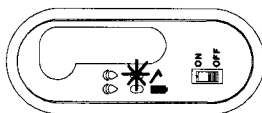


## HS110 Hydrogen Sulfide Monitor

### Operating Instructions

#### Operating the Instrument

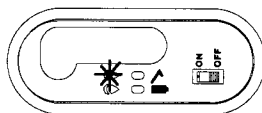
To turn the HS110 on, move the on/off switch on the top of the instrument to the ON position. You will hear a short beep and the LED indicators will flash in sequence. Once turned on the green LED indicator will flash once approximately every 10 seconds to indicate that the instrument is functioning. The instrument may be turned off when not in use by returning the switch to the OFF position.



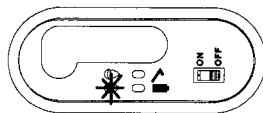
#### HS110 Alarm Indicators

The HS110 has two levels of alarm that are factory set at 10 and 20 PPM. (The alarms may be set to different levels at the factory if desired).

**Low Alarm** - When the H<sub>2</sub>S gas concentration has exceeded the low alarm setpoint of 10 PPM the instrument will emit a slow pulsed tone and the amber warning LED indicator will flash.

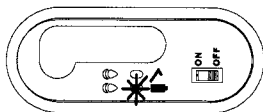


**High Alarm** - When the H<sub>2</sub>S gas concentration has exceeded the high alarm setpoint of 20 PPM the instrument will emit a fast pulsed tone and the red alarm LED indicator will flash.



#### Low Battery Warning

The HS110 will operate continuously for approximately 1100 hours on one AA alkaline battery. When the battery nears the end of its useful life, the HS110 will indicate a low battery



condition by flashing the Low Battery/Fault LED indicator and beeping once per second. The battery should be changed as soon as possible after the low battery indicator has been activated.

**Note: Activation of the Low Battery/Fault LED may also indicate a sensor or calibration fault.**

#### Replacing the Battery

The HS110 operates for up to 1100 hours on one standard AA alkaline battery. To replace the battery

- Remove the HS110 from the holder.
- Remove the battery cover from the bottom of the HS110 using the hex tool provided on the bottom of the instrument holder.
- Remove the battery from the instrument.
- Insert the new battery making sure the proper polarity is observed as indicated on the side of the HS110.
- Insert and tighten the battery cover.

#### Calibrating and Testing the HS110

Industrial Scientific recommends that a periodic function test is performed on the HS110 using a known concentration of calibration gas. The HS110 should be tested to verify operation any time the instrument has been dropped, submersed or any evidence of physical damage appears that may indicate that the unit is not functioning properly. Industrial Scientific recommends that a full calibration be performed on the instrument anytime that the HS110 fails to respond properly to a functional test.

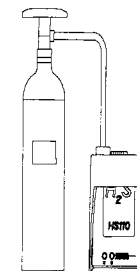
#### Testing the HS110

- Insert the instrument into the holder upside down such that the display indicators can be seen through the opening in the bottom of the holder and the calibration buttons are visible on the front of the instrument.
- Connect a cylinder of 25 PPM H<sub>2</sub>S calibration gas using a 0.5 liter/minute flow regulator and Tygon tubing to the tubing adapter on the instrument holder.
- Start the gas flow. The low alarm should activate within approximately 20 seconds and the high alarm should activate within

approximately 60 seconds. If the alarms fail to activate as described the instrument should be calibrated prior to further use.

#### To Perform a Full Calibration on the HS110

- With the HS110 in clean air, Zero the instrument by pressing and holding the Z button on the front of the instrument for approximately 10 seconds. The green LED indicator will flash while pressing the button.
- When the zeroing process is complete the instrument will beep to indicate that the zeroing function is successful.
- Apply 25 PPM H<sub>2</sub>S to the instrument for approximately 1 minute as described in *Testing the HS110*.
- With the 25 PPM H<sub>2</sub>S calibration gas applied, press and hold the span (S) button on the front of the instrument for 10 seconds. The green LED will flash rapidly while depressing the button.
- When the calibration process is complete a series of beeps will be heard while holding the S button. If the series of beeps is not heard the calibration was unsuccessful.
- Release the S button and remove the calibration gas.



**Note: An unsuccessful calibration or zeroing operation or other sensor fault will be indicated by an alternating red Low Battery/Fault LED and green LED along with a beep once per second.**

If you have problems or questions concerning the operation of the HS110 Hydrogen Sulfide Monitor contact

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1707-8957 Rev 3 08/07/00