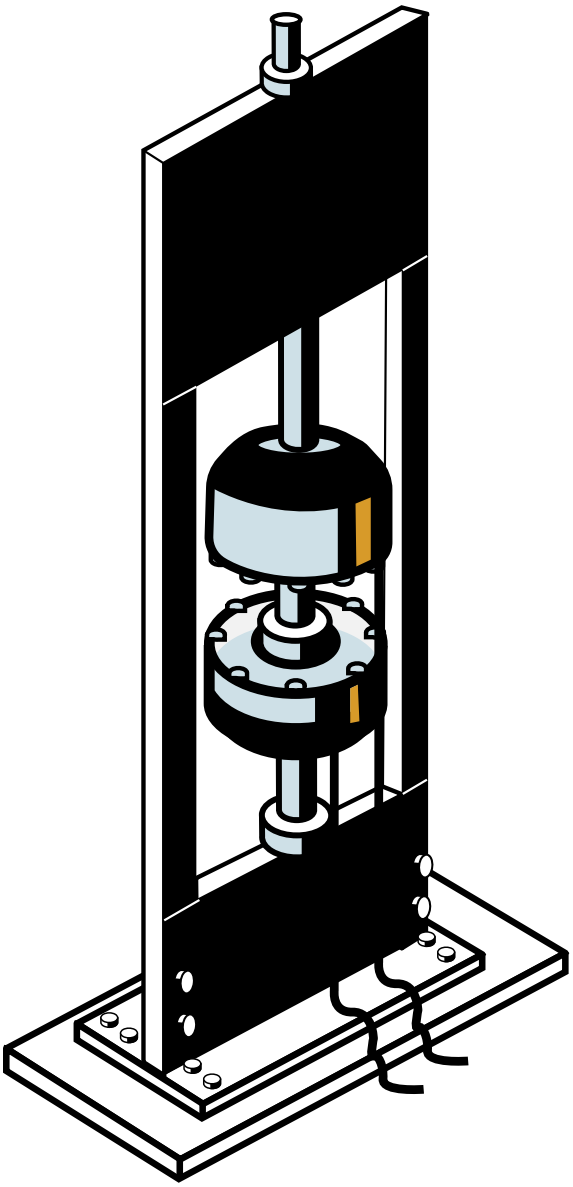
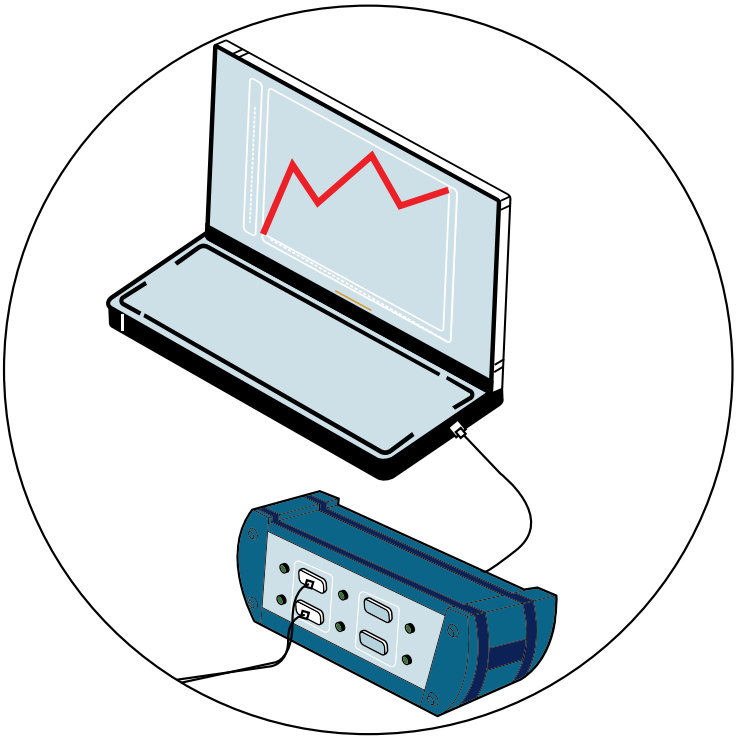
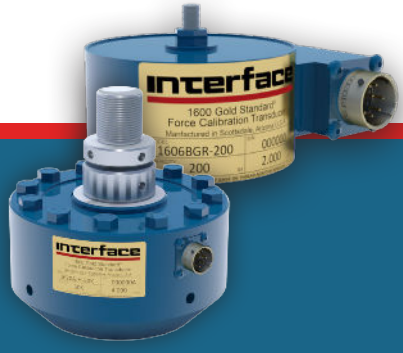
Interface

Test and Measurement Brochure







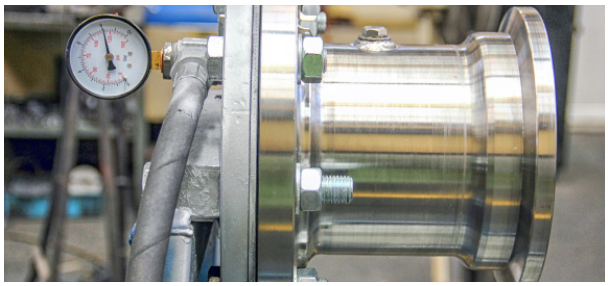
interface
FORCE MEASUREMENT SOLUTIONS.

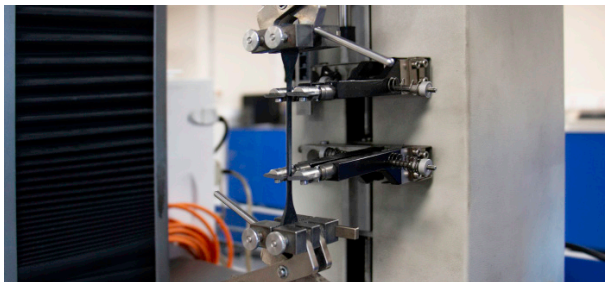
The World Leader in Force Measurement Solutions™

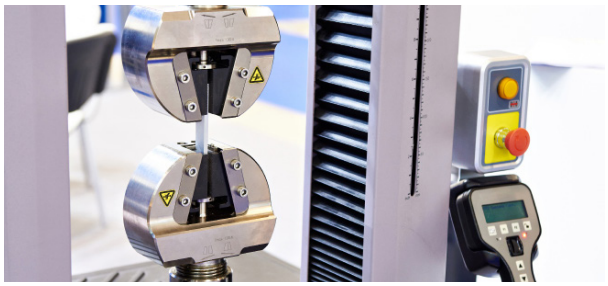
Test and Measurement

Solutions

Nearly every industry utilizes product or material testing. It's integral to invention, innovation, advancement, safety and consumption. Test and measurement is no small industry, with applications ranging from medical to rockets. Force and torque measurement are used in structural, material, static, friction, fatigue testing and more. Interface solutions are made for T&M.







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Test and Measurement

Interface is defined by our vast range of test and measurement products and services. It's where we started in 1968 and what we do today. We are a leader in T&M and continue to supply all types of users and industries with best in class sensor technologies and devices. They are used for structural and material testing, static and fatigue testing, torsion effects, tension tests and mass and kinetic energy measurements. When experienced users see the Interface brand and blue load cells, they know they can expect the highest quality and accurate results.

Since our first load cells were designed five decades ago, we have built millions of load cells and torque transducers for engineers and designers that require the highest precision force sensors for accurate and reliable data collection in test and measurement (T&M). Our customers represent a wide swath of industries, products, equipment types, tools, and electronics that depend on us for proving accuracy, consistency, and reliability in performance.

Industry Leading Quality

Interface understands that our products must meet the highest standards. It's why people buy from Interface and why our sensors outlast most every other products on the market. We have load cells still in use that were purchased from us over 40 years ago. How is that possible? Engineering and design, backed by quality.

Our products are built in accordance with A2LA, International Standard ISO/IEC 17025:2005 and ANSI/NCSL Z540-1-1994. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system. Everything we manufacturer in our Arizona-based headquarters in tested and calibrated, then certified before it sent to our customers.


Accredited Laboratory

A2LA has accredited

INTERFACE, INC.

Scottsdale, AZ

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and R205 - Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system. (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

Presented this 8th day of November 2022

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1991.01
Valid to November 30, 2024

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

ACCREDITED
Cert # 1991.01

ISO

ilac-MRA

Solution Capabilities

- Tens of thousands of standard product models, proven and tested
- Engineered to order products to match exact specifications
- Custom designs and proprietary products exclusive for a single customer
- Extensive capacities, capabilities and configurations of load cells and torque transducers
- Superior test and measurement sensor designs
- Proprietary strain gages, the heart of any load cell
- Wireless components
- Instrumentation for accurate and reliable data
- Custom solutions designed to your exact requirements for testing applications
- OEM engineered products for high-production counts
- Full T&M systems, including accessories, instrumentation, sensors and enclosures
- Experienced engineers to help

Test and Measurement Solutions

Interface sensors are utilized around the world by all types of industries for test and measurement projects and programs.

Test and measurement has been around since the first invention. What's changed over the centuries and decades is the sophistication of testing and measurement. As we were first to bring a LowProfile Load Cell to market over 50 years ago, now load cells are no longer just in testing they are embedded into products and used to collect real-time data through wireless communications from sensors that are unseen to the user.

Interface's robust line of load cells, torque transducers, multi-axis sensors, and instrumentation are used on every continent for T&M. We are the top supplier to calibration and testing labs. We see our products used today for continuous improvement programs, advancements in smart manufacturing and new product designs. If it must be measured, Interface has a solution. Interface's force measurement products are being used to gather data from machines, components, equipment, consumer products, and other applications by metrologists, engineers and testing experts. Here are just a few ways our products are used for T&M.

Prosthetic Load and Fatigue Testing

Medical hardware engineers are among the largest users of T&M equipment because of the stringent regulations in the industry. Interface developed a new solution to test heavy loads on prosthetic limbs to certify them for falls, accidents and athletic movement. These stress tests determine the expected lifespan of prosthetic components under normal usage. Our solution involves a static load test apparatus with an S-type load cell attached to a hydraulic actuator which applies and measures cyclic loads. These tests determine whether prosthetic materials and designs will withstand the rigors of daily use and high-loads.

Linear Test Stand

Our customer wanted to add a crush test to their test stand to measure the force it took to deform a piece of material. Interface provided the 1210 Load Cell with an internal amplification of 0-10VDC output. The load cell was installed into the load string of the customer's load frame, and the scaled analog output from the load cell was connected to the customer's test stand instrumentation. When the force levels reached the crushing point, the customer's software was able to read the output of the amplified load cell and record the value.

Motor Test Stand

In the quality control lab at a major automotive manufacturing company, a test engineer needed to test, record, and audit the torque produced by a new motor design under start load. Interface supplied the new AxialTQ® Rotary Torque Transducer that connected between the motor and the differential, on the drive shaft, that could measure and record these torque values. Based on the data collected using the AxialTQ transducer, along with the AxialTQ Output Module, and a laptop, the test engineer was able to make recommendations to optimize the amount of torque created by the new motor design.

Examples of Test and Measurement Applications:

- Force testing
- Pressure testing
- Material testing
- Equipment testing
- Durability testing
- Down hole testing
- Thrust testing
- Center of gravity testing
- Fatigue testing
- Material testing
- Suspension testing
- Friction testing
- Force verification
- Line testing
- Crash testing
- Pump testing
- Tension testing
- Tensile testing
- Data feedback
- Load and weight testing
- Device testing
- Robotic sensor testing
- Environmental Testing
- Submersible testing

HIGHLIGHT: Consumer Product E-Bike Torque Measurement

Customer Need / Challenge

An E-Bike manufacturer needs to test the torque on their electronic bicycles. They need a torque sensing system that measures how much force the bike rider is pedaling onto the pedals, because this determines how much electric power the bike's motor generates.

Interface Solution

Interface suggests installing the Model T12 Square Drive Torque Transducer where the pedal assist sensor would normally be. The T12 Square Drive Torque Transducer's results can be recorded, graphed, and logged using the SI-USB4 4 Channel USB Interface Module when connected to the customer's PC.

Results

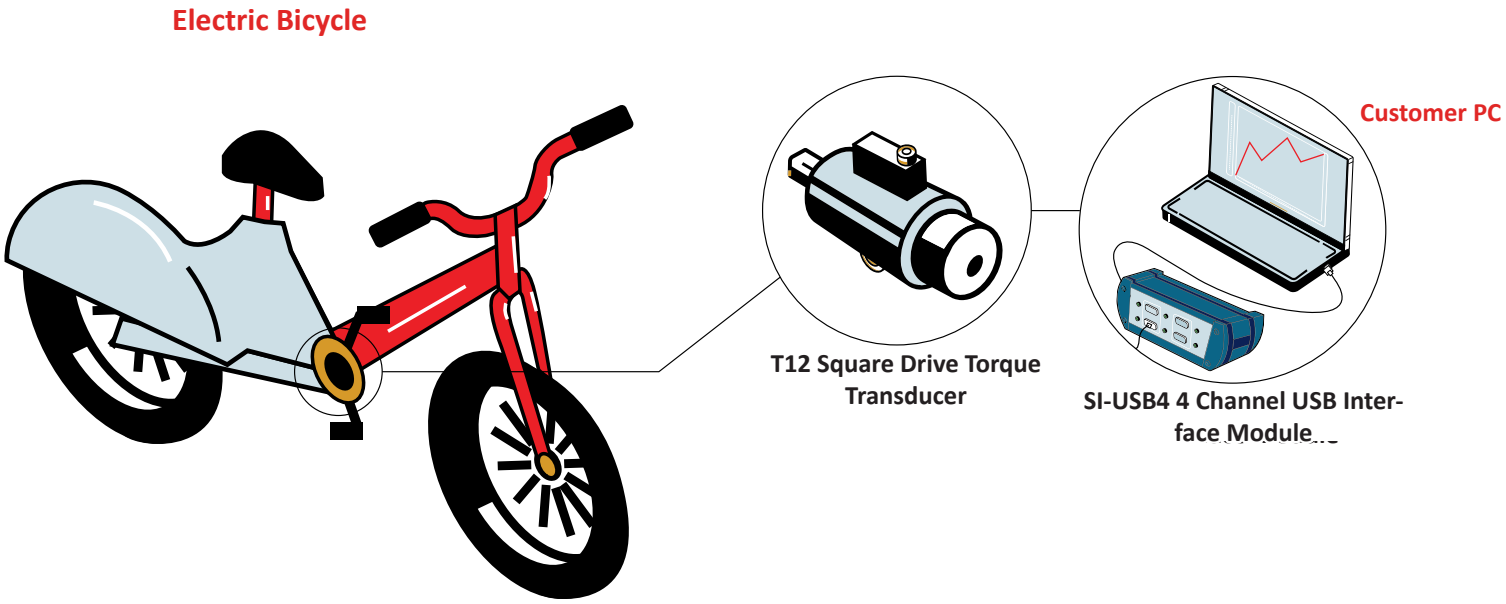
The E-Bike manufacturing company successfully tested the torque on their electronic bicycles with Interface's products and instrumentation.

Materials

- T12 Square Drive Torque Transducer
- SI-USB4 4 Channel USB Interface Module
- Customer PC or Laptop

How it Works

The T12 Square Drive Torque Transducer is installed and replaces where the outdated pedal sensor is normally located. The T12 is attached to the SI-USB4 4 Channel USB Interface Module. In a controlled environment, a cyclist pedals on the E-Bike and the T12 Square Drive Torque Transducer collects the measurements. The data is sent to the SI-USB4 4 Channel USB Interface Module where the torque measurements are recorded, graphed, and logged when connected to the customer's PC or laptop.



Product Examples for Test and Measurement Solutions

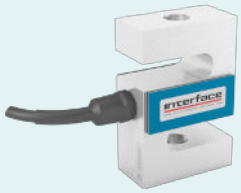
1600 Gold Standard®
Calibration LowProfile™ Load Cell
500 lbf to 200K lbf
2.22 kN to 900 kN

1606 Gold Standard®
Low Capacity Calibration Load Cell
50 lbf to 300 lbf
222 N to 1330 N

1800 Platinum Standard®
Calibration LowProfile™ Load Cell
1.1K lbf to 55K lbf
4.89 kN to 245 kN

1200 Standard Precision LowProfile™ Load Cell
300 lbf to 100K lbf
1.33 kN to 445 kN

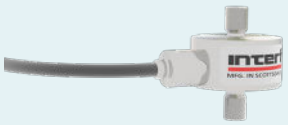
1000 High Capacity Fatigue Rated LowProfile™ Load Cell
100K lbf to 1000K lbf
45 kN to 4448 kN



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

T15 Hex Drive Style Rotary Torque Transducer
1.77 lbf-in to 177 lbf-in
0.2 Nm to 20 Nm

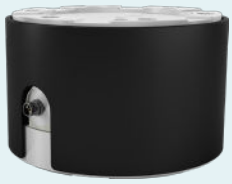
SSB Sealed Beam Load Cell
50 lbf to 10K lbf
222 N to 44.48 kN



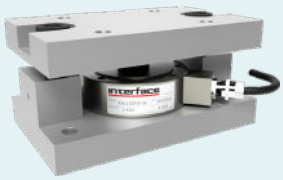
WMC Sealed Stainless Miniature Steel Load Cell
5 lbf to 500 lbf
22 N to 2,200 N

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



A4200 And A4600 WeighCheck™ Load Cells
2.5K lbf to 50K lbf
11.1 kN to 222 kN

SI-USB4 4-Channel USB Interface Module
Input ranges for mV/V, V and mA
Fast measurement of up to 5000 meas./s per measuring channel

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

INF-USB3 Universal Serial Bus Single Channel PC Interface Module
±3 mV/V, ±4.5 mV/V ±5 VDC, ±10 VDC
4-20 mA, 12 ±8 mA and 5V TTL

BSC4D Multi-Channel Bridge Amplifier and PC Interface Module
5 lbf to 500 lbf
22 N to 2,200 N

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

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

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

Keeping Up with Innovation

What we find most exciting about the T&M industry is continuous innovation, perhaps it is the “engineer” in us. We like to solve, create, build, imagine and challenge ourselves. There are a wide variety of new applications we see every year, and yet many applications are unique.

Interface is built and made by engineers that are experts in force and torque measurement. Our team of experts are renowned and working with other experts to solve real challenges and invent new technologies.

Our products are used by the technical experts around the world. Whether its a discerning metrologist, calibration lab professional, university class project leader, rocket engineer or product design house, we have products that meet the specifications and rigor for all types of users.

Interface T&M tools provide the exactness in accuracy and all-encompassing performance data. Not only will this continue as we add new products and capabilities, but it will expand rapidly as the industry demands more data and new types of sensors. In the force measurement world, Interface has responded by serving our customers with new innovations in multi-axis sensors, wireless telemetry systems, and advancements in strain gages.

Interface Accelerates Growth in the T&M Industry

Interface continues to experience significant growth in demand and fulfillment of our precision measurement products and services. Our focus remains steadfast to serve customers with innovative solutions, facilitated by requests for specialized engineering and production requirements. Every ask is met with full consideration, and when you decide that we have what you need, we work expeditiously to meet the delivery schedules aligned to your requirements. We call it teamwork at Interface and to our customers, it’s a partnership.

As the overall T&M industry grows, the demand from engineers and manufacturers across all industries for proven and “tested” solutions for their test and measurement equipment expands. Our sensor technologies are used every day for optimizing products with real-time, accurate measurement. So as you grow, we grow to meet your needs and be the best in accurate, quality, durable and reliable T&M solutions.

Those that are in the test and measurement field help to guarantee product safety, reliability and longevity. Therefore, the tools they use are critical to the confirmation of their work. That’s why Interface builds products that reliably and consistently gather high-quality, accurate data for any application. For more information on our T&M offerings, or to discover more T&M product applications, please contact us today.

Test and Measurement Solutions

- Load Cells
- Torque Transducers
- Test Stands
- Calibration Systems
- Load Frames
- Wireless Telemetry Solutions
- Weighcheck Systems
- S-Type Load Cells
- Multi-Axis Sensors
- Interface Mini™ Load Cells
- Data Acquisition Systems
- Instrumentation
- Digital Instrumentation

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 test and measurement 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.

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