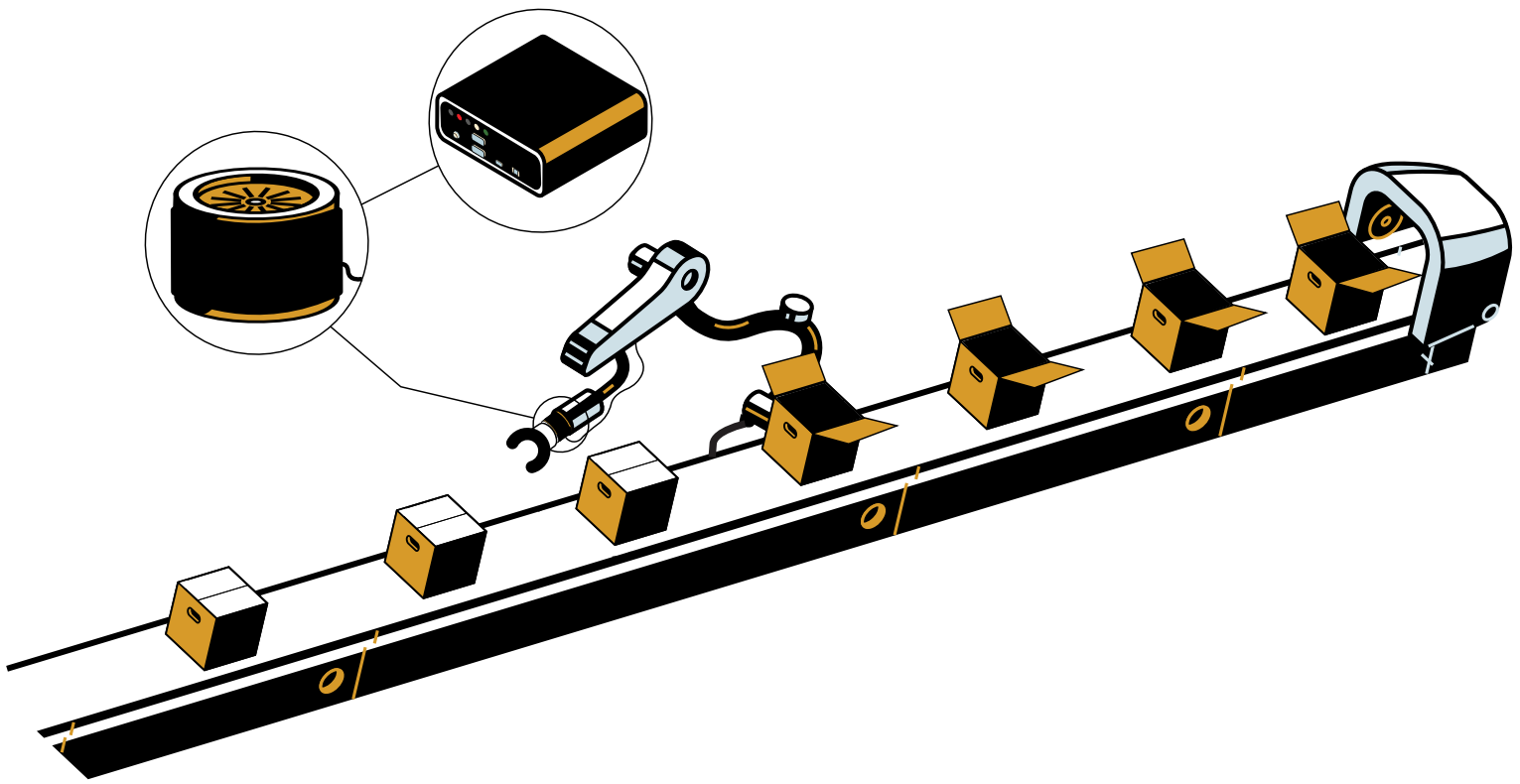


Interface

IoT Solutions



IoT Brochure v1.1.1

Interface
FORCE MEASUREMENT SOLUTIONS.

The World Leader in Force Measurement Solutions™

nbn Austria GmbH

nbn

IoT Solutions

Numerous factors are driving the Industry 4.0 revolution. From big data to IoT communication capabilities, industrial automation and manufacturing need efficient, accurate, and cost-effective sensor solutions designed for smart use cases. Interface load cells, torque transducers, multi-axis sensors, DAQ and instrumentation systems are designed for advanced IoT applications.



IoT: Internet of Things

Technology and communications are moving at 5G speed and IoT is seemingly ubiquitous in smart applications across all types of industries, from aerospace to healthcare.

The data from sensors in smart manufacturing, e-agriculture, autonomous vehicles, and IoT medical devices (IoMT) enable continuous monitoring, predict failure fast, and increase durability and efficiencies. These are the type of smart sensor technologies Interface has been designing and building for more than five decades.

We understand it is imperative that sensor solutions meet the needs of constant innovation and solve modern design and testing challenges. Whether it is miniature sensors, digital outputs, or wireless devices that provide intelligent information, Interface is a top provider of IoT enabled measurement technologies used through the entire product lifecycle from R&D to production and deployment.

IoT is in testing environments for machines, equipment, and products. Our IoT force measurement solutions are embedded in consumer products, increasing operability and reliability for users. Engineers require smaller devices and the ability to analyze data in real-time while connecting to other devices and the cloud wirelessly.

Interface remains the leader in accuracy and quality with no plans to change our focus. What is changing is use cases and opportunities for using precision sensor technology of all sizes and capacities, whether that be for autonomous vehicle testing, robotics in manufacturing lines, or in-home med devices. Interface is IoT ready to support you.

Industry Leading Quality

Interface is recognized for product reliability, accuracy and innovative design. 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.



Solution Capabilities

- Smart sensor technologies
- Wireless communications and enabled sensors for real-time collection
- Miniature load cells and sensor technologies for modernization and innovation of product designs
- Robotic sensor solutions for use in autonomous and mounted devices
- 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
- Bluetooth and wireless telemetry system components used for monitoring and testing
- Stainless steel and rugged designs for different temperatures and climates
- Advanced instrumentation and software for accurate and reliable data capture
- OEM engineered products for high-production counts

IoT Solutions

Interface builds quality test and measurement products and OEM sensors designed for smart applications in all industries.

Robotics in the 4.0 Revolution

To facilitate the demand for robotics and automation, a variety of sensor and measurement components are necessary to ensure the highest quality and reliability of these machines. Many tasks carried out by robotic applications are ultra-precise and require more accuracy than what a human hand or eye can handle.

Sensor technologies embedded in the actual robotics instrument must also be used to constantly calibrate or monitor the robotics. If robots are used on automated manufacturing lines, any issues with the robotics can disrupt and compromise the entire process. Robotics manufacturers, integrators using robotics, and system enabled robots utilize Interface solutions when they need quality sensors that can monitor the precision of the robotics and ensure that their accuracy and reliability is maintained during testing and live use.

Interface products are frequently used as a component within an IoT OEM device. The ConvexBT is designed for testing and for full integration into the robotic element to measure the force pressure during use. ConvexBT is available in multiple capacities, including our latest release of the 500lb and 1Klb models.

Smart Farming

Like most industries, the agriculture industry is no stranger to technology. In fact, it's among the most advanced industries in the world. With advancements in IoT, e-agriculture and smart farming are now core operations for most large producers and crop managers, while equipment and components look for more data to drive work efficiencies and improve production quality.

From heavy machinery used in working the fields to industrial weighing applications for livestock, manufacturers serving farmers and the supply chains that support agriculture use Interface sensor technologies. Interface's wide range of IoT functioning load cells, torque transducers, and DAQ systems are ideal for all types of advanced and simple agricultural applications, like weigh checking, lifting equipment, electrical and motorized farm vehicles, even drones used during the production and inspection.

Wireless solutions have increased in popularity across all industries, but especially in farming where engineers and manufacturers are running tests in the field and don't want to run long wires that can get in the way. Interface provides a wide range of wireless solutions for IoT, including our Wireless and Bluetooth® Telemetry Systems, which include sensor transmitters, receivers, and displays. These systems help our customers create a test network that is more convenient and just as accurate as its wired counterparts.

Types of IoT Applications Using Interface Measurement Solutions

- Smart factory tools and machines
- Wireless testing equipment for labs
- Autonomous vehicle components
- Robots and robotic parts
- Industrial automation equipment
- Cordless testing machines
- Stock weighing and lifting
- Safety regulation feedback and sensing
- Predictive usability and durability testing
- Liquid and line monitoring
- Fitness and health equipment use
- Miniature sensors in medical devices
- Touch screen testing
- Home health feedback sensors
- Mission critical applications for aerospace
- Hands-free devices and machines
- Prosthetics and surgical instruments
- Small scale testing equipment
- Modular component tests
- Visualization and product usability test
- Consumer product prototyping
- Environmental and temperature testing

HIGHLIGHT: Ice Machine Weighing

Customer Need / Challenge

A customer would like to check the amount of ice in the ice machine without leaving their vehicle. If the amount is below the desired weight, they will add more.

Interface Solution

Interface suggests using their Bluetooth® Telemetry System as an easy wireless solution to this application. Four SSB Sealed Beam Load Cells are mounted to the feet of the ice machine, and connected to the BTS Bluetooth Telemetry System. Force results are wirelessly transmitted to the customer's using the BTS Mobile App.

Results

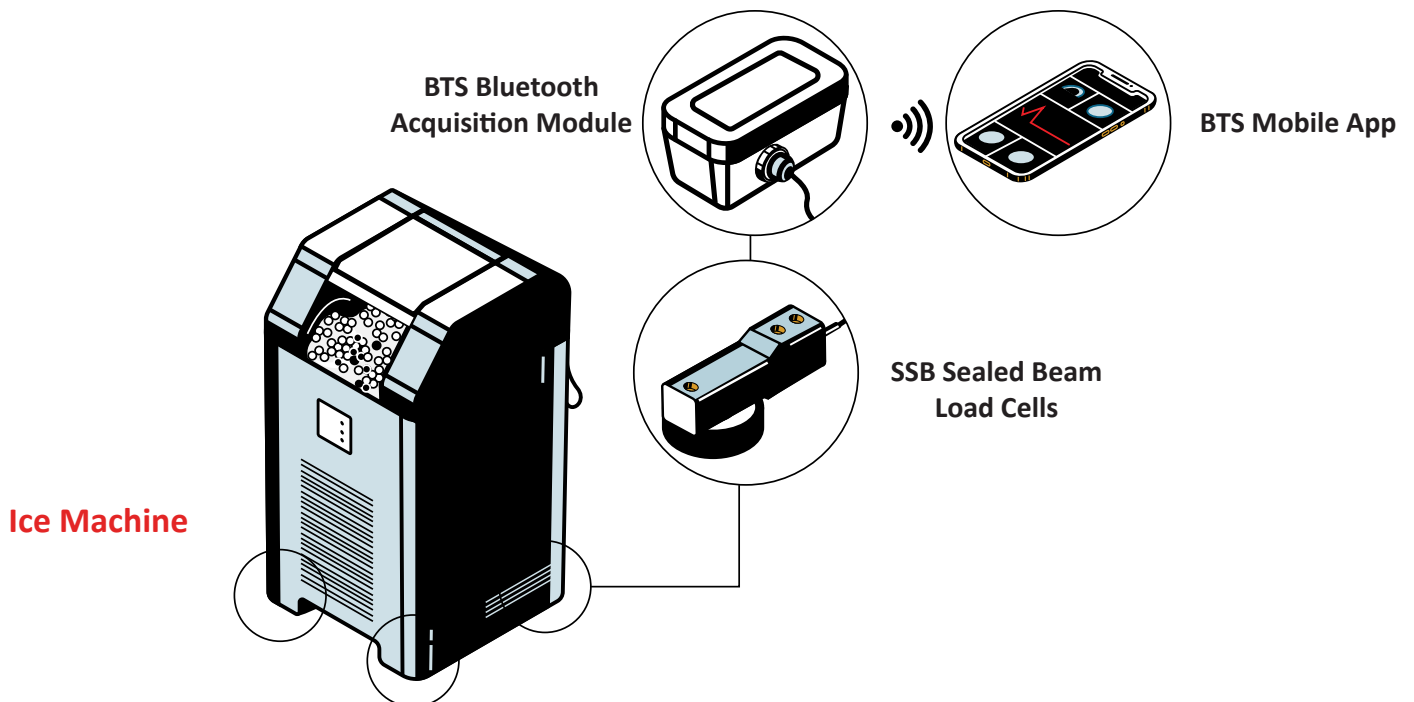
Interface's Bluetooth® Telemetry System successfully measured the ice machine's weight and wirelessly transmitted it to the customer's phone for quick and immediate results.

Materials

- Four SSB Sealed Beam Load Cells
- BTS Bluetooth® Telemetry System
- BTS Mobile App
- Customer's phone

How it Works

Four SSB Sealed Beam Load cells are mounted to the feet of the ice machine. When connected to the BTS Bluetooth® Telemetry system, the force results are transmitted wirelessly to the customer's phone. The customer is able to remotely view the weight of the ice machine.



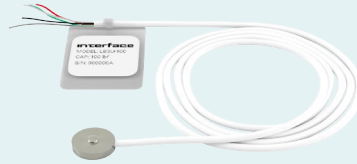
Product Examples for IoT Solutions



2400 Standard Stainless Steel Low Capacity Load Cell
100 lbf to 5K lbf
0.44 kN to 22 kN



3200 Precision Stainless Steel Load Cell
2.5 lbf to 100K lbf



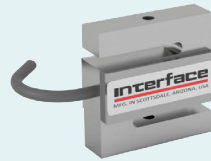
ConvexBT Load Button Load Cell
5 lbf to 1,000 lbf
22.24 N to 4.44 N



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



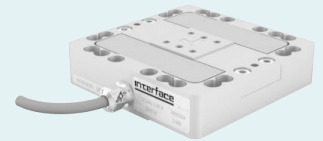
SMT Overload Protected S-Type Load Cell
1.1 lbf to 450 lbf
5 N to 2,000 N



SMA Miniature S-Type Load Cell
15 lbf to 200 lbf
60 N to 900 N



MRT2P Miniature Overload Protected Flange Style Reaction Torque Transducer
17.7 lbf-in to 17.7 lbf-in
0.2 Nm to 2 Nm



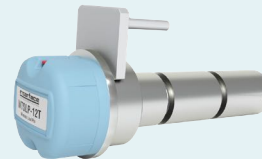
3AXX 3-Axis Force Load Cell
Force: 4.5 lbf to 112K lbf
Force: 10 N to 500 kN



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



WTS 1200 Standard Precision LowProfile™ Wireless Load Cell
300 lbf to 100K lbf
1.5 kN to 450 kN



WTSLP Wireless Stainless Steel Load Pin
Up to 3,000K lbf
Up to 1,360 MT



WTS-BS-1 Wireless Handheld Display for Single Transmitters
Roams between transmitters in range
Sleep/Wake, Auto shutdown



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



WTS-LD2 Wireless Large LED Display
6-digit, 102 mm (4 in) LED display
Mounting options: ceiling suspended or wall mounted



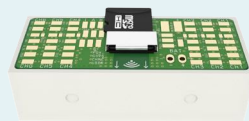
WTS-BS-6 Wireless Telemetry Dongle Base Station
Compact & Portable Logging
Fast Configuration
500m Wireless Range



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



WTS-WSS Wireless Wind Speed Transmitter Module
Low power mode providing exceptional battery life in excess of 12 months
Constantly monitors average wind speed



BX6-BT Portable 6-Channel High Speed Bluetooth Data Logger
6-channels + 1 encoder channel
Embedded Bluetooth with 400-meter range



WTSSHK-B Wireless Crosby™ Bow Load Shackle
Ranges from 12 to 120 MT (26.5K and 265K lbf)
Environmentally sealed to IP67



WTS-ANTA, ANTB, ANTC, ANTD, ANTE Wireless Telemetry Antenna Options
PCB, fixed, variable, puck versions
Offers flexibility to OEM installers

Speed of Innovation with Smart Sensor Technologies

In the age of Industry 4.0 and IoT vehicles, machines, equipment, products, and components are connected and sharing information. It is all greatly impacting the world of engineering and manufacturing, for the better. Data is more accessible, which allows for improved decision-making and more efficient product development cycles and design testing.

Industry 4.0 involves the process of connecting various machines, smart and conventional, to the cloud with sensors to create a powerful sensor network. Interface products meet those demands.

Interface force measurement solutions across the entire lifecycle, from research and development to build, even monitoring products while in use. With smart technologies expanding rapidly, Interface's force measurement products provide unparalleled accuracy for making intelligent decisions with data, identifying risks and vulnerabilities, and seizing upon continuous improvements.

The Industry 4.0 network is fast and stable enough to relay data to people or other machines in real-time. This data is rapidly turned into insight and the information ultimately allows engineers and manufacturers to automate more processes to create a more efficient factory, smarter machines and innovative products.

Keeping up with Smart Technologies

Interface's solution is part of the most exclusive line of integrated wireless products on the market. We are providing leading-edge communication-enabled devices and instrumentation that are used for all types of smart applications. We are connecting devices via cordless equipment for real-time performance monitoring, whether that be to the cloud or to software.

Our line of sensors includes devices that are designed for digital outputs, making connections and data sharing faster and more reliable. Digital instruments popular because of their advantages over analog devices, such as greater speed, increased accuracy, better resolution, reduction in operator errors and the ability to provide automatic measurements in the system application.

The digital instrumentation devices that Interface provides play a significant role in helping our customers create Industry 4.0 manufacturing for OEM products and compete in the fourth industrial revolution using digital technologies.

Our decades of experience in working with IoT applications and those in the industries that are taking advantage of smaller sensor technologies, wireless communications, 5G, and smart data.

Contact us today, we are ready to help explore the possibilities.

IoT Solutions

- Wireless Telemetry Solutions
- Bluetooth® Telemetry Solutions
- Interface Mini™ Load Cells
- Load Button Load Cells
- Wireless Load Cells
- Intrinsically Safe 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
IoT 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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