



## SM\_H2

### Hydrogen Gas Detector Kit

*For battery charging rooms and other areas where hydrogen gas may be present*



*Electrical Safety – UL 61010-1*

*Compliant with NFPA 70E® and IEEE Recommendations  
Pollution Degree 2*



## Overview

Caused by an internal chemical process, batteries gas out hydrogen during a charging cycle. As soon as the saturation of air with at least 4.1% hydrogen to 75% air is reached, a highly explosive gas mixture is formed - Sparks or hot surfaces can ignite the hydrogen gas.

Since hydrogen is colorless and odorless, battery rooms should be secured by additional hydrogen sensors

The SM\_H2 hydrogen detector is a monitoring device that provides a visual and audible alarm when hydrogen is detected:

The device provides a

- 1% concentration warning level
- 2% concentration alarm level

The system comes complete with the main display, a highly accurate hydrogen gas sensor and a 25 ft. cable. This unit can be powered with either AC or DC power and can be mounted directly to a wall or to an electrical box making it extremely versatile and very user friendly.

### How the SM H2 sensor works

Each SM\_H2 Hydrogen sensor provides up to 3 probes – these probes can be placed individually to monitor hydrogen level in the air.

Should the concentration of hydrogen gas in the air surrounding the sensor probe reach 1% by volume, the sensor reacts as followed:

#### *“1% Warning”*

- yellow LED will light up on the main control of the unit.
- The 1% internal relay will de-energize and can be used as trigger or information uplink to management systems.

Should the concentration of hydrogen gas in the air surrounding the sensor probe reach 2% by volume, the sensor reacts as followed:

#### *“2% Alarm”*

- red LED will light up,
- A stroboscopic LED will light up
- Audible alarm will appear.
- The 2% internal relay will de-energize and can be used to trigger automatic emergency functions or to inform a management/alarm system.

### Applications

The SM\_H2 hydrogen sensor can be used for

- Substations
- Battery rooms
- Uninterruptible power supply (UPS)
- Battery cabinet systems
- Battery charging areas
- Hydrogen fueled back-up power systems



## Technical Data

### Dimensions

Main control 4.7" L x 4.7"W x 1.2"D  
 Sensor 3.1"L x 1.6"W x0.87D

### Mounting

Wall Two 3/16" screws  
 H2JB-Junction box 4 11/16" 2-gang junction box

### Power

120 Vac, 50/60 Hz Nominal	93 - 121 Vac	250mA / 10W Max
220 Vac, 50/60 Hz Nominal	185 - 242 Vac	125mA / 10W Max
12-48 Vdc Nominal	9 - 58 Vdc	600mA / 6W Max

An earth ground must be supplied to the GND terminal on the AC terminal block when using only the DC power supply

### Relays

1% Warning Relay  
 1 Normally Open and 1 Normally Closed contact  
 Rated for 15 A resistive @ 120 Vac  
 Rated for 10 A resistive @ 277 Vac  
 Rated for 10 A resistive @ 28 Vdc

2% Alarm Relay  
 1 Normally Open and 1 Normally Closed contact  
 Rated for 0.5A @ 28 Vdc

### Temperature/Humidity

Temperature Range 32°F (0°C) to 122°F (50°C)  
 Humidity Range 20-95% non-condensing  
 Storage Humidity Range 5-95% non-condensing

### Air pressure condition

Maximum operating altitude 2000 meters

### Audible Alarm

Acoustical data 85 dB at 10' @ 1.6 - 3.2 KHz

### Strobe LED

Emitted light 146 lumens at 1A @ 3.2-4.2V