





MINERVA® MX

System 800 Fire Detection

Features:

- ATEX certified intrinsically safe system Ex II 1G
- Suitable for use in Zone 0, 1 and 2
- Fully intrinsically safe MX Digital addressable system 800 with MINERVA® MX Fire Controllers
- Allows flexible installation and system design
- Detector circuit and sounder circuit monitoring maintained throughout the system
- Unrivaled range of I.S. field devices for MX Digital addressable applications

System 800 Fire Detection: Hazardous Areas

There is a risk of fire or explosion in all areas containing flammable substances in the form of liquids, gases, dust or materials. Where these combustible materials are mixed with air in sufficient concentration they form flammable atmospheres and the areas containing them are designated Hazardous Areas. When a source of ignition, such as a spark, is applied in a hazardous area, an explosion could take place.

Electrical equipment supplied for use in Hazardous Areas must comply with requirements to ensure that its introduction into the area does not increase the existing risk. We have designed Intrinsically Safe (I.S.) systems and equipment for use in Hazardous Areas which can be connected to Fire Detection Systems installed in Safe Areas.

801PHEx Smoke & Heat Detector

The 801PHEx Intrinsically Safe Optical Smoke & Heat Detector forms part of the 800Ex Intrinsically Safe Series of MX Addressable Fire Detectors. The detector plugs into an MUBEx base.
The detector is designed to transmit to a remote MINERVA® MX / T2000 fire controller, digital signals which represent the status of the optical smoke and heat elements of the detector.
Software within the controller is used to interpret the returned optical and heat values to raise an alarm or other appropriate response according to the type of detector configured in 'MX CONSYS'.
The mode of detector may be:

- Optical smoke only detector (sensitivity High, Normal or Low)
- HPO smoke detector (sensitivity High, Normal or Low)
- Heat only rate-of-rise (A1R) detector (no sensitivity selection)
- Heat fixed temperature 60°C (A2S) (no sensitivity selection)
- Optical (sensitivity High, Normal or Low) combined with heat fixed temperature 60°C (A2S)
- HPO (sensitivity High, Normal or Low) combined with heat fixed temperature 60°C (A2S)

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus.
They are certified:

- ATEX Code: Ex II 1G
- Cenelec Code: EEx ia IIC T5

801CHEx CO & Heat Detector

The 801CHEx Intrinsically Safe Carbon Monoxide plus Heat Detector forms part of the 800Ex Intrinsically Safe Series of MX Addressable Fire Detectors. The detector plugs into an MUBEx base.
The detector is designed to transmit to a remote MINERVA® MX / T2000 fire controller, digital signals which represent the status of the carbon monoxide and heat elements of the detector.
Software within the controller is used to interpret the returned Carbon Monoxide and heat values to raise an alarm or other appropriate response according to the type of detector configured in 'MX CONSYS'.
The mode of detector may be:

- Heat only detector (A1R or A2S) (sensitivity: High, Normal or Low)
- Compensated Carbon Monoxide detector (sensitivity: High, Normal or Low)
- Compensated Carbon Monoxide detector (sensitivity: High or Normal) combined with heat (A1R)

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus.
They are certified:

- ATEX Code: Ex II 1G
- Cenelec Code: EEx ia IIC T5

801HEx Heat Detector

The 801HEx Intrinsically Safe Heat Detector forms part of the 800Ex Intrinsically Safe Series of MX Addressable Fire Detectors. The detector plugs into an MUBEx base.
The detector is designed to transmit to a remote MINERVA® MX / T2000 fire controller, digital signals which represent the status of the heat element of the detector.
Software within the controller is used to interpret the returned heat values to raise an alarm or other appropriate response according to the type of detector configured in 'MX CONSYS'.
The mode of detector may be:

- EN54-5 A1R, rate-of-rise normal ambient
- EN54-5 A2S, fixed 60°C
- EN54-5 CR, rate-of-rise high ambient

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus.
They are certified:

- ATEX Code: Ex II 1G
- Cenelec Code: EEx ia IIC T5

IS28 Banshee Sounder

The IS28 intrinsically safe banshee sounder has been developed for use in hazardous areas.

Up to a maximum of four sounders may be used. Each IS28 banshee has an output of 94dBA at one metre, this sound output will reduce to approximately 90dBA when four sounders are fitted to a circuit.

Certification No.	Classification
ITS03ATEX21311X	EEx ia 11c T5

CP 840Ex Break Glass Callpoint

The CP840Ex Intrinsically Safe Weatherproof Break Glass Callpoint is designed to monitor and signal the condition of the switch contact associated with the break glass.
The callpoint is designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. It is certified:

- ATEX Code: Ex II 1 G
- Cenelec Code: EEx ia IIC T5

IF800Ex Interface Module

The Intrinsically Safe IF800Ex Interface Module is designed to monitor fire contacts such as extinguishing system controls, ventilation controls, fire door controls etc.
The IF800Ex is contained within a grey compression moulded glass filled polyester box with 3 x 20 mm cable gland holes. The electronic components are mounted on a double sided printed circuit board built into a potted module formed from a plastic moulding. Connectivity is via two terminal blocks fitted to the PCB.
The interface module is designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. It is certified:

- ATEX Code: Ex II 1 G
- Cenelec Code: EEx ia IIC T5

EXI800 Interface Module & Galvanic Isolator

The EXI800 Interface Module, used with a galvanic isolator, provides a path for an MX Panel to transparently communicate to slave devices (800Ex Detectors, IF800Ex Interface Module or CP840Ex Addressable Break Glass Callpoint) connected to the Intrinsically Safe loop. The interface reduces the standard MX loop supply voltage and signalling currents to levels that are acceptable for hazardous areas.
The EXI800 can detect a short circuit on the left-loop, the right-loop, or the IS loop and will isolate the offending loop connections from the other loop connections.
The IS loop output of the EXI800 interfaces with the Pepperl+Fuchs KFD0-CS-Ex1.54 Galvanic Isolator, supplying loop voltage and signalling currents to the Intrinsically Safe loop.

I.S. Barrier Enclosures

A range of polycarbonate enclosures to suit the sounder driver, EXI800 and the Galvanic Isolator. The enclosures provide see-through lids and can accommodate barriers in the safe area.

The enclosures are impact resistant, flame retardant and dustproof to IP65.

Technical Information

To preclude the risk of an explosion, equipment in the Hazardous Area must not be capable of causing ignition under normal operating, or specific fault conditions. Limiting the energy which can be stored in, and released by the electronic circuitry and cables in the Hazardous Area is achieved by using Intrinsically Safe equipment and by placing restrictions on the cable parameters.

Intrinsic safety is a technique for ensuring that the electrical energy and temperature rise occurring during normal operation and during all probable fault conditions are not able to cause ignition.

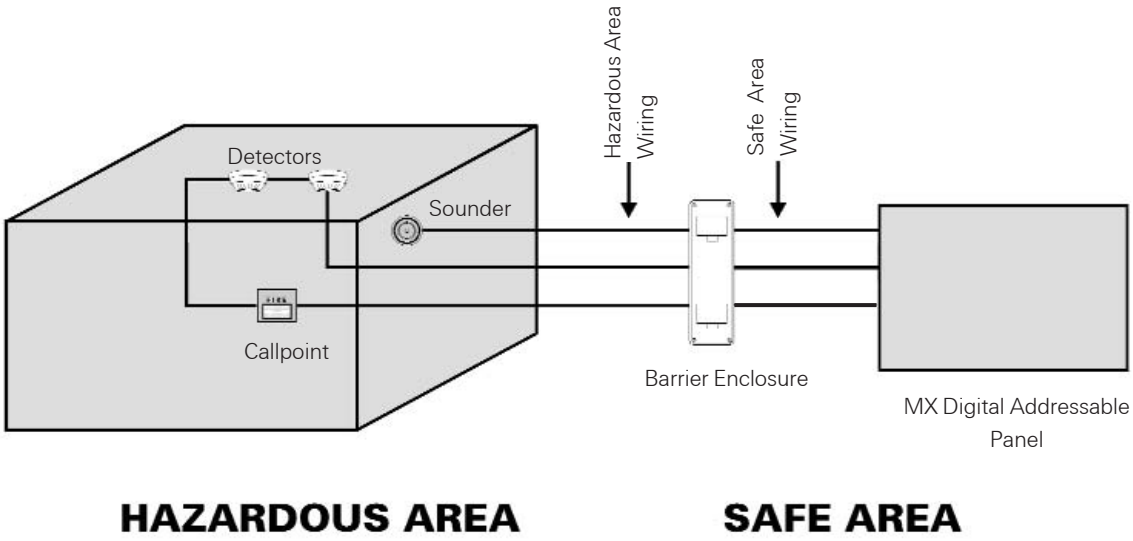
Intrinsic safety relies on limiting the voltage and current in the circuit so that if a fault occurs the power available in the circuit is insufficient to cause ignition.
To complete the explosion protection concept of a circuit a Safety Barrier must be connected between the Hazardous Area equipment and the source of power in the Safe Area. The electrical power which may be supplied or drawn from a Safe Area (i.e. an area with no definable hazard) is limited by using Galvanic Isolators or Isolating I.S. Interface Units.

The main advantage of intrinsic safety over other methods of protection is the fact that the majority of maintenance operations can be carried out whilst the system is live.

Intrinsically Safe Systems

System 800 ATEX Certificate: BAS01ATEX1394X

The System 800 ATEX system certificate allows the M800 Ex MX Digital addressable fire sensors to be fitted into category 'ia' for gas group IIC in Zone O, Zone 1 and Zone 2 hazardous areas.



tyco Safety Products

The right is reserved to modify or withdraw any product or service without notice

Technical Information Sheet PSF129U Issue 2

www.tycosafetyproducts-europe.com