



# Detcon MODEL 880A/S-N4X

## GAS DETECTION ALARM AND CONTROL SYSTEM

888-367-4286  
713-559-9200  
fax 281-292-2860  
www.detcon.com  
sales@detcon.com

### DESCRIPTION

Detcon Model 880-N4X is a PLC based control system designed to monitor and control multiple gas detection sensors and

other field devices. The main unit is programmed as a Modbus master with two options available; Model 880A-N4X for analog input field devices and Model 880S-N4X for addressable field devices. The system is completely configurable without the need for engineering or PLC programmer support. Selection of the number of active channels, gas type, range of measurement, and alarm relay logic are all simple menu driven tasks accomplished by navigating through and using a series of configuration screens featuring touch screen simplicity.

The Analog version (880A-N4X) has a system capacity of up to 72 field devices using distributed I/O nodes consisting of Detcon Model DA-4 for 4-20 mA DC inputs, Detcon Model DI-4 for digital inputs and Detcon Model RL-4 for alarm relay outputs. Power and din rail access are provided locally for up to eight I/O modules for both 880A-N1R and 880S-N1R. The Serial version (880S-N4X) is specifically designed for installations with up to 32 RS-485 addressable devices. The system features an 8-inch color touch screen that includes system configuration, utilities, and alarm history. The main screen displays the current reading and alarm status of up to 8 field devices at a time. Touch tabs at the top of the screen are used to navigate to additional screens of up to 8 field devices (9 tabs for Analog, 4 tabs for Serial). A tab will change to red shading if a device on its screen creates an alarm condition. Each sensor and/or field device can be selected from its main screen for viewing of its current status, configuration parameters and a graph of recent gas concentration levels.

Detcon Model 880 systems feature a USB port that is used for data logging and recording alarm history. Bulk memory thumb drives can be installed for high density installations.



### SPECIFICATIONS

**Electrical Classification**  
NEMA 4X

**Dimensions**  
18"W x 20"H x 9"D

**Capacity**  
Up to 72 Analog Inputs or  
Up to 32 Serial Inputs

**Power Input**  
100-260 VAC (50-60 Hz); 24 VDC

**Power Consumption**  
<60 Watts (not including sensors)

**Outputs**  
Programmable relays standard:  
3 banks (Alm1, Alm2, Alm3, Flt)

**Inputs**  
RS-485 Serial (880A-N4X)  
4-20 mA (880S-N4X)  
4 channels per module; up to 18 Modules

**Operating Temperature Range**  
0°C to 45°C; 32°F to 113°F

**Warranty**  
One year

### FEATURES

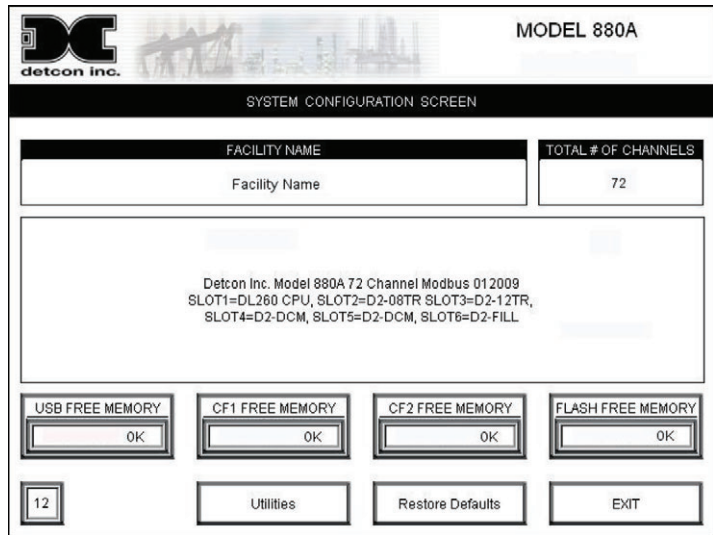
- ▶ PLC based Modbus™ master control system
- ▶ 2 addressable slave ports
- ▶ Distributed I/O options
- ▶ Simple menu driven programming
- ▶ 8 inch color touch screen
- ▶ Front panel LED status indicators
- ▶ USB drive alarm event logging

[www.detcon.com](http://www.detcon.com)

# TOUCH-SCREEN USER INTERFACE

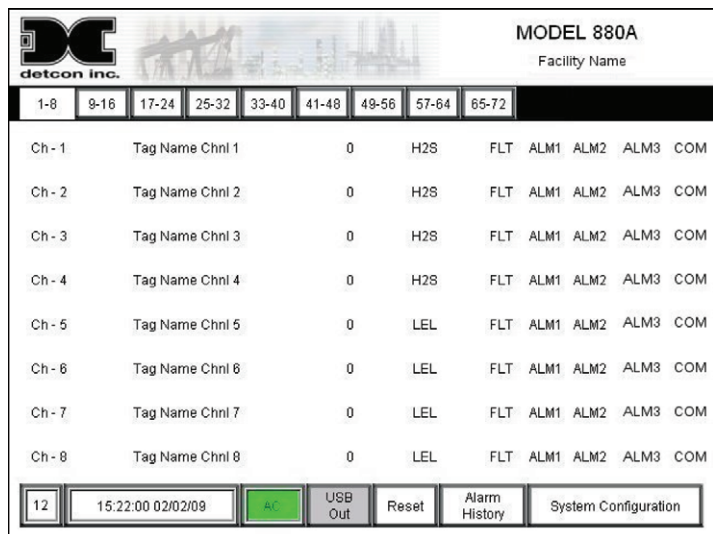
## SYSTEM CONFIGURATION

A password protected "System Configuration Screen" allows for the entry of the Facility name, number of active channels, and access to utilities. When called for, an alphanumeric keyboard and number keypad will display on the touchscreen for text and numeric entries.



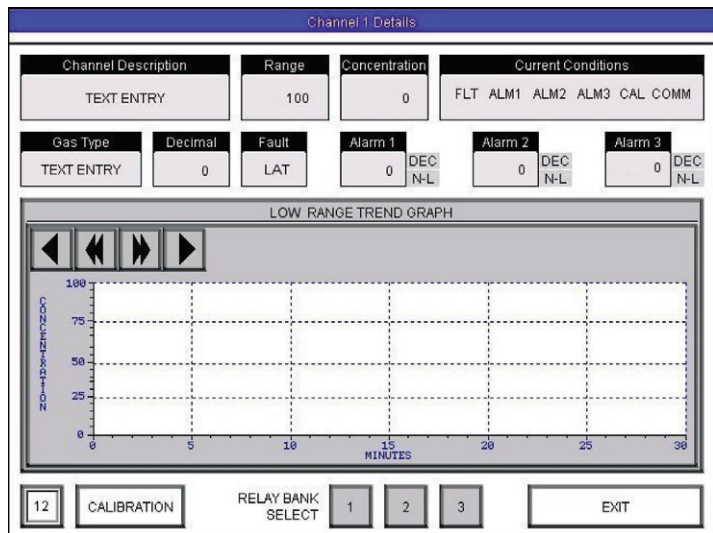
## MAIN SCREEN

The "Main Screen" displays the current reading and alarm status of up to eight field devices at a time. Touch tabs at the top of the screen are used to navigate to additional screens of up to 8 field devices. A tab will change to red shading if a device on its screen triggers an alarm condition.



## CHANNEL DETAILS SCREEN

From any "Main Screen" display of 8 field devices it is easy to select a single device and view the "Channel Details Screen". This screen displays real time reading and password protected configuration details including gas type, range of measurement, serial address, tag name, and alarm relay logic. The screen also provides a 30 minute trending graph of gas concentration activity of the device. Arrow keys allow the graph to shift backward and then forward to display up to 8 hours at 30 minute intervals.



# ADDRESSABLE I/O MODULES

## DESCRIPTION

The analog version Model 880A-N4X has a system capacity of up to 72 field devices and is specifically designed for distributed I/O installations using nodes of Detcon Model DA-4, DI-4, AO-4, and RL-4 modules. The modules are addressable devices that communicate via a RS-485 Modbus™ RTU protocol. They are din rail mounted and stackable with slide-in connectors that bus the power and communication lines between modules. Power and din rail access are provided locally for up to eight I/O modules.

Each module address is programmed using front panel switches. An LED flashes to demonstrate active communication status. Each module design incorporates integral I/O protection from reverse polarity termination, over voltage and transient spikes. The modules can be installed and stacked in any combination (DA-4, DI-4, AO-4 and RL-4).

Detcon I/O modules provide seamless expandability and simplified field wiring for low-cost installations.

## FEATURES

- ▷ Modular Din-rail Mounted Package
- ▷ Stackable Design with Integrated Bus for Communications and Power
- ▷ RS-485 Modbus RTU Platform
- ▷ I/O Protection from Over Voltage & Current Spikes

## SPECIFICATIONS

### Capacity

- DA-4: Four 4-20 mA DC Sensor Inputs
- DI-4: Four Dry Contact Inputs
- AO-4: Four 4-20 mA DC Sensor Outputs
- RL-4: Four Relay Output Contacts

### Communications

- RS-485 Modbus™ RTU
- 9600 Baud, 8 Data Bits, No Parity, 1 Stop Bit
- Other Baud Rate and Parity Optional

### Input Voltage

11.5-30 VDC

### Power Consumption

<3 Watts @ 24 VDC

### Dimensions

4.5"H x 4"D x 0.7"W

### Mounting

35 x 7.5 mm Din Rail Standard

### Electrical Classification

NEMA 1

### Warranty

One Year

### Model DA-4 Four Channel 4-20mA Input Module



Each DA-4 has four sensor input channels that provide power to any 2-wire or 3-wire field sensor such as a combustible, toxic gas or any other industry standard 4-20 mA sensor device.

### Model DI-4 Four Channel Dry Contact Input Module



Each DI-4 has four relay contact input channels that produce a 4 mA level when the contact is open and a 20 mA level when the contact is closed.

### Model AO-4 Four Channel 4-20mA Output Module



Each AO-4 has four 4-20 mA output channels that provide 4-20 mA signals as inputs to host control devices. The 4-20 mA outputs are dictated by the host controller.

### Model RL-4 Four Alarm Relay Module



Each RL-4 has four assignable relay contacts rated for 5A at 30 VDC and 250 VAC. The relay contacts are single pole double-throw.

# I/O NODES AND ENCLOSURE OPTIONS

## DESCRIPTION

Two I/O node enclosure options and three power supply options are available for housing and powering Detcon Model DA-4, DI-4, AO-4 and RL-4 serial addressable modules; NEMA 4X Fiberglass or NEMA 7 explosion proof. Both options include din rail and all necessary hardware including through terminal blocks, partitions, end stops, spacers and connectors.

### Enclosure Options

NEMA 4X Enclosure Dimensions: 14H x 12W x 7D

NEMA 7 Enclosure Dimensions: 16H x 14W x 9D

### Power Supply Options

110/220 VAC to 24 VDC 30 watts (4 remote sensors)

110/220 VAC to 24 VDC 75 watts (8 remote sensors)

110/220 VAC to 24 VDC 120 watts (16 remote sensors)

## REMOTE DISPLAY

Detcon Model 880R-N4X is a remote display designed to operate in conjunction with Detcon Model 880 PLC-based control systems. The 880R-N4X features a touch-screen operator interface and mimics the display functions of the main Model 880 system controller. It can be installed up to 1000 feet away. Digital data repeaters can be added to extend this distance.

**Electrical Classification**  
NEMA 4X

**Dimensions**  
14"W x 16"H x 7"D

**Power Input**  
100-260 VAC (50-60 Hz)

**Power Consumption**  
24 Watts

**Display**  
8" Backlit Touch-screen

**Inputs**  
RS-422

**Operating Temperature Range**  
0°C to 45°C; 32°F to 113°F

**Warranty**  
One year



## ORDER GUIDE

### Model 880-N4X Gas Detection Alarm and Control Systems

PN 904-880S00-000 Model 880S-N4X Serial Control System

PN 904-880A00-000 Model 880A-N4X Analog Control System

### Addressable I/O Modules

PN 976-041400-000 Model DA-4 Four Channel 4-20 mA DC Input Module

PN 975-041402-000 Model DI-4 Four Channel Dry Contact Input Module

PN 975-041400-000 Model RL-4 Four Alarm Relay Module

PN 975-041401-000 Model AO-4 Four Channel 4-20mA Output Module

### I/O Nodes Enclosures and Power Supply Options

PN 954-R11601-000 NEMA 4X Weatherproof Enclosure

PN 957-R11601-000 NEMA 7 Explosion Proof Enclosure

PN 360-16N030-024 Din Rail Power Supply 30 Watts including breaker and overvoltage modules (recommended for use with up to 4 remote sensors)

PN 360-16N075-024 Din Rail Power Supply 75 Watts including breaker and overvoltage modules (recommended for use with up to 8 remote sensors)

PN 360-16N120-024 Din Rail Power Supply 120 Watts including breaker and overvoltage modules (recommended for use with up to 16 remote sensors)

### Model 880R-N4X Remote Display

PN 904-88RS00-000 Model 880RS-N4X Serial Remote Display

PN 904-88RA00-000 Model 880RA-N4X Analog Remote Display