

interface

FORCE MEASUREMENT SOLUTIONS.

CASE STUDY

Interface Solutions Used in Growing Agriculture Innovation



Agriculture remains at the heart and soul of American industry. Today's version of the cultivating plants and managing livestock looks dramatically different than past decades of working the land. Technological advancements have made the modern farm and food production more efficient, smarter and more cost effective. One of the keys to keeping the agricultural industry at the height of innovation is a host of accurate and reliable measurement equipment designed to help engineers and manufacturers push the limit on the machinery that helps to feed America and the world. Interface plays a critical role in advancements in agriculture and farming as an enabler of sensor products. We've been serving this industry for many years and are a top supplier due to our commitment to quality, durability and reliability, all pillars for this industry.

Challenge

In the agriculture industry, which consists of small farmers to conglomerates, there are a wide variety of machines, vehicles and supplies used to carry out all sorts of tasks used in the modern production of food and crops. These parts are often pushing, pulling, or storing large amounts of food, animals, or materials. To ensure they hold up over time and can handle the necessary weight and capacity, force sensing is often used to verify use and test new designs. Sensors are often used in equipment to monitor and regulate in use. The challenge is, if these products aren't tested, confirmed, and monitored, not only can they break down and cost the user money and time, but they also pose a safety threat to operators and staff. Interface load cells, torque transducers, instrumentation and custom sensors are used in multitudes of products related to agriculture manufacturing, farm and field vehicles, inventory monitoring, equipment testing, livestock weighing and grain monitoring applications to name a few. In this case study, we'll be outlining a few of products we provide to our customers for continuous use and innovation.

Interface's Solution

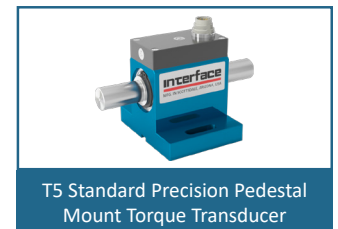
Interface provides a range of sensor technologies that are utilized by manufacturers and testing engineers in the agriculture and food production markets. This includes our precision load cells, torque transducers, multi-axis sensors and miniature load cells, along with the popular tension links, load shackles, wireless instrumentation and more. As a complete solutions provider, we have a variety of force measurement products that are designed for modern agricultural testing projects and as components for OEMs. Our Interface expert application engineers can help with standard products as well as design customized solutions for all types of applications using our products that are used for harsh environments, material handling, complex agricultural machines, and extreme weather conditions, engine testing, all ensuring



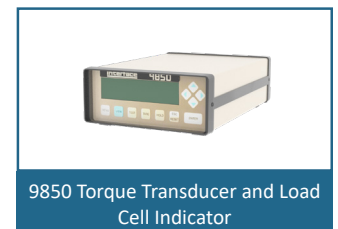
SSB Sealed Beam Load Cells



WTS 1200 Standard Precision LowProfile™ Wireless Load Cell



T5 Standard Precision Pedestal Mount Torque Transducer

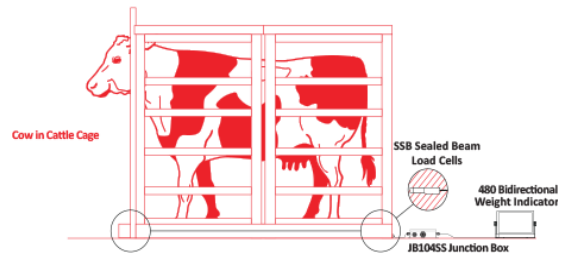


9850 Torque Transducer and Load Cell Indicator

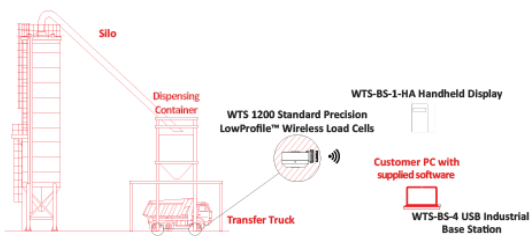
maximum safety and efficiency. The following application notes examples provide an overview of how Interface serves the agriculture sector:

Livestock Weighing Application

Weighing cattle is a critical process in the dairy industry. Farmers need to make sure their livestock are at a healthy weight and maintain their weight. They also want to know the optimal time for breeding based on the weight, meaning it needs to be as accurate as possible. In this use case, Interface provided four **SSB Sealed Beam Load Cells**. The load cells sit at the bottom of a metal weighing platform that is placed on the inside of the customer's cattle cage. Once the cow has walked onto the plate, the SSB Sealed Beam Load Cells measure the force pressure applied. With all four connected to a **JB104SS Junction Box**, which is then connected to the **480 Bidirectional Weight Indicator**, combined accurate weight results will be displayed. With this solution, the customer was able to determine accurate weight measurements of their livestock to keep them healthy and determine optimal breeding time.



Silo Grain Dispensing

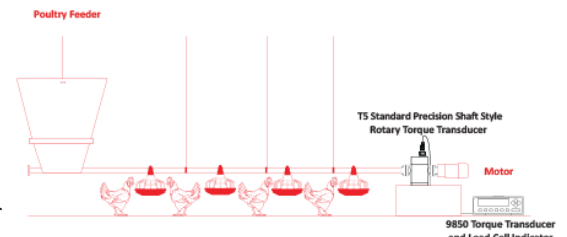


For a silo returning grain into a dispensing container, the customer wanted to measure and record the grain being put in and out of their grain dispensing container. They wanted real-time measurement as it dispenses content into a carrier truck for transportation. The customer also preferred a wireless solution. Interface suggested installing **WTS 1200 Standard Precision LowProfile™ Wireless Load Cells** at the legs of the grain dispensing container. The 1200 measures the distribution correlation of the grain as it's inputted and outputted from the container. Results are transmitted and displayed using the **WTS-BS-1-HA Handheld Display for multiple transmitters** and logged and graphed using the **WTS-BS-4 USB Industrial Base Station**. Utilizing these products, the customer was

able to log and graph the measurement results of the grain content during storage, dispensation and when loaded onto transportation vehicles. This solution eliminated all the guesswork and ensured accuracy in the storage and movement of the material.

Poultry Feeder Monitoring

When a customer wanted to monitor the motor that operates their poultry feeders to ensure it gave out an equal distribution of feed per poultry house, Interface's suggested using the **T5 Standard Precision Pedestal Mount Shaft Style Rotary Torque Transducer**, with the speed angle option. The transducer attached between a poultry feeder and a motor with Interface's Couplings. With this solution, torsion measurements can be graphed and logged using the **9850 Torque Transducer and Load Cell Indicator**. This allowed the customer to monitor their poultry feeders and confirm that every feeder got the same amount of food distributed to it for safety and efficiency.



Learn More

Interface Load Cells, Torque Transducers, and Data Acquisition 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. Our products can be paired together to measure to ensure efficiency, sustainability, and proper production planning. Interface's sensor products can regulate through harsh weather conditions such as humidity and unbearable temperatures, while still maintaining a precision testing and measurement performance. Additionally, if we don't offer a standard product that works for innovative use case, our custom solutions team will work alongside you to create the most effective and efficient solution based on your exact needs.

For more information on how Interface can help solve test and monitoring challenges for agriculture, please visit <https://www.interfaceforce.com/solutions/agriculture/>.