PERTRONIC INDUSTRIES LTD

INSTALLATION DATASHEET
Galvanic Isolator Interface
ISGAIFNZSSAP

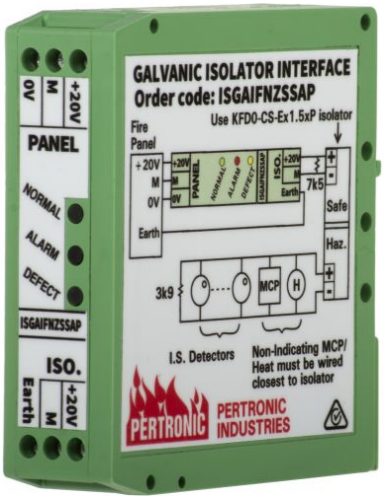
Overview

The **Pertronic Galvanic Isolator Interface (ISGAIFNZSSAP)** connects a galvanically-isolated detection circuit to a Pertronic conventional detection zone. The interface may be used with a conventional Pertronic fire alarm control panel (F1, F4, F16e), or a Pertronic loop responder.

The interface performs two functions:

- Translates signals from intrinsically safe (IS) devices to trigger the appropriate response in a Pertronic conventional detection zone
- Compensates for level changes introduced by the Galvanic Isolator

The Pertronic Galvanic Isolator Interface is compatible only with NZS 4512:2010 detection circuits. It does not support NZS 4512:1997 detection circuits.



Pertronic Galvanic Isolator Interface

Features

- Interfaces one conventional detection zone with a Pepperl + Fuchs KFD0-CS-Ex1.51P Galvanic Isolator connected to conventional detection devices
- Suitable for Pertronic NZS 4512:2010 20 Volt (nominal) conventional circuits, including F1, F4, F16e, and Loop Responder
- Powered from conventional zone +20 Vdc output
- Translates Orbis intrinsically-safe detector levels and MCP activation to Pertronic M-voltage levels
- Works with normally-closed IS MCPs (contact goes open when activated)
- LED indications for NORMAL (green), ALARM (red), and DEFECT (yellow)
- Label on the product shows connection diagram
- Maintains the integrity of fire alarm control panel Earth-Defect supervision
- On-board indicator shows current and historic defects (faults)
- Missing 20 V, 0 V, or M causes a defect (fault)
- Wiring open- or short-circuits between the Interface and the Galvanic Isolator trigger a defect (fault)

NOTE

The **Galvanic Isolator Interface** does not support NZS 4512:1997 circuits. In these circuits, an open circuit in the detector cabling would trigger a (non-indicating) heat or MCP alarm condition at the panel.

Specification

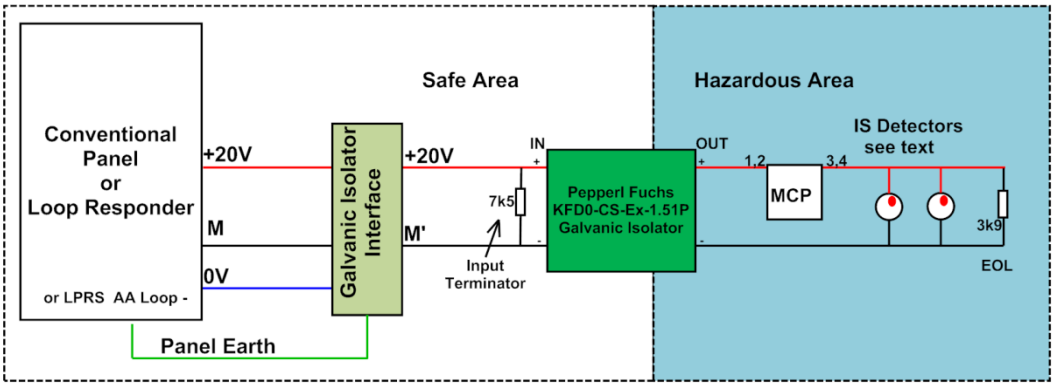
Dimensions		79 x 22 x 74 mm	excluding mounting tabs
Mounting		35 mm DIN rail	
Capacity	Orbis IS Detectors IS MCP	Up to ten Up to ten	
Connections	Panel to Interface Interface to Isolator Isolator Zone Cabling	4-wire (0 V, ‘M’, +20 V, Earth) 2-wire (+, ‘M’) 2-wire (+ and –)	
Current Consumption	Normal Alarm Defect	25 mA + detector load 47 mA (< 50 mA) 43 mA (< 50 mA)	current drawn from the panel zone circuit
Temperature		0 °C to 45 °C	
Humidity		≤ 65 % RH, non-condensing	
IP Rating		IP32	

Connections

The **Galvanic Isolator Interface (ISGAIFNZSSAP)** is designed for use with the Pepperl and Fuchs KFD0-CS-Ex-1.51P Galvanic Isolator. Both products mount on a 35 mm DIN rail.

> **Warning: The information in this document must not be treated as complete instructions for the design, construction, installation, commissioning, or maintenance of systems in hazardous areas. Cabling and fire system devices in hazardous areas must be designed and installed by properly qualified persons, in accordance with all applicable standards and regulations.**

- Wire the detection zone as shown in the diagram
- Install manual call points (MCP) closest to the Galvanic Isolator. This allows an MCP alarm to override a detector alarm, and makes it feasible to configure the panel to respond appropriately to each type of alarm.
- Terminate the detection cable in the hazardous area with a 3.9 kΩ EOL resistor.
- Terminate the safe side of the isolator with a 7.5 kΩ resistor. This ensures that the panel is able to distinguish between an MCP Alarm, and an open circuit in the detector wiring.
- Connect the Galvanic Isolator Interface **0 V** to the conventional circuit **0 V** (This is called **Battery 0 V** on the F4 and F16e; and **Loop Negative** on the Loop Responder).
- Diagrams on the Galvanic Isolator and Galvanic Isolator Interface show the wiring connections and polarity
- A terminal is provided for earthing the safe area side of the Galvanic Isolator Interface



Galvanic Isolator Connections (Pepperl + Fuchs KFD0-CS-Ex1.51P)

Safe Area Terminals				Hazardous Area Terminals		
Zone 'A' +	11	+		+	1	Detectors
Zone 'A' M	12	–		–	2	
N/A	10	Not used		Not used	3	Not connected

Indications

The Galvanic Isolator Interface has three indicator LEDs: Normal (Green), Alarm (Red), and Defect (Yellow).

Normal and Alarm LEDs

The following table details LED indications and the signal to the panel in the Normal and Alarm conditions:

Status	Condition	Normal	Alarm	Signal to Panel
Normal	V_{ISO} 1.7 V…4.0 V	1 Hz Flash		10 kΩ EOL
Panel Reset	Loop Current < 1 mA	2 Hz Flash		10 kΩ EOL
MCP Alarm	V_{ISO} 0.5 V…1.7 V		2 Hz Flash	iMCP Alarm
Detector Alarm	V_{ISO} 5.0 V…8.0 V		1 Hz Flash	Smoke Alarm

NOTE: Orbis heat and smoke detectors report identical alarm signals. The fire alarm control panel will record all detector alarms as *smoke alarms.*

Indications (continued)

Defect LED

The yellow LED indicates current and historic defects.

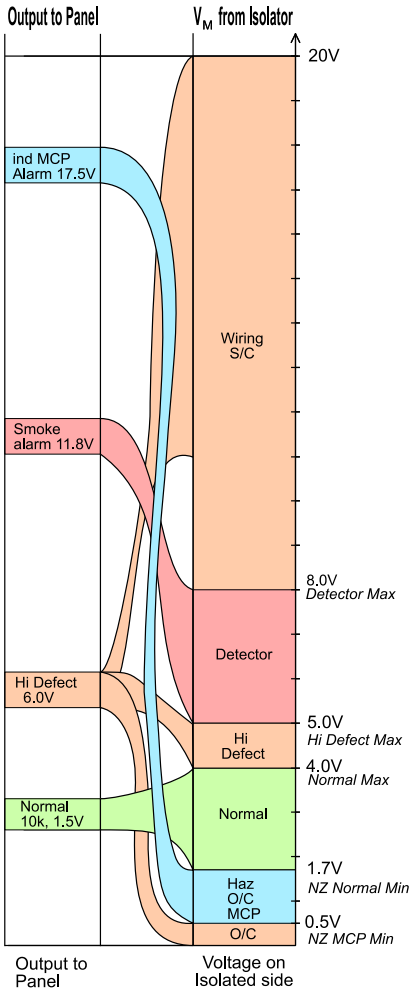
This LED repeats a sequence of ten pulses. A long pulse in any position identifies the defect, as listed in the table below. Codes 1-5 identify defects which still exist ("current"): Codes 6-10 indicate defects that occurred in the past ("historic"), and have since cleared.

To reset historic defect indications, depower the Galvanic Isolator Interface for five seconds.

Status	Condition	Defect	Signal to Panel
Current Defects			
High Defect	V_{ISO} 4.0 V…5 V	1st Flash Long	Hi Defect
Wiring O/C	V_{ISO} < 0.5 V	2nd Flash Long	Hi Defect
Wiring S/C	V_{ISO} > 8.0 V	3rd Flash Long	Hi Defect
Supply Low	+20V_S < 18.0 V	4th Flash Long	Hi Defect
Supply High	+20V_S > 22.0 V	5th Flash Long	Hi Defect
Supply missing	V+ or 0 V missing	N/A	Hi Defect
Historic Defects			
High Defect	V_{ISO} 4.0 V…5 V	6th Flash Long	The signal transmitted to the panel depends on the Galvanic Isolator Interface's **current** status.
Wiring O/C	V_{ISO} < 0.5 V	7th Flash Long	
Wiring S/C	V_{ISO} > 8.0 V	8th Flash Long	
Supply Low	+20 V_S < 18.0 V	9th Flash Long	
Supply High	+20 V_S > 22.0 V	10th Flash Long	

Signal Translation

The diagram at right shows how levels from the **Galvanic Isolator** are translated in the **Pertronic Galvanic Isolator Interface** to trigger the appropriate response in a Pertronic conventional fire alarm control panel or **Loop Responder**.



Ordering Information

Product Code	Description
ISGAIFNZSSAP	Galvanic Isolator Interface
MCP3A-R000SF-K013-01IS	Intrinsically Safe Call Point, Surface Mount
PS200	Plain Hinged Cover for Manual Call Point
KFD0-CS-Ex-1.51P	Single Channel Galvanic Isolator (Detector or Linear Heat)
ORB-HT-51151	Orbis Intrinsically Safe BS 65 °C Heat Detector
ORB-OP-52028	Orbis Intrinsically Safe Optical Smoke Detector
ORB-MB-50018	Orbis Base for Intrinsically Safe Detectors

Backward Compatibility

In some installations, the **Pertronic Galvanic Isolator Interface (ISGAIFNZSSAP)** is backward compatible with the ISGAIFNZ Galvanic Isolator Interface, which has been withdrawn from production.

Please contact Pertronic technical support for advice on specific installations.