Protec
Fire and Security Group

Protec Aspirating Systems For Automated Warehouse Applications

ADDRESSING SAFETY SYSTEMS WITH INTELLIGENCE

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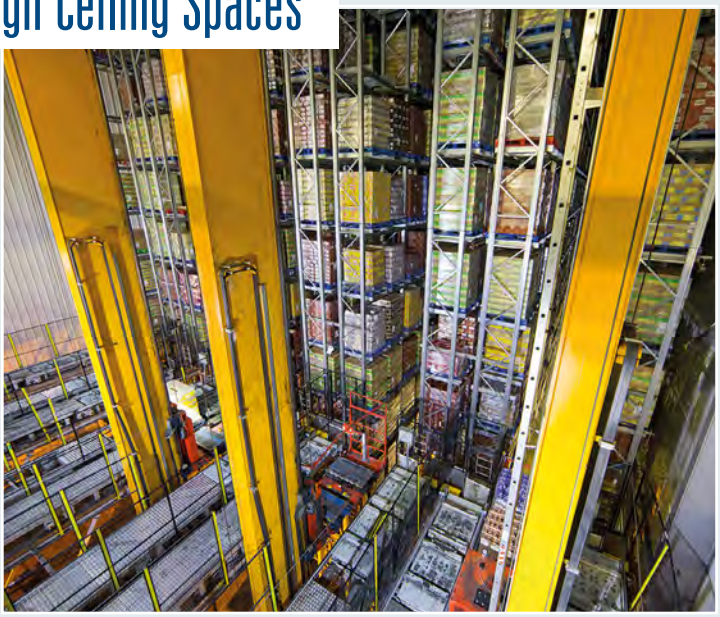
Protec Aspirating Systems - Automated Warehousing Applications

In recent times many manufacturers and logistics companies have introduced automated warehousing facilities. These are often large, high ceiling warehouse spaces filled with product, storage racking systems, conveyors and automated robots/pick and place equipment.

The risk of a fire can be quite high due to the fire load and automated electrical/mechanical machinery. However, the risk of loss of the facility can be critical to on-going business operation and therefore the requirement for fire risk assessment and Early Warning Fire Detection (EWFD) is imperative. This requirement is further warranted when chilled or frozen produce is stored.

High Ceiling Spaces



Automated warehousing facilities are getting larger and taller, the height of many are now 35m - 40m and on occasion beyond this.

Approved, and more importantly, effective detection technologies at these heights is limited. Essentially, only optical beam detectors and aspirating fire detection are a designers options. Optical beam detectors are usually excluded by full height automated racking and robot systems, leaving only aspirating as the logical, practical choice. Detection systems installed to the main ceiling level generally provide design code compliance, however where possible multiple intermediate levels of detection offer further building and stock protection.

A 'cloud chamber' based aspirating detection system designed to provide 'enhanced sensitivity' Early Warning Fire Detection (EWFD) and compliant to the local area design code is recommended for these areas.

Mezzanine Levels

Mezzanine levels are often an integral part of the building and storage system design of automated warehousing facilities.

Stored product and conveyor systems add to fire load and fire risk in these areas and so the requirement for early intervention for a potential fire threat is crucial.

Early Warning Fire Detection (EWFD) can be provided by an aspirating detection system, which can be interfaced via the main building fire alarm system, to shutdown plant and reduce the threat of fire spreading between different mezzanine levels and other areas.

An aspirating detection system designed to provide 'enhanced sensitivity' and compliant to the local area design code is recommended for these areas.

Multi-award Winning Aspirating Detector Technologies and Solutions

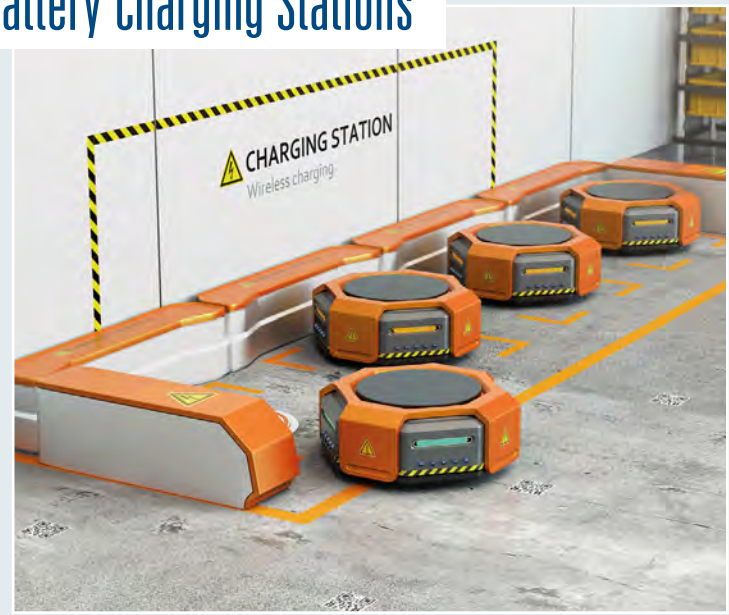
Cirrus CCD

ProPoint Plus

Cirrus HYBRID


ADRDP

Battery Charging Stations



One of the highest fire risk areas within an automated warehousing application is the Battery Charging Stations. Battery operated Robots and Pick & Place modules require charging on demand and therefore the stations are generally available 24/7.

A known potential fire risk is the connection point between the robot and the charger unit. An incorrectly mated connection can cause arcing and lead to a fire which can then be distributed by the robot around the warehouse.

A localised 'cloud chamber' based Very Early Warning Fire Detection (VEWFD) system designed to provide 'high sensitivity' and where required compliant to the local area design code, is recommended for these high risk areas.

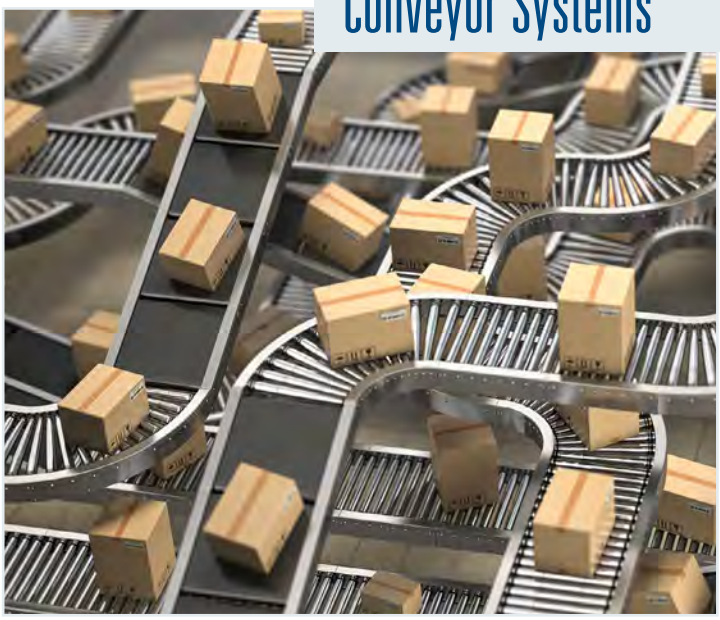
Conveyor Systems

Many automated warehousing applications include intricate, and in some cases, fast moving conveyor systems.

A significant risk with conveyor systems is the potential for a fire condition to rapidly distribute fire particles to other parts of the warehouse or even other buildings.

It could therefore be beneficial to have a localised Early Warning Fire Detection (EWFD) system installed along the length of these conveyor systems.

A further concern for fire risk in conveyor systems is the quantity of electric motors powering the conveyors. These can become contaminated with dust and overheat creating a potential fire threat.



Reference Projects

Project	Location
TNT	UK
Ocado	UK, France, Sweden, Canada, USA
Amazon	Spain & UK
Flower Dist. Centre	The Netherlands
ASDA Walmart	UK
ThredUp Inc.	US
Bernardo Ecenarro (BESA)	Spain
Yantian Port, Shenzhen	China
China Merchants	Djibouti, Africa
TJ Morris	UK
Luís Simões Logistics	Spain
Target	US
Eastern Airlines Cargo Warehouse	China
Lineage	UK
Xiamen Airport Warehouse	China
Volkswagen Motors	Spain
Shanghai Xinshida Electric Co.	China
ARCO	UK
Shenyang Cainiao	China
Shanghai ProLogis Cold Storage	China
SEAT Motors	Spain
Nanjing Cainiao	China

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