ScuL-Sense™ Two-Wire Optic Sensor
Liquid Level Sensor for Road Tanker Overfill Prevention

Featuring Dynacheck® – Automatic and Continuous Self-Checking Circuitry

DESCRIPTION

Scully two-wire optic sensors are purpose-built for liquid petroleum product overfill prevention and point level detection.
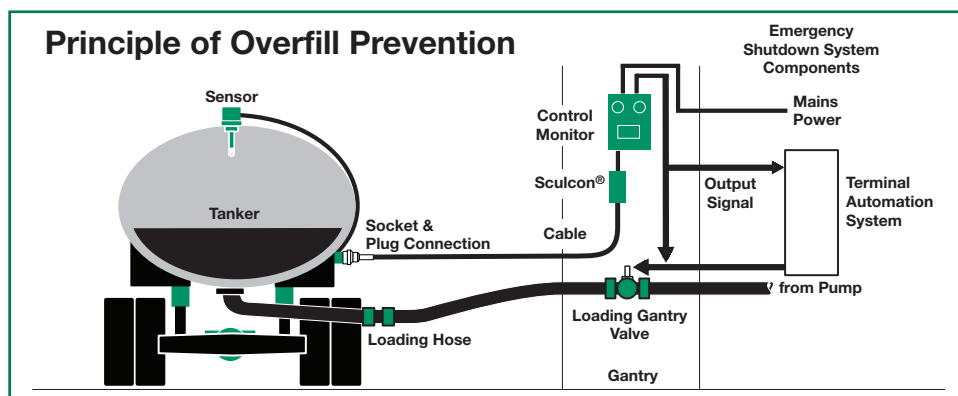
Scully offers a 5-year warranty on overfill prevention sensors for fixed tank trailer and storage tank applications. Scully sensors have the longest running safety record in the industry and are manufactured in Scully's U.S. factory, which prides itself on its strict quality and safety standards.

They are designed to be used with the Scully Intellitrol® and ST-15C series gantry control monitors. The sensors can also be used with the Scully IntelliCheck® II Monitor. There is no waiting for the control monitors' permit light to go on because the sensor requires no warm up time. Overfill prevention applications include road tankers, rail cars and storage tanks.

The two-wire optic sensor is 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.

2-Wire Sensor

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

Principle of Overfill Prevention

IEC 61508 SIL 3 Capable

λ_{DU}=2.0 FIT* λ_{SU}=110 FIT*

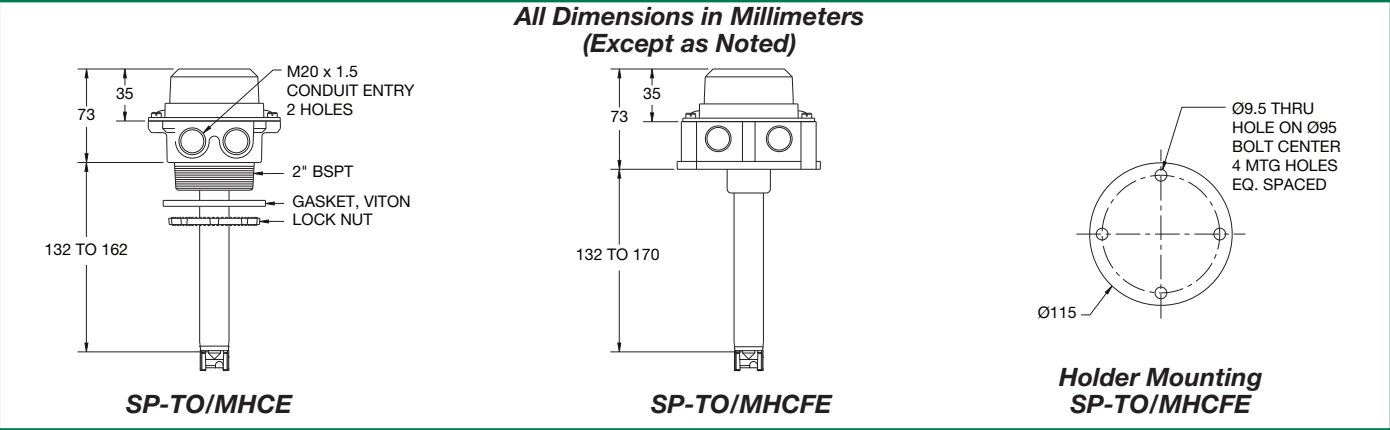*FIT = Failure In Time (1×10^9 failures per hour)*

FEATURES AND BENEFITS

- Maximum safety with Dynacheck—Automatic and continuous self-checking circuitry when used with Scully electronic rack and vehicle onboard monitoring systems.
- Scully's field-proven electro-optics technology.
- Wide Temperature Range.
- Adjustable Sensing Level.
- Instant-On™—Instant permissive signal. No warmup time required.
- Quick purging of liquid—"fast" repermit as product level drops below the sensing point.
- Fully compatible with all Scully thermistor controllers.
- ATEX approvals per directive 94/9/EC.

Liquid Level Sensor for Road Tanker Overfill Prevention

All Dimensions in Millimeters (Except as Noted)

M20 x 1.5 CONDUIT ENTRY 2 HOLES
35
73
2" BSPT
GASKET, VITON
LOCK NUT
132 TO 162

SP-TO/MHCE

35
73
132 TO 170

SP-TO/MHCFE

Ø9.5 THRU HOLE ON Ø95 BOLT CENTER 4 MTG HOLES EQ. SPACED
Ø115

**Holder Mounting
SP-TO/MHCFE**

TECHNICAL SPECIFICATIONS

Operating Temp. Range: -40°C to +60°C

Petroleum Product Range: Petroleum Blends through #2 Oil

Exposed Materials: Aluminum, zinc, borosilicate (Pyrex®) glass, epoxy, conductive nylon and Viton® seals

Level Repeatability: ±1 mm

Electrical Leads: 40 cm long, 0.33 mm² (22 AWG)

Cable Entry: Two holes, M20 x 1.5 threads

Detection Level and Size: The detection level is adjustable, refer to sensor outline drawing above, shown for 175mm shaft length.

Approvals: The sensor is intrinsically safe for mounting in Zone 0 according to ATEX Directive 94/9/EC
Ex ia IIB T5 Ga (-40°C ≤ Ta ≤ +60°C)

SIL Capable

1180 CE Ex II1G

ORDERING INFORMATION

Model	Description	Shaft Length	Part Number
SP-TO/MHCE(SC)	Two-Wire Optic Sensor, 2" BSPT holder, 35mm Short Cap	175mm	09014L1
		300mm	09034L1
		375mm	09044L1
SP-TO/MHCFE(SC)	Two-Wire Optic Sensor, Flanged holder, 35mm Short Cap	175mm	09013L1
SD-5CE	5-Element Electronic Dummy		08542
	Employed on road tankers with less than 8 compartments when not using IntelliCheck®II monitor		

REPLACEMENT PARTS

Model	Description	Shaft Length	Part Number
SP-TO	Two-Wire Optic Sensor, (without holder)	175mm	09032L1
		300mm	09035L1
		375mm	09045L1
SP-MHCE(SC)	2" BSPT Threaded Holder Only		08714
SP-MHCFE(SC)	Flanged Holder Only		08284

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Dynamic Self-Testing® Overfill Prevention Systems