Description
The Oseis™ Electronic Initiating System is designed specifically for the Oil and Gas market. The system combines a high strength accurate electronic detonator and a secure firing system to achieve reliability and precision for the harsh conditions common to geophysical exploration.

The Oseis™ system consists of the following components:

- **Oseis™ Electronic detonator** – highly accurate and programmable.
- **Oseis™ Tester** – multi function device used during loading to perform detonator function, identification and positioning tasks.
- **Oseis™ Shooter** – connects to the conventional shooting system via the trigger cable to fire the shot.
- **Oseis™ Project Management Software**.

Application
The Oseis™ system is designed specifically for geophysical exploration and can be used for both single and pattern firing applications in challenging environments.

Key Benefits
Detonator
- Highly accurate and programmable detonator.
- Two way communications allows the detonator to be checked via control equipment any time from loading to firing.

- Inherently safe by design, the system is protected against accidental or unintended detonation caused by over voltage, static electricity, stray currents or electromagnetic inductions.
- Ensures initiation reliability with all Orica detonator sensitive explosives, even at low temperatures.
- Harsh environment construction assures long sleep times in harsh in-hole conditions.

Equipment
- **Oseis™ Tester II** memory can save data for up to 1000 shot points. Each logged shotpoint is marked with a time and date stamp via the internal real time clock (RTC).
- **Oseis™ Tester III GPS capability** enables shotholes to be located before and after loading.
- Data is transferable to a computer with both Testers. USB and Bluetooth enabled for Tester III.
- **Oseis™ Shooter** has a firing capacity up to 10 Oseis™ electronic detonators in a single pattern shot.
- The Oseis™ Shooter II memory can save data for up to 1000 shot points.
- Shooter Data is transferable to computer-based software.
- **Oseis™ project management software** enables security tracking and inventory control of detonators via a unique ID number for every detonator that can be matched to a shotpoint location.

Properties

<table>
<thead>
<tr>
<th><strong>Oseis™ Detonator</strong></th>
<th>Constant firing time, system accuracy: ±0.075ms at 20ms after trigger signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leg wire:</td>
<td>Duplex steel wire</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>25.5 kg (56 LBS or 250 N)</td>
</tr>
<tr>
<td>Wire insulation:</td>
<td>Temperature and abrasion resistant polymer</td>
</tr>
<tr>
<td>Wire color:</td>
<td>Yellow</td>
</tr>
<tr>
<td>Base charge:</td>
<td>8&quot; strength detonator.</td>
</tr>
</tbody>
</table>
Packaging
Oseis Detonators are available in figure 8 and spool format as indicated below:

<table>
<thead>
<tr>
<th>Leg Length m/ft</th>
<th>Wire Format</th>
<th>Units per Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/13</td>
<td>Folded</td>
<td>60</td>
</tr>
<tr>
<td>7/24</td>
<td>Folded</td>
<td>50</td>
</tr>
<tr>
<td>10/35</td>
<td>Folded</td>
<td>36</td>
</tr>
<tr>
<td>13/45</td>
<td>Folded</td>
<td>32</td>
</tr>
<tr>
<td>16/55</td>
<td>Spooled</td>
<td>42</td>
</tr>
<tr>
<td>20/65</td>
<td>Spooled</td>
<td>42</td>
</tr>
<tr>
<td>25/85</td>
<td>Spooled</td>
<td>42</td>
</tr>
<tr>
<td>30/100</td>
<td>Spooled</td>
<td>36</td>
</tr>
<tr>
<td>36/120</td>
<td>Spooled</td>
<td>24</td>
</tr>
<tr>
<td>40/130</td>
<td>Spooled</td>
<td>24</td>
</tr>
<tr>
<td>60/200</td>
<td>Spooled</td>
<td>24</td>
</tr>
<tr>
<td>100/328</td>
<td>Spooled</td>
<td>12</td>
</tr>
</tbody>
</table>

Oseis™ Testers and Shooters are available in nylon carry cases to protect equipment during transport, storage and use. Oseis™ Testers and Shooters contain sensitive electronic circuitry that is designed to be robust under normal operating conditions. However care should be taken to prevent this equipment being subject to mechanical damage through rough handling or impact.

Recommendations for Use
The Oseis™ System is designed to provide accurate, secure and reliable initiation of explosives used in seismic surveys. Priming the explosive and subsequent operations must be carried out in a manner that will ensure that the leg wires and Oseis™ detonator are not damaged. The Oseis™ detonator should always be secured inside a suitable explosive device, which fully encloses the Oseis™ detonator shell to protect it from damage during charging and ensure reliable charge initiation. Exposed Oseis™ detonators should not be placed inside blastholes.

The Oseis™ hardware can only be used with Orica Oseis™ electronic detonators. Attempting to use this equipment with other products is not recommended. The Oseis™ hardware is only compatible with Orica Oseis™ Project Management Software. Attempting to interface this equipment with other software products is not recommended.

Storage and Handling

Product Classification
- Authorised Name: Oseis™
- Correct Shipping Name: Detonators Electric
- UN No.: 0255, PG II
- Class Code: 1.4B

All regulations pertaining to the handling and use of such explosives apply.

Storage and Transport
Oseis™ Detonators should be stored in a cool, dry licensed detonator magazine. Stacks of cases should be no more than 2 meters or 6.5 feet high. For recommended good practices in transporting, storing, handling, and using this product, refer to the “Always and Never” booklet packed inside each case.

Recommended temperature conditions:
- Operating: -40°C - +60°C
- Storage: -40°C - +60°C

Oseis™ Testers and Shooters should be stored in a protective case in a location not subject to high temperatures or humidity. Normal storage precautions applying to electronic equipment will maximize the useful life of the control equipment.

Disposal
Disposal of explosive materials can be hazardous. Methods for safe disposal of explosives may vary depending on the user's situation. Please contact a local Orica representative for information on safe practices.
Safety
Oseis™ Detonators can be initiated by extremes of shock, friction or mechanical impact. As with all explosives Oseis™ detonators should be handled and stored with care. Excessive force should not be applied to the leg wires under any circumstances. If an explosive charge becomes stuck when attempting to retrieve or reposition it, a replacement charge should be used.

The Oseis™ System complies with the principle of ‘Inherent Safety’. This means the Oseis™ Tester, used at the blasthole, is unable to fire Oseis™ Detonators even if the Tester and the Detonator develop faults. In addition, the Oseis™ Tester does not contain any circuitry or programming capable of generating program, arm and fire signals.

This Technical Data Sheet is for information only. The Oseis™ System should only be used by personnel that have been trained to use this system.

Disclaimer
The information contained herein is based on experience and is believed to be accurate and up to date as at the date of its preparation. However, uses and conditions of use are not within the manufacturer’s control and users should determine the suitability of such products and methods of use for their purposes. Neither the manufacturer nor the seller makes any warranty of any kind, express or implied, statutory or otherwise, except that the products described herein shall conform to the manufacturer’s or seller’s specifications. The manufacturer and the seller expressly disclaim all other warranties, including, without limitation, warranties concerning merchantability or fitness for a particular purpose. Under no circumstances shall the manufacturer or the seller be liable for indirect, special, consequential, or incidental damages without limitation, damages for lost or anticipated profits.

Emergency Telephone Numbers
Within Australia: 1800 033 111
Outside Australia: 61 3 9663 2130

Canada: Orica Canada emergency response 1-877-561-3636
USA: Chemtrec 1-800- 424-9300