



**ISO 9001**  
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# Engineering Specification

## Gas Detection Control System

**Type: Eight Channel / NEMA 4X Enclosure**

**Model: Detcon Model 840-N4X**

The gas detection control system shall consist of an eight-channel controller housed in a NEMA 4X weatherproof enclosure with internal fixed panel and door-mounted window. The enclosure shall include the provision to house an optional stand-by battery capable of sustaining system operation for a period of one hour in the event of line power failure. The control system shall be capable of operating from an input voltage of 120 or 220 VAC and/or 11.5-28 VDC.

The gas detection control system shall be microprocessor based and shall be designed to supervise the condition and input signal from one to eight field mounted gas detection sensors. The sensor input signal to the control system shall be user selectable and shall be either 4-20 milliamps or serial RS-485.

The control system shall be completely user programmable via embedded and intuitive software. User interface and programming shall be via function keys mounted on the controller front panel. The control system shall be equipped with a display (LCD) that is user programmed to reflect gas type and concentration for each field mounted gas sensor. The control system shall have discrete LED indicators for alarm level 1, alarm level 2, alarm level 3 and fault alarm conditions. The control system shall provide three field programmable alarm level relays and one fault relay. Relays shall be form "C" contacts rated for 5 amps @ 30 VDC. Alarm Level 1, alarm level 2, and alarm level 3 shall have individual adjustable set points for each channel of operation. There shall be a provision to configure alarm relays in a normally energized (failsafe) or normally de-energized mode of operation. There shall be a provision to configure alarm level 1, alarm level 2, and alarm level 3 and fault alarm relays for latching or non-latching operation. There shall be a provision to select an alarm acknowledge/alarm silence function for each alarm level relay.

The control system shall include an addressable RS-485 serial communication port.

The control system shall have diagnostic circuitry to continuously monitor for system faults including field wiring between the sensor and control unit. The fault alarm relay shall be failsafe normally energized and will de-energize on any supervised fault condition.

The control system shall include a provision to disable alarm relays during calibration without inhibition of panel LCD or alarm LED indicators. The alarm relay disable function will include an auto-reset feature after a 30-minute timeout.

The control system shall include date and time event logging and data storage of a minimum of the last 100 alarm incidents, a minimum of the last 10 calibrations and time weighted average (TWA) and peak exposure level (PEL) for the last eight hours of operation. There shall be a provision to view logged and stored data on the local LCD or by download to a PC.

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