

INTRINSICALLY SAFE - Photoelectric Smoke Sensor

Model 2251EIS

Overview

Features

- Compatible with existing System Sensor Protocol
- Low profile design
- Reliable analogue addressable communications
- Rotary decade address switches
- Tamper Resistant
- Twin LED indicators provide 360° visibility
- Built in test switch
- Must be used in conjunction with IST200 Translator Module and Y72221 Galvanic Isolator
- Compatible with the existing standard intelligent sensor base
- BASEEFA Approved to EEx ia IIB T5 for use in up to Zone 0 hazardous environments



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Description

The 2251EIS analogue addressable photoelectric sensor is a plug in intrinsically safe smoke sensor combining an optical sensing chamber with analogue addressable communications. As an intrinsically safe sensor, the 2251EIS has been designed specifically to provide fire protection for most hazardous environments, and has therefore been engineered so that it cannot become a source of ignition in areas where potentially explosive atmospheres are likely to arise.

The 2251EIS sensors are approved by BASEEFA to EEx ia IIB T5, for use in hazardous environments. The 2251EIS sensor is therefore suitable for use in all hazardous areas up to Zone 0 areas and with most gases, excluding hydrogen and acetylene.

The 2251EIS has two integral LED's which provide local visual indication of the sensor status. These LED's provide a dual function. In the event of an alarm, they can be switched ON continuously, and can also be programmed to either blink when polled by the panel or remain off during normal conditions.

The individual loop address of each 2251EIS can be easily set and read, using the rotary decade address switches located on the rear of each sensor. The use of decimal address codes significantly reduces the potential for incorrect address selection.

Each sensor base includes a tamper resistant option which, when activated, prevents the removal of the sensor from it's base without the use of a tool. Full circuit functionality can be easily confirmed on site by use of the sensor test switch. Operation of this magnetic switch will generate an alarm response to the fire alarm control panel, making system testing both convenient and simple.

All System Sensor products are covered by our extended 3 year warranty.

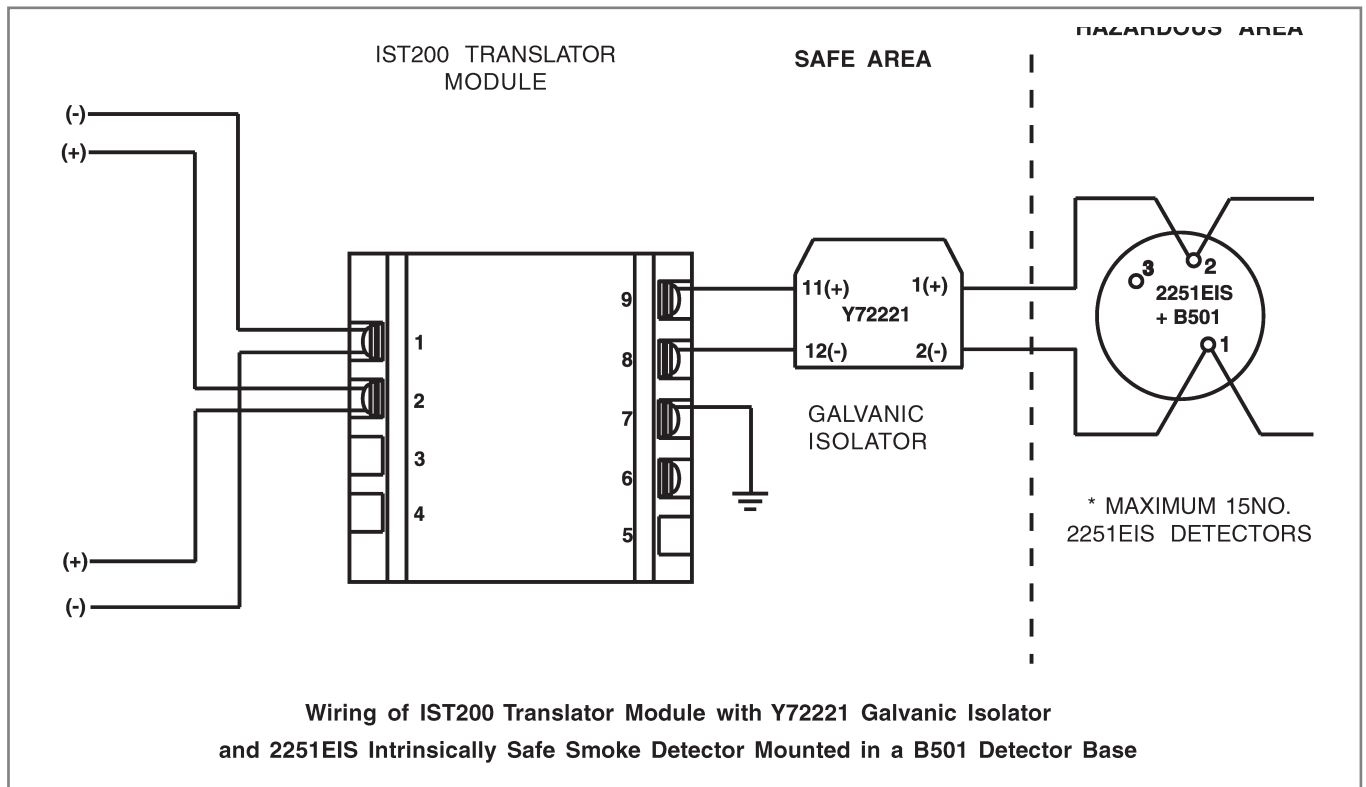
Architect/Engineer Specifications

IST200 Intelligent Translator Module

Description

The IST200 translator module is intended for use with analogue addressable systems and in conjunction with 2251EIS intrinsically safe photoelectric smoke sensors. The IST200 translator module serves as an interface between the control panel and up to a maximum of 15 x 2251EIS smoke sensors. The IST200 must also be used in conjunction with a Y72221 galvanic isolator barrier (see below). To ensure correct operation, the IST200 must only be connected to a listed compatible Control Panel.

The IST200 translator module can be easily mounted within System Sensor's existing SMB500 surface mount box (see diagram). The IST200 must be located within a safe environment.



Y72221 Galvanic Isolator

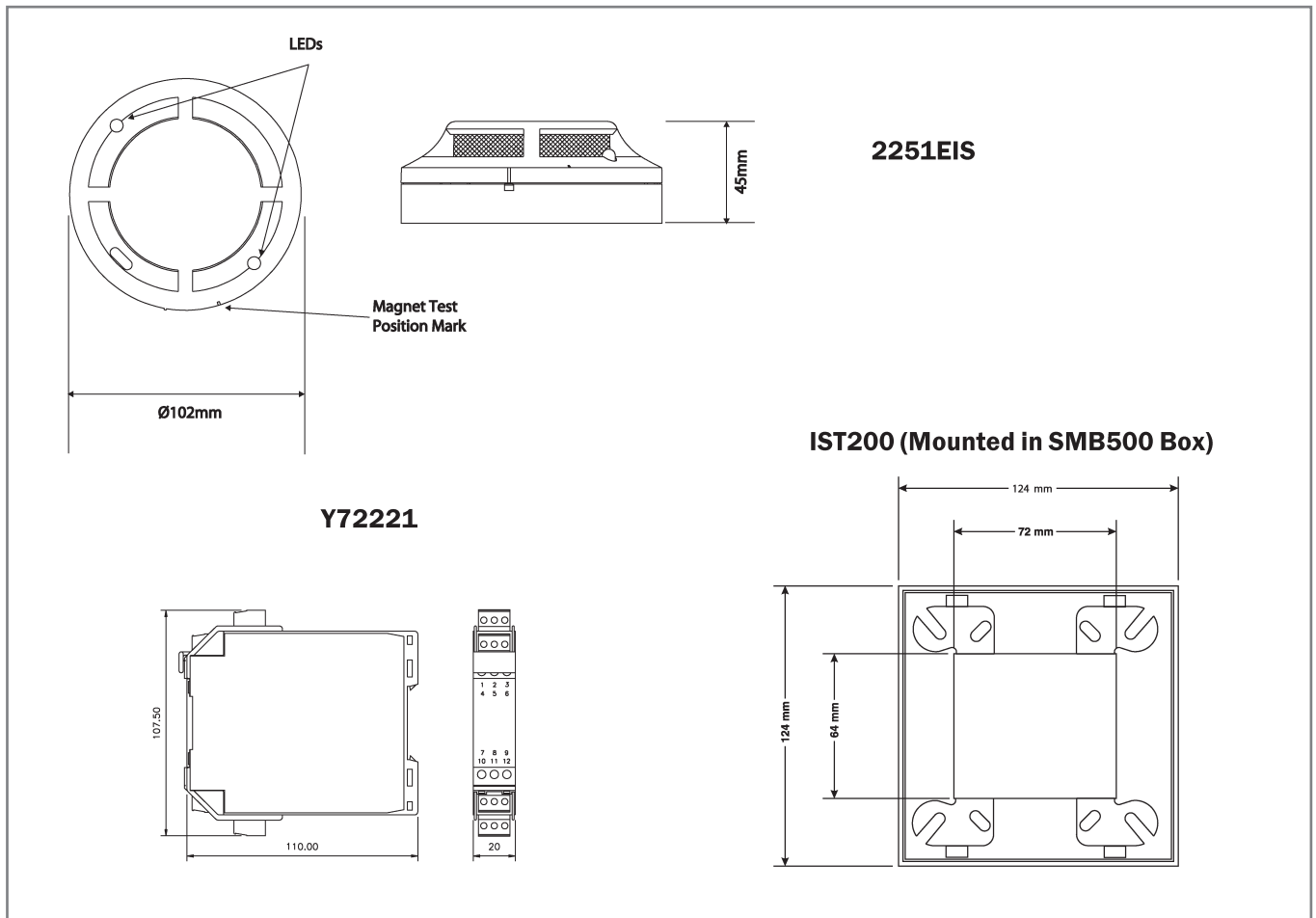
Description

The Y72221 Galvanic Isolator is a single channel isolated repeater. It is suitable for use as an intrinsically safe isolator between an IST200 translator module and up to a maximum of 15 x 2251EIS intrinsically safe photoelectric smoke sensors. The Y72221 is designed to transfer a DC current from a safe area to the hazardous area load, from a 24V DC nominal voltage. An AC signal ranging from 0.6 to 24V will then be transferred, allowing communication to the 2251EIS sensors in the hazardous area.

We would recommend the use of the Y72221 with all installations of 2251EIS sensors. We do not recommend the use of zener barriers, as they need to be tied to a high integrity earth, which can lead to earth fault indications on some Fire Control Panels. Please refer to the Fire Control Panel manufacturer for compatibility information. The Y72221 is certified intrinsically safe to EEx ia IIC, (Baseefa00ATEX087X).

The Y72221 is suitable for DIN rail mounting and can therefore be mounted within any electrical box with suitable DIN rail.

Architect/Engineer Specifications



2251EIS Electrical Specifications

Operating Voltage Range	15 to 24VDC
Maximum Average Standby Current	330 μA (with LED blink enabled)
Maximum Alarm Current (LED on)	4.2mA at 24VDC

Environmental Specifications

Operating Temperature Range	-10°C to +60°C
Humidity	5% to 95% Relative Humidity (non-condensing)
Intrinsically Safe Rating	EEx ia IIB T5

Mechanical Information

Height	43mm installed in B501 base
Diameter	102mm installed in B501 base
Weight	110g
Max Wire Gauge for Terminals	2.5mm ²
Colour	Pantone Warm Grey 1C
Material	Bayblend FR110

Wiring

The capacitance and inductance or inductance/resistance (L/R) ratio of the cable connected to the hazardous area between the 2251EIS base's (B501) power terminals (1 and 2) must not exceed the following values: -

Group	Capacitance (μF)	Inductance (mH)	L/R Ratio ($\mu\text{H}/\text{ohm}$)
IIB	0.65	12.6	165
IIA	2.15	33.6	440

Architect/Engineer Specifications

IST200 Translator Module

Electrical Specifications

Input Voltage Range	15 to 32VDC
Output Voltage	20 to 24VDC
Input Supply Current at 15V	21mA maximum*
Input Supply Current at 24V	14mA maximum*
Max Wire Gauge for Terminals	2.5mm ²

* with minimum barrier resistance, recommended quantity of 2251EIS detectors, and normal operating conditions

Environmental Specifications

Operating Temperature Range	0°C to 60°C
Humidity	5 to 95% Relative Humidity (non-condensing)

Mechanical Information

Height	70mm
Width	70mm
Depth	32mm
Weight	142g
Max Wire Gauge for Terminals	2.5mm ²

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Installation information: in order to ensure full functionality, refer to the installation instructions as supplied.

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