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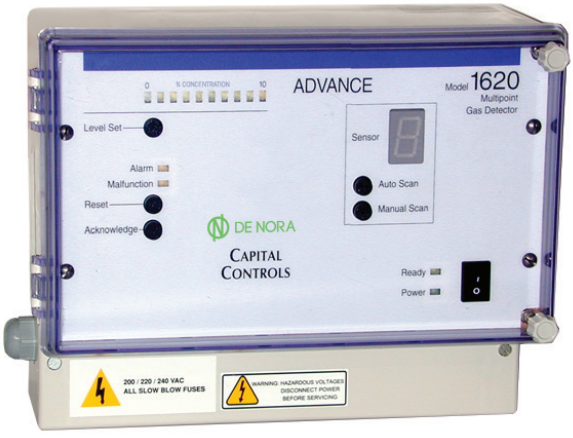
Capital Controls® Series **1620B**

Capital Controls® Multipoint Gas Detector Series 1620B provides continuous detection of chlorine, sulfur dioxide or ammonia gas in a normally clean air environment in up to eight (8) distinct locations.

The modular gas detection system consists of a single indicator/receiver and a sensing module for each location (up to eight) for monitoring the presence of chlorine, sulfur dioxide or ammonia gas. Chlorine and sulfur dioxide gas sensors are available in 0-5 and 0-10 ppm ranges; ammonia sensors are available in 0-50 and 0-100 ppm ranges. Chlorine and sulfur dioxide sensors may be used in combination on the same 1620B gas detector so long as the sensors are of the same range.



Ammonia gas sensors cannot be used in combination with chlorine or sulfur dioxide or with ammonia sensors of a different range.

Series 1620B is designed to continuously and independently sense for the presence of gas. The system can be expanded in the field, as requirements change.

The sensor module incorporates an electrochemical sensing element and conditioning electronics required for operation with the receiver. The sensing element and conditioning electronics are housed in a high-impact, corrosion resistant, enclosure and may be mounted up to 1,000 feet (305 meters) from the receiver. The sensor module may be located indoors or outdoors.

- Chlorine, sulfur dioxide or ammonia gas detection
- Monitors 1 to 8 locations
- Automatic or manual scanning
- Maintenance-free, long-life sensor
- Front panel setup and control
- Audible alarm annunciator
- RFI/EMI protection
- Optional power back-up

Technical Data

Receiver

Quality standard: ISO 9001

Compliance: CE

Power requirements: 120 or 240 Vac, 50/60 Hz, single phase

Power consumption: 24 watts

Input from sensor: 4-20 mAdc (per sensor)

Output to sensor: 18-24 Vdc (per sensor)

Sensor stabilization timer: Jumper selectable 1/2, 1, 2, 4, 8, 16 minutes

Sensing points: 1-8 switch selectable

Sensor sequencing: Automatic or Manual Rate, jumper plug selectable 0.5, 1, 2, or 8 seconds per channel

Indicator signal output: 4-20 mAdc into 900 ohms maximum

Alarm and malfunction control rating: 10 amps maximum at 240 Vac maximum, or 10 amps at 28 Vdc, resistive or inductive load, SPDT, (N.O./N.C.) DPDT (N.O./N.C.) by jumper selection when dedicated to alarm function

Alarm/malfunction relay reset: Latching (manual reset) only

Bar graph indicator range: 0-100% of sensor range

Accuracy: ±1 Bar Segment

LED Indicators: POWER, READY, MALFUNCTION, ALARM, BAR GRAPH INDICATOR, SENSOR INDICATOR

Ambient Temperature: -13°F to 150°F (-25°C to 65°C)

Enclosure: NEMA 12

Overall Dimensions: 10 3/32" (257 mm) L x 5" (127 mm) D x 8-13/32" (214 mm) H

Weight: 6 lbs. (3 kgs)

Chlorine and Sulfur Dioxide Sensors

Measuring Range: Chlorine (Cl2) 0-5 ppm and 0-10 ppm or Sulfur Dioxide (SO2) 0-5 ppm and 0-10 ppm

Minimum detectable concentration: 0.5 ppm by volume

Type: Electrochemical of the Micro Redox type

Response time: 60 seconds maximum for 80% of range to 10 ppm gas at 20°C, after stabilization.

Recovery time: 3 minutes for 90% of range at 10 ppm gas concentration.

Output signal: 4-20 mAdc

Operating temperature range: -4°F to 120°F (-20°C to 50°C).

Operating humidity range: 15% to 90% R.H.

Connection requirements: 3-conductor, shielded, 22 AWG cable

Maximum separation between receiver and sensor: 1000 feet (305 meters)

Enclosure: NEMA 12

Overall dimensions: 4 23/32" (120 mm) L x 5 5/32" (80 mm) D x 2 13/16" (71 mm) H

Weight: 9 oz. (.25 kgs)

Ammonia Sensor

Measuring range: 0-50 ppm and 0-100 ppm

Minimum detectable concentration: 6 ppm by volume

Linearity: <10% Full scale

Long term sensitivity drift: <5% per 6 months

Response time at 20°C:

- **t50:** <20 s Calculated from 5 min. exposure time
- **t90:** <60 s Calculated from 5 min. exposure time

Recovery Time: 5 minutes for 90% of the range at 100 ppm gas concentration

Type: Electrochemical

Output signal: 4-20 mAdc

Operating temperature range: -20°C to +40°C

Operating humidity range: 15-90% r.H, Non-condensing

Connection requirements: 3-conductor, shielded, 22 AWG cable

Maximum separation between receiver and sensor: 1000 feet (305 meters)

Enclosure: NEMA 12

Overall dimensions: 4 23/32" (120 mm) L x 5 5/32" (80 mm) D x 2 13/16" (71 mm) H

Weight: 9 oz. (.25 kgs)

Gas	Interference Gases for Chlorine Sensor		Interference Gases for Sulfur Dioxide	
	Concentration	Approximate Equivalent to Chlorine Signal	Concentration	Approximate Equivalent to Sulfur Dioxide
Hydrogen	100 ppm	-1 ppm	100 ppm	1 ppm
Carbon Monoxide	100 ppm	-1 ppm	---	---
Ethylene	100 ppm	-1 ppm	---	---
Sulfur Dioxide	100 ppm	-5 ppm	---	---
Nitric Oxide	100 ppm	+1 ppm	---	---
Chlorine	---	---	10 ppm	< 0.6 ppm
Hydrogen Sulfide	---	---	100 ppm	200 ppm
Alcohols	---	---	100 ppm	< 1 ppm
Nitrous Dioxide (Internal combustion engine exhaust	10 ppm	+16 ppm	10 ppm	-10 ppm

Gas	Interference Gases for Ammonia	
	Concentration	Reading ppm
Alcohols	1000 ppm	0
Carbon Dioxide	5000 ppm	0
Carbon Monoxide	100 ppm	0
Hydrocarbons	% range	0
Hydrogen	10000 ppm	0
Hydrogen Sulfide	20 ppm	21

Capital Controls®
Series 1620B

Brief Specification

The multipoint gas detection system for chlorine, sulfur dioxide or ammonia shall consist of sealed electrochemical type sensors, housed in NEMA 12 enclosures suitable for wall mounting. In the presence of gas, a current flow will develop and be transmitted to the receiver. The maximum separation between the receiver and each sensor shall be 1000 feet (305 meters).

Chlorine and sulfur dioxide gas sensors are available in 0-5 and 0-10 ppm ranges; ammonia sensors are available in 0-50 and 0-100 ppm ranges. Chlorine and sulfur dioxide sensors may be used in combination on the same 1620B gas detector so long as the sensors are the same range.

The receiver shall process and display incoming signals from the sensor modules, and be housed in a NEMA 12X enclosure. The receiver shall contain the following components: a power switch and LED indicators for power and ready; set point alarm level, field set via push button on the front of the receiver and indicated on the bar graph by a flashing bar segment; an LED alarm indicator and annunciator with corresponding contact; an LED malfunction indicator with selectable manual or automatic reset relay contact; an acknowledge button for silencing audible alarm; a RESET button for clearing alarm and malfunction circuits; an LED bar graph display in the range of 0-100% concentration; a LED numerical sensor indictor for display of sensor being scanned and push buttons for selecting automatic or manual scan. A 4-20 mAdc output signal shall be provided to transmit scanned levels.

Protection shall be provided against radio frequency/electromagnetic interference typically present at industrial and municipal plants. The unit shall operate from a (120 Vac) (240 Vac) 50/60 Hz single phase power supply. Battery terminals shall be provided for use in the event of a power failure. The gas detector shall be Capital Controls Series 1620B.

An optional power back-up shall be provided, and shall automatically provide power in the event of a power failure. The unit shall automatically and continuously recharge to supply maximum support to the gas detector and/or the remote indicator. The power back-up shall be Capital Controls Series 1640.

The minimum detectable concentration of chlorine or sulfur dioxide gas shall be 0.5 ppm by volume, The response time shall be 60 seconds for 80% of range to 10 ppm gas at 20°C, after stabilization. Protection shall be provided against radio frequency/electromagnetic interference typically present at industrial and municipal plants. The unit shall operate from a (120 Vac) (240) 50/60 Hz single phase power supply. Battery terminals shall be provided for use in the event of a power failure. The gas detector shall be Capital Controls Series 1620B.

Warranty and Capability

De Nora Water Technologies warrants its gas detectors for eighteen (18) months from the date of invoice, or twelve (12) months from date of installation.

De Nora Water Technologies is ISO 9001 certified to provide quality and precision materials. Disinfection technologies, water quality monitors and instrumentation for water and wastewater are areas of specialization. Over 35 years of industrial and municipal application experience in the water and wastewater industries is incorporated into the equipment design to provide high quality comprehensive solutions for the global market.

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