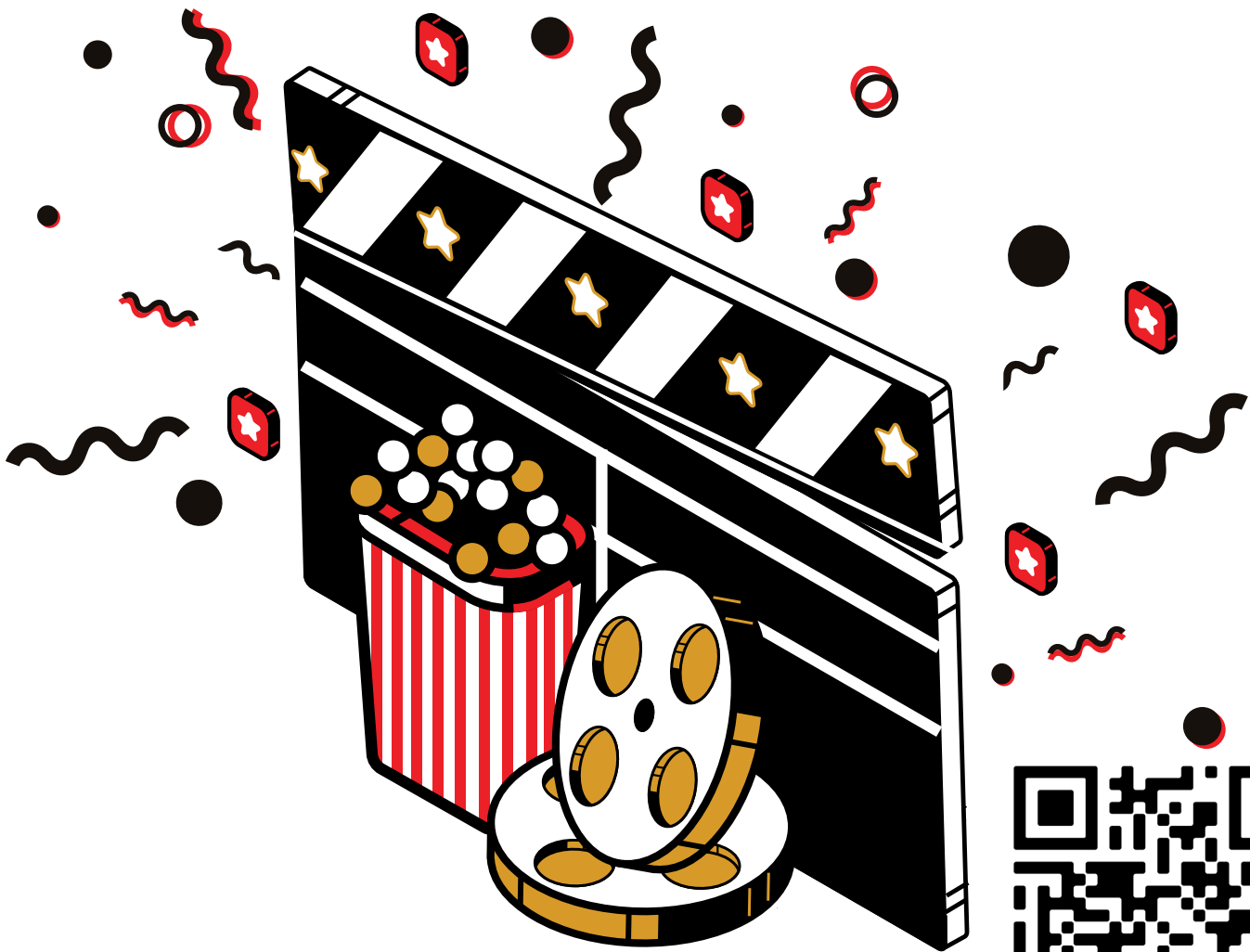


Interface

Entertainment Solutions



Entertainment Solutions v1.1

Interface
FORCE MEASUREMENT SOLUTIONS.

The World Leader in Force Measurement Solutions™



Entertainment Solutions

Interface provides our world renowned force measurement solutions to the global entertainment and amusement industry to accurately measure everything from thrill ride mechanics to stage rigging. Our load cells, torque transducers and instrumentation are used in all types of applications when quality, safety, and durability matters. You see our products used in testing gaming simulation devices, monitoring outdoor stage equipment, designing interactive displays, in lifting equipment, for film drone equipment, as well as for designing amusement rides and theme park robotics.



Serving Up Entertainment Solutions

Innovation has always had a huge role in the transformation of the entertainment industry, from better special effects in movies to mind-blowing theme park attractions. The role of engineering and use of sensor technologies has grown significantly over the years in this industry to help propel the machinery that delights audiences, while keeping purveyors, operators, and consumers safe.

Interface offers force measurement products for testing, monitoring, and embedding sensors into products by makers for various entertainment environments including theatre, film, video gaming, television, theme parks and entertainment venue, as well as multimedia attractions.

With the entertainment industry's growth into many different submarkets, Interface's deep range of load cells and other sensor products are used for reliable force measurement and data collection. Beyond our standard products, Interface's experts often collaborate with engineers to design customizable force measurement solutions for unique applications in the entertainment industry. Interface offers highly accurate sensor systems to ensure safety and eliminate risks when building and maintaining equipment used by industry professionals.

Industry Leading Quality

Interface is celebrated for meeting and exceeding the quality needs for our customers. 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. Every Interface manufactured sensor goes through rigorous testing and calibration before it's released to our customers. We provide certificates for each device. Our technical services team provides expert inspection, repair, and calibration for everything we make.



Solution Capabilities

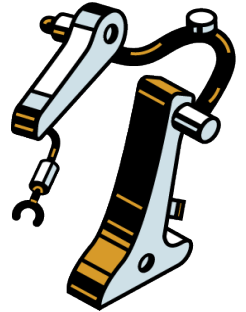
- Data acquisition and durable instrumentation for safety monitoring of equipment
- Load pins and load shackles for continuous hoist and lifting applications
- Digital and wireless load cell and instrumentation for maintenance and performance tracking
- Mobile testing solutions to take in the field and on remote locations
- Custom solutions designed to your exact safety and regulatory specifications for operating machines and devices
- Specialized sensors that range in sizes of miniatures to jumbos to use as embedded sensors

Entertainment Solutions

Interface offers diverse force measurement technologies for engineers to use in the design, testing, monitoring, and embedding of sensors into products and components used in entertainment and amusement environments.

Amusement Animatronics and Robotics

To ensure maximum effect, quality of product development and safety regulations, force testing and monitoring is utilized in wide variety of entertainment-related applications. Not only is this at the early stage of testing, but through the equipment's life cycle. Continuous measurement using load cells and other sensor devices is key to the successful launch and use across all type of entertainment sectors. From the touch screens used for interactive experiences in museums, to hydraulic systems used on roller coasters or for sets in film, all these devices and gear must be tested and monitored continuously using force sensing. Another growing use case for force and torque measurement is automation of equipment and robotics, including simulation environments and animatronics.



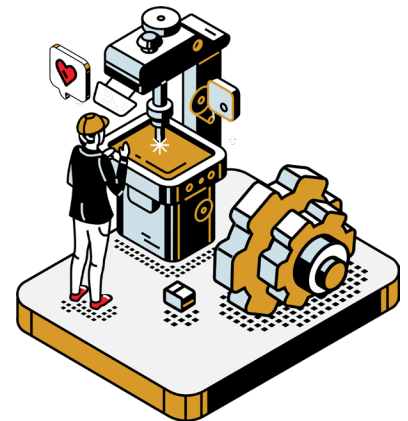
Touch Screen Testing for Venus Displays

Monitors and displays are commonly used in all types of entertainment and amusement venues. From ticketing to directional aids, these touch screens are used by consumers with varying forces. The testing of the material durability to withstand the touch, as well as environmental conditions, packing and shipping, set-up and long-term wear is critical for those that design, manufacture, and supply this type of equipment. Entertainment has been using big screens for decades, the smaller and more mobile touch pads require rigorous test and measurement before putting them into use, not only for quality of product but also for consumer use and safety. Interface supplies equipment for testing force applications of the glass, display housing, stands, rigging and inserts for all types of touch screens and all sizes.



Entertainment Component Manufacturing

Interface has been designing and building a variety of sensors for more than five decades that have been used in a variety of entertainment applications. More than ever, today we understand it is imperative that sensor solutions meet the needs of smart use cases, pushing innovation and solve modern design and testing challenges. This particularly applies to the constantly evolving global entertainment and amusement industry. Interface offers a broad range of force measurement products for testing, monitoring, and embedding sensors into products and components supplied to the industry. This includes our load cells, torque transducers, multi-axis sensors, miniature load cells, digital instrumentation, wireless and Bluetooth telemetry systems, and custom force measurement devices for OEM applications.



Types of Entertainment Applications Using Interface Measurement Solutions

- Display Equipment
- Cranes and Lifts for Rigging
- Animatronics
- Amusement Park Rides
- Stage Equipment and Design
- Touch Screens and Monitors
- Theme Park Robotics
- Drones
- Camera and Multimedia Equipment
- Outdoor Festival Wind Monitoring
- Stunt Devices
- Operating Machines
- Set and Venues Designs
- Equipment Safety Monitoring

HIGHLIGHT: Entertainment LED Display Screens

Customer Need / Challenge

A customer constructing a huge venue wants to weigh their exceptionally large LED screens. They want to measure the force of the structure that is supporting the screens, to ensure stability and structural integrity.

Interface Solution

Interface suggests their LW General Purpose Load Washer Load Cells being assembled within rods that are part of the support structure. The LED screen hangs off the structure, which connects to the rods. The compression forces applied to the rod will be measured by the LW's installed in between. The load washers are paired with WTS-AM-1E Wireless Strain Bridge Transmitter Modules, where the force results are wirelessly transmitted to both the WTS-BS-1 Wireless Handheld Display for Unlimited Transmitters and the WTS-BS-4 Wireless Base Stations with included Log100 software.

Results

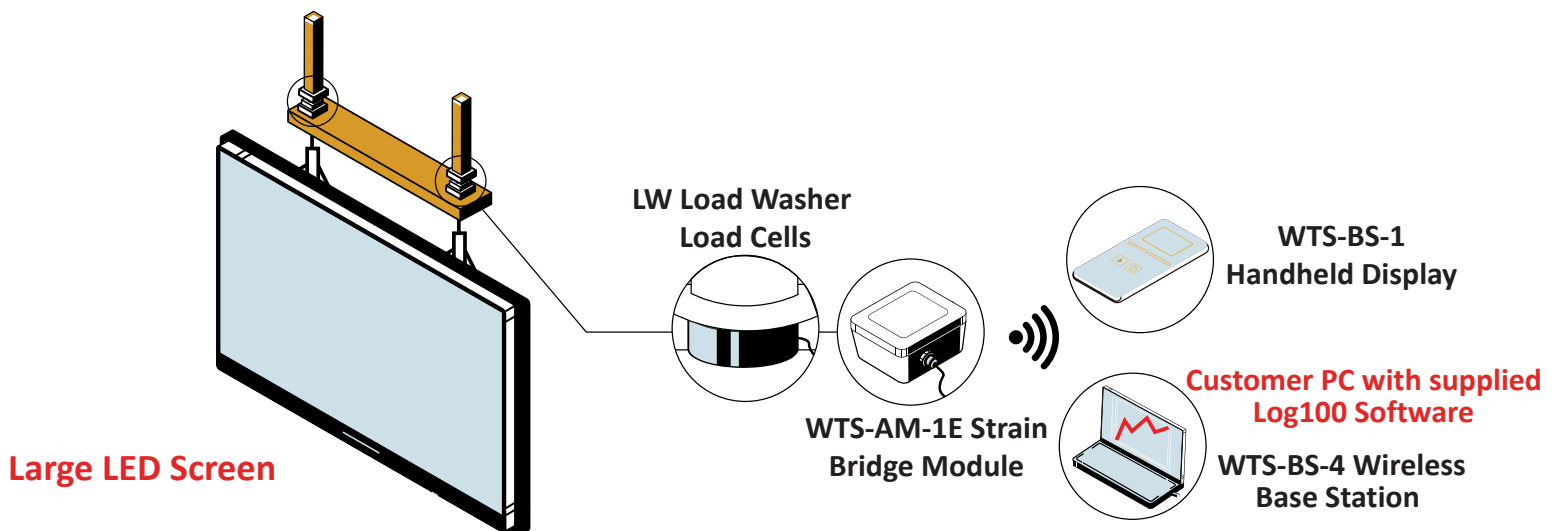
Interface's wireless load washer system successfully weighed the forces of the large LED screen for the customer's new venue

Materials

- LW General Purpose Load Washer Load Cells
- WTS-AM-1E Wireless Strain Bridge Transmitter Modules
- WTS-BS-1 Wireless Handheld Display for Unlimited Transmitters
- WTS-BS-4 Wireless Base Station with USB Interface in Industrial Enclosure
- Customer PC or Laptop

How it Works

Hundreds of LW General Purpose Load Washer Load Cells are installed within the LED screen's rod structure. The LW's are paired with WTS-AM-1E Wireless Strain Bridge Transmitter Modules. As the LED screen hangs off the support structure, the LW's measure the compression forces from the rods sustaining it. Force results are wirelessly transmitted to the WTS-BS-1 Wireless Handheld Display for Unlimited Transmitters, and the WTS-BS-4 Wireless Base Station with included Log100 software on the customer's PC.



Product Examples for Entertainment Solutions



WTS-WSS Wireless Wind Speed Transmitter Module

Low power mode providing exceptional battery life in excess of 12 months
Constantly monitors average wind speed



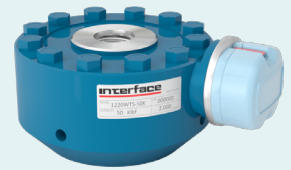
1200 High Capacity Standard Precision LowProfile™ Load Cells

200K lbf to 2,000K lbf
890 kN to 8,896 kN



1100 Ultra Precision LowProfile™ Load Cell

300 lbf to 200K lbf
1.33 kN to 890kN



WTS 1200 Standard Precision LowProfile™ Wireless Load Cell

300 lbf to 100K lbf
1.5 kN to 450 kN



WTSSHK-B Wireless Crosby™ Bow Load Shackle

26.5K and 265K lbf
12 to 120 MT



WTSSHK-D Wireless Crosby™ Bow Load Shackle

26.5K to 77.2K lbf
12 to 35 MT



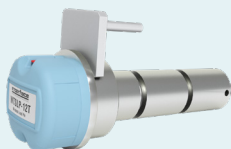
BPL Pedal Load Cell

50 lbf to 500 lbf
250 N to 2.5 kN



LW General Purpose Load Washer Load Cell

5 lbf to 100K lbf
0.02 kN to 4.45 kN



WTSLP Wireless Stainless Steel Load Pin

Up to 3,000 lbf
Up to 1,360 MT



WTSTL Wireless Tension Link Load Cell

11K lbf to 220.4K lbf
5 mt to 100 mt



WTS-BS-1-HA Wireless Display for Multiple Transmitters

Connect up to 12 transmitters
Provides summation of up to 12 transmitters



WTS-BS-1-HS Wireless Display for Single Transmitters

Simple operation
Connection to single transmitter module



WTS-BS-4 Wireless Base Station with USB Interface in Industrial Enclosure

Up to 800 m (2,625 ft) range
Simple plug & play USB



WTS-AM-1E Wireless Strain Bridge Transmitter Module

Simple wireless configuration and calibration
Wireless range up to 800 m (2,625 ft)



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

Interface Supports the Growing Entertainment Industry

The entertainment industry is valued in the trillions of dollars and growing. In meeting the demands of consumers, inventors and innovators are designing incredible entertainment activities and amusement attractions to thrill us all. Interface provides a variety of force measurement solutions to the global entertainment and amusement industry.

Engineers and manufacturers in the entertainment and amusement industry are utilizing all types of Interface sensor technologies in the design, build and maintenance of indoor and outdoor staging venues, big screen and floating displays, theatre stages and lighting, film production, video gaming, simulations, television production, camera work, theme parks and traveling rides, gaming centers, as well as multimedia attractions.

These providers use equipment and sensor-enabled components for lighting technologies, drone-enabled filming equipment, rigging and lifting equipment, display monitors, carnival rides, stages and venues. Our products are even used for manufacturing, testing, and monitoring small devices used for single touch screens, simulation consumer equipment and within animated robots.

Interface produces the sensor and torque technologies that are absolutely necessary for the types of applications used in the entertainment industry. Our wireless and Bluetooth® force measurement systems are perfect for any application, both in indoor and outdoor environments. Wireless tension links and load shackles are used for stage rigging and floating displays. Our S-Type Load Cells are perfect for touch screen testing. Interface provides solutions to measure and monitor in harsh weather conditions while still maintaining accurate and reliable measurement performance.

Leading in Imagination and Ingenuity

Interface continues to find new and innovative ways to support an industry that is full of creative genius. We provide leading-edge communication-enabled devices, wireless sensors and digital instrumentation that are used for all types of smart entertainment applications. We are connecting devices via cordless equipment for real-time performance monitoring to ensure great experiences.

Interface offers standard products for all types of testing programs as well as sensors that are used for activating components. When a custom solution is needed, we partner with engineers and industry experts to design products with exact specifications and requirements for unique applications.

If you're interested in learning more about Interface products for the entertainment industry, our experienced engineers are ready to act and get you what you need.

Entertainment Solutions

- High Capacity Load Cells
- LowProfile™ Load Cells
- Load Pins
- Load Shackles
- Multi-Axis Sensors
- Instrumentation
- Wireless Telemetry Solutions
- Load Washers
- Interface Mini™ Load Cells
- Digital Instrumentation
- Bluetooth® Telemetry 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
entertainment
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.