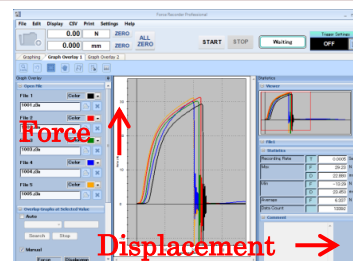# Force-Displacement Measurement Unit FSA

Measuring unit to draw force-displacement curve easily.

Ideal for feeling testing or material characteristic evaluation since force-displacement relation is clearly visible.

Easy	Simple operation Easy setting

Precise	High sampling speed High sensitivity

Various models are available.

Portable (50N)	Compact (500N)
FSA-MSL	FSA-0.5K2

Professional evaluation (1000N)	High capacity (2500N)	Horizontal testing (500N)
FSA-1KE	FSA-2.5K2	FSA-0.5HK2

Useful functions
- Output displacement values when load values reach the peak.
- Reset displacement values at chosen load values.

[Applications]

Switch feeling test	Rubber tension test	And more...
		• Cushion softness test • Material bending test Suitable for characteristic evaluation

[Model]

Model	Type	Capacity	Feature
FSA-MSL-____N	Portable	50N	Manual system.
FSA-0.5K2-____N	Standard	500N	Automatic system. Testing speed, the number of testing, pause time can be chosen. > Ideal for repetition/durability test
FSA-1K2-____N		1000N	
FSA-2.5K2-____N		2500N	
FSA-0.5HK2-__N	Standard horizontal	500N	Automatic system. Testing speed, the number of testing, pause time can be chosen.
FSA-1KE-____N	High performance functionality	1000N	Automatic system. Precise measurement due to high rigidity. In addition to functions of 0.5-2.5K2 series, more functions such as travel set up, 5 running patterns memory, etc. are available.

* ____N: You can select range according to your test.

↓

FSA- 0.5K2 - 200N

Force range (capacity) choices
2N, 5N, 20N, 50N, 100N, 200N, 500N, 1000N, 2500N,

Please choose the most appropriate range for your test

Please select a force range lower than the capacity of this model.

FORCE MEASUREMENT
IMADA

[Configuration examples]

FSA-1KE-50N

3 ->
1 ->
5 ->
2 ->

1 Force gauge 50N
2 Test stand
3 Cable
4 Software
5 Attachment

*1 Optional attachment

<-*1

4 ->

5 Some Included attachment

Force-Displacement measurement is possible with this FSA unit.

This unit includes 1 to 5 items to perform force-displacement measurement

With included software, FS curve can be drawn, and 5 graphs at maximum can be drawn in a table, which is useful for comparing and evaluating the graph data.

*1 With optional attachments, countless application is possible such as tension test, peeling test, etc.

[Specifications]

Model		FSA-___-___N
Measurement Unit	Force	N, kgf, lbf (Switchable) *
	Displacement	mm, inch (Switchable) *
Range		2N(200gf), 5N(500gf), 20N(2kgf), 50N(5kgf), 100N(10kgf), 200N(20kgf), 500N(50kgf), 1000N(100kgf), 2500N(250kgf)
Resolution	Force	4 digit (e.g. Resolution of 5N force gauge is 0.001N)
	Displacement	0.001mm (on software Force Recorder Professional) 0.01mm (on force gauge display)
Accuracy	Force	+/-0.2% F.S. +/-1digit
	Displacement	+/-0.1mm +/-1 digit (with no load) When maximum force is applied, the stand may be deformed upward and downward (approx. -0.5mm to +0.5mm).
Model : Stroke : Speed		MSL:80mm:Manual adjustment knob 0.5K2:230mm:10-300mm/min 1K2:290mm:10-300mm/min 2.5K2:290mm:10-300mm/min 0.5HK2:230mm:10-300mm/min 1KE:290mm:0.5-600mm/min *1 Please refer to page 2 for further information about model *2 "Stroke" means the maximum length from the top of force gauge to the table of test stand. Therefore, stroke varies depending on the force gauge and the attachments combined.
Sampling rate		2000 data / sec
Display update		16 data / sec
Output		USB, Serial(RS232C), Analog(Approx. +/-2V), Comparator, Overload
Functions of motorized test stand (Except MSL)		Stroke limit, Overload prevention(*1), Force control(*2), Emergency stop *1 We cannot assure the perfect prevention against sensor break-down. *2 The value of force control is specified by the absolute value.
Power of motorized test stand		AC100V-240V Free input
Operating temperature/Humidity		Temperature:0 - 40°C Humidity:20 -80%RH
Accessories		Instruction manual, Inspection certificate, Power cable, 2 pcs of spare hues, Driver CD-ROM(including software for data log "ZT-Logger"), Graphing software "Force-Recorder Professional".

*These are the specifications for International model.   Please note that this unit is different from Japanese domestic model and international one.

[Software operating environment]

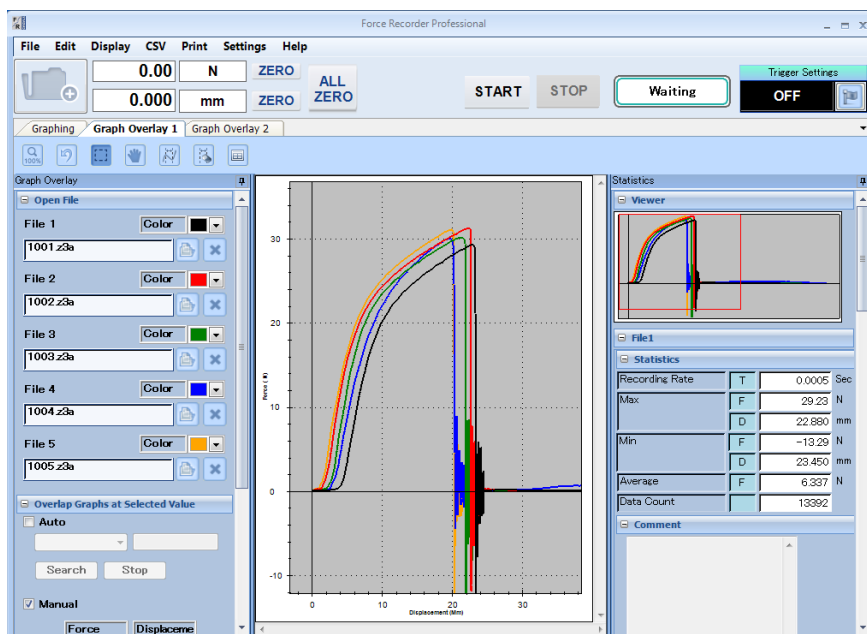| Operating environment	OS: Windows XP/Vista/7/8/8.1(32bit/64bit)
Hardware	CPU: Pentium4(1GHz more) more recommended
	Memory: 2GB more recommended
	Hard disk: 10GB (data storage area) more
Plat form	.NET Framework4 more
Execute environment	Microsoft Internet Explorer 6.0 later
	Windows Installer 3.1 later
Connection port	USB1.1 and USB 2.0 * connector

* We do not guarantee operation in USB 3.0.

[Option Attachment (Not included in unit)]

IMADA offers variety of attachments for limitless force testing applications. Besides, we can customize attachments only for you to suit your unique measurement needs.

Urethane made compression jig	Pantograph grip	Film grip	Fixture for 90 degree peel testing
UR series	PGC series	FC series	P90-200N

* Please refer to the specification sheet of each attachment.

[Graphing software image]

[Cautions]

- Please do not add load over capacity of a force gauge to prevent sensor break-down.
- Displacement reading error can occur due to deflection of a sensor or test stand when load is added.
- Optional attachment and PC are NOT included in this unit.
- Software could not work in some operating environment.

Please feel free to contact us for measurement solutions, distributor's information in your country, and so on.

TEL: +81-(0)532-33-3288
Email: info@forcegauge.net