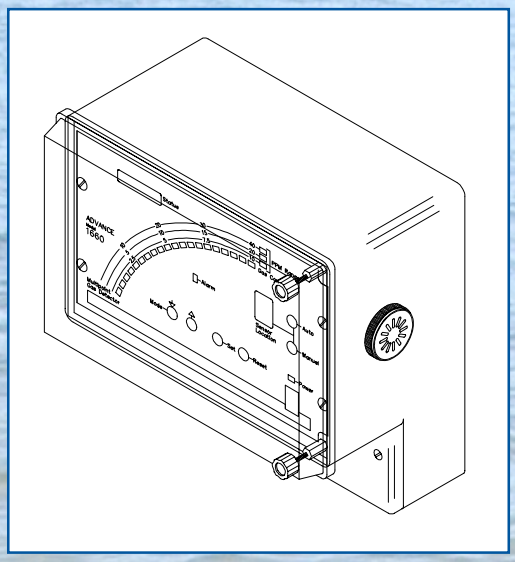
ADVANCE™ Multipoint Gas Detector Series 1660



- Chlorine or sulfur dioxide gas detection
- Monitors 1 to 8 locations
- Dynamic graph display
- Detects gas levels down to 0.5 ppm
- Two field-selectable alarm levels
- Internal annunciator
- Front panel setup and control
- Maintenance-free, long-life sensor
- RFI/EMI protection
- Power backup
- Computer interface

SEVERN TRENT SERVICES

Capital Controls

Capital Controls' ADVANCE™ Multipoint Gas Detector, Series 1660 provides continuous detection of either chlorine or sulfur dioxide gas in air in up to eight (8) distinct locations.

ADVANCE™ gas detectors are ideal for use when protection of personnel and property is of concern. Can be used wherever chlorine or sulfur dioxide is unloaded, stored or used.

The Series 1660 incorporates a unique auto-ranging feature. The unit monitors the presence of gas in three different levels. The unit begins in a 0-10 ppm range, then, as the gas level increases, automatically changes the range to 0-20 ppm and again to 0-40 ppm as necessary. As the gas levels decrease, the ranges are automatically decreased. A dynamic graph display mimics the auto ranging by illuminating ascending or descending LEDs on the front of the receiver.

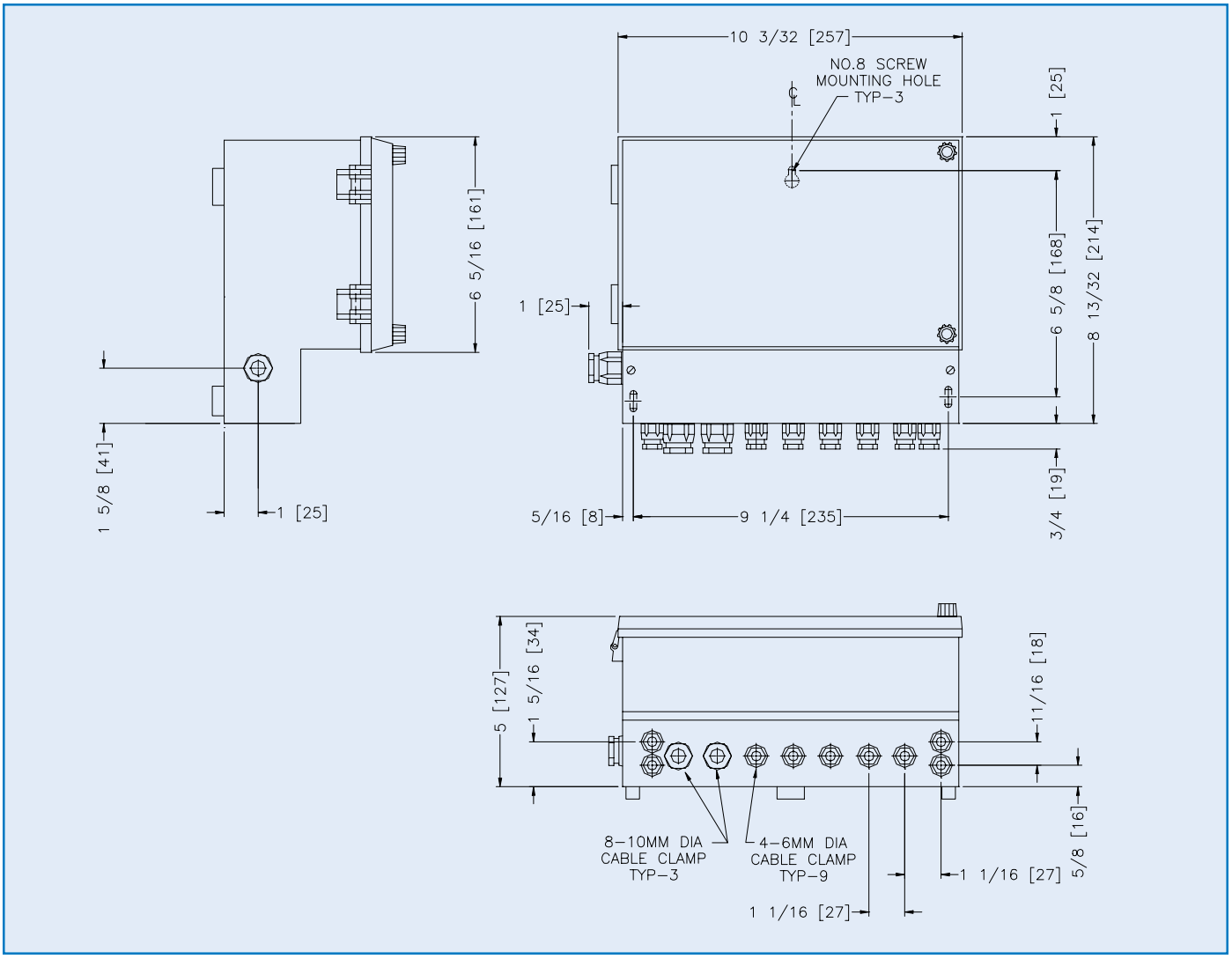
Two independent alarm levels are field-selectable in any of the three ranges for each sensor channel. The dual alarms are ideal as a warning and full alarm system.

Series 1660 design includes protection against radio-frequency/ electromagnetic interference typically present at industrial and municipal plants.

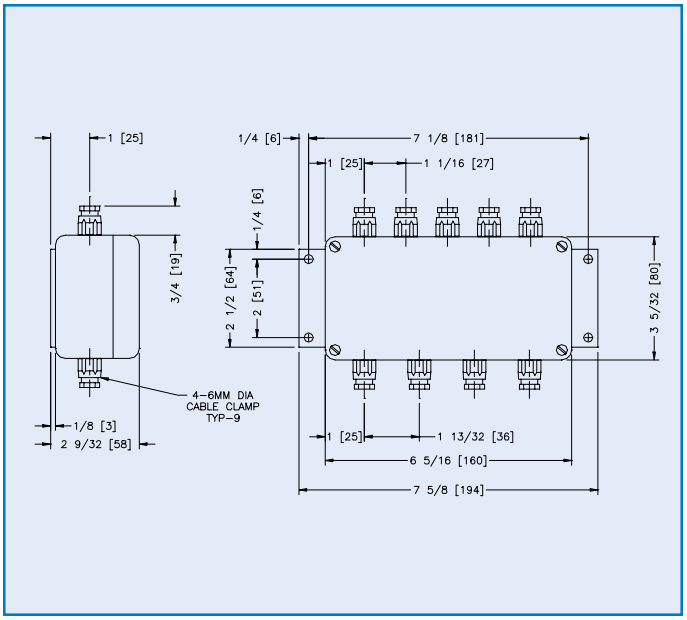
Computer Interface and Power Backup

For data retrieval, including number of gas leaks detected, sensors age, alarm levels, and gas detector readings, an RS-232 or RS-422 communications port, with software, is available for connection to a personal computer. Additionally, the computer can be used to enter and change the gas detector's setup parameters.

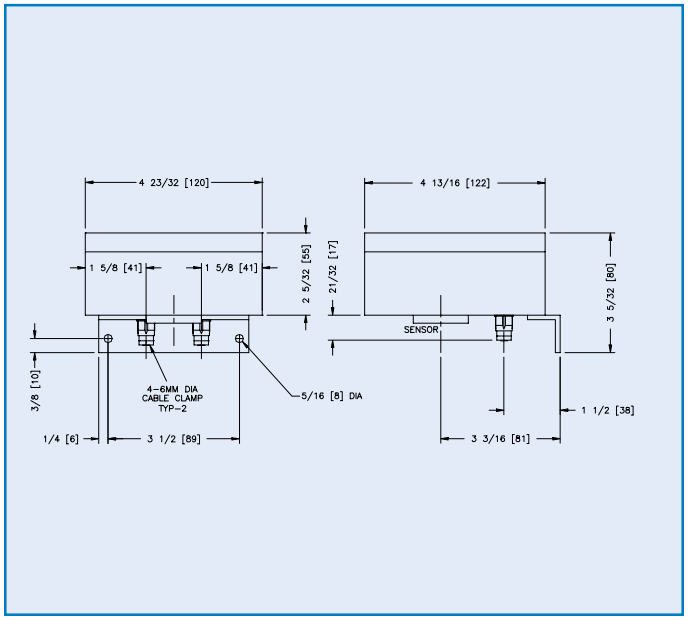
The optional Model 1640 Power Backup is designed to support the gas detector for up to 4 hours, from a fully charged battery, in the event of a power failure. The internal battery automatically and continuously recharges to supply maximum support. In the event of a power failure, the unit is activated automatically. An annunciator is provided to activate in the event of an alarm, whether in battery backup mode or under normal power operation.



Receiver Dimensions
(for reference only)



Multipoint Distribution Panel Dimensions
(for reference only)



Sensor Dimensions
(for reference only)

Technical Data
ADVANCE™ Gas Detector

RECEIVER

Quality Standard: ISO 9001
Compliance: CE
Receiver:
Power requirements: 120 or 240 Vac, 50/60 Hz, single phase
Power consumption: 40 watts
Input from sensor: Independent, multiplex analog and digital
Alarm, error and power failure contacts: Dual, 5 amps maximum at 240 Vac or 28 Vdc, resistive or inductive load, DPDT, (N.O./N.C.)
Alarm contact type: Manual reset (latching) or automatic reset (unlatching), program selectable
Relay action: Power failure relay normally energized; all other relays normally de-energized
Display:
Display: 8-character alpha/numeric
Indicator ranges: 0-10 ppm, 0-20 ppm, 0-40 ppm, auto-ranging
LED indicators: POWER, MEASURING RANGE, DYNAMIC GRAPH DISPLAY, SENSOR, ALARM
Ambient temperature range: -20°F to 150°F (-29°C to 65°C)
Enclosure: NEMA 4X
Weight: 6 lbs. (3 kgs.)
Computer Interface (Optional): RS232 or RS-422 communications port. Software supplied on 3 1/2" disks. IBM compatible personal computer with MS DOS 3.0 or higher, 640K RAM, serial communications port.
Multipoint Distribution Enclosure: (required for parallel and serial/parallel sensor wiring)
Enclosure: NEMA 4X
Weight: 10 oz. (0.3 kgs)

SENSOR

Sensor:
Gases sensed: Chlorine (Cl_2) Sulfur Dioxide (SO_2)
Ambient temperature range: -2°F to 131°F (-20°C to 55°C)
Relative humidity: 2% to 98% R.H.
Response time: 30 seconds for 80% of range to 10 ppm chlorine, sulfur dioxide gas at 20°C
Input from receiver/output to sensors:
8 independent 18-24 Vac
Input from sensors/Output to receiver:
8 independent, multiplex analog and digital
Sensor stabilizing timer: 180 seconds
Sensor sequencing: Automatic (default) or manual, non-alarm scan rate 1.2 seconds, alarm scan rate 3 seconds (2 or more sensors in alarm)
Default time-outs: Manual to automatic sensor scanning, 2 minutes; setup to run mode, 5 minutes
Recovery time: 3 minutes for 90% of range at 10 ppm
Cable requirements: 3-wire, shielded, 18 gauge minimum
Maximum receiver/sensor separation: 1,000 feet (305 meters)
Enclosure: NEMA 4X
Weight: 10 oz. (0.3 kgs.)

Gas	Interference Gases for Chlorine Sensor		Interference Gases for Sulfur Dioxide Sensor	
	Concentration	Approximate Equivalent to Chlorine Signal	Concentration	Approximate Equivalent to Sulfur Dioxide Signal
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

Warranty and Capability

Capital Controls warrants its gas detectors for eighteen (18) months from the date of invoice, or twelve (12) months from date of installation.

Capital Controls 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.

Brief Specification

The ADVANCE™ Multipoint Gas Detection System for chlorine and/or sulfur dioxide shall consist of electrochemical type sensors, housed in NEMA 4X enclosures. 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).

The receiver shall process and display incoming signals from the sensor modules, and be housed in a NEMA 4X enclosure. The front panel shall contain the following: power switch and LED indicator for power; Mode and Set push-button switches for program setup and diagnostic testing; Reset push-button switch for clearing alarm and error circuits; 20-LED dynamic graph; individual LEDs for indicating 0-10, 0-20, or 0-40 ppm dynamic graph display range; 8 LED alphanumeric display for indication of gas type, alarm condition, sensor error condition, setup information and diagnostic test information, push button switches for selecting automatic or manual sensor scanning; LED numerical sensor indicator for display of sensor number being scanned or in alarm. Selection of dynamic graph range shall be automatic. The minimum display resolution shall be 0.5 ppm.

The unit shall operate from a (120 Vac ±10%) (240 Vac ±10%) 50/60 Hz single phase power supply. Battery terminals shall be provided for use in the event of a power failure.

An optional (RS-232) (RS-422) communication port and software shall be provided for connection to and IBM/IBM-compatible personal computer. Software shall permit remote setup, operation and diagnostic testing of the gas detector.

The gas detector shall be Capital Controls Model 1660.

An optional Power Backup shall be provided, with internal 18 Vdc battery and shall automatically provide power in the event of a power failure. No manual switching shall be required. The unit shall automatically and continuously recharge to supply maximum support to the gas detector. An internal annunciator shall be provided and shall actuate in the event of an alarm whether in battery back up or under normal power operation.

The power backup shall be Capital Controls Model 1640.

Design improvements may be made without notice.

Represented by:

SEVERN TRENT SERVICES

CAPITAL CONTROLS

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