EBW AIR OPERATED VAPOR VALVE

Air-Operated Vapor Valve

Handle fuel and vapors safely and efficiently with this lightweight aluminum vapor valve. The air-operated valve allows fast vapor flow during loading and unloading. The poppet is designed to open into the tank, providing accidental leakage from product surges or from a tank truck rollover. Easy-to-use air line nozzles are located outside the compartment for convenient installation and maintenance. The 3.5-inch vapor valve comes with male NPT threads or a T1MA flange for installation in conventional 16- or 20-inch manholes.

<table>
<thead>
<tr>
<th>Features</th>
<th>Part no.</th>
<th>Style</th>
<th>Size (in.)</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightweight aluminum body and hood</td>
<td>EBW-88028601</td>
<td>flanged</td>
<td>3.50</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>EBW-88028801</td>
<td>threaded</td>
<td>3.50</td>
<td>3.25</td>
</tr>
</tbody>
</table>

SECTION THREE - PETRO - VAPOR VALVES

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Civacon Rollok® Design Elbows

The Rollok® design provides a unique coupling action at the fill adaptor. It incorporates features that insure positive connection and uniform seal compression at the adaptor.

Features:
- Roller rolls through groove.
  - Reduces coupling effort and driver fatigue
  - Reduces wear on adaptor and coupler
- Rollers contact at locations in line with delivery and vapor connections.
  - Relieves stress on adaptor caused by heavy hoses
  - Provides uniform seal compression
- Handle positioned vertically.
  - Reduces driver fatigue, the handle is positioned high on the elbow so the driver is not bending over as far during connection and disconnection.

"Don't Settle For Less"

Coaxial Single Point System

Coaxial elbows are used where service stations have been converted to vapor recovery using a single coaxial connection.

Features:
- (3) Three sight windows for monitoring product flow.
- Reduced coupling effort – due to patented “Rollok™” roller cam design.
- Product port on top to eliminate vapor hose interference when draining product hose.
- Uniform lower seal compression due to placement of cams front and back.
- Available in (2) two overall heights: 60TTCS standard industry height, 60TTC taller to reach deep fill adaptors.

Available Styles

- **CIV-60TTC0100** - Product Delivery has Kamlok Adaptor.
  - Overall Height 26”.

- **CIV-60TTCP0150** - Product Delivery has Kamlok Adaptor with poppeted Vapor Recovery Adaptor.
  - Overall Height is 26”.

- **CIV-60TTCF0200** - Product delivery has Female NPT Threads.
  - Overall Height 26”.

- **CIV-60TTCS1100** - Same as 60TTCF.
  - Overall Height is 22 3/4”.

- **CIV-60TTCFS1200** - Same as 60TTCF.
  - Overall Height is 22 3/4”.
**Dual Point Systems (Liquid) Delivery**

Dual Point delivery and vapor recovery systems are used on most new service stations due to higher efficiency and faster product delivery.

**CIV-60TT0095**
- Two-piece modular construction elbow, top half is replaceable.
- Patented Rollok® roller cam is designed for ease of coupling and low wear.
- Integral Kamlok inlet adaptor for a smoother flow.
- Top seal design.
- Three sight windows to monitor product flow.

**CIV-60TTF0190**
- Same as 60TT-4" except with a 4" female NPT inlet.
- Designed to accept a 633F-4", 633FD-3" x 4" adaptor or a 633B-4" coupler.
- Top seal type.

**CIV-60SLK Retrofit Kit**
- Spring-Link™ design reduces coupling linkage damage and tells the operator when the elbow isn't sealed properly.

**CIV-60-0077**
- Aluminum body reduces operator fatigue.
- Manganese bronze spring loaded cam arms which automatically engage the locking flange of the 61AS adaptor when pressed onto fill pipe.
- Three sight windows to monitor product flow.

**CIV-60AS0092**
- Two-piece modular design has an integral inlet adaptor for a smoother flow path.
- Three sight windows to monitor product flow.
- Two-piece cast aluminum body, top half is replaceable.
- Side seal type.

**CIV-60AS0184**
- Side seal type.
- Same as 60AS except with 4" female NPT inlet.
- Both 60AS and ASF are supplied with 60L Lock Ring.

**Dual Point Systems (Vapor Return)**

**CV-1711VL0300 Vapor Recovery Elbow**
- 5 degree angled outlet for vapor flow.
- Low wearing seal.
- Low maintenance design, easy to use.

**CIV-60T70000**
- Unrestricted, full flow tight fill connector. Simply pressing down-ward on the plunger engages double cams which securely locks the unit on adaptor.
- Three sight windows to monitor product flow.
- Top seal type.
INTELLICHECK®

Scully's INTELLICHECK® System is the most advanced secondary overfill protection and retained product monitoring system in tank truck loading operations. Featuring Dynachek®- automatic and continuous self-checking circuitry, the controller, wiring, connections and sensors are checked for faults up to 30 times per second. Only INTELLICHECK offers system diagnostics this extensive.

INTELLICHECK is a state of the art point level detection system that provides:

- Overfill prevention and retained product monitoring in one compact enclosure.
- Scully Dynacheck, automatic and continuous self-checking circuitry.
- The ability to use existing Scully five-wire optic or Scully two-wire optic overfill sensors.
- Complete visual and diagnostic display of overfill sensors' status. Will not permit loading under any fault or wet overfill sensor condition.
- Monitoring of up to 8 compartments.

- Complete compatibility with all Scully loading rack overfill prevention equipment.
- Durable construction for long lasting dependability.
- Easy installation with step by step instructions.
- The best technical service in the industry, with 24-hour toll-free trouble-shooting and technical assistance.
- Full communication with diagnostic information on all sensor conditions and system functions shown and explained on the monitor cover.
STANDARD FEATURES

OVERFILL PREVENTION
- Monitoring of up to 8 compartments.
- Maximum safety with Dynacheck automatic and continuous self-checking circuitry.
- Red “wet” sensor LED indicators which illuminate on high level and signal output shutdown.

DYNACHECK® SAFETY
- Dynacheck uses pulsed signals to continuously check the entire system.
- The controller, wiring, connections and sensors are checked for faults up to 30 times per second.
- If a sensor comes in contact with liquid, or in the event of a system fault, the pulsed signals cease, and the controller automatically signals for immediate shutdown of the loading operation.

COMPLETE DIAGNOSTICS AND COMMUNICATION
- IntelliCheck shows visual indication of proper operation.
- Prominent red and green status LED indicators indicate permit, Dynacheck status, auxiliary control, signals from rack, and signals to rack.
- Individual wet sensor detection by compartment, with indication of open sensor wiring, shorted sensor wiring, sensor faults and even wiring faults or a faulty connection to the loading rack controller.

RETAINED PRODUCT MONITORING
- Automatic detection with two-wire optic retained product sensors.
- Monitoring of up to 8 compartments.
- Loading is automatically locked out when product remains in a compartment.
- Driver must acknowledge the presence of retained product.
- Warns against product mixing.

ADVANCED OPTIC SENSING
- Scully optic sensors are the devices through which Dynacheck detects the presence of liquid product.
- The signal for each sensor is directly wired to the IntelliCheck monitor for verification of each compartment’s status.
- Optic technology insures no warm-up time.
- One overfill and/or one retained product sensor is mounted in each compartment.

DURABLE, RELIABLE SOCKET CONNECTIONS
- Scully sockets are the vehicle mounted connectors for the rack plug.
- Feature lightweight vinyl protective caps to prevent socket corrosion.
- Captive cable attachment to prevent loss.

---

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### OVERFILL - PETRO - SECTION THREE

#### ORDERING INFORMATION

**IntelliCheck kits**
Each IntelliCheck Kit includes one control module, the number of optic sensors to match the number of vehicle compartments, Scully cable, 30 crimp-on connectors, 16 compression fittings, a Swivel hook and a socket cleaner.

<table>
<thead>
<tr>
<th>IntelliCheck Overfill and Retained System Kit (200 foot Scully Cable)</th>
<th>Part #: 12” Extended Length Sensors</th>
<th>Part #: 8” Standard Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Compartment Overfill/Retained Kit w/ 1/2” optic sensor</td>
<td>SCDU-0658</td>
<td>SCDU-0658</td>
</tr>
<tr>
<td>2 Compartment Overfill/Retained Kit w/ 2” optic sensors</td>
<td>SCDU-0659</td>
<td>SCDU-0659</td>
</tr>
<tr>
<td>3 Compartment Overfill/Retained Kit w/ 2” optic sensors</td>
<td>SCDU-0659</td>
<td>SCDU-0659</td>
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<tr>
<td>4 Compartment Overfill/Retained Kit w/ 2” optic sensors</td>
<td>SCDU-0659</td>
<td>SCDU-0659</td>
</tr>
<tr>
<td>5 Compartment Overfill/Retained Kit w/ 2” optic sensors</td>
<td>SCDU-0659</td>
<td>SCDU-0659</td>
</tr>
<tr>
<td>6 Compartment Overfill/Retained Kit w/ 2” optic sensors</td>
<td>SCDU-0659</td>
<td>SCDU-0659</td>
</tr>
<tr>
<td>7 Compartment Overfill/Retained Kit w/ 2” optic sensors</td>
<td>SCDU-0659</td>
<td>SCDU-0659</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IntelliCheck Overfill Only System Kit (100 foot Scully Cable)</th>
<th>Part #: 12” Extended Length Sensors</th>
<th>Part #: 8” Standard Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Compartment Kit w/ 1/2” optic sensor</td>
<td>SCDU-0653</td>
<td>SCDU-0653</td>
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<tr>
<td>2 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
</tr>
<tr>
<td>3 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
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<tr>
<td>4 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
</tr>
<tr>
<td>5 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
</tr>
<tr>
<td>6 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
</tr>
<tr>
<td>7 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
</tr>
<tr>
<td>8 Compartment Kit w/ 2” optic sensors</td>
<td>SCDU-0654</td>
<td>SCDU-0654</td>
</tr>
</tbody>
</table>

**Control Units**

<table>
<thead>
<tr>
<th>Control Unit</th>
<th>Part #:</th>
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<tbody>
<tr>
<td>IntelliCheck Overfill Monitor</td>
<td>SCDU-3012</td>
</tr>
<tr>
<td>IntelliCheck Overfill and Retained Monitor</td>
<td>SCDU-3013</td>
</tr>
<tr>
<td>IntelliCheck Overfill Only Replacement Module</td>
<td>SCDU-3014</td>
</tr>
<tr>
<td>IntelliCheck Overfilling Management Monitor Module</td>
<td>SCDU-3015</td>
</tr>
<tr>
<td>IntelliCheck Cover Gasket</td>
<td>SCDU-3016</td>
</tr>
<tr>
<td>IntelliCheck Cover Plug Gasket</td>
<td>SCDU-3017</td>
</tr>
<tr>
<td>IntelliCheck Chain Hook</td>
<td>SCDU-2531</td>
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</table>
### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation kit for an intelligent overfill and retrieval system using five wire overfill sensors, which includes rail kit, 11 conductor color coded cable, 60 GPH pump controller, 32 compression fillings and a power switch</td>
<td>BPM-29027</td>
</tr>
<tr>
<td>Installation kit for an intelligent overfill and retrieval system using two wire overfill sensors, which includes rail kit, 11 conductor color coded cable, 60 GPH pump controller, 32 compression fillings and a power switch</td>
<td>BPM-19079</td>
</tr>
<tr>
<td>Installation kit for an intelligent overfill and retrieval system using five wire overfill sensors, which includes rail kit, 11 conductor color coded cable, 60 GPH pump controller, 32 compression fillings and a power switch</td>
<td>BPM-53871</td>
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<tr>
<td>Mounting kit for preventing trailers with existing monitors</td>
<td>BPM-31858</td>
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<tr>
<td>Intelligent auto-connecting kit</td>
<td>BPM-26983</td>
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<tr>
<td>Intelligent Installation Video for Five Wire overfill and retrieval system, VHS format</td>
<td>BPM-26859</td>
</tr>
<tr>
<td>Intelligent Installation Video for Two Wire overfill and retrieval system, VHS format</td>
<td>BPM-16851</td>
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<tr>
<td>Intelligent Installation Video for Two Wire overfill and retrieval system, DVD format</td>
<td>BPM-10143</td>
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</table>

### Sensors

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Part #</th>
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</thead>
<tbody>
<tr>
<td>Two Wire Standard Optic Sensor, with holder, SP-T0A/HC</td>
<td>BPM-102501</td>
</tr>
<tr>
<td>Two Wire Standard Replacement Sensor, SP-T0</td>
<td>BPM-22388</td>
</tr>
<tr>
<td>Five Wire Standard Sensor With Holder, SP-FUM-HB</td>
<td>BPM-106894</td>
</tr>
<tr>
<td>Five Wire Standard Replacement Sensor, SP-HJ</td>
<td>BPM-02503</td>
</tr>
<tr>
<td>Retained product sensor, five wire, 192 in, special section and weld coupling, SP-R</td>
<td>BPM-08913</td>
</tr>
<tr>
<td>Highed product sensor, five wire, 192 in, special section and weld coupling, 2-W</td>
<td>BPM-08685</td>
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</table>

### Sockets

<table>
<thead>
<tr>
<th>Socket Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>81-49 Security Style Thermostat Socket with 8 pins, 2 J Slots with housing</td>
<td>BPM-00722</td>
</tr>
<tr>
<td>81-49 Canadian Thermostat Socket with 10 pins, 2 J Slots with housing</td>
<td>BPM-00715</td>
</tr>
<tr>
<td>81-999 Security Style Optic Socket, 2 J Slots with housing</td>
<td>BPM-00673</td>
</tr>
<tr>
<td>81-999 Moca Style Optic Socket, 3 J Slots with housing</td>
<td>BPM-00674</td>
</tr>
<tr>
<td>81-999 Text Style Optic Socket with housing</td>
<td>BPM-00413</td>
</tr>
</tbody>
</table>
Scully Five-Wire Optic Sensor
Liquid Level Sensor for Tank Truck Overfill Prevention

Featuring Dynacheck® – Automatic and Continuous Self-Checking Circuity

Scully Five-Wire Optic Sensors are part of an automatic and continuous self-checking system you can count on. Scully five-wire optic sensors offer all these advantages:

- Maximum safety with Dynacheck® – automatic and continuous self-checking circuitry when used with Scully loading rack controls and vehicle onboard monitors
- Solid state construction employing state-of-the-art components and technology
- Scully’s field proven electro optics technology
- Wide temperature range
- Employs shaft that is easy to cut when shorter length is needed
- Adjustable sensing level
- Instant permisssive signal – no warm-up time required
- Quick purging of liquid – instant re-permit as product level drops below the sensing point
- Fully compatible with all Scully optic controllers
- FM & CSA approvals for Class I, Division 1, Groups C & D hazardous locations
- Meets requirements of API Recommended Practice RP-1004

Description

Scully five-wire optic sensors are designed for liquid petroleum product overfill prevention and point level detection. They are designed to be used with Scully Intellitrol®, Biclops® and ST-35 series loading rack control monitors. There is no waiting for the control monitors’ permit light to go on because the sensor requires no warm up time. The sensors can also be used with Scully Intellicheck® or Scully ONBOARD monitors.

Safety Features

The five-wire optic sensor incorporates Scully’s unique and exclusive Dynacheck® circuitry when connected to Scully monitoring equipment. To ensure that the system will always detect an overfill condition, the controller uses pulsed signals which continuously check the entire system operation, including sensors, wiring, connectors and itself. If a sensor comes in contact with liquid, or in the unlikely event of a system fault, the pulsed signals cease and the controller automatically signals for immediate shutdown of the loading operation. No operator involvement is needed! Shutdown is accomplished by controlling pumps or valves.
Technical Specifications

Operating Temperature Range
-40° F to 160° F (-40° C to 70° C)

Product Range
Carded Metal and Light Galvannealed

Diameters Available
2.25", 2.5", 3", 3.5", 4", 5" (57mm, 64mm, 76mm, 89mm, 125mm, 152mm)

Dial Set Level and Sumps
The dial on each is adjustable. For best results calibrate during assembly with 0.75" (.000") dial ring.

Dialing Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Outside Diameter</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-FUMHGF</td>
<td>Five wire optoelectronic, 2.5 NPT holder, 1/4&quot; standard cap</td>
<td>7&quot; (178mm)</td>
<td>3CL-06033</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12&quot; (300mm)</td>
<td>3CL-06213</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13&quot; (330mm)</td>
<td>ECU-08915</td>
</tr>
<tr>
<td>SP-FUMHGF</td>
<td>Five wire optoelectronic, slotted holder, 2.5&quot; standard cap</td>
<td>7&quot; (178mm)</td>
<td>3CL-04207</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12&quot; (300mm)</td>
<td>ECU-08912</td>
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</table>

Replacement Parts

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Outside Diameter</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-FU</td>
<td>Five wire optoelectronic (without holder)</td>
<td>7&quot; (178mm)</td>
<td>ECU-08299</td>
</tr>
<tr>
<td>SP-FU</td>
<td></td>
<td>12&quot; (300mm)</td>
<td>3CL-06214</td>
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<tr>
<td>SP-FU</td>
<td></td>
<td>13&quot; (330mm)</td>
<td>3CL-08217</td>
</tr>
<tr>
<td>SP-NHC</td>
<td>2.5 NPT Theatrical Holder Only</td>
<td>3CL-09065</td>
<td></td>
</tr>
<tr>
<td>SP-NHGF</td>
<td>Ranged Holder Only</td>
<td>3CL-06036</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mounting Stand for SP-NHC Holder</td>
<td>ECU-08808</td>
<td></td>
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<tr>
<td></td>
<td>Mounting Screw for SP-NHC Holder</td>
<td>ECU-06256</td>
<td></td>
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<tr>
<td></td>
<td>Cap Ring</td>
<td>ECU-01451</td>
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<tr>
<td></td>
<td>Short Cap (EC), height 1 6&quot; (150mm)</td>
<td>ECU-02056</td>
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<tr>
<td></td>
<td>Medium (Standard) Cap (EC), height 2 1/2&quot; (65mm)</td>
<td>ECU-02534</td>
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<tr>
<td></td>
<td>Cap Screw</td>
<td>3CL-08282</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cap screw static washer</td>
<td>3CL-01129</td>
<td></td>
</tr>
</tbody>
</table>

Scully Signal Company
P.O. Box 1349
Dundalk, MD 21222

Corporate Headquarters
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P.O. Box 1349
Dundalk, MD 21222

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Email: sales@scully.com  www.scully.com

Brenner Oil-Tanker
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Visit our web site @ www.brennertank.com
Scully Stainless Steel Optic Sensors are part of an automatic and continuous self-checking system you can count on. Scully Optic Sensors offer these advantages:

- Maximum safety with Dynacheck® - automatic and continuous self-checking circuitry - when used with Scully Controls.
- Versatile point liquid level sensing for use in storage tanks, tank trucks and other applications.
- AISI 316 stainless steel construction for superior corrosion resistance.
- Functions within a wide range of ambient temperatures in a variety of liquid chemicals.
- Unequalled resistance to fogging.
- Dependable solid state construction.

**Description**

The Stainless Steel Optic Sensor is designed for liquid chemical overfill prevention and point level detection. It is used in storage tanks, tank trucks and other vessels during loading operations. This sensor is compatible with the Scully Intellitrol®, ST-35 and Biclops® Control Monitors, offering the safest systems available for overfill prevention.

On tank trucks, the sensor may also be used with the Scully IntellieCheck® or Load Anywhere® System to allow loading at terminals equipped with optic, thermistor, or float control units.

Other Scully systems are available which provide individual alarm and relay outputs for each sensing point. Compatible control monitors are listed on back.

**Safety**

The Stainless Steel Optic Sensor incorporates Scully’s unique and exclusive Dynacheck® circuitry when connected to Scully monitoring equipment. Using pulsed signals which simulate a wet or “unsafe” condition, the monitor automatically and continuously checks the entire system operation; controller, wiring, connectors and sensors, for faults 30 times per second. If liquid comes in contact with the sensor, or in the event a fault occurs, the pulsed signals cease and the monitor signals for immediate shutdown of the loading operation. No operator involvement is needed!

**Sensor Holder**

The Scully SP-MHC(SS) sensor holder is designed for mounting in a 2” NPT tapping. This allows for convenient mounting in both storage tanks and tank truck vehicles. The fixed-length stainless steel sensor threads into the holder. It may be extended using the appropriate length of 3/4” stainless steel pipe and a pipe coupling. Consult Scully for assistance.
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SECTION THREE - PETRO - OVERFILL

All Dimensions in Inches

SP-PMH(SS) Holder
Top View

SP-PMH(SS) Holder
Side View

SP-FU(SS) Sensor
Side View & Sizing Lure

Technical Specifications

Temperature Range: 40°F to 400°F (40°C to 204°C).
Product Range: Non-corrosive and non-conductive materials which are compatible with most media and chemicals.
Contact the factory with specific questions.
Detonation Level: Fixed, refer to diagram. The sensor may be adjusted to any length using 3/4" stainless steel pipe and pipe coupling.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-FU(SS) Stainless steel optic sensor only</td>
<td>scu-06584</td>
</tr>
<tr>
<td>SP-PMH(SS) Holder assembly with 3/4&quot; NPT thread (no sensor)</td>
<td>scu-06585</td>
</tr>
<tr>
<td>Replacement sensor holder cap</td>
<td>scu-31605</td>
</tr>
<tr>
<td>Replacement sensor holder gasket</td>
<td>scu-31606</td>
</tr>
</tbody>
</table>
Scully Instant-On™ Two-Wire Optic Overfill Prevention Sensors

Featuring Dynacheck® automatic and continuous self-checking circuitry

which continuously check the entire system operation including sensors, wiring, connections and itself. If a sensor comes in contact with liquid, or in the unlikely event of a system fault, the pulsed signals cease and the controller automatically signals for immediate shut-down of the loading operation.

No operator involvement is needed! Shutdown is accomplished by controlling pumps and valves.

Sensor Installation

It’s easy to upgrade your current Scully thermistor system to Instant-On optic operation. Simply replace the sensor shafts in the existing sensor holder. No additional holders are required. The truck doesn’t need to be rewired and the same Scully thermistor socket can be used.

The sensors may be installed as an independent system or as part of Scully’s IntelliCheck or Load Anywhere on-board systems. When used in conjunction with an on-board system, visual indication of sensor status is provided and loading may be achieved at both optic and thermistor compatible loading racks.

Sensor Holders

Three styles of holders are offered in conjunction with Scully Instant-On sensors.

The Scully SP-MHC sensor holder is designed for mounting in a 2" NPT tapping or through a 2½" hole using a gasket and nut supplied with the unit.

The SP-MHC holder is a flanged style unit with a pre-drilled six-bolt pattern on a 4½" diameter bolt circle to match standard TTMA 2½" flange. It is also equipped with a four hole, 4½" diameter mounting pattern. The holders allow for convenient mounting in both tank trucks and rail cars. The sensing level may be adjusted up or down during installation within a range of 4½" and 7". One inch threaded elbow style holders, with field adjustable lengths, are also offered.

Scully MHC holders allow for custom adjustment for a variety of detection levels. Simply loosen the screw within the holder and slide the sensor up or down to the desired shut-off level before installing it in the tank.

Optional lower or higher holder caps may be used to meet level adjustment and rollover rail requirements.

Sensor lengths are offered in 7" and 12". Consult Scully for the availability of stainless steel sensors.

The SP-O elbow style holder is designed for mounting in a 1" NPT tapping for fixed tank applications. Refer to tech data sheet 60635.

Setting New Standards in Safety
Thermistor Sensors
For Overfill Prevention
Incorporating Dynacheck® - Automatic and Continuous Self-Checking Circuitry

Scully Thermistor Sensors are the industry standard for tank vehicle loading applications. The sensors feature:

- Dynacheck® - automatic and continuous self-checking circuitry when used with Scully Rack Control Systems.
- Proven thermistor liquid level sensing for tank trucks and rail cars.
- Self-cleaning for use in heavy viscosity products.
- Functions within a wide range of temperatures and in a variety of liquid products.
- Field adjustable for a variety of sensing levels.
- Solid state construction, no moving parts.
- Sensor and holder assemblies comply with pressure test requirements of DOT HM-183C final rule for new 400 series cargo tanks.
- FM and CSA approved.

Description
Scully Thermistor Sensors are designed for liquid petroleum product overfill prevention and point level detection. They are used in tank trucks and rail cars during loading operations.

Three models are available for different climate/product operating conditions; the standard SP-BL, the SP-BLU for low ambient temperature operation, and the SP-BLH for heated product sensing.

The SP-BL and SP-BLU sensors are compatible with the Biclops® Rack Control Monitor. All three are compatible with the ST-15 Rack Control Monitor.

Safety
The thermistor sensor incorporates Scully's unique and exclusive Dynacheck feature when connected to Scully monitoring equipment.

Using pulsed signals the monitor automatically and continuously checks the entire system operation: controller, wiring, connections and sensors, for faults up to 30 times per second.

If liquid comes in contact with the sensor tip, or in the unlikely event a fault occurs, the pulsed signals cease and the monitor signals for immediate shutdown of the loading operation. No operator involvement is needed!

Sensor Holders
The Scully SP-MHC sensor holder is designed for mounting in a 2" NPT tapping. The SP-MHCF holder is a flanged style unit with a pre-drilled six bolt pattern on a 4½" diameter bolt circle to match the standard TTMA 2½" flange. It is also spotted for a four hole, 4½" diameter mounting pattern. The holders allow for convenient mounting in both tank trucks and rail cars.

The sensing level may be adjusted up or down during installation within a range of 4½" and 7½".

Note: Model SP-BLU thermistor sensors manufactured after September 1992 are no longer anodized green.
Scully Sockets
Truck Mounted Overfill Prevention System Connectors
Featuring Complete Loading Rack Compatibility

Optic, Thermistor and Float Style Sockets

Scully sockets offer the widest range of truck to rack system compatibility in the petrochemical transport industry. They are designed for use with Scully Optic, Thermistor, Instant-On® and Load Anywhere® Overfill Prevention Systems.

These sockets are the vehicle mounted electrical connector of Scully Tank Truck Overfill Prevention Systems. They provide a simple, durable connection by way of the mating plug mounted on the loading rack.

Scully sockets offer all these advantages:

- Designs which meet API (American Petroleum Institute) standards for optic and thermistor systems.
- Used in conjunction with Scully Loading Rack Overfill Prevention Controls - the #1 choice of bottom loading terminals in the United States.
- Different socket styles for complete compatibility with all loading rack plug styles.
- Easy gripping vinyl or metal caps.
- Internal mounting holes for easy installation with plenty of room for probe wiring connections.
- Two 1/2" NPT threaded conduit entry holes for installation flexibility.
- Stainless steel contact pins.
- Color coded labels for easy identification.
- Durable construction to withstand the rigors of road travel.

Setting New Standards In Safety
Scully Meets Your Loading Needs

Scully Sockets are the most durable vehicle connections available for your loading needs. With over 90% of all bottom loading terminals in the United States using Scully Overfill Prevention Systems, Scully Sockets offer you the compatibility you need at any terminal.

Scully offers sockets which are compatible with all overfill prevention rack plug and cable units in use today. The sockets mount on the truck and are wired to either Optic, Thermistor, or Instant-On™ tank truck overfill prevention probes manufactured by Scully.

The sockets are available in Scully, API and SAE¹ styles. These offer easy connection to the rack control monitor plug. The style of plug at each loading terminal you frequent should be considered before ordering to insure a compatible connection.

The lightweight vinyl protective caps feature a hand grip that allows for easy removal. Caps made of heavy duty metal are also available. The caps help prevent socket corrosion by protecting the contact pins from dirt and moisture. They are sold separately and come complete with a captive cable attachment to prevent loss.

When ordering, order the part number for the socket and for the protective cap of your choice. Refer to the back page for socket replacement parts.

### Socket Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Socket Part #</th>
<th>Vinyl Cap Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ-6W Optic socket, WOGA pattern, API optic standard</td>
<td>SCU-07974</td>
<td>SCU-08575</td>
</tr>
<tr>
<td>SJ-6SO Optic socket, Scully pattern</td>
<td>SCU-07973</td>
<td>SCU-08575</td>
</tr>
<tr>
<td>SJ-6X Optic socket, SAE J560 pattern</td>
<td>SCU-08199</td>
<td>SCU-08575</td>
</tr>
<tr>
<td>SJ-6S Thermistor socket, API thermistor standard</td>
<td>SCU-07720</td>
<td>SCU-08574</td>
</tr>
<tr>
<td>SJ-6 Thermistor socket, SAE J560 pattern</td>
<td>SCU-07681</td>
<td>SCU-08574</td>
</tr>
<tr>
<td>SJ-F Float socket, Scully pattern</td>
<td>SCU-07788</td>
<td>SCU-08576</td>
</tr>
<tr>
<td>SJ-6F Float socket, SAE J560 pattern</td>
<td>SCU-08116</td>
<td>SCU-08576</td>
</tr>
<tr>
<td>SJ-4D 4 Pole Pattern Socket</td>
<td>SCU-07707</td>
<td>-</td>
</tr>
</tbody>
</table>

### Electronic Dummies

<table>
<thead>
<tr>
<th>Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD-1E, One element dummy for 5 compartment thermistor or two-wire Instant-On equipped vehicles</td>
<td>SCU-08294</td>
</tr>
<tr>
<td>SD-2E, Two element dummy for 4 compartment thermistor or two-wire Instant-On equipped vehicles</td>
<td>SCU-08295</td>
</tr>
<tr>
<td>SD-3E, Three element dummy for 3 compartment thermistor or two-wire Instant-On equipped vehicles</td>
<td>SCU-08296</td>
</tr>
<tr>
<td>SD-4E, Four element dummy for 2 compartment thermistor or two-wire Instant-On equipped vehicles</td>
<td>SCU-08297</td>
</tr>
<tr>
<td>SD-5E, Five element dummy for 1 compartment thermistor or two-wire Instant-On equipped vehicles</td>
<td>SCU-08298</td>
</tr>
</tbody>
</table>

¹Society of Automotive Engineers.

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# Optic Sockets

**SJ-6W:** API standard three "J" slot socket for use with the Scully SC-6W three bayonet pin plug found on most Scully ST-35 and many Biclops Rack Overfill Prevention Systems.

![Optic Sockets](image1)

**SCU-07974**

**SJ-6SO:** Scully style two "J" slot socket for use with the Scully SC-6A & SC-6AO two bayonet pin plug found on Scully ST-35 and most Biclops Rack Overfill Prevention Systems.

![Optic Sockets](image2)

**SCU-07973**

**SJ-6X:** SAE J560 style socket for use with the Scully SC-6 and SAE J560 style plug found on some Scully ST-35 and Biclops Rack Overfill Prevention Systems.

![Optic Sockets](image3)

**SCU-08199**

# Thermistor Sockets

**SJ-6S:** API standard two "J" slot socket for use with the two bayonet pin Scully SC-6A plug found on most Scully ST-6 and Biclops Rack Overfill Prevention Systems.

![Thermistor Sockets](image4)

**SCU-07720**

**SJ-6:** SAE J560 style socket keyed for use with the Scully SC-6 SAE J560 style plug found on many Scully ST-6 and Biclops Rack Overfill Prevention Systems.

![Thermistor Sockets](image5)

**SCU-07681**

**4 Pole Socket**
Multi-purpose. Mates with SC-1 Sculcon and Cane Probes.

![Thermistor Sockets](image6)

**SCU-07707**

**SJ-6F:** Scully SAE J560 style socket for use with the SAE J560 plug found on most float style loading racks.

![Thermistor Sockets](image7)

**SCU-08116**

# Float Sockets

**SJ-F:** Scully three "J" slot socket for use with the SC-F three pin plug found on some Scully ST-6 and Biclops Rack Overfill Prevention Systems equipped with a switchable Sculcon.

![Float Sockets](image8)

**SCU-07788**

**Plug Adaptors**
7-way to Scully Style Plug Adaptors

![Plug Adaptors](image9)

**RHA-6**

**HA-6**

### Scully Plug to Socket Adaptors

<table>
<thead>
<tr>
<th>Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA-6 adaptor. Permits SAE-J560, 7 pole sockets to mate with Scully SC-6A and SC-6AO rack plugs.</td>
<td>SCU-07735</td>
</tr>
<tr>
<td>RHA-6 reverse adaptor. Permits Scully SJ-6S, SJ-6S and SJ-F sockets to mate with SAE-J560 7 pole rack plugs.</td>
<td>SCU-07795</td>
</tr>
</tbody>
</table>

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Ashland, KY • Houston, TX • Mauston, WI • Memphis, TN
Scully T.I.M.™ - Truck Identification Module™
For Connection To The Vehicle Identification Prover® (V.I.P.®) System
Truck To Terminal Safety Communications

The Scully Truck Identification Module™ (T.I.M.) provides a unique serial number to the Vehicle Identification Prover® (V.I.P.®) System control unit which allows the truck to communicate with the terminal during loading. The system is used in conjunction with your Scully tank truck overfill prevention and vehicle static grounding controls. The T.I.M. allows you to:

- Eliminate driver time to present vapor tightness certificates and other documentation required by the terminal each time you load.
- Use the existing plug and cable at the rack for a single connection to provide communication.
- Easily installed in your existing overfill prevention socket.
- Prepares the truck to supply information requested by the terminal in the future.

T.I.M. Description
The T.I.M. is basically an industrial computer chip which stores a unique serial number.

T.I.M. Installation
The T.I.M. is mounted within the overfill prevention socket housing. The T.I.M. is mounted using an existing socket mounting bolt. Both the T.I.M. mounting bracket and ground wire ring terminal are secured with this bolt. The violet colored wire is connected to pin number nine of the socket contact assembly. After wiring, the exposed silver jumper wire is cut to activate the T.I.M.. After activation, the T.I.M. will not operate if removed from the vehicle socket. However, an activated T.I.M. does not prevent replacement of the socket faceplate.

Registering the T.I.M. Serial Number
The T.I.M. serial number is read by terminal operators using a hand held computer with an attached adaptor plug. This plug is connected to the truck socket. The unique serial number is then entered into the Scully V.I.P. rack control unit through software via a terminal PC, loading controller or terminal automation system. Once registered, the serial number is read automatically each time you load.

System Operation
A tank truck enters the bay for loading and the driver attaches the loading rack overfill prevention plug to the socket. The serial number in the T.I.M. is read by the Scully V.I.P. control unit*. The number is checked for meeting vapor tightness certification and other requirements. The overfill sensors and grounding status are also verified at the same time by their corresponding rack controls. If all safety criteria is met, the truck is authorized to load.

Terminal managers at their discretion also have the ability to authorize loading of trucks not yet equipped with a T.I.M.. They also may provide a temporary bypass in the event of a system failure. This ensures that only certified trucks may obtain a load.

Setting New Standards In Safety

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SECTION THREE - PETRO - OVERFILL

Installation Instruction Notes

1. Attach the T.I.M. to the cement housing using one of the cement housing mounting bolts. The T.I.M. mounting bracket ground (white) wiring should be secured by the outlet housing mounting bolt.

2. Connect the ground (white) lead to the ground stud on the cement tank plate. Simply insert the factory supplied jumper from pin 10 in the ground stud in place.

3. Connect the violet lead to pin 9. If a jumper wire is inserted between pin 9 and pin 10, it must be removed.

4. Install a Scully ground bolt or ball if installed. Connect the violet T.I.M. Assad ground bolt lead together into one end of a buttwire connector. Connect a single 16 gauge stranded copper wire into the other end of the buttwire connector. Connect the other single 16 gauge stranded copper wire into pin 9. The connection helps to ground the circuit to the tank body.

5. After attaching the T.I.M. to the housing and the wiring is completed, but the T.I.M. jumper is still the case to set rate. The T.I.M. cannot be used until activated. See installation sheet 92-29-4 for details. Contact Scully for additional wiring information.

Technical Specifications

- Operates with all output, thermostat and/or board overfill prevention systems.
- T.I.M. mounts with existing outlet housing.
- Switchable with the overfull and grounding systems.
- Compatible with present equipment and does not require additional guarding.
- Epoxy encapsulation for reliability and ease of mounting.
- Operating temperature range of -40°F to 140°F (-40°C to 60°C).
- Approved for use in Class I, Division II, Group D hazardous areas by Factory Mutual (FM).
- T.I.M. dimensions are shown on diagram.
- Warranty is a two year warranty.

Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>truck identification module (T.I.M.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part #</td>
<td>SCU-9800G</td>
</tr>
</tbody>
</table>

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Ashland, KY • Houston, TX • Mauston, WI • Memphis, TN
The Scully Ground Bolt & Ground Ball
For the Scully Groundhog™
Vehicle Mounted Static Grounding devices For Tank Truck Grounding
Self-Proving For Maximum Safety and Performance

Scully Ground Bolt (top) and Scully Ground Ball (bottom)

The Scully Groundhog™ Vehicle Grounding System provides self-proving capabilities for maximum safety through electronic protection. Only the Scully Groundhog can offer you all these advantages for vehicle static grounding:

- Prevents Loading until a proper static ground has been established.
- Automatically shuts off the loading operation if the ground is broken at any time during loading.
- The Ground Ball and Bolt can be installed easily in a few minutes.
- Provides intelligent grounding verification with self-proving connections to the Ground Ball and Bolt.
- Self-proving feature provides visible proof that a proper vehicle static ground has been made and automatically permits loading.
- Suitable for tank cleaning and other applications where verifiable grounding is needed.
- Known for dependability, maximum safety and service common to all Scully Systems.

Description

The Scully Groundhog System insures your truck is at the same ground potential as the rack for safe loading conditions. Provisions are available where an earth tie-in is required.

If you load at terminals where the Scully Groundhog is incorporated with the existing Scully Overfill Prevention System, you need a Scully Ground Bolt on your vehicle. The Bolt is mounted directly to the vehicle frame and wired to the existing truck mounted Scully Socket(s). This allows you to perform only one connection for overfill and ground verification.

If you load at terminals which have a Scully Groundhog mounted independently at the rack, you need a Scully Ground Ball on your vehicle. The Ball mounts directly to the vehicle frame. The grounding connection is completed with a special quick release plug and cable assembly that plugs onto the ball.

The Scully Ground Bolt and Ball contain "smart" electronic circuitry which offers an intelligent return signal to the Groundhog Control Monitor. This "smart" circuitry must verify that a proper connection is made before loading can begin. If the ground connection is broken during loading operation, the operation ceases.

The Groundhog cannot be cheated like other grounding systems by attaching the clamp to the rack, putting a metal shim between jaws or jumping plug contacts.

Only the Scully Groundhog gives you a self-proving vehicle static grounding system. This safe, this smart and this simple! With the Scully Groundhog, there's never a shadow of a doubt!

Setting New Standards In Safety
Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th>Ground Bolt</th>
<th>Ground Ball</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material:</td>
<td>Stainless Steel, Stainless steel nut and lockwasher.</td>
<td>Stainless Steel, Stainless steel nut and lockwasher.</td>
</tr>
<tr>
<td>Thread Size:</td>
<td>1/2-13 UNC</td>
<td>1/2-13 UNC</td>
</tr>
<tr>
<td>Pigtail Length:</td>
<td>72&quot; long</td>
<td>1/4&quot; through hole</td>
</tr>
<tr>
<td>Installation Torque:</td>
<td>125 inch pounds maximum</td>
<td>Pigtail Length: 12&quot; long</td>
</tr>
</tbody>
</table>

Factory Mutual Research has approved both system options. The Canadian Standards Association has approved the independent system option. Consult the factory for specific details. The Groundhog™ System is patent protected in the United States and other countries by the Scully Signal Company.

Two Simple Options for Maximum Grounding Safety

With The Overfill Prevention Plug

With The Independent Groundhog™ Plug

Ordering Information

If you load where the Scully Groundhog is connected to the Scully Overfill Prevention Monitor, order the Scully Ground Bolt. If you load or Unload where the Scully Groundhog is an independent system using a separate Ground Ball plug and cable, order the Scully Ground Ball.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Part#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Bolt</td>
<td>Truck mounted electronic ground proving bolt for direct wiring to the Scully Overfill Prevention Socket (integradly wired system)</td>
<td>SCU-08560</td>
</tr>
<tr>
<td>Ground Ball</td>
<td>Truck mounted electronic ground proving bolt for direct wiring to SC-47 ground plug (independent system)</td>
<td>SCU-08274</td>
</tr>
</tbody>
</table>
Onboard Monitors

Features/Benefits:
- Provides maximum fleet versatility
- Designed for negative and positive ground trailers
- Diagnostic lights indicate wetted sensors
- No need for universal adaptors, polarity adaptors, etc.
- Corrosion resistant terminals
- Three socket connections in housing
- Stainless steel, heavy-duty hardware

Liberty vehicle-mounted onboard monitors permit trailers and truck tanks equipped with optic sensors to load at terminals where compatible optic, thermistor or float rack control monitors are installed.

When properly installed, an overfill prevention system provides for automatic shutoff of product flow at a pre-determined liquid level and warns of an impending overflow condition. The fail safe design assures maximum protection.

Order Guide:
- CIV-3100 1-6 Compartment Onboard Monitor with Indicator Lights
- CIV-3150 Replacement Chassis For Product No. 3100
- CIV-2100 100' Roll 5-Conductor, Jacketed Cable (Optic Sensor Color-Coded)
- CIV-2200 500' Roll 5-Conductor, Jacketed Cable (Optic Sensor Color-Coded)
- CIV-2510 Strain Relief Fittings, ½” NPT (20 Per Package)

7-8 Compartment Onboard Monitor available. Call for details.
**Specifications:**

**Operating Temperature:**
- 40°F to 150°F (-40°C to 70°C)

**Input Requirements:**
- Power: 11-15 VDC
- Pos. or Neg. Ground
- Fuse Requirement: 0.25 Amp
- Sensors: 1-8 Compatible Optic Sensors

**Output Options:**
- Optic Signal
- Transistor Load
- Float Contacts

**Electrical Connections:**
- Corrosion resistant screw terminals

**Housing Ports:**
- See diagram below

**Materials:**
- Housing and Lid: Aluminum
- Gasket: Neoprene
- Windows: Sealed Plexiglass
- Assembly Hardware: Stainless Steel

**Approximate Weight:**
- 3 lbs

**Approvals:**
- Factory Mutual

**Installation Information:**
- Refer to Liberty Instruction Sheet
  - H-50101-PA

**Dimensions:**

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**Please Contact CIVACON With Any Special Design Requests or Application Needs.**

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CIVACON

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Safety & Simplicity

with ROM II

Three auxiliary inputs with status lights for brake interlock, pressure sensors or other add-ons

- Shadow box
- Potted monitor board
- Diagnostic monitor lights
- Diagnostic instructions
- Retain-timer status light
- Retain reset button
- Stainless steel screws
- Drain holes in housing
- Socket status lights
- Scratch resistant plexiglass
- Powder coated finish on housing

Time is money! You can’t afford to send your units to the rack and not get a permissive signal to load.

At the same time, we all must operate with safety-first being the priority.

This is where Civacon’s overfill systems come into play.

Specify ROM II for dependable, reliable and safe operations all within a simplistic design.
Liberty™ optic sensors detect the presence of liquid at a preset level. Liberty sensors are used with Liberty or other compatible control monitors. Liberty sensors interface with thermistor and float control monitors when used in conjunction with compatible overfill (on-board) monitors.

When properly installed, an overfill prevention system provides for automatic shutoff of product flow at a pre-determined liquid level and warns of an impending overflow condition.

**Features/Benefits:**
- Self checking circuitry
- Combats conditions of condensation and ice
- Highly resistant to sunlight
- Recessed prism design for prism protection
- No moving parts
- Stainless steel, heavy-duty hardware
- Parallel outlet ports
- Saves time on installation
- Viton® wetted o-ring for greater chemical resistance
- Wire connectors included with all shipments
- Wide adjustment in sensor length
- Special lengths available

<table>
<thead>
<tr>
<th><strong>Order Guide</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CIV-1110</strong></td>
</tr>
<tr>
<td><strong>CIV-1200</strong></td>
</tr>
<tr>
<td><strong>CIV-1250</strong></td>
</tr>
<tr>
<td><strong>CIV-1300</strong></td>
</tr>
<tr>
<td><strong>CIV-2100</strong></td>
</tr>
<tr>
<td><strong>CIV-2200</strong></td>
</tr>
<tr>
<td><strong>CIV-2510</strong></td>
</tr>
</tbody>
</table>
Specifications:

Operating Temperature:
-40°F to 158°F (-40°C to 70°C)

Product Range:
- Refractive Index 1.37 to 1.60
- Viscosity of less than 1000 SSU

Sensing Length Adjustability:
See chart below

Level Repeatability:
±1/8"

Electrical Leads:
18 Ga. Stranded Wire 26" Long

Materials:
- Sensor Housing - Aluminum
- Sensor Shaft - Aluminum
- Cap O-ring - Nitrile
- Prism Head - Anodized Aluminum
- Prism - Glass
- Prism Adhesive - Epoxy
- Mounting Gasket: 1" O.D. - Nitrile

Sensor Core O-ring - Viton

Approximate Weight:
1110 2 lbs. 1250 2 lbs.
1200 2 1/2 lbs. 1300 1 lb.

Approvals:
Factory Mutual

Installation Information:
Refer to Liberty Instruction Sheet H-56280-PA

Dimensions:

CIV-1110

CIV-1200

CIV-1250 (Low Profile Cap) 2 1/4" 5 3/4"-7 3/4"

For additional adjustment shaft length can be shortened. Refer to Liberty Instruction Sheet H-56280-PA.

NOTE: Special Length Sensors Are Available Upon Request.

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Ashland, KY • Houston, TX • Mauston, WI • Memphis, TN
Thermistor Probes

Liberty thermistor probes detect the presence of liquid at a preset level. Liberty probes are used in conjunction with compatible thermistor control monitors.

When properly installed, an overfill prevention system provides for automatic shutoff of product flow at a pre-determined liquid level and warns of an impending overflow condition.

**Features/Benefits:**
- Self checking circuitry
- Wire connectors included with all shipments
- No moving parts
- Choice of green or silver probes
- Stainless steel, heavy-duty hardware
- Viton® wetted o-ring for greater chemical resistance
- Parallel outlet ports
- Saves time on installation

**Order Guide:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV-1510</td>
<td>Adjustable Thermistor Probe, 2” NPT Housing (Green)</td>
</tr>
<tr>
<td>CIV-1700</td>
<td>Adjustable Thermistor Probe, 2” NPT Housing (Silver)</td>
</tr>
<tr>
<td>CIV-1600</td>
<td>Replacement Thermistor Tip, No Housing (Green)</td>
</tr>
<tr>
<td>CIV-1800</td>
<td>Replacement Thermistor Tip, No Housing (Silver)</td>
</tr>
<tr>
<td>CIV-1900</td>
<td>Solid State Thermistor Dummy, 1-5 Loads</td>
</tr>
</tbody>
</table>
Specifications:

**Operating Temperature:**
-40°F to 120°F (-40°C to 48°C)

**Product Range:**
Viscosity of less than 5000 SSU

**Sensor Length Adjustability:**
See chart below

**Level Repeatability:**
\( \pm \frac{1}{32}'' \)

**Electrical Leads:**
18 Ga. Stranded Wire 40" Long

Materials:
- Probe Housing - Aluminum
- Probe Shaft - Aluminum
- Thermistor Housing - Anodized Aluminum
- Cap O-ring - Nitrile
- Thermistor Bead - Glass
- Thermistor Seat - Viton®
- Mounting Gasket - Nitrile
- Probe Shaft O-ring - Viton®

**Approximate Weight:**
- 1510/1700 2\( \frac{1}{4} \) lbs.
- 1600/1800 \( \frac{1}{4} \) lb.

**Approvals:**
Factory Mutual

**Installation:**
Refer to Liberty Instruction Sheet
H-50281-PA (1510 and 1600)
H-50322-PA (1700 and 1800)

Dimensions:

<table>
<thead>
<tr>
<th>Model</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot; (Adjustable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV-1510</td>
<td>3( \frac{3}{16} )&quot;</td>
<td>5'-7&quot;</td>
</tr>
<tr>
<td>CIV-1700</td>
<td>3( \frac{3}{16} )&quot;</td>
<td>5'-7&quot;</td>
</tr>
</tbody>
</table>

**NOTE:** Special Length Probes Are Available Upon Request.

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Liberty™
by CIVACON™

Sockets

Liberty vehicle-mounted sockets connect optic, thermistor or float type level sensors on trailers and truck tanks to compatible control monitor plugs installed at loading terminals. When properly installed, an overfill prevention system provides for automatic shutoff of product flow at a pre-determined liquid level and warns of an impending overflow condition.

Features/Benefits:
- Electrochemical hardcoat finish for long wear
- Stainless steel contact pins
- Pin connectors included with all shipments
- Color coded for easy identification
- Lightweight, durable, low cost caps with raised surfaces for better grip
- Expanded wire holes for ease of wire/wire pin installation
- Stainless steel, heavy-duty hardware

Order Guide:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CIV-4100</td>
<td>API Pattern Socket (Button) For Optic Output: Blue Nameplate</td>
</tr>
<tr>
<td>CIV-4200</td>
<td>Scully Pattern Socket (Button) For Optic Output: Blue Nameplate</td>
</tr>
<tr>
<td>CIV-4300</td>
<td>J560 Pattern Socket (Pin) For Optic Output: Blue Nameplate</td>
</tr>
<tr>
<td>CIV-4400</td>
<td>API Pattern Socket (Button) For Thermistor Output: Green Nameplate</td>
</tr>
<tr>
<td>CIV-4500</td>
<td>J560 Pattern Socket (Pin) For Thermistor Output: Green Nameplate</td>
</tr>
<tr>
<td>CIV-4600</td>
<td>API Pattern Socket (Pin) For Float Output: Red Nameplate</td>
</tr>
<tr>
<td>CIV-4700</td>
<td>Scully Pattern Socket (Button) For Float Output: Red Nameplate</td>
</tr>
<tr>
<td>CIV-4150</td>
<td>Replacement Cap and Cable Assembly For Models 4100, 4200: Blue</td>
</tr>
<tr>
<td>CIV-4450</td>
<td>Replacement Cap and Cable Assembly For Model 4400: Green</td>
</tr>
<tr>
<td>CIV-4750</td>
<td>Replacement Cap and Cable Assembly For Model 4700: Red</td>
</tr>
</tbody>
</table>
Specifications:

Operating Temperature:
- 40°F to 158°F (-40°C to 70°C)

Materials:
Socket Housing - Aluminum
Faceplate - Hardcoat Aluminum
Gasket - Neoprene
Mounting Hardware - Stainless Steel
Cap - Molded Plastisol
Contact Pins -
4100, 4200, 4400, 4700 - Stainless Steel
4300, 4500, 4600 - Zinc Plated Brass

Housing Ports:
See diagram below

Approximate Weight:
4 lbs.

Installation Information:
Refer to Liberty Instruction Sheet H-50200-PA

Dimensions:

Side View

Front View