Disconnector and Earthing Switches
12kV to 145kV

Insulect Disconnectors are designed to accommodate each customer’s needs and the layout of each substation. For over two decades, our disconnector and earthing switches have been 100% locally designed, built and serviced to ensure the best possible solution tailored to the needs of our customers.

**Standard Design**
Our disconnector range is based on a rotary double break design, with or without integrated Earthing Switch.

**Horizontal or Vertical**
Designed for horizontal or vertical applications, and may be mounted on steel structures or pole mounted.

**Manual or Motor Operated**
Disconnectors are built for either manual operation or with a motor operated mechanism, for local or remote operation.

**Earthing Switches**
Independent single or double earthing switches can be supplied with the disconnectors.

**Features & Options**

**CONTACTS**
All contact surfaces are silver plated copper. Copper components other than the contact surfaces are tin plated as standard.

**FLICKERS**
The moving blades are supplied with a spring loaded flicker to quickly extinguish residual current arcing when the switch is opened live.

**CUSTOM FOOTPRINT**
Insulect disconnectors can be customised to suit specific substation layouts, configurations and structure types.

**INSULATORS**
A variety of insulator types can be accommodated for each voltage level, including electrical and mechanical ratings and pollution levels.
Earthing Switches

Each disconnector can be fitted with independent earth switches where required.

Earth switches can be supplied for one or both sides of the switch.

Interlocks

Mechanical or electrical interlocks can be provided for all disconnector models.

Mechanical interlocks prevent the earth switch operating when the disconnector is in the ‘closed’ position and vice-versa.

Electrical interlocks can be provided for disconnectors and earth switches that are fitted with a motor drive. It prevents the motor drive from engaging unless it is safe to do so.

Auxiliary Switches

The mechanism for each switch can be fitted with Auxiliary Switches to enable a substation control system to monitor the state of the disconnectors and earth switches.

Auxiliary switches can be supplied with more than 12 poles, depending on the control information required.
Motor Drive

For many applications it is desirable to operate switches remotely. A motor drive eliminates the need for manual operation of disconnectors and earth switches and will enable operation when it is not safe to have a man in the switch yard. It also enables disconnectors and earth switches located at remote or unmanned sites to be operated from a remote control room when there are no local personnel available.

- IP65 rated stainless steel cabinet.
- Variable speed DC motor.
- The control voltage can be specified as AC or DC.
- Limit switches coupled with mechanical stops prevent the output shaft over-rotating and damaging the contacts.
- Protection is provided for the motor by fuses and thermal overload devices.
- An anti-condensation heater prevents moisture build-up inside the cabinet.
- Positioning and mounting of motor drive components can be customised to suit user requirements.

Installation Services

Insulect offers a complete service for new disconnectors to get them into your network and operational.

We can customise these services to suit your network requirements, including:
- fully assembled or kit form.
- storage and delivery.
- switchyard install and test.
- staff operational training.

Contact our team for more information on how we can tailor a service package to your needs.

Refurbishment Services

Insulect's switchgear team provide support services for asset management of disconnectors.

We assist customers in maintaining their disconnector fleet with a range of services and expert advice, to keep their fleet performing optimally.
- Site assessments.
- Customer site repair and refurbishment.
- Insulect service centre refurbishment.

The refurbishment services return aged disconnectors to correct operating condition, replacing all corroded, worn or damaged components.

All services are covered by warranty. Available for Insulect and AKPS branded product, as well as other manufacturer brands.
## Technical Specifications

### Rating, according to IEC 60694

<table>
<thead>
<tr>
<th>Rated Voltage (kV rms)</th>
<th>Rated Lightning Impulse Withstand Voltage kV (peak)</th>
<th>Rated 1 Min Power Frequency Withstand Voltage kV (rms)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To Earth and between Poles (Common Value)</td>
<td>Across the insulating distance</td>
</tr>
<tr>
<td>12</td>
<td>75</td>
<td>85</td>
</tr>
<tr>
<td>24</td>
<td>125</td>
<td>145</td>
</tr>
<tr>
<td>36</td>
<td>170</td>
<td>195</td>
</tr>
<tr>
<td>72.5</td>
<td>325</td>
<td>375</td>
</tr>
<tr>
<td>145</td>
<td>650</td>
<td>750</td>
</tr>
</tbody>
</table>

### Normal/Short Circuit Current Rating, according to AS62271-102 / IEC62271-102

<table>
<thead>
<tr>
<th>Rated Voltage (kV rms)</th>
<th>Current Rating Continuous (A)</th>
<th>Short Circuit Withstand Current and Duration (A/sec)</th>
<th>LIWV (kVp) BIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 / 24</td>
<td>600 - 2500</td>
<td>Up to 31.5 kA/3sec</td>
<td>125 kV</td>
</tr>
<tr>
<td>36</td>
<td>600 - 3500</td>
<td>Up to 31.5 kA/3sec</td>
<td>170 kV</td>
</tr>
<tr>
<td>72.5</td>
<td>600 - 2500</td>
<td>Up to 40.0 kA/3sec</td>
<td>325 kV</td>
</tr>
<tr>
<td>145</td>
<td>600 - 2500</td>
<td>Up to 50.0 kA/3sec</td>
<td>650 kV</td>
</tr>
</tbody>
</table>

### Associated Earth Switch Ratings

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Short Circuit Withstand Current</th>
<th>LIWV</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 / 24</td>
<td>Up to 31.5 kA/3sec</td>
<td>125 kV</td>
</tr>
<tr>
<td>36</td>
<td>Up to 31.5 kA/3sec</td>
<td>170 kV</td>
</tr>
<tr>
<td>72.5</td>
<td>Up to 31.5 kA/3sec</td>
<td>325 kV</td>
</tr>
<tr>
<td>145</td>
<td>Up to 50.0 kA/1sec</td>
<td>650 kV</td>
</tr>
</tbody>
</table>

### Mechanical Endurance Class

AKPS Disconnectors are built and tested to M1 class mechanical endurance suitable for operating cycles of 2000 operations, as per AS 62271.102-2005 & AS 2650-2005.

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**DISCLAIMER:** The information in this document is believed to be correct at the time of publication. The user is responsible for determining whether the product is fit for a particular purpose and suitable for user’s method of use or application. No reliance may be placed on any such information or data without first contacting Insulect Australia to clarify individual user requirements.