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**Specifications for the**  
**Hydro Instruments**  
**Model GA-170 Gas Alarm**  
**Specification GA-170**

**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, Perkasie, PA, USA or approved equal. The gas alarm shall be Hydro Instruments Model GA-170.

**1.03 GAS DETECTOR**

**1.03.1 General**

1. The Chlorine Gas Detector shall be a device including a monitor and up to four electrochemical gas sensors.
2. The Chlorine Gas Detector shall include a microprocessor-based monitor operating electrochemical sensors.
3. The microprocessor-based monitor shall be enclosed in a NEMA 4X rated housing. The monitor shall include a two (2) line sixteen (16) character, alphanumeric, backlit, liquid crystal, display, four alarm LED's, a 90 dB audible alarm, and four front panel push buttons. Three and four sensor units shall include eight LED's.
4. Alteration of the Gas Detector settings shall be password protected.
5. The electrochemical gas sensors shall be mounted in weatherproof enclosures.
6. Twenty-five (25) feet of shielded signal cable shall be provided to connect each sensor to the monitor. A six (6) foot long power cord shall be provided to connect the monitor the AC Power.

7. The Gas Detector shall operate from 120 Volt 60 Hz or 240 Volt 50 Hz AC Power.

#### 1.03.2 Alarm Relays

1. The monitor shall provide two (2) common alarm relays and two adjustable relays per sensor.
2. One of the common relays shall indicate loss of A/C or battery power and the other shall indicate loss of sensor signal.
3. The two adjustable relays per sensor shall indicate low-level alarm reading and high-level alarm reading. The low & high-level settings shall be adjustable using the password protected keypad / display interface.
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.

#### 1.03.3 Gas Sensors

1. The Chlorine gas sensor shall be an electrochemical type having a range of 0 to 10 PPM and a resolution of 0.1 PPM.
2. The Chlorine gas sensor shall have an 80% 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 12 hours.
2. The gas detector monitor shall include an external acknowledge contact input to allow remote acknowledgement of alarms.
3. The gas detector shall be capable of providing an RS-232 digital output signal to allow external recording of the gas sensor reading.