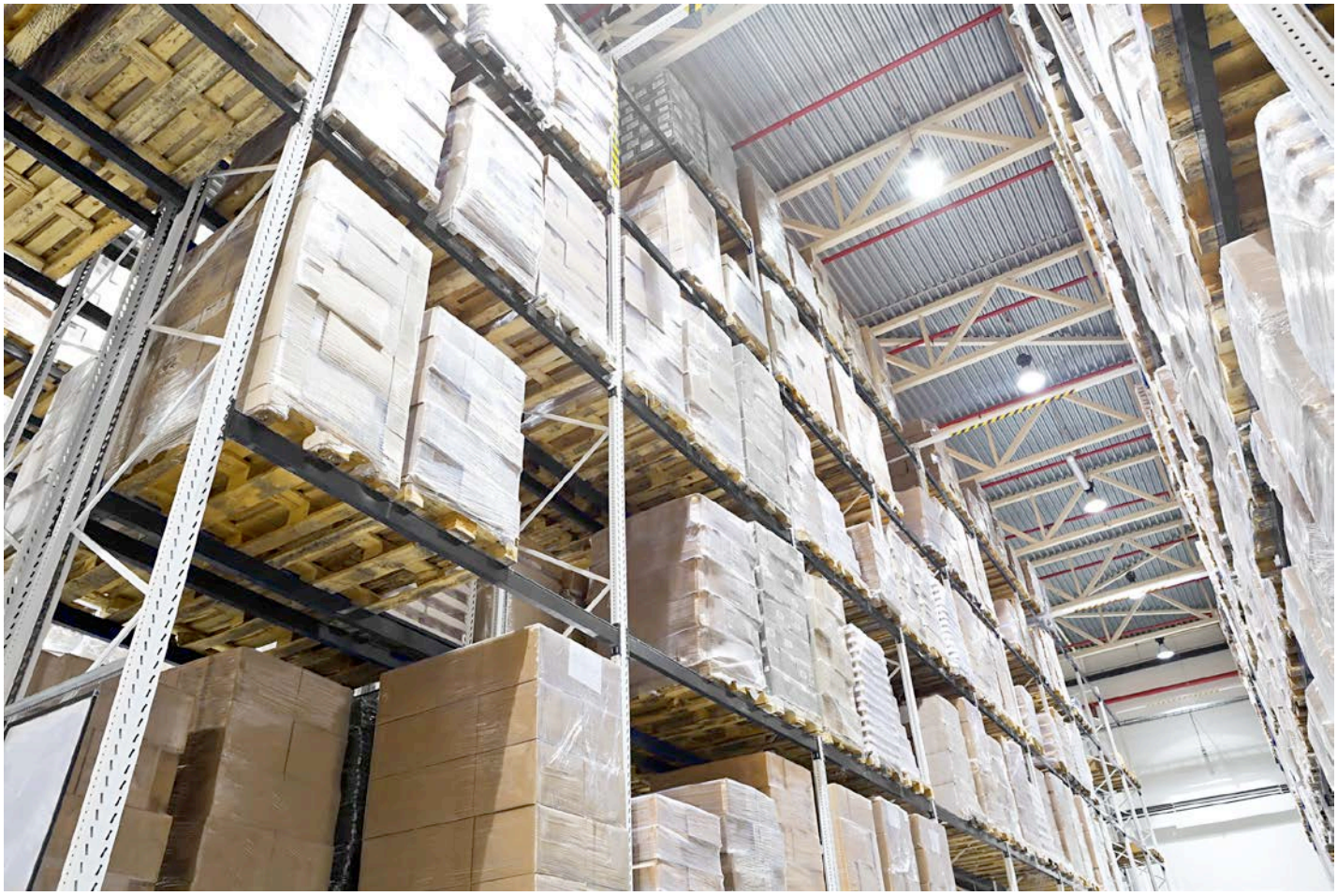
Lighting Control System for Cold Storage

Needs-Based Lighting Control with Ultrasonic Sensors

The Application

Industrial cold storage buildings are larger than football fields. Lighting such areas consumes significant amounts of electricity. It also produces unwanted heat, which then needs to be eliminated through additional cooling. To minimize power consumption and heat generation, LED lamps inside the cold storage areas switch on only where forklift trucks are on the move. The lights switch off again when the vehicle leaves the row of shelves, extending the service life of the lights and the maintenance intervals considerably.



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The Goal

The lighting control system must accurately and reliably detect the presence and direction of forklift trucks. It is imperative that the system works regardless of the fog that often forms in cold storage. The lamps illuminate only when light is needed, reducing power consumption and preventing unnecessary heat generation. As a result, these lamps have a much longer service life compared to continuous lighting solutions.

The Solution

Two UC4000-L2 ultrasonic sensors with a detection range of four meters monitor the entire width of each aisle. One sensor is aligned crosswise to the pathway and detects the forklift truck as it passes through the entrance. The other sensor is positioned at an angle and scans the area in front. Using the output trigger sequence, it is possible to determine the direction in which the truck is driving, and switch the lighting on or off as required. The required switch points can be set quickly and accurately in real-time conditions on site via teach-in buttons.

The Benefits

Even if clouds of mist form or frost develops, the ultrasonic sensors guarantee reliable operation. The sound pulses detect objects regardless of their shape and color. The compact design and versatile mounting base enable simple, space-saving mounting with optimal alignment. The noncontact devices are completely maintenance-free. Adopting a needs-based lighting concept such as this allows considerable savings – and not just in terms of power. Because the lamps have a long service life, maintenance intervals can be significantly extended.

At a Glance:

- Optimal lighting control
- Significant energy cost reduction
- Extended maintenance intervals for the lighting
- Simple assembly and alignment
- Maintenance-free sensor operation

More information at
www.pepperl-fuchs.com/ultrasonic

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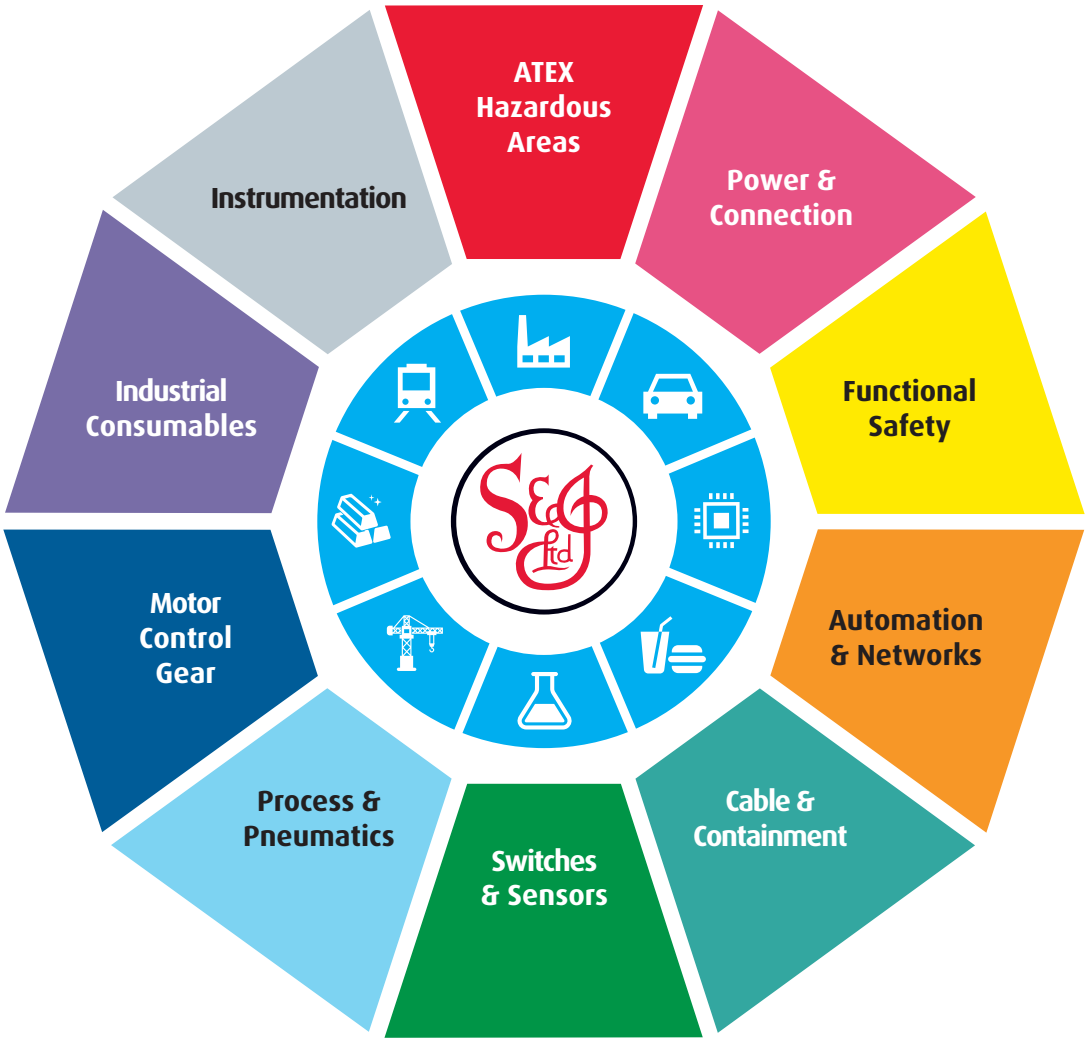

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