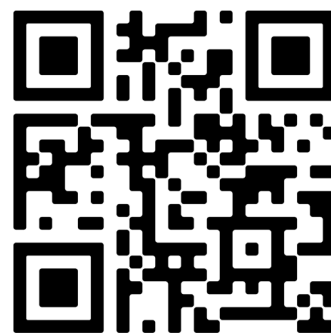
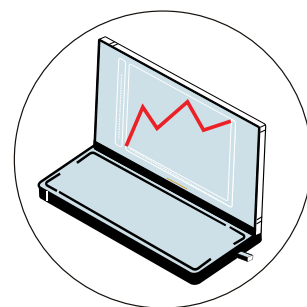
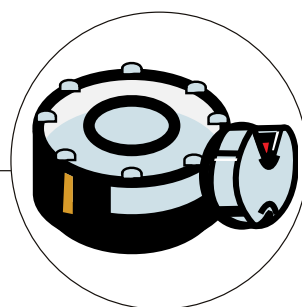
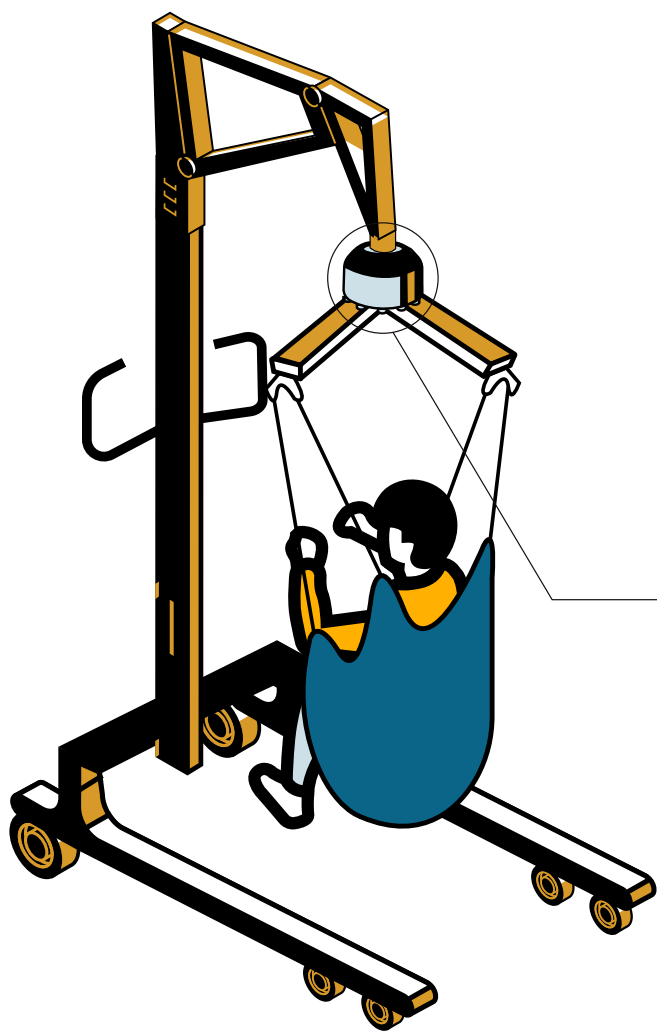


Interface

Medical and Healthcare Solutions



Medical and Healthcare Solutions v1.3

Interface
FORCE MEASUREMENT SOLUTIONS.

The World Leader in Force Measurement Solutions™



Medical Solutions

Interface is a trusted leader in providing sensor technologies to the medical and healthcare industry. Interface provides test and measurement solutions for research, medical device testing, equipment monitoring and for use in components. When safety matters, Interface provides the quality and accuracy the medical and health industry demands.



Medical and Healthcare

Interface was founded in 1968 and throughout our history we have been recognized for designing and manufacturing high performance sensors that are used by industry leaders. In the medical and healthcare industry, accuracy is an absolute imperative in the devices, machines, and tools used in every patient care stage from diagnosis to surgery, health monitoring to after care. This also applies to the specialized equipment used by pharmaceutical manufacturers, in both design and maintenance, whether it is for producing medicine tablets with consistency or packaging healthcare related products.

Medical device and health care product engineers and manufacturers turn to Interface because our measurement solutions are designed for precision test and measurement applications, in both quality and reliability. There is also a high demand for Interface's ability to customize solutions to meet the exact requirements of these sensitive medical and healthcare applications.

Industry Leading Quality

Interface is celebrated for meeting and exceeding the quality needs for our customer's projects. Our products are built in accordance with A2LA, International Standard ISO/IEC 17025:2017 and ANSI/NCSL Z540-1-1994. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system.

Our team of application engineers and force measurement experts are here to help you get a product that meets your exact needs. We are ready to help!



Solution Capabilities

- Designs for high performance and measurement of medical devices
- Accurate and reliable products for testing and monitoring
- Miniature solutions for complex product designs
- Sensors designed as embedded component for OEMs
- Vast inventory for quick availability
- Customizable sensor and instrumentation solutions
- Data acquisition systems to record and monitor performance
- Engineering team support for design and testing

Medical Solutions

Interface is the leader in building and supplying precision measurement solutions to enable innovation and advances in medical and healthcare.

Medical device and healthcare product manufacturers depend on Interface because our robust and proven line of measurement solutions are designed for medical-grade test and measurement applications. Industry leaders trust Interface products based on quality, accuracy, and reliability. Interface is a proven partner with expertise in developing unique solutions based on specifications for complex and intricate applications.

Medical Devices

Medical devices, like prosthetics and surgical implements, require extremely accurate measurement of forces before they are approved for use. Whether they are measuring tenths of a Newton and all the way up to several hundred lbf, accuracy and force sensitivity is a key factor for the tools and technologies that deliver modern healthcare. For more than 50 years, Interface has provided load cells and sensors of all capacities and sizes to use in the development of tools and technologies that improve the ability to diagnose, mitigate risks, treat illness, support wellness and advance science.

Interface offers various miniature and shear beam load cell solutions with 10x overload protection. Our torque transducers provide rotary and reactive measurement to accurately measure performance. These solutions are used to control product use, for fatigue testing, test surgical equipment durability, measure implants and monitor equipment. Other Interface solutions include multi-axis sensors for multiple channels of measurement in one housing to use in complex designs requiring multiple measurement outputs.

Prosthetic Performance

Interface supplies products to test how a prosthetics perform during different positions and stances. The products used in a prosthetic foot design test including the the Interface Model 3A120 3-Axis Load Cell, which was installed between the leg socket and the prosthetic foot and the Model 3A120, which was connected to a portable data acquisition system. When standard precision solutions needs a custom designed sensor, Interface's solutions team and engineers work directly with medical device manufacturers to deliver specialized products, systems and software that meet the evolving needs and innovation requirements.

Stent and Catheter Testing

In this application, large testing rigs that contain approximately a dozen Interface load cells are used to test stents and heart valves that are surgically implanted into patients. The rigs subject the stents and heart valves to thousands of stress tests over months to determine their material properties. Stents stay in a patient's body for the rest of their life, so accuracy and durability are extremely important. This application makes use of Interface's Miniature Beam Load Cell product line, which is overload protected. This product line is extremely reliable and has never had a reported fatigue failure.

Examples of Medical Applications Using Interface Measurement Solutions:

- Plasma separation device
- Tablet hardness testing and tablet machine calibration
- Prosthetic limbs load and fatigue testing
- Surgical staplers and tools
- Ball and socket medical devices
- Medical bag weighing
- Syringe plunger force testing
- Dental hand tool torque check
- Vascular clamp force

HIGHLIGHT: Tablet Machine Hardness Calibration Application

Customer Need / Challenge

A customer wants to re-calibrate tablet hardness testers. The customer needs a mini-load cell the size of a sugar cube that replaces the tablets and fits horizontally in the tablet test-box. Therefore, a special cable exit is important for the compression only calibration application

Interface Solution

Interface's MCC Miniature Compression Load Cell can measure forces on its side with a special cable exit on the flat side that attaches to the calibration indicator, such as the Interface handheld indicator and datalogger Model 9330. The MCC load-cell calibration set compares the applied forces with the hardness tester to make sure that the tablet hardness tester uses the correct force for future tablet hardness tests. The BlueDAQ software helps to log and compare the data of the MCC reference load cell.

Results

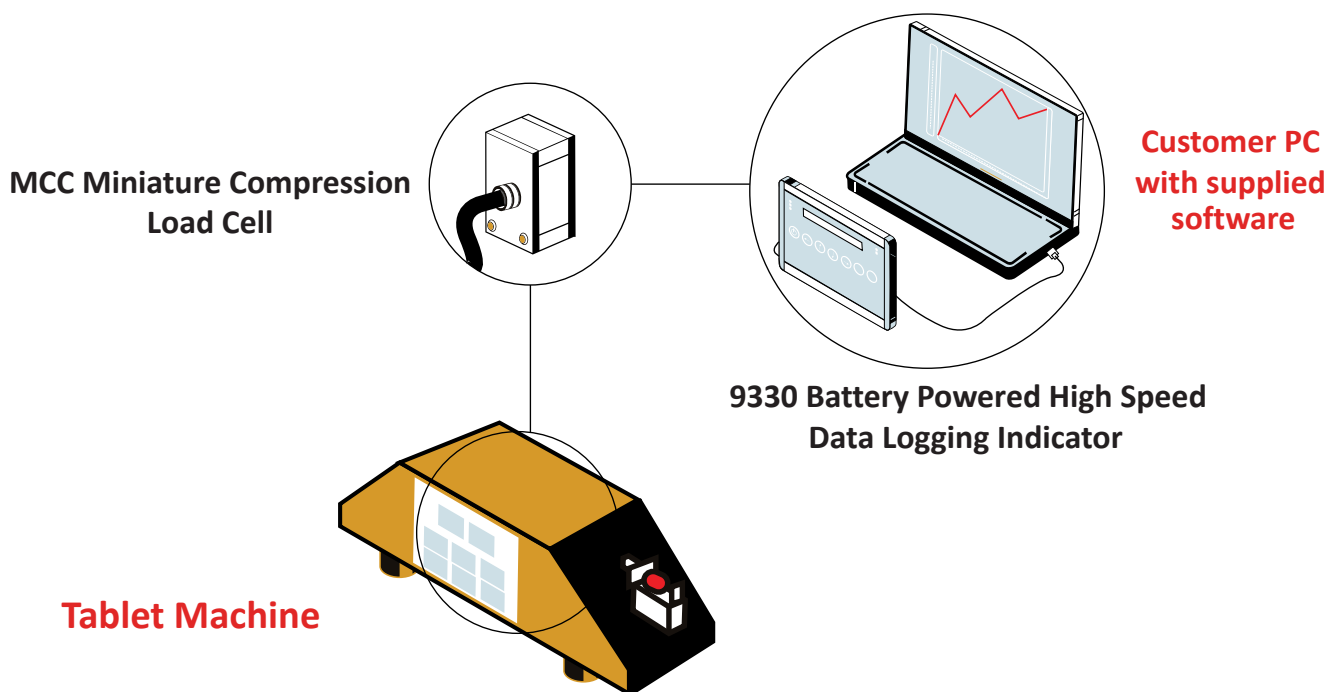
In the past, the machines had to be rebuilt for calibrations, or a complex mechanism had to be integrated to enable vertical calibration. The customer successfully verified and calibrated the tablet hardness tester machine horizontally to conduct accurate hardness testing on tablets in the future. Interface's MCC Miniature Compression Load Cell was perfect due to its small size, and convenient to measure the forces on its side.

Materials

- MCC Miniature Compression Load Cell
- 9330 Battery Powered High Speed Data Logging Indicator
- BlueDAQ Software included with instrument purchase
- Customer's PC or Laptop

How it Works

The MCC Miniature Compression Load Cell is connected to the hardness testing mechanism inside of the tablet machine. Calibration results are sent to the 9330 Battery Powered High Speed Data Logging Indicator, where data is logged and graphed. Data is processed using BlueDAQ Software, which stores and logs data in the customer's PC computer or laptop.



Product Examples for Medical Solutions



MCC Miniature Compression Load Cell
112.4 lbf
500 N



T2 Ultra Precision Shaft Style Rotary Torque Transducer
0.9 lbf-in to 177K lbf-in
0.1 Nm to 20K Nm



MRT Miniature Flange Style Reaction Torque Transducer
1.77 lbf-in to 177 lbf-in
0.2 Nm to 2 Nm



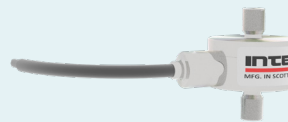
MBP Overload Protected Miniature Beam Load Cell
2.5 lbf to 10 lbf
5 - 10 N & 0.5 - 5 kg



LBMU Ultra Precision Compression Load Button Load Cell
100 lbf to 1K lbf
0.5 kN to 5



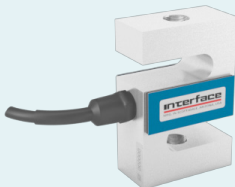
LBM Compression Load Button Load Cell
25 lbf to 50K lbf
0.11 kN to 222.4 kN



WMC Sealed Stainless Miniature Steel Load Cell
5 lbf to 500 lbf
22 N to 2,200 N



ConvexBT Load Button Load Cell
5 lbf to 1,000 lbf
22.24 N to 4.44 N



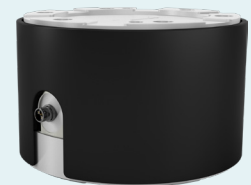
SSMF Fatigue Rated S-Type Load Cell
25 lbf to 2.5K lbf
100 N to 10 kN



3AXX 3-Axis Force Load Cell
Force: 4.5 lbf to 112K lbf
Force: 10 N to 500 kN



6A Series 6-Axis Standard Capacity Load Cells
Force: 11.2 to 22.5K lbf
Torque: 8.85 to 88.5K lb-in
Force: 50 to 100K N
Torque: 1 to 10K Nm



6A Series 6-Axis High Capacity Load Cells
Force: 11.2K to 180K lbf
Torque: 88.5K to 354K lb-in
Force: 50K to 800K N
Torque: 10K to 40K Nm



SSB Sealed Beam Load Cell
50 lbf to 10K lbf
222 N to 44.48 kN



SML Low Height S-Type Load Cell
5 lbf to 2000 lbf
22 N to 9 kN



SI-USB4 4 Channel USB Interface Module
Up to 5000 meas./s
Input ranges for mV/V, V and mA



WTS Wireless Telemetry System
17.7 lbf-in to 44.3K lbf-in
2 Nm to 5K Nm



9330 Battery Powered High Speed Data Logging Indicator
Powers up to 4x 350 ohm sensors
Stores up to 6 sensor calibrations



9870 High-Speed High Performance TEDS Ready Indicator
Powers up to 4x 350 ohm sensors
Stores up to 6 sensor calibrations



9890 Strain Gage, Load Cell, & mV/V Indicator
 $\pm 15, \pm 25, \pm 150, \pm 250$ mV
Bipolar Input Ranges
Powers up to 12 x 350 ohm Sensors



BX8 8-Channel Data Acquisition System and Amplifier
 $\pm 5V, \pm 10V, 4-20mA$, and 0-20 mA Outputs
8-Channel Synchronized Sampling

OEM's and Premium Accuracy in the Medical Industry

Healthcare is the most heavily regulated and the need for compliance continues to grow. Interface works with manufacturers across the world who design and build life-saving medical devices, implants and tools. These customers turn to Interface because of our proven track record for producing the most accurate, reliable and efficient force measurement products and accessories for collecting critical data. Interface has been involved in the engineering of unique sensor products for use in medical devices and equipment, from medtech devices to some of the machinery used to manufacture medical products.

Interface understands that products, devices and machines that medical professionals use to keep people healthy, and in some cases, alive, require stringent test, review and clearance from governing bodies before they can be put into practice with a patient. The medical devices being tested also have to pass strict inspections and FDA regulations before meeting the requirements necessary to bring a product, device, implant or machine to market.

The challenge when developing medical and healthcare products is to test and measurement equipment accurate enough to manufacture safe and reliable devices which pass test and inspection requirements. That is why Interface is a recognized partner in this endeavor. Our products meet these requirements, and when we work together with medical accredited OEM partners they can trust the outcomes and know they used the best sensors on the market.

Designing for Medical and Healthcare Applications

Interface understands the requirements of those developing and manufacturing medical devices. We have long been a supplier of force and torque measurement solutions used in through the design testing of instruments, apparatus, implants, machines, tools, and equipment used to safely diagnose, prevent, mitigate, treat, or support patients and their caregivers.

Beyond just accuracy, there are several different considerations to make when designing and building load cells used in medical applications. Factors such as traceability and the materials used is extremely important. All materials need to be certified and free of hazardous compounds. They also need to be able to withstand sterile environments where surfaces are constantly being sprayed with chemicals. There are several unique considerations and failure is not an option when it comes to devices that can directly impact patient safety.

Interface is extremely proud of our superior quality products and the fact that we are enabling global medical innovations. It is important to us to deliver the right solutions when we know it's having a direct impact on improving, saving and changing lives.

Medical Solutions

- Load Cells
- Torque Transducers
- Wireless Telemetry Solutions
- S-Type Load Cells
- Load Buttons
- Interface Mini™ Load Cells
- Signal Conditioners
- Instrumentation
- Multi-Axis Sensors
- Digital Instrumentation
- Custom Solutions

If you know what you need and are ready to talk to our application engineers, email or call today!

To learn more about the Interface medical and healthcare solutions provided 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.