Four Channel Wall Mount Controller

Beacon 410

The Beacon 410 from Air Liquide is a highly configurable, microprocessor-based, flexible and easy-to-use four channel gas monitor. It simultaneously displays the gas type, readings and status for four channels of gas detection. It can monitor any combination of Direct Connect sensors including LEL combustibles, O₂, CO₂ and toxic gas sensors as well as any 4-20mA transmitters.

Each channel has three fully configurable alarm points. A built-in silenceable audible alarm alerts you to alarm conditions. Each channel also has two dedicated fully configurable relays and there is a bank of common relays as well. The common relays can be optionally configured as additional channel relays, allowing up to three alarm relays per channel.

Each channel provides a 4-20mA output signal. A digital Modbus interface for remote logging of data via a Modbus network is standard. A Min-Max feature retains high and low peak readings for review at any time.

Field calibration is made simple by the easy-to-use calibration mode. A fully configurable high visibility strobe is available as an option. The unit can be powered from 115/220 VAC, an external 24 VDC source or a 24 VDC backup battery. A trickle charging battery backup feature is also available as an option.

All features and functions of the Beacon 410 are controlled by easy-to-use menus on the back-lit LCD display. The Form-C (SPDT) relay contacts are rated at 10A, 250V, reducing or eliminating the need for additional slave relays. All features of the Beacon 410 are built into the unit so you never need to purchase or maintain any “add-on” cards or components.

Air Liquide offers the industry's widest selection of standard and toxic gas detection sensors, all of which can be utilized with the Beacon 410, providing gas monitoring protection for almost any application.

Benefits/Features

- Simultaneously monitor up to four channels
- Digital display of gases and concentrations
- Accepts direct wire sensors for LEL, O₂, H₂S, CO, CO₂, toxic Direct Connect sensors
- Accepts any 4-20mA transmitter, two or three wire
- Three programmable alarm levels per channel
- Up to three configurable alarm relays per channel
- Zero follower automatically compensates sensor drift
- 4-20mA analog and Modbus digital output standard
- 115/220 VAC or 24 VDC operation
- Audible alarm with silence feature
- Alarm reset switch
- Built-in trouble alarm with relay
- Weather-proof NEMA 4X enclosure
- Optional strobe and battery backup available
- CSA Certified to CSA C22.2 No. 1010 and ANSI/ISA S82.01
- One year materials and workmanship warranty

Industry Applications

- Petrochemical plants
- Refineries
- Water and wastewater treatment plants
- Pulp and paper mills
- Gas, telephone and electric utilities
- Parking garages
- Manufacturing facilities
- Steel
- Automotive
- HVAC
Four Channel Wall Mount Controller (cont’d.)

Beacon 410

Specifications

Physical
Dimensions: 12.5” H x 11” W x 6.4” D (318 mm x 279 mm x 136 mm)

Enclosure: NEMA 4X non-metallic for indoor and outdoor locations

Conduit Connection: Four 3/4” NPT conduit hubs provided (for sensor, power and relay wiring)

Wiring Termination: Screw-type terminal block, 14 gauge max

Power: 115 VAC and 220 VAC, or 24 VDC nominal; battery backup option available

Controls: Display PCB control switches
  - UP/YES push button switch
  - DOWN/NO push button switch
  - ESCAPE push button switch
  - ENTER push button switch
  - External reset switch
  - ON/OFF toggle switch

Environmental

Operating Temperature: -4°F to 122°F (-20°C to 50°C)

Storage Temperature: -4°F to 158°F (-20°C to 70°C)

Relative Humidity: 0-95% RH (non-condensing)

Enclosure Rating: NEMA-4X enclosure, chemical and weather-resistant

Inputs

Direct Wired Sensors: LEL, O2, CO2 and toxic gas sensors. Remote amp not required for less than 500 feet

4-20mA Sensors: Accepts any 4-20mA transmitter (24 VDC, 2 or 3 wire)—wide variety of sensors are available with 4-20mA signals. Wiring distances up to 8,000 feet

Sampling Methods: Diffusion and sample draw heads available

Outputs

Relays: Two flexible, programmable Form-C (C, NO, NC) relays per channel, plus five common relays (Fail, Alarm-1, Alarm-2, Alarm-3, Alarm-Any). Common relays may optionally be assigned to function as additional channel alarm relays, providing for up to three alarm relays per channel. 10A contact rating

4-20mA: Signal output, 4-20mA (maximum load impedance 500 ohms), per channel

RS-485: Modbus format RS-485 serial output of all channel data, including gas reading and alarm status

Display: 4” x 20” backlit LCD display

Audible: Built-in audible alarm, 94 dB, mounted on enclosure. Coded output: pulsing = gas alarm, steady = fail

Visual: Alarm LEDs (on Display PCB)—Alarm 1 = yellow; Alarm 2 = orange; Alarm 3 = red; Fail = yellow. Green Pilot LED to indicate AC power connected (on Display PCB). An optional 24 VDC NEMA 4X strobe mounted to top of case

Ordering Information

When ordering a Beacon 410 system, please specify the following components:

1. Controller: Be sure to order correct -01, -02 or -03 version if intended to be used with a standby battery or if a strobe light is needed
2. Detector Assemblies (up to 4): See note below
3. Battery back-up assembly if Beacon 410 with battery charger is ordered

49-8104RK Standby battery assembly, 24 VDC, 12 AMP hours

Please note:
The Beacon 410 can accept Direct Connect Sensors for LEL combustibles (catalytic or IR sensor), oxygen, hydrogen sulfide, carbon monoxide and carbon dioxide as well as a few other gases (see Direct Connect Sensors). The Beacon 410 can also accept any 4-20mA transmitter.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>72-2104RK</td>
<td>Four channel controller (no sensors)</td>
</tr>
<tr>
<td>72-2104RK-01</td>
<td>Four channel controller with battery charger (no sensors or back-up battery)</td>
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<tr>
<td>72-2104RK-02</td>
<td>Four channel controller with strobe light (no sensors)</td>
</tr>
<tr>
<td>72-2104RK-03</td>
<td>Four channel controller with battery charger and strobe light (no sensors or back-up battery)</td>
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