

Featuring Dynacheck® – Automatic and Continuous Self-Checking Circuitry



**Intellitrol®2**  
Overfill Prevention  
Control Unit

**IEC 61508**  
**Certified**  
**SIL 3**



The Intellitrol®2 is designed to serve as a secondary overfill protection system for loading operations. It is intended for use in hazardous locations and is packaged in an explosion-proof (flameproof) enclosure and has International approvals and certifications.

The Intellitrol®2 performs a variety of monitoring functions and provides a number of outputs to control valves, pumps and other systems including Terminal Automation Systems (TAS). It has an integrated display to indicate system and monitoring status, a bypass capability, and communications for integration with TAS and other systems.

The Intellitrol®2 contains a pair of microprocessors, each with its own relay, that monitors critical functions. Only when both processors detect a safe condition will both relays close and make outputs permissive.

The Intellitrol®2 is designed to be Fail-safe® and in the event of a failure (power, sensors, or internal electronics) the unit will enter a non-permissive (safe) state.

This state of the art Dynamic Self-Testing® system controller provides overfill prevention, vehicle earth verification and vehicle identification operating in a single enclosure. The Intellitrol®2 also provides the user with comprehensive diagnostic information, both locally on the exterior of the control unit housing and remotely to the terminal automation system via RS-485 communications.

### FEATURES & BENEFITS

- Overfill prevention, earth verification and vehicle identification in one compact state of the art explosion-proof enclosure.
- Scully Dynacheck® automatic and continuous self-checking circuitry.
- Automatic detection of two-wire optic/thermistor or five-wire optic vehicle sensors.
- Monitoring of up to 8 two-wire or 12 five-wire vehicle sensors.
- Complete visual diagnostic display of overfill sensors status. Will not permit loading under any fault or wet sensor condition.
- When used with Scully Sensors, the Scully Intellitrol®2 Control Unit has been certified as part of a SIL 3 Overfill Prevention System.
- Easy connection to vehicles with rugged high impact industry standard plug and cable units.

## TECHNICAL SPECIFICATIONS

### Temperature Range:

- Operating: ICC2 Models: -40° to +122°F (-40° to +50°C)
- Storage: -45° to +85°C (-50° to +185°F)

**Power Requirements:** 100 - 130 VAC (120 VAC Setting) or 200 - 250 VAC (240 VAC Setting. 50/60 Hz, 30 Watts maximum.

**Enclosure:** Explosion-proof weathertight housing with powder coated corrosion resistant finish. Weather-tight rating: Type 4X and IP 65.

**Sensor Inputs:** Up to 8 Scully two-wire optic/thermistor sensors (6 or 8 channels) or 12 five-wire optic sensors (maximum). Automatic detection of two-wire vs. five-wire sensors. 3-wire high-temperature thermistor sensors are not supported.

**Earth Verification Inputs:** The Intellitrol®2 can be configured via an internal jumper setting to monitor static earth verification based on:

- Ground Bolt/Ground Ball using Scully pioneered Dynamically Self-Testing® earth verification systems only or
- Automatic detection and reporting of the type of earthing. Either resistive ground or Ground Bolt/Ground Ball verification systems.
- Provides a method for setting the acceptable resistance level per API/NFPA and EN13922 for a good vehicle earth connection when automatic ground type detection is selected.

**Deadman Input:** An intrinsically safe input is provided for an optional Deadman switch.

**Outputs:** Three outputs are provided as follows:

#### • Main Permissive Output:

A Form-A (“normally open”) AC relay output with “monitored redundant contacts”. This output closes when all overfill prevention sensors are dry and functional, a proper earth connection, and/or vehicle I.D. (optional), and/or Deadman (optional) is established. This output is an AC control output and must only be used with AC voltage. This output should be used for product flow shutdown capability and is rated at 250 VAC, 5A resistive.

#### • Main Form-C, Volt-Free Output Relay:

A Form-C (“normally open” and “normally closed”) volt-free redundant relay output contact. These output contacts reverse state (“normally open” closes and “normally closed” opens) when all overfill prevention sensors are dry and functional, and a proper earth connection, and/or Deadman (optional), and/or vehicle I.D. is established. If a volt-free relay output contact is needed, the “normally open” relay output contact may be used for product flow shut down.

The “normally closed” relay output contact is intended for any additional non-critical output status reporting functions. This Form-C contact is rated at 250 VAC, 5A resistive.

#### • Good Earth or Truck Present Output (non Faysafe):

A transistor switch is available to indicate that a good earth has been detected or that a truck is connected. This fully isolated output is designed to provide a control logic level signal to a Programmable Logic Controller (PLC) or a Solid State Relay. This output is capable of sinking up to 5mA (milliAmp). When the optoisolator is in the ON or conducting state, the maximum saturation voltage at rated current is 0.4 VDC. In the non-conducting or OFF state, the transistor is capable of withstanding up to 25.2 VDC.

**Response Time:** 450 milliseconds maximum after wet sensor or fault condition.

**Communications Port:** The communications port is a half-duplex, RS-485 multi-drop communications port, utilizing Modbus™ RTU (straight binary) communications protocol at 1200, 2400, 4800, 9600 or 19200 baud rate; 8 bits; even, odd or no parity.

**Approvals:** All Intellitrol®2 units fall under the approvals for:

- NEMA 4X rating, for either indoor or outdoor use and is Watertight, dust tight and corrosion resistant.
- BAS99ATEX2143 - Ex db ia IIB T4 Gb Ta -40°C to +50°C
- IECEx BAS 20.0024X - Ex db ia IIB T4 Gb Ta -40°C to +50°C

**Shipping Weight:** 14.1 kg. (31 lbs.). Refer to diagram for dimensions.



# MODEL DESIGNATIONS

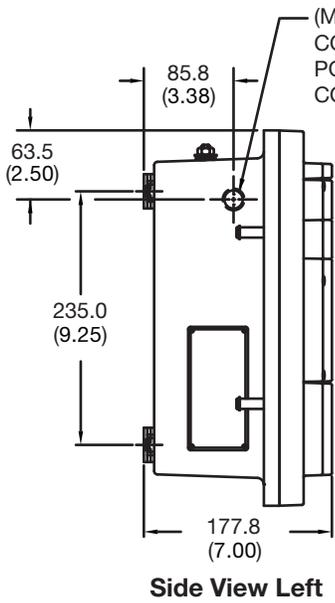
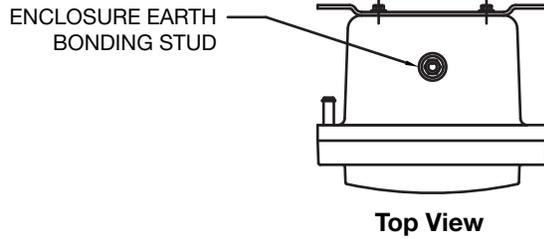
**Model Designations**

**Prefixes**

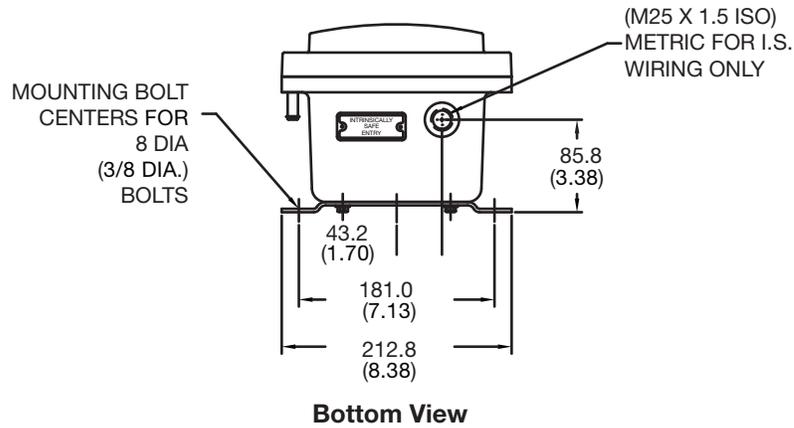
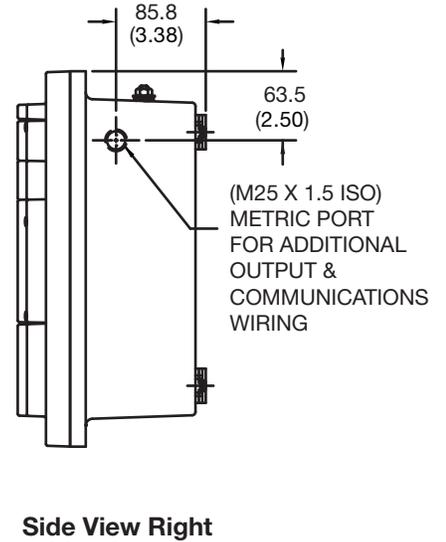
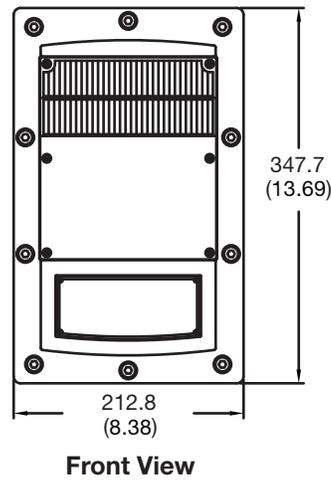
**Suffixes**

ATEX and IECExApproved =	ICC2	}–	O Overfill Prevention	G Ground Verification	V Vehicle Identification
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All Dimensions in Millimeters (Inches in Parenthesis)



(M25 X 1.5 ISO)  
CONDUIT PORT  
POWER AND  
CONTROL WIRING\*



# Intellitrol®2

Overfill Prevention, Ground Verification & Vehicle Identification for Petroleum & Chemical Gantries

CONTROL UNITS	Part Number
<i>Description</i>	
ICC2-OG Intellitrol, Overfill & Ground (Earth)	<b>09547</b>
ICC2-OGV Intellitrol, Overfill, Ground (Earth) & V.I.P.	<b>09548</b>

SYSTEM ACCESSORIES	Part Number
<i>Description</i>	
Bypass Key Authorizer	<b>08939</b>
Deadman Control Switch Assembly	<b>08863</b>
USB to RS-485 Converter Kit (for communications)	<b>09001</b>
SC-8OB Sculcon Junction Box with 8B Style Black Poly Plug and 6 meter (20 ft) Blue Straight Cable (for 2-wire or 5-wire sensors - 4-bayonet pins - 10 contact pins)	<b>08958</b>
SC-8B Sculcon Junction Box with 8B Style Green Poly Plug and 6 meter (20 ft) Blue Straight Cable (for 2-wire or 5-wire sensors - 4 bayonet pins - 10 contact pins)	<b>08959</b>
SC-8A Sculcon Junction Box with 8A Style Green Poly Plug and 9 meter (30 ft) Orange Coiled Cable (for 2-wire sensors - 2 bayonet pins - 10 contact pins)	<b>08729</b>
SC-6A Sculcon Junction Box with 6A Style Green Poly Plug and 9 meter (30 ft) Orange Coiled Cable (for 2-wire sensors - 2 bayonet pins - 8 contact pins)	<b>08156</b>
SC-6W Sculcon Junction Box with 6W Style Blue Poly Plug and 9 meter (30 ft) Blue Coiled Cable (for 5-wire sensors - 3 bayonet pins - 6 contact pins)	<b>08159</b>

REPLACEMENT PARTS	Part Number
<i>Description</i>	
Module Assembly, 2-OG 240V	<b>09551</b>
Module Assembly, 2-OGV 240V	<b>09577</b>
Module Assembly, 2-OGV 120V	<b>09552</b>
Module Assembly, 2-OG 120V	<b>09576</b>
Cover Bolt, M8 x 1.25 x 25mm	<b>50005</b>
Contact Fuse (F5, F8), 5A, Hi-interrupt	<b>26372</b>
Cover O-ring (gasket)	<b>31340</b>
Corrosion Inhibitor	<b>40268</b>
Lens Assembly (with 6 mounting screws)	<b>09181</b>
Display Module (with backing plate)	<b>09553</b>
Display Cable Feed-through	<b>08982</b>
Lens Mounting Screw, 8-32 x 3/4	<b>50080</b>
Retaining Ring, Cover Hinge	<b>54039</b>
Text Mask (English), Overfill and Ground	<b>38052*</b>
Text Mask (English), Overfill, Ground and Vehicle ID	<b>38053*</b>
Heat Sink Assembly	<b>09481</b>

\*For a diagnostic display panel in a language other than English add -  
 "S" for Spanish, "F" for French, "I" for Italian, "D" for Danish or "G" for German

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**Scully Signal Company**  
 800 272 8559  
 sales@scully.com  
 Wilmington, MA, USA

**Scully Systems Europe NV**  
 +32 (0) 15 56 00 70  
 sales@scully.be  
 Mechelen, Belgium

**Scully UK Ltd**  
 +44 (0) 1606 553805  
 sales@scullyuk.com  
 Winsford Cheshire, UK

**Scully Systems India**  
 +91 9821799566  
 salesindia@scully.com  
 Maharashtra, India

Dynamic Self-Testing® Overfill Prevention Systems

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