

## Getting Started Guide & Unisense standard specifications for Hydrogen Sulfide Sensors - SULF-type

This sensor has been successfully tested prior to shipping, however some sensors suffer from rough transportation. Therefore, it is important that you test the sensor upon arrival!

### Replacement of Defective Sensors

Unisense will replace the sensor if it does not meet the specifications below, provided that:

1. A test is performed upon receipt without breaking the seal. (Note! No seal on MR-sensors for testing purposes)
2. The complaint is given to Unisense *within two weeks* from receipt of the equipment.

### Guaranteed Lifetime

Unisense guarantees the SULF sensor a minimum lifetime of 6 months on condition of correct storage and use according to the manual.



### Individual Sensor Calibration is required

Our sensors are handmade and as the sensor signal relies on the exact geometry of the sensor tip (micrometer scale), some variation must be expected. Complete linearity cannot be expected in the high concentration range (more than 300  $\mu\text{M}$   $\text{H}_2\text{S}$ ). The  $\text{H}_2\text{S}$  sensitivity decreases over time (not uniformly) no matter if the sensor is in use or stored.

### Signal Amplification

Unisense SULF sensors should be connected to a Unisense amplifier such as a UniAmp series instrument or the Field Microsensor Multimeter.

### Standard SULF sensors are functioning correctly if (at room temperature):

- The 90 % response time is within the specified range (see table below).
- The zero signal is less than 25 % of the signal in a 50  $\mu\text{M}$   $\text{H}_2\text{S}$  calibration solution (see the table).

	SULF -10	SULF -25	SULF -50	SULF -100	SULF -200	SULF -500	SULF -N	SULF -NP	SULF -MR	SULF -50LR	SULF -100LR	SULF -500LR	SULF -NPLR
90% response time (sec.)	<10	<10	<10	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Zero-signal less than	15 mV	15 mV	15 mV	15 mV	15 mV	15 mV	15 mV	15 mV	15 mV	10 mV	10 mV	10 mV	10 mV

The sensor signal in pA is converted to an instrument signal in mV. The default setting of this Pre-Amp range is 1 pA = 1 mV. However, this can be changed by the user (see the instrument manual).

# Getting started with Hydrogen Sulfide Sensors – SULF

## 1. Unpacking

- Remove the grey shock-absorbing plastic net and inspect the sensor visually. Leave the sensor in the protection tube for testing, and do not break the seal.

## 2. Connect the sensor to the amplifier

- The amplifier is automatically set up correctly when used with these instruments: UniAmp series and Unisense in situ amplifiers.
- For other amplifiers, set the polarization manually to +200 mV.

NOTE: Incorrect polarization may destroy the sensor.

## 3. Wait for the sensor to stabilize

- The signal will be very high right after the sensor is connected and will decrease over time.
- The period of decreasing signal will normally be at least 2 hours.
- Once the signal is stable, calibration can be performed..

## 4. Calibrate the sensor

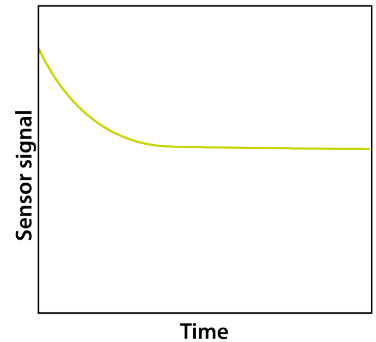
- Place the sensor in sulfide free water to obtain the zero calibration point.
- Prepare the sulfide solution according to the H<sub>2</sub>S calibration kit manual and inject the solution into the calibration cap.
- For alternative calibration method, see the H<sub>2</sub>S Microsensor User Manual.

## 5. Approve the sensor

- Compare the calibration points to the specifications given on the previous page. If necessary, see Troubleshooting in the H<sub>2</sub>S Microsensor manual or contact support.

## 6. Storage

- When not in use, store the sensor with the protection tube mounted at room temperature. If the sensor is used regularly, keep it polarized and connected to the amplifier.



*A typical decrease in sensor signal over time for a sensor that has just been plugged in.*



*Injecting calibration liquid into protection tube using the calibration cap.*

## Useful tools



H<sub>2</sub>S Microsensor Manual



uSense Solutions Manual



Calkit-H<sub>2</sub>S Manual



Contact information for support

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