

Load cell for compression and tension SW1/SW3 series

Easily to mount into equipment with the 2 female threads on the sides.
The waterproof body enables measurement applications in wet environments.



SW1 series



SW3 series

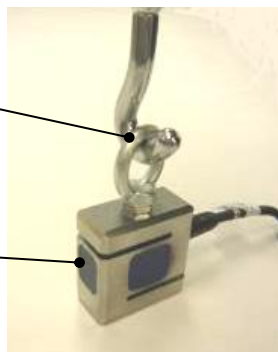


[Main features]

- Easily integrate into your facility and equipment.
- Suitable for compress and pulling measurement due to easy mountable design.

Eye bolt
EB series
(Sold separately)

SW1 series



Customized jig for
mounting SW1 series
to external equipment
(Sold separately)

SW1 series



What is IP?

IP(International Protection) is a standard which is based on IEC Standard 529 for solid foreign materials, electric devices for water and cabinet.

IPxx

The second code

(IP 0 to 8 for water penetration)

The first code

(IP 0 to 8 for human body and solid foreign materials)

IP67

Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1m of submersion for 30 minutes.)

No ingress of dust, complete protection against contact.



: eZ-Connect series

eZ-Connect is composed of an amplifier and load cells.

Enables to replace load cells without additional adjustment.

Suitable for different types of tests such as tension and torque, measuring from low load to high load etc.

Available load cells have a mark .

Specifications				
Model	SW1 series	eSW1 series 	SW3 series	eSW3 series 
Capacity	Refer to model list			
Accuracy *1	±0.5%F.S. or less	±0.5%F.S. or less	±0.5%F.S. or less	±0.5%F.S. or less
Rated output	±2mV/V			
Nonlinearity	100N,200N: ±0.5%R.O 500N-5000N: ±0.25%R.O		±0.25%R.O	
Allowable voltage	10V DC			
Safe overload rating	120%		110%	
Working environment (Allowable temperature)	-5~50 °C (-30~70 °C)		-10~50 °C (-30~80 °C)	
Temperature influence at 0 point	0.01%/ °C		0.01%/ °C	
Temperature influence for output	0.02%/ °C		0.02%/ °C	
Cable	Approx. 0.5~2m (Curl cord)		Approx. 5m	
Dimensions	See [Dimensions]			
Weight	100N to 2000N: Approx. 200g 5000N: Approx. 300g		Approx. 1120g	
International Protection (*2)	IP67			

*1 The accuracy is only load cell itself. Please refer to below "Separated Sensor Model" and "eZ-Connect series" for the accuracy of combinations with the amplifier (indicator).

*2 IP67 is only approved for the load cell itself. The amplifier (indicator) and the connector parts are not approved.

* An amplifier (indicator) is required to read values. Please refer to below "Available amplifiers (indicators)" for the detail.

* When you order a load cell without indicators, please choose one from 3 of connector types. We cannot undertake that our load cell can be combined with your equipment. Even though you could combine it, we cannot guarantee accuracy of force value.

[Available Amplifiers (Indicators)]

Separated Sensor Model		
Handheld type ZTS series	Handheld type ZTA series	Desktop type FA Plus2
		
- Handheld use - Specific purpose - Higher accuracy	- Handheld use - Higher accuracy - I/O displacement - Data saving to USB	- Desktop use - Higher accuracy
eZ-Connect series Sensor Interchangeable Amplifier		
Desktop type eFA Plus2	Handheld type eZT	Quad Sensor Measuring Amplifier QSMA-400
		
- Desktop use - Load cell interchangeable (such as measurement of tension and torque, or low and high load)	- Handheld use - Load cell interchangeable (such as measurement of tension and torque, or low and high load)	- Up to 4 different load cells can be connected Simultaneously. (Load cell interchangeable) - To use QSMA-400, the graphing Software Quad Graph Drawer is required to be downloaded.

* Refer to the specification sheet of each amplifier (indicator) for details.

[Sensor Model]

	Model	Capacity	Mounting thread
SW1 series	SW1-100N	100N	M6
	SW1-200N	200N	M6
	SW1-500N	500N	M8
	SW1-1000N	1000N	M8
	SW1-2000N	2000N	M10
	SW1-5000N	5000N	M10
SW3 series	SW3-20kN	20kN	M16

* When order load cell without amplifier, please choose the connector type from below table.

Code	-5P	-6P	-OC
Connector shape	 5 pin	 6 pin	Without Connector (Open end)
Connect to	ZT series, FA Plus2,etc	Some discontinued IMADA products	For installing in equipment
*Please check the connector shape of your equipment to connect.			

* Add the code to the end of model. For example: When order SW1-100N with 5 pin, the product model is "SW1-100N-5P".

[Separated Sensor Model]

Model			Capacity	Accuracy	Display	Resolution
ZTA	ZTS	FA Plus2				
ZTA-SW1-100N	ZTS- SW1-100N	FAP2-SW1-100N	100N	±0.5%F.S. or less	100.0N	0.1N
ZTA-SW1-200N	ZTS- SW1-200N	FAP2-SW1-200N	200N		200.0N	0.1N
ZTA-SW1-500N	ZTS- SW1-500N	FAP2-SW1-500N	500N		500.0N	0.1N
ZTA-SW1-1000N	ZTS- SW1-1000N	FAP2-SW1-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
ZTA-SW1-2000N	ZTS- SW1-2000N	FAP2-SW1-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
ZTA-SW1-5000N	ZTS- SW1-5000N	FAP2-SW1-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
ZTA-SW3-20kN	ZTS-SW3-20kN	FAP2-SW3-20kN	20kN		20.00kN	0.01kN

* Please refer to each indicator specification for the details.

[eZ-Connect series]

Model		Capacity	Accuracy *1	Display	Resolution
eSW1 series	eSW1-100N	100N	±0.5%F.S. or less + Accuracy of amplifier	100.0N	0.1N
	eSW1-200N	200N		200.0N	0.1N
	eSW1-500N	500N		500.0N	0.1N
	eSW1-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
	eSW1-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
	eSW1-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
eSW3 series	eSW3-20kN	20kN		20.00kN	0.01kN

*1 Total accuracy when combined with the eZ-Connect series amplifier.

e.g. Accuracy combined with eZT → +/-0.7%F.S. or less (Load cell: +/-0.5%F.S. or less + Amplifier: +/-0.2%F.S. or less)

[Related Products]

Eye bolt EB/RE series	Measuring shaft	Extra Small Load Cell LMU series
		
Hoisting attachments for load cell. Measure tensile strength by letting a hook or a shaft through.	It can be attached to load cell as male screw shaft.	Load cell LMU series is extra small type for both tension and compression testing with 50N,200N and 500N capacity.
Standard Type Load Cell DPU/DPUH series	Extra Compact Load Cell SCX series	Customized Mounting Block
		
Load cell DPU/DPUH series is standard type for both tension and compression testing with 2N to 20kN capacity.	Load cell SCX series is extra small type for both tension and compression testing with 100N to 2000N capacity.	Custom-made jig for mounting SW1 series to IMADA test stands or other external equipment. Please contact us for details.

Related Cable		
Model	Explanation	Purpose of use
CB-108	Analog cable	To connect to a multi meter, oscilloscope.
CB-118	Analog cable (For optional -AN)	To connect to a multi meter, oscilloscope.
CB-208	RS232C cable	To connect to PC having its own system.
CB-908	Open end connection cable	Output cables for loose wire 37 pin (Useful for connection with unique equipment.)
CTB-A	Cable with Terminal Block	Allow doe connection with linear scale and external equipment such as PLC *1

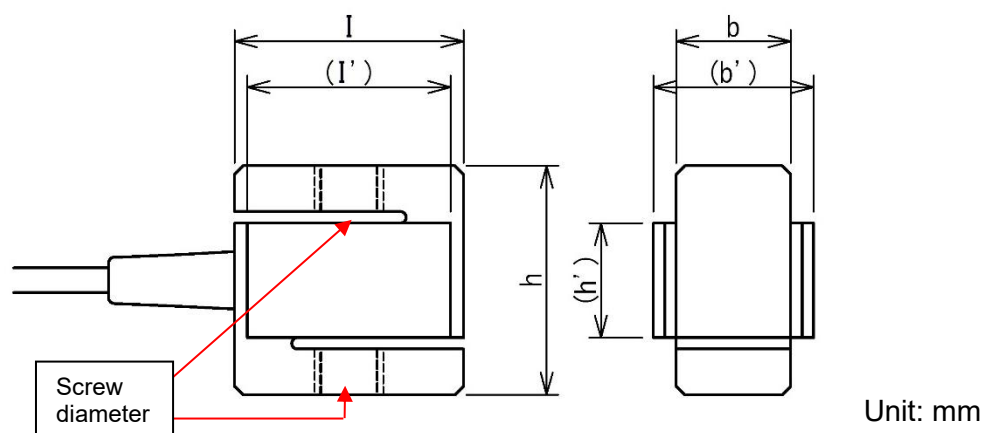
*1 Displacement function is only available in ZTA series , eZT, FA Plus2, eFA Plus2.

Related Adaptor	
CA-6T6	Adaptor for M6 female screw convert to M6 male screw. For mounting of M6 force gauge attachment to M6 measuring shaft of load cell SW1 series.
CA-8T6	Adaptor for M8 female screw convert to M6 male screw. For mounting of M6 force gauge attachment to M8 measuring shaft of load cell SW1 series.
CA-8T10	Adaptor for M6 female screw convert to M6 male screw. For mounting of M10 force gauge attachment to M8 measuring shaft of load cell SW1 series.
CA-10T10	Adaptor for M10 female screw convert to M10 male screw. For mounting of M10 force gauge attachment to M10 measuring shaft of load cell SW1 series.
CA-16T16	Adaptor for M16 female screw convert to M16 male screw. For mounting of M16 custom attachment to M16 measuring shaft of load cell SW3 series.

* Please refer to screw adaptor CA series specification for further information.

[Dimension]

SW1 series

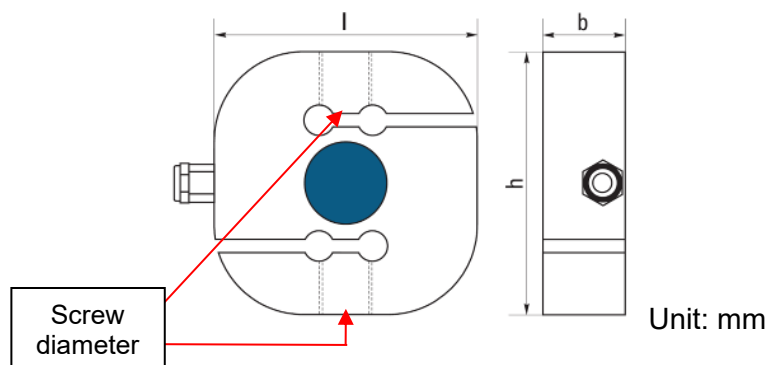


Model	I	b	h	Screw (*1)	I'	b'	h'
SW1-100N	40	20	40	M6	36	28	20
SW1-200N							
SW1-500N				M8	-	-	-
SW1-1000N							
SW1-2000N							
SW1-5000N				M10			

* The protective cover is attached on model SW1-100N and 200N. Refer to I' , b' , h' for dimensions for the cover.

*1 The depth is 8mm.

SW3 series



Model	I	b	h	Screw (*1)
SW3-20kN	80	25	80	M16

*1 The depth is 11mm.

[Cautions]

- Information in this document is subject to change without prior notice.
- This document is product descriptions and handling precautions, and do not guarantee various characteristics or safety.
- This product is designed for force measurement purpose only.
- Do not copy and use this content without authorization.
- Do not apply force more than its capacity or from incorrect direction to the measuring shaft.
- Do not use this product in the environments including fierce temperature changes, high temperature, high humidity, near water, dusty place.

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