



Z-Gard[®] CXII Controller - Product Specifications

PHYSICAL CHARACTERISTICS	
Size	The controller enclosure shall not exceed 7.00"H x 10.00"W x 3.75"D in total size.
Weight	The Controller shall not exceed 2.5 lbs.
Enclosure Type	The enclosure shall consist of polycarbonate, with a hinged cover and door, and be designed to meet NEMA 4.
Mounting Provisions	The enclosure shall have four mounting holes for attaching the unit to a flat surface or panel.
ENVIRONMENTAL	
Temperature	The operating temperature range of the controller is -10° to +55° C (-4° to +122° F).
Humidity	The operating humidity range is 0-95% RH, non-condensing.
POWER REQUIREMENTS	
Input Power Requirement	The controller shall operate at 17-27 VAC, 50/60 Hz or 18-32 VDC @ 0.3 amps.
CONTROLLER OPERATING REQUIREMENTS	
Sensor Input Requirements	The controller connects to remotely located Z-Gard S Sensors that are automatically recognized, and establishes the sensor range and gas type. The sensors are linked by a RS485 2-wire network communication system. The controller and associated sensors shall continuously monitor for excessive levels of specific target gases and provide the necessary notification controls in the event that gas levels rise above preset limits.
WARNING and ALARM CONTROL REQUIREMENTS	
Warning and Alarm Relay Control	The controller shall manage up to 99 Z-Gard S Sensor inputs on the RS485 serial communication network. The controller shall provide 40 user-programmable relays (4 internal; 36 external, optional) that can be used to establish up to 8 discreet zones of sensors that are tied to a specific relay or set of relays. Additionally, the Warning and Alarm level set points can be selected from a value of zero up to full-scale range of a sensor or group of sensors. Upon sensing the concentration of target gas at levels equivalent to the Warning and Alarm set points, the relay contact(s) shall activate, signaling the event.
Delay Function	The controller shall have a programmable OFF time delay function that is adjustable from 0-600 seconds (factory setting is 0 minutes). The Warning relay shall deactivate from 0-600 seconds after the warning occurrence has abated. The Alarm relay shall deactivate 0-600 seconds after an alarm event has abated.
Output Capability	The controller shall have the capability of communicating with a commercial BAS, DCS, or PLC through ModBus RTU or BACNet [®] MS/TP. The controller shall be capable of communicating the status of individual sensors through a 4-20 mA analog output signal.

USER INTERFACES	
Display Readout Requirements	The controller shall have a local readout display indicating the active sensor point number, the corresponding gas concentration level and gas type, Warning and Alarm indication, zone number, number of sensors, and the diagnostic status of the system. The display will scan through all active channels. The readout display will be visible from a minimum of 5 feet, will be always present, and will not require being turned on or off.
Display Type	The controller shall have a 4 line x 40 character LCD readout for the purpose of displaying the diagnostic status of the system and associated sensors.
User Keypad	The controller shall include a user interface keypad of 16 items to access the menu-driven operating parameters located inside the front door of the enclosure. All setup parameters shall be accessed using the keypad.
Sensor Status LEDs Indicators	The controller shall include 4 common LEDs to indicate Sensor Okay, Warning, Alarm and Sensor Fail status.
Alarm Acknowledge Switch	The controller shall include a locally mounted audible alarm rated @ 90 dB with push-button reset switch. The push-button reset switch shall silence and reset the audible alarm when alarm points are exceeded. The common LED visual alarms will remain on as long as any Warning or Alarm levels are exceeded. The push-button will reset latched alarms if normal gas conditions exist. A horn relay shall be included to facilitate control of a remote alarm reset push-button.

RELAY SETPOINT and CONTACT RATINGS	
Warning and Alarm Relay Set Point Levels	Warning and Alarm Set Point Levels - The controller shall provide up to 40 user programmable Warning and Alarm Relays (4 internal, 36 external). The activation set point levels shall be independently adjustable for any value in the readout range. The set points and relay assignments shall provide drive signals to user interface relays. All Warning and Alarm relays shall have the ability to be programmed as Latching or Non-Latching, normally energized or de-energized.
Relay and Contact Rating	All Warning, Alarm and Sensor Fail relays shall be double pole, double throw. Contacts shall be rated for 10 amps 1/8 HP at 125VAC, 5 amps at 30VDC.
Contact Selections	The contacts shall be capable of being selected normally open or normally closed.

APPROVALS	
Approvals	ETL Listed; CSA C22.2 No 61010-1; UL 61010-1

WARRANTY	
Full Replacement Warranty	Instrument shall have a one-year parts and labor standard warranty with one-year extended warranty available.

MAINTENANCE REQUIREMENTS	
Maximum System Maintenance	The controller shall not require periodic maintenance other than verifying that the sensor inputs are responding to the target gases.

MANUFACTURER	
Instrument Supply	The manufacturer must be capable of supplying all equipment used to check or calibrate the sensor units.
Product Service	The manufacturer must be capable of providing on-site service with factory-trained personnel.
On-site Training	The manufacturer must be capable of providing on-site training for owner/operator.

COMMISSIONING	
Commissioning	After installation and wiring is complete, set-up and start-up of the sensor will be such that the enclosure need not be opened during this process. Prior to commissioning, verify the expected response logic per the project specification.
Checking a Warning Event	To check a Warning Event, verify the following: 1. To begin, the Power and Sensor Okay LED located on the controller door should be illuminated. 2. Verify the controller is communicating with each sensor by observing the sensor number and corresponding gas concentration reading on the controller display. 3. There are up to four outputs to be verified upon introducing a known concentration of target gas to a Z-Gard S Sensor. Upon reaching the Warning level the controller display shall show the sensor that is creating the Warning and value of the target gas; the Warning Relay contact shall activate and the Warning LED on the door shall illuminate; the corresponding digital output shall be representative of the target gas concentration; if any time delay functions are active then the preceding events will occur after the established time has elapsed.
Checking an Alarm Event	To check an Alarm Event, verify the following: 1. To begin, the Power and Sensor Okay LED located on the controller door should be illuminated. 2. Verify the controller is communicating with each sensor by observing the sensor number and corresponding gas concentration reading on the controller display. 3. There are up to five outputs to be verified upon introducing a known concentration of target gas to any of the Z Gard S Sensors. Upon reaching the Alarm level, the controller display shall show the sensor that is creating the Alarm and the value of the target gas; the Alarm Relay contact shall activate and the Warning and Alarm LEDs on the door shall illuminate and the local audible horn shall sound; the corresponding digital output shall be representative of the target gas concentration; if any time delay functions are active, then the preceding events will occur after the established time has elapsed. Pressing the audible Alarm Reset button will silence the horn.