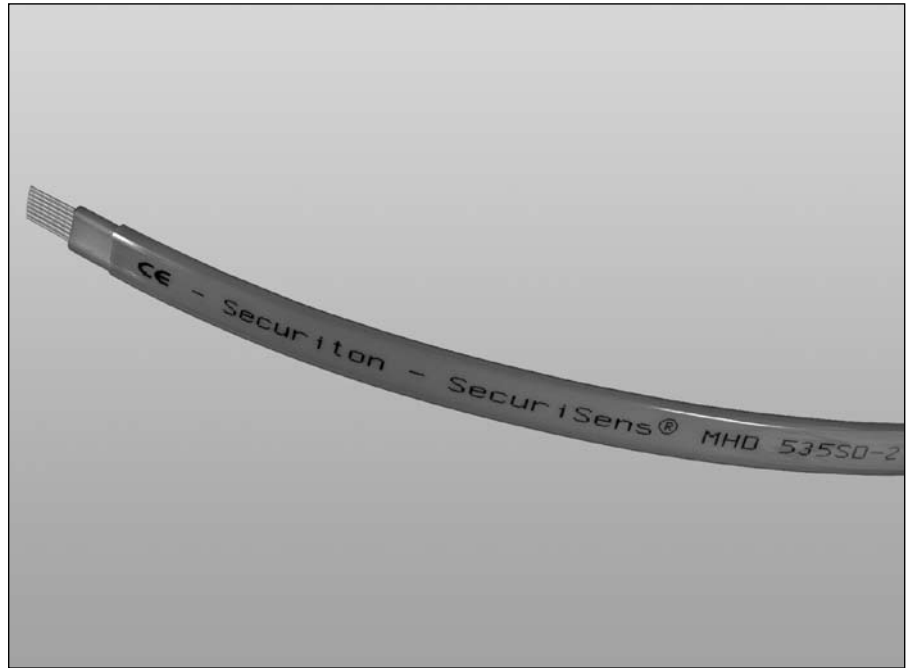


Multipoint Heat Detector SecuriSens® MHD 535

- Line type heat detector based on the multipoint principle (sensor cable)
- VdS-approved in accordance with EN 54-5 classes A1, A2, B, C
- Prepared for the future EN 54-22 line type heat detector
- Sensor spacing of 2 m, 4 m, 7 m and 10 m
- Sensor cable length up to 2000 m or 250 sensors
- Intelligent cable terminal processors with relays and interfaces
- FT-NET network option
- Free assignment of the sensors to groups
- Freely adjustable detection properties for each sensor, also within the group (max./diff.)
- Convenient PC Tool



The SecuriSens® MHD 535 is an addressable, linear type heat detector for special applications. It is characterised by its very fast detection speed, easy planning and installation, and a diversity of software evaluation features. Thanks to its modular design, there are a number of networking options available. While the MHD 535 is used mainly in applications with long enclosed sections, such as road and rail tunnels as well as in cable and transport channels, it also has a variety of uses in industrial settings.

Design and function

The SecuriSens® MHD 535 system is based on acquiring data from numerous temperature sensors which are integrated in the sensor cable at regular intervals. The system measures both the actual heat temperature of the surroundings (convective heat) as well as a fraction of the infrared irradiation (radiant heat). Thanks to these characteristics, the response time of the linetype heat detector is extremely short.

The intelligent cable terminal processor evaluates the measurement data and determines instances of alarms and pre-signals based on the specific programming. The MHD Config PC software is an exceptionally flexible programming environment which makes it possible to program the cable terminal processor easily for project-specific requirements. In addition to the programming functions, the MHDConfig software also provides useful visualisation functions. The temperature profiles enable you to evaluate the state of the monitored object at a glance at any time. This means that in the event of an alarm you can gain an overview of the current situation very quickly.

The programmable relays, whose availability depends on the cable terminal processor, can be used for actuating the necessary systems in the event of an alarm or fault. With additional RCU 535 relay control units, up to 200 relays can be actuated.

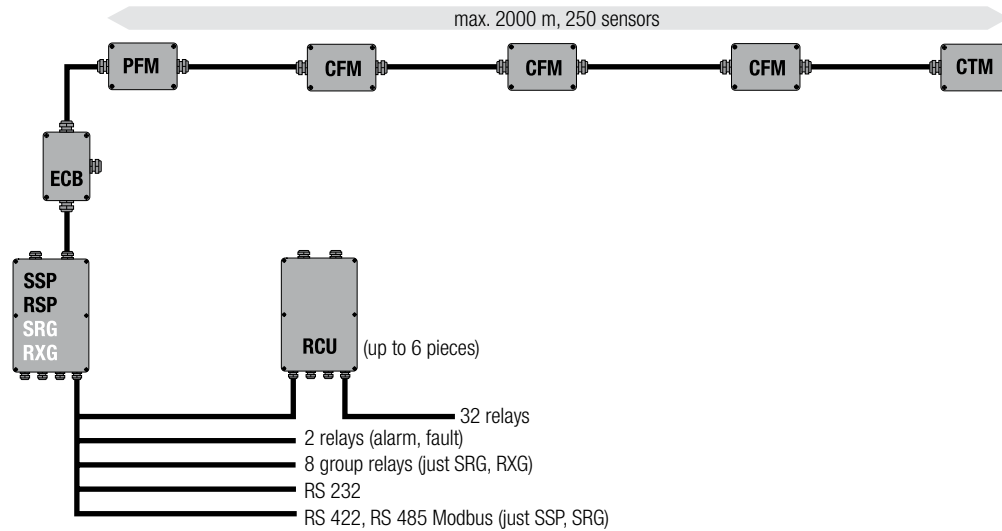
Applications

Thanks to its excellent resistance to extreme environmental conditions, the SecuriSens® MHD 535 is used wherever conventional point detectors are not able to guarantee optimal protection.

Typical applications include the following:

- Street tunnels, railway tunnels, metro tunnels
- Supply tunnels, such as in airports and large-scale industrial facilities
- Car parks, vehicle silos
- Cold stores
- Industrial object protection, such as in conveyance systems and production lines
- Refineries, gas lines, external heating lines
- Incineration plants, disposal operations
- Saw mills, agricultural sectors
- Open loading platforms
- And many other special applications

Stub type installation



Temperature sensor cable MHD 535

The standard version of the cable is offered with sensor spacing of 2 m, 4 m, 7 m and 10 m. Other sensor spacing between 2 m and 20 m is available upon request.

The sensors are positioned outside on the cable sheathing and thus easily visible. They are also identified by their serial numbers. Each sensor contains the electronic circuit for the temperature measurement and the data transmission. The innovative addressing and data transmission method of the sensor cable guarantees rapid signal transmission and sufficient immunity to interference.

The design of the MHD 535 is based on a flat cable which has double casing. The inner casing prevents moisture from entering. The outer casing guarantees resistance to chemicals and gives the cable its rigidity. The Kevlar inlays provide

additional mechanical strength. The MHD 535 is a thin-walled cable which has an extremely low thermal transition resistance and thus a very short response time.

Mounting

The sensor cable is snapped into special mounting clips (CMC) and fastened with them. The spacing between the individual clips is 80 to 120 cm, depending on the application. The cable can be mounted horizontally and vertically. The clip can be easily opened. Thanks to the ease of mounting, costs are kept low, especially in tunnel applications.

System design

The SecuriSens® MHD 535 sensor cable is usually installed as a stub line. Depending on the situation, a connection cable may be used between the cable terminal processor and the sensor cable.

Other accessories

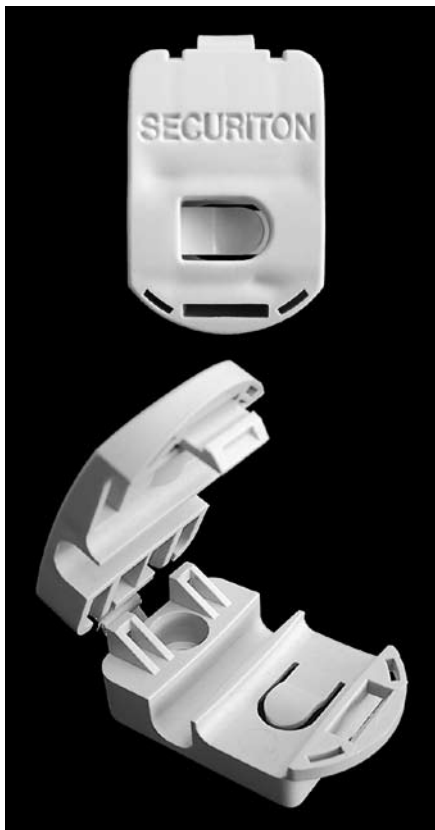
Other modules may be necessary depending on the system configuration: a CTM 535 cable terminator module; a CFM 535 connector filter module, which connects cable segments; a PFM 535, used as additional lightning protection for particularly exposed systems; and the ECB 535 earthing connection module, which improves EMC resistance.

Technical data Standard temperature sensor cable SecuriSens® MHD 535-xSD

Standard sensor spacing	2 m, 4 m, 7 m, 10 m (others in the 2–20 m range upon request)
Maximum cable length	2,000 m (for 10 m sensor spacing)
Maximum number of sensors	250 (for sensor spacing of 2, 4 and 7 m)
Continuous operating temperature	–40 to +85 °C
Long-term operating temperature (up to 5 hr)	–40 to +95 °C
Short-term operating temperature (up to 1 min)	–40 to +120 °C
Relative humidity	100%
Sensor cable material	TPE/PUR (inner/outer halogen-free)
Dimensions	6 × 14.5 mm
Weight per metre	85 g
Colour of the sensor cable	Red RAL 3000
Tensile force when laying (short term)	500 N
Tensile force in operation	0 N
Response characteristics (adjustable)	EN 54/5 (class A1, A2, B, C)
Bending radius	50 mm (200 mm in sensor area)
VdS approval	G 208 190

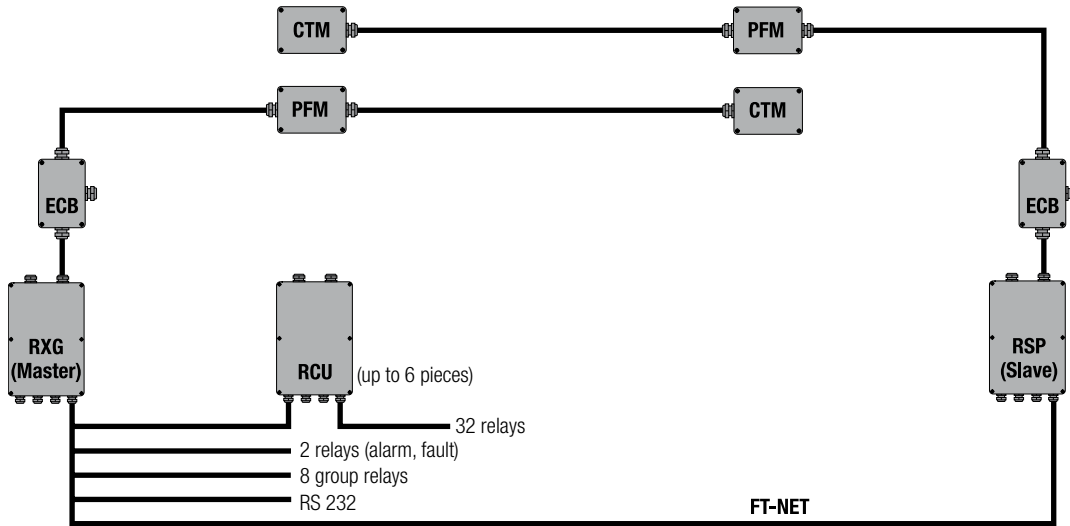
Overview of cable terminal processors

		Group alarm	Collective disturbance	8 group relays	RCU 535 connection	RS 232 interface	RS 422 RS 485 Modbus	FT-NET interface
SSP 535	Standalone Signal Processor	●	●			●	●	
SRG 535	Standalone Response Generator	●	●	●	●	●	●	
RSP 535	Remote Signal Processor	●	●			●		●
RXG 535	Remote eXtended Generator	●	●	●	●	●		●



CMC 511A closed and open

Redundant installation with cross-linking FT-NET



Cable terminal processor concept

The cable terminal processor and other functional units are all based on the same software-controlled micro-controller featuring state-of-the-art design. The selection options of various interfaces result in the right components for every application.

FT-NET option

The fault-tolerant FT-NET network enables the MHD 535 system components to be connected in compliance with EN 54 in order to create large systems with centralised connection to the fire alarm control panel.

An RCU cascable relay unit with 32 relays together with the FT-NET enables large-scale fire alarm systems with one single access point.

Technical data of all cable terminal processors (all versions)

Material	Polycarbonate
Colour	Light grey RAL 7035
Permitted voltage range	10–36 VDC
Permitted operating temperature	–25 °C to +85 °C
Relative humidity (continuous/short-term)	70%/95%
IEC 529 protection class	IP 65

Technical data of cable terminal processor RXG 535/SRG 535

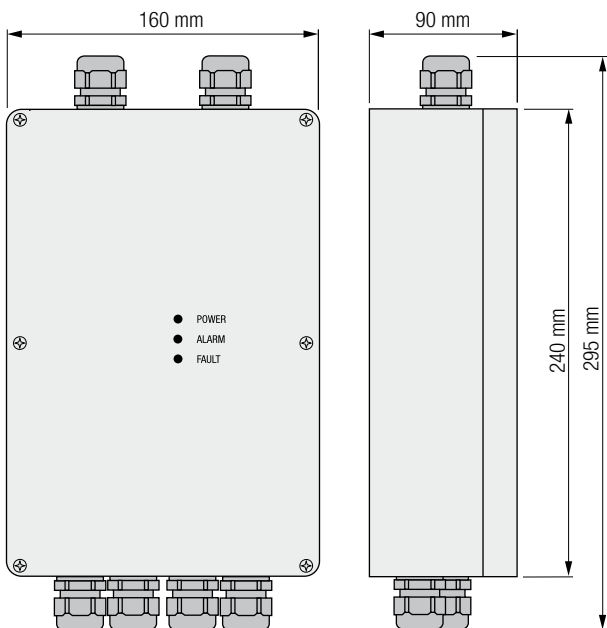
Power consumption RXG-SRG (quiescent/max. at 24 VDC)	220/330 mA–260/370 mA
Dimensions (W × H × D)	160 × 295 × 90 mm
Weight	1350 g

Technical data of cable terminal processor RSP 535/SSP 535

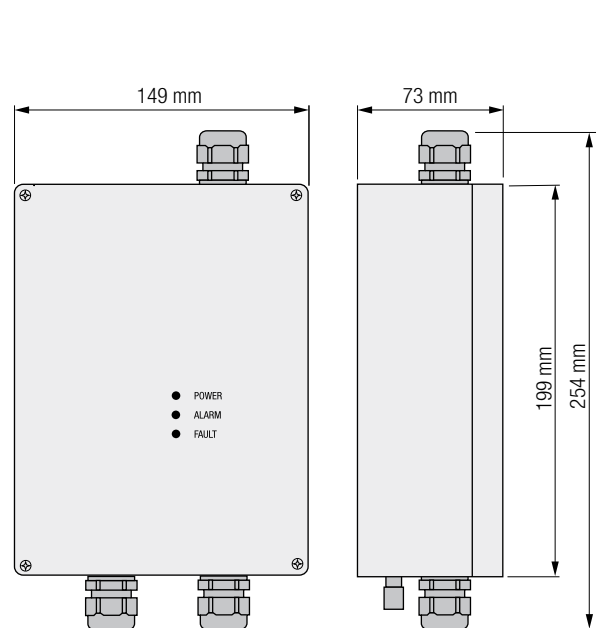
Power consumption of RSP-SSP (quiescent/max. at 24 VDC)	210/230 mA–250/270 mA
Dimensions (W × H × D)	149 × 254 × 73 mm
Weight	920 g

Dimensioned drawing

RXG 535/SRG 535



RSP 535/SSP 535



MHD Config software

The software is extremely flexible and adapts easily to your application. Any number of sensors can be grouped together. Maximum and differential temperature thresholds can be individually programmed for each sensor as can equations for the response behaviour of each group.

Status messages, events and their prehistory are saved in a log file. The SecuriSens® MHD software offers an easy overview of the temperature profile over the entire length of the cable and enables you to pinpoint the location of a fire in the event of an alarm.

Maintenance

The SecuriSens® MHD 535 is largely maintenance-free. The position of the temperature sensors always remains the same even after years in use because of the location-specific temperature measurement.

The mobile, battery-powered sensor testing device STE 515 lets you easily check response characteristics, even in high tunnels.



Sensor testing device STE 515

Technical data of RCU 535 relay control unit

Permitted voltage range	10–36 VDC
Quiescent operating current	110 mA typical (24 VDC)
Relays	32
Relay contact load	250 VDC/6 A
Interfaces	Serial interface for SRG and RXG 535 as well as for additional RCU 535 units (max. 6 units cascable)
Ambient operating temperature	–25 to +85 °C
IEC 529 protection class	IP 65
Housing dimensions (W × H × D)	160 × 295 × 90 mm (with connection sockets)
Housing colour	Light grey RAL 280 70 05
Housing material	Polycarbonate
Weight	approx. 1270 g

Technical data of CFM 535, CTM 535, PFM 535, ECB 535

Permitted voltage range	10–20 VDC (via sensor cable)
Housing dimensions (W × H × D)	110 × 75 × 56 mm (without connection sockets) 165 (138 CTM) × 75 × 56 mm (with connection sockets)
IEC 529 protection class	IP 65
Housing material	Glass fibre reinforced polyester
Weight	approx. 420 g

SecuriSens® MHD 535 product line

MHD 535SD-2	Multipoint heat detector with 2 m sensor spacing for object monitoring
MHD 535SD-4	Multipoint heat detector with 4 m sensor spacing for object and space surveillance
MHD 535SD-7	Multipoint heat detector with 7 m sensor spacing for space surveillance and use in tunnels
MHD 535SD-10	Multipoint heat detector with 10 m sensor spacing for use in tunnels
SSP 535	Stand-alone signal processor
SRG 535	Stand-alone response generator
RSP 535	Remote signal processor
RXG 535	Remote eXtended generator
RCU 535	Relay control unit with 32 relays (cascable)
CFM 535	Connection/filter module
CTM 535	Cable terminator module
PFM 535	Protected filter module
ECB 535	Earth connection box
MHD Config	PC software for commissioning and maintenance
CMC 511A	Cable mounting clip
CCA 535	Connection cable between CPA and MHD
STE 515	Mobile heat sensor test equipment with carrying bag for use with standard test poles (without test pole)
FOO 535	Fiber Optic Option
MBI 535-X	ModBus Interface (Full duplex/Half-duplex)

We reserve the rights to implement technical changes and modify delivery options.