



Comparison Table of Force Gauges

Digital Force Gauges vs. Mechanical Force Gauges

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

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





Model <small>Click for details</small>		FB/FS series	PS/PSS series	PSM series	PSH series	UKK/UKT series
Features		Low Cost	High Accuracy	High Accuracy High Resolution	High Accuracy High Capacity	Compact
Accuracy		✓ +	✓ ++	✓ ++	✓ ++	✓ +
Repeatability		✓	✓	✓ +	✓	✓
Handheld Use		✓ +	✓ +	✓ +	✓	✓
Use with Stand/Fixed		✓ +	✓ +	✓ +	✓ +	✓ ++
Image						
Specifications	Capacity	10N to 500N	5N to 500N	20N to 500N	500N to 3000N	20N to 300N
	Unit	N *1				
	Direction	Tension&Compression	Tension&Compression	Tension&Compression	Tension&Compression	Tension/Compression
	Accuracy	+/-0.3%F.S.	+/-0.1%F.S.			+/-0.3%F.S.
	Resolution	1/100 *2		1/200 *2	1/100 *2	
Functions	Peak Hold	✓ +	✓ +	✓ +	✓ +	✓ +
	Zero Reset	✓ +	✓ +	✓ +	✓ +	✓ +
Accessory	Attachments	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 Click for details		DST series	DSV series	ZTS series	ZTA series
Main Features		Simple Low Cost	High Functionality for Handheld	High Functionality High Repeatability	Top-Tier with High Output
Next Series *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 nd 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			
Included Attachments		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 <small>Click for details</small>		Separate sensor ZTS series	Separate sensor ZTA series	eZT	eFA Plus 2	FA Plus 2
Features		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 sereis). Connected load cell can be replaced without adjustment.	Desktop type amplifier (eZ-Connect sereis). 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.
Next Series *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)
Accuracy *2		✓ +	✓ +	✓	✓ +	✓
Repeatability		✓ ++	✓ ++	✓ ++	✓ ++	✓ ++
Handheld Use		✓	✓	✓	-	-
Use with Stand *3		✓	✓	✓	✓	✓
Load Cell Interchanging *4		-	-	✓ ++	✓ ++	-
Graphing *5		✓ +	✓ ++	✓ ++	✓ ++	✓ ++
Output		✓ +	✓ ++	✓ ++	✓ ++	✓ ++
Wireless		✓ ++	✓ ++	✓ ++	✓ ++	✓ ++
Image						
Specifications	Capacity *2	2 to 20kN				
	Unit *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)
	Direction *2	Tension / Compression		Tension / Compression / Torque		Tension Compression
	Accuracy *2	The accuracy of the connecting load cell		The accuracy of the connecting load cell + Accuracy of Amplifier (±0.2%F.S.)		The accuracy of the connecting load cell
	Sampling Rate	Max. 2000 times/sec				
	Sensitivity	4 steps				
	PC Data Comm. Speed	2000Hz				
	Display	4-digit graphic organic EL				
	Use	6.5 hours			-	
	Charge	2 hours			-	
	Power	Internal battery, AC adapter			100V to 240V (*5)	
Functions / Output		Basic functions and output functions are the same as ZTS series. Please refer to the specification sheet for details.	Basic functions and output functions are the same as ZTA series. Please refer to the specification sheet for details.	Basic functions and output functions are the same as ZTA series. Please refer to the specification sheet for details.	Please refer to the specification sheet for details.	Please refer to the specification sheet for details.
Included Software		Data Acquisition Software Force Logger Series				
Included Attachments		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.

IMADA CO., LTD

99 Jinnoshinden-cho aza Kanowari Toyohashi
Japan 441-8077
Tel: +81-(0)532-33-3288
Fax: +81-(0)532-33-3866
E-mail: info@forcegauge.net
Website: <https://www.forcegauge.net/en/>



Visit our website for more
information on wide product
specifications, measurement
applications and videos.