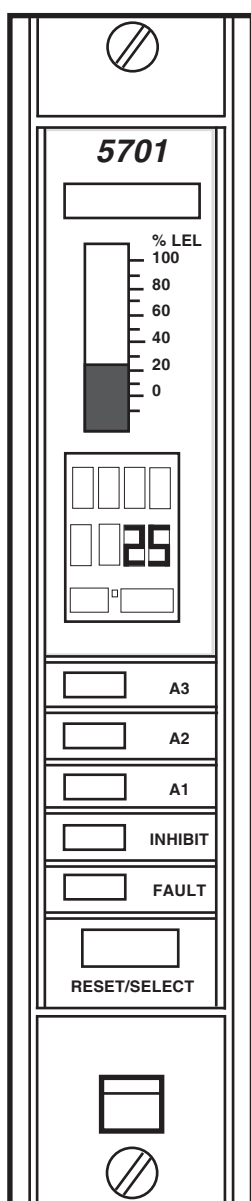


CHAPTER 2 - SYSTEM DESCRIPTION

4. SINGLE CHANNEL CONTROL CARDS

4.1 General



The 5701 Single Channel Control Card provides control, display and alarm facilities for a connected gas detector. The front panel display indicates the gas reading and channel status while LEDs are used for alarms. A push-button is provided for resetting the alarms and selecting the card for use with the Engineering Card.

The operation of the control card is microprocessor controlled and is fully definable for a wide range of connected gas detectors and application requirements. The software configuration setup is stored in an EEPROM.

There are two types of control card depending on the type of gas detector being fitted to the system:

- a. Single Channel Control Card 4 - 20mA.
Part Number 05701-A-0301.
- b. Single Channel Control Card Catalytic.
Part Number 05701-A-0302.

Each of the above control cards consist of a single channel control card fitted with the respective plug-in sensor drive module.

An optional Analogue Output Module can also be plugged into the single channel control card to provide a remote output of the channel card readings.

CHAPTER 2 - SYSTEM DESCRIPTION

4.2 Single Channel Control Card

The Single Channel Control Card carries out the control functions for a single loop of gas detection as follows:

- a. Processes the incoming sensor drive module signal.
- b. Displays the signal level on the front panel liquid crystal display.
- c. Compares the signal level with pre-defined alarm limits.
- d. When the pre-defined alarm limits are exceeded, raises the alarms by lighting up front panel LEDs and operating optional connected relays.
- e. Informs other cards with the alarm status information.
- f. Self validates the operation of its circuit components, software operation and the condition of the sensor.

4.3 Sensor Drive Modules

Two sensor drive modules are provided:

- a. Sensor Drive Module, 4 - 20mA, Part Number 05701-A-0283
- b. Sensor Drive Module Catalytic, Part Number 05701-A-0284

The Sensor Drive Module conditions the incoming catalytic or 4 - 20mA sensor signal and provides the necessary sensor power supply. It contains all the circuitry necessary to generate the voltages and currents required to drive the sensor, the circuitry to acquire the sensor signal and to scale the sensor signal to a standard output. The sensor drive modules are factory fitted and plug directly onto the channel control card.

4.4 Analogue Output Module

An optional Analogue Output Module, (Part Number 05701-A-0285), may be factory fitted to the Single Channel Control Card and is used on a channel of gas detection to provide an isolated current loop output which follows the sensor signal level. This may be set electronically to produce a 0 - 20mA output or a 4 - 20mA output and can be used to operate a chart recorder, etc.

CHAPTER 2 - SYSTEM DESCRIPTION

4.5 Single Channel Control Card Physical Layout

The physical layout of the Single Channel Control Card is shown below. The Sensor Drive Modules plug into the 14-way connectors J1 and J2 while the Analogue Output Module, when fitted, plugs into J3 and J4. Link LK1, available on MkII cards only, is used when individually powering control cards See Chapter 4, Section 16.2.

