Pickering Series 60, 65

High Voltage Dry Reed Relays
for up to 15kV

Features

- **SoftCenter®** construction
- Up to 15 kV stand-off
- Up to 12.5 kV switching
- Small size
- Easy mounting
- Long life
- Fully encapsulated

Series 60 - Chassis mounting with solder connections on the top face

Series 65 - Printed circuit mounting

The Series 60 and 65 ranges of high voltage reed relays have been manufactured for many years and remain popular due to their small size and ease of use.

They are available for up to 15kV stand-off, 12.5kV switching at 50 Watts maximum. Tungsten plated contacts ensure a long and reliable life.

Both Form A (energize to make) and Form B (energize to break) configurations are available and it is usually possible to achieve a Form C (change-over) function by using a Form A and a Form B type together.

Form B types are magnetically biased and should not be mounted directly onto ferrous metal chassis or less than 1.5 inches (38mm) away from other relays as the coil operating voltage characteristics will be altered due to magnetic interaction. The coils of Form B relays are polarity sensitive, the positive connection is identified by a red spot.

Form A types can be mounted on ferrous chassis but a space of 1 inch (25mm) should be allowed between adjacent relays. 5, 12, and 24 volt coils are available as standard other voltages can be supplied to special order, please contact our sales office.

If similar relays with “push-on” connectors are preferred, please look at our Series 62 and Series 63.

**Switch Ratings**

- **1 Form A (energize to make)** Switch Number 1
  5kV stand-off, 3.5kV switching at up to 50 Watts
- **1 Form A (energize to make)** Switch Number 2
  10kV stand-off, 7.5kV switching at up to 50 Watts
- **1 Form A (energize to make)** Switch Number 3
  15kV stand-off, 12.5kV switching at up to 50 Watts
- **1 Form B (energize to break)** Switch Number 1
  5kV stand-off, 3.5kV switching at up to 50 Watts
- **1 Form B (energize to break)** Switch Number 2
  10kV stand-off, 7.5kV switching at up to 50 Watts
Series 60, 65 switch ratings - The contact ratings for each switch type are shown below:

### Switch No. Power rating Max. Switch current Max. carry current Max. switching volts Max. stand-off volts Life expectancy Operate time inc bounce Release time
1 A or B 50 W 3 A 3500 5000 10^7 3 ms 2 ms
2 A or B 50 W 3 A 7500 10000 10^7 3 ms 2 ms
3 A 50 W 3 A 12500 15000 10^7 3 ms 2 ms

Operating voltages

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
<th>Capacitance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 V</td>
<td>3.75 V</td>
<td>0.6 V</td>
</tr>
<tr>
<td>12 V</td>
<td>9 V</td>
<td>1.2 V</td>
</tr>
<tr>
<td>24 V</td>
<td>18 V</td>
<td>2.4 V</td>
</tr>
</tbody>
</table>

Series 60 Coil data and type numbers

<table>
<thead>
<tr>
<th>Device type</th>
<th>Type Number</th>
<th>Coil (V)</th>
<th>Coil resistance</th>
<th>Max. contact resistance (initial)</th>
<th>Insulation resistance (minimum)</th>
<th>Capacitance (typical)</th>
<th>Capacitance (typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Switch to coil</td>
<td>Across switch</td>
<td>Closed switch to coil</td>
<td>Across open switch</td>
</tr>
<tr>
<td>1 Form A (energize to make)</td>
<td>60-1-C-5</td>
<td>12</td>
<td>150 Ω</td>
<td>0.12 Ω</td>
<td>10^12 Ω</td>
<td>10^12 Ω</td>
<td>3 pF</td>
</tr>
</tbody>
</table>

Environmental specification

Standard operating temperature range: -20 to +65 °C.

Note: The upper temperature limit can be extended to +125 °C if the coil drive voltage is increased to accommodate the resistance/temperature coefficient of the copper coil winding. This is approximately 0.4% per °C. This means that at 125 °C the coil drive voltage will need to be increased by approximately 40 x 0.4 =16% to maintain the required magnetic drive level.

If you need any technical advice or other help, for example, special tests that you would like carried out, please do not hesitate to contact our Technical Sales Department. We will always be pleased to discuss Pickering relays with you.

Important: For all Form B types, the correct coil polarity must be observed. The positive connection is shown by the red spot on the package.

Please ask us for a FREE evaluation sample.
Pickering Electronics continue to lead the high-end reed relay market through innovative product design, high performance components and exceptional quality control.

Part of the privately-owned Pickering Group, company operations employ around 200 staff across quality accredited factories in the UK and Czech Republic, supplying demanding Aerospace, Infrastructure, Test & Measurement and ATE applications worldwide.

**Reliability through quality** – 50 Year reputation for exceptional product life longevity derived from continuous staged manufacturing inspection, strenuous full range thermal cycling and 100% testing for all operating parameters.

**Reliability through design** – Environmentally compliant designs and unique Softcenter® technology combine to create an optimised assembly that minimises internal lifetime stresses, extending working life and contact stability.

**Switching Performance** – Compared with common bobbin based products, our formerless coil constructions maximise magnetic efficiency resulting in faster switching speeds, optimal switching action and several orders of extended lifetime at operational extremes.

**Cost & Size Performance** – Industry leading mu-metal magnetically screened packages deliver ultra-high PCB packing densities, saving significant cost and space.

**Designers toolkit** – Free samples, worldwide tech support and an unrivalled range of specialist and custom devices, Pickering engineers work alongside customers to deliver problem solving solutions for complex and challenging applications.


**Distribution** – An established global network of group sales offices supported by local agents and distributors, Pickering operate an established logistical supply chain worldwide.

**The Pickering Group** – Employing around 400 staff across 8 sites in the UK and CZ, Pickering Electronics are a key technology partner for Pickering Interfaces and Pickering Connect, supporting the design and manufacture of high performance modular signal switching and simulation systems.

**Why Pickering Electronics?**

**Because Quality Matters**