

Interface

FORCE MEASUREMENT SOLUTIONS.

CASE STUDY

Cranes and Lifting



About

There are countless applications that utilize lifting forces, from industrial equipment like cranes and forklifts to robotics used in manufacturing and medical devices. Force measurement sensors improve safety and the quality of products. Interface products are ideal in lifting-based applications and provide the industry's most accurate and reliable data available through force measurement sensors.

Challenge

In practice, lifting an object from one place and putting it down in another seems very simple. However, there are multiple factors to consider. It is especially important in more precise tasks or overweight loads to ensure the lifting mechanisms operate with precision. The mechanisms that lift objects must be tested to ensure they can handle their specific task, while accounting for factors such as sway and for outdoor projects the environmental factors. The use of drones is a growing application for test and measurement of lifting forces. Interface worked with the manufacturer of drones using sensors for the delivery of packages. This adds in the need to test and monitor counterbalance forces in addition to the lifting mechanisms. One unique industry using lifting applications is entertainment. Staging and production companies use cranes and other lifting mechanisms for people and objects.

Interface Solutions

Interface supplies the industry's most accurate and reliable load cells to for lifting and crane solutions. Our load cells are available in different form factors and capacity ranges to force from 0.02 to 2,000k lbf. Interface has a growing number of products perfect for lifting and weighing, including tension links, load shackles and measurement devices used for weigh checks and monitoring cranes and lifting equipment. Our products can be used for single tests or embedded into machines for ongoing performance monitoring. Additionally, we offer a wide range of instrumentation solutions in a variety of communication channels including wireless to allow users to gather data in-facility or on the go. Interface also customizes sensor solutions to meet your exact needs and specifications.



WTSLP Wireless
Stainless Steel Load Pin



WMC Sealed Stainless Steel
Miniature Load Cells



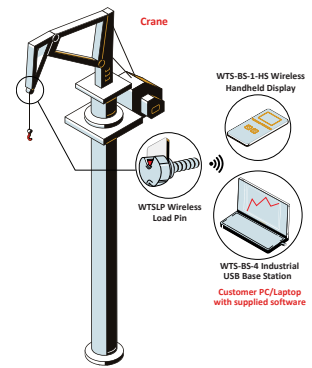
WTSSHK-B Wireless Load Shackle



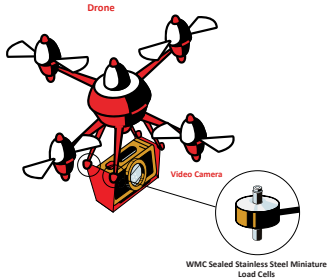
LW General Purpose
Load Washer Load Cells

Crane Force Regulation

A customer wanted to regulate the maximum number of heavy loads being lifted so that production time can be both safe for workers and efficient. The customer also wanted to complete lifting duties faster and with little or no expense. A wireless solution was preferred, so that there would be no long cable interference during production. With Interface's WTSLP Wireless Stainless Steel Load Pin, which can be custom made to be used for any and all types of cranes, proved great for lifting both short and long distances. Paired with the WTS Wireless Telemetry System, force is measured and logged. The customer was able to monitor the continuous force from the crane and gather information on loads being lifted. Data was transmitted and logged to the customer's computer for review and analysis.

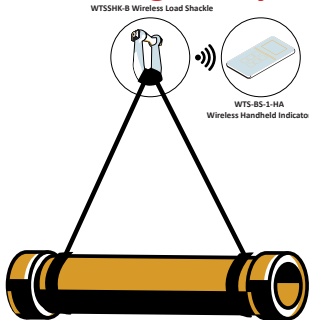


Drone Videography



A drone manufacturer needed to ensure the propeller motors compensate for shifting weight and uneven weight distribution of the video camera when attached for filming and aerial shots. Interface suggested four Interface WMC Sealed Stainless Steel Miniature Load Cells to be installed to the necessary propeller motors to measure weight load. The WMC's measure the weight of the camera and detect weight shifting or uneven weight distribution. The four WMC load cells accurately measured the payload weight and maintained stability of the propeller motors when the drone was in flight with the attached film camera. This information was communicated to the drones on-board processor for monitoring and recording during flight.

Lifting Heavy Objects

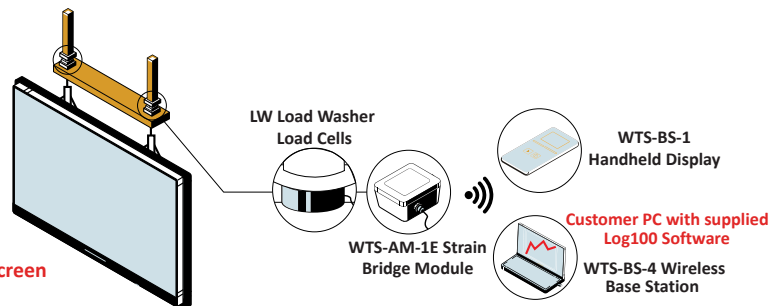


A customer needed to use a crane to move heavy construction materials around the work site and monitor the weight of these objects during lift. Interface's WTSSHK-B Wireless Load Shackle were connected to the crane load string to measure forces. Model WTS-BS-1-HA Battery Powered Hand-held Display is used to wirelessly receive load information and display results. Using Interface's solution, the customer is successfully lifting and reading weight (wirelessly) on a hand-held display while material is moved.

Entertainment LED Screens

A customer constructing a venue wanted to weigh large LED screens and measure the force of the structure supporting the screens, to ensure stability and structural integrity. Interface suggested LW General Purpose Load Washer Load Cells for assembly 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 Hand-held Display for Unlimited Transmitters and the WTS-BS-4 Wireless Base Stations with included Log100 software. Interface's wireless load washer system successfully weighed the forces of the large LED screens used in the venue.

Large LED Screen



Learn More

Interface has been supplying force measurement solutions for crane and lifting applications for more than 50 years. If you're in the market for accurate and reliable force solutions, visit www.interfaceforce.com or call our application engineers at 480-948-5555.