

Scalable system using Sensor-Transmitters communicating with a central Control Panel, Built-in or Remote Relay Modules to operate ventilation equipment & remote alarms.

Features

- Proven RS-485 data communication technology for up to 256 addressable remote sensor-transmitters & up to 96 addressable remote relay modules.
- Relay outputs from the Control Panel or from Remote Relay Modules.
- 4-20mA output to control VFD's
- Fan On / Fail status confirmation signals.

Applications

- Energy savings through the intermittent operation of ventilation equipment in enclosed facilities.
- Suitable for garages, tunnels, warehouses and other enclosed commercial locations where a hazardous build-up of gases may occur.
- Designed for multiple stage projects.

The ACME CEL(LS) MultiSet series is a microprocessor-based multipoint multigas detection and control system that can be used with a wide variety of ACME toxic, combustible, refrigerant & oxygen gas sensors. The sensors can be grouped in any combination. The wiring between the Control Panel and the remote sensor-transmitters is accomplished via 4-wire "low voltage" "daisy-chain".

The versatility of the system allows the user to customize the system parameters (ON-OFF level setpoints, time delays, hysteresis, scan rate, sensor type and range, etc.) via a removable keyboard and LCD screen. The menu-driven options appear in plain English for easy field-programming.

The LCD provides a continuous digital read-out of gas concentrations for each sensor-transmitter, as well as On-Off output level status (LOW, HIGH & ALARM).

In its most basic configuration, the MultiSet Control Panel supports up to 256 channels where each channel is treated independently controlling a fan zone. In this configuration each channel has a set of relay outputs for Low, High and Alarm levels and/or a 4-20 mA signal proportional to the gas concentration. In a more practical application, the channels are divided into groups that collectively serve various fan zones. In the latter configuration each group (zone) has a set of relay output contacts and/or 4-20mA signal proportional to the demand from that group.



The MultiSet series Sensor-Transmitters are available with different sensor technologies depending on the type of gas detected. Electrochemical cell type sensors are common for most of the toxic gases, non-dispersive infrared (NDIR) for CO₂ & Refrigerant Gases and Combustible Gas sensors are catalytic bead (pellistor) type.

Acme also offers other versions of the MutiSet where only a maximum of 4 channels (CEL4) or 32 channels (CEL) are supported. Output configurations are limited and the user keypad is optional.

Sensor-Transmitter specifications

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|----------------------------------|--|
| GASES DETECTED: | CO, Diesel Fumes (NO ₂), CO ₂ , O ₂ , H ₂ , H ₂ S, Ammonia, etc. Methane, Propane & Butane Family of refrigerant gases |
| SENSOR TECHNOLOGY: | Electrochemical, NDIR or Catalytic Bead |
| SENSING METHOD: | Diffusion |
| DETECTION RANGE: | Varies by gas |
| ACCURACY: | +/- 5ppm of reading |
| POWER REQUIREMENTS: | 24V AC |
| COMMUNICATION: | RS-485 |
| OPERATING TEMPERATURE: | 32°F to 104°F (0°C to +40°C)* |
| HUMIDITY RANGE: | 0-95% RH Non-condensing |
| EXPECTED LIFETIME: | Electrochemical CO: 7 years Electrochemical other: 2 Years 2 Years for Catalytic Bead; 10 Years for NDIR; |
| ENCLOSURE: | NEMA 3 |
| CALIBRATION VERIFICATION: | Yearly |
| APPROVALS: | CAN/CSA-22.2 No 1010.1-92 UL 61010C-1 ISA S82.01 |

* Extended temperature range available.

How To Order

Indicate "N" the number of sensors (of the same gas for multi-gas) to be included.

Add a "BB" suffix at the end to indicate an integral battery back-up.

For other supply voltage, substitute 120 by the desired voltage (24, 240 or 277V).

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|---|--|
| Gasoline Fumes (CO) | Combustible Gas |
| CP-CEL(LS)-N-120 | Methane : 40-CH ₄ -CEL (LS)-N-120 |
| Carbon Dioxide (CO ₂) for IAQ | Propane : 40-C ₃ H ₈ -CEL (LS)-N-120 |
| CO ₂ -CEL (LS)-N-120 | Butane : 40-C ₄ H ₁₀ -CEL (LS)-N-120 |
| Diesel Fumes (NO ₂ based) | Other gases |
| DG-NO-CEL (LS)-N-120 | Oxygen : O ₂ -CEL (LS)-N-120 |
| Gasoline Fumes (CO) & | Hydrogen : H ₂ -CEL (LS)-N-120 |
| Diesel Fumes (NO ₂ based) | Chlorine : CL ₂ -CEL (LS)-N-120 |
| MGD-NO-CEL (LS)-N-120 | Ammonia : NH ₃ -CEL (LS)-N-120 |

For other gases or other combination of gases, contact factory for model number

Technical Data

Principle of Operation

The ST Series Sensor/Transmitters provide a linear, 4-20 mA output signal over the desired detection range for the gas selected. This signal is digitally transmitted to the CEL(LS) Control Panel using an addressable RS-485 communication interface.

Typical specifications:

Supply, install and connect at locations shown on plans ACME model XX-ST-485 Sensor/Transmitters and a CEL (LS) Control Panel.

Each Sensor/Transmitter shall be interrogated by the Control Panel and its data acquired and stored in memory.

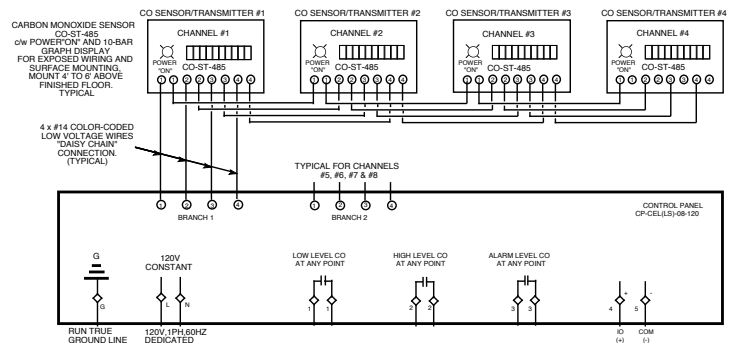
The CEL (LS) Control Panel shall have multiple ON-OFF (LOW, HIGH & ALARM) outputs with visual status indicators. Discrete relay contacts shall be available to operate the mechanical ventilation equipment based on demand. Local and/or remote alarm devices shall also be activated by the ON-OFF relays.

The CEL (LS) Control Panel shall have a removable keyboard to program system control parameters.

The CEL (LS) Control Panel's logic circuits shall operate the exhaust/supply fans and dampers according to job specifications. The Control Panel shall supply 24VAC to all remote Sensor/Transmitters.

The standard panel provided shall be a gasketed NEMA 1 enclosure with provision for a 120VAC 50/60 Hz power input. Power shall be supplied from a dedicated uninterruptible 15A circuit. (Provision for battery back-up is optional).

Typical Wiring Diagram



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