

# SHIMPO INSTRUMENTS

Measuring Quality

## FG-7000L Digital Force Gauge

**The FG-7000L Series digital force gauges provide additional tension and compression testing flexibility with their external load cell input.** External load cells are immediately recognized when connected to the display base. Two styles of load cells are available for your specific testing needs. The first is the 'S' Beam style load cell for both tension and compression tests with capacities ranging from 220 lbf (100 kgf) up to 4500 lbf (2000 kgf). The second style available is the 'Ring' type load cell for compression applications with capacities ranging from 2250 lbf (1000 kgf) all the way up to a hefty 44,000 lbf (200 kN).

The multiple-language FG-7000L's provide menu programming for easy selection and set-up of the instrument to your desired requirements. Four selectable modes of operation include: Track mode for live readings, Peak mode for displaying the maximum reading, Auto Peak where the peak resets after a programmed period of time and First Peak where only the initial peak is recorded once a decrease is sensed. The display has two selectable operations, numerical view with bar graph or graphical view with bar graph. In graph mode if alarm tolerances are set, the user is presented a quick indication where their process is in relation to their upper and lower limit graph lines and can immediately determine pass/fail status.

These high-tech instruments can easily data log a reading at the push of a button for simple data acquisition, or be set to continuous data storage. Data can be viewed on the screen, sent to the optional printer, or loaded to be analyzed and graphed on the free software program. The 1,000 point memory with definable groups allows for multiple tests to be recorded and easily separated upon loading. In addition, the comparator output can be set up for integration of the instrument into a quality system for repetitive testing such as on a production line.

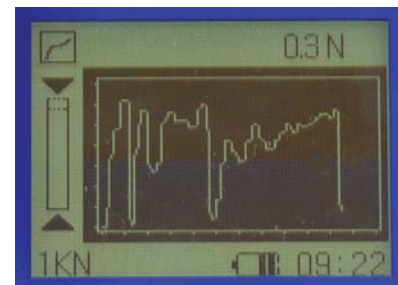
The FG-7000L's robust housings are designed to fit perfectly in the operator's hand for portable testing. The large back-lit, 180° auto-reversible display, compression/tension icons, combined with the dual labeled key pad allows for usage of the gauge in various positions while still being able to easily view and operate. These many features make the FG-7000L the ideal force instrument for various applications such as, incoming quality inspection, finished goods testing, R&D or almost any force testing requirement.

### Features

- 1000 Hz Sample Rate combined with  $\pm 0.2\%$  F.S. accuracy provides fast sampling producing great resolution and more accurate results
- Four mode operation: Track, Peak, First Peak & Auto-Peak
- 180° Auto-reversible display, tension/compression icons, and dual printed keypad allows usage as a portable gauge or mounted upside down on a test stand
- Programmable High & Low Limits allow for instant visual and audible indication of pass or fail testing.
- 1000 point data collection capability can be viewed on display, sent to optional printer, or uploaded to software package for further analysis
- Rugged, ergonomic die cast aluminum construction allows usage in demanding applications
- Comparator output function provides user with easy Pass/Fail testing system integration capabilities
- Multi-language and engineering units selection provides flexible user comfort
- Datalogging/graphing software available for free download on website



FG-7000L with  
Connected Load Cell



Display in Graph Mode

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## FG-7000L Specifications

Accuracy	± 0.2% F.S.
Selectable Units	kN, N, kgf, tf, lbf and klbf. (Depending on Range)
Overload Capacity	S beam: 150% of F.S.; Ring Type 120% of F.S. (LCD flashes beyond 110% of F.S.)
Measurement Method	Peak, Autopeak, First Peak or Track Mode
Data Sampling Rate	1000 Hz
Display	160*128 dot matrix LCD with LED Backlight
Display Update Rate	10 times/second
Resolution	See chart
Memory	1000 data
Set Point	Programmable high and low limits
Battery Indicator	Display flashes battery icon when battery is low
Power	3.6VDC 800mAH Ni-MH rechargeable batteries
Battery Life	Approximately 16 hours continuous use per full charge
Charger / Adaptor	Universal USB/BM charger, Input: 110 ~ 240VAC
Temperature Effects	<0.054% per °F (0.03% FS per °C)
Operating Temp.	14 to 104°F (-10 to 40°C)
Storage Temperature	-4 to 122°F (-20 to 50°C)
Oper. Relative Humidity	5 to 95%
Housing	Aluminum
Outputs	USB, Serial Port RS-232, High & Low Limit NPN
Dimensions	5.7 x 2.9 x 1.4" (145 x 73 x 35.5 mm)
Product Weight	1.5 lb (0.7 kg)
Package Weight	2.8 lb (1.3 kg)
Warranty	1 year
Included Accessories	AC Adapter/Charger, USB cable, calibration cert.

## Load Cell Specifications

Zero Balance	S Beam & Ring Type ±2% F.S.
Non-Linearity	S Beam 0.03% F.S.; Ring Type 0.1% F.S.
Hysteresis	S Beam 0.03% F.S.; Ring Type 0.1% F.S.
Temp. Effect	S Beam 0.03%/10°C F.S.; Ring Type 0.05%/10°C F.S.
Overload Protection	S Beam 150%; Ring Type 120%
Protection Class	IP76

DISTRIBUTED BY:

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## Resolution Charts

S-Beam for Compression or Tension			N	kgf	lbf	kN
S-1	1kN	Capacity	1000	100	220	-
		Resolution	0.1	0.01	0.05	-
S-2	2kN	Capacity	2000	200	450	-
		Resolution	0.5	0.05	0.1	-
S-5	5kN	Capacity	5000	500	1100	-
		Resolution	1	0.1	0.1	-
S-10	10kN	Capacity	10000	1000	2250	10
		Resolution	1	0.1	0.5	0.01
S-20	20kN	Capacity	-	2000	4500	20
		Resolution	-	0.5	1	0.005

Ring Type for Compression			N	kgf	lbf	kN	klbf	tf
R-10	10kN	Capacity	10000	1000	2250	10	-	-
		Resolution	0.1	0.1	0.5	0.01	-	-
R-20	20kN	Capacity	-	2000	4500	20	-	-
		Resolution	-	0.5	1	0.005	-	-
R-50	50kN	Capacity	-	5000	-	50	11	5
		Resolution	-	1	-	0.01	0.001	0.001
R-100	100kN	Capacity	-	-	-	100	22	10
		Resolution	-	-	-	0.01	0.005	0.001
R-200	200kN	Capacity	-	-	-	200	44	20
		Resolution	-	-	-	0.05	0.01	0.005

## Ordering Details

FG-7000L-S-1	Digital Force Gauge with Remote S-Beam Load Cell 220 lb (1 kN) Capacity
FG-7000L-S-2	Digital Force Gauge with Remote S-Beam Load Cell 450 lb (2 kN) Capacity
FG-7000L-S-5	Digital Force Gauge with Remote S-Beam Load Cell 1100 lb (5 kN) Capacity
FG-7000L-S-10	Digital Force Gauge with Remote S-Beam Load Cell 2250 lb (10 kN) Capacity
FG-7000L-S-20	Digital Force Gauge with Remote S-Beam Load Cell 4500 lb (20 kN) Capacity

FG-7000L-R-10	Digital Force Gauge with Remote Ring Type Load Cell 2250 lb (10 kN) Capacity
FG-7000L-R-20	Digital Force Gauge with Remote Ring Type Load Cell 4500 lb (20 kN) Capacity
FG-7000L-R-50	Digital Force Gauge with Remote Ring Type Load Cell 11 klb (50 kN) Capacity
FG-7000L-R-100	Digital Force Gauge with Remote Ring Type Load Cell 22 klb (100 kN) Capacity
FG-7000L-R-200	Digital Force Gauge with Remote Ring Type Load Cell 44 klb (200 kN) Capacity

## Accessories

FG-7CHRG	Charger
FG-7USB	USB Cable
FG-PRINT	Portable Thermal Printer