



# ST-47 Groundhog

Vehicle Static Grounding System

Featuring Dynacheck® – Automatic and Continuous Self-Checking Circuitry



Groundhog Ground Verification System



## DESCRIPTION

Don't let unsure grounding methods leave you guessing. Transport vehicles should be properly tied to ground before and during the loading operation. There should never be any doubt that the grounding systems at your terminals are performing their proper function. Many systems give you little assurance of their operation. The Scully Groundhog gives you complete assurance that a proper static ground tie-in is present.

The Groundhog is a self-proving ground verification system for maximum safety

in loading operations. It can operate in conjunction with your existing Scully Overfill Prevention System or as an independent unit\*. Scully Signal Company has over 30 years of electronic liquid handling experience providing the ultimate dependability, service and safety.

The Scully Groundhog ground verification system can be used for a wide variety of loading applications for use with tank trucks, rail cars, and aircraft refuelers.

## FEATURES AND BENEFITS

- Self-Proving, the Groundhog continuously monitors the grounding connection throughout the loading operation.
- Can be used in conjunction with your Scully Overfill Prevention System offering one quick connection for overfill protection and grounding verification.
- Can also be used as a completely independent\* ground verification system with a special quick-release plug for grounding to a specially designed, vehicle mounted, electronic ball.
- Direct earthing tie point at loading rack available.
- Immediately shuts down the loading operation if proper static grounding is not present.
- FM approved
- No manual checks are needed.

## IMPORTANT

Static grounding is used to dissipate any static charges which can build up as a result of product flow or other vehicle movement. These charges over time may build up and exceed the ratings of the ST-47. Some applications such as rail lines and pipelines may also have stray currents present. In these situations the vehicle, rail, and pipeline must be bonded to ground independently from the Scully system. Local codes should be consulted regarding wire gauges and number of conductors. Refer to American Petroleum Institute (API) Recommended Practice 2003 "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents", and NFPA 77, s Arising out of Static, Lightning, and Stra. for accepted earth bonding practices.

\*Separate earth bond cable required

# ST-47 Groundhog



*Scully Ground Bolt*

## THE SCULLY GROUNDHOG PROVES IT

The Scully Groundhog gives you complete assurance that grounding to the vehicle's frame has been accomplished. The Groundhog is an intelligent system which continuously and automatically monitors the grounding connection during the entire loading operation.

The Groundhog is designed to immediately shut down the loading operation if the earth tie-in is broken. That's proof-positive, something no other system can provide.

The Groundhog control monitor is mounted at the loading rack. Indicator lights on the face of the control monitor are visual proof that proper grounding has been accomplished.

The Groundhog requires that each vehicle be equipped with a specially designed Scully electronic ground ball or bolt. Before the loading operation can begin, the controller must see an intelligent return signal from the ground ball or bolt, indicating that a proper grounding connection has been made.



*One Connection for Overfill Prevention and Grounding*

## ARE YOUR GROUNDING SYSTEM OPTIONS LIMITED?

The Groundhog Control Unit can be wired into your existing Scully Overfill Prevention System for the ultimate safety system. Just one connection gives you overfill and ground verification protection. This single connection simplifies loading and eliminates the need for additional plugs and cables at the loading rack. The Groundhog utilizes a separate conductor in the existing Scully

Overfill Prevention Plug and Cable together with a special Scully Ground Bolt mounted on each vehicle. The Scully Ground Bolt's sensing lead is wired to the Scully Overfill Prevention Socket. Only Scully offers you a complete, integrated overfill prevention and vehicle ground verification system for maximum safety in your loading operations.

## CONTROL UNITS AND PLUG AND CABLE ASSEMBLY

If you intend to wire the Groundhog in conjunction with your existing Scully Overfill Prevention System, you need only order the control monitor. For the independent system, order the control monitor and junction box with plug and cable.

### ORDERING INFORMATION

<i>Model</i>	<i>Description</i>	<i>Part Number</i>
ST-47-115 EL	Control Monitor with Lamps (115 VAC operation)	08508
ST-47-115 ELK	Control Monitor with Lamps and Key Protected Bypass Switch (115 VAC operation)	08220
ST-47-115 ELK/D	Control Monitor with Lamps and Key Protected Bypass Switch (115 VAC operation) With Deadman Switch	08749
ST-47-240 EL	Control Monitor with Lamps (240 VAC operation)	08675
ST-47-240 ELK	Control Monitor with Lamps and Key Protected Bypass Switch (240 VAC operation)	08502
SC-47	Rack Mounted Heavy Duty Junction Box with 20' Straight Cable and Ground Proving Plug for Connection to Vehicle Mounted Ground Proving Ball (Independent System)	08249
SC-47CC	Rack Mounted Heavy Duty Junction Box with 32' Coiled Cable and Ground Proving Plug for Connection to Vehicle Mounted Ground Proving Ball (Independent System)	08567
SC-47CC/D	Same as SC-47-CC with Additional Circuitry for the Deadman Switch for Aviation Applications	08653



# Vehicle Static Grounding System



*Scully Groundhog Control Monitor with Plug and Cable*

## DON'T USE A SYSTEM THAT IS EASILY CHEATED

There are many systems that claim to be foolproof and even self-checking. It is possible with many of these systems to bypass a safe earth tie-in by attaching the clamp to the rack, a metal shim or by jumping the plug contacts with a paper clip. In many cases, there is no proof that proper earthing has been made or that the system is functioning correctly.

The Scully Groundhog when used together with a Scully Ground Ball or Ground Bolt, foils these typical cheating methods and malfunctions that can lead to grounding vehicles improperly.

The Scully ground verification System ensures that unless the proper grounding connection has been made, the loading process will not begin. It will automatically shut down the loading operation if the ground is broken. The Groundhog's intelligent monitoring capabilities and the special electronic circuitry inside the Scully Ground Ball and Ground Bolt form a self-proving system. No manual checks are needed. Only the Scully Groundhog can provide you with the safest and most dependable means for vehicle ground verification. It maintains the integrity of your loading operation.

## SCULLY HAS A SYSTEM FOR EVERY APPLICATION

The Groundhog can be used as a completely independent system. This system is ideal for top loading or applications where a Scully Overfill Prevention System is not in use.

The control monitor connects to a heavy duty Sculcon® junction box with attached cable and special quick release snap-on plug. The Scully

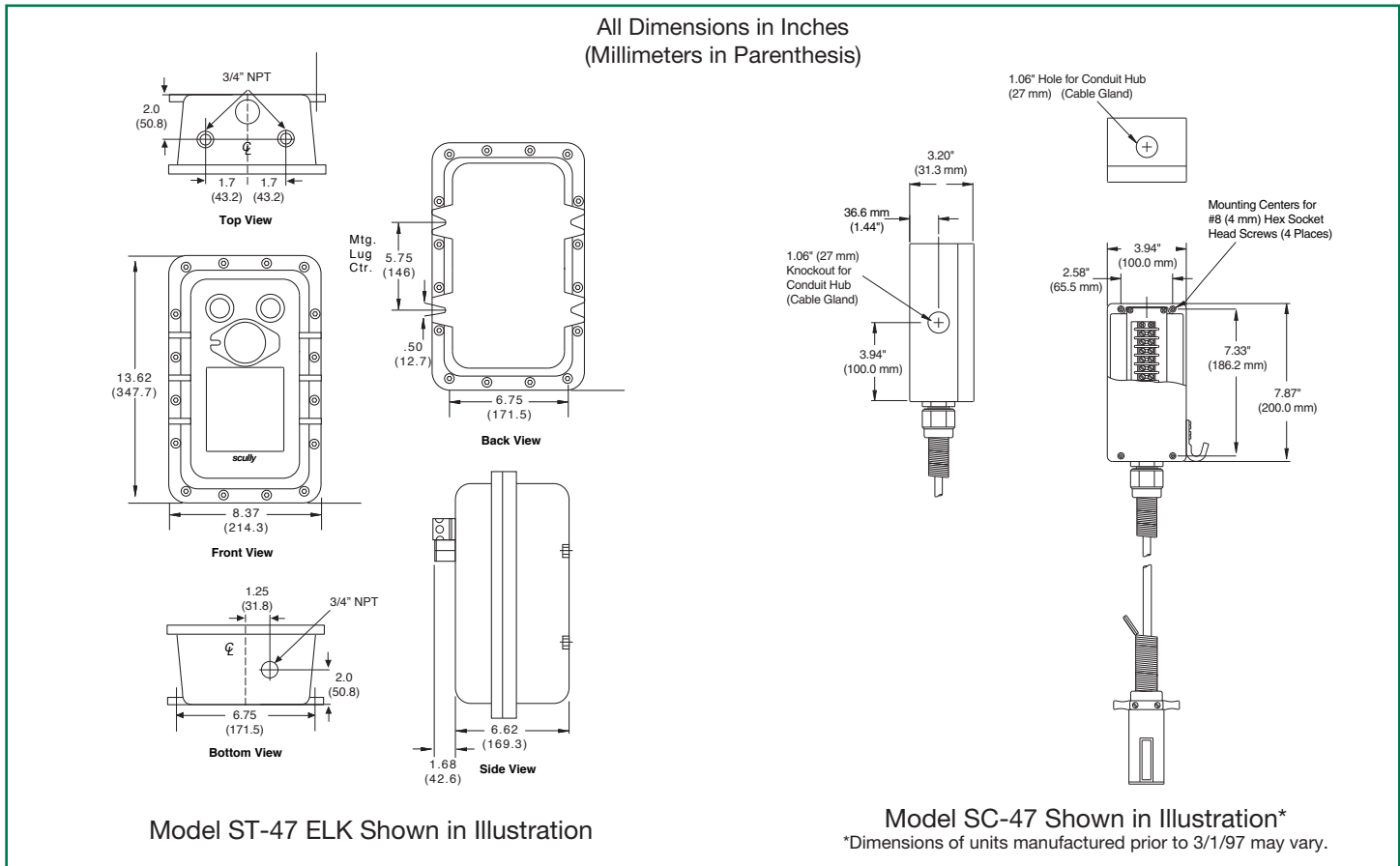
Ground Plug connects to a specially designed electronic Scully Ground Ball mounted on each vehicle. The controller in conjunction with the ground ball provides and verifies vehicle grounding before loading can begin. The controller must receive an electronic return signal from the ground ball throughout the loading operation.

### REPLACEMENT PARTS

<i>Model</i>	<i>Description</i>	<i>Part Number</i>
Ground Ball	Truck Mounted Electronic Ground Proving Ball for Independent Grounding System	08274
Ground Bolt	Truck Mounted Electronic Ground Proving Bolt for Wiring to Overfill Prevention Socket	08560
Coiled Cable	Replacement Plug and 32' Coiled Cable Assembly for SC-47	08566
Straight Cable	Replacement Plug and 20' Straight Cable Assembly for SC-47	08219
Plug	Replacement Plug only for SC-47	08565
Module 115	Replacement Module for 115 VAC Models	09511
Bulb, 135V	Replacement Indicator Lamp Bulb for 115 VAC Older Models	27005
LED Bulb	Red LED Candelabra for 120V	09384
Module 240	Replacement Module for 240 VAC Models	09512
Bulb, 250V	Replacement Indicator Lamp Bulb for 240 VAC Models	27006
LED Bulb	Green LED Candelabra for 120V	09385
Deadman Control	Deadman Switch with Coiled Cable	08863

# ST-47 Groundhog

## Vehicle Static Grounding System



### TECHNICAL SPECIFICATIONS

<b>Operation Temperature:</b>	-40° to +140° F (-40° to +60° C)
<b>Enclosure:</b>	Explosion-Proof Weather-Proof Housing.
<b>Indicators:</b>	Red—not grounded/non-permit. Green—grounded/permit.
<b>Response Time:</b>	0.5 seconds maximum.
<b>Electrical Connections:</b>	Internal terminal strips, identified for easy installation.
<b>Bypass Switch:</b>	Key lockable off-on bypass switch for ELK model only.
<b>Output Control:</b>	One normally open user contact rated 250, 5A resistive load.

<b>Power Requirements:</b>	
ST-47-115 Models:	105-125 VAC, 50/60 Hz. 0.250 Amperes max
ST-47-240 Models:	208-240 VAC, 50/60 Hz. 0.125 Amperes maximum.
<b>Shipping Weights:</b>	ST-47 ELK; 26 lbs (12 kgs) ST-47 EL; 26 lbs (12 kgs) SC-47; 9 lbs (4 kgs)
<b>Approvals:</b>	Explosion-proof with intrinsically safe ground connection outputs. Rated for Class I, Division 1, Groups C & D Hazardous (Classified) Locations, by FM Global (FM) to Canadian and United States standards.



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