

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. Three 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 third style is the "Mini Ring" type load cell for compression applications with capacities from 220 lbf (100 kgf) to 22 klbf (10,000 kgf).

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

- Tension Capacities to 4500 lbf (20 kN), compression up to 44,000 lbf (200 kN)
- 1000 Hz Sample Rate combined with +/-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
S-Beam Load Cell



Available Ring & Mini Ring
Style Load Cells

FG-7000L Specifications

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|----------------------|--|
| 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 & Mini 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 | 3.6 V dc 800 mA Ni-MH rechargeable batteries |
| Battery Life | Approximately 16 hours continuous use per full charge |
| Charger / Adaptor | Universal USB/BM charger, Input: 110 ~ 240 V ac |
| Temperature Effects | <0.054% per °F (0.03% FS per °C) |
| Operating Temp. | 14 to 104°F (-10 to 40°C) |
| Humidity Limit | 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) |
| Cable Length | 9.8' (3 m) |
| Product Weight | 1.5 lb (0.7 kg) |
| Package Weight | 2.8 lb (1.3 kg) |
| Certification | CE |
| Warranty | 1 year |
| Included Accessories | Load cell sensor, AC Adapter/Charger, USB cable, calibration cert., carrying case |

Load Cell Specifications

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|---------------------|---|
| Zero Balance | ±2% F.S. |
| Non-Linearity | S Beam 0.03% F.S.; Ring Type 0.1% F.S., Mini Ring 0.5% F.S. |
| Hysteresis | S Beam 0.03% F.S.; Ring Type 0.1% F.S., Mini Ring 0.5% F.S. |
| Temp. Effect | S Beam 0.03%/10°C F.S.; Ring & Mini Ring Type 0.05%/10°C F.S. |
| Overload Protection | S Beam 150%; Ring & Mini Ring Type 120% |
| Protection Class | IP76 |

Accessories

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

Resolution Charts

| S-Beam for Compression or Tension | | N | kgf | lbf | kN | klbf | tf |
|-----------------------------------|------------|-------|------|------|-------|-------|--------|
| S-1 M-1 | Capacity | 1000 | 100 | 220 | - | - | - |
| | Resolution | 0.1 | 0.01 | 0.05 | - | - | - |
| S-2 | Capacity | 2000 | 200 | 450 | - | - | - |
| | Resolution | 0.5 | 0.05 | 0.1 | - | - | - |
| S-5 M-5 | Capacity | 5000 | 500 | 1100 | - | - | - |
| | Resolution | 1 | 0.1 | 0.1 | - | - | - |
| S-10 R-10 M-10 | Capacity | 10000 | 1000 | 2250 | 10 | - | - |
| | Resolution | 1 | 0.1 | 0.5 | 0.01 | - | - |
| S-20 | Capacity | - | 2000 | 4500 | 20 | - | - |
| | Resolution | - | 0.5 | 1 | 0.005 | - | - |
| R-50 M-50 | Capacity | - | 5000 | - | 50 | 11 | 5 |
| | Resolution | - | 0.5 | - | 0.005 | 0.001 | 0.0005 |
| R-100 M-100 | Capacity | - | - | - | 100 | 22 | 10 |
| | Resolution | - | - | - | 0.01 | 0.005 | 0.001 |
| R-200 | Capacity | - | - | - | 200 | 44 | 20 |
| | Resolution | - | - | - | 0.05 | 0.01 | 0.005 |

Ordering Details

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|----------------|---|
| 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 |
| FG-7000L-M-1 | Digital Force Gauge with Remote Mini Ring Load Cell 220 lb (1 kN) Capacity |
| FG-7000L-M-5 | Digital Force Gauge with Remote Mini Ring Load Cell 1100 lb (5 kN) Capacity |
| FG-7000L-M-10 | Digital Force Gauge with Remote Mini Ring Load Cell 2250 lb (10 kN) Capacity Type Load Cell 11 klb (50 kN) Capacity |
| FG-7000L-M-50 | Digital Force Gauge with Remote Mini Ring Type Load Cell 11 klb (50 kN) Capacity |
| FG-7000L-M-100 | Digital Force Gauge with Remote Mini Ring Type Load Cell 22 klb (100 kN) Capacity |