



System 601 and 602 Fire Detection

Hazardous Areas

Features:

- BASEEFA certified intrinsically safe systems
EEX ia 11C
- Suitable for use in Zone 0, 1 and 2
- Fully intrinsically safe analogue addressable system 602 with Minerva Fire Controllers
- System 601 Compatible with Thorn Security and most other conventional fire controllers
- Allows flexible installation and system design
- Detector circuit and sounder circuit monitoring maintained throughout the system
- Unrivalled range of I.S. field devices for conventional and analogue addressable applications

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 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. ADT Fire & Security 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.

There are two I.S. systems used by ADT Fire and Security. System 601 for use in conventional fire detection circuits and System 602 which is for use with MINERVA analogue addressable circuits. Two Sounder Systems (one earthed and one isolated) are available for use with either of the two I.S. systems.

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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 condition.

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 Shunt-Diode Safety Barriers or Isolating I.S. Interface Units.

Intrinsically Safe Systems

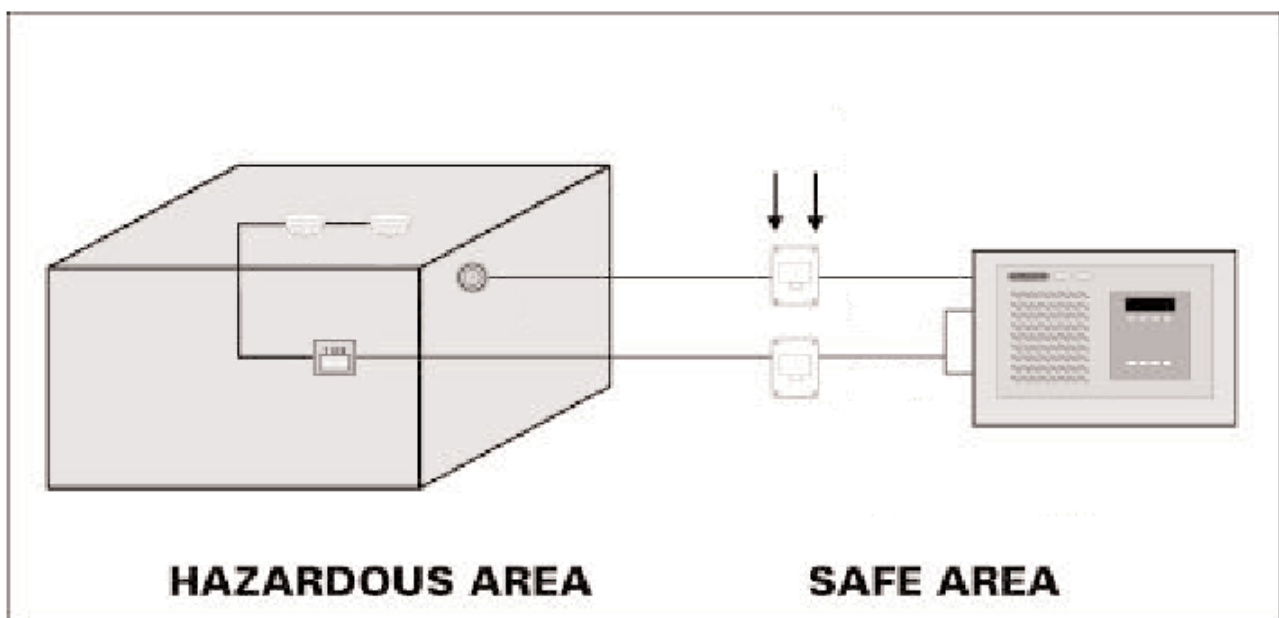
There are four intrinsically safe systems available from ADT Fire & Security systems 601, 602 and two sounder systems.

System 601 BASEEFA Certificate Ex82254 System 601 is a BASEEFA certified intrinsically safe system that enables intrinsically safe conventional fire detectors to be fitted into category 'ia' for gas group IIC in Zone 0, Zone 1 and Zone 2 hazardous areas. System 601 allows for either shunt diode safety barriers with a high integrity earth or galvanic barriers with a floating earth.

Systems 602 BASEEFA Certificate Ex 89Y2204 The system 602 BASEEFA system certificate allows the M500 Ex analogue addressable fire sensors to be fitted into category 'ia' for gas group IIC in Zone 0, Zone 1, and Zone 2 hazardous areas. System 602 may only be used with a single channel shunt diode safety barrier together with high integrity earth.

Sounder System BASEEFA Certificate Ex 872028 In addition to the above detection system certificates, two sounder systems (one earthed and one isolated) are available and either can be used with system 601 or 602. Both systems allow intrinsically safe sounders to be installed into category "ia" for gas group IIC in Zone 0, Zone 1 and Zone 2.

Open and short circuit monitoring of the sounder circuit is only available with the earthed shunt diode safety barrier.



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Intrinsically Safe Products



S100 and S200 Series Infra-Red Flame Detectors

The S100 and S200 series of detectors are designed to detect the presence of flaming fires involving carbonaceous materials. Both series of detectors have been specifically developed for use in hazardous applications, and feature the ADT Fire & Security patented "Solar Blind" optical filtering that enables the detectors to be used in direct sunlight. The S200 series also feature a built in microprocessor that ensures optimum performance against false alarms together with an extensive self test function that confirms the correct operation of the detector every minute.

Certificate No.	Classification	Product
Ex 812333	EEx ia 11c T5	S100 Series
Ex 94C2080	EEx ia 11c T5	S200 Series

M300 Ex and M500 Ex Smoke Heat&Flame Detectors

A comprehensive range of both conventional and analogue addressable smoke heat and flame detectors. The MF range of intrinsically safe ion-chamber smoke detectors react to the visible and invisible fire aerosols (products of combustion). They are most suitable for "fast" developing fires such as wood, paper etc. The MR range of intrinsically safe optical smoke detectors also includes the internationally renowned High Performance Optical Smoke Detector. The optical smoke detectors react to a whole range of fire products from slow smouldering fires, producing visible particles to open flame fires producing large numbers of very hot small sized aerosols.

Certification No.	Classification	Product
Ex88B2168X	EEx ia 11c T5	M300 Series
Ex89C2200X	EEx ia 11c T5	M500 Series

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 with either of the ADT Fire & Security certified sounder systems. 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	Product
Ex862B2344	EEx ia 11c T6	IS28 Banshee Sounder

CP Break Glass Callpoints and IF500EX

The CP range of callpoints have been specifically developed for use in hazardous areas. The callpoints are classified as simple apparatus and may be used on either conventional or addressable systems. When used with addressable systems, the IF500EX interface unit must be used. The IF500EX may also be used to monitor other simple apparatus i.e. sprinkler flow switches. The CP220 and CP540 callpoints are classified as "simple apparatus" in accordance with clause 6.3.3 BS5343 Pt. 4.

Certification No.	Classification	Product
Ex 89C2202	EEx ia IIC T4	IF500 Interface

SPECIFICATIONS



I.S. Barrier and Sounder Interface Module

The barrier provides the safety interface between the fire detector in the hazardous area and the fire controller.

Two different types of barriers are available from ADT Fire & Security.

- a) Shunt diode safety barrier (earthed)
- b) Isolating interface (floating earth)

When using the IS28 banshee sounders together with a shunt diode safety barrier, it is essential that the sounder interface module is provided to ensure open circuit line monitoring. Note: This facility is not available when using isolating barriers.



I.S. Barrier Enclosures

A range of fire polycarbonate enclosures to suit both types of barriers (shunt diode safety or isolated).

The enclosures provide see-through lids and can accommodate from 1 to 12 barriers in the safe area.

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

* For further details on Detectors, Call points and Sounders, please refer to the relevant product datasheet

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