## Data Sheet

## Advanced Digital Force Gauges Series 5

32-1111 REV 0716



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, 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 data collectors 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.



Shown with an ESM303 test stand and G1061 wedge grips

The Series 5's averaging mode addresses the need to record the average force over time, useful in applications such as peel testing,

MARKI-110 М Export to Excel Download Gauge Memory

MESUR<sup>™</sup> Lite data acquisition software is included with Series 5 gauges

#### 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

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.

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

- 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



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Specifications subject to change without prior notice

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Accuracy:	$\pm 0.1\%$ of full scale		· · · · ·	— 0.42 [10.7]	
Sampling Rate:	7,000 Hz, pulse response of 1/3,500 sec. minimum	0.40 [10.2]	T h		5/16 FLAT
Power:	AC or rechargeable battery. Multi-step low battery indicator is displayed, gauge shuts off automatically when power is too low.			0.38 [9.7]	
Battery life:	Backlight on / off: up to 7 / 24 hours of continuous use	Series 5		( <b>©</b>	0.69 [17.5]
Outputs:	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.         Analog: ±1 VDC, ±0.25% of full scale at capacity,         General purpose: Three open drain outputs, one input.         Set points: Three open drain lines.			2.25 [57.2]	
Configurable settings:	Digital filters, outputs, automatic output (via USB/RS-232), auto- matic shutoff, default settings, averaging mode, external trigger, passwords, key tones, audio alarms, backlight, calibration			5.12 [130.0]	Ø0.188 [4.8]
Safe overload:	200% of full scale (display shows "OVER" at 110% and above)			#6-32 X4 -	2.125 [54.0]
Weight (lb [kg]):	M5-012 - M5-100: 1.0 [0.45], M5-200 - M5-500: 1.2 [0.54]				• • • • • • • • • • • • • • • • • • •
Load cell deflection:	All models 0.010 [0.25], except 0.005 [0.13] for M5-012			· (@	• M4 X 0.7 X2
Included items:	Carrying case, chisel, cone, V-groove, hook, flat, extension rod, AC adapter, battery, quick-start guide, USB cable, resource CD (USB driver, MESUR™ Lite software, MESUR™gauge DEMO software, user's guide), NIST-traceable certificate of calibration with data.	2.53 [64.3] IN [MM]	- 1.32 [33.6] -		2.165 [55.0]
Environmental requirements:	40 - 100°F, max. 96% humidity, non-condensating		M5-012 - M5-100 M5-200 - M5-500	#10-32M UNF 5/16-18M UNC	
Warranty:	3 years (see individual statement for further details)				

#### **Capacity & Resolution**

Model	lbF	ozF	kgF	gF	N	kN	mN	
M5-012	0.12 x 0.00002	2 x 0.0005	-	50 x 0.01	0.5 x 0.0001	-	500 x 0.1	For Moc M5-200 respecti
M5-025	0.25 x 0.00005	4 x 0.001	-	100 x 0.02	1 x 0.0002	-	1000 x 0.2	
M5-05	0.5 x 0.0001	8 x 0.002	-	250 x 0.05	2.5 x 0.0005	-	2500 x 0.5	
M5-2	2 x 0.0005	32 x 0.01	1 x 0.0002	1000 x 0.2	10 x 0.002	-	-	All mode adapters
M5-5	5 x 0.001	80 x 0.02	2.5 x 0.0005	2500 x 0.5	25 x 0.005	-	-	
M5-10	10 x 0.002	160 x 0.05	5 x 0.001	5000 x 1	50 x 0.01	-	-	Add
M5-20	20 x 0.005	320 x 0.1	10 x 0.002	10000 x 2	100 x 0.02	-	-	(220 or 'A
M5-50	50 x 0.01	800 x 0.2	25 x 0.005	25000 x 5	250 x 0.05	-	-	(220V).
M5-100	100 x 0.02	1600 x 0.5	50 x 0.01	50000 x 10	500 x 0.1	-	-	Ex: N
M5-200	200 x 0.05	3200 x 1	100 x 0.02	-	1000 x 0.2	1 x 0.0002	-	M5-
M5-500	500 x 0.1	8000 x 2	250 x 0.05	-	2500 x 0.5	2.5 x 0.0005	-	

s M5-1000 and refer to their data sheet

include 110V AC

'E' for euro plug for UK plug (220V) Australian plug

5E, M5-100U,



MARK-10

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