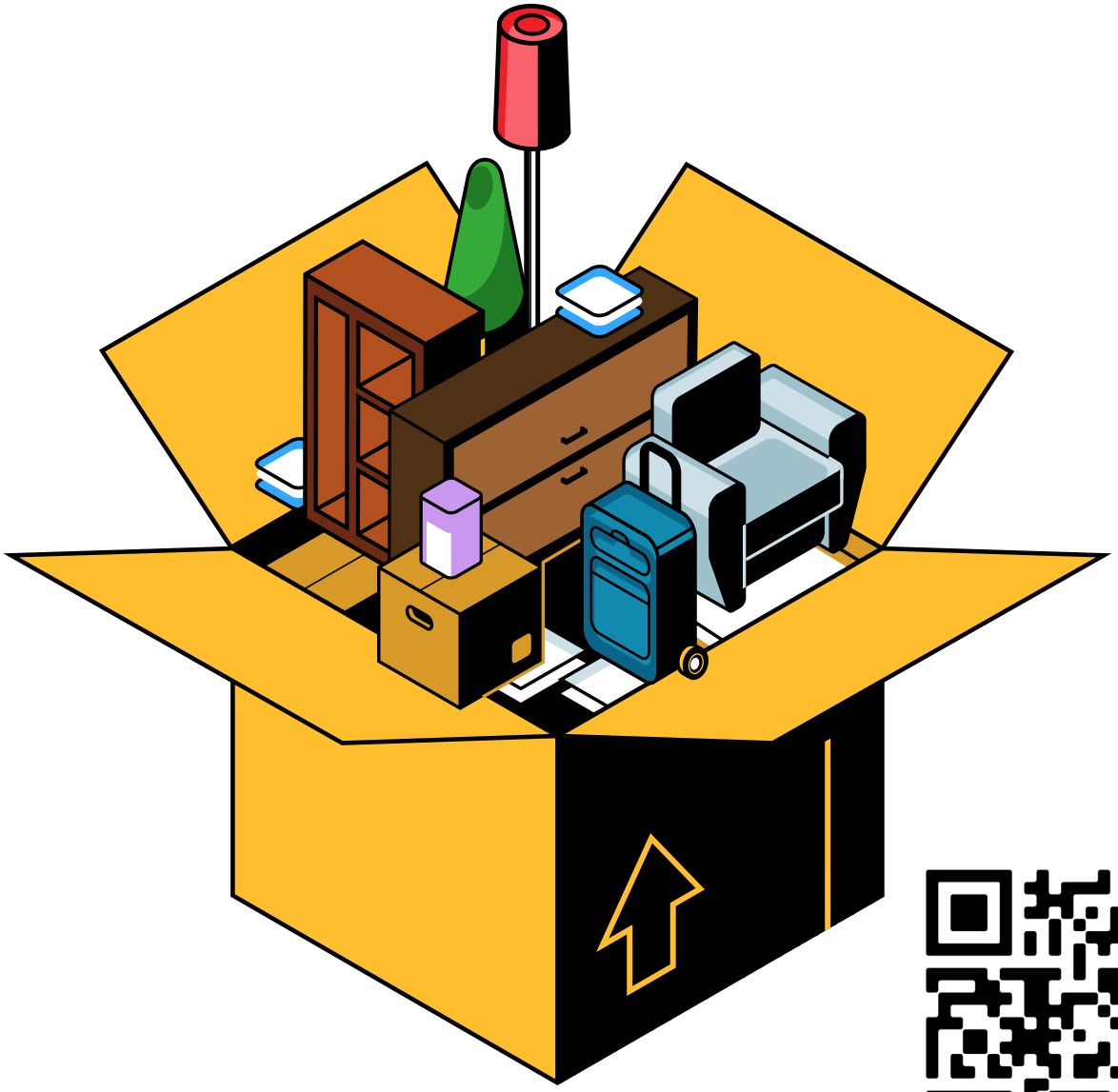
Interface

Consumer Product Solutions



Consumer Product Solutions v1.310-06-26

Interface
FORCE MEASUREMENT SOLUTIONS

The World Leader in Force Measurement Solutions™

CPG Solutions

Consumer products are made across all types of industries. Interface force measurement solutions are used to predict failure and identify design challenges before these goods enter the public domain. From testing furniture to ensuring your household appliances are safe and durable, Interface's sensor measurement technologies have a critical role with all types of testing in the creation and manufacturing of everyday goods.

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7418 East Helm Drive, Scottdale, AZ 85260 ▪ 480.948.5555 ▪ interfaceforce.com

Consumer Products

Interface remains the leader in load cell and torque transducer accuracy and quality, and we have no plans to change our focus. It's why product engineers and manufacturers buy force measurement solutions from Interface. Our sensors provide accurate data for performance monitoring and outlast other products used to test consumer products. We have customers using load cells for fatigue and material tests that they purchased from Interface more than 40 years ago.

Interface's specialty is building force measurement solutions for the testing and monitoring of parts and total systems, which is vital to makers and designers of consumer packaged goods. Accurate measurement is necessary in design, prototyping and producing final consumer products across all industries for performance and safety.

Our force measurement solutions are ideal for consumer product stand-alone testing rigs, production equipment, as well as embedding into products to increase operability and reliability for end users.

CPG challenges are solved with rigorous testing throughout design, development and fabrication. It is often what inspires the next generation of a product or revolutionary new idea. Interface wants to be a part of that process.

Industry Leading Quality

Our products are built in accordance with A2LA, International Standard ISO/IEC 17025 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 24th day of October 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1991.01
Valid to November 30, 2026

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

ACCREDITED
Cert # 1991.01

Solution Capabilities

- Bluetooth and wireless telemetry system components used for monitoring and testing
- Smart sensor technologies
- Wireless communications and enabled sensors for real-time collection
- Superior test and measurement sensor designs
- OEM designed sensor solutions to use for stability and product intelligence
- Intrinsically safe products used in harsh and changing environments
- Safety and regulatory sensors for constant monitoring
- Advanced instrumentation and software for accurate and reliable data capture
- OEM engineered products for high-production counts
- Experienced engineers to help

CPG Solutions

When it comes to product design, testing, and development of consumer product goods, Interface provides quality test and measurement products for all industries.

Manufacturing Consumer Products

Interface force measurement solutions are commonplace in R&D labs, design houses, manufacturing environments and even packaging plants for consumer goods. Using industrial robotic arms, measurement of force and torque when an arm lifts items and places them down again is one example of how sensors improve performance in the manufacturing process of final goods. An industrial automation engineer wanted to ensure the robotic arm would operate efficiently and actually improve the packaging process. Interface created a custom solution using our 6A40 6-Axis Load Cell, which was installed at the wrist of the robotic arm. The 6A40 was able to measure all forces and torques (Fx, Fy, Fz, Mx, My, Mz). This load cell was connected to our BX8 8-Channel Data Acquisition System and Amplifier with BlueDAQ Software, where results were displayed, logged, and graphed for monitoring.

Computer Touch-Pad Force Testing

A laptop manufacturer wants to test their mouse touch-pads. They want to ensure it is functioning properly for future consumers, thus measuring the right amount of sensitivity when touched. They need a system that measures the force it takes for the mouse pad to activate a response on the laptop. Interface suggests using the SMTM Micro S-Type Load Cell, from their Interface Mini™ line. The SMTM can be installed in the customer's actuator test rig. The SMTM will record the amount of force it takes to press on the track-pad and create a response, on different areas of the track-pad. The actuator will aid with tactile feedback by providing movements such as dragging or creating friction. The measurements can be captured using the 9330 Battery Powered High Speed Data Logging Indicator through an SD card, or another laptop directly.

Self Check Out Kiosk

A manufacturer wants to test their self check out kiosks. They want to ensure its weighing feature is functioning properly, with the right amount of sensitivity when future customers want to weigh products like fruits or vegetables. They need a system that measures the force it takes for the self check out kiosk, in order to activate a response for consumers. Interface suggests installing a SSB Load Beam Load Cells under the plate where items are weighed. When connected to the WTS-AM-1E Wireless Strain Bridge Transmitter Module, force results are wireless transmitted to the WTS-BS-6 Wireless Telemetry Dongle Base Station on the customer's PC. Data can be logged and graphed with the included Log100 software.

Types of Consumer Product Applications Using Interface Measurement Solutions

- Sports equipment design
- Regulatory and performance monitoring
- Toys and gaming devices
- Simulation devices testing
- Consumer electronics manufacturing
- Furniture fatigue testing
- Home appliance testing
- Product packaging
- Personal care products
- Food, candy, and snack manufacturing
- OTC products testing
- Capping and bottling machines
- Tablet and pharmaceutical machines
- Smart home devices
- IoT solutions
- Production line testing
- Usability research
- Safety and compliance tracking
- Distribution equipment
- Robotics

HIGHLIGHT: Industrial Robotic Arm

Customer Need / Challenge

A manufacturer of a robot arm needs to measure force and torque when the arm picks up and places products on the assembly line.

Interface Solution

Interface supplied Model 6A40A 6-Axis Load Cell with Model BX8-HD44 Data Acquisition Amplifier.

Results

The 6A40-6 Axis Load Cell was able to measure all forces and torques (Fx, Fy, Fz, Mx, My, Mz) and the BXB-HD44 Data Acquisition Amplifier was able to log, display, and graph these measurements while sending scaled analog output signals for these axes to the robot's control system.

Materials

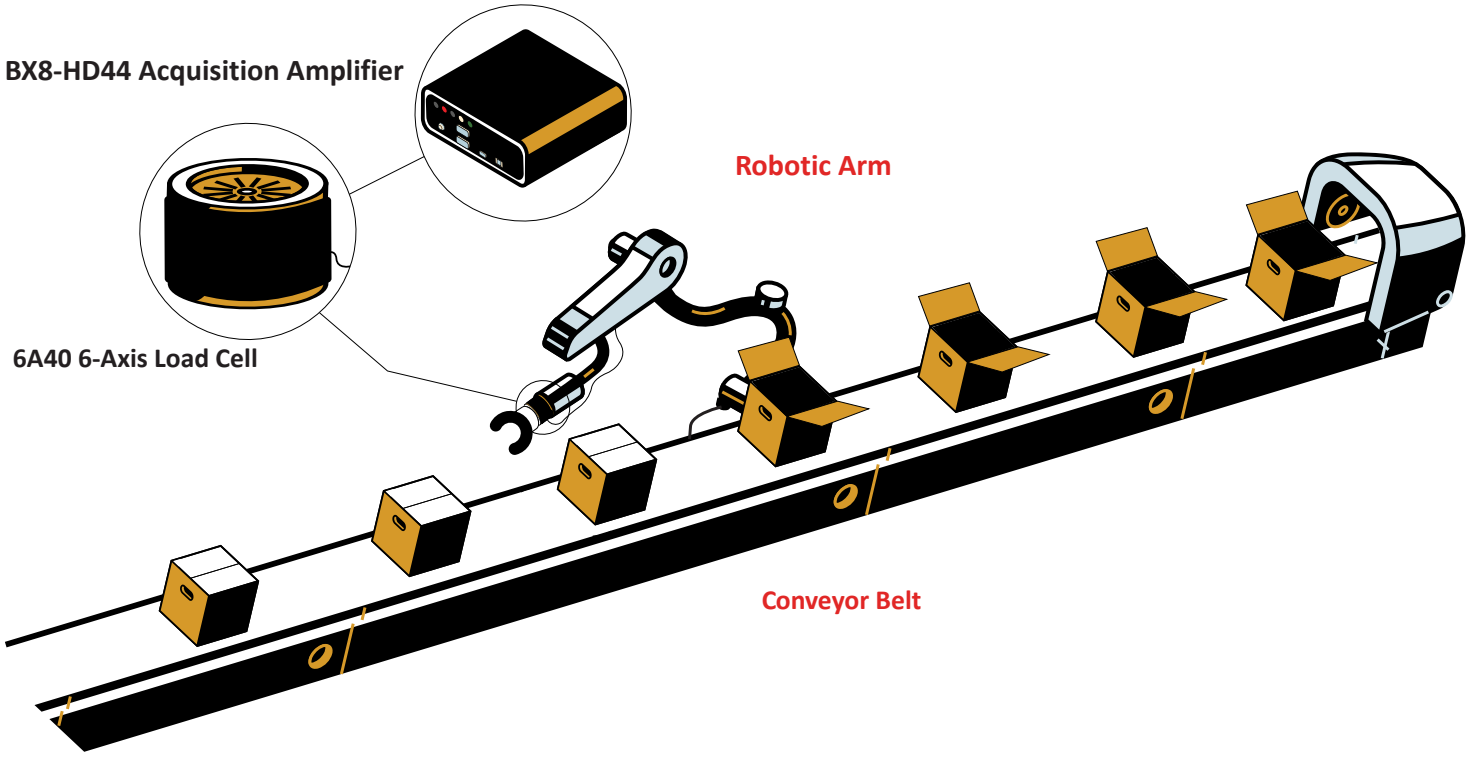
- 6A40 6-Axis Load Cell

- BX8- Data Acquisition Amplifier with includes BlueDAQ configuration, logging, display and graphing software

- Customer's robotic arm and control system

How it Works

The customer installed Interface's 6A40 6-Axis Load Cell between the robot flange and robot grabber. The 6A40 6-Axis Load Cell was connected to Interface's BX8-HD44 Data Acquisition Amplifier. The customer connected analog outputs to their control system. As a result, the customer is now able to measure forces and torques in six axes and send a scaled analog output signal to their robotic arm control system as the arm picks up and places products on the assembly line.

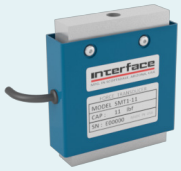


Product Examples for Consumer Product Solutions

1100 Ultra Precision LowProfile™ Load Cell
200 lbf to 300K lbf
1.33 kN to 890 kN

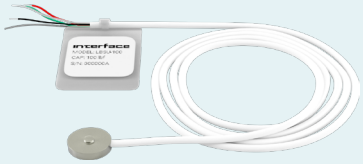
1200 Standard Precision LowProfile™ Load Cell
300 lbf to 100K lbf
1.33 kN to 445 kN

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

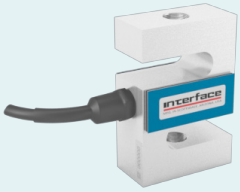


SMT Overload Protected S-Type Load Cell
1.1 lbf to 450 lbf
5 N to 2,000 N

BPL Pedal Load Cell
50 lbf to 500 lbf
250 N to 2.5 kN



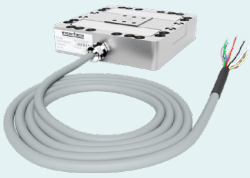
ConvexBT Load Button Load Cell
5 lbf to 1,000 lbf
22.24 N to 4.44 N



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

SML Low Height S-Type Load Cell
5 lbf to 2,000 lbf
22 N to 9 kN

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



3A Series 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

9870 High-Speed High Performance TEDS Ready 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

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

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

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

BX6-HD44-ECP Strain Gage Amplifier with EtherCat Protocol
6 channels for force-torque sensors
Supply and data transmission with EtherCAT P

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

BTS Bluetooth® Telemetry System
High Measurement Resolution
Simple Integration into iOS and Android Apps

Playing a BIG Role in Product Testing

All products need to be tested and found acceptable before being distributed to the public. Interface plays a big role throughout a product's lifecycle, from the its initial concept during R&D to testing, manufacturing, and even feedback during use.

Interface's force measurement solutions provide high accuracy and all-encompassing performance data. 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 to get the most reliable and accurate data.

Product designers and makers use sensor data to assess product usability, capabilities, and durability. The more data, the greater the opportunity to adjust and ensure the product is a direct fit. Precision in this process using quality sensor data will improve the product's performance and influence adoption.

Interface's force measurement solutions are needed throughout the product's creation process within testing and manufacturing equipment. We want to help keep all consumers in the world safe and satisfied by ensuring proper monitoring with high quality equipment through the testing process using our load cells and instrumentation.

Sensor Flexibility Across All Industries For CPG

Interface provides force measurement sensors and systems for all kinds of products across different industries. Versatility provides the ability innovate and solve challenges identified through the R&D and prototyping process. Whether it is using a small load button load cell within a smart product design or deploying multi-axis sensors during the production to gather feedback in real-time, Interface has a diverse set of options.

From measuring the force of a pod-style coffee maker, to determining how much weight a bike frame can handle, Interface has products for all stages of test and measurement throughout the CPG lifecycle. They are used in personal home health products, IoT consumer electronics, weighing your household pets, and in production-line robotics. Interface has the most exclusive force and torque measurement products on the market for CPG. Interface's force measurement systems are perfect for monitoring performance in real-time.

If you need a custom solution to get user feedback, such as on a treadmill or even home appliances, we are flexible when it comes to creating a force measurement solution for your specific application.

For more information on our CPG applications, or to discover more CPG product applications, please contact us today. We are ready to help explore the possibilities.

CPG Solutions

- Wireless Telemetry Solutions
- Bluetooth® Telemetry Solutions
- Interface Mini™ Load Cells
- Load Button Load Cells
- Wireless Load Cells
- LowProfile® Load Cells
- Torque Transducers
- Multi-Axis
- Instrumentation
- Digital Instrumentation
- OEM Custom Sensors

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 CPG 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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