Miniature Force and Torque Transducer Products

Tension, Compression, and Torque Measurement for Medical Applications
## SPECIALITY FORCE TRANSDUCERS

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</table>
| **LBM** | 25lbf to 50Klbf (125N to 250kN) | Compression Load Button  
- Environmentally sealed  
- SS construction  
- Temp compensated  
- 150% safe overload | 1 = 0.39” to 1.50”  
2 = 0.50” to 0.80”  
3 = 1.00” to 1.00”  
9.90 to 38.1mm  
1.30 to 6.40mm  
25.4 to 76.2mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.05  
Deflection – in., FS 0.004  
Elec. Output – mV/V 2.0 |
| **LBS** | 5lb to 1,000 lb (5N to 5kN) | Micro Comp. Load Button  
- From 0.30” height  
- Environmentally sealed  
- SS construction  
- Temp compensated | 1 = 0.12” to 0.25”  
2 = 0.09” to 0.24”  
3 = 0.38” to 0.75”  
3.0 to 6.4mm  
2.20 to 6.10mm  
9.60 to 19.0mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.05  
Deflection – in., FS 0.004  
Elec. Output – mV/V 2.0 |
| **MB** | 5lb up to 250 lb (25N to 1.25kN) | Miniature Beam Load Cell  
- Accuracy of 0.03%  
- Near-Zero temp effect on output (<0.0008%/F)  
- Low height | 1 = 1.02”  
2 = 2.38”  
3 = 0.50”  
25.9mm  
60.5mm  
12.7mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.05  
Deflection – in., FS 0.005  
Elec. Output – mV/V 2.0 |
| **ULC** | 50 grams to 200 grams (0.5N to 2N) | Ultra-Low Capacity Cell  
- Overload protected  
- Accuracy of 0.04%  
- Safe side-load to 5x capacity | 1 = 2.00”  
2 = 1.98”  
3 = 0.84”  
50.8mm  
50.3mm  
21.2mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.05  
Deflection – in., FS 0.005  
Elec. Output – mV/V 2.0 |
| **MBI** | 2 lb to 50 lb (10N to 50kN) | OL Prot – Fatigue Rated  
- 10x overload protection  
- Accuracy to 0.03%  
- Near-Zero temp effect on output (<0.0008%/F) | 1 = 2.75”  
2 = 1.16”  
3 = 0.510”  
69.90mm  
29.50mm  
12.7mm | Nonlinearity - %FS ±0.03  
Hysteresis - %FS ±0.02  
Deflection – in., FS 0.004  
Elec. Output – mV/V 2.0 |
| **SSB** | 50 lb to 1,000 lb (2.5kN to 5kN) | Sealed Beam Load Cell  
- Environmentally sealed  
- Accuracy to 0.03%  
- Near-Zero temp effect on output (<0.0008%/F) | 1 = 0.98” to 1.50”  
2 = 2.38” to 5.00”  
3 = 0.50” to 1.00”  
24.9 to 69.90mm  
60.5 to 127.0mm  
12.7 to 25.4mm | Nonlinearity - %FS ±0.03  
Hysteresis - %FS ±0.02  
Deflection – in., FS 0.004/0.013  
Elec. Output – mV/V 3.0 |
| **SML** | 5 lb to 1,000 lb (25N to 5kN) | Low Height Load Cell  
- From ¾” high  
- Low extraneous load sensitivity  
- Tension & compression | 1 = 0.73” to 0.98”  
2 = 1.80” to 2.12”  
3 = 0.52” to 0.90”  
18.6 to 24.9mm  
45.7 to 53.8mm  
13.2 to 22.9mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.05  
Deflection – in., FS ~0.006  
Elec. Output – mV/V 3.0 |
| **2400** | 100 lb to 5,000 lb (500N to 100kN) | Submersible, SS, Low Height  
- Submersible cable/unit  
- From 1” high  
- Hermetically sealed  
- Accuracy to 1/10th % | 1 = 1.00” to 1.80”  
2 = 3.00” to 6.00”  
3 = 2.00” to 4.50”  
25.4 to 45.7mm  
76.2 to 152.4mm | Nonlinearity - %FS ±0.10  
Hysteresis - %FS ±0.10  
Deflection – in., FS ~0.003  
Elec. Output – mV/V 3.0 |
| **MSC** | 15K lb to 30K lb (65kN to 130kN) | Submersible, SS, High Cap  
- Submersible cable/unit  
- Hermetically sealed SS  
- Accuracy to 0.05% | 1 = 1.00”  
2 = 1.25”  
3 = 1.05”  
25.4  
31.75mm  
26.67mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.05  
Deflection – in., FS ~0.004  
Elec. Output – mV/V 2.0 |

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1. Capacity may vary with dimensions – see data sheet.
## Torque-Force Transducers

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| **SM S-Type** | 0.1 lb to 1K lb (50N to 5kN) | Low Capacity, S-Type  
- Capacity to 50 grams  
- Overload protected  
- Lowest creep (<0.025%)  
- Near-Zero temp effect | 1 = 2.5" to 3.00"  
63.5 to 76.2mm  
2 = 2.00"  
50.8mm  
3 = 0.75" to 1.25"  
19.1 to 31.8mm | Nonlinearity - %FS ±0.03  
Hysteresis - %FS ±0.10  
Deflection – in., FS ~0.004  
Elec. Output – mV/V 2.0 |
| **SSM** | 50 lb to 5K lb (200N to 20kN) | Sealed, Low Capacity  
- Environmentally Sealed  
- Tension & Compression  
- Low creep (<0.025%)  
- Near-Zero temp effect | 1 = 0.75" to 1.25"  
19.1 to 31.8mm  
2 = 2.00"  
50.8mm  
3 = 2.5" to 3.00"  
63.5 to 76.2mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.03  
Deflection – in., FS ~0.004  
Elec. Output – mV/V 2.0 |
| **SMA** | 0.1 lb to 1K lb (50N to 5kN) | Sealed Load Button  
- Low Capacity <50 grams  
- Overload protected  
- Lowest creep (<0.025%)  
- Near-Zero temp effect | 1 = 0.82" to 1.75"  
20.8 to 45.5mm  
2 = 2.00" to 2.50"  
50.8 to 63.5mm  
3 = 2.50" to 3.50"  
63.5 to 88.9mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.03  
Deflection – in., FS ~0.005  
Elec. Output – mV/V 2.0 |
| **WMC** | 0.1 lb to 1K lb (50N to 5kN) | Sealed, SS Load Cell  
- Capacity to 50 grams  
- Overload protected  
- Lowest creep (<0.025%)  
- Near-Zero temp effect | 1 = 0.82" to 1.75"  
20.8 to 44.5mm  
2 = 2.00" to 2.50"  
50.8 to 63.5mm  
3 = 2.50" to 3.50"  
63.5 to 88.9mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.03  
Deflection – in., FS ~0.005  
Elec. Output – mV/V 2.0 |
| **TCN-Micro** | 50 lb to 75 lb (250N to 375kN) | Sealed, Alum. Load Cell  
- Environmentally Sealed  
- Dual male threaded  
- 1.0" body w/ ¾" length threaded ends | 1 = 2.50"  
63.5mm  
2 = 0.75"  
19.1mm  
3 = 1.00"  
25.4mm | Nonlinearity - %FS ±0.05  
Hysteresis - %FS ±0.03  
Deflection – in., FS ~0.005  
Elec. Output – mV/V 3.0 |

## Speciality Torque Transducers

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| **TS-17** | 1.77 lb-in to 177 lb-in (0.2Nm to 20Nn) | ¼" Hex Drive - Reaction  
- Capacity to 50 grams  
- Overload protected  
- Lowest creep (<0.025%)  
- Near-Zero temp effect | 1 = 0.60"  
15.5mm  
2 = 3.75"  
96.5mm  
3 = 3/4" hex drive | Combined Error - %FS ±0.10  
Non-repeatability - %FS ±0.10  
Elec. Output – mV/V 1.0 to 2.0 |
| **T15** | 1.77 lb-in to 177 lb-in (0.2Nm to 20Nn) | ⅜" Hex Drive - Rotary  
- Capacity to 50 grams  
- Overload protected  
- Lowest creep (<0.025%)  
- Near-Zero temp effect | 1 = 1.25"  
31.8mm  
2 = 1.35"  
34.0mm  
3 = 1.95"  
49.0mm | Combined Error - %FS ±0.10  
Non-repeatability - %FS ±0.10  
Elec. Output – mV/V 1.0 to 2.0 |
| **MRT-Mini** | 0.1 lb to 1K lb (50N to 5kN) | ⅜" Square Drive - Reaction  
- Capacity to 50 grams  
- Overload protected  
- Lowest creep (<0.025%)  
- Near-Zero temp effect | 1 = 1.25"  
31.8mm  
2 = 1.60"  
40.6mm | Combined Error - %FS ±0.10  
Non-repeatability - %FS ±0.10  
Elec. Output – mV/V 1.0 to 2.0 |
| **1516** | 100 lb and 50 lb-in (50N to 5kN) | Torque-Force Transducer  
- Measure both torque and axial force together  
- Fatigue rated  
- Near-zero crosstalk | 1 = 1.00"  
15.5mm  
2 = 3.00"  
96.5mm  
3 = 1.50"  
38.1mm | Combined Error - %FS ±0.10  
Non-repeatability - %FS ±0.10  
Elec. Output – mV/V 1.0 to 2.0 |
Interface Inc. provides miniature stainless steel, aluminum, and hardened steel force and torque sensors / transducers for the medical industry – most of these units are hermetically sealed and environmentally robust. Capacities range from 50 grams to over 50,000 pounds. These sensors meet or exceed the exacting requirements for FDA and 510K approvals, and are being used in hundreds of life science applications supporting physical therapy, blood and saline weighting, tablet-hardness testing, exercise machines, hospital beds, rehabilitation systems, prosthesis testing, orthopedic analysis, and many other medical device applications worldwide.

### APPLICATION DEVELOPMENT KITS

#### Force Experimenter’s Kit

*Includes one 9320 hand-held, battery powered indicator, one SM-S_Type force transducer, connecting cables, and users’ manuals.*

US $849

#### Torque Experimenter’s Kit

*Includes one 9850 Indicator, one TS17 hex-drive reaction torque transducer, connecting cables, and users’ manuals.*

US $1995

#### Researcher’s Force & Torque Experimenter’s Kit

*Includes one 9840 indicator, one SSM sealed, super-mini force transducer, one TS17 hex-drive, reaction, torque transducer, connecting cables, user’s manuals, and installation guide.*

US $3995

**NOTES:**  
1. Dimensions may vary with capacity; please see data sheet.  
2. Accuracy unless otherwise specified is 0.05%

**Medical bag Application** • **Prothesis Testing Application** • **Using Force to Measure Bladder Pressure** • **Back Rehab** • **Dialysis** • **Fluid Exchange** • **Hospital Beds** • **Fasteners** • **Exercise Systems** • **Implantable Devices** • **Orthopedics** • **Stents** • **Crutches** • **Chiropractic Tables**

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