



# Comparison Table of Force Gauges

## Digital Force Gauges vs. Mechanical Force Gauges

	<a href="#">Mechanical Force Gauge</a>	<a href="#">Digital Force Gauge</a>
		
<b>Strong Points</b>	<ul style="list-style-type: none"> <li>- Requires no power supply</li> <li>- Highly durable and reliable</li> <li>- Easier to read force transition</li> </ul>	<ul style="list-style-type: none"> <li>- Digital indication avoids misreading</li> <li>- Connectable with PC, easy to analyze force data</li> <li>- Various convenient functions</li> <li>- Fit for impact/breaking test</li> </ul>
<b>Weak Points</b>	<ul style="list-style-type: none"> <li>- Not fit for impact/breaking test</li> <li>- Misreading is more likely to happen</li> </ul>	<ul style="list-style-type: none"> <li>- Not easy to read force transition</li> <li>- Take hours to be charged</li> </ul>

## Mechanical Force Gauges [Request a Quote >](#)





Model <small>Click for details</small>	<a href="#">FB/FS series</a>	<a href="#">PS/PSS series</a>	<a href="#">PSM series</a>	<a href="#">PSH series</a>	<a href="#">UKK/UKT series</a>	
<b>Features</b>	Low Cost	High Accuracy	High Accuracy High Resolution	High Accuracy High Capacity	Compact	
<b>Accuracy</b>	✓+	✓++	✓++	✓++	✓+	
<b>Repeatability</b>	✓	✓	✓+	✓	✓	
<b>Handheld Use</b>	✓+	✓+	✓+	✓	✓	
<b>Use with Stand/Fixed</b>	✓+	✓+	✓+	✓+	✓++	
<b>Image</b>						
<b>Specifications</b>	<b>Capacity</b>	10N to 500N	5N to 500N	20N to 500N	500N to 3000N	20N to 300N
	<b>Unit</b>	N *1				
	<b>Direction</b>	Tension&Compression	Tension&Compression	Tension&Compression	Tension&Compression	Tension/Compression
	<b>Accuracy</b>	+/-0.3%F.S.		+/-0.1%F.S.		+/-0.3%F.S.
	<b>Resolution</b>	1/100 *2		1/200 *2	1/100 *2	
<b>Functions</b>	<b>Peak Hold</b>	✓+	✓+	✓+	✓+	✓+
	<b>Zero Reset</b>	✓+	✓+	✓+	✓+	✓+
<b>Accessory</b>	<a href="#">Attachments</a>	6 types *3	8 types *3	8 types *3	6 types *3	UKK: 5 types *3 UKT: 4 types *3

\*1 It is for international models only. Available units for Japanese domestic models are different.

\*2 Some ranges have different resolutions. See specification sheet for details.

\*3 Included types vary depending on the range.

Digital Force Gauges [Request a Quote >](#)

Model <a href="#">Click for details</a>	<a href="#">DST series</a>	<a href="#">DSV series</a>	<a href="#">ZTS series</a>	<a href="#">ZTA series</a>	
Main Features	Simple Low Cost	High Functionality for Handheld	High Functionality High Repeatability	Top-Tier with High Output	
<a href="#">Next Series</a> *1	- *2	- *2	✓ (Ver.5.00 or later)	✓ (Ver.5.00 or later)	
Repeatability	✓+	✓+	✓++	✓++	
Handheld Use	✓+	✓++	✓+	✓+	
Use with Stand	✓+	✓+	✓++	✓++	
Graphing *3	✓	✓	✓+	✓++	
Output	-	-	✓+	✓++	
Wireless	-	-	✓++	✓++	
Image					
Specifications	Capacity	2 to 1000N		2 to 5000N *4	
	Unit	N (mN, kN), kgf (gf), lbf (ozf) *5		N (mN, kN), kgf (gf), lbf (ozf) *5	
	Direction	Tension, Compression			
	Accuracy	+/- 0.2% F.S. +/- 1 digit			
	Sampling Rate	Max. 1000 times/sec		Max. 2000 times/sec	
	Sensitivity	3 steps		4 steps	
	PC Data Comm. Speed	50Hz		2000Hz	
	Display	4-digit graphic LCD		4-digit graphic organic EL	
	Power	Internal battery, USB charge (AC adapter)		Internal battery, AC adapter	
Battery	Approx. 30 continuous hours of use (with backlight off) by 4.5 hour charge		Approx. 6.5 continuous hours of use by 2 hour charge		
Functions	Peak Hold	✓+	✓+	✓++ (Tension&Compression)	✓++ (Tension&Compression)
	2 <sup>nd</sup> Peak	-	-	-	✓+
	Judgement	✓+ (OK only)	✓+ (OK only)	✓++ (OK, +NG,-NG)	✓++ (OK, +NG,-NG)
	+NG Alarm	-	-	✓+	✓+
	Reverse Display	✓+	✓+	✓+	✓+
	Reverse +/-	✓+	✓+	✓+	✓+
	Internal Memory	-	✓+ (1000 data)	✓+ (1000 data)	✓+ (1000 data)
	USB Drive	-	-	-	✓+
	Calendar	✓+	✓+	✓+	✓+
	Setting Lock	✓+	✓+	✓+	✓+
	Bar Graph	-	-	✓+	✓+
	Overload Warning	✓++ (w/ precaution alarm)	✓++ (w/ precaution alarm)	✓+	✓+
	Tilt-sensing Alarm	-	✓+	-	-
Language	JP, EN	JP, EN	JP, EN, CN, ES, DE, FR, IT, KO	JP, EN, CN, ES, DE, FR, IT, KO	
Output	USB	✓+	✓+	✓+ (2.0, 3.0)	✓+(2.0, 3.0)
	RS232C	✓+	✓+	✓+	✓+
	Analog	-	-	✓+	✓+
	High/Low Set Points	-	-	✓+	✓+
	Sub High/Low Set Points	-	-	-	✓+
	Overload	-	-	✓+	✓+
	Displacement	-	-	-	✓+
Included Software	Data Acquisition Software Force Logger Series				
<a href="#">Included Attachments</a>	6 types *6	6 types *6	8 types *6	8 types *6	

\*1 [Next Series](#) is a generic term for IMADA measurement devices with upgraded functions, performances with the essential modifications. Product registration in [IMADA-Connected](#) allows access to the following services (some services are paid): (1) Additional functions downloads to the force gauge, (2) Data Acquisition Software and Graphing Software downloads, (3) Firmware online updates, (4) User's manual downloads

\*2 Any DSV or DTS are NOT applicable for Next series, however, DST/V with firmware Ver. 1.02 or later can be registered on IMADA Connected. By registration, data acquisition software Force Logger Next and User's manual can be downloaded.

\*3 [Graphing software](#) sold separately is required.






\*4 The shape of ZTS/A with capacity 2500N or more is different images above.

\*5 It is for international models. Available units for Japanese domestic models are different. Some units are only available with certain models.

\*6 Included attachments vary depending on the capacity.

## Separated Sensor Model Digital Force Gauges and Amplifier Comparison Table

Followings are digital force gauges with [an external sensor](#). [Request a Quote >](#)

Model <a href="#">Click for details</a>	<a href="#">Separate sensor</a> <a href="#">ZTS series</a>	<a href="#">Separate sensor</a> <a href="#">ZTA series</a>	<a href="#">eZT</a>	<a href="#">eFA Plus 2</a>	<a href="#">FA Plus 2</a>	
<b>Features</b>	Handheld type digital force gauge with an external load cell, which is more accurate than eZ-Connect series.	Handheld type digital force gauge with an external load cell. Force-displacement measurement is possible by connecting with a linear scale.	Handheld type amplifier (eZ-Connect series). Connected load cell can be replaced without adjustment.	Desktop type amplifier (eZ-Connect series). Connected load cell can be replaced without adjustment.	Desktop type digital force gauge with an external load cell. Easy to combine with external equipment due to the box shape and its output functions.	
<a href="#">Next Series</a> *1	✓ (Ver.5.00 or later)	✓ (Ver.5.00 or later)	✓ (Ver.5.00 or later)	✓ (Ver.5.00 or later)	✓ (Ver.5.00 or later)	
<b>Accuracy</b> *2	✓+	✓+	✓	✓+	✓	
<b>Repeatability</b>	✓++	✓++	✓++	✓++	✓++	
<b>Handheld Use</b>	✓	✓	✓	-	-	
<b>Use with Stand</b> *3	✓	✓	✓	✓	✓	
<b>Load Cell Interchanging</b> *4	-	-	✓++	✓++	-	
<b>Graphing</b> *5	✓+	✓++	✓++	✓++	✓++	
<b>Output</b>	✓+	✓++	✓++	✓++	✓++	
<b>Wireless</b>	✓++	✓++	✓++	✓++	✓++	
<b>Image</b>						
<b>Specifications</b>	<b>Capacity</b> *2	2 to 20kN				
	<b>Unit</b> *6	N(mN,kN), kgf (gf), lbf (ozf)	N (kN), kgf (gf), lbf (ozf), N-m(N-cm), kgf-m(kgf-cm), lbf-in (ozf-in)		N(mN,kN), kgf (gf), lbf (ozf)	
	<b>Direction</b> *2	Tension / Compression		Tension / Compression / Torque		
	<b>Accuracy</b> *2	The accuracy of the connecting load cell		The accuracy of the connecting load cell + Accuracy of Amplifier (±0.2%F.S.)		
	<b>Sampling Rate</b>	Max. 2000 times/sec				
	<b>Sensitivity</b>	4 steps				
	<b>PC Data Comm. Speed</b>	2000Hz				
	<b>Display</b>	4-digit graphic organic EL				
	<b>Use</b>	6.5 hours			-	
	<b>Charge</b>	2 hours			-	
<b>Power</b>	Internal battery, AC adapter			100V to 240V (*5)		
<b>Functions / Output</b>	Basic functions and output functions are the same as ZTS series. Please refer to <a href="#">the specification sheet</a> for details.	Basic functions and output functions are the same as ZTA series. Please refer to <a href="#">the specification sheet</a> for details.	Basic functions and output functions are the same as ZTA series. Please refer to <a href="#">the specification sheet</a> for details.	Please refer to <a href="#">the specification sheet</a> for details.	Please refer to <a href="#">the specification sheet</a> for details.	
<b>Included Software</b>	Data Acquisition Software Force Logger Series					
<b>Included Attachments</b>	Depending on the combined load cell		-			

\*1 [Next Series](#) is a generic term for IMADA measurement devices with upgraded functions, performances with the essential modifications. Product registration in [IMADA-Connected](#) allows access to the following services (some services are paid): (1) Additional functions downloads to the force gauge, (2) Data Acquisition Software and Graphing Software downloads, (3) Firmware online updates, (4) User's manual downloads

\*2 Accuracy, Capacity, and Direction vary depending on the connected load cell. Please refer to each specification for details.

\*3 Some load cells cannot be mounted to our test stand. Please contact us for details.

\*4 Separated Sensor Model ZTS/ZTA/FA Plus2 series are sold in combination with a load cell. Amplifiers are not sold separately. The load cell cannot be replaced after purchase.

\*5 [Graphing software](#) sold separately is required.

\*6 It is for international models. Available units for Japanese domestic models are different. Units vary depending on the connected load cell.

\*7 Option of industrial power DC+24V is available. (option: -DC)

**[Cautions]**

- These products are designed for measurement purpose only.
- This is only a guide. Exceptions may occur under certain environment and conditions.
- The contents may be changed without prior notice.
- Do not copy the contents without permission.

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