



## HeatSCREEN<sup>®</sup> MHD 535.

High tech temperature detector.

**FIRE ALARM**

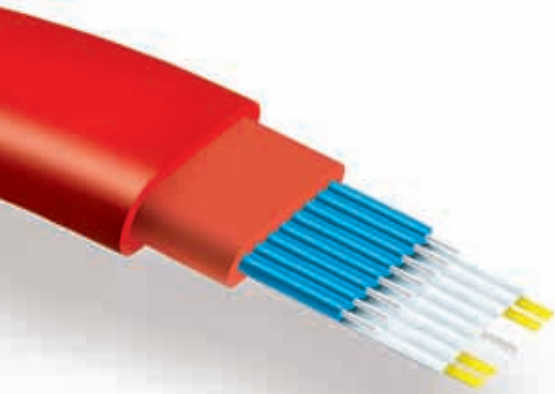
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S E C O N E T

**HeatSCREEN® MHD 535**



# Precision even under extreme conditions.



## Precise location of the fire.

The distance of sensors in the tunnel area can be chosen on an individual basis in accordance with necessary requirements. Sources of fire can be located precisely and countermeasures – e.g. tunnel ventilation – can be controlled efficiently.

## Up to 2,000 metres per evaluation unit.

For longer distances, evaluation units are interposed, which are connected with one another over the FT-Net.

- **Line type heat detector using multiple spot principle.**
- **For safe and rapid detection and precise location of fires.**
- **VdS approval pursuant to EN 54-5 classes A1, A2, B and C.**

## Previously unattained precision.

Where heat or frost, dust and salt vapour, high humidity, aggressive gas build-up and physical demands are commonplace occurrences, traditional fire detection measures rapidly reach their limits. Under extreme conditions, only the HeatSCREEN MHD 535 high tech line type heat detector is able to detect a fire quickly safely and precisely. The sensor cable has already proven itself in countless tunnels, cable conduits, underground car parks, cavity ceilings, industrial plants and power stations.

## Top quality from Europe.

The HeatSCREEN MHD 535 is a robust, simple to install cable, within which fast-reacting semiconductor sensors have been integrated. They detect both the absolute temperature as well as the increase in temperature, and can be individually configured as well as individually analysed. HeatSCREEN MHD 535 was developed in Switzerland and is manufactured in Germany and Switzerland.



## Saving time in road and rail tunnels.

Accidents in tunnels in the past have led time and time again to catastrophes and have triggered a lengthy discussion on safety. Thanks to rapid detection and alarm notification more users of tunnels can be rescued in the event of an emergency, and effective rescue efforts can be deployed more quickly. For good reasons the HeatSCREEN MHD 535 temperature sensor cable is already globally deployed in over 150 kilometres of tunnels worldwide.

## Infra-red-sensitive sensors.

The sensors of the HeatSCREEN MHD 535 line type heat detector react immediately to increased heat radiation. Strong airflows within the tunnel therefore do not delay detection.

## Robust and reliable.

Damage to the cable does not lead to a total failure: The cable is supplied with power and data read out from both ends, so that a failure is restricted to the defective section of the cable.

## Simple installation on the ceiling.

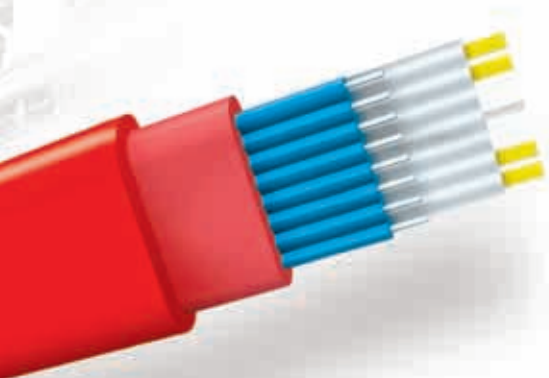
Special fitting clips offer flexibility for the cable in the event of temperature fluctuations.



**HeatSCREEN® MHD 535**



# Quick, networkable detection technology.



- **Ideal for usage in industry and in tunnels.**
- **Can be used in temperatures from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .**
- **ATEX approval for potentially explosive atmospheres.**

## Fire detection in large-scale plants.

In well spread out industrial plants, in power stations, tunnels, in inaccessible cable conduits – e.g. at airports – the completely insulated flexible HeatSCREEN MHD 535 sensor cable reliably delivers data precisely and quickly. Wherever a large number of detectors would be required due to large areas to be monitored, the HeatSCREEN MHD 535 also makes sense from an economic perspective.

A further area for deployment: Areas which are very difficult to access for maintenance work, as the HeatSCREEN MHD 535 works almost maintenance-free.



## Fire zones can be isolated simply.

In order to fulfil the standards for the size of fire zones in spread-out systems, the HeatSCREEN MHD 535 is split into zones of any desired size using Sensor-Separator-Modules (with short circuit isolators). The fault tolerant construction of the cable permits the supply of power and analysing of data from both ends of the sensor cable. In the event of a fault occurring – e.g. if there is a short circuit or physical damage sustained – it is possible to isolate a defective section of the cable or an individual sensor.



## The quickest system on the market.

The system of sensor cables and evaluation units has been optimised to ensure a rapid response from the outset. In various comparative tests with simulated fire loads, it was possible to prove that the HeatSCREEN MHD 535 reacts considerably faster than other systems on the market. The sensitivity of the sensors is  $0.05^{\circ}\text{C}$ , with 250 sensors being read quickly using the patented high speed bus system.

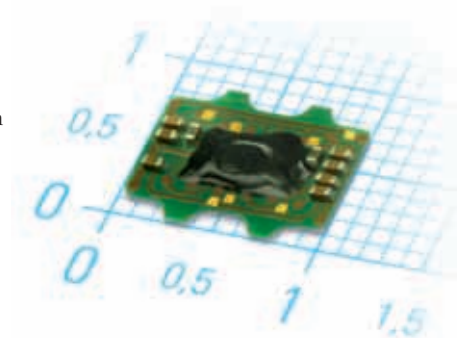
## Individual sensor configuration.

Environmental conditions in industrial plants, in tunnels or on loading ramps can often change within a matter of metres. This makes it necessary to configure every sensor individually.

The HeatSCREEN MHD 535 line type heat detector allows every sensor to be programmed with up to 4 response thresholds for absolute temperature and temperature gradient. There are no usually standard values: Experience gained from processes, temperature courses are used for the adjustment of the sensors – in order to guarantee the highest possible level of safety without deceptive alarms. It is possible to make adjustments using the software at any time.

## Forwarding of data to superordinated systems.

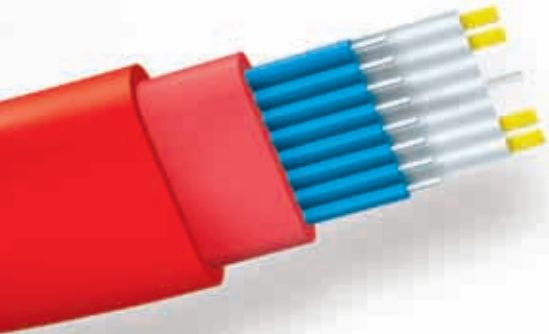
The signal evaluation and alarm generation takes place in the evaluation units. A maximum of 250 sensors can be split into up to 64 reaction groups e.g. fire zones in each cable. The data is forwarded to the fire alarm control panel using 8 group relay contacts (can be extended to 200).



**HeatSCREEN® MHD 535**



# A safe journey the whole way.



- Quick reaction time: The infra-red-sensitive sensors react to temperature differences of even 0.05° C.
- Distances between sensors of 2, 4, 7, 10 and 20 metres or as requested by the customer between 2 and 20 metres.
- Every sensor can be individually configured and can be analysed individually.
- Patented high speed bus for quick data transmission: 250 sensors are read out in 10 seconds.

- Functions safely even when there are harsh environmental conditions.
- Every sensor point can be individually configured.
- Simple and quick installation and commissioning.

## Processor units collect the information.

The evaluation units cyclically query the sensor values and determine the threshold values for every individual sensor. The alarm can be defined both in terms of the absolute temperature or in terms of temperature gradients. Additional external data can also be incorporated using digital inputs.

## Fault-tolerant network FT-NET.

Up to 16 evaluation units can be networked with one another using a fault-tolerant network (FT-NET) for larger monitoring tasks. This network is also used to forward data to a superordinated system – such as a fire alarm control panel.

## MHD Config Software for configuration.

The software was specially developed for the HeatSCREEN MHD 535. With help from the software the response characteristic and reaction characteristic of the sensors is programmed, links and dependencies determined, external data included and alarm and status information visualized.



## The HeatSCREEN MHD 535 in overview.

- The only possibility to establish a reliable system for the early detection of fires in extreme conditions.
- Contamination, mechanic stress, dust, smoke, salt mist, risk of explosion, aggressive gases and liquids do not restrict function.
- Highly flexible cable for simple installation.
- Kevlar reinforcement for the highest tensile load resistance.
- Up to 2,000 metres in a single stretch, up to 250 sensors per cable.
- Can be deployed in temperatures between -55° C to +125° C.

- External data can be incorporated.
- Data transferred to the fire alarm control panel.
- Configuration software with a Windows user interface supports the most important programming steps using wizards.
- Fulfils standard EN 54-5, classes A1, A2, B, C and ATEX protection class for zone 1 and 21.
- Developed in Europe, manufactured in Switzerland and Germany.





## SCHRACK SECONET AG

Headquarter Austria: A-1122 Vienna, Eibesbrunnergasse 18 • Tel.: +43-1-81157-0 • office@schrack-seconet.com

Technical support Fire Alarm Systems Tel.: +43-1-81157-570 • Technical support Health Care Systems Tel.: +43-1-81157-525

### Branch offices Austria:

A-6850 Dornbirn, Sebastianstraße 13a • Tel.: +43-5572-51199-0

A-8055 Graz, Neuseiersberger Straße 157 • Tel.: +43-316-407676-0

A-6021 Innsbruck, Valiergasse 56 • Tel.: +43-512-365366-0

A-9020 Klagenfurt, Feldkirchner Straße 138 • Tel.: +43-463-429362-0

A-4060 Leonding-Hart, Kornstraße 16 • Tel.: +43-732-677900-0

A-5020 Salzburg, Vogelweiderstraße 44a • Tel.: +43-662-887122-0

Czech Rep. • CZ-100 00 Prague 10, V Úžlabině 1490/70 • Tel.: +420-2-74782284

Hungary • HU-1119 Budapest, Fehérvári út 89-95 • Tel.: +36-1-4644300

India • IN-122002 Gurgaon, Technopolis, DLF Golf Course Road, Sector-54 • Tel.: +91-124-4626248

Poland • PL-02-583 Warsaw, ul. Wołoska 9 • Tel.: +48-22-3300620

Romania • RO-021723 Bucharest, Sos.lancului nr. 6A, Sector 2 • Tel.: +40-21-6533246

Russia • RU-129626 Moscow, Ul. Staroalexejevskaja 5 • Tel.: +7-495-510 50 15

Slovakia • SK-83527 Bratislava–Rača, Mudrochova 2 • Tel.: +421-2-44635595

Sweden • SE-145 84 Norsborg, Botvid Business Center • Tel.: +46-8-680 18 60

Turkey • TR-34722 Kadıköy–İstanbul, Kasap İsmail Sk. 5/12 • Tel.: +90-216-345 51 99

Partner in (BG) (BH) (BY) (CH) (CY) (D) (DK) (E) (EST) (ET) (F) (GE) (GR) (HR) (I) (IL) (KS) (KSA) (KW) (KZ) (L) (LT) (LV) (MK) (NL) (P) (PK) (RB) (RL) (SLO) (SRB) (TM) (UA) (UAE) (UZ)

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