



**ISO 9001**  
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# Engineering Specification

## Gas Detection Control System

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**Type: Panel Mount NEMA 1 Enclosure**

**Model: Detcon Model 410-N1-24VDC**

The gas detection control system shall consist of single sensor control cards housed in a NEMA 1 panel mount enclosure. System capacity shall be up to 4 active channels of gas detection. The single sensor control cards shall be front panel plug-in replaceable. The control system shall be capable of operating from an input voltage of 22.5-28 VDC.

Sensor input signal to the control system shall be 4-20 milliamps.

Each single sensor control card shall supervise and display the status of a remote mount gas detection sensor. Display functions shall include gas type, a digital indicator of gas concentration and front panel alarm status light emitting diodes.

The single sensor control cards shall provide 2 user programmable alarm level relays and a fault condition alarm relay. The single sensor control cards shall be addressable via RS-485 serial communication. Each control card shall provide a 4-20 milliamp output.

Alarm relays shall be form "C" contacts rated for 5 amps at 30 VDC. Alarm relay configuration and action shall be user programmable as normally energized (failsafe) or normally de-energized, latching or non-latching. There shall be a provision to select an alarm acknowledge/alarm silence function for each alarm relay. Alarm reset and alarm silence functions shall be via a panel switch located on the faceplate of each control card. The mother board shall include terminals for an external common reset switch. The control system motherboard shall include program jumpers such that alarm relay outputs from each control card may be discreet, common or zoned.

The single sensor control cards shall have diagnostic circuitry to continuously monitor for system faults including open and short circuits in field wiring to sensors. The fault relay shall be normally energized and will de-energize on any supervised fault condition.

The single sensor control cards shall include a provision to disable alarm level relays during which the fault relay and fault LED will be activated. There shall be a provision to enter a calibration mode which will disable alarm relays, activate the fault relay and flash the fault LED without inhibiting the digital display or alarm level LED indicators. The calibration alarm inhibit mode shall include an auto reset feature after a 60 minute timeout. Each single sensor control card shall be programmed to detect a fixed 2 milliamp input as calibration mode activation from a remote sensor.

The single sensor control cards shall include a test function simulating full scale input and activating all relays.

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