



Specifications for the Hydro Instruments
Model GA-180 Gas Detector
Specification GA-180

1.01 GENERAL

1.01.1 Completeness

The system shall be complete with all components, equipment, and appurtenances.

1.01.2 Quality Assurance

All materials and components shall be new and unused of first quality by well-known manufacturers. Inferior materials or components shall not be allowed.

1.02 MANUFACTURER

The manufacturer shall be Hydro Instruments, Telford, PA, USA or approved equal. The gas alarm shall be Hydro Instruments Model GA-180.

1.03 GAS DETECTOR

1.03.1 General

1. The gas detector shall be a device including a monitor and up to sixteen electrochemical gas sensors.
2. The gas detector shall include a microprocessor-based monitor operating the electrochemical sensors.
3. The microprocessor-based monitor shall be enclosed in a NEMA 4X (IP66) rated housing. The monitor shall include a two (2) line twenty (20) character, alphanumeric, backlit, liquid crystal, display, one alarm LED, a 90 dB audible alarm, and four front panel push buttons.
4. For every four gas sensors ordered, an additional enclosure will be provided. The single display will be mounted in the main enclosure (sensor enclosure 1-4). All enclosures will be mounted on a wall panel for easy access.
5. A self-diagnostic alarm shall be provided to detect any communication errors for the electrical hardware.
6. Alteration of the gas detector settings shall be password protected.
7. The gas detector monitor shall include an external acknowledge contact input to allow remote acknowledgement of alarms.
8. The gas detector shall provide an RS-485 (Modbus) digital output signal to allow external recording of the gas detector readings and alarms.
9. The gas detector shall provide an isolated 4-20 mA output signal for each sensor.
10. A standard twenty-five (25) feet of shielded signal cable shall be provided to connect each sensor to the monitor. Additional cable lengths may be provided up to 300 ft. as required.

11. The gas detector shall operate from 85 to 264 Volts (50-60 Hz) AC Power.

1.03.2 Alarm Relays

1. The gas detector shall be provided with two selectable common alarm outputs standard. These two common alarm outputs shall be capable of monitoring the following conditions: any sensor low, any sensor high, any sensor signal loss, AC power loss, and low battery.
2. For every four sensors ordered an additional eight relays shall be provided.
3. The two adjustable relays per sensor shall indicate low-level alarm reading (odd relays) and high-level alarm reading (even relays). The low and high level settings shall be adjustable using the password protected keypad/display interface. Each relay may also be programmed to indicate: any sensor low, any sensor high, any signal loss, AC power loss, and low battery.
4. The high-level alarm relay shall be user selected as either latching or non-latching and either failsafe or non-failsafe.
5. The low-level and common alarm relays shall always be non-latching and non-failsafe.
6. Relays shall be dry contacts and rated for a maximum power of 10 A at 250 VAC / 10A at 24 VDC.

1.03.3 Gas Sensors

1. All gas sensors shall be of the electrochemical type capable of monitoring the specific gas ordered. Sensor range provided will be specified by Hydro Instruments.
2. All gas sensors shall operate with a 4-20 mA output loop powered signal.
3. The chlorine gas sensor shall have a measurement range of 0 to 10 ppm and a resolution of 0.1 ppm.
4. The chlorine gas sensor shall have an 90% response time of sixty (60) seconds or less.

1.03.4 Optional Features

1. The gas detector shall be capable of field retrofit to add or remove Battery-Backup. Battery-Backup shall be enabled and disabled in the password protected keypad/display interface. Battery-Backup shall be able to power the gas detector without AC power for at least 12 hours. One battery shall be provided for every enclosure, if ordered.
2. The gas detector shall be capable of monitoring air temperature. Only a type K thermocouple shall be used. One alarm output will be provided for high temperature alarm indication.