Secondary Process Seal and Assemblies
Simplified and safer design allows for easy installation, reliable sealing, and primary seal rupture indication.
Secondary Process Seal Assembly with Rupture Indication Sensor

Cooper Crouse-Hinds® Secondary Process Seal Assembly with Rupture Indication Sensor is designed to prevent the passage of gases under pressure through conduit, cables and conductors while providing immediate notification of a dangerous, potentially explosive seal rupture. These assemblies are ideal where volatile liquids or gases are stored, processed or transported under pressure. If the primary seal in an instrument should fail, the Cooper Crouse-Hinds Secondary Process Seal will prevent gases, vapors and liquids from migrating into the non-classified location through the electrical system.

RUPTURE INDICATION SENSOR
The Secondary Process Seal features a rupture indication sensor that opens safely at 60 psi minimum and activates a circuit to a control system or alarm, which immediately alerts maintenance personnel that the primary seal has ruptured. The location of the problem can be pinpointed so the problem can be quickly addressed.

Innovative, intelligent technology combined with easy installation and low maintenance cost provides a safe and reliable solution for detection of a process seal rupture within your facility.

FEATURES AND BENEFITS
SECONDARY PROCESS SEAL
- CSA and CSAus certified
- Meets or exceeds ANSI / ISA / CSA / CEC / NEC / API requirements for a secondary process seal and explosionproof conduit seal
- Sealed to 1500 psi, operates in any position
- Simplified design allows for easier installation in new and existing applications
- Integrated packaging contains all necessary components for installation
- The explosionproof drain allows for the safe release of gas, vapor or liquid from the electrical system to meet required codes
- Explosionproof terminal box features a simple design to provide access for quick connection of circuits
- Assembly with drain provides local "make obvious" indication of primary seal failure

RUPTURE INDICATION SENSOR
- Rupture detection and indication at 60 psi
- Provides remote, immediate notification of a seal rupture, allowing for maintenance to quickly address the problem and isolate safety concerns
- Stainless steel construction provides superior corrosion resistance and durability

The problem that never happens. That’s the goal behind ESP - smarter, more powerful solutions enhancing safety and productivity in your world.
Assembly Information

Simplified and safer design allows for easy installation, low maintenance and reduced downtime.

**ASSEMBLY WITH PROCESS SEAL RUPTURE INDICATION SENSOR**

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**Terminal Housing**
- Cast ears on cover permit easy opening and tightening
- Neoprene o-ring meets NEMA 4 requirements
- Compact, explosionproof design
- Various termination methods available
- DIN rail mounted terminal blocks provided as option

**Ultra High Pressure Seal (UHPS) (available separately)**
- Rated to 1500 PSI
- 2 or 4 wire versions available
- Conductors available in 14, 16, 18, and 22 gauge
- Two foot pigtail leads
- Additional conduit seal not required

**Process Seal Rupture Indication Sensor (PSRIS) (available separately)**
- Switch is activated (open) when the primary seal is ruptured, by Hall Effect (magnetic)
- Switch activates at internal pressure of 60 psi or higher*
- Must be wired as intrinsically safe (Div. 1, Zone 1) or non-incendive (Div. 2, Zone 2)
- 2 meter silicon cable

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*60 psi internal pressure rating at 25°C ambient. Activation pressure rating may vary +/- 10% depending on ambient variation.
### Ordering Information

#### Ultra High Pressure Seal

<table>
<thead>
<tr>
<th>Option</th>
<th>Catalog Number</th>
<th>DIN 12 Option</th>
<th>DIN 14 Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 wire, 14 gauge</td>
<td>CH6DR500X002D 14G</td>
<td>SPS214</td>
<td>SPS214R</td>
</tr>
<tr>
<td>2 wire, 16 gauge</td>
<td>CH6DR500X002D 16G</td>
<td>SPS216</td>
<td>SPS216R</td>
</tr>
<tr>
<td>2 wire, 18 gauge</td>
<td>CH6DR500X002D 18G</td>
<td>SPS218</td>
<td>SPS218R</td>
</tr>
<tr>
<td>2 wire, 22 gauge</td>
<td>CH6DR500X002D 22G</td>
<td>SPS222</td>
<td>SPS222R</td>
</tr>
<tr>
<td>4 wire, 14 gauge</td>
<td>CH6DR500X004D 14G</td>
<td>SPS414</td>
<td>SPS414R</td>
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<tr>
<td>4 wire, 16 gauge</td>
<td>CH6DR500X004D 16G</td>
<td>SPS416</td>
<td>SPS416R</td>
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<tr>
<td>4 wire, 18 gauge</td>
<td>CH6DR500X004D 18G</td>
<td>SPS418</td>
<td>SPS418R</td>
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<tr>
<td>4 wire, 22 gauge</td>
<td>CH6DR500X004D 22G</td>
<td>SPS422</td>
<td>SPS422R</td>
</tr>
</tbody>
</table>

For Process Seal Rupture Indication Sensor replacement, order catalog # PSRIS.

#### Ordering Example

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPS214R</td>
<td>DIN12</td>
</tr>
</tbody>
</table>

#### Options (add to part number)

- No terminal blocks (leave option blank)
- DIN12: 2 terminal blocks
- DIN14: 4 terminal blocks

### SPS Secondary Process Seal with Local “Make Obvious” Indication Using an ECD Explosionproof Drain

- Process Connected Solenoid Valve, Transmitter, Pressure Switch, or Similar Device Without Arcing Contacts
- Explosionproof EYS, if required (see opposite)
- Secondary Process Seal (SPS)
- GUAC Splice Box
- Conduit System or Cable System with Applicable Terminator for Area

Reference: API 14F.

### SPSR Secondary Process Seal with PSRIS Rupture Indication Sensor for Remote Indication, and ECD Drain for Local “Make Obvious” Indication

- Process Connected Solenoid Valve, Transmitter, Pressure Switch, or Similar Device Without Arcing Contacts
- Explosionproof EYS, if required (see opposite)
- Secondary Process Seal with Rupture Indication Sensor (SPSR)
- Explosionproof Terminal Box (Div. 1)
- Non-explosionproof Terminal Box (Div. 2)
- Wired or Wireless Alarm Circuit
- Conduit or Cable System with Applicable Terminator

Reference: API 14F.
**Technical Data**

**PRODUCT CERTIFICATION**

The Secondary Process Seal and Assemblies are CSA certified (Canada, U.S.).

**OPERATING PRESSURE RATING**

- Rupture protection to 1500 psi
- Rupture indication at 60 psi minimum

**OPERATING TEMPERATURE RANGE**

-25°C to +50°C

Note: For more extreme temperature and/or pressure requirements please consult factory.

**COMPONENT TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Components</th>
<th>Construction</th>
<th>Certifications and Compliances</th>
<th>Rating</th>
<th>Area Suitability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Switch Assembly - hermetically sealed, nickeled brass, with silicon cable</td>
<td>(Div. 1, Zone 1) intrinsically safe (Div. 2, Zone 2) non-incendive Simple apparatus (NEC 504.4)</td>
<td>174 mA 24VDC</td>
<td>Cl. II, Div. 1 and 2, Groups E, F, G</td>
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<tr>
<td>Ultra High Pressure Seal</td>
<td>Stainless steel</td>
<td>CSA 22.2 No. 30 - 03 CSA 22.2 No. 14 - 2005 ANSI / ISA 12.27.01 - 2003 CEC 18 - 108, 158 NEC 501.15(F)(3)</td>
<td>24VDC 120VAC</td>
<td>Zone 1 IIB + H₂ and Zone 2 IIB + H₂</td>
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<td>Terminal Housing</td>
<td>Copper-free aluminum</td>
<td>UL886 CSA C22.2 No. 30</td>
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<td>NEMA 3, 4, 7BCD, 9</td>
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<tr>
<td>Drain / Vent</td>
<td>Stainless steel</td>
<td>UL886 CSA C22.2 No. 30</td>
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</tr>
</tbody>
</table>

**DIMENSIONS**

![ASSEMBLY WITH RUPTURE SENSOR AND VENT/DRAIN](image1)

![ASSEMBLY WITH VENT/DRAIN](image2)

Note: Assemblies shown with DIN12 terminal blocks (optional)