

INTERNATIONAL

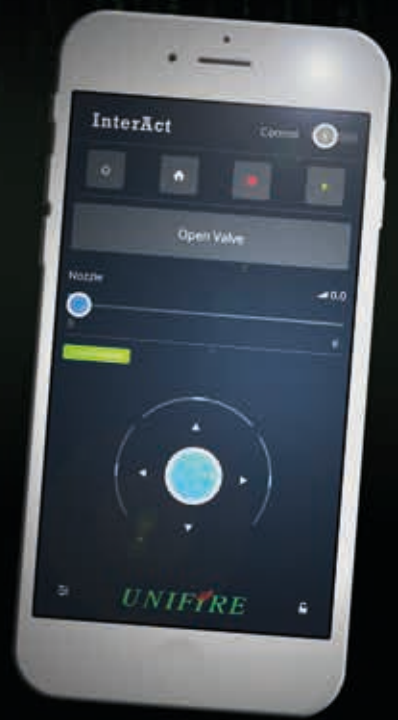
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FIRE FIGHTER

REPORTING TO MUNICIPAL, INDUSTRIAL AND FIRE TRAINING PROFESSIONALS



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Unifire

Swedish solution for high-rise building fires

Swedish fire fighting nozzle specialists, Unifire AB, have developed what may very well usher in a new era in fire fighting: a fully automatic fire detection and extinguishing system, called FlameRanger™. The system, according to Unifire, is capable of detecting and extinguishing a fire in seconds of its breaking out, with minimal use of water, and without any human intervention required.

Unifire has specifically designed a special version of the system, called FlameRanger XT™, to protect the exteriors of high-rise buildings that are at a particularly high-risk of fire due to the material used in the exterior panels – a continuing problem that has been linked to a number of devastating high-rise exterior fires in the UAE and elsewhere.

The problem solved

Unifire spokesman, Roger Barrett James, explains that, “Fire grows exponentially – all fires start out small, but then grow extremely quickly as long as they have oxygen and a fuel source. If you can both

▼ **InterAct enables any device with authorization to monitor and control the FlameRanger system.**



detect a fire and begin extinguishing it right away with a high volume of water, directly at its source, then you not only maximize your chances of successfully extinguishing it, but you also minimize damage and use the least amount of water or agent necessary to extinguish the fire.”

The FlameRanger was designed specifically to achieve both of these goals – fast detection, and fast suppression. Full-scale tests of the system have proven the technology to be astonishingly effective, and Unifire indicates that the system is now available on the market, ready to be installed on high-risk buildings and in a wide-range of other applications, including the protection of oil & gas facilities, aircraft hangars, tunnels, warehouses, stadiums, factories, and other large-volume spaces, both on- and off-shore.

How it works

The system works by combining advanced Tyco FlameVision FV300 IR array flame detectors with Unifire’s highly advanced, Force™ high-flow, stainless steel 316L robotic nozzles (a new generation of remote control fire monitors), which feature industrial-robot-type brushless (BLDC) motors, providing extreme accuracy and long life.



When a fire breaks out, it is detected in seconds by the flame detectors, which feed the fire’s coordinates to the system’s advanced electronics, called the TARGA™ PLC. By combining the two dimensional position data from two separate flame detectors, the system’s software is able to triangulate the size and position of the fire in three-dimensions. With this information, the system then aims the robotic nozzle at the fire, and opens a valve to turn on the water and begins extinguishing the fire with a high volume of water or foam, with pinpoint accuracy. According to Unifire, the entire process of detecting a fire, triangulating its 3D size and location, aiming the robotic nozzle, opening the valve and commencing suppression, typically takes only 5-15 seconds.

The system continuously updates the fire’s position 10 times a second, fighting the fire dynamically, in real time, eerily similar to the way a human firefighter would.

As soon as fire is no longer detected, the system signals the valve to close, stopping the flow of water. The system continues detecting for the presence of fire, however, and will recommence suppression should any fire break out again.

By accurately directing a high-volume of water onto the fire so quickly after it has ignited, the system has in full-scale fire tests proven capable of fully extinguishing fires in 20 seconds or less from ignition.

Importantly, the FlameRanger has an extremely low risk of false alarms. Each of the FV300 flame detectors used in the system employs highly advanced algorithms to detect flame, and thus have an extremely low risk of false alarms. Moreover, the FlameRanger system will not react unless two detectors both independently detect a fire, at the same time and at the same location – making the chances of a false alarm negligible, according to Unifire.

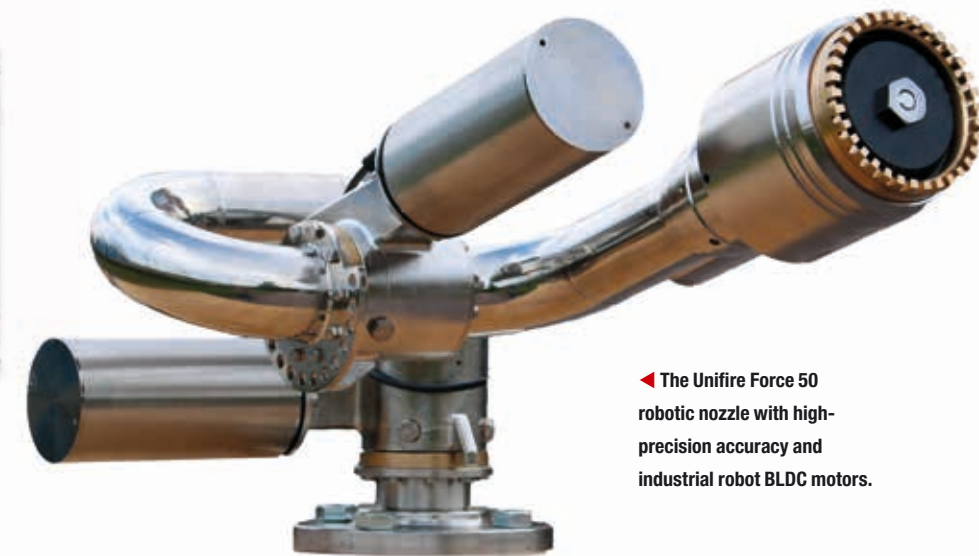
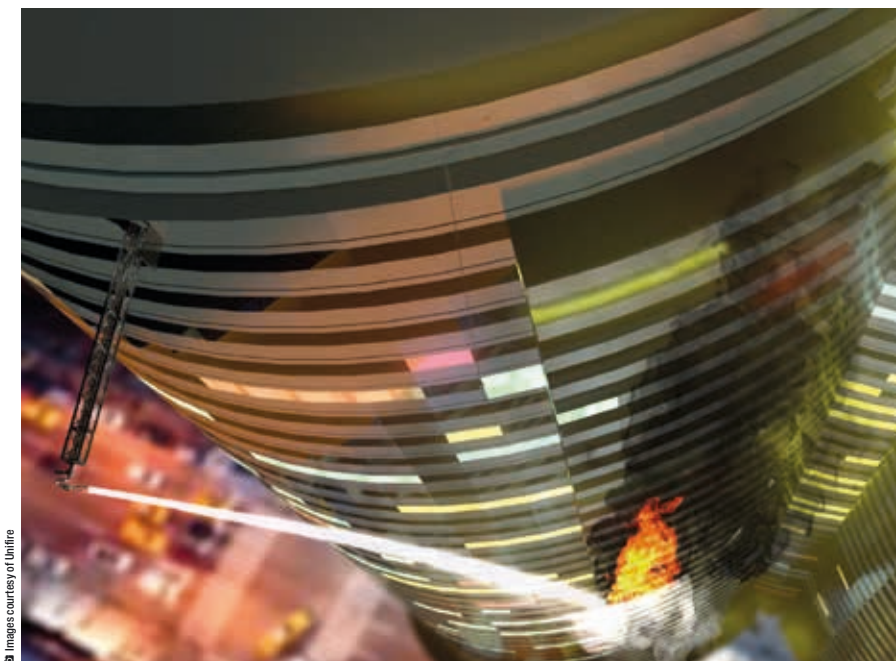
In essence, the FlameRanger is very much like having a firefighter on duty 24/7/365 – it reacts immediately and fights fire very much like a human firefighter.



▲ **InterAct enables any device with authorization to monitor and control the FlameRanger system.**

According to Mr James, “In fact, one of the tests conducted pitted a human operator controlling the robotic nozzle with a joystick against the FlameRanger fully automatic guidance of the same robotic nozzle. The human operator extinguished the test fire in 20 seconds with approximately 380 liters of water, whereas the FlameRanger extinguished the same sized test fire fully autonomously in only 15 seconds and used only approximately 250 liters of water. In short, the automatic system worked faster and more efficiently than the human operator.”

▼ **The Unifire Force robotic nozzle can be mounted on a boom and hidden from view in the building’s interior, such as on service floors. In the event of fire, it extends outward and begins extinguishing, retracting again when the fire is out.**



◀ **The Unifire Force 50 robotic nozzle with high-precision accuracy and industrial robot BLDC motors.**

Networked systems with InterAct™ GUI

Another revolutionary aspect of the system is the fact that an infinite number of systems can be networked together, and all can be remotely monitored and controlled over Unifire’s new InterAct™ graphical user interface (GUI). Each system can be accessed from any standard computer, laptop, tablet or smartphone with a secure network connection and proper authorization, including over the Internet.

If a fire is detected on any system, authorities can be alerted immediately and authorized personnel can not only monitor the entire network but also take control remotely. Firefighters on the ground are thereby able to take control at the scene, whether or not the automatic feature has been engaged.

Moreover, each robotic nozzle “cell” in the system is able not only to work independently, but can also take in and react to data from the other “cells”. This means, for example, that systems can be programmed so that “a cell which detects a fire would suppress it, while the neighboring robotic nozzle could react by either assisting, or cooling and protecting surrounding equipment or structures,” Mr James explained.

Test results

The FlameRanger technology underwent a series of full-scale fire tests in late 2015, which were conducted by the U.S. Naval Research Laboratory and Jensen Hughes. The results were, according to Mr James, “nothing short of amazing. Running completely autonomously with no human intervention whatsoever, the system was able to detect the fires and extinguish them in between 5 and 20 seconds.”

At all times, the system uses real-time data to direct the nozzles. This means that if the fire moves, changes size or position, or more fires break out, the robotic nozzle reacts accordingly, capable of suppressing up to four separate fires detected simultaneously.

Future

Unifire first unveiled the technology in Dubai in January 2016 at Intersec, and has since been in talks with developers and governmental authorities. The company is optimistic that the first systems will be installed as early as 2017.

➔ **For more information, go to www.Unifire.com**

Tipsa

As a leading manufacturer of Fire fighting Equipment with more than 60 years of experience, TIPSA is committed to provide first-class products to professionals who risk their lives in the line of duty. TIPSA produces hoses, nozzles and GENFO water back packs for municipal, industrial and forestry brigades.

TIPSA offers a complete range of High Quality Fire Fighting Nozzles including the models of Selectable, Constant, Automatic and variable Gallonage Nozzles mostly covered by VIPER Nozzles Line.

TIPSA it is an Innovative company that it is constantly improving its product line in order to offer better products using the latest technologies. The BLUE DEVIL line it is the reflect of the newest developments of TIPSA that it is offering a complete line of high performance selectable flow nozzles going from 25 up to 950lpm (5 to 250 GPM). The BLUE DEVIL line of Nozzles accomplishes the main standards such as EN-15182-1, EN-15182-2 type 3 and NFPA 1964 Standards.

TIPSA it is constantly certifying nozzles, the most relevant product certificates of nozzles are EN-15182-1, EN-15182-2 type 3, GOST-R, CNBOP-PIB and MED.

TIPSA is collaborating with universities, technological centres and laboratories to offer new solutions like RYLSTATIC, a patented system that works without spinning teeth and creates a more uniform FOG with smaller water droplets increasing the humidification power. RYLSTATIC system is able to create a good fog even at lower pressures due to its low friction losses. RYLSTATIC it is available in the BLUE DEVIL and VIPER ATTACK line of nozzles.

For more information, go to www.tipsa.com



Unifire

Unifire AB of Sweden has introduced to market its next-generation Force™ remote controlled fire fighting robotic nozzle systems.

These state-of-the-art systems feature high-end, industrial-robot-type brushless (BLDC) motors, stainless steel 316L construction, and cutting-edge TARGA™ PLC. TARGA enables Unifire to now offer a wide-range of advance control system options, which include the Unifire's InterAct™ graphical user interface (GUI), the Unifire FlameRanger™, a fully automatic fire detection & extinguishing system, and more.

InterAct provides users the ability to securely monitor and control one or more robotic nozzles and other connected peripheral devices from a touchscreen PC in a vehicle cab, or from a computer, tablet, smart phone or any other web enabled device, such as in a control room. The intuitive interface has a virtual joystick and can display the nozzle's position, tank levels, open and close valves,

show alarms, show camera feeds, provide function buttons, and monitor and control any other device on the system. Unifire customises the interface to its customers' needs, including language settings, functions, etc.

Unifire's FlameRanger is a revolutionary system that uses IR array flame detectors to automatically detect and locate the exact size and 3D position of fire and begin suppressing it with the Force robotic nozzles, with pin-point accuracy, within seconds of detection. The system automatically shuts off the water as soon as the fire is extinguished, yet remains in active stand-by 24/7/365. In multiple full-scale fire tests conducted by the U.S. Naval Research Laboratory and Jensen Hughes, FlameRanger was able to extinguish fires in 20 seconds or less.

For more information, go to www.RoboticNozzles.com www.AutomaticFireFighting.com



Williams Fire & Hazard Control

Williams Fire & Hazard Control, part of Tyco Fire Protection Products, is a leading brand in innovative monitor and nozzle technologies to combat the most challenging industrial and municipal fires. Our extensive experience in developing monitors and nozzles has helped to shape the industry. From the world's first self-educating nozzles to the patented Hydro-Chem nozzles, Williams Fire & Hazard Control products are engineered to offer the greatest reach, muzzle velocity, and stream efficiency to overcome real-world challenges and help protect personnel. Our monitor and nozzle packages offer flows up to 37,800 lpm (liters per minute). Innovative

designs provide unique features to enable the flow of firefighting foam solution through on-board self-education, or remote proportioning. Hydro-Chem nozzles deliver dry chemicals along with water or foam solution to combat three dimensional or pressurized fires.

For more information, go to www.williamsfire.com



By firefighters.
For firefighters.



The passion to protect. The strength to deliver.

The equipment we build is the equipment we use in fighting the world's most challenging fires. With more than 30 years in the field, Williams Fire & Hazard Control has earned a reputation for response equipment engineered with the firefighter in mind.

Learn more www.williamsfire.com



Offering a full array of C6 Foam Agents

