Digital Force Gauges Series 5 - High Capacities

The M5-750, M5-1000, M5-1500, and M5-2000 advanced digital force gauges are designed for tension and compression force testing in numerous applications across virtually every industry, with capacities up to 2,000 lbF (10,000 N). The gauges feature an industry-leading sampling rate of 7,000 Hz, producing accurate results even for quick-action tests. A large, backlit graphics LCD displays large, legible characters, while the simple menu navigation allows for quick access to the gauges’ many features and configurable parameters. Data can be transferred via USB, RS-232, Mitutoyo (Digimatic), or analog outputs.

On-board data memory for up to 1,000 readings is included, as are statistical calculations with output to a PC. Integrated set points with indicators and outputs are ideal for pass-fail testing and for triggering external devices such as an alarm, relay, or test stand. The gauges are overload protected to 200% of capacity, and an analog load bar is shown on the display for graphical representation of applied force.

The gauges’ averaging mode addresses the need to record the average force over time, useful in applications such as peel testing, while external trigger mode makes switch activation testing simple and accurate. An ergonomic, reversible aluminum design allows for hand held use or test stand mounting for more sophisticated testing requirements. The force gauges are directly compatible with high capacity Mark-10 test stands, grips, and software.

The gauges include MESUR™ Lite data acquisition software. MESUR™ Lite tabulates continuous or single point data. Data saved in the gauge’s memory can also be downloaded in bulk. One-click export to Excel easily allows for further data manipulation.

Features
- High-speed 7,000 Hz sampling rate
- USB, RS-232, Mitutoyo, and analog outputs
- Large backlit graphic display
- 1,000-point data memory with statistics and outputs
- Live load bar graph with set point markers
- Programmable set points, with indicators and outputs
- Peak readings and set points always displayed
- Averaging mode - calculates average readings over time
- External trigger mode - for switch contact testing or remotely stopping display update
- Automatic data output via USB/RS-232
- 5 selectable units of measurement
- Configurable audio alarms and key tones
- Password protection, configurable for individual keys and calibration

Display Indicators
- Set points
- Pass/fail indicators
- Automatic output indicator
- Battery indicator
- Number of saved data points
- Peak readings
- Current reading
- Measurement mode
- Units of measurement
- Analog load bar w/set point markers

Specifications subject to change without prior notice.
Focus on Engineering: Reversible Housing

Housing separates into reversible halves, electrically connected by gold-plated spring contacts.

Load cell oriented down

Reversible housing allows the gauge to be used in different orientations.

The display and keypad remain upright.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity x Resolution</th>
<th>Accuracy</th>
<th>Sampling Rate</th>
<th>Power</th>
<th>Battery Life</th>
<th>Outputs</th>
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<th>Weight</th>
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<tr>
<td>M5-750</td>
<td>750 x 0.5 lbF</td>
<td>±0.1% of full scale</td>
<td>7,000 Hz</td>
<td>AC or rechargeable battery. Multi-step low battery indicator is displayed, gauge shuts off automatically when power is too low.</td>
<td>up to 7 hours of continuous use / up to 24 hours of continuous use</td>
<td>USB / RS-232: Configurable up to 115,200 baud. Includes Gauge Control Language 2 for full computer control. Mitutoyo (Digimatic): Serial BCD suitable for all Mitutoyo SPC-compatible devices.</td>
<td>Digital filters, outputs, automatic output (via USB/RS-232), automatic shutdown, default settings, averaging mode, external trigger, passwords, key tones, audio alarms, backlight, calibration</td>
<td>200% of full scale (display shows “OVER” at 110% and above)</td>
<td>1.8 lb [0.82 kg]</td>
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<td>M5-1000</td>
<td>1000 x 0.5 lbF</td>
<td>64 x 16,000 Configurable up to 115,200 baud. Includes Gauge Control Language 2 for full computer control. JUVP2ZP9JHNBUJDSerial BCD suitable for all Mitutoyo SPC-compatible devices. *OBSMH: ±0.1% of full scale at capacity. (FOF9M9VSQ9PF) Three open drain outputs, one input. 4FUQ)OUT Three open drain lines.</td>
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<td>1500 x 1 lbF</td>
<td>0.0001% of full scale</td>
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Note:

At 500 lbF (2,500 N) or more, force gauges are not recommended for applications involving sudden, sharp breaks. Examples include compression of brittle materials, pull testing of welds, etc. Consider an indicator with load cell instead.

Dimensions in [mm]

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