



Series 4 digital force gauges are designed for tension and compression force testing in numerous applications across virtually every industry, with capacities from 0.12 lb to 500 lb (0.5 N to 2500 N). The gauges feature a sampling rate of 3,000 Hz, producing accurate results under a wide range of test conditions. Accuracy is  $\pm 0.2\%$  of full scale  $\pm 1$  digit, and resolution is 1/2000. 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 to a PC or data collectors via USB, RS-232, Mitutoyo (Digimatic), or analog outputs.

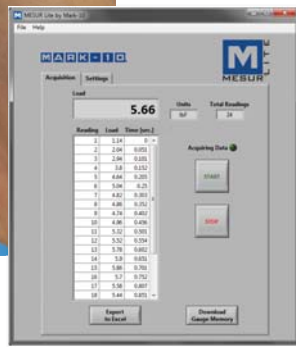
On-board data memory for up to 50 readings is included, as are statistical calculations with output to a PC. Integrated set points with indicators and outputs are ideal for pass-fail testing and for triggering external devices such as an alarm, relay, or test stand. The gauges are overload protected to 150% of capacity, and an analog load bar is shown on the display for graphical representation of applied force.



Shown with an ESM301 test stand and G1061 wedge grips

An ergonomic, reversible aluminum design allows for hand held use or test stand mounting for more sophisticated testing requirements. Series 4 digital force gauges are directly compatible with Mark-10 test stands, grips, and software.

Series 4 gauges include MESUR Lite data acquisition software. MESUR Lite tabulates continuous or single point data from Series 5 and 4 gauges. Data saved in the gauge's memory can also be downloaded in bulk. One-click export to Excel button easily allows for further data manipulation.



MESUR Lite data acquisition software is included with Series 4 gauges

## Features

- 3,000 Hz sampling rate
- USB, RS-232, Mitutoyo, and analog outputs
- Large backlit graphic display
- 50-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
- Configurable audio alarms and key tones
- 5 selectable units of measurement
- MESUR Lite data collection software included

## Display Indicators



### Distributed by:

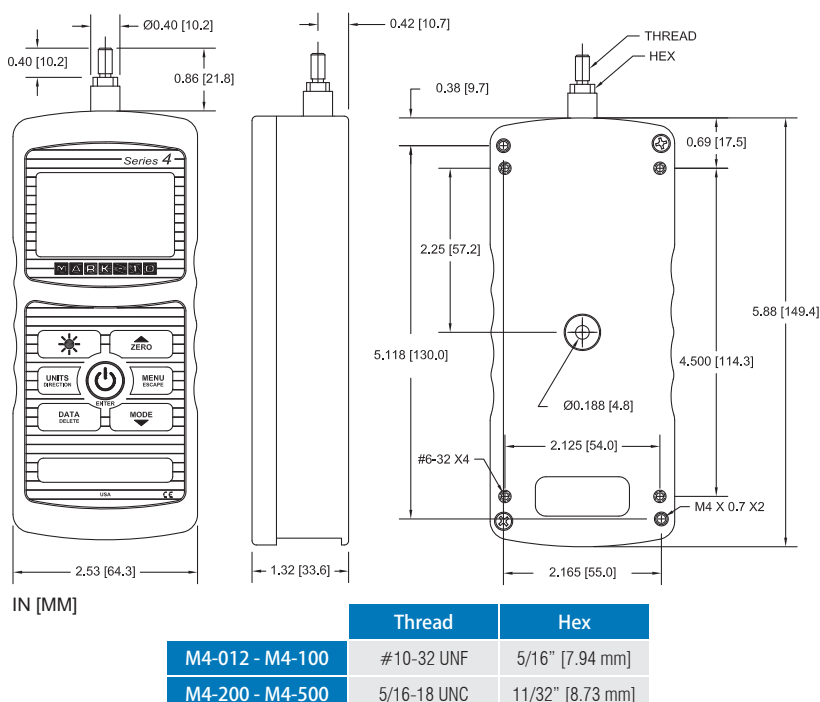
Nels Jorgenson & Co. ■ 20400 Nine Mile Road ■ St. Clair Shores, MI 48080  
 Tel: 586-774-6600 ■ Fax: 586-774-6605 ■ www.njcforce.com ■ njc@njcforce.com

## Focus on Engineering: Reversible Housing



## Specifications

|                               |  |
|-------------------------------|--|
| <b>Accuracy:</b>              | ±0.2% of full scale ±1 digit   |
| <b>Sampling Rate:</b>         | 3,000 Hz, pulse response of 1/1,500 sec. minimum   |
| <b>Power:</b>                 | AC or rechargeable battery. Multi-step low battery indicator is displayed, gauge shuts off automatically when power is too low.  |
| <b>Battery life:</b>          | <b>Backlight on:</b> up to 7 hours of continuous use<br><b>Backlight off:</b> up to 24 hours of continuous use   |
| <b>Outputs:</b>               | <b>USB / RS-232:</b> Configurable up to 115,200 baud.<br><b>Mitutoyo (Digimatic):</b> Serial BCD suitable for all Mitutoyo SPC-compatible devices.<br><b>Analog:</b> ±1 VCD, ±0.25% of full scale at capacity,<br><b>General purpose:</b> Three open drain outputs, one input.<br><b>Set points:</b> Three open drain lines. |
| <b>Configurable settings:</b> | Digital filters, outputs, automatic shutoff, default settings, key tones, audio alarms, calibration  |
| <b>Safe overload:</b>         | 150% of full scale (display shows "OVLd" at 110% and above)  |
| <b>Weight (gauge only):</b>   | <b>M4-012 - M4-100:</b> 1.0 lb [0.45 kg]<br><b>M4-200 - M4-500:</b> 1.2 lb [0.54 kg]   |
| <b>Load cell deflection:</b>  | All models 0.010 [0.25], except 0.050 [0.13] for M4-012  |
| <b>Included items:</b>        | Carrying case with chisel, cone, V-groove, hook, flat, extension rod, universal voltage AC adapter, battery, quick-start guide, USB cable, resource CD (USB driver, MESUR Lite software, MESURgauge DEMO software, and user's guide), and NIST-traceable certificate of calibration with data.                               |
| <b>Warranty:</b>              | 3 years (see individual statement for further details)   |



## Capacity & Resolution

| Model  | lbF  | ozF  | kgF | gF    | N    | kN  | mN   | lbF     | ozF   | kgF    | gF   | N      | kN     | mN  |
|--------|------|------|-----|-------|------|-----|------|---------|-------|--------|------|--------|--------|-----|
| M4-012 | 0.12 | 2    |     | 50    | 0.5  |     | 500  | 0.00005 | 0.001 |        | 0.02 | 0.0002 |        | 0.2 |
| M4-025 | 0.25 | 4    |     | 100   | 1    |     | 1000 | 0.0001  | 0.002 |        | 0.05 | 0.0005 |        | 0.5 |
| M4-05  | 0.5  | 8    |     | 250   | 2.5  |     | 2500 | 0.0002  | 0.005 |        | 0.1  | 0.001  |        | 1   |
| M4-2   | 2    | 32   | 1   | 1000  | 10   |     |      | 0.001   | 0.02  | 0.0005 | 0.5  | 0.005  |        |     |
| M4-5   | 5    | 80   | 2.5 | 2500  | 25   |     |      | 0.002   | 0.05  | 0.001  | 1    | 0.01   |        |     |
| M4-10  | 10   | 160  | 5   | 5000  | 50   |     |      | 0.005   | 0.1   | 0.002  | 2    | 0.02   |        |     |
| M4-20  | 20   | 320  | 10  | 10000 | 100  |     |      | 0.01    | 0.2   | 0.005  | 5    | 0.05   |        |     |
| M4-50  | 50   | 800  | 25  | 25000 | 250  |     |      | 0.02    | 0.5   | 0.01   | 10   | 0.1    |        |     |
| M4-100 | 100  | 1600 | 50  | 50000 | 500  |     |      | 0.05    | 1     | 0.02   | 20   | 0.2    |        |     |
| M4-200 | 200  | 3200 | 100 |       | 1000 | 1   |      | 0.1     | 2     | 0.05   |      | 0.5    | 0.0005 |     |
| M4-500 | 500  | 8000 | 250 |       | 2500 | 2.5 |      | 0.2     | 5     | 0.1    |      | 1      | 0.001  |     |

All models include 110V AC adapters.

Add suffix 'E' for euro plug (220V), 'U' for UK plug (220V) or 'A' for Australian plug (220V).

Ex: M4-50E, M4-200U



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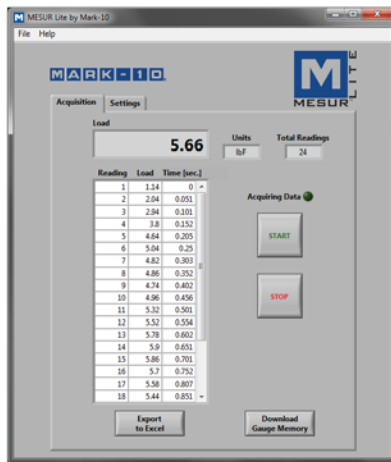
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MESUR™ Lite is a basic data collection program included with all new Mark-10 gauges with outputs. MESUR™ Lite tabulates continuous or single point data from a gauge. Data saved in the gauge's memory can also be downloaded in bulk. One-click export to Excel allows for further data manipulation.

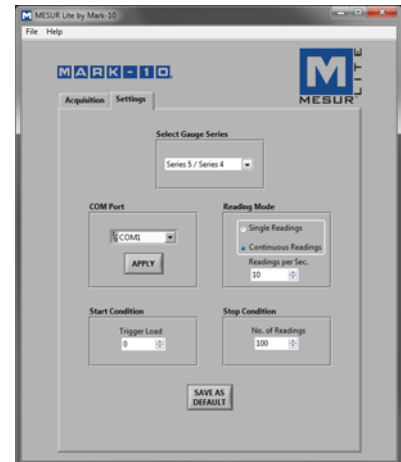
## Features

- Acquires and tabulates continuous, single-point, or saved data from a force or torque gauge
- One-click export to Excel
- Configurable start and stop test triggers
- Configurable number of readings per second, for continuous data acquisition



▶ The Settings tab allows the user to select gauge series, COM port, reading mode, and start and stop conditions.

◀ The Acquisition tab displays the current reading, tabulated data, and contains an Export to Excel button.



## MESUR™ gauge vs. MESUR™ Lite

|   | MESUR™ gauge  | MESUR™ Lite                 |
|---|---|-----------------------------|
| Compatible equipment                              | Gauges and test stands  | Gauges only                 |
| Type of data                                      | Load vs. time / load vs. travel / custom                      | Load vs. time only          |
| Data tabulation                                   | Yes   | Yes                         |
| Export to Excel                                   | Yes   | Yes                         |
| Graphing and analysis tools                       | Yes   | No                          |
| Max. number of continuous data points             | Unlimited   | 1,000                       |
| Data sampling rate                                | 0.000001 - 50/sec   | 0.1 - 10/sec                |
| Statistical calculations                          | Yes   | No                          |
| Available start conditions                        | Time, load, travel distance                                   | Load only                   |
| Available stop conditions                         | Time, load, sample break, travel distance, number of readings | Number of data points only  |
| Configurable pass / fail limits                   | Yes   | No                          |
| Reporting   | Yes, with customizable fields and templates                   | No                          |
| Save and recall test data                         | Yes   | No                          |
| Save and recall multiple test setups              | Yes   | No                          |
| Gauge configuration utility                       | Yes   | No                          |
| Large digital display to monitor current readings | Yes   | No                          |
| Price   | \$495   | Free with purchase of gauge |