

8 CHANNEL WALL MOUNT CONTROLLER

Gas Detection For Life

Beacon[™] 800 Model



Gas detection should not be complicated. The Beacon[™] 800 is gas detection simplified.

The Beacon[™] 800 is a versatile, low cost fixed system controller for one to eight points of gas detection. It is microprocessor controlled and is capable of accepting up to 8 separate 4-20 mA sensor transmitters which can be either 2 or 3 wire. The Beacon[™] 800 can be powered by either 24 VDC, or 85-264 VAC. It is simple to operate and comes complete with a wall mount installation kit.

The 2 large digital displays have backlighting and easily identify both the gas type and the gas concentration for all 8 channels simultaneously. The Beacon[™] 800 is housed in a NEMA 4X rated case for a weather tight seal. This case design complies with lock out / tag out standards and can be fully secured. An external reset switch allows alarms to be silenced from outside the controller housing. The bottom mounted wiring hubs allow for easy wiring.

With 3 amp rated relays, the Beacon[™] 800 can be wired directly to a variety of devices like alarm horns, buzzers, or lights. This eliminates the need for costly external relays from the controller to devices. RKI offers the industry's widest selection of standard and toxic gas detection sensors, which can be utilized with the Beacon[™] 800, providing gas monitoring protection for almost any application.

RKI Instruments, Inc. • 33248 Central Ave. Union City, CA 94587 • Phone (800) 754-5165 • (510) 441-5656 • Fax (510) 441-5650

Beacon[™] 800 Model

Physical				
Dimensions	Height: 12.5" 318 mm Width 11.0" 279 mm			
	Depth 6.4" 163 mm			
Enclosure	Wall mounting grey fiberglass with hinged cover.			
Conduit Connection	3/4" NPT conduit hubs, 4 provided for sensors, power, and relay wiring.			
Wiring Termination	Screw type terminal block, 14 gauge max.			
Operating Environment				
Operating Temp	-4°F to 122°F (-10°C to 50°C)			
Storage Temp	-4°F to 158°F (-20°C to 70°C)			
Relative Humidity	0 - 95% RH			
Enclosure Rating	NEMA-4X enclosure, waterproof, chemical, and weather resistant.			
Inputs				
4-20 mA	Accepts any 4-20 mA transmitter (24 VDC, 2 or 3 wire). A wide variety of RKI sensors are available with 4-20 mA signals. Wiring distances up to 8,000 feet.			
Outputs				
Relays	2 relays per channel 3 amp rating, SPDT isolated contacts. 1 set of common relays: • 2 for gas alarm levels • 1 for malfunction Relays fully programmable for: • Increasing or decreasing alarms • Latching or self reset alarms • Normally energized or normally de-energized • Time delay for alarm on and alarm off.			
24VDC	24 VDC output provided to operate sample drawing adapters.			
Display	2 alphanumeric displays with backlighting. 16 characters per line; 4 lines each. All 8 channels continuously displayed.			
Audible	Built-in audible alarm, 94 dB, mounted on enclosure. <i>Coded Output:</i> • pulsing = gas alarm • steady = fail			
Visual	4 visual LED alarms on front cover for alarm indications, pilot, and malfunction.			
Optional Expansion Cards	Individual 4-20 mA (or 1 - 5 VDC) outputs. Heavy duty relay card (4 each @ 30 amps)			
Power	85-264VAC or 24VDC			
Approvals	CSA Certified to CSA C22.2 No. 1010 and UL 61010-1			
Warranty	One year materials and workmanship.			

Specifications subject to change without notice.

10000363 ISO 9001

Authorized Distributor:

Toll Free: (800) 754-5165 • Phone: (510) 441-5656 Fax: (510) 441-5650 • www.rkiinstruments.com Made in the USA









Condition	Cause	Visual Indications	Audible Indications	
Alarm 1	 Increasing (decreasing for O2) gas reading at or above the alarm 1 set point 	Alarm 1 LED on Gas reading alternates with Alarm-1 message Strobe (if installed) activates	 Steady tone 	
Alarm 2	 Increasing gas reading at or above the alarm 2 set point 	Alarm 2 LED is on Gas readings alternates with ALARM 1 and ALARM-2 messages Strobe (if installed) activates	 Steady tone 	
Fail	Disconnected or misconnected detector head wiring Display reading at -10% of full scale or lower Defective component	 Fail LED is on Fail message replaces gas reading Strobe (if installed) activates 	Steady tone	
Low Power	•No AC power and DC power source (primary or backup) less than 21.5 volts.	Fail LED is on SUPPLY VOLTAGE IS TOO LOW LOW POWER STANDBY message and actual voltage of incoming DC power	■None	













Quick Reference Guide Programming the Beacon 800

Required Materials:

None

Enter Programming Mode

- 1. Open front door to Beacon 800
- 2. Press and HOLD the ESCAPE and ENTER buttons on the front panel.
 - a. The lower display screen will show the version for firmware that the Beacon contains, and the power supply voltage.
 - b. To return to Normal Operation, press the NO button.
 - c. To continue press the YES button.
- 3. Enable / Disable Channels
 - a. Select Channel 1 through 8, or ALL Channels.
 - b. View current Channel Setting. Press Yes if it is OK as is, or NO if it requires changing.
 - c. If you enter NO, then use the UP/DOWN buttons to select the desired setting.
 - d. Press Enter to finish your selection.
- 4. Enter Calibration Mode
 - a. Use the UP/DOWN buttons to select the desired duration of the calibration process.
 - b. Press ENTER to go accept and enter calibration mode.
 - c. Readings will show on the display, but alarms and relays are disabled.
 - d. Once calibration is complete, press the ESCAPE button to return to normal operation.
- 5. Configure Channel Settings
 - a. Select Channel 1 through 8 or ALL Channels.
 - b. Select from each of the following options for the Channels selected:
 - i. UNITS and GAS TYPE (Choose from list or create your own)
 - ii. FULL SCALE (choose from the list, or create your own)
 - iii. ALARM-1 Level
 - iv. ALARM-1 ON DELAY
 - v. ALARM-1 OFF DELAY
 - vi. ALARM-1 INCREASING or DECREASING
 - vii. ALARM-1 Relay set as NORMALLY DE-ENERGIZED or NORMALLY ENERGIZED
 - viii. ALARM-1 set as SELF RESETTING or LATCHING

- ix. ALARM-2 Relay to be used for the ALARM-2 condition or the channel Fail condition
- x. ALARM-2 Level
- xi. ALARM-2 ON DELAY
- xii. ALARM-2 OFF DELAY
- xiii. ALARM-2 INCREASING or DECREASING
- xiv. ALARM-2 Relay set as NORMALLY DE-ENERGIZED or NORMALLY ENERGIZED
- xv. ALARM-1 set as SELF RESETTING or LATCHING
- xvi. NOISE FILTER (Select from 1-8, 1 is minimum filtering and 8 is maximum filtering)
- xvii. ZERO SUPPRESSION (Select "Dead Band" as percent of Full Scale)
- c. Press YES to save your settings or NO if you do not want to save them.
- 6. Configure Power Relays
 - a. This option will only show in the menu if you have the optional Power Relay Board installed.
 - b. Use the UP/DOWN buttons to select one of the 4 relays.
 - c. Set the Relay as ENABLED or DISABLED.
 - d. Set the Relay as NORMALLY DE-ENERGIZED or NORMALLY ENERGIZED.
 - e. Set the Relay Assignments:
 - i. On the Lower Display, a grid will be shown indicating each Channel and possible Alarm or Fail condition. A minus sign (-) indicates that condition on that channel WILL NOT cause this relay to activate. A plus sign (+) indicates that condition on that channel that WILL cause the relay to activate.
 - ii. If the assignments shown are what you want, press YES, if not, press NO.
 - iii. If NO is pressed, set the +/- setting for each condition using the UP (+) and DOWN (-) buttons. You can also press ESCAPE to back up, or press ENTER to skip forward without changing the assignment
 - iv. After the last grid entry, press YES to save your settings or NO if you don't want to.



Training Notes

RKI Instruments, Inc. * 33248 Central Ave. * Union City CA 94587 * Rev. A