2251EIS
Photoelectric Smoke Sensor

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 the 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

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.

LPCB 118a/04 Ex Baseefa03ATEX0155X VdS G296050

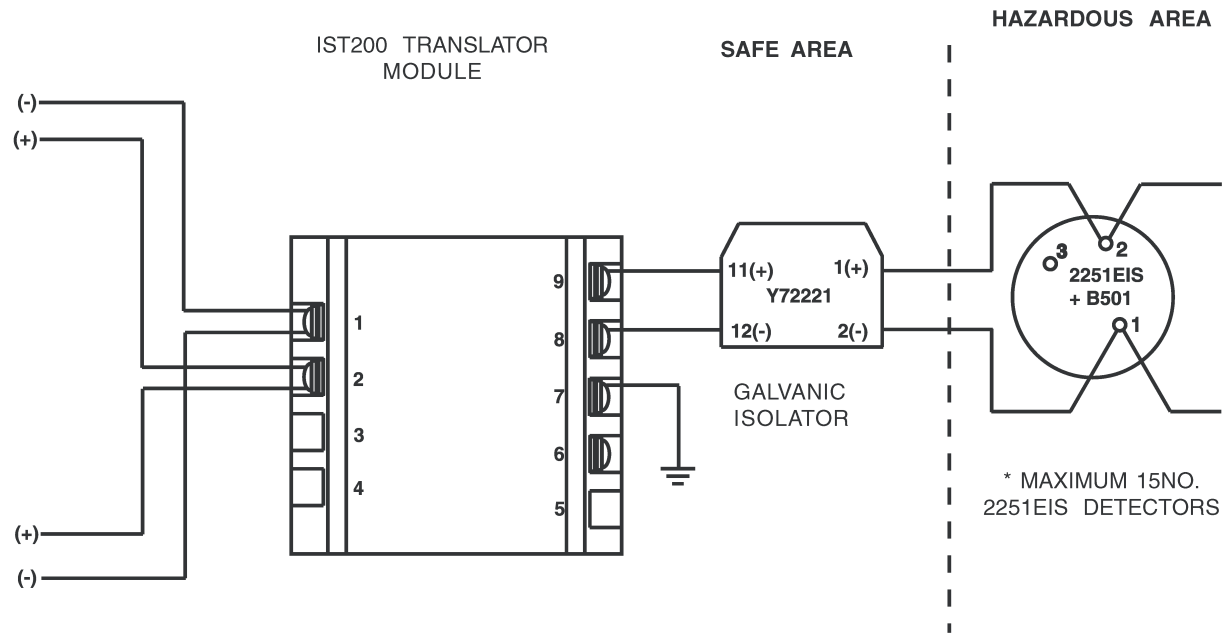
Canada 25 Interchange Way, Vaughan (Toronto), Ontario L4K 5W3 Telephone: (905) 660-4655 Fax: (905) 660-4113 • **Web Page:** www.mircom.com
U.S.A. 4575 Witmer Industrial Estates, Niagara Falls, NY 14305 Telephone: (888) 660-4655 Fax: (888) 660-4113 • **E-mail:** mail@mircom.com

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.



Wiring of IST200 Translator Module with Y72221 Galvanic Isolator and 2251EIS Intrinsically Safe Smoke Detector Mounted in a B501 Detector Base

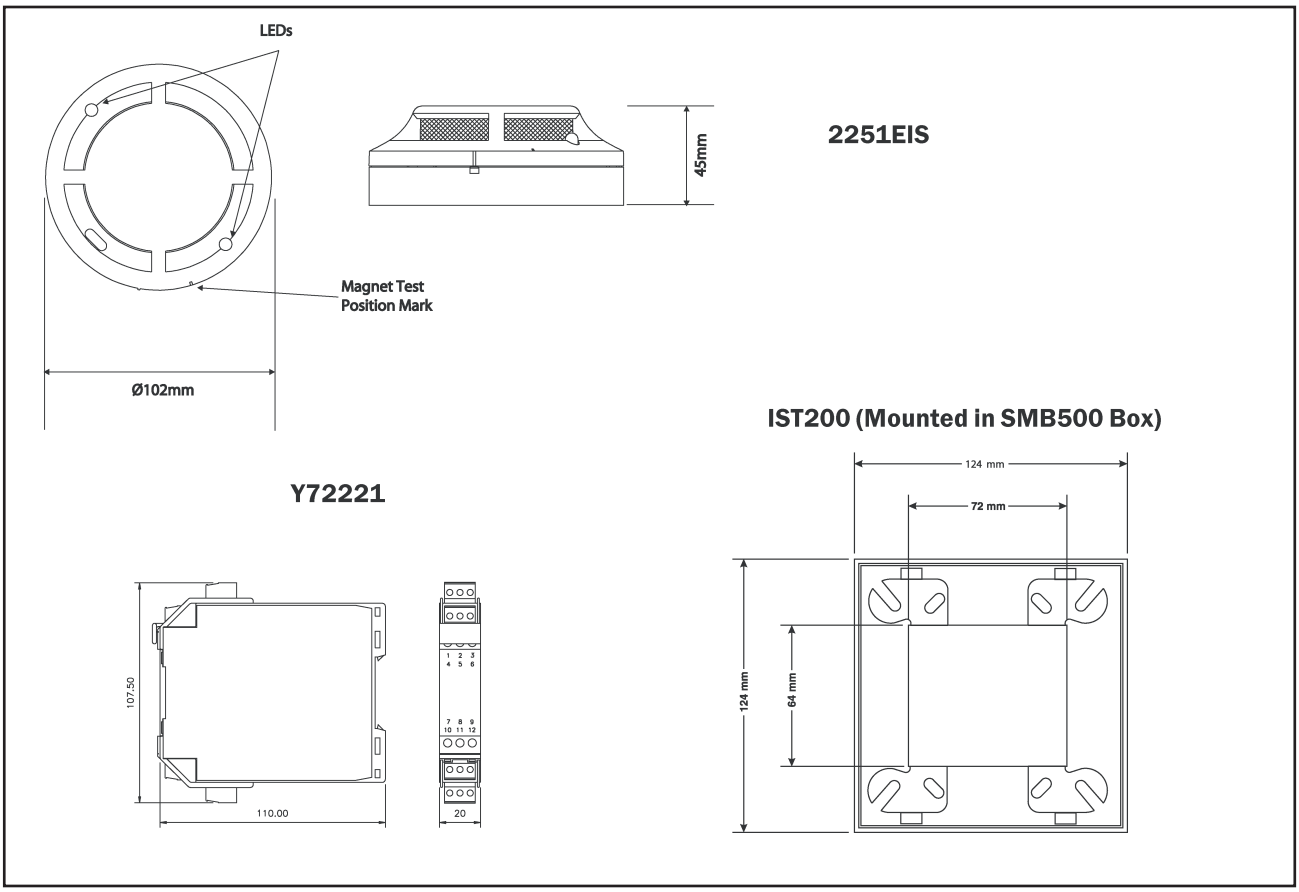
Y72221 Galvanic Isolator

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.



2251EIS Intrinsically Safe Smoke Detector

Electrical Specifications

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

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
43 mm installed in B501 base
Diameter
102 mm installed in B501 base
Max Wire Gauge for Terminals
2.5 mm^2
Weight
110 g
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 (µH/ohm)
IB	0.65	12.6	165
IIA	2.15	33.6	440

IST200 Translator Module

Electrical Specifications

Input Voltage Range
15 to 32 VDC
Output Voltage
20 to 24 VDC
Input Supply Current at 15V
21 mA maximum*
Input Supply Current at 24V
14 mA maximum*
Max Wire Gauge for Terminals
2.5 mm^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
70 mm
Width
70 mm
Depth
32 mm
Weight
142 g
Maximum Wire Gauge for Terminals
2.5 mm^2

Y72221 Galvanic Isolator

Electrical Specifications

Input Voltage Range
20 to 24 VDC
Output Voltage
0.6 to 24 VAC
Current Range
1 to 20 mA
Short Circuit Current (Output)
65 mA maximum

Environmental Specifications

Operating Temperature Range
-20°C to +60°C

Mechanical Information

Height
107.5 mm
Width
20 mm
Depth
110 mm
Weight
100 g
Maximum Wire Gauge for Terminals
2.5 mm^2
Maximum 2251EIS Sensors
15*
Maximum number IST200 between Isolators
2*

* - refer to the control panel manufacturer for overall loop capacities