Bulletin A211

BRASCH

Gas Detectors - Stand Alone

The Brasch gas detector is a combination sensor and energy saving unit. Concentration of a targeted gas is monitored and ventilation equipment cycled when selected threshold levels are exceeded. Because ventilating equipment runs only when necessary, energy costs for heating and operating fans are greatly reduced. Detectors are available to monitor carbon monoxide (CO), nitrogen dioxide (NO_2) and oxygen (O_2), or a combination of any two of these gases. Detectors include an easy to read digital display, a test feature to aid in installation, and an internal, audible alarm. Stand Alone Detectors can be used to monitor up to two remote transmitters.

Key Features

- Microprocessor Controlled
- Electrochemical Sensor-Standard
- Factory Calibrated
- Power Loss Fail-Safe Mode
- Choice of Factory Installed 24 VAC or 120 VAC Power
- Supplied With External Leads for Easy Installation
- Easy To Read Digital Display
- Low, High and Alarm Levels
- Built In Self Test Feature

Flexibility

- Selectable Low-level Setpoint
- Adjustable Alert Time Delay
- External Alarm Contacts
- Capacity for Two Sensors
- Remote Sensor Hookup

Standard Outputs

- Dry Contact Relays
- 4 - 20 mA Current Loop
- 0-1 VDC Output
- 0-5 VDC Output
- 0-10 VDC Output

Typical Applications

- Commercial Parking Garages
- Condominium and Apartment Garages
- Warehouses and Factories
- Car and Bus Maintenance Garages
- Tunnels
- Auto Service Centers
- Small Engine Repair Shops
- Wastewater Treatment plants
- Steel Mills
- Incineration Facilities
- Bottling Plants
- Cryogenic Laboratories

Ratings

Input Voltage *(specify at time of order)*
24 VAC, 50/60 Hz., 10 VA
120 VAC, 50/60 Hz., 16VA
Ambient Temperature Rating
Storage
-50°C to 50°C (-58°F to 122°F)
Operating
-15°C to 40°C (5°F to 104°F)
Humidity
10% to 90% (non-condensing)

Enclosure

NEMA 1
Polycarbonate Plastic
Grey High Gloss Finish

Output Relays

Alert Levels, Alarm
125 VAC, 50/60 Hz.
5 Amp, Resistive
250 VA, Inductive
1/8 HP Motor
24 VAC, 50/60 Hz.
24 VA, Inductive

Dimensions

6 5/16" H x 9 7/16" W x 3 1/2" D

Weight

3 lbs.

Recognition

ETL Listed per
(UL 3111-1, CSA C22.2)

Mounting

This unit must be mounted indoors and should be in a dry location at a height of 5 to 7 feet above floor level. This location will sense the concentration of the target gas at approximately breathing height. The detector should be positioned to sense the average gas concentration in the area. The detector will monitor 7000 to 9000 square feet of floor space.

Unit Operation

The Brasch gas detector uses state of the art analog and digital components, including a microprocessor. This is essential to meet the ever-growing demand for reliable detection of potentially dangerous gases. This unit continuously monitors the ambient concentration of the target gas. When the gas concentration exceeds a pre-selected low-alert level, and remains there for a chosen time delay period, the low-alert relay contacts close. This contact closure can actuate a low speed fan, remote indicator, or open a set of dampers. The low-alert level has eight selectable concentrations depending upon the gas being monitored. The time delay also has eight user selectable periods. Optimal ventilation system operation is obtained through proper selection of the low-alert level and delay period. The delay is active for both the low and high alert conditions.

If the gas level exceeds a factory preset limit, the high-alert relay contacts close, and the high-alert indicator glows. These relay contacts can actuate a high speed fan, a remote indicator, or additional dampers.

If the high alert condition continues for 15 minutes, the alarm relay contacts close and the internal alarm energizes. Pressing the alarm silence switch on the front panel will silence the internal alarm. The alarm circuit automatically reactivates for future alarm conditions.

Typical Uses

Many localities require that operators of underground parking garages provide ventilation to preclude the buildup of dangerous carbon monoxide gas. Brasch detectors, designed to sense carbon monoxide and operate the ventilation system only when necessary, are ideal for this type of application. In areas where only diesel powered equipment is operating, the Brasch nitrogen dioxide detector is recommended. The Brasch combination (carbon monoxide/nitrogen dioxide) unit detects both carbon monoxide and diesel fumes. This detector provides for automatic ventilation control of both gases using one unit.

OSHA defines an oxygen-deficient environment as one that contains 19.5 % or less oxygen. The Brasch oxygen detector safeguards workers against dangers of oxygen deficiency in facilities such as wastewater treatment plants, steel mills, cryogenic laboratories and incineration rooms. When the oxygen level drops below an adjustable threshold, an alarm will sound and ventilation equipment will operate bringing in fresh air to restore the level to normal.

Factory Default Settings

The detector is set at the factory for operation in the 50/100 % ventilation position, (single fan). A field movable jumper allows operation of a two-speed fan motor. The LOW ALERT and TIME DELAY switches are adjustable. Factory setting of the switches are as follows:

GAS	LOW ALERT	HIGH ALERT	DELAY
Carbon Monoxide	35 PPM	100 PPM	3 min.
Nitrogen Dioxide	1.0 PPM	5.0 PPM	3 min.
Oxygen	19.0 %	16.0 %	60 sec.

Color coded wires exiting factory installed conduit fittings allow most installations without opening the housing of the unit.

Sensor Technology

Electrochemical Sensor
Available in detectors for carbon monoxide, nitrogen dioxide, and oxygen. This sensor provides long-term accuracy and repeatability within +/- 5 % of the calibrated value. The sensor is not affected by changes in humidity in the operating area. The sensor's response to the target gas is also inherently linear.

Brasch OnGuard Carbon Monoxide Detector

The Brasch OnGuard Carbon Monoxide detector may be an economical alternative to our premium Stand-Alone detector when a highly reliable, single sensor, carbon monoxide detector meets your specifications.

For more complete information, visit our website or contact our sales department.

Ask for Bulletin A-213

Ordering Procedure *(Stand-Alone Models)*

To order a Brasch gas detector, determine the type of detector for your application.

I. The model designation for a combination, carbon monoxide/nitrogen dioxide, stand-alone gas detector would be as follows:

(1) Indicates Type of Gas Sensor
- GSE Electrochemical Sensor (EC)

(2) Indicates Type of Gas(es) Detected
- CM Carbon Monoxide (EC)
- ND Nitrogen Dioxide (EC only)
- OX Oxygen (EC only)
- NCM Nitrogen Dioxide and Carbon Monoxide
- OCM Oxygen and Carbon Monoxide
- OND Oxygen and Nitrogen Dioxide (EC)

(3) Indicates Operating Voltage
- 0 24 VAC
- 1 120 VAC

II. The model designation for a carbon monoxide detector, with electrochemical sensor, would be as follows:

Example: GSE-CM-O

1. Brasch Gas Detector with Electrochemical Sensor
2. Detects Carbon Monoxide
3. 24 VAC Operating Voltage

Brasch also produces Refrigerant Leak Detectors, Carbon Dioxide Detectors, and Control Panel Systems. Visit our web site for technical and application literature for all Brasch products.

BRASCH

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Remote Mounted Sensors

Stand-Alone Gas Detectors are capable of monitoring gases from two sensors at the same time. These sensors can be mounted:
- Both externally (Remote)
- One internally (Local) and one externally (Remote)

One or two transmitters can be wired to a Stand-Alone Detector. In this application, the Stand-Alone Detector can serve as a monitor only.

A Transmitter is required for remote mounted sensors. Transmitters are connected to the Stand-Alone Detector with a six conductor, shielded, 18 AWG cable, supplied by the customer.

When ordering the Stand-Alone Detector with one of these features, specify the physical location of each sensor (Local or Remote).

Example: GSE-NCM-LRO

1. Brasch Stand-Alone Detector with Electrochemical Sensors
2. Detects both nitrogen dioxide and carbon monoxide
3. Nitrogen Dioxide sensor mounted in Stand-Alone Detector (L)
4. Carbon Monoxide Transmitter mounted remotely (R)
5. 24 VAC Operating Voltage

Example: GSE-NCM-RRO

1. Same as above
2. Same as above
3,4. Both sensors mounted remotely (RR) as Transmitters
5. Same as above