ScuL-Sense™ Stainless Steel High Pressure Chemical Sensor
Liquid Level Sensor for Chemical Industries

Featuring Dynacheck® – Automatic and Continuous Self-Checking Circuitry

DESCRIPTION

Scully ScuL-Sense™ stainless steel optic sensors are designed for Chemical product overfill prevention and point level detection.

Scully offers a 5-year warranty on these models of overfill prevention sensors for fixed tank trailer and storage tank applications. Scully sensors have the longest running safety record in the industry and are manufactured in Scully's U.S. factory, which prides itself on its strict quality and safety standards.

They are designed to be used with the Scully Intellitrol®, ST-15, and/or ST-35 series loading rack control monitors. They can be used for overfill prevention on road tankers, rail cars and storage tanks.

These chemical sensors are available in either 2 wire or 5 wire versions. The sensors are a critical component in Scully's unique and patented Dynacheck® circuit design. When used in conjunction with Scully electronic monitoring equipment, our overfill protection sensor will provide consistent failsafe monitoring. By constantly checking a "closed loop" pulsing signal across the entire system, Scully ensures a safe and reliable loading operation. If rising fuel contacts the sensor, this signal is interrupted and the controlling pumps and valves are shutdown. No operator involvement is needed to end the loading operation.

Scully stainless steel chemical sensors are constructed of SS 316 Stainless Steel, Borosylicate (Pyrex® Glass) and SIMRIZ® O-rings and are compatible with a wide range of chemicals.*

Chemical Sensor

The ScuL-Sense™ design is API compliant and withstands temperature related stresses, dramatically improving reliability across a wide operating range.

IEC 61508 SIL 1 Capable

2 Wire Model

$\lambda_{DU}=2.0$ FIT* $\lambda_{SU}=110$ FIT*

FIT = Failure In Time (1×10^{-9} failures per hour)

IEC 61508 SIL 2 Capable

5 Wire Model

$\lambda_{DU}=1.0$ FIT* $\lambda_{SU}=116$ FIT*

FIT = Failure In Time (1×10^{-9} failures per hour)

FEATURES AND BENEFITS

- Maximum safety with Dynacheck®— Automatic and continuous self-checking circuitry when used with Scully loading rack controls and vehicle onboard monitors.
- Usable to pressures of 600 PSI.
- Broad chemical compatibility.
- Wide temperature range.
- Shaft threaded inside and out and incorporates wrench flats.

- Fully compatible with Scully controllers.
- Rated for Class I, Division 1, Groups C & D Hazardous Locations, by FM Global (FM) to Canadian and United States standards.
- Meets requirements of API Recommended Practice RP-1004.
- Can be employed as part of a SIL system.
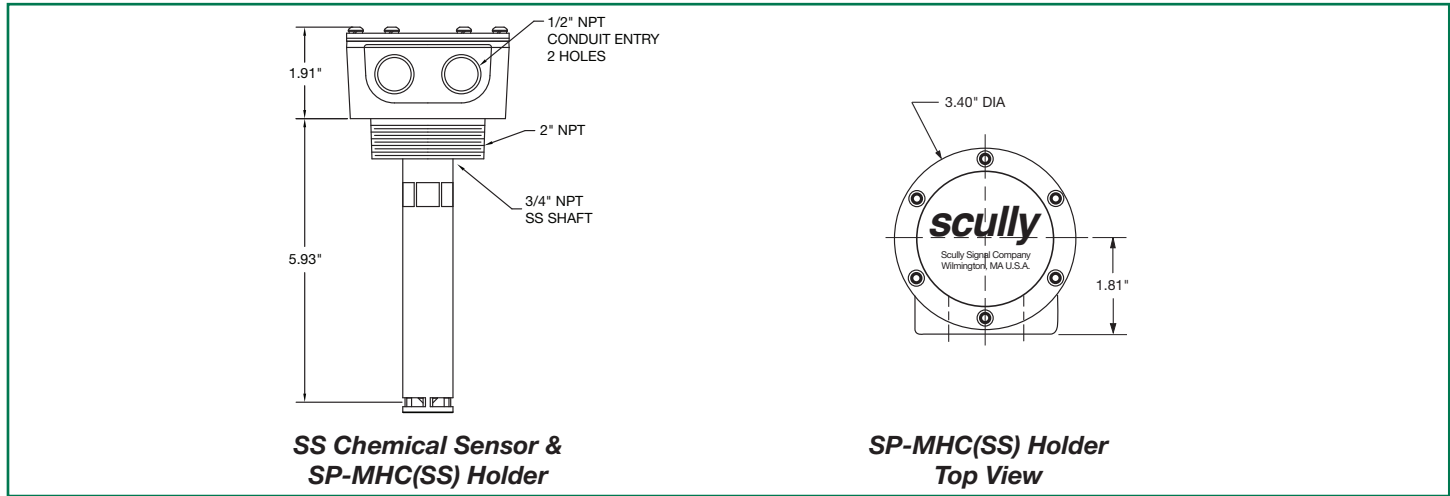
CHEMICAL COMPATIBILITY

Compatible products include:
(not a complete list)

- Gasoline
- Jet Fuel (JP3, JP4, JP5)
- Fuel Oils
- Oils
- Ethanol

- Alcohols
- Sodium Peroxide
- Hydrogen Peroxide
- Mineral Spirits
- Arsenic Acid
- Boric Acid
- Carbonic Acid

- Nitric Acid
- Acetic Acid Glacial
- Stearic Acid
- Methyl Ethyl Ketone (MEK)
- Phosphorus Trichloride
- Methyl Bromide

***NOTE:** Compatibility is based on compatibility with sensor components. In rare cases, optical properties of the chemical may interfere with proper operation. Always perform operational tests before deploying.*

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Liquid Level Sensor for Chemical Industries

**SS Chemical Sensor &
SP-MHC(SS) Holder**

**SP-MHC(SS) Holder
Top View**

TECHNICAL SPECIFICATIONS

Temperature Range: -40° F to +140° F (-40°C to +60°C).

Product Range: Groups C & D hazardous materials and non-hazardous materials which are compatible with optic sensing technology. Consult the factory for specific chemical compatibility.

Exposed Materials: SS 316 Stainless Steel, Borosilicate (Pyrex®) Glass, SIMRIZ® Seal.

Detection Level and Size: Fixed, refer to diagram. The sensor may be adjusted to any length using 3/4" stainless steel pipe and a pipe coupling.

Level Repeatability: ±1/16" (1 mm).

Electrical Leads: 48" (122cm) long Teflon insulated wires, 22 AWG (0.33 mm^2).

Cable Entry: Two holes, 1/2" NPT threads or M20 X 1.5 depending upon model.

Weight: Sensor: 15.5 oz (0.45 kg).
Holder: 2.8 lbs (1.27 kg).

Approvals:

SIL Capable

The sensor is intrinsically safe for mounting in Class I, Division 1, Groups C and D Hazardous location in accordance with Scully Control unit approval ratings.

ORDERING INFORMATION

Model	Description	Part Number
SP-TO(SS)	Two-Wire Optic Stainless Steel Chemical Sensor only	09375L1
SP-FU(SS)	Five-Wire Optic Stainless Steel Chemical Sensor only	09376L1
SP-MHC(SS)	Stainless Steel Holder assembly with 3/4" NPT thread (no sensor)	08585

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Dynamic Self-Testing® Overfill Prevention Systems

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