Alarmline

LINEAR HEAT DETECTION NEWSLETTER *MARCH 2002*

Thriller In The Chiller

Somerfield, one of the leading UK food retailers, has installed a showpiece Alarmline system in a chiller warehouse at its regional distribution centre in Tewkesbury.

The fire risk in the 62,000 ft² temperature-controlled warehouse consists mostly of combustible food packaging materials in roll cages and high-level racking. Sources of ignition from fork-lift trucks and electric cabling are kept to a minimum through good housekeeping, but despite this Somerfield was committed to installing the best fire alarm system possible.

Early detection was deemed crucial not only to save lives and property, but also to ensure the warehouse remains fully operational 24-7 to avoid any costly downtime. Average volume through the site, which services 240 supermarkets in the Midlands and South-West, is half a million cases per week.

Steve Bushell is Facilities and Site Services Manager for Wincanton, the logistics firm appointed by Somerfield to manage and operate the site. He remembers the trouble they had in the past with conventional smoke detectors mounted on the ceiling: “The problem was the smoke given off in the early stages of a fire was not buoyant enough to reach the high level detectors. To make matters worse the smoke could be dispersed by air turbulence in the warehouse caused by 46 evaporator fans blowing out cold air, hot lighting, and draughts from the goods-in bays. We also had false alarms caused by exhaust fumes from the vehicles on the loading bays”.

Chiller warehouse is wired for safety with 2.5 km of Alarmline

The new Alarmline system gets around all these problems. It comprises 2.5 km of heat sensor cable installed on the ceiling with 2800 specialist clips. It provides early detection of fire conditions by detecting changes in temperature in localized “hot spots” occurring on small sections of the cable as well as over its entire length.

The cable consists of two major components: a small diameter sensor cable and an interface module. The sensor cable is constructed with a negative temperature coefficient (NTC) material, where a change in temperature results in a decrease in resistance of the sensor. The interface module interprets this resistance

change and provides an output to a fire control panel once the temperature alarm set point is exceeded

The system is programmed to withstand the ambient temperature in the chiller of 1.5 to 3.0 °C without an alarm being raised. However, the alarm is triggered if a one metre section of the cable suffers an abnormal temperature elevation to 105 °C.

The entire project from the initial survey, through supply and installation, to commissioning was handled by Spectrum Fire Protection (UK) Ltd. Systems Manager Paul Kerman comments "We divided the warehouse into eight zones and carefully designed a cable layout for each one. The great thing about Alarmline is it's really easy to install. Its small bend radius meant we could shape it to fit into exactly the right places on the ceiling. It really does reach the parts other detection systems can't!"

Alarmline is ideally suited to the harsh environment of a chill store that causes other detection devices to be unreliable or difficult to use. Specially coated with nylon, it can be used at temperatures as low as –65°C. This gives Somerfield the option of converting the chiller to a freezer warehouse in the future without incurring any additional cost.

Each zone sends an alarm signal to an Alarmline LHD4 Control Unit which is fully integrated with an intelligent analogue addressable fire alarm system also installed by Spectrum. Once the fire alarm is activated a call is made to Gloucestershire Fire & Rescue Service who can then intervene quickly to nip any fire in the bud and so reduce damage to a minimum.

Another important advantage of the Alarmline system over other types of detection is that it requires very little maintenance. This is a godsend in large warehouses like those operated by supermarkets where access is restricted due to fast-moving roll cages, trucks, and personnel working in the area.

Minimal maintenance is big advantage where access is restricted

"It's the sheer quality and professionalism of the workmanship at this installation that sets it apart", says Richard Slipper, Senior Sales Engineer for Alarmline at Kidde Fire Protection. "With the rise in the number of distribution warehouses being built by internet-based companies to house stock for e-commerce, we're noticing a sharp rise in demand for Alarmline systems like this installation at Somerfield".

Further information:

Kidde Fire Protection
Thame Park Road, Thame
Oxfordshire, OX9 3RT
Tel: +44 (0) 1844 265003
Fax: +44 (0) 1844 265156
Web: www.kfp.co.uk
Contact: Richard Slipper
E-mail: rslipper@kfp.co.uk

Spectrum Fire Protection (UK) Ltd
49 Phoenix Park Avenue Road
Aston
Birmingham
B7 4NU
Tel: 0121 359 8881
Fax: 0121 359 7778
Web: www.spectrumfire.co.uk
Contact: Paul Kerman

Somerfield
c/o Wincanton Logistics
Northway Lane
Ashchurch
Tewkesbury
Gloucestershire
GL20 8JH
Tel: 01684 278500
Fax: 01684 278501
Web: www.wincanton.co.uk
Contact: Steve Bushell

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