



# AUTONOMOUS DETECTION SYSTEM

using thermal / mechanical  
release

DUAL  
TASK

FIRE  
DETECTION

# **EFFECTIVE AND RELIABLE DETECTION AND CONTROL**



When designing or installing a fire protection system, the top priority is to end up with a safe system that works in any circumstance. For this reason the detection system must ensure operation whatever happens.

In its ongoing quest to provide the most complete equipment, SIEX has developed SIEX™ TK-COMPLEX, an innovative automatic detection system. It works mechanically, without external power supply: a network of thermal sensors connected by a tensed wire triggers the release in the event of a fire.

It works as the main detection and release system or as a supplementary, auxiliary system when the protected asset has special value or if the electronic detection could fail due to external causes.

Its release, fully standalone and automatic, ensures the activation of the detection before any adversity, providing maximum safety when it comes to protecting special equipment or significant fire hazards.

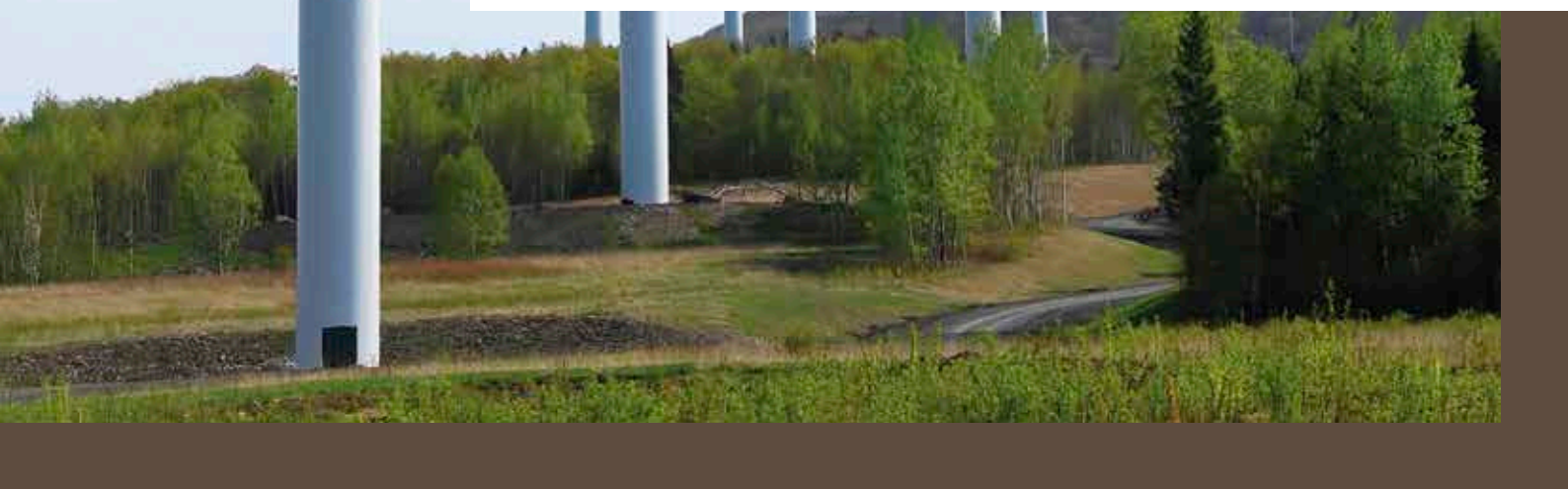


## MECHANICAL DETECTION: FULL PROTECTION

SIEX™ TK-COMPLEX provides full protection by allowing control of several detection lines in the same installation. It can also feature cross-detection, providing a double check prior to release, to ensure complete safety and prevent accidental discharge.

In some cases, it is not adequate or sufficient to rely solely on electronic components to detect fire and in others it is not feasible when power supply is not guaranteed. Likewise, for protected areas where there is a high risk of explosion or electrical fault it is necessary to have additional mechanical detection. These units are ideal thanks to their easy installation, maintenance and extreme reliability.

SIEX™ TK-COMPLEX is fully self-contained and highly efficient. It ensures that the fire is located without power supply. The equipment is completely effective and suitable, whether controlling large facilities or small volumes. It can be tailored to any circumstance and delivers absolute release guarantee in fire protection systems.



It stands out for the simplicity of its operation and release. It can also be manually release remotely, completely safe for people.

**ITS DISTINGUISHING FEATURE IS BEING ABLE TO INCORPORATE DOUBLE-LINE DETECTION.**

**IT CAN WORK TWO WAYS:**

#### **CROSS-DETECTION LINES**

They need double confirmation of the existence of fire to activate the extinguishing system. **Both lines should be activated in at least one of the control points for the release to be conveyed.** It thus ensures a totally safe release which eliminates any risk of accidental release.



#### **INDEPENDENT DETECTION LINES**

They are installed through different detection paths and thus cover large spaces. **In each line, more than 40 sensors and pulley elbows can be installed, covering a distance of over 60 metres.**

Since it can include two lines, twice the surface is protected with a single panel, which translates into significant savings.

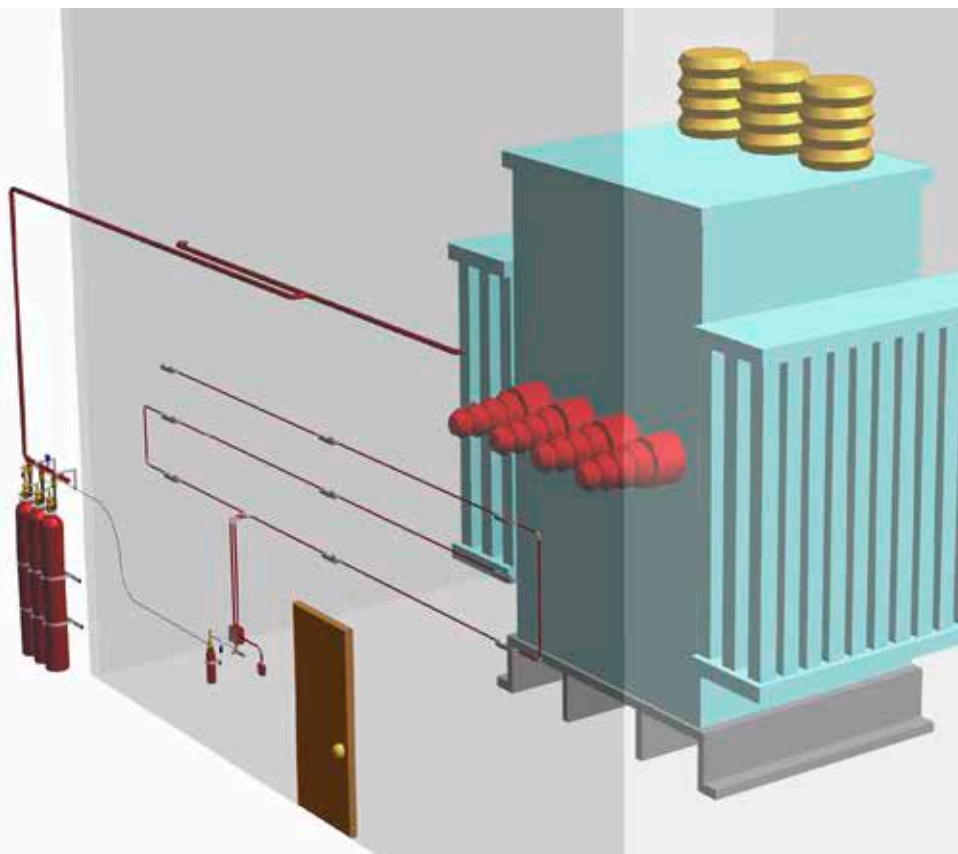


## EACH HAZARD REQUIRES A TEMPERATURE

Not all protected hazards or enclosures are the same temperature and, therefore, the detection line acts by means of a thermal fuse or bulb calibrated to rupture at various temperatures. The proper protection of each area is thus ensured in a way that meets its own characteristics.

## OPERATION

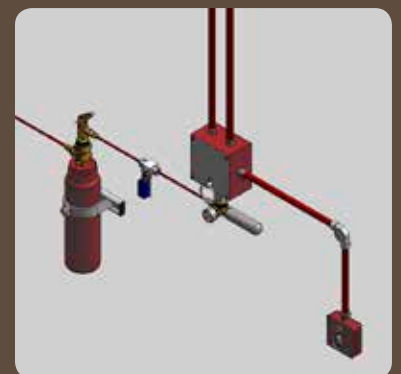
SIEX™ TK-COMPLEX releases an inert gas cylinder or cartridge responsible for actuating the modular cylinder or cylinder banks storing the extinguishing agent (gas, powder, foam, water, etc.) or directly triggering the main or modular cylinder. The agent is thereby discharged immediately after detection completely autonomously.



## MULTI-VARIABLE DESIGN

Criteria are set out in the selection of components based on all possible variables that the installation may require, including:

- Path of the detection lines.
- Most appropriate temperature for the detection kits in each hazard.
- Standard-response or quick-response heat-sensitive bulbs.
- Manual release and path layout.
- Extinguishing system activation.



# FEATURED COMPONENTS

■ CONTROL PANEL



■ PULLEY ELBOWS



■ PULLEY TEES

■ REMOTE MANUAL WIRE PULL



■ VENTILATION FLAP RELEASE



■ SHUTOFF VALVES

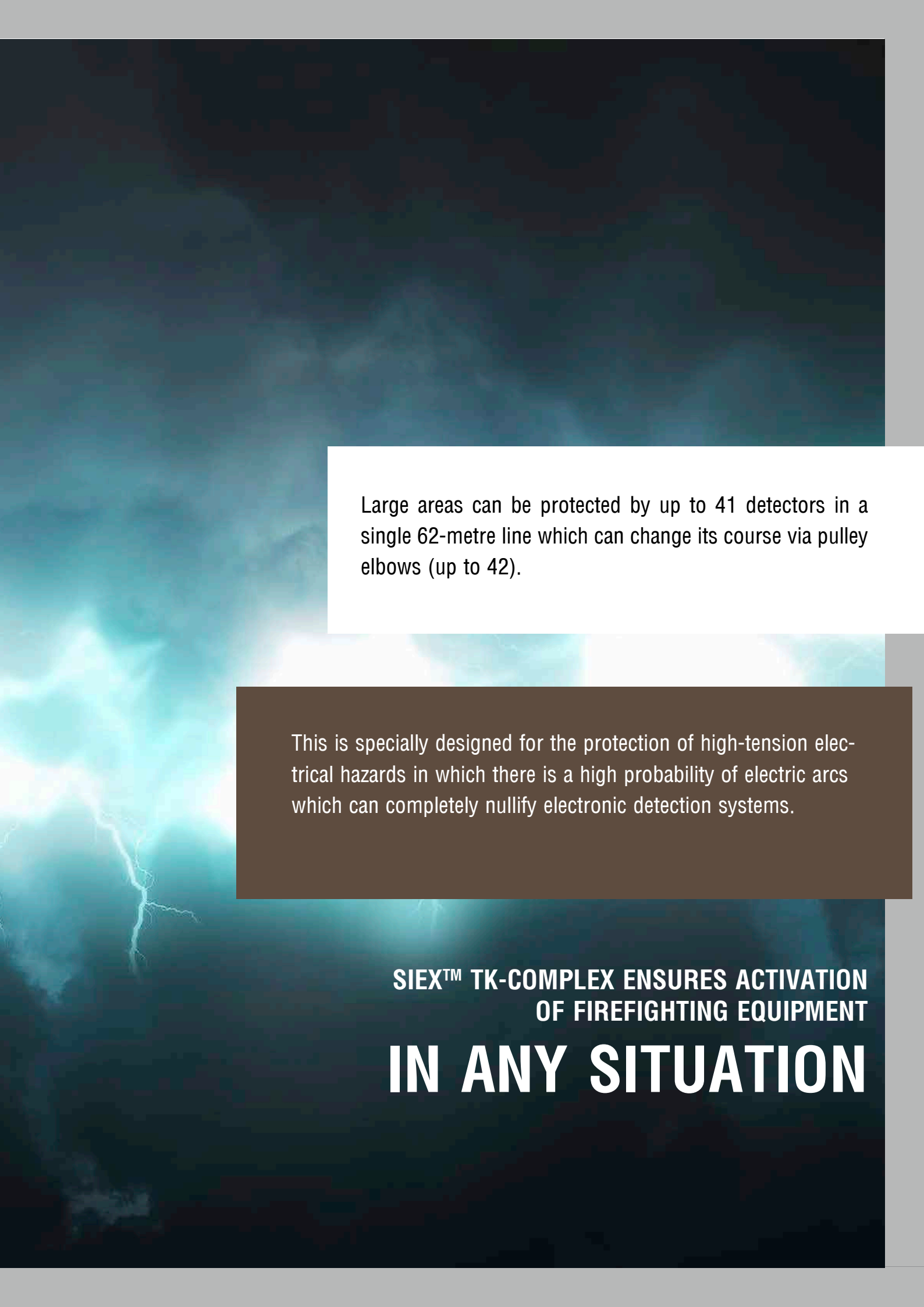
■ LIMIT SWITCHES FOR ELECTRICAL CONTROLS



■ ETC.







Large areas can be protected by up to 41 detectors in a single 62-metre line which can change its course via pulley elbows (up to 42).

This is specially designed for the protection of high-tension electrical hazards in which there is a high probability of electric arcs which can completely nullify electronic detection systems.

**SIEX™ TK-COMPLEX ENSURES ACTIVATION  
OF FIREFIGHTING EQUIPMENT**

**IN ANY SITUATION**

## EASY INSTALLATION AND LOW MAINTENANCE

Another reason to use this type of detection is ease of installation and minimal maintenance.

It is easy to install the control panel and detection lines, adapting them to the extinguishing system. Its simple mechanism allows straightforward installation and with very little training.

The SIEX™ TK-COMPLEX detection system requires minimal maintenance, and checking its proper operation is very easy. Maintaining the fixed extinguishing system to which it is connected is minimal, since it streamlines all necessary tasks.

Its installation in industrial kitchens stands out as one of its most demanding applications. Its use in kitchen hoods and other appliances ensures the detection of uncontrolled fire that can occur due to oils and grease.





# WHY TK-COMPLEX?

## TOTAL AUTONOMY

Needs no external energy for release, except the heat produced by the fire itself, so it can be installed anywhere and its operation will not be compromised. It provides safety even in an explosion that would disable conventional electronic detection.

## FULL ADAPTABILITY

: Its components are chosen and arranged based on the hazard characteristics, fitted with fuses calibrated at different temperatures. Cross-detection can be used for double verification. It can also be installed as a primary detection means or as a complementary means to electronic detection.

## INSTALLATION FLEXIBILITY

Installation is very simple. The system can be installed in any room arrangement. Allows easy reset due to the simplicity of its components.

## MONITORING OPTION

By using a supervisory switch, the status of the mechanical control unit can be monitored for greater safety and continuous monitoring of the hazard. Allows remote electric control of any device.

## GAS SHUT-OFF VALVE

It is very often necessary to shut off the supply of fuel gas into the protected enclosure. This system can be installed in combination with a mechanical gas cutoff valve for this purpose.

## REMOTE ACTIVATION

The manual release can be located at a great distance from the control panel. Staff can access it without ever being in danger.

## INCREASED SAFETY

Responde en caso de fallo de los elementos de detección electrónicos o conjuntamente con ellos. Con detección cruzada se impiden falsas alarmas y la activación intempestiva del sistema de extinción.

## RESISTENTE Y FIABLE

Reacts in case of failure of the electronic detection elements or together with them. Cross detection avoids false alarms and the untimely activation of the extinguishing system.

## ROBUST AND RELIABLE

The quality of components ensures resistance to vibrations and other disturbances. Tested to operate up to 500 times straight with total reliability.

## GREATER NUMBER OF COMPONENTS

The SIEX TK-COMPLEX system can be installed with the least design constraints on the market, ensuring maximum flexibility.

## QUALITY GUARANTEE

The components and assembly are approved and endorsed by the UL international organization.





WIDELY USED FOR APPLICATION IN INDUSTRIAL KITCHENS.

Installed in hoods and other kitchen appliances, it detects the un-controlled fire produced by oils and fats faster and more effectively than any other system.



# APPLICATIONS

Its features and release method make it ideal for installation in a wide variety of hazards, either as the principal detection system or as a supplementary system, ensuring activation of the extinguishing equipment.

The most common are:

- INDUSTRIAL KITCHENS
- TRANSFORMERS
- ELECTRIC GENERATORS
- SMALL FUEL TANKS
- PAINT SPRAY BOOTHS
- HAZARDOUS AND EXPLOSIVE MATERIAL
- STORAGE AREAS
- PETROL STATIONS
- ALL TYPES OF ISOLATED HAZARDS
- SMALL ENCLOSURES
- HAZARDS WHERE POWER SUPPLY IS A PROBLEM
- ETC.

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