strains of Rotating/
Moving Object**



Features of Measurement Unit

Real-time Simultaneous Measurement at a Maximum of 100 points

By utilizing the advantage of wireless measurement, maximum of 100 points (100 units)* can be measured simultaneously in real time.
*When sampling time is less than 1 sec, 30 points (30 units)

Easy Measurement of Rotating/Moving Objects

Enables easy strain measurement of formerly difficult-to-measure targets such as rotating or moving objects.

Stores an Amplifier and a Bridge in a Compact Body

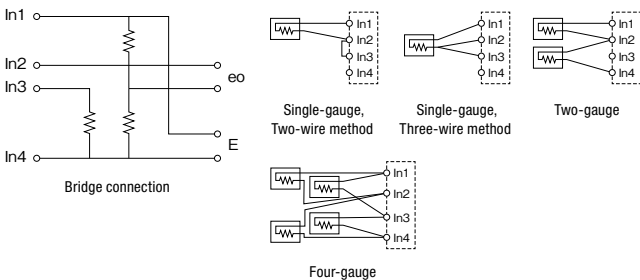
Equipped in a compact body, this sensor includes a high-performance amplifier and a high-precision bridge using high-density mounting technology. It contributes to space saving at installation sites and improves efficiency of operation. Measurement range: $\pm 20000 \mu$ strain

Three Kinds of Resistance to Meet Measurement Methods

- 120 Ω type: For the 120 Ω strain gauge
- 350 Ω type: For the 350 Ω strain gauge
- Full bridge type: For the four-active gauge method

Applicable for Single/Two/Four Gauge Methods

Equipped with four connection terminals, this unit can measure with both single-gauge and two-gauge methods, realizing high precision measurements. It can be jointed strain gauge transducer by adding the new type of four-gauge method.



Features of AirLogger™

Dramatically Improve Efficiency

Various measurement units wirelessly send measurement data to your PC for display and saving. The fully wireless design of AirLogger™ dramatically boosts efficiency by freeing users from the constraints of working with data cables.

Work in Various Fields

The compact AirLogger™ units without cables enable easy measurement for formerly difficult-to-measure targets such as rotating/moving objects or inside of various sizes of space or enclosed spaces.

Installed Internal Memory Stores Measurement Data

When the radio wave is weak and data transfer is unstable, the internal memory can store measurement data which can be retrieved and displayed after measurement.

Software Switch Function

The power switch has been removed from the measurement unit. Units can now be turned on/off from your PC. Smooth measurement instructions reduce wasted time. The power off status is standby mode with ultra-low power consumption, reducing power consumption of battery.

Simultaneous Measurement by Combining Diverse Types of Measurement Units

One PC Communication Unit of WM2000 series can receive measurement data from diverse types of measurement units such as temperature, voltage, strain or acceleration. They can be combined depending on use cases, making the AirLogger™ even more convenient.



Major Specifications

[Strain Measurement Unit]		
Measurement ch/unit	1 ch	
Size	54.5 × 45 × 17.5 (mm)	
Weight	36 g (Include battery)	
Communication frequency	2.4 GHz wireless communication	
Communication distance	Max 30 m	
Measurement interval	100 msec, 200 msec, 500 msec, 1 sec, 2 sec, 10 sec, 1 min, 5 min, 10 min	
Number of simultaneous connection / 1 PC Communication Unit	Measurement interval 1 sec or more: Max 100 units Less than 1 sec: Max 30 units Mixed: Max 70 units (Less than 1 sec: 30 + 1 sec or more: 40)	
Power supply	Lithium primary battery	
Environmental operation range	Temperature: -30 to below +100°C* *In the United States, -30 to 90°C (Same value when Water-proof Attachment is used) Humidity: 5 to 80% RH (no condensation)	
Resistance against vibration	Equivalent to JIS_D1601_Type 1_Type C	
Dust proof/waterproof performance	IP54 or equivalent (When Water-proof Attachment is used)	
Strain measurement	Measurement range	±20000μ
	Applicable sensors	Strain gauge, Strain gauge transducer (Choose one of gauges, 120 Ω, 350 Ω, or Full bridge)
	Applicable method	120 Ω type, 350 Ω type: Single-gauge method (two-wire connection) Single-gauge method (three-wire connection) Two-gauge method (dummy gauge for temperature compensation) Full bridge type: Four-gauge method
	Measurement resolution	±20000 μST: 1 μST ±10000 μST: 0.5 μST ±5000 μST: 0.1 μST
Water-proof Attachment	Size: 64.5 x 66.1 x 21 (mm) Material: Polycarbonate	



- ① Strain Measurement Unit
- ② Water-proof Attachment (standard accessory)
- ③ PC Communication Unit (sold separately)

Other Specifications

[PC Communication Unit]		(Sold separately)
Outer dimensions	50 × 23.5 × 8.3 (mm)	
Weight	11 g	
Power supply	From PC mainframe	
Connection to PC	USB interface	
Communication frequency	2.4 GHz wireless communication	
Install PC environment	Specifications	CPU: Intel Celeron processor 1.6 GHz or higher Memory: 2 GB (including memory used by the OS) Remaining storage of space: 10 MB or less (program size) Display: Minimum size 8-inch, Minimum XGA (1024 × 768)
	OS	Windows10 32bit/64bit, Windows11 64bit
	Interface	USB 2.0 compliant

*Windows is a registered trademark of Microsoft Corporation in the U.S. and/or other countries.

Products

[Strain Measurement Unit]		
120 Ω Measurement Unit	1 unit/1 set	WM2000SA-000-01
120 Ω Measurement Unit	5 units/1 set	WM2000SA-000-05
120 Ω Measurement Unit	10 units/1 set	WM2000SA-000-10
350 Ω Measurement Unit	1 unit/1 set	WM2000SA-100-01
350 Ω Measurement Unit	5 units/1 set	WM2000SA-100-05
350 Ω Measurement Unit	10 units/1 set	WM2000SA-100-10
Full bridge Measurement Unit	1 unit/1 set	WM2000SA-200-01
Full bridge Measurement Unit	5 units/1 set	WM2000SA-200-05
Full bridge Measurement Unit	10 units/1 set	WM2000SA-200-10

Standard Accessories: A lithium primary battery and a water-proof attachment for each unit

- Sensors, PC Communication Unit and PC are not included.
- To use these measurement units, at least one PC Communication Unit is required to be installed in a PC.

[PC Communication Unit]		
PC Communication Unit	1 unit/1 set	WM2000ZA-000-01

- Software and manuals are provided as downloads.
In case of you need the software CD and the manual brochure, please select from the option window.

[Options]		
One set of the software CD and the manual brochure	SWM2244019-01	
Calibration Certificate	1 measurement unit/1 set	A7090-2000-TB ¹

¹ Please order certificate sets of the numbers of necessary measurement units.
(e.g. To order certificates for five measurement units, order 5 sets)

Replacement lithium primary battery	10 units/1 set	A7010-L10-010 ^{2,5,6,7}
Replacement lithium primary battery	50 units/1 set	A7010-L10-050 ^{2,5,6,7}

² Commonly usable with the same series 2 ch Temperature/Voltage Measurement Unit (WM2000TA), and Strain Measurement Unit (WM2000SA).

⁵ As replacement of lithium batteries that it should be quoted separately.

⁶ For transporting only lithium batteries overseas, lithium batteries are subject to UN standards and should be packaged in accordance with UN packaging standards before transportation.

⁷ In case of overseas transportation of lithium batteries alone that need to be packaged as dangerous goods.

Replacement Water-proof Attachment	10 units/1 set	A7030-A01-010 ³
		³ Exclusive for 7 ch Temperature/Voltage Measurement Unit (WM2000TB). Cannot be used for other measurement units.

Heat-resistant Case	1 case/1 set	A7030-B00-001 ⁴
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⁴ Commonly usable with the same series 2 ch Temperature/Voltage Measurement Unit (WM2000TA)

Thermocouple Cable (Type K)	5 meter/1 cable	A7020
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- Note that the communication may become unstable or the communication distance may become shorter depending on the radio wave environment and obstacles during use.
- This product can be used in Japan, China, Vietnam, United States, EU, Thailand, Taiwan.
- In the United States, the temperature range is -40°C to 90°C in compliance with US safety standards.
- Specifications and external appearance in this brochure may change without notification.
- Products are not fault-tolerant and are not designed or intended for any use requiring fail-safe performance in which the failure of a Product could lead to death, serious personal injury, or severe physical and environmental damages (collectively, "High Risk Activities"), such as the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, weapons systems and/or direct life-support machines.
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