



Series 5 advanced 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 an industry-leading sampling rate of 7,000 Hz, producing accurate results even for quick-action tests. Accuracy is  $\pm 0.1\%$  of full scale  $\pm 1$  digit, and resolution is 1/5000. 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 other data collector 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 and output to a PC. Integrated set points with indicators 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.

The Series 5's 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. Series 5 force gauges are directly compatible with Mark-10 test stands, grips, and software.

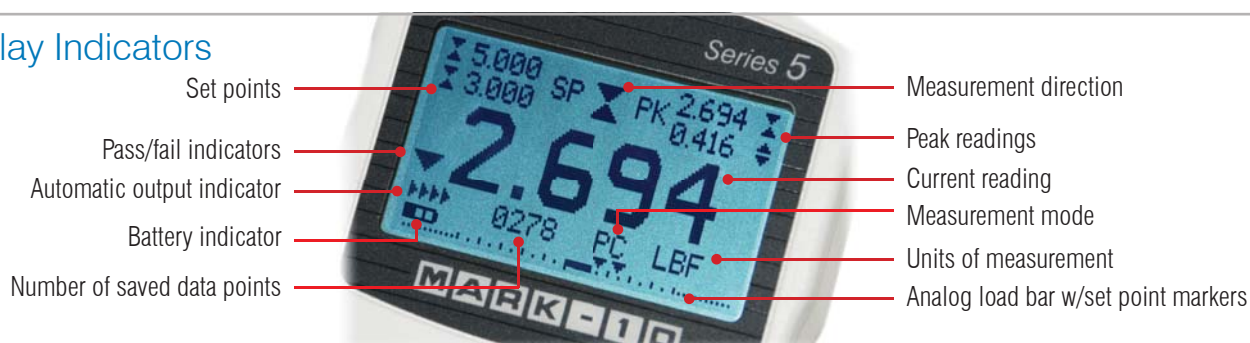


Shown with an ESM301 test stand and G1061 wedge grips

## 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 alarms 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



## Focus on Engineering: Reversible Housing

Display and keypad are upright

Shaft down

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

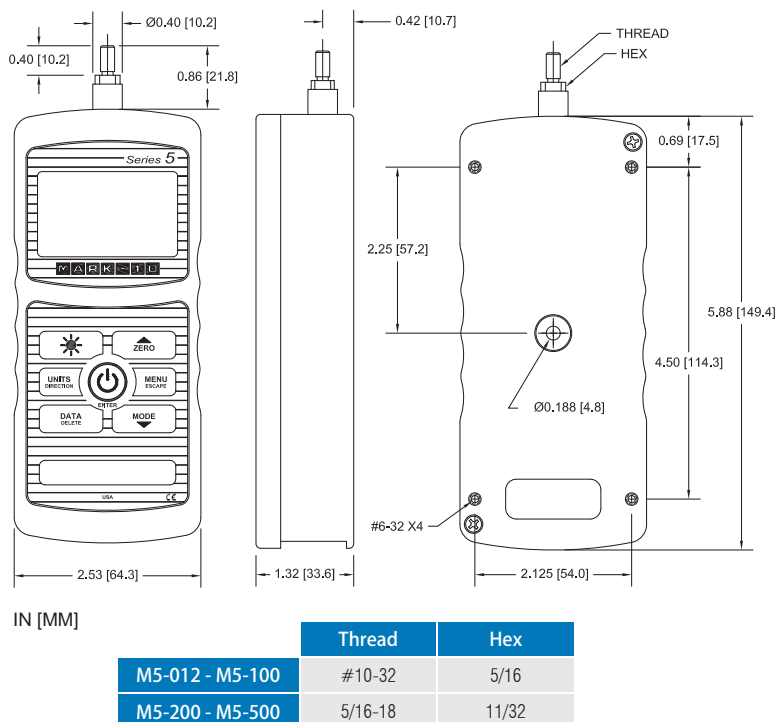
Shaft up

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

The display and keypad remain upright.

## Specifications

<b>Accuracy:</b>	±0.1% of full scale ±1 digit
<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 <b>Backlight off:</b> up to 24 hours of continuous use
<b>Measurement units:</b>	lbF, ozF, gF, kgF, N, kN, mN (depending on model)
<b>Outputs:</b>	<b>USB / RS-232:</b> Configurable up to 115,200 baud. Includes Gauge Control Language 2 for full computer control. <b>Mitutoyo (Digimatic):</b> Serial BCD suitable for all Mitutoyo SPC-compatible devices. <b>Analog:</b> ±1 VCD, ±0.25% of full scale at capacity, <b>General purpose:</b> Three open drain outputs, one input. <b>Set points:</b> Three open drain lines.
<b>Configurable settings:</b>	Digital filters, outputs, automatic output (via USB/RS-232), automatic shutoff, default settings, averaging mode, external trigger, passwords, key tones, audio alarms, backlight, calibration
<b>Safe overload:</b>	150% of full scale (display shows "OVLD" at 110% and above)
<b>Weight (gauge only):</b>	<b>M5-012 - M5-100:</b> M5-012 - M5-100: 1.0 lb [0.45 kg] <b>M5-200 - M5-500:</b> 1.2 lb [0.54 kg]
<b>Load cell deflection:</b>	All models 0.010 [0.25], except 0.050 [0.13] for M5-012
<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, 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
M5-012	0.12	2		50	0.5		500	0.00002	0.0005		0.01	0.0001		0.1
M5-025	0.25	4		100	1		1000	0.00005	0.001		0.02	0.0002		0.2
M5-05	0.5	8		250	2.5		2500	0.0001	0.002		0.05	0.0005		0.5
M5-2	2	32	1	1000	10			0.0005	0.01	0.0002	0.2	0.002		
M5-5	5	80	2.5	2500	25			0.001	0.02	0.0005	0.5	0.005		
M5-10	10	160	5	5000	50			0.002	0.05	0.001	1	0.01		
M5-20	20	320	10	10000	100			0.005	0.1	0.002	2	0.02		
M5-50	50	800	25	25000	250			0.01	0.2	0.005	5	0.05		
M5-100	100	1600	50	50000	500			0.02	0.5	0.01	10	0.1		
M5-200	200	3200	100		1000	1		0.05	1	0.02		0.2	0.0002	
M5-500	500	8000	250		2500	2.5		0.1	2	0.05		0.5	0.0005	

All models include 110V AC adapters.

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

Ex: M5-50E, M5-200U



MESUR™ Lite data acquisition software is included with the gauges



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 features 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 gauge 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.



Shown with a TSF test stand in a spring testing application

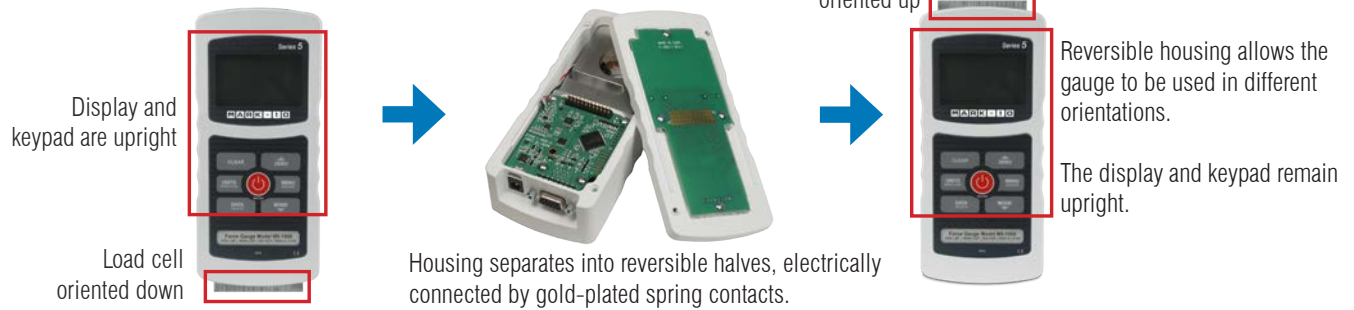
## Features

- 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



## Focus on Engineering: Reversible Housing



## Specifications

<b>Capacity x Resolution:</b>	<b>M5-750:</b> 750 x 0.5 lbF   12000 x 10 ozF   375 x 0.2 kgF   3750 x 2 N   3.75 x 0.002 kN <b>M5-1000:</b> 1000 x 0.5 lbF   16000 x 5 ozF   500 x 0.2 kgF   5000 x 2 N   5 x 0.002 kN <b>M5-1500:</b> 1500 x 1 lbF   24000 x 20 ozF   750 x 0.5 kgF   7500 x 5 N   7.5 x 0.005 kN <b>M5-2000:</b> 2000 x 1 lbF   32000 x 20 ozF   1000 x 0.5 kgF   10000 x 5 N   10 x 0.005 kN
<b>Accuracy:</b>	±0.1% of full scale
<b>Sampling Rate:</b>	7,000 Hz
<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 / <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. Includes Gauge Control Language 2 for full computer control. <b>Mitutoyo (Digimatic):</b> Serial BCD suitable for all Mitutoyo SPC-compatible devices. <b>Analog:</b> ±1 VDC, ±0.25% of full scale at capacity, <b>General purpose:</b> Three open drain outputs, one input. <b>Set points:</b> Three open drain lines.
<b>Configurable settings:</b>	Digital filters, outputs, automatic output (via USB/RS-232), automatic shutoff, default settings, averaging mode, external trigger, passwords, key tones, audio alarms, backlight, calibration
<b>Safe overload:</b>	200% of full scale (display shows "OVER" at 110% and above)
<b>Weight:</b>	1.8 lb [0.82 kg]
<b>Environmental requirements:</b>	40 - 100°F, max. 96% humidity, non-condensating
<b>Included items:</b>	Carrying case with chisel, cone, V-groove, hook (M5-750 and M5-1000 only), flat, extension rod, universal voltage AC adapter, battery, quick-start guide, USB cable, resource CD (USB driver, MESUR™ Lite software, MESUR™ gauge 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)

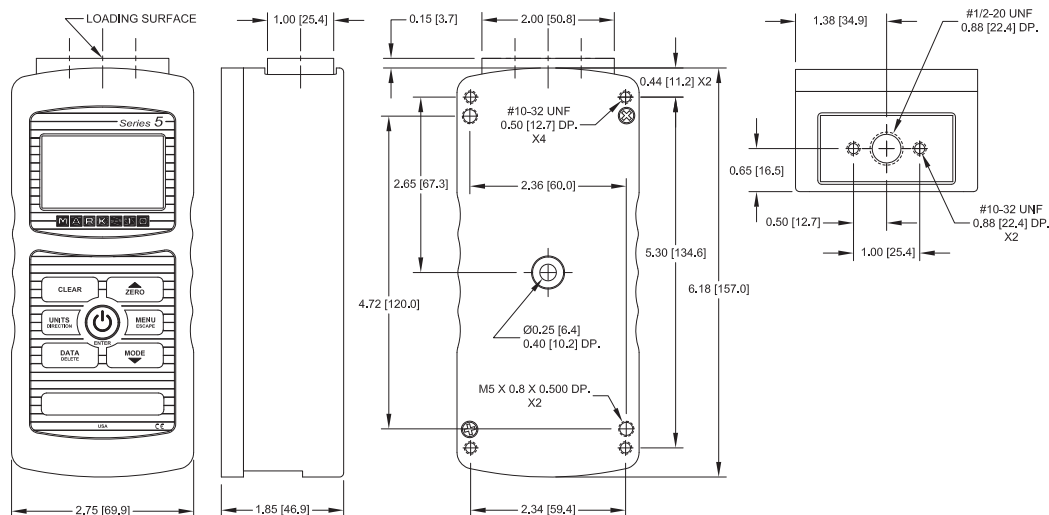
The gauges include a 110V AC adapter.

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

Ex: M5-1000E, M5-2000A

**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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