

Application Note

Limitless™ Wireless Hazardous Location Switch for Grain Handling

Used to determine grain gate movement, flow, and position

Background

Grain handling facilities such as grain elevators, transfer stations, and storage sites share similar characteristics. Many of them use automated equipment to move grain from one position to another. It is common to see long stretches on conveyor systems in grain handling facilities. These conveyors distribute the grain to storage bins or other process equipment throughout the site. To ensure that the grain is delivered to the correct spot, the conveyors are usually installed in conjunction with a system of grain gates and grain distributors. The gates function similarly to how a valve would function in a fluid process control. Closed, grain is not allowed to move or flow. Open, grain can pass through the gate to next position in the grain handling facility. Just like valves in process control applications, customers often want a secondary means of indicating the position of a grain gate. Knowing the position of the grain gate, whether it is open or closed, allows confirmation that the grain is indeed getting to the right place at the right time.

Grain handling environments are not only extremely dirty; they are usually associated with a lot of moisture, and a lot of dust. The dust involved with grain handling is so significant that most grain handling facilities are considered classified environments or hazardous locations. This means that there is a danger of explosion if there is electrical activity, in the form of arcs and sparks present. Because they are hazardous locations, grain handling facilities require most of their electrical equipment to be intrinsically safe or specially built and designed for hazardous locations. If intrinsically safe, the electrical equipment is intrinsically not able to be a source of ignition. The electrical power it uses will not be great enough to cause a spark or an arc and become a source of ignition.



Solution

The Limitless™ Wireless Hazardous Location Switch, WBX Series is a position indication device, similar to a standard limit switch. However, it is wireless. It does not need expensive cable and conduit to be installed. This is critically important to those grain handling facility customers whose plants can often cover several football fields worth of space. Often the largest cost of installing a standard limit switch is long conduit and cable runs.

Not only does the customer need to pay for the conduit and the cable itself, but they need someone to install it. This often results in hefty installation costs for retrofits and new installation alike. With the Limitless™ wireless hazardous location switch, WBX Series, a grain facility customer can install WBXs in many different locations throughout their facility and not worry about these cabling and conduit costs. Because the WBX is designed to be intrinsically safe it is perfect for use in grain handling classified areas. It is also designed with the globally accepted BX limit switch mounting platform. Current uses of standard BX limit switches can easily integrate WBX switches into their systems.



In hazardous locations, the Limitless™ WBX is designed to contain an explosion.

Sensing and Control

Application Note

Limitless™ Point-to-Point Wireless Hazardous Location Switch, WBX Series

Features and Benefits

- Enables control in remote parts of application/machinery/ manufacturing plants, where wiring is not possible or feasible
- Ability to reconfigure and network multiple interfaces, or point-to-point with personalized addresses which allows for adding, subtracting, or relocating Limitless™ inputs easily
- Can reduce installation/maintenance costs with no wiring to Limitless™ switches, conduit, strain relief, clips, connectors, junction boxes, etc.
- Wireless operation and signal transmission eliminates the need to physically send maintenance engineers into the field thus reducing installation and operating costs
- Provides an independent layer of protection for equipment, by giving an immediate indication that a remote mechanical device is not positioned or moving correctly
- Batteries are inexpensive, readily available worldwide, and easy to replace. No re-provisioning is required after a battery replacement
- Batteries are readily available and easy to replace

Find Out More

To learn more about Honeywell safety solutions, contact a Honeywell representative today at **1-800-537-6945**, e-mail info.sc@honeywell.com, or visit sensing.honeywell.com

Sensing and Control

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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