Description

The i-kon™ VS System consists of programmable digital Detonators and control equipment.

The i-kon™ Logger VS is used during hook-up to assign the delay sequence and perform testing functions. The i-kon™ Logger VS reads and stores the unique Detonator Identification Number (Det ID) and the required delay time.

The i-kon™ Blaster 400 is used to conduct final system tests, blast programming and firing.

i-kon™ Detonators VS are programmable in 4 or 5 ms increments and have on board digital timing circuits and energy storage enabling them to function independently once the fire signal has been sent. A connecting copper harness wire is used to hook-up the detonators. The harness wire is connected to an i-kon™ Logger VS to enable delay assignment and testing during hook up.

Once hook-up is complete, or at any time during logging, the system may be fully tested by using the i-kon™ Logger VS test menu. This causes the i-kon™ Logger VS to communicate with every detonator individually and determine its status. If errors are detected the i-kon™ Logger VS will display these in a meaningful way along with comprehensive help information.

Current leakage is continuously monitored during logging and can be measured using the ‘Measure Leakage’ function. To fire the blast, the i-kon™ Loggers VS are placed at a safe position from the blast and connected to the i-kon™ Blaster 400 via a firing line. The Blaster communicates with the i-kon™ Detonators VS via the i-kon™ Loggers VS.

Application

The i-kon™ VS System is designed to provide accurate, flexible and reliable sequencing of both surface and underground blasts. The i-kon™ Detonator VS will directly initiate detonator sensitive packaged explosives.

Priming and subsequent operations must be carried out in a manner that will ensure that the lead wires and i-kon™ Detonator VS are not damaged. The i-kon™ Detonator VS should always be secured inside a suitable primer that fully encloses the Detonator shell to protect it from damage during charging. Exposed Detonators should not be placed inside blastholes or charging hoses. i-kon™ Detonator VS should normally be “reverse-primed”, with the Detonator base pointing towards the blasthole collar.

The lead wire is extremely robust, however if the insulation is cut or split, moisture may cause earth leakage problems causing testing and communication errors with the i-kon™ VS System, therefore care must be taken when handling and loading the product.

Excessive force should not be applied to the lead wires under any circumstances. If a primer becomes stuck when attempting to retrieve or reposition it, a replacement unit should be used.
Care should be taken during loading and hook up to avoid dirt and water entering the connector. The connector contains silicon grease for water proofness. Joints in the harness wire should be made secure and kept free from moisture.

To assist connecting of the i-kon™ VS System at the face or on the bench a specially designed sling bag has been provided. The sling bag is designed to deploy the draw-from-centre harness wire. Care should be taken to ensure that the i-kon™ Logger VS and i-kon™ Blasters 400 are kept dry and free from dust and grease.

The i-kon™ Blaster 400 should only be connected to the firing line at a point of safety. i-kon™ Logger VS and i-kon™ Blasters 400 contain sensitive electronic circuits and are 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**

These products are available for use in ground temperatures -20 °C to a maximum of +65 °C. If your application requires you to operate outside this temperature range please contact your local Orica Account Manager.

- Not to be used in mines with hazards of coal dust or fire damp explosions.
- Only to be operated by i-kon™ Logger VS and i-kon™ Blaster 400.

**Technical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire (mm)</td>
<td>0.6 / Steel</td>
</tr>
<tr>
<td>Insulation diameter (mm)</td>
<td>1.8</td>
</tr>
<tr>
<td>Tensile strength (N)</td>
<td>180</td>
</tr>
<tr>
<td>Form, Insulation</td>
<td>Duplex, PVC or PP</td>
</tr>
<tr>
<td>Wire color</td>
<td>orange</td>
</tr>
<tr>
<td>Base charge (mg)</td>
<td>PETN alternative Pentolite 780</td>
</tr>
<tr>
<td>Initiating charge (mg)</td>
<td>Lead Azide 120</td>
</tr>
<tr>
<td>Connector</td>
<td>PE, yellow brass</td>
</tr>
<tr>
<td>Hydrostatic pressure resistance</td>
<td>10 / 7</td>
</tr>
<tr>
<td><strong>System Specification</strong></td>
<td></td>
</tr>
<tr>
<td>i-kon™ Detonator VS</td>
<td>Programmable from 0 ms to 8000 ms in 4 ms or 5 ms increments. Accuracy: 0.01 %</td>
</tr>
<tr>
<td>Harness wire</td>
<td>0.6 mm twin twist copper on 200 m.</td>
</tr>
<tr>
<td>i-kon™ Logger VS</td>
<td>Inherently Safe, hand-held logging and testing device. Includes system memory. Maximum of 200 i-kon™ detonators VS per Logger VS.</td>
</tr>
<tr>
<td>Firing Cable</td>
<td>Dependent upon cable characteristics. Consult Orica for specific recommendations.</td>
</tr>
<tr>
<td>i-kon™ Blaster 400</td>
<td>Hand held device able to provide the voltage and digital signalling required to fire i-kon™ detonators VS. Capable of firing up to 400 detonators.</td>
</tr>
</tbody>
</table>

**Product Classification**

**i-kon™ Detonator VS**

Authorised Name: i-kon™ Detonator VS  
Proper Shipping Name: Detonators, electric  
UN: 0030 0456  
Classification: 1.1B 1.4S  
EC Type Certificate: 0589.EXP.0992/03  
Identification Number: BAM-ZEIC-013  
Authorised Name: i-kon™ Logger VS  
Approval Number: BAM-ZKIC-003  
Authorised Name: i-kon™ Blaster 400  
Approval Number: BAM-ZMIC-001  
EC Type Certificate: 01190201

**Storage and Handling**

**i-kon™ Detonator**

Detonator should be stored between -40 °C and +45 °C.  
Transport temperature range from -40 °C to +65 °C.  
i-kon™ Detonator VS have a storage life of up to 2 years in stable, temperate storage conditions in an approved magazine.

**Hardware**

Store at moderate temperatures and humidity.  
Use in the temperatures range -20 °C to +60 °C.

If your application requires you to operate the i-kon™ System outside these temperature ranges please contact your local Orica Account Manager.
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.

All i-kon™ control equipment contains a battery. Please dispose of the equipment in an environmentally friendly manner. It should be recycled or disposed in the same way as normal consumer electronics containing batteries according to the legal requirements.

Packaging
i-kon™ Detonator VS are packed into cardboard cases. All units are presented coiled on plastic spools apart from the 6 m products, which is presented in a folded format. i-kon™ Logger VS and i-kon™ Blasters 400's are provided in nylon carry cases to protect equipment during transport and storage.

Packaging Details

<table>
<thead>
<tr>
<th>Lead Length (m)</th>
<th>1.1B Units per Case</th>
<th>1.4S Units per Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>15</td>
<td>54</td>
<td>32</td>
</tr>
<tr>
<td>20</td>
<td>54</td>
<td>32</td>
</tr>
<tr>
<td>25</td>
<td>48</td>
<td>32</td>
</tr>
</tbody>
</table>

Safety
The i-kon™ VS system complies with the Orica principle of 'Inherent Safety' for electronic blasting systems. This means the i-kon™ Logger VS, used at the blasthole, is unable to fire an i-kon™ Detonator VS even if the detonator is faulty. i-kon™ Detonator VS have protection structures in the electronic circuitry, which give a high level of protection against stray currents, high voltage, static and electromagnetic induction.

The unique i-kon™ Det ID is printed on the flag tag and allows full production traceability for detonators. i-kon™ Detonator VS have a special copper/zinc alloy shell to provide a high level of shock protection.

i-kon™ VS detonators can be initiated by extremes of shock, friction or mechanical impact. As with all explosives, i-kon™ VS detonators should be handled and stored with care and must be kept clear of flame and excessive heat.

i-kon™ VS Loggers and Blasters are designed for tough environments, but submersion in water and excessive impact must be avoided.

Training
This Technical Data Sheet is for information only. The i-kon™ VS System should only be used by personnel who have been properly trained to use this system.

Equipment service
i-kon™ VS control equipment is powered by rechargeable batteries, which must be recharged regularly. It is recommended to return the equipment to your local Orica representative at least every two years for a service inspection. The service inspection includes battery pack replacement, a function test and a firmware upgrade.

Trademarks
The word Orica, the Ring device and the Orica mark are trademarks of Orica Group Companies. i-kon™ and Digital Energy Control® are registered trademarks of Orica Explosives Technology Pty Ltd ACN 075 659 353, 1 Nicholson Street, East Melbourne, Victoria, Australia.

Disclaimer
The manufacturer reserves the right to modify products without prior notice. All information in this data sheet is believed up-to-date at the time of publication. Because Orica cannot anticipate or control the conditions under which this information and its products may be used, Orica does not take any responsibility for their suitability for use in any particular application other than liabilities implied mandatorily by law and which cannot be disclaimed. The user is expressly responsible to verify the suitability of the information and the product for use in any particular application. Orica's general terms and conditions of contract, a copy of which is available upon request, apply to all sales and are incorporated by reference.

Orica Germany GmbH
Muelheimer Strasse 5
D-53840 Troisdorf
Germany
Phone: +49 (0) 2241 4829 1019
Fax: +49 (0) 2241 4829 1697
Email: orica.germany@orica.com

Emergency Telephone Numbers
Within Germany: 02736 / 448-0
Outside Germany: 0049 2736 / 448-0