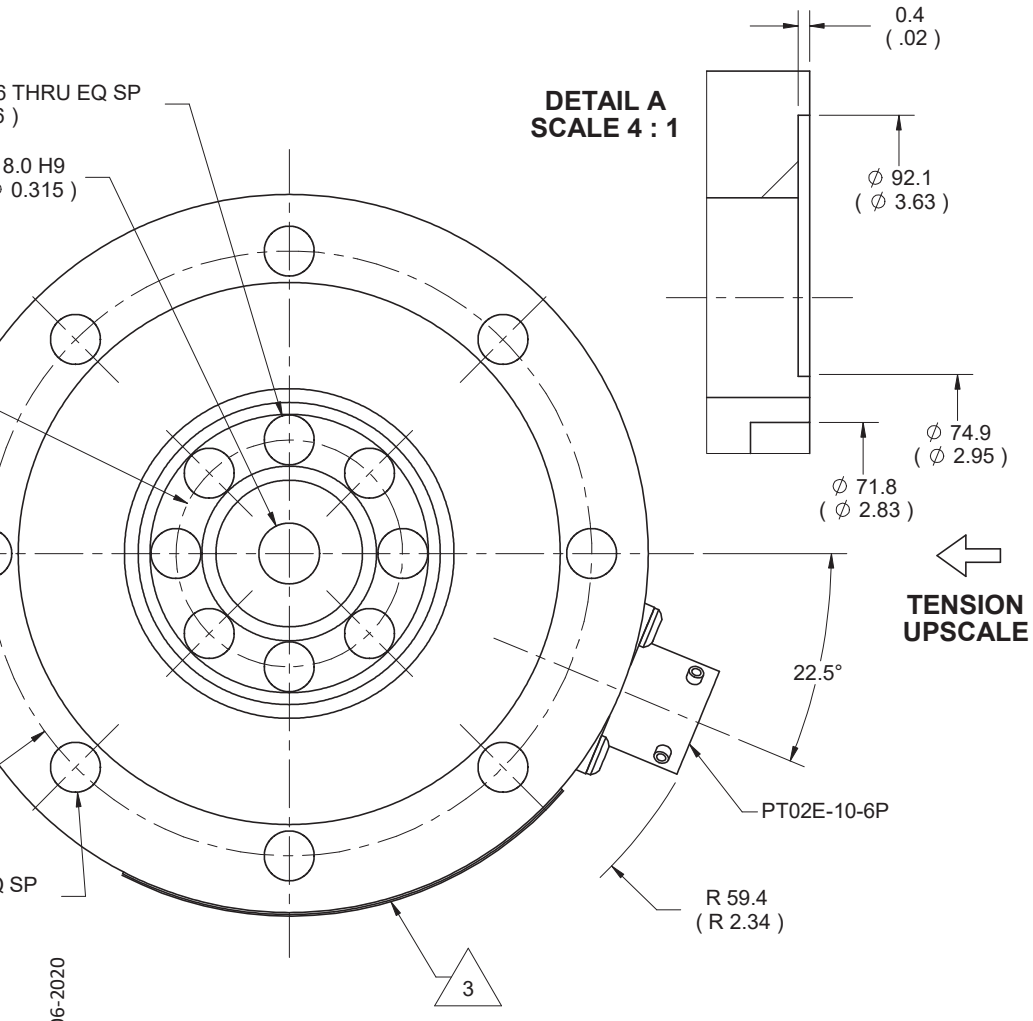
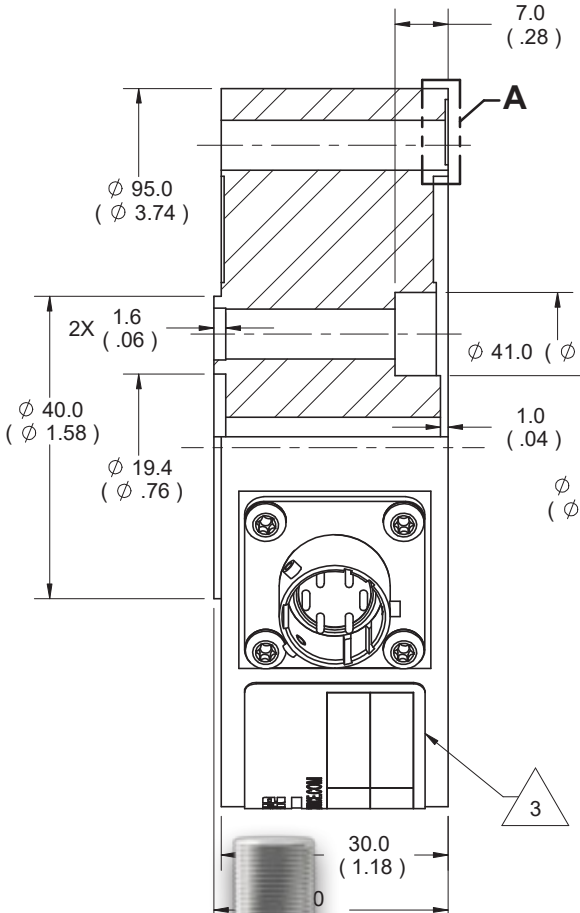
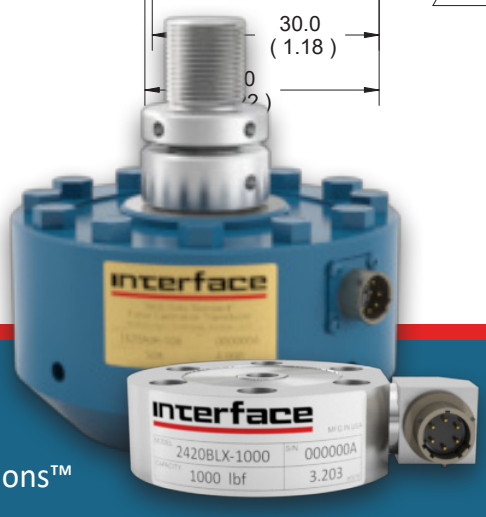
LowProfile®

Interface Load Cells







LowProfile v1.1 02-06-2020

interface
FORCE MEASUREMENT SOLUTIONS

The World Leader in Force Measurement Solutions™

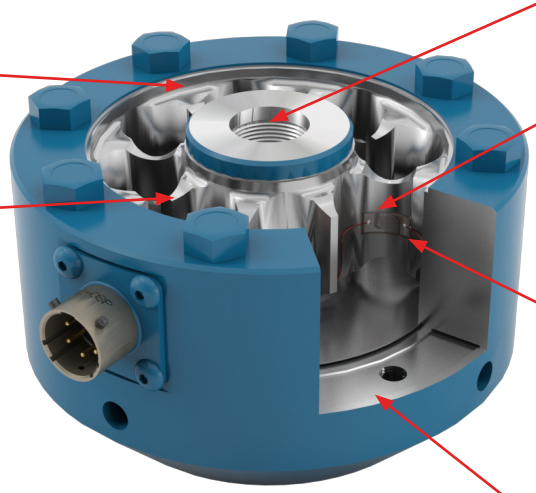
We manufacture more than 60 different types of load cells and mini load cells at Interface.

We have capacities ranging from 1 lbf / 500 gf to 2 million lbf / 9,000 kN. Our facility produces them in several shapes and sizes. Models include pancake load cell and donut load cell in our LowProfile® load cell and thru-hole load cell. Additionally, our canister, rod end, downhole, column, coil tubing, load buttons, and load washers all use our proprietary alloy strain gages. This helps us produce the most accurate and reliable data possible in test and measurment. With the wide variety of load cell specs in stock, most customers are able to use an off-the-shelf application. However, our engineers can also work with you to design a custom load cell to fit your exact needs. Contact us so that we can help you find a solution that fits your requirements.

In-House CNC Machining
- Total control of manufacture and quality standards

Moment Compensated during Production
- Reduces the effects of off-axis loads

TRUE Fatigue Specification
- Fully reversed cycles through zero at full capacity



High Quality Threads
- 0.002” perpendicularity
- 0.003” concentrically

Proprietary High Output Strain Gages
- Matched to flexure for best performance
- 8-16 Strain Gages per bridge

Temperature Compensated Strain Gages
- No signal loss from compensation resistors
- Measures temperature at the strain gage

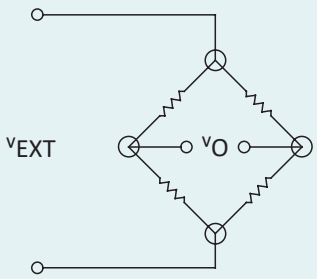
Accurate Machined Base (0.0002” flatness)
- Provides excellent mounting surface

Class Leading Performance
- Published accuracy (Static Error Band) specification as low as ±0.02%FS and actual performance as low as ±0.01%FS on a regular basis
- Will never be less accurate than published spec

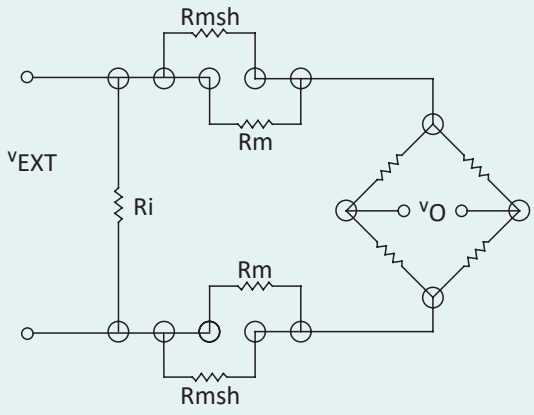
Proprietary Strain Gages
- Higher output
- Higher signal to noise ratio
- Higher resolution
- Superior fatigue life

Rm = Modulus compensating resistor
Rmsh = Fine trim for Rm
Ri = Bridge input resistance trim

Interface Load Cell



Typical Competitor’s Load Cell



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FORCE MEASUREMENT SOLUTIONS
7418 East Helm Drive, Scottsdale, AZ 85260 480.948.5555 interfaceforce.com

1000 Fatigue Rated
250 lbf to 50K lbf
1.25 kN to 225 kN

1000 Fatigue Rated High Capacity
100K lbf to 1,000K lbf
445 kN to 4,448 kN

1100 Ultra Precision Very High Accuracy
300 lbf to 200K lbf
1.33 kN to 890 kN

1101 Ultra Precision Compression Only
1K lbf to 50K lbf
4.45 kN to 222 kN

1200 Standard Precision
300 lbf to 100K lbf
1.33 kN to 445 kN

1200 Standard Precision High Capacity
200K lbf to 2,000K lbf
890 kN to 8,896 kN

WTS 1200 Standard Precision Wireless
Up to 3,000K lbf
Up to13.3 kN

1200 & 1201 Series 3-Wire Internal Amplifier
300 lbf to 100K lbf
2 kN to 445 kN

12X8 Flange Mount Standard Precision
30K lbf to 330K lbf
133 kN to 1,468 kN

1201 Compression-Only Standard Precision
1K lbf to 400K lbf
4.45 kN to 1,779 kN

1331 Compact Compression Only
100K lbf
450 kN

1500 Compact Low Capacity
25 lbf to 300 lbf
111 N to 1.33 kN

1600 Gold Standard® Calibration
500 lbf to 200K lbf
2.22 kN to 900 kN

1601 Gold Standard® Compression Only Calibration
1K lbf to 100K lbf
4.45 kN to 445 kN

1606 Gold Standard® Low Capacity Calibration
50 lbf to 300 lbf
222 N to 1.33 kN

1700 Flange Mount
220 lbf to 14K lbf
1 kN to 63 kN

1800 Platinum Standard® Calibration
1.1K lbf to 55K lbf
4.89 kN to 245 kN

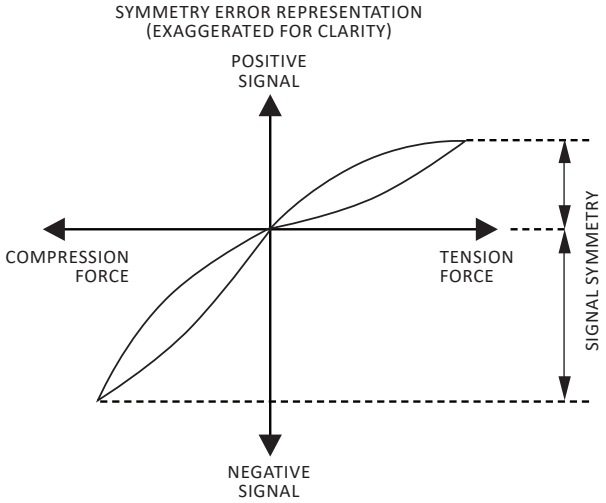
2101 Dual Range
1/5K to 100/270K lbf
4.45/22.2 kN to 445/1201 kN

2400 Stainless Steel
100 lbf to 5K lbf
445 N to 23 kN

2400 Stainless Steel High Capacity
7.5K lbf to 300K lbf
33.4 kN to 1,334 kN

Calibration

- Every LowProfile® load cell is individually calibrated in tension and compression with no additional charge
- Allows for the comparison of rated output in tension to the rated output in compression
- We do system calibrations of most load cell brands



Performance Parameters that Set Us Apart from Our Competitors

- **Creep.** Interface is ±0.025%/20 minutes
- **Symmetry.** Interface is less than 0.1% in comparing included tension & compression calibration data
- **Minimum Shift in Zero Balance.** Toggle from complete cycle of tension & compression
- **Parallelism.** 0.002” between top and bottom load surfaces
- **Concentricity.** 0.003” variance between top thread and base thread
- **Surface flatness.** Interface load cell and base maintains 0.0002” flatness

A2LA ACCREDITED
Cert #1991.01

Made in the USA

2404 Stainless Steel 2-Wire 4-20 mA
100 lbf to 5K lbf
445 N to 23 kN

3200 Precision Stainless Steel
2.5K lbf to 100K lbf
11.1 N to 445 kN

3201 Stainless Steel Compression Only
2.5K lbf to 100K lbf
11.1 N to 445 kN

3410 Intrinsically Safe
750 lbf to 10K lbf
3.37 N to 45 kN

3416 & 3430 Coil Tubing Intrinsically Safe
20 lbf to 60K lbf
89 kN to 267 kN

3420 Coil Tubing Intrinsically Safe
40K lbf to 50K lbf
178 kN to 222 kN

A4600 Tank Weighing Stainless Steel
2.5 lbf to 50K lbf
11.1 kN to 222 kN

BPL Ultra Low Height Compression Only
50 lbf to 500 lbf
250 N to 2,500 N

1216 2-Axis Axial Torsion
Force: 250 to 2K lbf
Torque: 125 to 1K lbf-in
Force: 1.11 to 8.9 kN
Torque: 14.1 to 113 Nm

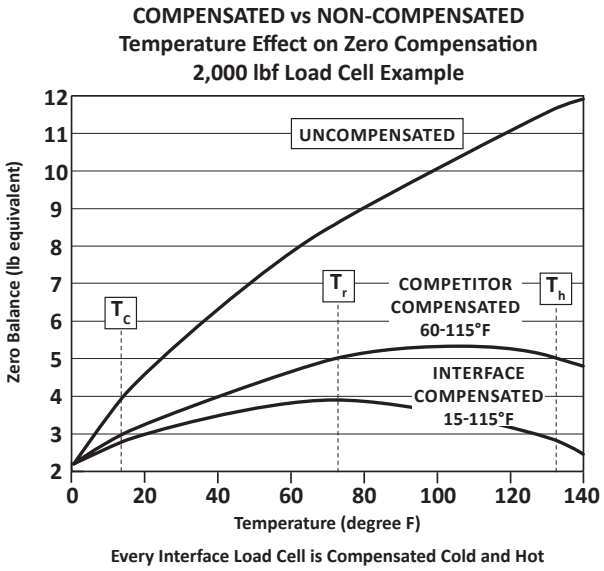
1516 Axial Torsion
Force: 100 lbf
Torque: 50 lbf-in
Force: 444.8 N
Torque: 5.6 Nm

2816 Axial Torsion
Force: 3.3K to 15K lbf
Torque: 2K to 7.5K lbf-lb
Force: 14.6 to 66.7 kN
Torque: 226 to 847 Nm

5200 Three Axis Fz, Mx, My
Force: 1K to 50K lbf
Moment: 400 to 20K lbf-in
Force: 4.45 to 222 kN
Moment: 45.2 to 2.26K Nm

Temperature Effects

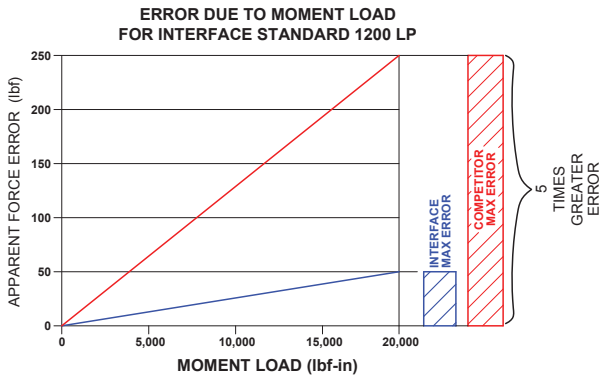
- Industry leading temperature performance (0.0004-0.0008%RO/°F)
- Hot and cold temperature compensation to reduce thermal effects
- We test and adjust each sensor at each temperature extreme
- Multiple runs in temperature chamber to validate adjusted final accuracy



Every Interface Load Cell is Compensated Cold and Hot

Interface Moment Compensation

- Every LowProfile® load cell is mechanically compensated for moment loads
- Minimizes effect of eccentric loading and installation orientation
- Maximizes the operating life and minimizes the error
- Most load cell manufacturers do not compensate or have a specification for eccentric load sensitivity like Interface



1000, 1100, 1600, 1800 Series are Even Better

Options available for a variety of applications

- Fatigue Rated
- Internally Amplified
- Axial Torsion
- Multi-Axis
- 25 lbf to 2 million lbf
- 2-Wire Amp
- 3-Wire Amp
- Flange Mount
- High Temperature
- Intrinsically Safe
- Hermetically Sealed
- Calibration Grade
- Dual Range
- Custom Designs
- Overload Protection
- Adapters
- Vacuum Rated
- Cables

Interface Load Cells

- Eccentric Load Compensated
- Low Profile
- Tension & Compression
- Wireless
- Fatigue Rated
- Compression Only
- Amplified
- Flange Mount
- Calibration Grade
- Canister
- Sealed
- Column and Rod End
- Stainless
- Pedal
- Load Button
- Overload Protected
- Load Washer
- Beam Type
- S-Type
- Tension Only
- Single Point

Interface force measurement load cells are available in many design configurations for project designs requiring the highest performance.

To learn more about the Interface products or force measurement solutions call 480-948-5555.

Interface is the world's trusted leader in technology, design and manufacturing of force measurement solutions. Our clients include a "who's who" of the aerospace, automotive and vehicle, medical device, energy, industrial manufacturing, test and measurement industries.

Interface engineers around the world are empowered to create high-level tools and solutions that deliver consistent, high quality performance. These products include load cells, torque transducers, multi-axis sensors, wireless telemetry, instrumentation and calibration equipment.

Interface, Inc., was founded in 1968 and is a US-based, woman-owned technology manufacturing company headquartered in Scottsdale, Arizona.

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