

Load Cell Description and Application

A load cell is a transducer which converts force into a measurable electrical output; in other words, it converts a load acting on it into an electrical signal. Although there are several types of load cells, strain gauge (gage) are the most common. Strain gauge load cells offer accuracies from within 0.03% to 0.25% full scale, and are suitable for almost all industrial applications. One such type of load cell that is particularly useful in the Tank/Silo application is the Pancake Load Cell, or low profile Load Cell. The Pancake Load Cell is commonly used in applications that require high precision, and it is less sensitive to load condition.

In the Tank/Silo application, load cells are placed on the legs of a tank or silo to monitor its fullness. When more than one load cell is used at a time, a junction box (which connects all the wires together) is needed to average the load from each load cell. The junction box provides one output which can be connected to a computer or plc using a signal conditioner or digital display to view the output. The user can then be notified of the level of fullness of the tank or silo in a variety of ways, some of which include a notification to the user via email of the system's levels, an automated alarm that will sound at a certain level, or an application that will trigger another tank to fill it at a certain level. These methods of notification can be tailored to the user's preferences, however the overall load cell application is the same.