



## Gas Detection Technology

### Ultra 1000 Addressable H<sub>2</sub>S Sensor

#### Features

- RS-485 MODBUS Serial Output
- 4-20mA Analog Output
- Field Programmable Alarm Relays
- 14-28 VDC Operation
- Automated Non-Intrusive Calibration
- Liquid Crystal display with back light



#### Description

Ultra 1000 series is a microprocessor based addressable sensor for detection of Hydrogen Sulfide in ambient air. The self-contained sensor features user friendly interface and menu driven calibration procedure and configuration.

The complete sensor consists of a stainless steel sensor head assembly, a user connection board and a transmitter board assembly. All of the sensor electronics are enclosed in an explosion proof instrument box. The unit's modular design allows easy maintenance, troubleshooting and high reliability.

The unit provides a 4-20mA signal proportional to 0 to 100% of the detection range. In addition the sensor may be addressed via MODBUS RTU interface. The MODBUS output provides sensor status, alarm & fault conditions. Alarm levels can be programmed via MODBUS RTU or via magnetic switch on the face of the transmitter board assembly.

Ultra 1000 can be calibrated in less than 2 ½ minutes. The calibration and the set-up parameters are retained in a non-volatile memory.

## Ultra 1000 Addressable H<sub>2</sub>S Sensor

### Specifications

#### Sensor Type

Electrochemical  
(Also available in Solid State MOS)

#### Measuring Range

0 – 100 ppm (parts per million)  
*( 500 ppm extended range also available)*

#### Repeatability

± 2 % Full scale

#### Zero Drift

< 5% per year

#### Typical Response Time

T90 < 30 seconds with 100% FS gas applied

#### Classification

Class I, Division 1, Groups B,C & D

#### Operating Temperature

-4°F to +122°F (-20°C to +50°C)

#### Operating Humidity

15% to 90% RH, non-condensing

#### Display

2 lines by 8 Character LC Display with back light

#### Status Indicators

LC Display for gas concentration,  
Alarm relay status, calibration mode and  
sensor fault status.

#### Mechanical Specifications

Length: 7 inches (178 mm)  
Width: 5 inches (127 mm)  
Height: 4.5 inches (114 mm)

#### Input Power

14-28 VDC. 24 VDC nominal

#### Power Consumption

60mA @ 24 VDC typical

#### Alarm Relays

Fully programmable. 0 to Full scale range  
of the sensor. Latching or Non-Latching.

#### Relay Ratings

SPDT Form “C” type Relay contacts  
5 Amps @ 250 VAC or 30 VDC

#### Analog Output

Linear 4-20mA (300 Ohms max. load)  
2.0 mA - Calibration mode  
< 1.0 mA - Sensor malfunction

#### Interface

RS-485 MODBUS RTU (2 wire)  
at 9600 Baud rate

#### Cable Entry Hub

3/4" NPT Female

---

#### **Pem-Tech, Inc.**