

SMC 5100-02-IT Combustible Gas Detector

The SMC 5100-02-IT Catalytic Combustible Gas Sensor Module is network-enabled to provide the interface needed to your plant-wide control system, whether it be 4-20 mA, Modbus, HART, relay contacts or Sentry IT Bus. This USA-made, stand-alone smart gas sensor module is loaded with features you need.

The SMC 5100-02-IT provides all the built-in features desired by instrumentation and safety professionals, including:

- 180-day calibration interval
- Sentry IT PSG digital bus interface
- Optional alarm relays - Alarm, Warning, Trouble
- Aluminum or 316 Stainless Steel enclosure
- Single person, non-intrusive calibration
- Optional remote sensor



How it Works

Catalytic Bead gas sensors detect gas by comparing the resistance of two heated elements. One element is catalytic to enhance the burning of combustible gases; the other element is passive. Electronic circuits are used to compare the change in the catalytic bead resistance relative to the passive bead. The relative change is calibrated to determine the concentration of the gas of interest.

Features

- Six-month calibration interval
- Single person, non-intrusive calibration
- Network-compatible with Modbus, 4-20 mA, Sentry IT Bus, HART
- Bright scrolling LED display

Benefits

- Longest rated calibration cycle for any catalytic bead gas detector - reduced maintenance & cost of ownership
- Able to calibrate module without declassifying the area
- Easily meets users' needs for access to critical plant safety information
- Ease of calibration and easy access to gas concentration, relay status and diagnostics

Specifications

Sensor

Type: Catalytic Bead

Performance

Repeatability: +/-1% LEL

Response Time: T90<17.9 sec

Calibration Frequency: 180 days

Accuracy: +/- 1% for 0-50% LEL range
+/- 2% for 51-100% LEL range

Output

Display: Fixed and Scrolling LED

Signal Output: Sentry IT digital bus, Analog 4-20 mA Linear, 3-wire Non-Isolated, 4-wire Isolated, Serial RS-485 Modbus RTU

Relay: Relays not to be used for safety critical functions

Power

Power consumption: 4 watts maximum

Input voltage: 24 VDC nominal: 10-30 VDC

Options

Relays: 5 amp Alarm, Warning (0.25 amp Trouble)
5A@ 30VDC (Alarm, Warning), Board includes

auxiliary connection for Sentry IT multiplexing

HART: Termination board includes HART, Modbus
RS-485, 4-20mA, Digital Input, 2A Relay output,
No Sentry IT Bus

Remote Sensor: Up to 50 feet (15.2m)

Operating Range

Ambient Temp Range: -40° to 176 °F
(-40° to 80°C)

Relative Humidity: 15-90% Non-Condensing

Dimensions: (HxWxD)

(A1 & A2) = 6.9 x 5.7 x 3.9 in. (17.5 x 14.5 x 9.9 cm)

(S1 & S2) = 7.5 x 5.0 x 4.4 in. (19 x 13 x 11 cm)

Weight: (A1 & A2) = 3.4 lb. (1.5 Kg)
(S1 & S2) = 7.2 lb. (3.3 Kg)

Enclosure: Epoxy coated Aluminum or
316 Stainless Steel

Housing: AL or SS (same as enclosure)

Approvals

Consult instruction manual approval addendum for current approvals and specifications

Remote Sensor Option

It is often necessary to sample the combustible gas at some distance from the gas sensor module. The SMC 5100-02-IT remote sensor kit enables the user to mount the sensor up to 50' from the transmitter module. This removes the need for expensive, high maintenance and energy consuming sample pumps. Remote sensor kits are purchased separately using the part numbers shown below. Remote sensor extension cable not included and is to be provided by others.

5394-51 Aluminum, 3/4" NPT

5394-51-S1 316 SS, 3/4" NPT

Accessories

General Accessories

5311-00 Rainshield

5311-02 Rainshield with calibration port

Calibration Accessories

5358-01 Calibration Head, Standard

5360-00 Calibration Gas Delivery Fitting

Calibrators High Capacity

1250-01 Gas Sensor Calibration Kit, Type A

10028032 50% LEL Methane, Gas Cylinder, Type A

10028042 Zero (Air), Gas Cylinder, Type A

1260-30 25% LEL Methane

1260-42 Hydrogen, 50% LEL, Gas Cylinder, Type A

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice.

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