

Enhanced AS detectors

Bosch Security Systems is extending its 420 Series Aspirating Smoke Detectors with a version offering very early detection and localisation of fires. The new Aspirating Smoke Detector TM features ROOM-IDENT.



This feature enables individual identification of up to five rooms and quickly tracks down the source of a fire in four phases, displaying the result both on the unit itself and on the Bosch Modular Fire Panel 5000 Series. The new TM version also features a ten-digit bar graph for monitoring smoke pollution.

The TM detector unit is capable of protecting areas of up to 400 square meters even under challenging environmental conditions. Potential application areas include hotels, small server rooms and small high-rise warehouses.

The complete 420 Series provides three models, all specially designed to interface with the Bosch Modular Fire Panel 5000 Series with the extended features of LSN improved technology (Local Security Network). Bosch's LSN bus system uses the master-slave principle, with all smoke detectors, remote indicators, fire alarm devices, intrusion detectors, keypads, arming devices and sounders connected to it. The network can be flexibly structured with loop, stub or tee-off configurations; the possibilities are additionally extended by interfaces with inputs and outputs and zone expanders. Power and data are transmitted over two wires.

Chinese approval for FIRERAY

Fire Fighting Enterprises has confirmed that two of its beam-type smoke detection systems, the FIRERAY 2000 and FIRERAY 5000, have recently been certified by the China National Test Centre (CNTC) and are approved for sale and use throughout the country.

This certification is in addition to the approvals already awarded by the relevant authorities in the UK, the USA, Canada, France, Germany, Sweden and Belgium.

The FIRERAY 5000 is the latest beam detector from FFE, featuring laser-guided installation, motorised auto-alignment and optimisation, and automatic gain and drift compensation technology as well as a compact ground-level control unit. These features work independently and collectively to make the wide-area smoke detection system easier than ever to install, set up, operate and maintain – as well as reducing the chance of false alarms.

Research by the company indicated that the vast majority of false alarms and problems with beam detection systems were due to incorrect installation or setup, but the new manual guidance and automatic alignment features will help to prevent this. FFE also provides training, after-sales service support, and an extensive product guide to help make the most of their products.

Beam-type smoke detectors are particularly suited to installations involving large, spacious areas: shopping centres, car parks, schools, airports, warehouses and places of public gathering. By detecting smoke along a corridor of space with an infra-red beam that is reflected off a plate on the opposite wall, each FIRERAY 5000 unit can cover an area of approximately 1,500m². The FIRERAY 2000 operates similarly, however it is an end-to-end detector that uses separate heads for beam transmission and reception. Beam detectors' large area coverage means less units, reduced wiring, and faster and less intrusive installation compared to the 14 or so traditional point-type detectors that would be needed to effectively cover the same space.



Extinguishing a stubborn transformer

The Fire Department of New York (FDNY) recently turned to the Fire Suppression Encapsulator Agent F-500, to extinguish a stubborn substation transformer fire containing 3,600 gallons of mineral oil, writes Stan Tarnowski, Market and Field Operations Manager/North America, Hazard Control Technologies.

FDNY crews arriving at the scene reported heavy fire showing from a Consolidated Edison (Con Ed) 40 KV Sub Station Transformer. There was a threat to exposures, one being a three story community center building directly adjacent to the burning transformer. Crews immediately placed large water curtains between the fire and the community center to protect it from radiant and permeating heat damage, and the threat of combustion of interior class A materials.

Since this substation was in an operationally charged state, crews had to postpone firefighting efforts for about an hour, until the Con Ed field personnel could confirm that the power was disconnected. Intense heat and toxic smoke emanated from the transformer during this waiting period.

Once the Con Ed personnel confirmed that the power was disconnected, suppression activities began, first using 2,000

Toxic smoke was emanating from the main body of the fire.





FDNY applying F-500 encapsulating agent.

pounds of dry chemical discharged from a special unit through hand-lines directed at the base of the transformer fire. After the discharge of the dry chemical, the special operations HAZMAT 1 Commander, Lt. John Cassidy, recognised that the dry chemical had initially knocked down some of the flames momentarily but the fire was still in a free and complete burn state.

The decision was made to use the F-500 Encapsulator Agent, which is carried on HAZMAT 1 and Squad 288 for special fire incidents involving Hazardous Materials, to suppress the Class B fuel (mineral oil) that was burning in the transformer. A single 1.75" hand-line was used flowing a 3% mixture of water and F-500 to knock-down the fire and remove the heat in less than a

minute. In all, crews consumed approximately 5 gallons of F-500 concentrate for the extinguishment, and a total of 38 gallons to completely cool all exposures including an additional transformer that backed up to the one on fire.

F-500 is not a traditional foam firefighting agent. Instead, F-500 uses unique suppression mechanics to encapsulate the hydrocarbon vapor and liquid while immediately (in seconds) reducing extreme temperatures to a point well below the auto ignition temperature. Once the F-500 stream is applied and the fire is extinguished, there is not enough heat left to re-ignite the liquid or vapor. This provides the burn back resistance when using F-500, in contrast to traditional firefighting foams that create an insulating blanket that can trap heat. F-500 enables a quick and permanent extinguishment.

In 1998, tests were conducted at the Philadelphia Electric Company (PECO) by HCT field operations staff to determine the conductivity rate when F-500 at 3% was applied through a Type III application to the fire (typical firefighting nozzle and hand-line operation). The electrical grid was charged to 40,000 volts (40KV) of electricity and F-500 at 3% solution was applied through the grid with a 10 degree pattern setting on the discharge nozzle. The staff at the PECO training grounds was amazed to see that there was a reading of only 0.03 milliamps of conductivity charge back to the nozzle.

The experience with this incident, combined with the knowledge of the PECO testing, has motivated Con Ed operations personnel to conduct field testing with HCT personnel on higher energy grids, to confirm the ability to start suppression operations on sub station fires such as the one noted above without the threat of electrocution to fire personnel operating the suppression hand-line.



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