

GASPLUS™

SERIES 4600 & 4600MB UNIVERSAL TOXIC GAS AND OXYGEN TRANSMITTER



SCOTT
HEALTH & SAFETY

SAFER THROUGH SCIENCE

The Series 4600 GasPLUS is a toxic gas and oxygen transmitter designed for single and multi-point monitoring applications where rugged-ness, flexibility, and ease of maintenance are critical. The basic Series 4600 transmitter is a two-wire device providing a 4 to 20 mA output. For additional output flexibility, Series 4600 MB transmitters offer RS-485/232 MODBUS® RTU output and relay contacts in a multi-wire configuration.

Advanced Gas Sensors and Universal Electronics

GasPLUS's advanced sensor technology combines with its universal transmitter electronics to help users streamline the transmitter's operation and maintenance requirements. Every "smart" sensor provides data such as gas type, range, and calibration data to the universal electronics for automatic transmitter configuration. A built-in lithium battery keeps the sensor "hot," which eliminates the need for warm-up time and enables users to maintain and calibrate the sensor remote from the instrument. A patented elastomeric connector eliminates pin alignments and makes sensor replacement quick and easy.

The GasPLUS includes a built-in intrinsically-safe barrier so the sensor can be removed without declassifying the area. The sensor connects to the transmitter with an elastomeric pad, rather than pins or plugs. This patented design makes sensor replacement quick and easy — even with gloves on.

Multiple self-diagnostics add reliability and security. The sensor end-of-life indicator provides a warning when sensor lifetime is nearing its end. The missing sensor indicator drives instrument output to a fault level if the electrical connection between the sensor and transmitter is broken. Other diagnostics continuously check electronics and software.

Operation of the instrument is simple and intuitive and does not require a costly infrared tool. A magnet is simply touched to the front panel for non-intrusive operation and calibration. The local output inhibit (with adjustable output signal) permits true one-man calibration.

4600MB - MODBUS® for Optimum Operational Flexibility

The 4600MB offers additional output flexibility and features in a multi-wire configuration. The 4600MB provides, as standard, 4 to 20 mA analog output as well as digital output via RS-485/232 wiring configuration utilizing the MODBUS RTU protocol. As an option, the 4600MB can be equipped with three on-board relays providing two concentration and one fail relay contacts. These 5A SPST relays come with a programmable time delay to reduce nuisance activations. The programmable relay includes configurable alarm setpoints, time delay on/off, latching/non-latching mode, energized/deenergized mode, alarm reset, and rising/falling relay activation. All parameters are adjusted nonintrusively.



FEATURES

Easy-To-Maintain & Operate

- Local display
- Non-intrusive calibration
- No sensor warm-up time
- Remote sensor maintenance
- Universal transmitter
- Sensor removal without the need to declassify the area
- Patented no-pins sensor connection

Self Diagnostics

- Sensor end-of-life indicator
- Missing sensor indicator

Rugged Design

- Conformally-coated electronics
- Horizontal conduit entries

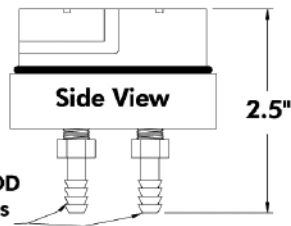
4600MB Additional Features

- Optional built-in alarm relays
- RS-485/232 MODBUS® RTU output
- Security lockout

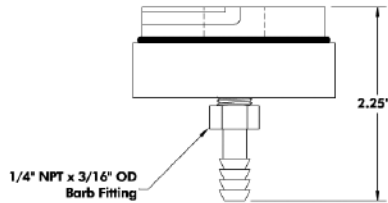
1/4 TURN ACCESSORIES

FlowCell

P/N # 096-2102



1/8" x 3/16" OD
Barbed Fittings

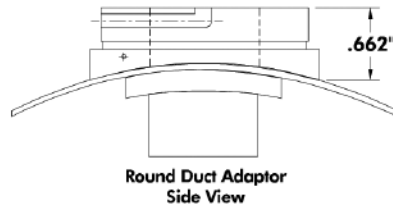


Calibration Adaptor

P/N # 096-2101

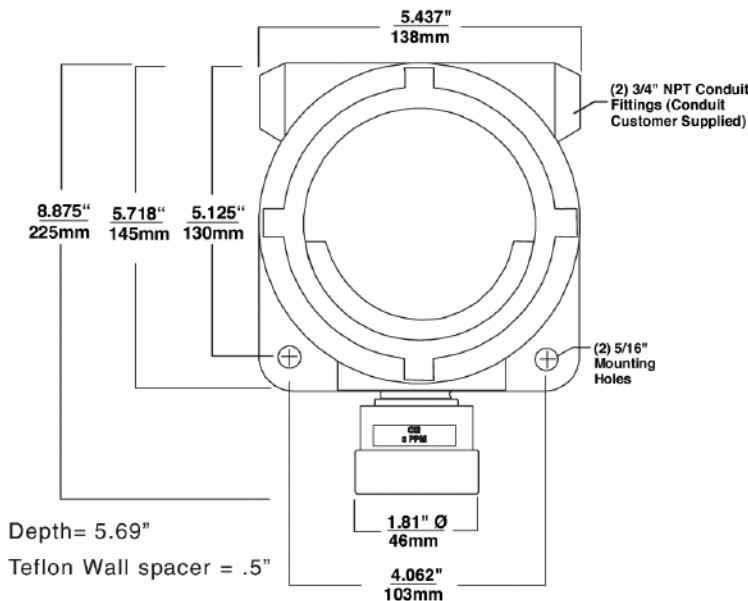
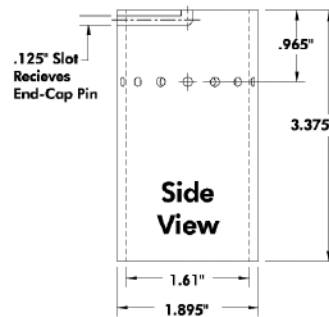
Duct Mount Adaptor

Order Part
096-2118-6/8
(curved)
or
096-2118-F (flat)



RainShield Splash Guard

P/N # 074-0305



Depth= 5.69"

Teflon Wall spacer = .5"

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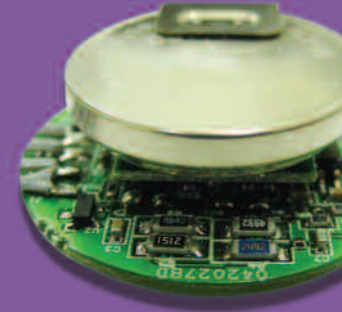
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We Make Sensors that Make a Difference.

Unlike most gas detection companies, Scott Health & Safety develops and manufactures the gas sensors used in its detection instruments. Our team of research and development scientists work every day to advance sensor technologies and improve manufacturing techniques. The result — over 40 reliable, stable, and gas specific sensors including our Rock Solid® series of high performance sensors.



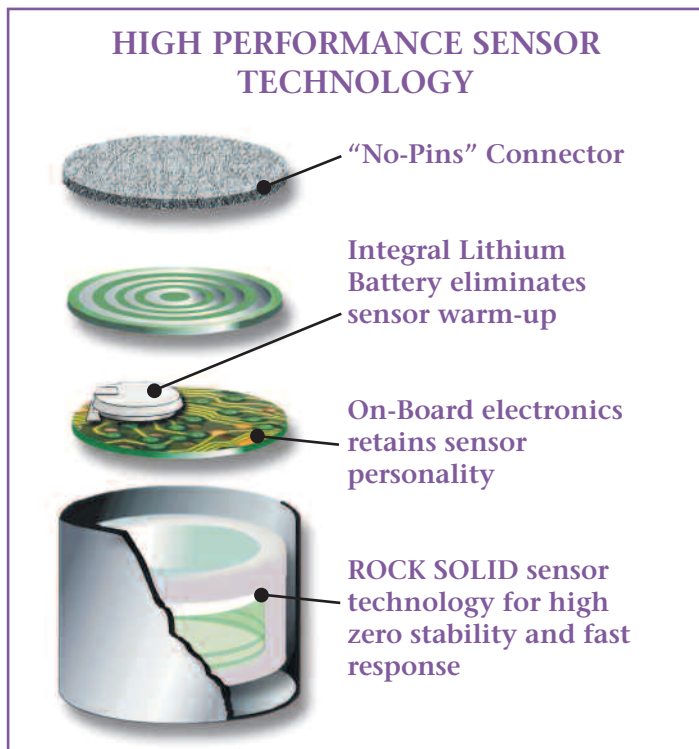
ROCK SOLID® Sensors

ROCK SOLID® sensors use proprietary technology that significantly enhances sensor performance. ROCK SOLID® sensors can detect gas concentrations lower than any other electrochemical gas sensor. ROCK SOLID® sensors provide:

- highest stability
- lowest zero drift
- greatest sensitivity
- fastest speed of response and recovery time
- greatest specificity to the target gas

Sensor Self Test

Any electrochemical sensor can potentially fail without warning. The Sensor Self Test (SST) option reduces overall maintenance costs by providing users with a means to conduct an automatic functional test of the sensor. A built-in, programmable gas generator exposes the sensor to a “test gas” at user determined intervals and alerts personnel if the unit fails to respond.



SMART SENSOR TECHNOLOGY

Using advanced electrochemical toxic gas sensors such as our high performance ROCK SOLID sensor with backup battery to retain calibration information, the 4600 Series is available to detect a multitude of toxic gases.

- Ammonia
- Arsine
- Boron Trichloride
- Boron Trifluoride
- Bromine
- Carbon Monoxide
- Chlorine
- Chlorine Dioxide
- Diborane
- Fluorine
- Germane
- Hydrogen
- Hydrogen Bromide
- Hydrogen Chloride
- Hydrogen Cyanide
- Hydrogen Fluoride
- Hydrogen Sulfide
- Methanol
- Methyl Mercaptan
- Methyl Iodide
- Nitric Oxide (NO)
- Nitrogen Dioxide
- Oxygen
- Ozone
- Phosgene
- Phosphine
- Silane
- Silicon Tetrafluoride
- Sulfur Dioxide
- TEOS
- Tungsten Hexafluoride

ORDERING OPTIONS

BLUE color prefix indicates that a Low % RH version is available.
Low % RH sensors are typically used in semiconductor, HVAC controlled, and desert environments.

Bold = standard range

00 No sensor w/ standard endcap

01 No sensor w/ Rock Solid endcap

85 • Ammonia (NH₃)

37 • Arsine (AsH₃) **Rock Solid**

65 • Arsine (AsH₃)

27 • Boron Trichloride (BCl₃) **Rock Solid**

29 • Boron Trifluoride (BF₃) **Rock Solid**

99 • Bromine (Br₂) **Rock Solid**

61 • Bromine (Br₂)

82 • Carbon Monoxide

24 • Chlorine (Cl₂) **Rock Solid**

52 • Chlorine (Cl₂)

78 • Chlorine Dioxide **Rock Solid**

53 • Chlorine Dioxide (ClO₂)

18 • Fluorine (F₂) **Rock Solid**

62 • Fluorine (F₂)

51 • Hydrogen (H₂)

95 • Hydrogen Bromide **Rock Solid**

93 • Hydrogen Chloride **Rock Solid**

71 • Hydrogen Chloride (HCl)

19 • Hydrogen Cyanide (HCN) **Rock Solid**

64 • Hydrogen Cyanide (HCN)

91 • Hydrogen Fluoride (HF) **Rock Solid**

70 • Hydrogen Fluoride (HF)

81 • Hydrogen Sulfide (H₂S)

59 • Methanol (CH₃OH)

45 • Methyl Mercaptan

46 • Methyl Mercaptan

44 • Methyl Iodide (CH₃I)

34(P) • Methylene Chloride

86 • Nitric Oxide (NO)

84 • Nitrogen Dioxide (NO₂)

80 • Oxygen (O₂)

60 • Ozone (O₃)

77 • Ozone **Rock Solid** (O₃)

49 • Phosgene

50 • Phosgene w/ HCN filter

39 • Phosphine (PH₃) **Rock Solid**

66 • Phosphine (PH₃)

32 • Silicon Tetrafluoride (SiF₄) **Rock Solid**

97 • Sulfur Dioxide (SO₂) **Rock Solid**

83 • Sulfur Dioxide (SO₂)

25 • Tungsten Hexafluoride (WF₆) **Rock Solid**

Sensor Connection / Housing

- Integral Sensor with transmitter
- Separated Sensor w/ junction box and 50' cable
- Separated Sensor, no J-box, 6' cable standard (not approved for hazardous locations)
- Condensing % RH Sensor housing, no window/includes Humishield endcap
- 3/4" housing and condensing humidity endcap (not approved for hazardous locations) Model 46AA

Transmitter Output

Series 4600

- Standard (4 to 20 mA DC)

Series 4600MB

- 4600MB (RS-485, 4 to 20 mA) without Relays (qty 3)
- 4600MB (RS-485, 4 to 20 mA) Local Relays N.O. (Low, High, Fault)
- 4600MB (RS-485, 4 to 20 mA) Local Relays N.C. (Low, High, Fault)
- SST No Relays. [For ROCK SOLID Sensors Only]
- SST Local Relays N.O. (3) [For ROCK SOLID Sensors Only]
- SST Local Relays N.C. (3) [For ROCK SOLID Sensors Only]

Adaptors

- No Adaptors
- 1/4 Turn Rainshield/Splash Guard (typical)
- S.S. Rainshield/Cal Adaptor w/ SS endcap (for REMOTE sensor apps)
- 1/4 FlowCell

Sensor Self Test

- No SST
- SST Type A (4600MB ONLY)
[only available in some models – call for info]

SPECIFICATIONS

All specifications shown apply to both Series 4600 and Series 4600MB unless otherwise noted.

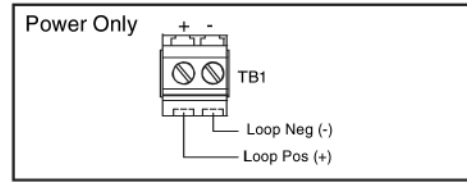
- Enclosure Transmitter: Copper-free cast aluminum.
Sensor housing: Stainless steel with PVC endcap
- Temperature Range Transmitter: -40°F to 140°F
(-40°C to 60°C)
Sensor: Depends on gas type.
See Gas Capabilities Data Sheet.
- Operating Humidity Range . . . Up to 99% RH, non-condensing
(up to 100% RH with optional Humishield)
- Operating Pressure Range . . . 0 to 10 psig
- Weight 5lbs (2.25Kg)
- Power Requirements (4600 2 wire): 14 to 30VDC 0.6W
(4600MB 3 wire): 18 to 27VDC 1.2W
(4600MB w/ relays): 18 to 27VDC 2.0W
- Output Analog: 4 to 20 mA (4600MB)
RS-485/232 MODBUS RTU (4600MB w/Relay): 2 alarm, 1 fail (all 5A SPST rated at 120V); user-selectable latching/non-latching and energized/deenergized
- Maximum Loop Load (4600 2 wire): 460 ohm at 24VDC
(4600MB w/relays): 950 ohm at 24VDC
- Display 3.5 digit LCD; 0 to 100% bargraph; alarm indication; inhibit indication; weak sensor indication.
- Local Inhibit Output Selectable (4600): 3.5 to 20 mA
(4600MB): 0 to 20 mA
- Self-diagnostics Weak sensor; Missing sensor; transmitter fault
- Max. Sensor Separation 50 feet (15.25m) from transmitter
- Sensor Type Electrochemical gas diffusion
- Sensor Life 22 to 24 months average; disposable
- Sensor Battery 9 months continuously unpowered
(no drain when powered)
- Sensor Repeatability ±2% full scale
- Sensor Linearity ±2% full scale
- Approvals (4600): Class 1, Groups B, C and D, Class 2, Group E, F and G, Class 3

(4600MB): Class 1, Zone 1,
Group IIC EX d IIC T6

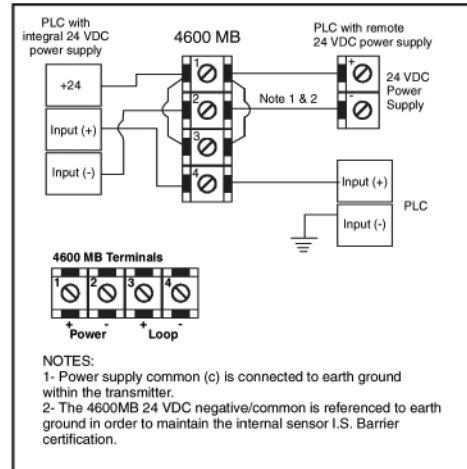


- Warranty 1 year (sensor and transmitter) Except
Phosgene (COCl₂) sensor – 6 months

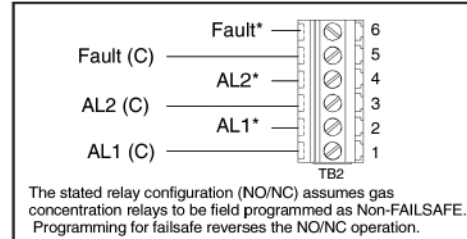
4600 Electrical Connections



4600MB Electrical Connections



Alarm Relay Connections



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