Solutions by Sensor type: Force

Force

Measurement Specialties has been a pioneer in the design and manufacture of ultra-low cost OEM load cells. Initially designed for use in high-volume digital bathroom scales, MEAS has developed a line of low cost load cells that allow OEMs across a variety of industries to incorporate direct force measurement into their products. Based on our proprietary piezoresistive silicon strain gauge (Microfused™) technology, our load cells combine outstanding durability and long term stability in an extremely low cost package, perfectly suited for medium and high volume applications.

Our load cells our tailored for the specific customer application, including custom packaging and electronics with analog or digital outputs, suited for both low and high force environments.

Load Cells

Low cost OEM load cells

	FX 1901-0001	FS20	FC22	FC23
Package	Low profile "coin cell" design	Miniature; drop in replacement for industry standard	Plastic housing, button, flange mounting	Stainless steel housing button shape for higher weight loads
Operating Mode	Compression	Compression	Compression	Compression
Unique Feature	Ultra low cost, low strain design: essentially unlimited cycle life	Load cell design operates at very low strains; not subject to lead die fatigue	Low cost button shape essentially unlimited cycle life	Industry standard low profile all stainless steel design. Resistant to off-axis loads.
Ranges (Lbf)	10, 25, 50, 100	1.5, 3	25, 50, 100	250, 500, 1000, 2000
Max Overload	2.5X	10 lbf	2.5X	1.5X and 2.5X
Output / Span	100mV	1.0 to 4.0V	100mV, 0.5 to 4.5Vdc	100mV
Combined Linearity Hysteresis	±1.0% FSO	±1.0% FSO	±1.0% FSO	±1.0% FSO
Operating Temp	-40° to 85°C	0° to 70°C	-40° to 85°C	-40° to 85°C
Typical Apps	Consumer OEM, exercise machines, physical therapy, vending machines, appliances, pumps, medical devices	Infusion pumps, contact sensing, medical devices, consumer appliances	Infusion pumps, robotics end-effectors, exercise machines, contact sensing, appliances	Batch weighing, robotics, assembly line force, printing presses, pumps, winch & hoist
Legacy Brand	MEAS	MEAS	MEAS	MEAS

Test and Measurement load cells

	ELPF, ELFF, ELWF, ELAF	ELHM, ELHS	EL20-S458
Package	Dual Stud, Button, Through hole	High capacity dual stud or button style	Special purpose design optimized for automotive crash test environments
Operating Mode	Tension and Compression	Tension and Compression	Tension
Unique Feature	- High immunity to off axis loads - Low deflection design for fast response and high cycle life - Optional external amplifier module - NIST traceable calibration provided	- Tension and compression or compression only - High stability metal foil strain gage (ELHM) - High output semiconductor strain gage (ELHS) - NIST traceable calibration provided	- Low mass titanium design for use in high shock environments - Mass optimized to minimize acceleration induced errors during SAE J2570 ATD testing - Optional high level and linearized outputs - Smoothed edge design and optional slotted titanium axles eliminate drag errors and dummy damage - Ultra robust cable is user replaceable - NIST traceable calibrations provided
Ranges (Lbf)	10 to 5000	200 to 10K	1000 & 3200
Max Overload	2.5X	1.5X	2X
Output / Span	100mV (0.5-4.5V optional)	10mV (ELHM), 200mV FSO (ELHS)	10mV (0.5-4.5V optional)
Non-Linearity	0.25% to 1% FSO	0.3% to 0.5% FSO	1.0% to 3.0% FSO
Operating Temp	-40° to 120°C	-50° to 120°C (ELHM), -20° to 80°C (ELHS)	-40° to 120°C
Applications	Research, materials test, medical instrumentation, physical therapy, weighing, thrust, biomechanical measurements, product validation test	Robust general purpose, low deflection design: machine tool, linkage forces	Seat belt forces, safety and restraint system crash test, parachute tether/riser forces
Legacy Brand	Entran	Entran	Entran

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