

# CHAPTER 2 - SYSTEM DESCRIPTION

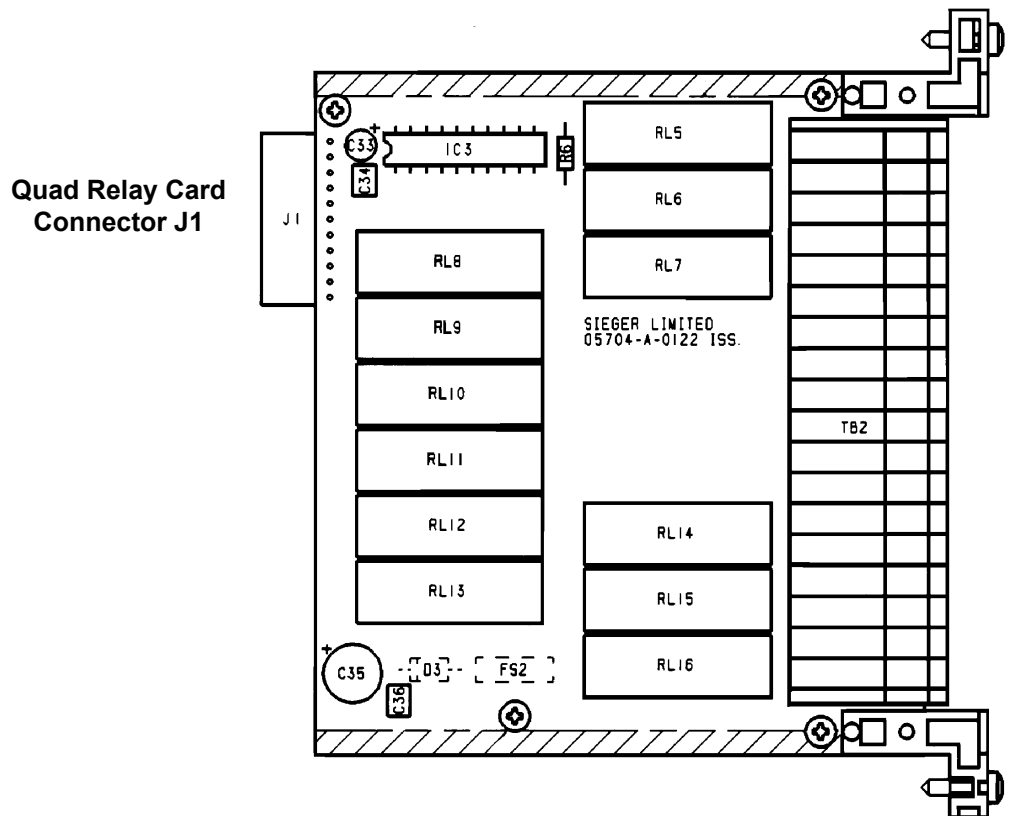
## 6.3 Fire Relay Interface Assembly (05704-A-0123)

### 6.3.1 General

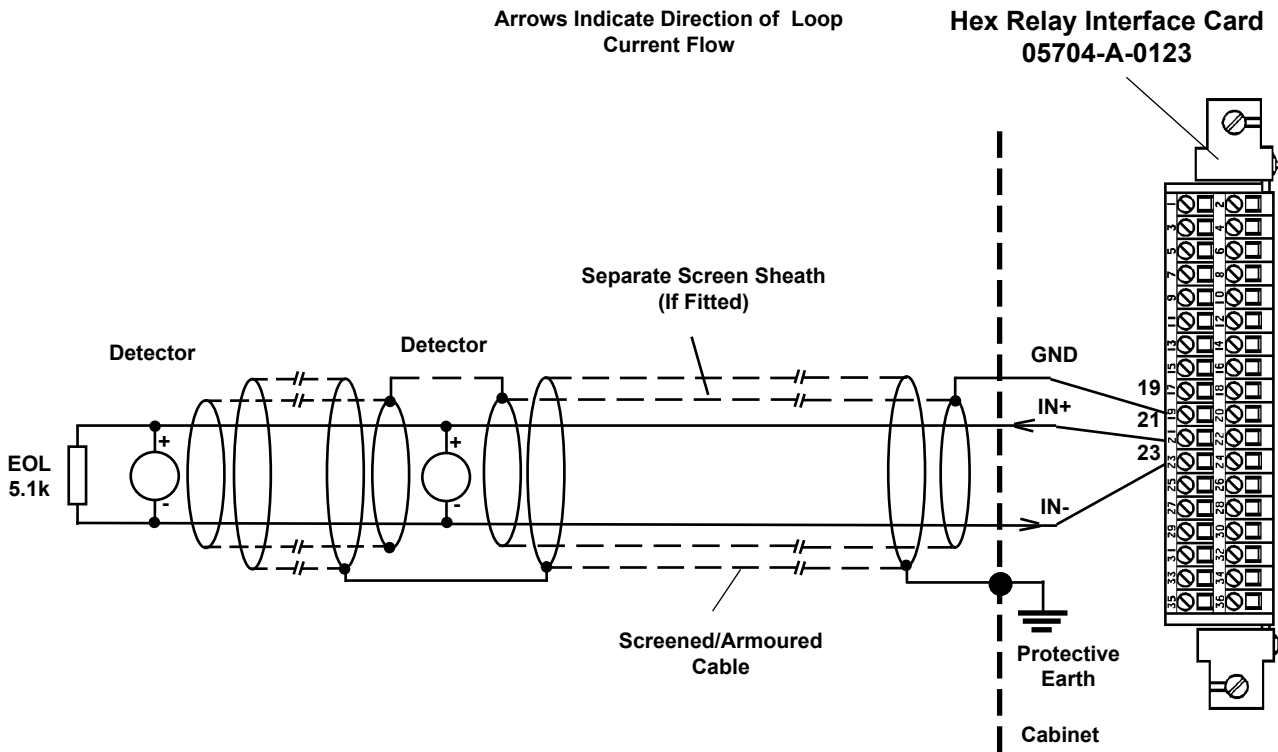
The Expansion Relay Card provides relay expansion for a Four Channel Control Card and the Hex Relay Interface Card. The Expansion Relay Card is connected to the Hex Relay Interface Card and provides 12 additional relays, eight of which are single pole change-over and four are single pole single throw. The relays can be configured for fire, fault or inhibit alarms and as individual or master outputs.

When the Expansion Relay Card is connected to the Hex Relay Interface Card, the pair of cards take up two slots of the rack. For this reason a blank panel (or Fire Status Panel) has to be fitted to the rack front panel adjacent to the associated Four Channel Control Card.

The front and rear access connections are shown in Sections 6.3.3 and 6.3.4 respectively while the physical layout is shown below:



# CHAPTER 4 INSTALLATION INSTRUCTIONS



- Notes: 1. Where a detector is earthed locally, either to an Earth Stud or through the detector casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end.
2. The above diagram shows the detector connections for Channel 1. Channels 2, 3 and 4 connections are similar and their pin connection numbers are shown below:

	Channel	Detector Connection		
		IN+	IN-	Ground
Hex Relay Interface Connections	1	21	23	19
	2	22	24	20
	3	27	29	19
	4	28	30	20

**Typical Loop Powered Detector and Terminal Block Connections**

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## CHAPTER 4 INSTALLATION INSTRUCTIONS

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### 12.3 Typical Loop Powered Detector with IS Barrier Connections

Loop powered intrinsically safe detectors (eg. most smoke, heat and manual call points) have two wire connection. The detector documentation will indicate the positive and negative loop connections. Multiple detectors may be connected in parallel on a single loop input provided the IS criteria and loop operational limit for quiescent current are not exceeded.

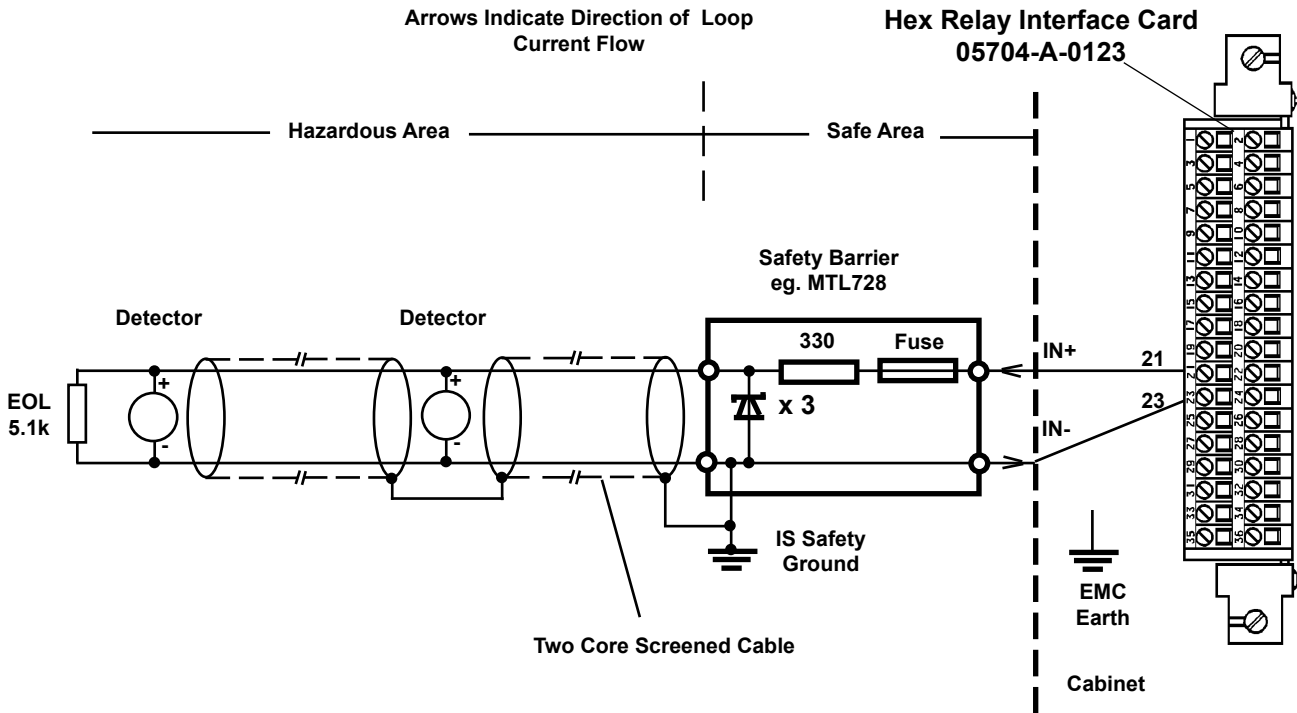
In the safe area, the two wires from the detector should be connected to the field (hazardous area) side of the barrier. The input (safe area) side wires from the barrier should be connected to the appropriate channels IN+ and IN- terminals of the Hex Relay Interface Card that is attached to the required 5704F Control Card. The loop current always flows from the IN+ terminal and returns via the IN- terminal. The barrier must be earthed appropriately.

For fault monitoring purposes an end of line (EOL) resistor must be fitted in or after the last detector on the loop. The typical value for end of line resistance is 5.1k ohms.

When using an external barrier the IS compatibility link for the input must be set appropriately, see section Chapter 2 Section 4.3.

Intrinsically safe systems must be earthed at one point only. All detector cable screens should be connected separately to the IS safety ground.

# CHAPTER 4 INSTALLATION INSTRUCTIONS



- Notes:
1. Earth Leakage must not be used with single or dual barriers since the 0V is connected to IS ground. If earth leakage is required an isolating barrier must be used.
  2. A suitable barrier specification is a 28V 300 ohm Shunt Barrier with 50mA minimum current capability for short circuit survival.
  3. The above diagram shows the detector connections for Channel 1. Channels 2, 3 and 4 connections are similar and their terminal block connection numbers are shown below:

	Channel	Detector Connection		
		IN+	IN-	Ground
Hex Relay Interface Connections	1	21	23	19
	2	22	24	20
	3	27	29	19
	4	28	30	20

**Typical Loop Powered Detector, IS Barrier and Terminal Block Connections**