

MZX SensorLaser™ Plus

Linear Heat Detection System

Features:

- Continuous detection despite extremely large monitoring area
- Easy and rapid installation of the maintenance-free sensor cable
- Very high resistance to extremely contrary ambient influences (immune against heat, cold, humidity, corrosion, strong winds and draft)
- Undiminished precision under electromagnetic interference
- Unprecedented security against false alarms
- Very high sensor cable service life of up to 30 years
- Temperature profile over the complete measurement range delivers exact information of location, size and spreading of the fire
- Very low maintenance costs as the maintenance and the trouble shouting can be done from the control unit
- VdS certified to EN 54/5-A1
- One controller unit will drive up two 8 km spurs or one 8 km loop
- Easy integration into existing installations
- Each sensor cable divided into up to 256 zones
- Individual configuration of 5 alarm criteria per zone
- Good network connection through Modbus, TCP/IP, FTP and SCPI interfaces



The new generation in safety

The reliability and precision of a fire detection system play a key role in the early detection of fire. The new MZX SensorLaser™ Plus guarantees fast and continuous fire detection even in difficult and varying ambient conditions. The new linear heat detection system enables long and heavily fragmented facilities such as traffic and supply tunnels, cable routes and conveyor belts as well as large-scale buildings such as production halls, cold stores and multi-storey car parks to be monitored at all times. The MZX SensorLaser™ Plus is ideal for use in areas that are hard or impossible to access after installation, e.g. false floors, because maintenance can be carried out from the control unit.

The MZX SensorLaser™ Plus delivers precise information about the location of the fire, its size and spreading even under adverse and changing ambient conditions.

Unique advantages

The only product of its kind on the market, the MZX SensorLaser™ Plus enables a measuring range of up to 8 km per sensor cable to be monitored. Up to two 8 km spurs or one 8 km loop can be connected. Because the ambient conditions in a monitoring area of this size can vary enormously, the individual sensor cables can each be divided into up to 256 zones. Several alarm criteria that can be freely defined as required operate in each zone. This level of precision adjustment allows the MZX SensorLaser™ Plus to deliver high security against false alarms and precise fire detection despite contrary and variable ambient conditions.

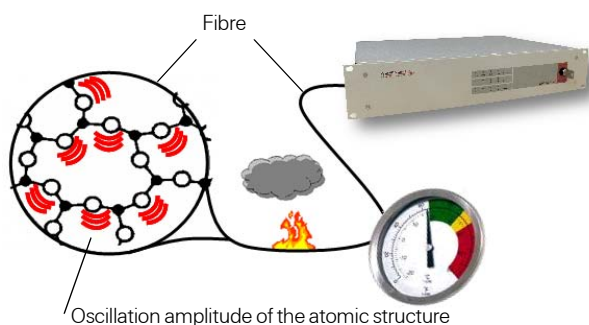
MZX SensorLaser™ Plus



A further unique selling proposition is the use of a laser with a particularly low power output with the class 1M. The accessible laser radiation emitted by this class of laser is not hazardous to the eyes, while operation is absolutely fail-safe even in the event of a break in the cable. In addition, the sensor cable can be used in explosive atmospheres (ATEX zones) up to zone 0 without any additional measures being required. In contrast to other laser supported systems, the low laser output of < 20 mW ensures that the measuring system has a long service life.

Functionality of the precise localisation

The precisely localised recording of the temperature along the sensor cable is based on the optical Raman Effect. Temperature changes induce a change in the amplitude of the lattice vibrations in the solid-state structure of the fibre. When light falls on these thermally excited lattice vibrations, these triggers an interaction between the particles of light (photons) and the electrons of the solid-state structure. In addition to the normal scattering of light that occurs under the effect of heat, a further scattering of light, known as Raman scattering, also occurs. For the exact localisation the optical backscatter method is used. Here the time which the Raman scattering needs to be back-scattered to the controller is measured. By means of the pulse echo method (path-time function) the exact position of the temperature change is calculated.



High security against false alarms

The Ambient conditions (temperatures) typically fluctuate extremely over a measuring range of many hundreds of metres. It may therefore be necessary to divide the measuring range into zones that can be adapted perfectly to the ambient conditions on the basis of differing alarm criteria. This ensures high detection reliability - and also security against false alarms.



The MZX SensorLaser™ Plus allows the measuring range to be very finely divided into zones. Up to 256 zones can be defined for each sensor cable and with up to 5 alarm criteria can be configured for each zone. Another 2 alarm criteria respond to a minimum temperatures as temperature drop, enabling them to be used e.g. in tunnels to warn of black ice.

The start and the end point and the size of a zone can be defined individually. The zones can be chosen consecutive or overlapping. In between the zone there can be an undefined area for e.g. excluding special areas of the detection.

If desired, the excess of alarm criteria in a zone or alarm criteria falls below the minimum value this can be shown by an allocated relay, so additional controlling functions are possible to drive (e.g. allocation of a fire panel or intruder system).



MZX SensorLaser™ Plus

Immune from external influences

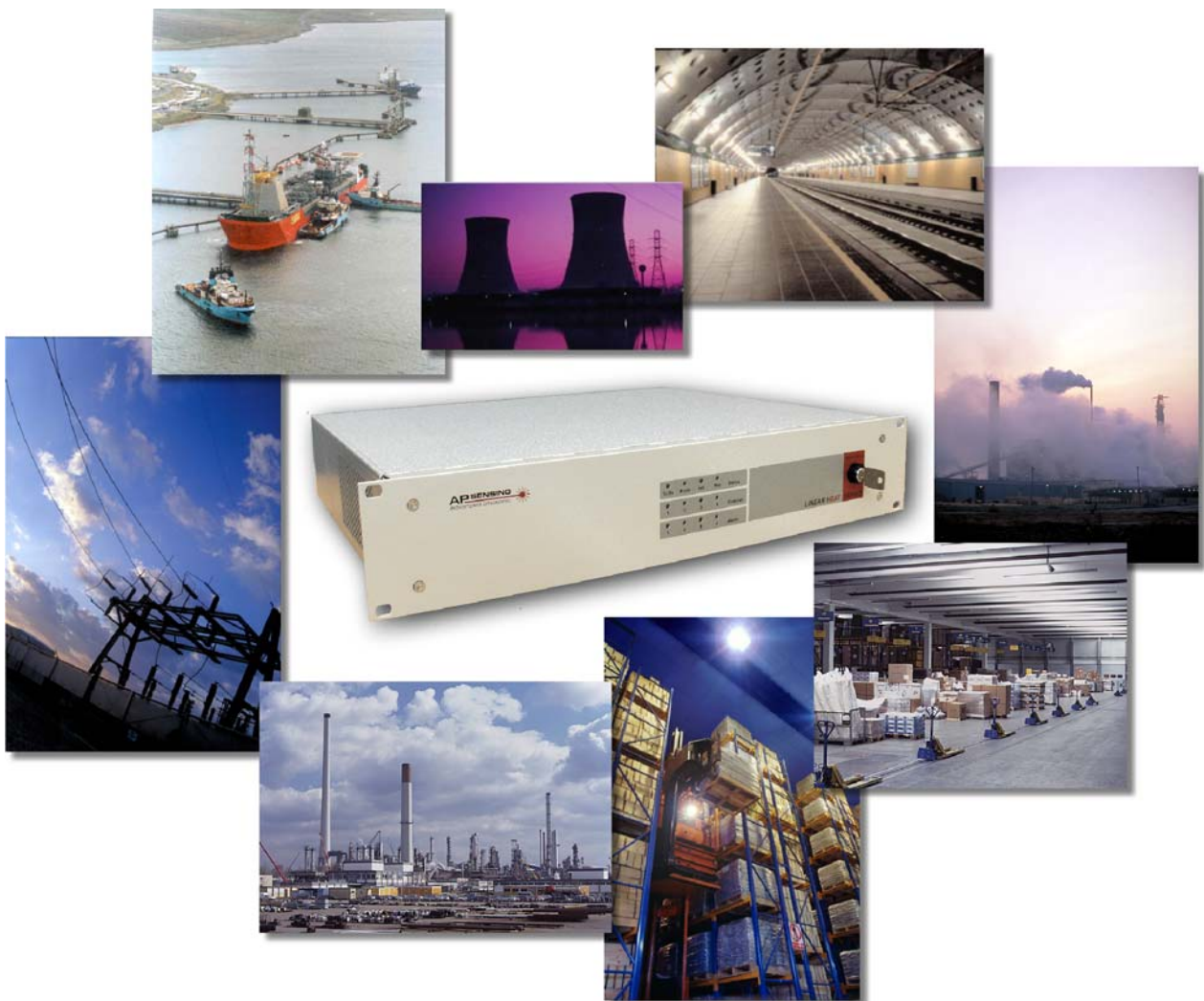
The sensor cable itself is maintenance-free and, thanks to its particularly robust characteristics, offers a high level of security against false alarms. The sensor cable is insensitive to dust, dirt, moisture, high temperatures, pressure and the action of vibration and wind as well as corrosive atmospheres. Because of its purely passive, optical analysis process, the MZX SensorLaser™ Plus is even immune from electromagnetic interference caused by generators, energy routes, cables or electric motors.

The new MZX SensorLaser™ Plus delivers precise information about the location, size and spreading of a fire even under ambient conditions that would cause other fire detection systems to fail.

Areas of application

The MZX SensorLaser™ Plus is ideal for use in particularly demanding ambient conditions:

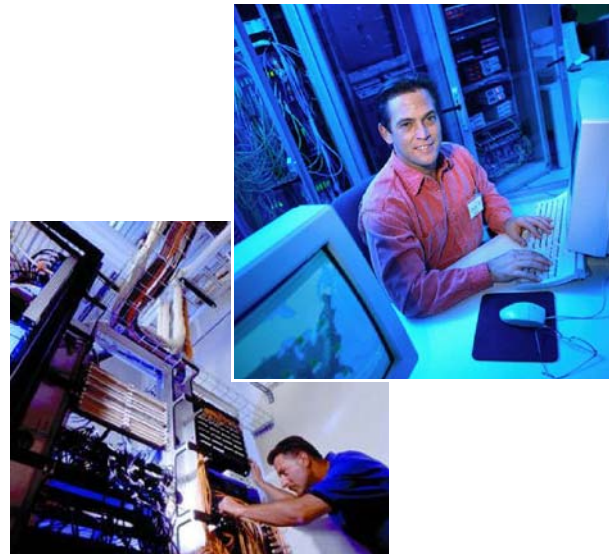
- In areas with high dust and dirt contamination (industry, mining)
- Where humidity and damp can arise as well as in corrosive atmospheres (industry, marine, tunnel)
- In areas where electromagnetic interferences can appear (transformers, generators, next to catenaries)
- With particularly warm or cold ambient temperatures (production halls, refrigerated warehouses)
- Where vibrations can occur (machines, production halls)
- In areas where strong winds or draft prevail
- In areas with mobile or radio transmitters
- In areas with chemical pollution (chemical industry)
- In areas with radioactivity (power plant, intermediate storage)



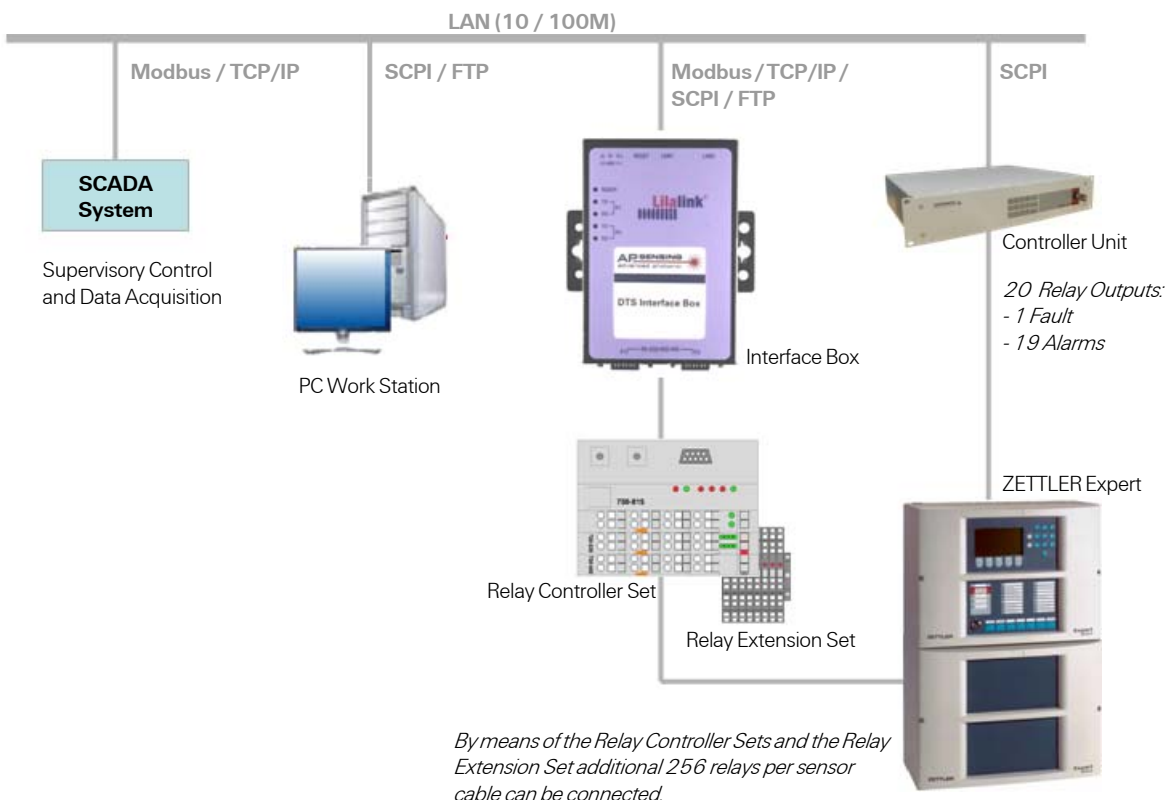
Customer focus

The MZX SensorLaser™ Plus in its many different product variants offers a particularly customer-friendly and hence cost-effective solution. Hardware can be selected as a function of the project size and requirement. The size of the measuring area and the number of sensor cables can be differentiated. A further advantage is the low maintenance costs because all components were designed for a long service life.

For example the maintenance-free sensor cable is built for a long lifetime of up to 30 years. Should a fault occur in the measuring area, this can easily be rectified from the controller unit. And because the MZX SensorLaser™ Plus detects the exact position, specialist personnel can rectify a cable break quickly.



Integration of MZX SensorLaser™ Plus



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