

SCALABLE SYSTEM USING SENSOR/TRANSMITTERS CONNECTED TO A CENTRAL CONTROL PANEL



Features:

- Proven RS-485 transmission technology for up to 32 remote sensor/transmitters.
- Relay outputs or zoned 4-20mA outputs from the Control Panel.
- Equipment is composed of solid-state circuitry housed in rugged enclosures.

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.

The CEL Series Multi-gas Detection & Control System is designed to provide a large scale, high quality reliable gas detection system at a moderate cost.

The ACME CEL series is a microprocessor-based up to 32 channel multi-gas detection and control system that can be used with a wide variety of ACME toxic, combustible & oxygen gas sensors. The sensors can be grouped in any combination. The wiring between the Control Panel and the remote sensors is accomplished by a 4-wire "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 password-protected removable keypad and a 4-line alphanumeric Liquid Crystal Display. The menu-driven options appear in plain English.

The LCD provides a digital readout of gas concentrations and ON-OFF output level status for each channel as well as system error codes.

In its most basic configuration, the CEL Control Panel supports up to 32 channels where each channel is treated independently controlling a fan zone. In this configuration each channel has a set of relay output contacts 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 CEL series Sensor/Transmitters are available with different sensor technologies depending on the type of target gas and job application. The CO-ST-24, for example, uses a Metal Oxide Semiconductor (MOS) CO sensor; The CO₂-ST-24 employs a non-dispersive infrared (NDIR) CO₂ analyzer; The XX-EL-ST-24 sensor/transmitters all have electrochemical cell type sensors. The Acme 40-ST-XP Combustible Gas vapor sensors are catalytic bead (pellistor) and furnished in explosion-proof enclosures for use in Class 1 hazardous locations.

Acme also offers a version of the CEL where only a maximum of 4 channels is supported. Output configurations are limited and the user keypad is optional.

Gas detected: **Toxics:**
Carbon Monoxide, Carbon Dioxide, Nitrogen Dioxide, Hydrogen, Hydrogen Sulphide, Sulphur Dioxide, Oxygen, etc.
Combustibles:
Propane, Methane, Butane

Detection range: Varies by gas

Sensors: MOS, NDIR, Catalytic Bead or Electrochemical

Mounting: Wall or column with brackets (supplied)

Unit dimensions: 152mmH x 152mmW x 101mmD (6"H x 6"W x 4"D)

Supply voltage: 24V (9V for Combustibles) supplied from Control Panel

Outputs : RS-485

LED indicators: Power "On", Bar graph for CO-ST-24

Operating Temperature: Varies by gas

Relative Humidity: 5-95% non-condensing

Approvals: CAN/CSA-22.2 No 1010.1-92
UL 61010C-1
ISA S82.01

Sensor Life: 5 Years for MOS; 2 Years for Electrochemical;
10 Years for NDIR; 3 Years for Catalytic Bead Sensors

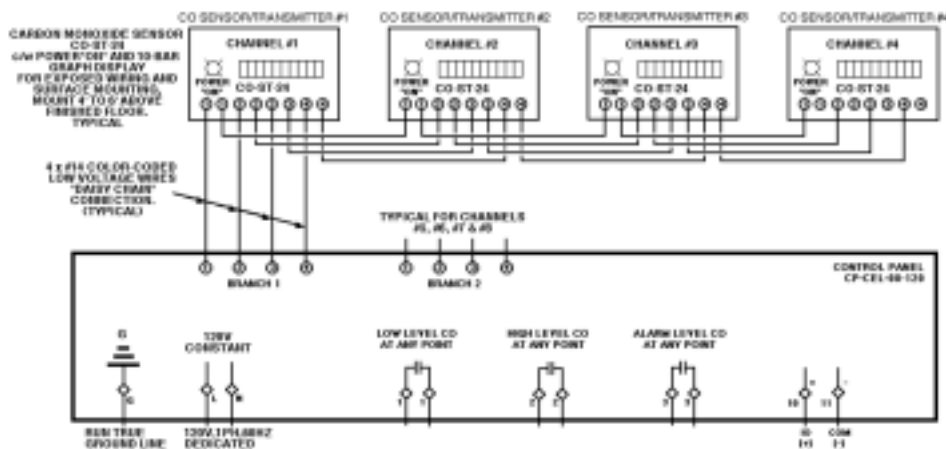
How to order

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).

Gasoline Fumes (CO)	Combustible Gas
CP-CEL-N-120	Methane : 40-CH4-CEL-N-120
Carbon Dioxide (CO2) for IAQ	Propane : 40-C3H8-CEL-N-120
CO2-CEL-N-120	Butane : 40-C4H10-CEL-N-120
Diesel Fumes (NO2 based)	Other gases
DG-NO-CEL-N-120	Oxygen : O2-CEL-N-120
Gasoline Fumes (CO) &	Hydrogen : H2-CEL-N-120
Diesel Fumes (NO2 based)	Chlorine : CL2-CEL-N-120
MGD-NO-CEL-N-120	Ammonia : NH3-CEL-N-120

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

Typical wiring diagram



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 Control Panel using an addressable RS-485 communication interface.

Typical specifications:

Supply, install and connect at locations shown on plans ACME model XX(-EL)-ST-24 Sensor/Transmitters and a CEL Control Panel.

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

The CEL 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 Control Panel shall have a removable password-protected keypad to program system control parameters.

The CEL 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).

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