



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, 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.

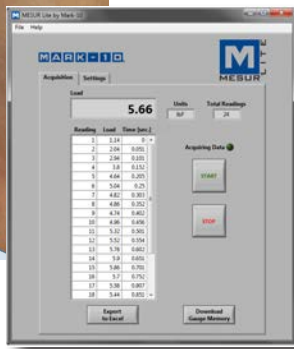
On-board data memory for up to 50 readings is included, as are statistical calculations with output to a PC. Integrated set points with indicators and outputs are ideal for pass-fail testing and for triggering external devices such as an alarm, relay, or test stand. The gauges are overload protected to 200% of capacity, and an analog load bar is shown on the display for graphical representation of applied force.



Shown with an ESM303 test stand and G1008 film & paper 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



## Focus on Engineering: Reversible Housing

Display and keypad are upright

Shaft down

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

Shaft up

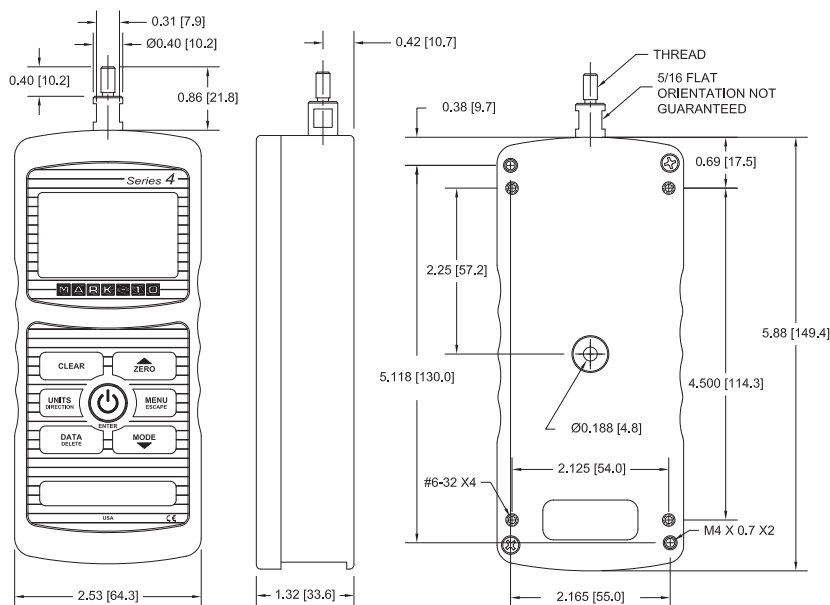
Reversible housing allows the gauge to be handheld or mounted to a test stand.

The display and keypad remain upright.

## Specifications

|                                    |                                                                                                                                                                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Accuracy:</b>                   | ± 0.2% of full scale                                                                                                                                                                                                                                                                                                           |
| <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>               | Backlight on / off: up to 7 / 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 VDC, ± 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>              | 200% of full scale (display shows "OVER" at 110% and above)                                                                                                                                                                                                                                                                    |
| <b>Weight:</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 0.005 [0.13] for M4-012                                                                                                                                                                                                                                                                        |
| <b>Environmental requirements:</b> | 40 - 100°F, max. 96% humidity, non-condensating                                                                                                                                                                                                                                                                                |
| <b>Warranty:</b>                   | 3 years (see individual statement for further details)                                                                                                                                                                                                                                                                         |

## Dimensions in [mm]



|                 | Thread      |
|-----------------|-------------|
| M4-012 - M4-100 | #10-32 UNF  |
| M4-200 - M4-500 | 5/16-18 UNC |

## In The Box



Series 4 force gauges are shipped as shown at left, and include the following accessories:

- (1) Extension rod \*
- (1) Hook \*
- (1) Cone \*
- (1) Chisel \*
- (1) V-Groove \*
- (1) Flat \*
- (1) Coupling \*
- (1) Carrying case
- (1) USB cable
- (1) AC adapter
- (1) Battery
- (1) Resource CD (USB driver, MESUR® Lite software, MESUR® gauge software demo, and user's guide)
- (1) Certificate of calibration with data

\* The specific accessory depends on the force gauge model. Refer to the website for details.

## Capacity & Resolution

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