Relays & Solenoids

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Model 9802 J-Lead - No shield fitted
Gull wing: H = 4.31, W = 11.68, D = 4.95mm
J-Lead: H = 4.82, W = 11.18, D = 4.96mm

Model 9001 & 9007
H = 3.18, W = 19.3, D = 5.6mm
CSA Approved and UL Recognised

Model 9002
H = 7.6, W = 19.3, D = 5.05mm

Model 9852 - SPDT
Model 9814 - SPST
Model 9802 - SPST
Model 9800 Series
Model 9001, 9002 9007

Reed - Surface Mount
9800 Series

Reed - SIL
9000 Series

Temperature, operating -20 to +85°C -20 to +85°C
Switching current (max) 250mA 250mA 250mA
Switch voltage (max) 100V 100V 100V
Switch power (max) 10W 10W

Life (Typical) 250 x 10^6 1000 x 10^6 100 x 10^6 (N/C)
Insulation resistance (Min)
Switch carry current (max) 0.5A 0.5A 0.5A
Switch voltage (max) 200V 200V

J-Lead - H = 4.82, W = 11.18, D = 4.95mm
Gull wing - H = 4.31, W = 11.68, D = 4.95mm

Relays & Solenoids

Reed Relays - Coto

Coil suppression diode option protects coil drive circuits
9002 version with coaxial shield for 50Ω impedance and switching of fast rise time digital pulses
Hermetically sealed contacts for long life
High diodelectric strength
High speed switching
High insulation resistance
Moulded thermoset body on integral lead frame

Reed - Miniature SIL
9091

H = 6.98, W = 15.24, D = 3.81mm

Model 9091
Contact resistance (max) 125mohm
Insulation resistance (Min)
Life (Typical) 500 x 10^6 operations
Temperature, operating -20 to +85°C

Reed Relay - DIL
8L Series

Model 8L01 & 8L02 8L41
8L Series

Model 8L01-05-001 108-1660 Diode
Model 8L01-05-011 108-1662 Diode
Model 8L01-05-011 108-1661 Diode
Model 8L01-12-011 108-1663 Diode

Model 8L41-05-001 108-1672 Diode
Model 8L41-05-011 108-1674 Diode
Model 8L41-05-111 108-1675 Diode
Model 8L41-12-001 108-1676 Diode

Model 8L01-12-011 108-1677 Diode
Model 8L01-12-001 108-1678 Diode
Model 8L01-12-101 108-1663 Diode

Model 9091 - SPST

Model 9091-05-011 108-1626 Diode
Model 9091-05-001 108-1625 Diode
Model 9091-12-011 108-1627 Diode

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Price Each
V dc ±10% 5 500 108-1678 5
5 500 108-1679 5
5 500 108-1679 5
12 1K 108-1680 12
5 500 108-1680 5
12 1K 108-1681 12
5 500 108-1681 5
12 1K 108-1682 12
5 500 108-1682 5
12 1K 108-1683 12
5 500 108-1683 5
12 1K 108-1684 12
5 500 108-1684 5

Model 8L02-05-001 108-1666 8L41-12-011 108-1677 Diode
Model 8L01-12-101 108-1663 Diode 8L41-12-001 108-1675 Diode
Model 8L01-12-011 108-1662 8L41-05-111 108-1674 Diode
Model 8L01-05-011 108-1661 Diode 8L41-05-011 108-1673 Diode
Model 8L01-05-001 108-1660 Diode 8L41-05-001 108-1672 Diode

Model 9802 J-Lead - No shield fitted
Gull wing: H = 4.31, W = 11.68, D = 4.95mm
J-Lead: H = 4.82, W = 11.18, D = 4.96mm

Model 9802
Switch power (max) 3W 3W 3W
Switch voltage (max) 100V 100V 100V
Switching current (max) 250mA 250mA 250mA
Switch carry current (max) 0.5A 0.5A 0.5A
Contact resistance (max) 125mohm 125mohm 125mohm
Insulation resistance (Min)
Time, operate/release ms (max) 0.25/0.25/0.25
Life (Typical) - Operations 250 x 10^6 1000 x 10^6 100 x 10^6 (N/C)
Temperature, operating -20 to +85°C -20 to +85°C -20 to +85°C

Model 9814
9802 9814 9852

Model 9852
9802-05-20 108-1633 J-Lead
9814-05-20 108-1691 Gull wing
9852-05-00 108-1693 Gull wing

UL Recognised

farnell.com element14.com

2501

Electromechanical

Relays & Solenoids
Reed Relay - DIL - continued

**31 Relays & Solderable Components**

**Reed Relay**

**2200 and 2300 Series**

- Very small footprint
- Hermetically sealed contacts for long life
- Epoxy coated steel shell provides magnetic shielding

<table>
<thead>
<tr>
<th>Model</th>
<th>2200 1 Form C</th>
<th>2200 1 Form C (SPDT-CO)</th>
<th>2200 2 Form C</th>
<th>2200 2 Form C (SPDT-CO)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Switch power (max)</strong></td>
<td>100V</td>
<td>200V</td>
<td>100V</td>
<td>200V</td>
</tr>
<tr>
<td><strong>Switch voltage (max)</strong></td>
<td>0.5A</td>
<td>0.5A</td>
<td>1.0A</td>
<td>1.0A</td>
</tr>
<tr>
<td><strong>Switching current (max)</strong></td>
<td>500mA</td>
<td>250mA</td>
<td>500mA</td>
<td>250mA</td>
</tr>
<tr>
<td><strong>Contact resistance (max)</strong></td>
<td>150Ω</td>
<td>200Ω</td>
<td>150Ω</td>
<td>200Ω</td>
</tr>
<tr>
<td><strong>Hold off voltage (min)</strong></td>
<td>250V</td>
<td>200V</td>
<td>250V</td>
<td>200V</td>
</tr>
<tr>
<td><strong>Switch power (max)</strong></td>
<td>10W</td>
<td>5W</td>
<td>10W</td>
<td>5W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>2300 1 Form C</th>
<th>2300 1 Form C (SPDT-CO)</th>
<th>2300 2 Form C</th>
<th>2300 2 Form C (SPDT-CO)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Switch power (max)</strong></td>
<td>100V</td>
<td>200V</td>
<td>100V</td>
<td>200V</td>
</tr>
<tr>
<td><strong>Switch voltage (max)</strong></td>
<td>0.5A</td>
<td>0.5A</td>
<td>1.0A</td>
<td>1.0A</td>
</tr>
<tr>
<td><strong>Switching current (max)</strong></td>
<td>500mA</td>
<td>250mA</td>
<td>500mA</td>
<td>250mA</td>
</tr>
<tr>
<td><strong>Contact resistance (max)</strong></td>
<td>150Ω</td>
<td>200Ω</td>
<td>150Ω</td>
<td>200Ω</td>
</tr>
<tr>
<td><strong>Hold off voltage (min)</strong></td>
<td>250V</td>
<td>200V</td>
<td>250V</td>
<td>200V</td>
</tr>
<tr>
<td><strong>Switch power (max)</strong></td>
<td>10W</td>
<td>5W</td>
<td>10W</td>
<td>5W</td>
</tr>
</tbody>
</table>

**Models**

- Model 2200
- Model 2300

**Dimensions**

- Model 2200: H = 5.72, W = 20.57, D = 5.33mm
- Model 2300: H = 8.4, W = 20.57, D = 5.33mm

**UL Recognised**

- File E47258

**Hermetically sealed, immune to environmental effects**

- Standard Dual In Line package

**PCB layout**

- SPST Schematic diagram
- SPDT Schematic diagram

**Reed Relay - DIL - continued**

**8L Series - continued**

<table>
<thead>
<tr>
<th><strong>Reed Relay - DIL - continued</strong></th>
<th><strong>8L Series - continued</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 2900</strong></td>
<td><strong>Model 2900</strong></td>
</tr>
<tr>
<td><strong>Switch type</strong></td>
<td><strong>Switch type</strong></td>
</tr>
<tr>
<td>1 Form C</td>
<td>1 Form C</td>
</tr>
<tr>
<td>1 Form A</td>
<td>1 Form A</td>
</tr>
<tr>
<td>1 Form D</td>
<td>1 Form D</td>
</tr>
</tbody>
</table>

**Prices**

<table>
<thead>
<tr>
<th><strong>Model 2900</strong></th>
<th><strong>Price Each</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>230</td>
</tr>
</tbody>
</table>

**Contact resistance**

- 10% of rated voltage

**Hermetically sealed contacts for long life**

**Epoxy coated steel shell provides magnetic shielding**

**High Insulation Resistance**

**Very small size combined with high reliability**

**Reed Relays - Hamlin**

**Dry Reed, SIL**

Single pole normally open reed relays in single-in-line epoxy moulded package. Slim package allows relays to be mounted on 0.2" centres. Protection diode incorporated.

**Reed - DIL**

**HE 700 Series**

<table>
<thead>
<tr>
<th><strong>Model</strong></th>
<th><strong>Switch type</strong></th>
<th><strong>Price Each</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Form C</td>
<td>1 Form C</td>
<td>1+ 25+ 100+ 250+ 500+</td>
</tr>
<tr>
<td>1 Form A</td>
<td>1 Form A</td>
<td>1+ 25+ 100+ 250+ 500+</td>
</tr>
</tbody>
</table>

**Dimensions**

- Model 2200: H = 5.72, W = 20.57, D = 5.33mm
- Model 2300: H = 8.4, W = 20.57, D = 5.33mm
**Dry Reed, DIL and DIP -**
HE700 Series

- **Switch power (max)**: 10W 3W 10W
- **Switch current (max)**: 500mA 250mA 500mA
- **Switch voltage (max)**: 0.5V dc 200V dc 240V ac

**Reed Relay**

- **Contact Form 1A Switch carry current A (max)**: 1
- **Switching current A (max)**: 1
- **Time, operate/release ms (max)**: 0.5/0.1
- **Switch carry current A (max)**: 1.25
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 250V 200V 450V

**Insulation resistance G**: 200V dc Switching 240V ac Switching

**Contact resistance (max)**: 2000 150 150

**Operate/Release**: 0.5ms 1.5ms 0.5ms

**V dc**: 200V dc 240V ac

**H = 7.8, W = 19.8, D = 5.08mm**

**Contact Form 1A Contact Form 1A**
- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Meder**

- **IC-pin compatible**
- **Standard DIL pin configurations**
- **4.25 kV dc breakdown voltage**
- **Internal suppression diode version available**

**Molded DIP**

- **H = 7.8, W = 19.8, D = 5.08mm**
- **Contact Form 1A Contact Form 1A**
- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Micro-Single In Line**

- **Rugged molded design**
- **Requires half the area of a standard SIL Reed Relay**
- **Internal suppression diode version available**
- **Internal magnetic shield**

**H = 6.8, W = 15.2, D = 3.81mm**

- **Contact Form 1A Switch carry current A (max)**: 1
- **Breakdown voltage V dc**: 225
- **Time, operate/release ms (max)**: 0.5/0.1
- **Temperature, operating °C**: -20 to +70

**Contact Form 1A Contact Form 1A**

- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Single In Line**

- **Approved according to EN 60950**
- **4.25 kV dc breakdown voltage**
- **High resistance coil**
- **Internal suppression diode version available**

**H = 7.8, W = 19.8, D = 5.08mm**

- **Contact Form 1A Contact Form 1A**
- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Molded DIP**

- **IC-pin compatible**
- **Standard DIL pin configurations**
- **4.25 kV dc breakdown voltage**
- **Internal suppression diode version available**

**Molded DIP**

- **H = 7.8, W = 19.8, D = 5.08mm**
- **Contact Form 1A Contact Form 1A**
- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Micro-Single In Line**

- **Rugged molded design**
- **Requires half the area of a standard SIL Reed Relay**
- **Internal suppression diode version available**
- **Internal magnetic shield**

**H = 6.8, W = 15.2, D = 3.81mm**

- **Contact Form 1A Switch carry current A (max)**: 1
- **Breakdown voltage V dc**: 225
- **Time, operate/release ms (max)**: 0.5/0.1
- **Temperature, operating °C**: -20 to +70

**Contact Form 1A Contact Form 1A**

- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Single In Line**

- **Approved according to EN 60950**
- **4.25 kV dc breakdown voltage**
- **High resistance coil**
- **Internal suppression diode version available**

**H = 7.8, W = 19.8, D = 5.08mm**

- **Contact Form 1A Contact Form 1A**
- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200

**Reed Relay - Molded DIP**

- **IC-pin compatible**
- **Standard DIL pin configurations**
- **4.25 kV dc breakdown voltage**
- **Internal suppression diode version available**

**Molded DIP**

- **H = 7.8, W = 19.8, D = 5.08mm**
- **Contact Form 1A Contact Form 1A**
- **Contact resistance mR (max)**: 150
- **Switch power W (max)**: 20
- **Switching voltage V dc (max)**: 200
- **Switching current A (max)**: 1
- **Temperature, operating °C**: -20 to +70
- **Breakdown voltage V dc**: 320 4200
Reed Relays - Meder - continued

Molded DIP - continued

<table>
<thead>
<tr>
<th>Volts</th>
<th>±10%</th>
<th>Code</th>
<th>1+</th>
<th>10+</th>
<th>25+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>250</td>
<td>107-95020</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>1k</td>
<td>107-95030</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reed Relay - continued**

**Relays & Solenoids**

Switch carry current A (max) 5
Switching current A (max) 3
Temperature, operate/release
Switch voltage V dc (max) 7.5
Time, operate/release ms (max) 3/1.5
Switch power W (max) 50
Insulation voltage kV dc 15
Contact resistance mR (max) 150
Breakdown voltage kV dc 10
Temperature, operating °C -20 to +70

Carry current 0.5A
Switching current 500mA
Operating temperature -40 to 125°C
Switching voltage 170VDC or 170V ac peak
Coil voltage 5V

**High Voltage HM Series**

- Power switching up to 50W
- Breakdown voltage of 15 kV dc
- Switching up to 7.5 kV dc

Contact Form
- SPST-NO
- SPST-NC

Contact Form: SPST-NO/NC
- Contact resistance mR (max) 150
- Breakdown voltage kV dc 10
- Insulation voltage kV dc 15
- Time, operate/release ms (max) 3/1.5
- Temperature, operating °C -20 to +70

Contact Form: SPST-NO/NC
- Contact resistance mR (max) 150
- Breakdown voltage kV dc 10
- Insulation voltage kV dc 15
- Time, operate/release ms (max) 3/1.5
- Temperature, operating °C -20 to +70

**High Voltage H Series**

- Switching up to 7.5 kV dc
- 1000 Gigahertz between coil and contact
- Breakdown voltage of 15 kV dc
- Coil covered with a thermoplastic that meets UL94V-0

Contact Form
- SPST-NO/NC
- Contact resistance mR (max) 150
- Breakdown voltage kV dc 10
- Insulation voltage kV dc 15
- Time, operate/release ms (max) 3/1.5
- Temperature, operating °C -20 to +70

Contact Form: SPST-NO/NC
- Contact resistance mR (max) 150
- Breakdown voltage kV dc 10
- Insulation voltage kV dc 15
- Temperature, operating °C -20 to +70

**High Voltage Reed Relays**

- 15kV Isolation
- Low Contact Resistance
- High Power Switching
- PCB
- Flying Lead Terminal

Contact Configuration
- SPNO
- Tungsten
- Max. Switching Current
- 20A
- Max. Switching Voltage
- 3kV

Dimensions: H=18.5, D=15.8, W=60mm

**High Voltage Reed Relays - S Series**

- Compact Footprint
- Designed Specifically for High Voltage
- Rhodium Contacts for Low Resistance
- 3 or 5kV Isolation Between Contacts

Contact Configuration
- SPNO
- Max. Switching Current
- 500mA
- Rhodium
- Max. Switching Voltage
- 5kV

Dimensions: H=8.4, D=7.3, W=27.6mm

**Photo MOSFET Relays - Avago**

**Applications:**
- Telecommunication Switching
- Data Communications
- Industrial Controls
- Medical
- Security
- EMR / Reed Relay Replacement

**MOSFET Relays - Avago**

**ASSR Series**

- Applications:
  - Telecommunication Switching
  - Data Communications
  - Medical
  - Security
  - EMR / Reed Relay Replacement

**Avago Technologies’ new ASSR Series** are high-speed optically isolated MOSFET output solid-state relays that feature performance that has been qualified over a wide industrial temperature range of -40°C to +85°C. They are Form A (normally open) single-pole single-throw relays in industry-standard 6-pin and 8-pin dual-inline (DIP) packages, and 4-pin small outline (SO) packages. Their output ratings range from 60V to 600V maximum load voltage and from 40mA to 2.5A continuous output current. Their transient immunity of more than 1kV/µs and excellent noise rejection between input-output as well as between open terminals on the output will eliminate undesirable transient effects. Reinforced insulation of 3.75kV with fast switching speed makes them suitable for a wide range of industrial, consumer and automotive applications.
Dual Channel Photovoltaic MOSFET Driver

The ASSR-V62X Series is specially designed to drive high power MOSFETs. The dual channel configurations, ASSR-V621 and ASSR-V622, allow 2 independent MOSFETs to be driven. It has the versatility to double the photovoltaic voltage by connecting the 2 channels in series or to double the short circuit current by connecting the 2 channels in parallel.

Applications:
- Solid State Module
- Voltage Supply for electronic circuits

MOSFET Relays - Omron

High load voltage capability
Large isolation between input and output
MOSFET design ensures fast switching
PCB TH3 and SMD versions available
UL Recognised
**Photo MOS - AQY Series**

- **Ultra-miniature**
  - H = 2.1, W = 4.3, D = 4.4 (Pin spacing 2.54 x 6.3)
- **Sub-miniature**
  - H = 3.2, W = 4.7, D = 6.4 (Pin spacing 2.54 x 8.3)

- Available in ultra-miniature SD and sub-miniature DIL packages
- ac or dc switching capability

**Photo MOS - AQZ Series**

- High capacity switching
  - ac or dc switching capability
- Low-level off state leakage current

**Photo MOS - AQW Series**

- Compact 4 pin SIL package
- High capacity AC / DC output switching
- Extremely low On-Resistance
- High isolation voltage 2500V

**Photo MOS - AQV/W21 Series**

- The photomos relay provides solid state switching for low level signals, utilising MOSFET technology for the output stage.
Solid State Relays - Carlo Gavazzi

- 17.5mm width
- Rated Operational voltage: Up to 600Vrms
- Rated Operational current: Up to 80Ams
- Control voltages: 3-32 VDC, 20-275 VAC
- Input connection: Screw terminal
- Output connection: Screw clamp/screw terminal
- Integrated voltage transient protection with varistor
- Short circuit rating: 100 kA

**List No. Voltage Current Voltage Input Voltage**

<table>
<thead>
<tr>
<th>Mftrs.</th>
<th>Rated Voltage</th>
<th>Current</th>
<th>Blocking Voltage</th>
<th>Control Current</th>
<th>Pick-up Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGS1A23A25KKE</td>
<td>230V</td>
<td>25A</td>
<td>800V</td>
<td>20V</td>
<td>3.8V DC</td>
</tr>
<tr>
<td>RGS1A23A50KKE</td>
<td>230V</td>
<td>50A</td>
<td>800V</td>
<td>20V</td>
<td>22V ac/dc</td>
</tr>
<tr>
<td>RGS1A23D25KKE</td>
<td>230V</td>
<td>25A</td>
<td>800V</td>
<td>4V</td>
<td>20V ac/dc</td>
</tr>
<tr>
<td>RGS1A23D50KKE</td>
<td>230V</td>
<td>50A</td>
<td>800V</td>
<td>4V</td>
<td>20V ac/dc</td>
</tr>
<tr>
<td>RGS1A60D50KKE</td>
<td>600V</td>
<td>50A</td>
<td>1200Vp</td>
<td>3V</td>
<td>3.5V DC</td>
</tr>
<tr>
<td>RGS1A60A50KKE</td>
<td>600V</td>
<td>50A</td>
<td>1200Vp</td>
<td>3V</td>
<td>176-1604</td>
</tr>
<tr>
<td>RGS1A23D25KKE</td>
<td>230V</td>
<td>25A</td>
<td>800V</td>
<td>3V</td>
<td>3.5V DC</td>
</tr>
<tr>
<td>RGS1A23A25KKE</td>
<td>230V</td>
<td>25A</td>
<td>800V</td>
<td>20V</td>
<td>22V ac/dc</td>
</tr>
</tbody>
</table>

**Price Each**

- 1+ 5+ 10+ 50+

**New**

Solid State Relays

- High capacity switching up to 6A
- Low on resistance, less than 50m
- ac or dc switching capability
- UL Recognised and CSA approved

**Load Voltage (ac)**

<table>
<thead>
<tr>
<th>Load Current</th>
<th>Isolation Voltage (ac)</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
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<td>1.5</td>
<td>AGZ262</td>
<td>310-5854</td>
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<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Price Each**

- 1+ 5+ 10+ 50+

**Base Module**

- Control Plug with Spring Terminals - Power: FASTON Terminals
  - RXTA232D5V: 230V ac 25A 650Vp 4-32V dc 3.5V dc 176-1604
  - RXTA232D5VVC: 230V ac 25A 650Vp 4-32V dc 3.5V dc 176-1608
  - RXTA232D5VGC: 230V ac 25A 650Vp 4-32V dc 3.5V dc 176-1617
  - RXTA232D5VGC: 230V ac 25A 650Vp 4-32V dc 3.5V dc 176-1618

**Operational Voltage**

- 20A DIN Rail Mounting
- Mini Solidon

These relays are designed to replace electro-mechanical contactors in industrial heating and motor control applications, especially when switching is frequent. The devices are ready to mount on DIN-rail or chassis and come with integral heatsink. The compact terminal layout allows SSR (U) type connection. Two 2.5mm² cables can be connected in each screw terminal to allow looping. A removable IP20 cover enables connection of a 4mm² cable with crimped terminal. An LED indicates the status of the control input. UL Recognised and CE marked.

**AC semiconductor contactor**

- Zero switching
- Direct Copper Bonding (DCB) technology
- LED Indication
- Self lifting terminals
- Opto-isolation >4000V ac/ rms

**Control Voltage**

- 0 to 60V
- 310-5854
- Order Code
- Load Voltage Range
- 0 to ±60

**Input Current (Max.)**

- 12 mA
- 17 mA

**Pick-up voltage**

- 3.8V DC
- 22V ac/dc

**Control Voltage**

- 4 to 32V DC
- 24 to 275V AC/24 to 48V DC

**Junction temperature**

- 125°C

**Off state leakage current**

- Minimum operational current: 350mA ac (rms)

**Rated operational current**

- AC1: 20A (rms) @ Ta = 25°C, AC3: 5A (rms) @ Ta = 25°C

**Control Input (Max.)**

- 12 mA
- 17 mA

**Operational Voltage**

- 660VAC

**Operational Voltage**

- 230V ac

**List No. Voltage Current Voltage Input Voltage**

<table>
<thead>
<tr>
<th>Mftrs. List No.</th>
<th>Voltage Current Voltage Input Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>RJ1A60D20UA</td>
<td>230V ac 25A 650Vp 4-32V dc 3.5V dc</td>
</tr>
<tr>
<td>RJ1A60D20UA</td>
<td>230V ac 25A 650Vp 4-32V dc 3.5V dc</td>
</tr>
</tbody>
</table>

**Price Each**

- 1+ 5+ 10+ 50+

**Solid State Relays**

- Multi-Function Analog Switching

- AC semiconductor contactor
- Multi-function - 5 selectable modes of operation: Phase Angle, Distributed Full Cycle and Burst Control (1, 3 and 10s)
- Direct copper bonding (DCB) technology
- LED-indication for control and load status
- G-10V control input
- Built-in varistor
- Blocking voltage: Up to 1200VP
- Opto-isolation >4000VACrms
- Cage clamp terminals
- IP20 protection

**Dimensions**

- H=80, W=22.5, D=103mm

**Price Each**

- 1+ 5+ 10+ 50+
Solid State Relays - Carlo Gavazzi - continued

30A to 63A DIN Rail Mounting - RN Series

- Solid State Contactor (IEC 158-2)
- Front mounted heatsink
- LED status indication
- IP20 Protection
- Zero volt switching
- Contactor terminal layout
- CE Marked

H = 120, W = 45, D = 103mm (30A)
H = 120, W = 90, D = 103mm (50/63A)

Note: for 2 pole versions current rating is SUM of both poles - e.g. 15A + 15A for 30A rating

Input Voltage: 5V DC to 32V DC
Input Current: 1mA
Current Leakage: ≤1mA
Rated operational Current - AC53a 5A (ac rms) 15A (ac rms)
Off-state leakage current

3 mA ac (rms) @ rated voltage and frequency

3 Pole - 25, 40 & 55A

RZ3A Series

Solid state relays designed to switch loads such as heating elements, motors and transformers. Capable of switching voltages up to 600V ac (rms).

- 3 Phase Solid State Relay
- Zero switching
- Internal snubber networks
- IP 10 back-of-hand protection
- LED indicator

Load Current

AC/DC Input - 480Vac output - 1 pole
30 42-530Vac Thyristor 1200 600 RN1A48D30 247-406
50 42-530Vac Thyristor 1200 600 RN2A48D50 310-3018

30A to 50A DIN Rail Mounting

- 2 Pole AC solid state relay
- Analog switching for resistive loads (heating)
- 0-10V controls
- Rated operational voltage up to 480 Vac
- LED-indication for normal operation and alarm status
- IP 20 protection
- DIN-rail mountable

IP20 Covered SSR

SCR Output - Single Phase with Over-Voltage and Transient Protection

A range of EMC level 3, class A compliant, surface mountable, optically coupled, solid state relays in the industry-standard ‘hockey puck’ housing. These relays have a sealed construction, with no moving parts. The switching is silent and it is not affected by vibration.

Zero volt switching versions can be used for switching single phase resistive loads or motors where the power factor is <0.8. For inductive loads (motors) with a power factor less than 0.8 the random switching versions are recommended. These devices must be mounted on an adequate heat sink to dissipate the heat generated within the relay, caused by the internal volt drop across the output circuit.

- Direct Copper Bonded substrate
- Up to 10 times longer life expectancy
- Current ratings from 10 to 125 Amps
- EMC Compliant
- Output overvoltage and transients protection
- Back to back dual SCR output
- 4000Vac optical isolation
- LED input status indicator
- IP20 ‘touch safe’ cover
- UL and cUL recognised
Panel Mount SSRs

- FET Output
  - 15 or 30 amp output ratings
  - Very low off-state leakage current (<10μA)
- Low on-state impedance minimizes power dissipation
- IP20 “touch safe” housing
- 4000 Vac optical isolation

Transistor Output
- 10 amp load rating at 60Vdc
- LED input status indicator
- 4000Vac optical isolation
- IP20 “touch safe” housing
- 4000Vac optical isolation

Dual Output Panel Mount SSRs

- True 40 amp per channel rating at 240Vac
- Dual input channels for independent output operation
- Direct Bond Copper substrate for superior thermal performance
- Back-to-back SCR output for heavy industrial loads
- 4-15Vac or 17-32Vac per channel input rating
- Zero-crossing (resistive loads) or random-fire (inductive loads) outputs
- No external transient protection required (internal TVS)
- 400VAC Optical isolation
- 1/4” quick connect

DIN Rail Mount SSRs

- Integral heat sink eliminates the need for complex thermal calculations
- DBC substrate for superior thermal performance
- Epoxy-free design minimizes internal component stress
- Standard ratings up to 45 amps at 600Vac
- No external transient protection required (internal TVS)
- LED indicator clearly identifies the relay’s input status
- IP20 touch safe housing
- AC or DC inputs
- 4000Vac optical isolation
- Relay or contactor configuration

20A DIN Rail Mount SSR

Single Phase Hybrid Power Relay

Hybrid relay switching is controlled by a microprocessor. When switched on, the circuit is closed by the solid state element and the load energised. The solid state element is short-circuited a few milliseconds later by an electro-mechanical relay contact, which maintains the load. The reverse cycle operates when the circuit is de-energised.

- 20A output (resistive output)
- Life >5 million full load operations
- 1.75mm DIN rail mount
- Zero volt load switching by the SSR contacts - increased life of switched elements
- No current switching by mechanical contacts - no contact arcing, minimum relay wear

DIN Rail Mount SSRs

- 2509 Date: 06-09-12 time:19:11
- 1/4” quick connect
- 4000Vac optical isolation
- No external transient protection required (internal TVS)
- LED indicator clearly identifies the relay’s input status
- IP20 touch safe housing
- AC or DC inputs
- 4000Vac optical isolation
- Relay or contactor configuration

Mfrs.

- List No.
- Order Code
- Price Each

GNR25ACZ 25A 48Vrms to 600Vrms 180V AC to 280V AC SCR Zero Voltage 193-6484
GNR30DCR 30A 48Vrms to 600Vrms 4V DC to 32V DC SCR Instantaneous 193-6489
GNR30ACZ 30A 48Vrms to 600Vrms 180V AC to 280V AC SCR Zero Voltage 193-6488
GNR10DCZ 10A 24Vrms to 280Vrms 4V DC to 32V DC Triac Zero Voltage 193-6481
GNR10ACZ 10A 24Vrms to 280Vrms 180V AC to 280V AC Triac Zero Voltage 193-6480
GNR20DHZ 22.5mm - Relay Configuration 193-6490
GNR20DHC 22.5mm - Relay Configuration 193-6491
GNR20ACZ 22.5mm - Relay Configuration 193-6492

Mfrs.

- List No.
- Order Code
- Current
- Voltage
- Voltage

GNR10DCZ 10A 24Vrms to 280Vrms 4V DC to 32V DC Triac Zero Voltage 193-6481
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6482
GNR30DCZ 30A 48Vrms to 600Vrms 180V AC to 280V AC SCR Instantaneous 193-6489
GNR30DCR 30A 48Vrms to 600Vrms 4V DC to 32V DC SCR Instantaneous 193-6489
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6489

Mfrs.

- List No.
- Order Code
- Current
- Voltage
- Voltage

GNR10DCZ 10A 24Vrms to 280Vrms 4V DC to 32V DC Triac Zero Voltage 193-6481
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6482
GNR30DCZ 30A 48Vrms to 600Vrms 180V AC to 280V AC SCR Instantaneous 193-6489
GNR30DCR 30A 48Vrms to 600Vrms 4V DC to 32V DC SCR Instantaneous 193-6489
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6489

Mfrs.

- List No.
- Order Code
- Current
- Voltage
- Voltage

GNR10DCZ 10A 24Vrms to 280Vrms 4V DC to 32V DC Triac Zero Voltage 193-6481
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6482
GNR30DCZ 30A 48Vrms to 600Vrms 180V AC to 280V AC SCR Instantaneous 193-6489
GNR30DCR 30A 48Vrms to 600Vrms 4V DC to 32V DC SCR Instantaneous 193-6489
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6489

Mfrs.

- List No.
- Order Code
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- Voltage
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GNR10DCZ 10A 24Vrms to 280Vrms 4V DC to 32V DC Triac Zero Voltage 193-6481
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GNR30DCZ 30A 48Vrms to 600Vrms 180V AC to 280V AC SCR Instantaneous 193-6489
GNR30DCR 30A 48Vrms to 600Vrms 4V DC to 32V DC SCR Instantaneous 193-6489
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6489

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- Voltage
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GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6482
GNR30DCZ 30A 48Vrms to 600Vrms 180V AC to 280V AC SCR Instantaneous 193-6489
GNR30DCR 30A 48Vrms to 600Vrms 4V DC to 32V DC SCR Instantaneous 193-6489
GNR20DCZ 20A 48Vrms to 600Vrms 4V DC to 32V DC SCR Zero Voltage 193-6489
Solid State Relays - Crouzet - continued

DIN Rail Mount SSRs - continued

Mfrs. List No. Order Code 1+ 10+ 25+ 50+ 100+
45mm - Relay Configuration
GN450HZ 193-6493≈
90mm - Three Phase Contactor Configuration
GN925AQC 193-6484≈
GN925BQC 193-6485≈
GN925DQC 193-6486≈

Three Phase SSRs

- Ratings up to 50 amps per phase at 530Vac
- Epoxy-free design minimizes internal component
- 100-cycle UL508 Endurance rating for enhanced reliability
- No external protection required (Internal TVS)
- Back-to-back SCR output for heavy industrial loads

GN0320SR 25A 48Vrms to 600Vrms 4V DC to 32V DC Screw Zero voltage 193-6471
GN325BZ 25A 48Vrms to 600Vrms 90V AC to 140V AC Screw Instantaneous 193-6478
GN325ESZ 25A 48Vrms to 600Vrms 18V AC to 36V AC Screw Zero voltage 193-6476
GN325DSZ 25A 48Vrms to 600Vrms 4V DC to 32V DC Screw Zero voltage 193-6474
GN325BSZ 25A 48Vrms to 600Vrms 90V AC to 140V AC Screw Zero voltage 193-6473
GN325ASZ 25A 48Vrms to 600Vrms 180V AC to 280V AC Screw Zero voltage 193-6472
GN025DSR 25A 48Vrms to 530Vrms 4V DC to 32V DC Screw Instantaneous 193-6471

Solid State Relays - Crouzet - continued

1.5A-SDI/SDV Series

- Miniature ac SSRs in compact 16 pin DIP package
- Suitable for high density PCB mounting
- SDV is current operated, SDV is voltage operated
- Zero voltage or random switching versions available

Load voltage range (Vrms) Control current (mA) Control voltage (V dc) Load Voltage Mfrs. List No. Order Code
12V AC to 280V AC 10 - 50 — 0.025 - 1.5 SD2415 120-0272
12V AC to 280V AC 10 - 50 — 0.025 - 1.5 SD2415 193-6538
12V AC to 280V AC — 3.5 - 10 0.025 - 1.5 SD2415 120-0273

Solid State Relays - Crydom

1A/1.5A/2A/3A PCB - Mini SIP Case Style

- Compact SIL epoxy dipped package
- DC Input - 240V ac Output

Price Each

Order Code 1+ 10+ 25+ 50+ 100+
1A A0241 121-316≈
1.5A A0241 120-0224≈
2A A0242 120-0223≈
2.5A A0242 193-6429≈

2A/3/3.5A PCB - D2W Series

- Compact SIL epoxy dipped package
- Built in snubber network (AC)

Price Each

Order Code 1+ 10+ 25+ 50+ 100+
120-0279≈
120-0280≈
120-0281≈

3A/4A PCB - MP Series

- AC type Triac output with zero voltage switching
- DC type Bipolar transistor output

Price Each

Order Code 1+ 10+ 25+ 50+ 100+
24 - 280V rms 600V pk 200V/us
120-0279≈
120-0280≈
120-0281≈

Troubleshooting Tips

Chat online to one of our technical engineers at farnell.com
AC and DC Control - PCB Mount

CX/CMX Series

- High power switching in SMD package
- UL Recognized, CSA and VDE approved
- CX400D5 conforms to EN60950:1993

CX400D5
3V DC to 15V DC 12Vrms to 280Vrms 5A SCR

CMX100D10
3V DC to 10V DC 0V DC to 100V DC 10A MOSFET

CMX60D20
3V DC to 10V DC 0V DC to 60V DC 20A MOSFET

CMX60D5
3V DC to 10V DC 0V DC to 60V DC 5A MOSFET

CMX240D5R
3V DC to 15V DC 12Vrms to 280Vrms 5A SCR

Mini SIP SSRs

- Ratings to 2A @ 280 VAC
- Dual SCR output (normally open)
- DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output
- Plastic encapsulated

PCB Mount SSRs

- SIP SSR
- Ratings to 12A @ 280 VAC
- SCR output for heavy industrial loads
- DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

Load
Current
Order Code
1+ 10+ 25+ 50+ 100+
DC input - 240VAC Output
20mA
3AMP240D3A
120-0201
20mA to
4AMP240D4A
193-6445
DC input - 60VDC - Output
20mA to
3AMPDCD3
120-0204
0.02A to 3A
161-3902

Load Rating
Order Code
1+ 10+ 25+ 50+
DC input - AC Output
5A @ 12Vms to 280Vrms
120-0213
5A @ 48Vms to 660Vms
120-0214
5A @ 48Vms to 530Vms
161-3824
5A @ 12Vms to 280Vrms
120-0215
5A @ 48Vms to 530Vms
161-3826
5A @ 12Vms to 280Vrms
120-0211
DC input - 240VAC Output 2A @ 280Vrms
184-0402

AC and DC Control - PCB Mount

CN Series

Mini SIP SSRs

- Ratings to 2A @ 280 VAC
- Dual SCR output (normally open)
- DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output
- Plastic encapsulated

PCB Mount SSRs

- SIP SSR
- Ratings to 12A @ 280 VAC
- SCR output for heavy industrial loads
- DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

Mfrs.
List No.
Order Code
1+ 10+ 25+ 50+ 100+

Load
Current
Order Code
1+ 10+ 25+ 50+
Relay/Socket Compatibility
Mfrs.
List No.
Order Code
1+ 10+ 25+ 50+

Mfrs.
List No.
Order Code
1+ 10+ 25+ 50+

Price Each

Price Each

Price Each

Price Each

Price Each

Price Each

Price Each

Price Each
Solid State Relays - Crydom - continued

25A 'PowerFin' - PF Series

- Integral heatink gives a ultra high steady state current rating
- Low leakage current
- SCR output
- DC control
- High surge rating of 250A Pk.
- High blocking voltage
- VDE and CE Approvals, UL Recognised

H=34.3 (excl. pins), W=43.2, D=22.8

Electromechanical 40A PCB Mount SSRs

- DIP SSR
- Ratings to 40A @ 480 V AC with external heat sink
- SCR output for heavy industrial loads
- DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

Plug-in SSR

- AC and DC output solid state relay in an industry standard electrome-
  chanical plug in package
- Ratings of 3 & 5 Amps
- Load voltage range of 24-280VAC, 1-48VDC and 1-
  80VDC
- Fits standard DIN rail & PCB mountable sockets
- LED input status indicator
- AC or DC control
- AC output: Horsepower rated
- DC output: Motor controller rated

Electromechanical 40A PCB Mount SSRs

- DIP SSR
- Ratings to 40A @ 480 V AC with external heat sink
- SCR output for heavy industrial loads
- DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

DIN Rail AC and DC SSR Relays

- Ready-to-use SSR assemblies for either AC or DC output
- 10 mm Single channel and 54 mm Four channel DIN Rail mount assemblies available
- 3 to 15 or 15 to 32 VDC input versions include LED indicator
- 3 to 32 VDC, 18 to 36 and 90 to 140 AC input control versions do not include LED indicator
- AC output ratings up to 300 VAC @ 8 Amps (UL) and 380 VAC 8 Amps (IEC)
- DC output ratings up to 200 VDC and 8 Amps
- Cage style screw terminals for easy and reliable wire connection
- Socket clip fits all standard 35 mm DIN rail profiles
**DIN Rail SSR Relays**

Crydom SeriesOne DR Solid State Relays were developed to offer the advantages of Crydom’s thermal management technology in a compact 11 & 18 mm wide IP20 housing with unique integrated heat sink. The SeriesOne DR provides a quick and easy installation onto any management technology in a compact 11 & 18 mm wide.

- **Single channel 6 & 12 Amp rated output current**
- **Two independent 6 Amp channels in dual channel versions**
- **Single channel 60 & 100 VDC, 24 to 600 VAC rated operation voltage**
- **Dual channel 24 to 600 VAC rated operation voltage**
- **4-32 VDC: 24, 120 & 220 VAC control input options for single channel versions**
- **4-32 VDC control input options for single channel versions**
- **AC output versions with Zero Voltage Turn-On for resistive loads and Random Turn-On for inductive loads**

### DR Series - 11mm

<table>
<thead>
<tr>
<th>List No.</th>
<th>Voltage</th>
<th>Control Voltage Range</th>
<th>Current</th>
<th>Max. Load</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR10006</td>
<td>1V DC to 60V DC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
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<tr>
<td>DR10006</td>
<td>1V DC to 100V DC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
<td></td>
</tr>
<tr>
<td>DR24006</td>
<td>24V DC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
<td></td>
</tr>
<tr>
<td>DR24006</td>
<td>24V DC to 280V AC</td>
<td>90V AC to 140V AC</td>
<td>6A</td>
<td>182-1835</td>
<td></td>
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<tr>
<td>DR24006</td>
<td>24V DC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
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<tr>
<td>DR24006R</td>
<td>24V DC to 280V AC</td>
<td>18V AC to 36V AC</td>
<td>6A</td>
<td>182-1835</td>
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<tr>
<td>DR48006</td>
<td>48V AC to 600V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
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<tr>
<td>DR48006R</td>
<td>48V AC to 600V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
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### DR Series - 18mm

<table>
<thead>
<tr>
<th>List No.</th>
<th>Voltage</th>
<th>Control Voltage Range</th>
<th>Current</th>
<th>Max. Load</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR10D12</td>
<td>1V DC to 60V DC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
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<tr>
<td>DR24A12</td>
<td>24V DC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
<td>182-1835</td>
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<tr>
<td>DR24B12</td>
<td>24V AC to 280V AC</td>
<td>90V AC to 140V AC</td>
<td>12A</td>
<td>182-1835</td>
<td></td>
</tr>
<tr>
<td>DR24D12</td>
<td>24V AC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
<td>182-1835</td>
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</tr>
<tr>
<td>DR24D12R</td>
<td>24V AC to 280V AC</td>
<td>18V AC to 36V AC</td>
<td>12A</td>
<td>182-1835</td>
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<tr>
<td>DR48A12</td>
<td>48V AC to 600V AC</td>
<td>20V AC to 26V AC</td>
<td>12A</td>
<td>182-1835</td>
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<tr>
<td>DR48B12</td>
<td>48V AC to 600V AC</td>
<td>90V AC to 140V AC</td>
<td>12A</td>
<td>182-1835</td>
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<tr>
<td>DR48D12</td>
<td>48V AC to 600V AC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
<td>182-1835</td>
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<tr>
<td>DR48D12R</td>
<td>48V AC to 600V AC</td>
<td>18V AC to 36V AC</td>
<td>12A</td>
<td>182-1835</td>
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</tbody>
</table>

### DL Series - 11mm

<table>
<thead>
<tr>
<th>List No.</th>
<th>Voltage</th>
<th>Control Voltage Range</th>
<th>Current</th>
<th>Max. Load</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL24006</td>
<td>24V DC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
<td></td>
</tr>
<tr>
<td>DL24006R</td>
<td>24V DC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
<td></td>
</tr>
<tr>
<td>DL48006D</td>
<td>48V AC to 600V AC</td>
<td>4V DC to 32V DC</td>
<td>6A</td>
<td>182-1835</td>
<td></td>
</tr>
</tbody>
</table>

### DL Series - 18mm

<table>
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<tr>
<th>List No.</th>
<th>Voltage</th>
<th>Control Voltage Range</th>
<th>Current</th>
<th>Max. Load</th>
<th>Order Code</th>
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<tbody>
<tr>
<td>DL10D12</td>
<td>1V DC to 60V DC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
<td>182-1835</td>
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</tr>
<tr>
<td>DL24A12</td>
<td>24V DC to 280V AC</td>
<td>4V DC to 32V DC</td>
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<tr>
<td>DL24B12</td>
<td>24V AC to 280V AC</td>
<td>90V AC to 140V AC</td>
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<td>DL24D12</td>
<td>24V AC to 280V AC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
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<td>DL24D12R</td>
<td>24V AC to 280V AC</td>
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<tr>
<td>DL48A12</td>
<td>48V AC to 600V AC</td>
<td>20V AC to 26V AC</td>
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<tr>
<td>DL48B12</td>
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<td>90V AC to 140V AC</td>
<td>12A</td>
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<td>DL48D12</td>
<td>48V AC to 600V AC</td>
<td>4V DC to 32V DC</td>
<td>12A</td>
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<tr>
<td>DL48D12R</td>
<td>48V AC to 600V AC</td>
<td>18V AC to 36V AC</td>
<td>12A</td>
<td>182-1835</td>
<td></td>
</tr>
</tbody>
</table>

### EL Series

- **Rated at 5A, 10A or 20A @ 24-280 VAC**
- **Rated at 5A or 10A @ 100 VDC**
- **5, 12 & 24 VDC Control**
- **Zero-crossing (resistive loads) or random-fire (inductive loads)**
- **100% Solid State design**

### 5A to 20A

<table>
<thead>
<tr>
<th>List No.</th>
<th>Control Voltage Range</th>
<th>Current</th>
<th>Load Voltage</th>
<th>Switching Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL24A05-05</td>
<td>4V DC to 8V DC</td>
<td>5A</td>
<td>24V AC to 280V AC</td>
<td>Zero Cross Turn-On</td>
</tr>
<tr>
<td>EL24A05-05</td>
<td>4V DC to 8V DC</td>
<td>5A</td>
<td>24V AC to 280V AC</td>
<td>Random Turn-On</td>
</tr>
<tr>
<td>EL24A05-12</td>
<td>10V DC to 14V DC</td>
<td>5A</td>
<td>24V AC to 280V AC</td>
<td>Zero Cross Turn-On</td>
</tr>
<tr>
<td>EL24A05-12</td>
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<td>5A</td>
<td>24V AC to 280V AC</td>
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<tr>
<td>EL24A05-24</td>
<td>21V DC to 27V DC</td>
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<tr>
<td>EL24A05-24</td>
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<td>EL24A05-10</td>
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5A to 20A - continued

EL Series - continued

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<tr>
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<th>Control Voltage</th>
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<td>10V DC to 14V DC</td>
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<td>24V AC to 280V AC</td>
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<td>EL240A10-12</td>
<td>10V DC to 14V DC</td>
<td>5A</td>
<td>3V DC to 100V DC</td>
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<tr>
<td>EL240A20-24</td>
<td>21V DC to 27V DC</td>
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<td>24V AC to 280V AC</td>
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<tr>
<td>EL240A20-24</td>
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<td>3V DC to 100V DC</td>
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<td>EL100D5-05</td>
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<td>3V DC to 100V DC</td>
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<tr>
<td>EL100D5-12</td>
<td>4V DC to 8V DC</td>
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<td>3V DC to 100V DC</td>
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Input voltage: 90 - 280V ac (ac series)

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<td>Thyristor</td>
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<td>1200</td>
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<td>120-0221</td>
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Price Each

List No. | Order Code | 1+ | 10+ | 50+ | 100+ |
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2.5A to 125A Surface Mounting - 1 Series

A range of AC switching SSRs with internal overvoltage protection to meet standard. Over 50% of SSR failures are attributed to overvoltage. Traditionally, SSRs have been protected by MOVs (Metal Oxide Varistors) which degrade over a period of time. The TVS diodes fitted ‘just before’ the devices so that the overvoltage is passed harmlessly to the load. The benefits to the user are a fully protected SSR without the need for additional components or assembly whilst maintaining the Solid State Reliability and international approvals.

Applications include switching of pumps, motors, lamps, solenoids and heating elements. Zero cross types can reduce EMI.

Input status is indicated with a green LED.

- AC or DC control available
- UL recognised CSA and VDE approved
- Overvoltage protection
- Non-degrading protection
- Over zero voltage or random switching (AC models only)
- Conforms to EN60947-4-1
- UL Recognised, CSA and VDE approved including protection
- Status indicating LED
- Microprocessor compatible input

List No. | Voltage | Current | Mode |
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<td>EL100D10-05</td>
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<td>24V AC to 280V AC</td>
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<td>EL100D10-12</td>
<td>10V DC to 14V DC</td>
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<td>3V DC to 100V DC</td>
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Price Each

List No. | Order Code | 1+ | 10+ | 50+ | 100+ |
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<td>183-3506</td>
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</table>
Load | Current (A) | Load Voltage (V ac) | Output Device | DC Input - 480V ac Output | High Blocking Voltage | DC Input - 480V ac Output | High Blocking Voltage
---|---|---|---|---|---|---|---
90 | 48Vrms to 530Vrms | Thyristor | 1200 | 1200 | H12D480 | 120-0265 | 125A | 1200V | 193-6502
90 | 48Vrms to 530Vrms | SCR | 1200 | 1200 | H48410 | 161-3480
110 | 48Vrms to 530Vrms | Thyristor | 1200 | 9340 | H48410 | 120-0260 | 125A | 1200V | 193-6502
125 | 48Vrms to 530Vrms | Thyristor | 1200 | 1500 | H48412 | 120-0261
DC Input - 480V ac Output | High Blocking Voltage | Random Turn-On
50 | 48Vrms to 530Vrms | SCR | 1200 | 625 | H444850 | 193-6500
50 | 48Vrms to 530Vrms | SCR | 1200 | 625 | H444850 | 161-3481
90 | 48Vrms to 530Vrms | SCR | 1200 | 1200 | H48410 | 193-6500
125 | 48Vrms to 530Vrms | SCR | 1200 | 625 | H48412 | 193-6502
Load Peak Blocking | Current Voltage | Order Code | Price Each
---|---|---|---
AC Input - 240V ac Output | 10A | 600V | 120-0226
25A | 600V | 120-0227
40A | 600V | 120-0228
50A | 600V | 120-0229
110A | 600V | 193-4420
25A | 600V | 193-4422
50A | 600V | 193-4425
10A | 600V | 193-4421
50A | 600V | 193-4427
110A | 600V | 193-4423
AC Input - 480V ac Output | 50A | 600V | 120-0234
75A | 600V | 120-0235
DC Input - 240V ac Output | 10A | 500 | 120-0267
25A | 500 | 120-0268
40A | 500 | 120-0264
60A | 500 | 120-0265
75A | 500 | 120-0266
90A | 600 | 120-0270
50A | 600 | 193-4387
90A | 600 | 193-4509
DC Input - 480V ac Output with TVS and LED | 10A | 600V | 120-0238
25A | 600V | 120-0239
50A | 600V | 120-0242
75A | 600V | 193-4548
90A | 600V | 193-4460
125A | 600V | 193-4460
DC Input - 480V ac Output | 1+ 5+ 10+ 25+
25A | 600V | 120-0240
40A | 800V | 120-0249
50A | 800V | 120-0250
75A | 800V | 120-0251
90A | 1200V | 120-0253
DC Input - 200V ac Output | 1+ 10+ 25+ 50+
25A | 1200V | 120-0262
50A | 1200V | 120-0263
75A | 1200V | 193-4389
90A | 1200V | 193-4509
75A | 1200V | 193-4501
90A | 1200V | 193-4503
10A | 1200V | 193-4389
90A | 1200V | 193-4500
125A | 1200V | 193-4501
125A | 1200V | 193-4502
7A to 100A DC Switching, Surface Mounting
Series 1-D - MOSFET Output
- DC input/DG output solid-state relays with power MOSFET output
- Low on-state resistance, fast switching
- Control can be driven from most logic circuits requiring less than 1.6 mA at 5V
- DC control signal activates a 50 kHz oscillator which is transformer coupled to the output

Accessories
- Load Peak Blocking | Current Voltage | Order Code | Price Each
---|---|---|---
DC Control - Normally Open | 3.5V DC to 32V DC | 2mA | 5 | 3V DC to 60V DC | 161-3484
3.5V DC to 32V DC | 2mA | 5 | 3V DC to 60V DC | 161-3850
DC Control - Normally Closed | 3.5V DC to 32V DC | 2mA | 5 | 3V DC to 60V DC | 161-3851
3.5V DC to 32V DC | 2mA | 5 | 3V DC to 60V DC | 161-3852
DC Control - Normally Open | 90V DC to 280V DC, 90V AC to 280V AC | 2mA | 5 | 3V DC to 60V DC | 161-3853
90V DC to 280V DC, 90V AC to 280V AC | 2mA | 5 | 3V DC to 60V DC | 161-3854
DC Control - Normally Closed | 90V DC to 280V DC, 90V AC to 280V AC | 2mA | 7 | 3V DC to 60V DC | 161-3855
90V DC to 280V DC, 90V AC to 280V AC | 2mA | 7 | 3V DC to 60V DC | 193-6464
Load Peak Blocking | Current Voltage | Order Code | Price Each
---|---|---|---
DC Control - Normally Open | 3V DC to 60V DC | 161-3484
5V DC to 60V DC | 161-3850
7V DC to 60V DC | 161-3851
DC Control - Normally Closed | 3V DC to 60V DC | 161-3852
5V DC to 60V DC | 161-3853
7V DC to 60V DC | 161-3854
AC Control - Normally Open | 3V DC to 60V DC | 161-3854
5V DC to 60V DC | 161-3855
7V DC to 60V DC | 161-3856
AC Control - Normally Closed | 3V DC to 60V DC | 161-3854
5V DC to 60V DC | 161-3855
7V DC to 60V DC | 161-3856
Solid State Relays - Crydom - continued

7A to 100A DC Switching, Surface Mounting - continued

Series 1-DC - MOSFET Output - continued

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Current (max.)</th>
<th>Load current (min.)</th>
<th>Isolation</th>
<th>Surge Current</th>
<th>Mftrs.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>3.5 - 32V dc</td>
<td>0.33A/cm²</td>
<td>20mA/cm²</td>
<td>2000V rms</td>
<td>10mA/cm²</td>
<td>250V rms</td>
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</thead>
<tbody>
<tr>
<td>12V</td>
<td>0.25A</td>
<td>15A</td>
<td>D120 120-0291</td>
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<tr>
<td>24V</td>
<td>0.50A</td>
<td>30A</td>
<td>D240 120-0292</td>
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<table>
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<th>Load Current</th>
<th>Isolation</th>
<th>Surge Current</th>
<th>Mftrs.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>3.5 - 32V dc</td>
<td>20A</td>
<td>2000V rms</td>
<td>10mA/cm²</td>
<td>250V rms</td>
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<td>10A 100V dc</td>
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<td>20A 120V dc</td>
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<td>40A 240V dc</td>
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10A to 40A Surface Mounting - Series 1 - (-10)

Phase Control (Instantaneous Switching)

- DC input with non-zero voltage (random) turn-on for operation from a phase controlled signal
- Suitable for light dimming, motor control etc.
- Conforms to EN60950:1993.

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Load Current</th>
<th>Isolation</th>
<th>Surge Current</th>
<th>Mftrs.</th>
<th>Order Code</th>
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<tbody>
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<td>24V</td>
<td>2A</td>
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<td>5mA</td>
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</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>0.25A</td>
<td>15A</td>
<td>D240 120-0291</td>
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</table>

10A to 40A Surface Mounting - Series 1 (-10)

SSR - Surface Mounting

CS Series

- Integrated circuit version of the D2400 Series relays
- Inverse parallel thyristor output
- Zero voltage switching, low off-state leakage current
- Conforms to EN60950:1993

<table>
<thead>
<tr>
<th>Load Voltage</th>
<th>Load Current</th>
<th>Surge Current</th>
<th>Mftrs.</th>
<th>List No.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>3.5 - 15V dc</td>
<td>10A</td>
<td>25A</td>
<td>E2220410 120-0210</td>
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</table>

| SSR - Surface Mounting
| CW24 and CW48 Series

- Low Leakage
- SCR Output
- Integrated removable finger proof cover
- Universal screw type finger proof connectors
- LED status indicator
- EMC Compliant design
- CSA, VDE and CE Approvals, UL Recognised

<table>
<thead>
<tr>
<th>Control Voltage</th>
<th>Current</th>
<th>Load Voltage</th>
<th>Surge Current</th>
<th>Mftrs.</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3V DC to 32V DC</td>
<td>10mA</td>
<td>25A</td>
<td>24Vms to 280Vms</td>
<td>E224095 120-0291</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<td>E224095 120-0291</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5A/12A/18A Surface Mounting - EZ Series

- SPST - NO, AC Output
- Low leakage current
- Quick connect terminals
- Surface mounting with SCR output
- Zero voltage switching
- CSA, VDE and CE Approved, UL Recognised

H = 33, W = 45.7, D = 58.4 mm

<table>
<thead>
<tr>
<th>Control Voltage</th>
<th>Current</th>
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<td>E224095 120-0291</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### CW48 Series - AC Control - Random Turn-On

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
<th>Load</th>
<th>Surge</th>
<th>Mfrs.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 V to 280 V AC 6 mA 25 A</td>
<td>24 V rms to 280 V rms</td>
<td>60 A</td>
<td>CWA4825P</td>
<td>161-3815</td>
<td></td>
</tr>
<tr>
<td>90 V to 280 V AC 50 A</td>
<td>24 V rms to 280 V rms</td>
<td>85 A</td>
<td>CWA4825P</td>
<td>161-3816</td>
<td></td>
</tr>
<tr>
<td>90 V to 280 V AC 90 A</td>
<td>24 V rms to 280 V rms</td>
<td>135 A</td>
<td>CWA4825P</td>
<td>161-3817</td>
<td></td>
</tr>
</tbody>
</table>

### CW48 Series - AC Control - Internal Overvoltage Protection

- 90 V to 280 V AC 6 mA 25 A | 24 V AC to 280 V AC | 60 A | CWA4825P | 161-3815 |
- 90 V to 280 V AC 50 A | 24 V AC to 280 V AC | 85 A | CWA4825P | 161-3816 |
- 90 V to 280 V AC 90 A | 24 V AC to 280 V AC | 135 A | CWA4825P | 161-3817 |

### CW48 Series - DC Control

- 4 V to 32 V DC 10 mA 25 A | 48 V rms to 660 V rms | 60 A | CWD4825P | 161-3785 |
- 4 V to 32 V DC 10 mA 50 A | 48 V rms to 660 V rms | 85 A | CWD4825P | 161-3786 |
- 4 V to 32 V DC 10 mA 90 A | 48 V rms to 660 V rms | 135 A | CWD4825P | 161-3787 |

### CW48 Series - DC Control - Internal Overvoltage Protection

- 4 V to 32 V DC 10 mA 125 A | 4 DC to 32 DC | 200 A | CWD4825P | 193-6449 |

### CW48 Series - AC Control

- 90 Vrms to 280 Vrms 6 mA 25 A | 48 Vrms to 660 Vrms | 60 A | CWA4825P | 161-3816 |
- 18 V AC to 38 V AC 24 mA 50 A | 48 Vrms to 660 Vrms | 85 A | CWA4825P | 161-3818 |

### CW48 Series - DC Control - Random Turn-On

- 4 V to 32 V DC 10 mA 25 A | 48 V rms to 660 V rms | 60 A | CWD4825P | 161-3785 |
- 4 V to 32 V DC 10 mA 50 A | 48 V rms to 660 V rms | 85 A | CWD4825P | 161-3786 |
- 4 V to 32 V DC 10 mA 90 A | 48 V rms to 660 V rms | 135 A | CWD4825P | 161-3787 |

### CW48 Series - DC Control - Internal Overvoltage Protection

- 4 V to 32 V DC 10 mA 125 A | 4 DC to 32 DC | 200 A | CWD4825P | 193-6449 |

### CW48 Series - AC Control

- 90 Vrms to 280 Vrms 6 mA 25 A | 48 Vrms to 660 Vrms | 60 A | CWA4825P | 161-3816 |
- 18 V AC to 38 V AC 24 mA 50 A | 48 Vrms to 660 Vrms | 85 A | CWA4825P | 161-3818 |

### CW48 Series - DC Control - Random Turn-On

- 4 V to 32 V DC 10 mA 25 A | 48 V rms to 660 V rms | 60 A | CWD4825P | 161-3785 |
- 4 V to 32 V DC 10 mA 50 A | 48 V rms to 660 V rms | 85 A | CWD4825P | 161-3786 |
- 4 V to 32 V DC 10 mA 90 A | 48 V rms to 660 V rms | 135 A | CWD4825P | 161-3787 |

### CW48 Series - DC Control - Internal Overvoltage Protection

- 4 V to 32 V DC 10 mA 125 A | 4 DC to 32 DC | 200 A | CWD4825P | 193-6449 |

### CW48 Series - AC Control

- 90 Vrms to 280 Vrms 6 mA 25 A | 48 Vrms to 660 Vrms | 60 A | CWA4825P | 161-3816 |
- 18 V AC to 38 V AC 24 mA 50 A | 48 Vrms to 660 Vrms | 85 A | CWA4825P | 161-3818 |

### CW48 Series - DC Control - Random Turn-On

- 4 V to 32 V DC 10 mA 25 A | 48 V rms to 660 V rms | 60 A | CWD4825P | 161-3785 |
- 4 V to 32 V DC 10 mA 50 A | 48 V rms to 660 V rms | 85 A | CWD4825P | 161-3786 |
- 4 V to 32 V DC 10 mA 90 A | 48 V rms to 660 V rms | 135 A | CWD4825P | 161-3787 |

### CW48 Series - DC Control - Internal Overvoltage Protection

- 4 V to 32 V DC 10 mA 125 A | 4 DC to 32 DC | 200 A | CWD4825P | 193-6449 |

### H16WD Series - 25A to 75A

- 1600 Volt Blocking
- DC control
- LED Status Indicator

- This relay is designed for use in applications in which it is exposed to high voltage surge conditions
- Suitable for inductive loads such as transformers, motors, valves and solenoids, as well as all resistive loads

### Load

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 A</td>
<td>H16WDM025G</td>
</tr>
<tr>
<td>50 A</td>
<td>H16WDM050G</td>
</tr>
<tr>
<td>75 A</td>
<td>H16WDM075G</td>
</tr>
<tr>
<td>90 A</td>
<td>H16WDM090G</td>
</tr>
</tbody>
</table>

### 10 PV Series 25A to 40A

- Proportional controller
- Ratings from 25A to 40A @ 240 VAC
- 2-10 V DC analog input range
- For use with resistive loads only

### New

- 40A to 100A

### LVD Series

- Low Voltage Disconnect
- Output Ratings from 40A to 100A @ 3 - 75VDC
- Low On-State Resistance FET Output
- Six DC control Ranges Available for 12 & 24VDC Battery Systems
- Compact Encapsulated Panel Mount Package
- Terminal type: Screw

---

**Control Voltage**

- 4V DC to 32V DC

**Operating Voltage**

- 48V AC to 660V AC

**Switching Mode**

- Zero Crossing

**Operating Temperature**

- -40°C to 80°C

**Terminals**

- Screw

---

**List No.**

- CW24 Series - AC Control
- CW24 Series - DC Control
- CW48 Series - AC Control
- CW48 Series - DC Control
- CW48 Series - DC Control - Random Turn-On
- CW48 Series - DC Control - Internal Overvoltage Protection

---

**Order Code**

- CW24 Series - AC Control
- CW24 Series - DC Control
- CW48 Series - AC Control
- CW48 Series - DC Control
- CW48 Series - DC Control - Random Turn-On
- CW48 Series - DC Control - Internal Overvoltage Protection

---

**Price Each**

- CW24 Series - AC Control
- CW24 Series - DC Control
- CW48 Series - AC Control
- CW48 Series - DC Control
- CW48 Series - DC Control - Random Turn-On
- CW48 Series - DC Control - Internal Overvoltage Protection

---

**List No.**

- CW24 Series - AC Control
- CW24 Series - DC Control
- CW48 Series - AC Control
- CW48 Series - DC Control
### 100A Panel Mount MOSFET Output

A range of DC switching Solid State Relays in a robust panel mount package, with screw terminal connections. Load currents of up to 100A can be switched at up to 60Vdc, delivering greatly improved reliability over electro-mechanical devices. This series is compatible with control voltages of 3.5–32Vdc. A SSR has no moving parts, hence no contacts to degrade and wear out. Suitable for switching pumps, motors, lamps, solenoids and heating elements, DC Bus control.

#### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 100 amps.**
- **Robust PANEL Mount Construction.**
- **DC Control.**
- **Surface Mount Technology.**
- **MOSFET Output**

### 20A to 40A Dual and Quad Output

- **DC controlled**
- **Built-in snubber network**
- **UL recognised, CSA certified**

Output terminations are via 6.35mm (¼") push on terminals. Suitable input connectors are

- **Robust PANEL Mount Construction.**
- **DC Load Switching up to 100amps.**
- **Robust PANEL Mount Construction.**
- **Surface Mount Technology.**

### 40A to 100A - continued

#### Mtr. List No. Control Voltage Load Surge Current Voltage Safe Thermal Pad
LVD75A100 23V DC to 24V DC 10mA 60A 3V DC to 75V DC 180A ✓
LVD75C100 23V DC to 24V DC 10mA 80A 3V DC to 75V DC 220A ✓

### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 1000Vdc.**
- **Built in Over-Voltage Protection (800V Model).**

#### Input Specifications

- **Control voltage:** 3.5 – 32VDC
- **Turn on voltage - Max:** 3.5V dc
- **Max. Input current:** 1.6mA @ 5V dc, 28mA @ 32V dc

#### Output Specifications

- **Operational voltage:** 0 – 60V dc
- **Load current, min:** 60A dc
- **Load current, max:** 100A dc
- **Input impedance:** 780ohm
- **Input current @ nominal voltage:** 15 mA
- **Input voltage:** 0 – 60V dc
- **Max. Surge current:** 180A dc
- **Leakage current:** 0.1mA
- **Min. Turn-On Time:** 1.8µs
- **Max. Turn-On Time:** 300µs
- **Operating voltage:** 0 – 60V dc

### 25A DC Switching - High Voltage

### 40A to 100A - continued

#### Mtr. List No. Control Voltage Load Surge Current Voltage Safe Thermal Pad
LVD75A100 23V DC to 24V DC 10mA 60A 3V DC to 75V DC 180A ✓
LVD75C100 23V DC to 24V DC 10mA 80A 3V DC to 75V DC 220A ✓

### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 1000Vdc.**
- **Built in Over-Voltage Protection (800V Model).**

#### Input Specifications

- **Control voltage:** 12V dc
- **Turn on voltage - Max:** 3.5V dc
- **Max. Input current:** 20mA
- **Input impedance:** 780ohm
- **Input current @ nominal voltage:** 15 mA
- **Input voltage:** 12V dc
- **Max. Surge current:** 270A dc
- **Leakage current:** 0.3mA
- **Min. Turn-On Time:** 1.8µs
- **Max. Turn-On Time:** 300µs
- **Operating voltage:** 0 – 60V dc
- **Load current, min:** 60A dc
- **Load current, max:** 100A dc

### 25A DC Switching - High Voltage

### 40A to 100A - continued

#### Mtr. List No. Control Voltage Load Surge Current Voltage Safe Thermal Pad
LVD75A100 23V DC to 24V DC 10mA 60A 3V DC to 75V DC 180A ✓
LVD75C100 23V DC to 24V DC 10mA 80A 3V DC to 75V DC 220A ✓

### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 1000Vdc.**
- **Built in Over-Voltage Protection (800V Model).**

#### Input Specifications

- **Control voltage:** 12V dc
- **Turn on voltage - Max:** 3.5V dc
- **Max. Input current:** 20mA
- **Input impedance:** 780ohm
- **Input current @ nominal voltage:** 15 mA
- **Input voltage:** 12V dc
- **Max. Surge current:** 180A dc
- **Leakage current:** 0.1mA
- **Min. Turn-On Time:** 1.8µs
- **Max. Turn-On Time:** 300µs
- **Operating voltage:** 0 – 60V dc
- **Load current, min:** 60A dc
- **Load current, max:** 100A dc

### 25A DC Switching - High Voltage

### 40A to 100A - continued

#### Mtr. List No. Control Voltage Load Surge Current Voltage Safe Thermal Pad
LVD75A100 23V DC to 24V DC 10mA 60A 3V DC to 75V DC 180A ✓
LVD75C100 23V DC to 24V DC 10mA 80A 3V DC to 75V DC 220A ✓

### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 1000Vdc.**
- **Built in Over-Voltage Protection (800V Model).**

#### Input Specifications

- **Control voltage:** 12V dc
- **Turn on voltage - Max:** 3.5V dc
- **Max. Input current:** 20mA
- **Input impedance:** 780ohm
- **Input current @ nominal voltage:** 15 mA
- **Input voltage:** 12V dc
- **Max. Surge current:** 180A dc
- **Leakage current:** 0.1mA
- **Min. Turn-On Time:** 1.8µs
- **Max. Turn-On Time:** 300µs
- **Operating voltage:** 0 – 60V dc
- **Load current, min:** 60A dc
- **Load current, max:** 100A dc

### 25A DC Switching - High Voltage

### 40A to 100A - continued

#### Mtr. List No. Control Voltage Load Surge Current Voltage Safe Thermal Pad
LVD75A100 23V DC to 24V DC 10mA 60A 3V DC to 75V DC 180A ✓
LVD75C100 23V DC to 24V DC 10mA 80A 3V DC to 75V DC 220A ✓

### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 1000Vdc.**
- **Built in Over-Voltage Protection (800V Model).**

#### Input Specifications

- **Control voltage:** 12V dc
- **Turn on voltage - Max:** 3.5V dc
- **Max. Input current:** 20mA
- **Input impedance:** 780ohm
- **Input current @ nominal voltage:** 15 mA
- **Input voltage:** 12V dc
- **Max. Surge current:** 180A dc
- **Leakage current:** 0.1mA
- **Min. Turn-On Time:** 1.8µs
- **Max. Turn-On Time:** 300µs
- **Operating voltage:** 0 – 60V dc
- **Load current, min:** 60A dc
- **Load current, max:** 100A dc

### 25A DC Switching - High Voltage

### 40A to 100A - continued

#### Mtr. List No. Control Voltage Load Surge Current Voltage Safe Thermal Pad
LVD75A100 23V DC to 24V DC 10mA 60A 3V DC to 75V DC 180A ✓
LVD75C100 23V DC to 24V DC 10mA 80A 3V DC to 75V DC 220A ✓

### 25A DC Switching - High Voltage

800 to 1000Vdc rated

- **Solid State Switch - High Reliability.**
- **DC Load Switching up to 1000Vdc.**
- **Built in Over-Voltage Protection (800V Model).**

#### Input Specifications

- **Control voltage:** 12V dc
- **Turn on voltage - Max:** 3.5V dc
- **Max. Input current:** 20mA
- **Input impedance:** 780ohm
- **Input current @ nominal voltage:** 15 mA
- **Input voltage:** 12V dc
- **Max. Surge current:** 180A dc
- **Leakage current:** 0.1mA
- **Min. Turn-On Time:** 1.8µs
- **Max. Turn-On Time:** 300µs
- **Operating voltage:** 0 – 60V dc
- **Load current, min:** 60A dc
- **Load current, max:** 100A dc
Phase Angle Controller and SSR

The MCPC series of proportional controllers incorporates a complete phase-fused logic system and solid state relay in one small industry standard package. The MCPC uses microprocessor controlled logic, accepts a wide range of input logic power supply, provides an output status indicator, and has 4 modes of analog control input along with an Enable/Disable control.

The MCPC does not require any calibration adjustment, is optically isolated to 4000V rms, includes an internal snubber network and has a load rating of 50A. The series is particularly suited to applications such as tungsten lamp dimming, vibratory feeders, universal motor control and resistive heating element control.

- Phase Angle Controller and SSR in one industry standard package
- Low voltage, current and potentiometer control versions available
- Separate output enable/disable control
- SCR Based output load switching
- Internal snubber network
- 50 Amp. Load current
- 0 - 100% Control range

<table>
<thead>
<tr>
<th>Mftrs. List No.</th>
<th>Input Voltage</th>
<th>Supply Voltage</th>
<th>Current</th>
<th>Current</th>
<th>Load Voltage</th>
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</thead>
<tbody>
<tr>
<td>MCPC2450D</td>
<td>0 - 10VDC</td>
<td>8V to 32V DC</td>
<td>28mA to 30mA</td>
<td>150mA to 50A</td>
<td>180Vrms to 28Vrms</td>
</tr>
<tr>
<td>MCPC2450D</td>
<td>4 - 20mA</td>
<td>8V to 32V DC</td>
<td>28mA to 30mA</td>
<td>150mA to 50A</td>
<td>180Vrms to 28Vrms</td>
</tr>
<tr>
<td>MCPC4980D</td>
<td>4 - 20mA</td>
<td>8V to 32V DC</td>
<td>28mA to 30mA</td>
<td>150mA to 50A</td>
<td>180Vrms to 30Vrms</td>
</tr>
</tbody>
</table>

517372

SSR Heat Sinks

- Optimized thermal design for use with Crydom panel mount SSRs
- DIN rail and panel mountable heat sinks available
- Thermal Impedance Ratings from 5 up to 0.5 degrees C per watt
- All models Drilled and tapped to accept industry standard panel mount SSRs
- Models available to accept 1, 2 or 3 single or dual phase SSRs, or 1 three phase SSR

<table>
<thead>
<tr>
<th>Mftrs. List No.</th>
<th>Thermal Resistance (°C/W)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS050</td>
<td>0.7</td>
<td>120.7</td>
<td>149.7</td>
<td>177-5196</td>
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<tr>
<td>HS050D</td>
<td>0.5</td>
<td>152.4</td>
<td>152.4</td>
<td>177-5198</td>
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<tr>
<td>HS050DR</td>
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<td>44.5</td>
<td>80</td>
<td>177-5091</td>
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<tr>
<td>HS050DOR</td>
<td>3</td>
<td>40.2</td>
<td>81</td>
<td>177-5093</td>
</tr>
<tr>
<td>HS050RO</td>
<td>2</td>
<td>90.2</td>
<td>81.3</td>
<td>177-5094</td>
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<tr>
<td>HS050RRO</td>
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<td>45.2</td>
<td>81</td>
<td>177-5095</td>
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<tr>
<td>HS050RRO</td>
<td>1.5</td>
<td>45.2</td>
<td>81</td>
<td>177-5096</td>
</tr>
</tbody>
</table>

512268

DIN rail and Panel Mount

45A, 55A, 65A models
ac & dc control versions
Ready to mount and use
Low leakage
Integral heatsink
Status indicating green LED
UL Recognised, CSA, VDE and CE approved

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Control - Zero Cross</td>
<td>4V to 32V DC</td>
<td>14mA</td>
<td>45</td>
<td>48Vrms to 53V0m</td>
<td>SCR</td>
<td>1200</td>
<td>161-3774</td>
</tr>
</tbody>
</table>

22.5mm DIN rail Mount

<table>
<thead>
<tr>
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<tr>
<td>DC Control - Zero Cross</td>
<td>4V to 32V DC</td>
<td>15-20mA</td>
<td>10A</td>
<td>24Vrms to 28V</td>
<td>SCR</td>
<td>1200</td>
<td>161-3775</td>
</tr>
<tr>
<td>DC Control - Random Turn-On</td>
<td>4V to 32V DC</td>
<td>15-20mA</td>
<td>10A</td>
<td>24Vrms to 28V</td>
<td>SCR</td>
<td>600</td>
<td>1203-3420</td>
</tr>
<tr>
<td>AC Control - Zero Cross</td>
<td>9V to 14V AC</td>
<td>15mA</td>
<td>15A</td>
<td>15V rms</td>
<td>SCR</td>
<td>1200</td>
<td>161-3776</td>
</tr>
<tr>
<td>AC Control - Random Turn-On</td>
<td>9V to 14V AC</td>
<td>15mA</td>
<td>15A</td>
<td>15V rms</td>
<td>SCR</td>
<td>600</td>
<td>1203-3420</td>
</tr>
</tbody>
</table>

Filters, Single Phase and Three Phase

- Filter provides simple method of supressing thyristor noise from SSRs
- Designed to enable equipment incorporating SSRs to conform to EMI directive 89/336/EEC
- Connects between incoming lines of the mains supply, reducing conducted noise by around 30dB
- Easily adds to existing designs
- Single filter is normally sufficient for multiple SSR systems
- Suitable for use with any Crydom single phase and three phase a.c. SSRs

<table>
<thead>
<tr>
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<td>24Vrms to 28V</td>
<td>SCR</td>
<td>600</td>
<td>1203-3420</td>
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<td>DC Control - Random Turn-On</td>
<td>4V to 32V DC</td>
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<td>1203-3420</td>
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<td>9V to 14V AC</td>
<td>15mA</td>
<td>15A</td>
<td>15V rms</td>
<td>SCR</td>
<td>600</td>
<td>1203-3420</td>
</tr>
</tbody>
</table>

Farnell element14.com
Solid State Relays - Crydom - continued

22.5mm DIN rail mount - continued
Series CKR240 - continued

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>90V AC to 280V AC</td>
<td>2A</td>
<td>240Vms to 280Vrms</td>
<td>SCR</td>
<td>600</td>
<td>120</td>
<td>CKR240110</td>
</tr>
<tr>
<td>90V AC to 280V AC</td>
<td>4A</td>
<td>240Vms to 280Vrms</td>
<td>SCR</td>
<td>600</td>
<td>240</td>
<td>CKR240410</td>
</tr>
<tr>
<td>90V AC to 280V AC</td>
<td>6A</td>
<td>480Vms to 280Vrms</td>
<td>SCR</td>
<td>1300</td>
<td>240</td>
<td>CKR44830</td>
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</table>

AC Control - Random Turn-On

90V AC to 280V AC | 0-4A | 240Vms to 280Vrms | SCR | 600 | 1200 | CKR24030-10 |
90V AC to 280V AC | 6A | 480Vms to 280Vrms | SCR | 1300 | 1200 | CKR44830-10 |

Solid State Relays - Finder

2A to 5A PCB Mount SSRs

- PCB mount or via PCB or DIN rail socket
- Silent, high speed switching with long electrical life
- Wash tight: RT III
Series 34 Dimensions: L=28, W=5, H=15mm

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Input Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.81.7.005.9024</td>
<td>5V</td>
<td>120-0301</td>
<td></td>
</tr>
<tr>
<td>34.81.7.012.9024</td>
<td>12V</td>
<td>120-0302</td>
<td></td>
</tr>
<tr>
<td>34.81.7.005.8240</td>
<td>5V</td>
<td>120-0303</td>
<td></td>
</tr>
<tr>
<td>34.81.7.012.8240</td>
<td>12V</td>
<td>120-0304</td>
<td></td>
</tr>
</tbody>
</table>

Solid State Relays - Omron

5A to 40A Surface Mounting

G3NA Series

- AC or DC output switching
- AGC or DC control available
- Built in varistor protection
- Operation indicator (red LED) enables monitoring
- Protective cover for greater safety
- UL Recognised, CSA approved

Load Current (A) | Load Voltage | Output Device | Mfrs. List No. | Order Code |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>19 - 264V ac</td>
<td>Triac</td>
<td>G3NA-211B 200-240VAC</td>
<td>118-1254</td>
</tr>
<tr>
<td>20</td>
<td>19 - 264V ac</td>
<td>Triac</td>
<td>G3NA-222B 200-240VAC</td>
<td>118-1255</td>
</tr>
</tbody>
</table>

DC Input - 24V ac Output

- 5 | 19 - 264V ac | Triac | G3NA-205B 5-24DC | 118-1258 |
- 10 | 19 - 264V ac | Triac | G3NA-211B 5-24DC | 118-1259 |
- 20 | 19 - 264V ac | Triac | G3NA-222B 5-24DC | 118-1260 |
- 40 | 19 - 264V ac | Triac | G3NA-304B 5-24DC | 118-1261 |

G3R Series Solid State Relays

- Compact SSR’s for I/O Interface with High Dielectric Strength Requirements
- High speed with optimum input ratings
- Same footprint as G2R Series relays
- Coupled approved by VDE 0884 ensuring an I/O dielectric strength of 4 kV
- Incorporates an easy-to-see monitoring indicator
- UL Recognised. Approved by CSA and TUV

G3R Solid State Relays

Control Voltage | Load Current | Mfrs. List No. | Order Code |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4-32V (dc)</td>
<td>0.1-2A (118-1636)</td>
<td>118-1253</td>
<td></td>
</tr>
<tr>
<td>1500Ohms</td>
<td>0.1-2A (118-1634)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5kV</td>
<td>Temperature range 30%-90%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A0H Series - 600mA/1.2A

- Compact DIP type SSR that’s ideal for AC load control
- Handles both 100 and 200 V AC loads
- High dielectric strength: 5,000 V AC

H = 9.79, W = 6.4, D = 3.4mm
### High Frequency Relays - Panasonic

**2.6GHz 75Ω**

This range of high frequency relays has single side stable type contacts. The relay turns on when the coil is energised and turns off when de-energised.

- **Low insertion loss**
- **Low VSWR performance**
- **SMD and Through Hole Devices available**

**Technical Specifications**

- **Contact arrangement:** DPDT
- **Contact resistance:** 150m ohm max.
- **Contact life:** 5,000,000 cycles

**Order Codes**

- **Volts**
  - 5V
  - 12V

- **Mtrs.**
  - 1A

- **List No.**
  - 990-6651

- **Order Code**
  - 732-5

- **Price Each**
  - 1+ 25+ 50+

---

**High Frequency Relays - Teledyne**

**DPDT Sensitive Coil - TO5**

The TO-5 style relay has become one of the industry standards for switching from low level to 1 ampere. This sensitive coil version has gold plated precious metal alloy contacts that ensure reliable switching from low level to full rated load.

By virtue of the low intercontact capacitance and circuit losses these relays are ideal for switching frequency ranges well into the UHF spectrum. Applications are to be found wherever transmit receive switching is required and space is at a premium.

- **High reliability**
- **Small size**
- **Low coil power consumption**
- **Low inter-contact capacitance**
- **High resistance to shock and vibration**
- **All welded construction**

**Contact arrangement**

- **Contact resistance:** 6.0 ohms max.
- **Temperature range:** -55°C to 85°C

**Price Each**

- 1+ 10+ 25+

---

**DPDT Standard**

The 172 relay is an ultra miniature, hermetically sealed, armature relay for commercial applications. Its low profile height of 7.11mm and 2.54mm grid spaced terminals, makes it an ideal choice where extreme packaging density and/or close PCB spacing are required. The relay operates well into the UHF spectrum making it ideal for applications including telecommunications, test equipment, mobile communications and attenuators.

- **High reliability**
- **Compact size**
- **Low coil power consumption**
- **High resistance to shock and vibration**
- **All welded construction**

**Contact arrangement**

- **Contact resistance:** 6.0 ohms max.
- **Temperature range:** -55°C to 85°C

**Price Each**

- 1+ 10+ 25+

---

**DPDT Surface Mount**

The GRF172 surface-mount relay is an ultra-miniature, hermetically sealed, armature relay for 2.5 GHz RF applications. Its low profile height (8.38mm) and small (2.54mm) grid spaced terminals make it an ideal choice where close PC board spacing are required.

The GRF172 features a unique ground shield that isolates and shields each lead to ensure excellent contact-to-contact and pole-to-pole isolation. This ground shield produces improved high-frequency performance as well as parametric repeatability.

- **All welded construction**
- **High magnetic efficiency and mechanical rigidity**
- **High resistance to mechanical shock and vibration**
- **High isolation between control and signal paths**

**Contact arrangement**

- **Contact resistance:** 6.0 ohms max.
- **Temperature range:** -55°C to 85°C

**Price Each**

- 1+ 10+ 25+
High Frequency Relays - Teledyne - continued

DPDT Surface Mount - continued
2.5 GHz - GRF172 - continued

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>990-6760 GRF172-12</td>
<td>£ 414510</td>
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</table>

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V 4000</td>
<td>990-6600</td>
<td>£ 414510</td>
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</tbody>
</table>

DPDT High Repeatability TO-5
3 GHz - RF300 Series

- Designed to provide improved RF insertion loss repeatability over the entire frequency range by balancing the aggregate insertion loss elements of the relays design. Suitable for use in all high performance applications where high speed signals must be transferred. These relays feature broad bandwidth, metal enclosure for EMI shielding, ground pin option to aid in case grounding. Unique construction features and manufacturing techniques provide excellent resistance to environmental extremes and high reliability.

- High repeatability
- Broad bandwidth
- EMI shielded
- High resistance to ESD
- High isolation between control and signal paths

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>Contact rating</th>
<th>Contact resistance</th>
<th>Contact life</th>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDT / 2 Form C</td>
<td>1A @ 28V dc</td>
<td>150mohm</td>
<td>10,000,000 cycles</td>
<td>990-6878</td>
<td>RF300-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>£ 990-6878</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6690</td>
</tr>
</tbody>
</table>

DPDT Standard - TO5
712 Series

DPDT Standard TO-5 style relay with gold plated precious metal alloy contacts to ensure reliable switching from low level to full rated load. Designed for high-density PCB mounting they are among the most versatile ultraminiature relays available because of their compact size and low coil power dissipation.

- High reliability
- Compact size
- Low coil power consumption
- High resistance to shock and vibration
- All welded construction

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>Contact rating</th>
<th>Contact resistance</th>
<th>Contact life</th>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDT / 2 Form C</td>
<td>1A @ 28V dc</td>
<td>150mohm</td>
<td>10,000,000 cycles</td>
<td>990-6687</td>
<td>712-5</td>
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<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>£ 990-6687</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6688</td>
</tr>
</tbody>
</table>

DPDT High Repeatability
0.3 MHz to 4 GHz - RF100 Series

- Designed to provide improved RF insertion loss repeatability over the frequency range by balancing the aggregate insertion loss elements of the relays’ design. Suitable for use in all high performance applications in which high speed signals must be transferred. The relays feature broad bandwidth, metal enclosure for EMI shielding to ensure that control and signal paths are highly resistant to ESD. Applications include attenuators and other precision RF circuits.

- High repeatability
- Broad bandwidth
- EMI shielded
- High resistance to ESD
- High isolation between control and signal paths

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>Contact rating</th>
<th>Contact resistance</th>
<th>Coil consumption</th>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDT</td>
<td>10 to 50µA / 10 to 50mV</td>
<td>100mohm</td>
<td>500mW</td>
<td>991-3580</td>
<td>RF100-5</td>
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</table>

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>991-3580</td>
<td>RF100-5</td>
</tr>
<tr>
<td>185-5483</td>
<td>HF3-52</td>
</tr>
<tr>
<td>185-5484</td>
<td>HF3-01</td>
</tr>
<tr>
<td>185-5485</td>
<td>HF3-02</td>
</tr>
<tr>
<td>185-5486</td>
<td>HF3-03</td>
</tr>
<tr>
<td>185-5487</td>
<td>HF3-04</td>
</tr>
<tr>
<td>185-5488</td>
<td>HF3-05</td>
</tr>
<tr>
<td>185-5489</td>
<td>HF3-06</td>
</tr>
<tr>
<td>185-5490</td>
<td>HF3-07</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>990-6762</td>
<td>£ 25+</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6770</td>
<td></td>
</tr>
</tbody>
</table>

DPDT - TO5
ER142 Series

The TO-5 style relay series is one of the industry standards for switching from low level to 1 ampere. Gold plated precious metal alloy contacts assure reliable switching from low level to full rated load. These relays are ideal for switching high frequency ac or high speed digital signals with applications wherever transmit/receive switching is required.

- High reliability
- Low inter-contact capacitance
- High magnetic efficiency
- High resistance to shock and vibration
- All welded construction

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>Contact rating</th>
<th>Contact resistance</th>
<th>Contact life</th>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDT / 2 Form C</td>
<td>1A @ 28V dc</td>
<td>100mohm</td>
<td>10,000,000 cycles</td>
<td>990-6835</td>
<td>ER412-5</td>
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<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
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<tbody>
<tr>
<td>990-6843</td>
<td>ER412-12A/G</td>
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</table>

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>990-6835</td>
<td>£ 25+</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6843</td>
<td></td>
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</tbody>
</table>

DPDT Low Profile
ER114 Series

Low inter-contact capacitance and contact circuit losses allows for reliable signal transfer well into the UHF spectrum. The 114 series relays are low profile (6.9mm), ultra-miniature, hermetically sealed, armature relay with 2.54mm grid spaced terminals. Gold plated precious metal alloy contacts assure reliable switching from low level to full rated load. These relays are ideal for switching high frequency ac or high speed digital signals.

- High reliability
- Low inter-contact capacitance
- High resistance to shock and vibration
- All welded construction

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>Contact rating</th>
<th>Contact resistance</th>
<th>Contact life</th>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDT / 2 Form C</td>
<td>1A @ 28V dc</td>
<td>100mohm</td>
<td>10,000,000 cycles</td>
<td>990-6827</td>
<td>ER114-12</td>
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<table>
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<tbody>
<tr>
<td>990-6843</td>
<td>ER114-12</td>
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</table>

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>990-6827</td>
<td>£ 25+</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6843</td>
<td></td>
</tr>
</tbody>
</table>

High Frequency Relays - Tyco Electronics
1A Single Pole
HF3 Series, 50Ω

- DC to 3 GHz frequency range
- 2A maximum switching current
- Polarized coil
- Low power consumption ≤140 mW
- Immersion cleanable

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>Frequency range</th>
<th>Impedance</th>
<th>VSWR @ 3 GHz</th>
<th>Continuous contact current</th>
<th>Order Code</th>
<th>Mfrs. List No.</th>
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<tbody>
<tr>
<td>DPDT - 1 Form C</td>
<td>DC to 30GHz</td>
<td>50Ω</td>
<td>1.2</td>
<td>2A @ max. ambient temperature</td>
<td>991-3580</td>
<td>HF3-52</td>
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</table>

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>185-5483</td>
<td>HF3-52</td>
</tr>
<tr>
<td>185-5476</td>
<td>HF3-01</td>
</tr>
<tr>
<td>185-5482</td>
<td>HF3-02</td>
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<tr>
<td>185-5477</td>
<td>HF3-03</td>
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<tr>
<td>185-5485</td>
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<td>HF3-06</td>
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<td>HF3-08</td>
</tr>
<tr>
<td>185-5490</td>
<td>HF3-09</td>
</tr>
<tr>
<td>185-5491</td>
<td>HF3-10</td>
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<tr>
<td>185-5492</td>
<td>HF3-11</td>
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<td>185-5493</td>
<td>HF3-12</td>
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<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>990-6762</td>
<td>£ 25+</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6770</td>
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<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>990-6700</td>
<td>RF100-12</td>
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<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V 50</td>
<td>990-6762</td>
<td>£ 25+</td>
</tr>
<tr>
<td>12V</td>
<td>390 £ 990-6770</td>
<td></td>
</tr>
</tbody>
</table>
Shielded High Frequency Relay
HFS Series

- Y-Design
- Frequency range from DC to 6 GHz
- Impedance 50Ω
- 50 W hot switching
- 50 W RF power carry capacity
- Small dimensions
- Immersion cleanable
- Low power consumption of ≤140 mW

H = 10, W = 16, D = 7.6mm

Contact arrangement: SPDT
Contact Resistance: max. 1000 ohms
Contact Rating: 1A @ 24Vdc/120Vac
Max. Continuous RF power: 50 W

Contact arrangement: DPCO
Contact Material: AgAu
Dielectric Strength: 1000V ac (coil-contact)
Temperature Range: -25°C to +55°C

Signal Relays - SPC MultiComp

Subminiature - HRA Series

- SPCO Series of relays
- Small size & light weight
- Plastic sealed (washable)
- DIL pitch terminal

Contact arrangement: SPCO
Life Elect.: 100,000 operations
Contact Rating: 1A @ 24Vdc/120Vac
1,000,000 Operations
Voltage Switching Max: 30Vdc/120Vac
Resistance Insulation: 5000Ω
Current Switching Max: 2.0A
Current Rating: Gold/Silver
Max.: 2.0A

Subminiature Telecom - EA2/EB2 Series

- 1500V FCC surge
- High sensitivity (140mV)
- Fully sealed
- UL Recognised & CSA approved

Contact arrangement: DPCO
Contact Material: Silver Alloy
Dielectric Strength: 2000V ac (coil-contact)
Temperature Range: -75°C to +150°C

Subminiature - High Sensitivity

- Low profile
- Fully sealed
- Sensitive coil - 200mW
- UL Recognised

Contact arrangement: DPCO
Contact Material: Gold clad Silver
Dielectric Strength: 1000V ac (coil-contact)
Temperature Range: -40°C to +85°C

Subminiature - High Sensitivity

MCS1H Series

- Low profile
- Fully sealed
- High coil sensitivity
- UL Recognised

Contact arrangement: SPCO
Contact Rating: 1A @ 24Vdc/120Vac
1A
Dielectric Strength: 1000V ac (coil-contact)
Temperature Range: -5°C to +55°C

Signal Relays - NEC

Subminiature Telecom - EA2/EB2 Series

- PCB and Surface Mount

- 1500V FCC surge
- High sensitivity (140mV)
- Fully sealed
- UL Recognised & CSA approved

Contact arrangement: DPCO
Contact Material: Silver Alloy
Dielectric Strength: 2000V ac (coil-contact)
Temperature Range: -75°C to +150°C
Subminiature Telecom - EA2/EB2 Series - continued

### PCB and Surface Mount - continued

<table>
<thead>
<tr>
<th>COIL</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPCO - UA2 Series</td>
<td>1A @ 24V dc</td>
<td>$</td>
</tr>
<tr>
<td>Voltage</td>
<td>Order Code</td>
<td>Price Each</td>
</tr>
<tr>
<td>5V dc</td>
<td>109-4048</td>
<td>$</td>
</tr>
<tr>
<td>12V dc</td>
<td>109-4049</td>
<td>$</td>
</tr>
<tr>
<td>24V dc</td>
<td>109-4050</td>
<td>$</td>
</tr>
<tr>
<td>DPCO - UB2 Series</td>
<td>1A @ 24V dc</td>
<td>$</td>
</tr>
<tr>
<td>Voltage</td>
<td>Order Code</td>
<td>Price Each</td>
</tr>
<tr>
<td>5V dc</td>
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</tr>
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<td>$</td>
</tr>
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<td>24V dc</td>
<td>109-4053</td>
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<td>24V dc</td>
<td>109-4056</td>
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**Signal Relays - NEC - continued**

**Subminiature Telecom - EA2/EB2 Series - continued**

- **PCB and Surface Mount - continued**
- **DPCO - UA2 Type**
  - H = 8.8mm, W = 10.6mm, D = 5.7mm
- **UB2 Type**
  - H = 8.8mm, W = 10.6mm, D = 5.7mm
- **UC2 Type**
  - H = 5.5mm, W = 10.6mm, D = 6.5mm
- **UD2 Type**
  - H = 5.5mm, W = 10.6mm, D = 6.5mm

---

**Subminiature - Signal**

- **DPCO - 1A, 220V dc/250V ac**
  - Wide switching capacity of 1mA to 1A
  - Dielectric strength of 1500 VAC and an impulse withstand voltage of 2,500 V for 2 x 10 μs
  - Conforms to FCC Part 68
  - Conforms to CS/CE marked
  - Conforms to UL Recognized and CSA approved

---

**High Sensitivity Telecom - EF2 Series**

- **Surface Mount**
  - Wide switching capacity of 1mA to 1A
  - Dielectric strength of 1500 VAC and an impulse withstand voltage of 2,500 V for 2 x 10 μs
  - Conforms to FCC Part 68
  - Conforms to CS/CE marked
  - Conforms to UL Recognized and CSA approved

---

**1A Signal Relay**

- **G6-Y Series**
  - Ultra-compact and Slim
  - Single-winding latching models to save energy
  - Conforms to FCC Part 68
  - Conforms to IEC60950/UL1950/EN60950

---

**Subminiature - High Sensitivity - G5V-1 Series**

- **SPCO contacts**
  - Wide switching capacity of 1mA to 1A
  - Fully sealed
  - UL Recognized and CSA approved
  - Conforms to FCC Part 68

---

**Subminiature - High Sensitivity - G5V-3 Series**

- **SPCO contacts**
  - Wide switching capacity of 1mA to 1A
  - Fully sealed
  - UL Recognized and CSA approved
  - Conforms to FCC Part 68

---

**Signal Relays - Omron**

- **G6-J-Y Series**
  - Ultra-compact and Slim
  - Single-winding latching models to save energy
  - Conforms to FCC Part 68
  - Conforms to IEC60950/UL1950/EN60950

---

**Subminiature Telecom - EE2 Series**

- **Surface Mount**
  - Conforms to IEC950/UL1950/EN60950
  - Meets UL Recognised and CSA approved
  - Recognised and CSA certified
### Miniature Signal - G6E Series

- **SPCD contacts**
- **UL Recognised and CSA approved**
- **Fully sealed**

**Contact arrangement:**
- SPOT/SPDT

**Contact material:**
- Ag (Au-Aloy)

**Temperature range:**
- -40°C to +70°C

<table>
<thead>
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<th>Price Each</th>
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<td>960</td>
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<td>24V dc</td>
<td>3.84k</td>
<td>994-9583</td>
<td>+</td>
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### G6L Series

- **High density mounting**
- **Dielectric strength of 1000V ac between coil and contacts**
- **High dielectric strength of 750V ac between contacts of the same polarity**
- **Conforms to FCC Part 68**
- **Approved to CSA C22.2 No. 60950 and UL Recognised**
- **Use of lead completely eliminated**

**Operating temperature:**
- -40°C to 85°C

**Max. switched voltage:**
- 125V, 60V

**Rated carry current:**
- 1A

**Coil power - Stable:**
- 140mW (230mW 24V version)

**Coil power - Latching:**
- 100mW 24V

**Impulse withstand voltage:**
- 2500V for 2 x 10秒

**Dielectric strength:**
- 1000V ac between coil and contacts of the same polarity

**Order Code**
- Mftrs. List No.

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<tr>
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<th>Code</th>
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<td>48V</td>
<td>5.7k</td>
<td>994-2045</td>
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### G6K Series

- **Low profile and weight for improved mounting efficiency**
- **Low power consumption**
- **Dielectric strength of 1500V ac**
- **Conforms to FCC Part 68**
- **Approved to CSA C22.2 No. 950 and UL Recognised**

**Operating temperature:**
- -40°C to 70°C

**Max. switched voltage:**
- 1500VAC

**Rated load:**
- 300mA @ 1A @ 30V dc

**Rated current:**
- 1A

**Price Each**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1+</td>
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<tr>
<td>100+</td>
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<tr>
<td>250+</td>
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<td>500+</td>
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<td>245</td>
<td>998-9626</td>
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### G6K-2F Series

- **Conforms to FCC Part 68**
- **Single-winding latching models to save energy**
- **CSA Approved and UL Recognised**

**Rated carry current:**
- 1A

**Coil power - Stable:**
- 110mW, 125VAC

**Rated load:**
- 300mA @ 1A @ 30V dc

**Operating temperature:**
- To 85°C

**Price Each**

<table>
<thead>
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<th>Price Each</th>
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<tbody>
<tr>
<td>1+</td>
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<tr>
<td>20+</td>
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<tr>
<td>50+</td>
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<td>100+</td>
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<td>250+</td>
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<td>G6K-2F 3DC</td>
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<tr>
<td>444-6082</td>
<td>21.1mA</td>
<td>G6K-2P 3DC</td>
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<td>444-6084</td>
<td>9.1mA</td>
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<td>444-6180</td>
<td>4.6mA</td>
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<td>12V</td>
<td>1,151mA</td>
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<td>24V</td>
<td>5,220mA</td>
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<tr>
<td>3V</td>
<td>910mA</td>
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<tr>
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<td>237mA</td>
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</table>
**Signal Relays - Omron - continued**

### DPDT 1A - continued

#### G6K Series - continued

- **Contact arrangement:** DPCO
- **Contact rating:** 2A @ 30V dc, 200mW (24V)
- **Max. switch voltage:** 220VDC, 240VAC
- **Temperature range:** -40°C to +85°C
- **Coil consumption:** 500mW

**Subminiature - High Sensitivity - G6S Series**

- **Contact arrangement:** DPCO
- **Contact rating:** 2A @ 30V dc, 500mA @ 125V ac
- **Contact material:** Silver, Gold Plated
- **Dielectric strength:** 1000V ac (coil-contact)
- **Temperature range:** -25°C to +120°C

**Subminiature - Ultra Sensitivity - G6S Series**

- **Contact arrangement:** DPCO
- **Contact rating:** 2A @ 30V dc, 500mA @ 125V ac
- **Contact material:** Silver, Gold Plated
- **Dielectric strength:** 1000V ac (coil-contact)
- **Temperature range:** -25°C to +120°C

**High Sensitivity - G6A Series**

- **Contact arrangement:** DPCO and 4PCO bifurcated contacts
- **Fully sealed, suitable for immersion cleaning**
- **Satisfies CCIT lighting test requirement**
- **Permanent magnet construction, coil polarity must be observed**

### Electromechanical

#### Relays & Solenoids

- **Subminiature - G5V-2 Series**
- **Contact arrangement:** DPCO
- **Contact rating:** 2A @ 30V dc, 500mA @ 125V ac
- **Contact material:** Silver, Gold Plated
- **Dielectric strength:** 1000V ac (coil-contact)
- **Temperature range:** -25°C to +60°C

- **Subminiature - G6S Series**
- **Contact arrangement:** DPCO
- **Contact rating:** 2A @ 30V dc, 500mA @ 125V ac
- **Contact material:** Silver, Gold Plated
- **Dielectric strength:** 1000V ac (coil-contact)
- **Temperature range:** -25°C to +60°C

- **Subminiature - G6A Series**
- **Contact arrangement:** DPCO and 4PCO bifurcated contacts
- **Fully sealed, suitable for immersion cleaning**
- **Satisfies CCIT lighting test requirement**
- **Permanent magnet construction, coil polarity must be observed**

---

**COIL**

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<th>Volts</th>
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<td>2A @ 30V dc, 500mA @ 125V ac</td>
</tr>
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<td>2A @ 30V dc, 500mA @ 125V ac</td>
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</tr>
<tr>
<td>24V DC</td>
<td>2A @ 30V dc, 500mA @ 125V ac</td>
</tr>
</tbody>
</table>
**High Isolation - G6A-BS Series**

- **DCPC contacts**
- **Approved to BABT BS6301**
- **Fully sealed**
- **2KVrms coil/contact and 2.5mm creepage/clearance**
- Suitable for telecoms and office equipment

**Signal Relays - Panasonic**

- **DPCO contacts**
- **Fully sealed**
- **Suitable for telecoms and office equipment**

**Subminiature - TQ2/TQ2-L2 Series**

- **DPCO contacts**
- **Approved to BABT BS6301**
- **Fully sealed**
- **2KVrms coil/contact and 2.5mm creepage/clearance**
- Suitable for telecoms and office equipment

**Miniature - TN/TNL2 Series**

- **Non Latching/1 Coil Latching**
- **2 Coil Latching**
- **Latching**
- **Non Latching**

**Subminiature - High Sensitivity - TX2 Series**

- **High contact capacity**
- **High coil/contact breakdown voltage 2kV**
- **High insulation version conforming to EN41003**
- **Surface mount versions available with gull wing contacts**
Signal Relays - Panasonic - continued

4A Polarized TX Series

- Low profile 4mm (0.157")
- High contact capacity 2A
- Surge withstand voltage between contact and coil 2500V (Telecordia)
- UL Recognised, CSA & BSI approved

<table>
<thead>
<tr>
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<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>CONTACTS</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
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</table>

Low Profile - NF2EB/4EB Series

- DPCO and 4PCO contacts
- Fully sealed
- UL Recognised

<table>
<thead>
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<td>2A</td>
<td>0.15W</td>
<td>13.8 x 19.6 x 10.8</td>
</tr>
</tbody>
</table>

Subminiature - DS2 Series

- High sensitivity
- High switching capacity
- High breakdown voltage

<table>
<thead>
<tr>
<th>RELAY</th>
<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5VDC</td>
<td>2859200003</td>
<td>5VDC</td>
<td>0.15W</td>
<td>29.6 x 19.6 x 10.8</td>
</tr>
<tr>
<td>12VDC</td>
<td>2859200004</td>
<td>12VDC</td>
<td>0.15W</td>
<td>29.6 x 19.6 x 10.8</td>
</tr>
</tbody>
</table>

Signal Relays - Tyco Electronics

1A Subminiature P1 Series

- SPCO sealed relay
- Suitable for data, telecoms, control or medical equipment
- UL Recognised, CSA and CECC approved

<table>
<thead>
<tr>
<th>RELAY</th>
<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>206964</td>
<td>1A</td>
<td>0.15W</td>
<td>1.9 x 10.6 x 4</td>
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</tbody>
</table>

SPDT 1A OUAZ Series

- Contacts suitable for low loads
- Small size
- 2.54 terminal pitch - same as IC socket terminal pitch
- Sensitive coil, 200mW
- Immersion cleanable, sealed plastic case
- UL Recognised and CSA Approved

<table>
<thead>
<tr>
<th>RELAY</th>
<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12VDC</td>
<td>207074</td>
<td>12VDC</td>
<td>0.15W</td>
<td>3.6 x 10.6 x 4</td>
</tr>
</tbody>
</table>

Subminiature - DS3 Series

- High sensitivity
- High switching capacity
- Hydrofuge
- Can be used with IC socket
- UL Recognised, CSA & BSI approved

<table>
<thead>
<tr>
<th>RELAY</th>
<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5VDC</td>
<td>207075</td>
<td>5VDC</td>
<td>0.15W</td>
<td>13.5 x 7.5 x 6</td>
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<tr>
<td>12VDC</td>
<td>207076</td>
<td>12VDC</td>
<td>0.15W</td>
<td>13.5 x 7.5 x 6</td>
</tr>
</tbody>
</table>

Subminiature - TSC Series

- High sensitive coil, 150mW
- IC Compatible
- Suitable for telecom applications
- Fully sealed
- CSA Approved, UL Recognised

<table>
<thead>
<tr>
<th>RELAY</th>
<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
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<tbody>
<tr>
<td>5VDC</td>
<td>207077</td>
<td>5VDC</td>
<td>0.15W</td>
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<td>207078</td>
<td>12VDC</td>
<td>0.15W</td>
<td>13.5 x 7.5 x 6</td>
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Signal Relays - Panasonic - continued

Relays & Solenoids

- Electromechanical
- High breakdown voltage
- High switching capacity
- UL
- Fully sealed
- DPCO and 4PCO contacts

<table>
<thead>
<tr>
<th>RELAY</th>
<th>ORDER CODE</th>
<th>VOLTAGE</th>
<th>POWER</th>
<th>SIZE (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5VDC</td>
<td>2859200005</td>
<td>5VDC</td>
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<td>29.6 x 19.6 x 10.8</td>
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<tr>
<td>12VDC</td>
<td>2859200006</td>
<td>12VDC</td>
<td>0.15W</td>
<td>29.6 x 19.6 x 10.8</td>
</tr>
</tbody>
</table>

Coil Consumption:
- DPCO 290mW
- 4PCO 400mW

Contact material:
- Silver, Gold Clad

Temperature range:
- -40°C to +70°C

Breakdown voltage:
- 1500V FCC (Surge between open contacts)

Max. Switched Power:
- 60W/125VA

Max. Switched Voltage:
- 220VDC, 250V ac

Switching Voltage:
- 220V DC

Contact Resistance:
- 50mohm @ 100mA, 6V dc

Electrical Life:
- 100,000 operations (rated load)

Mechanical Life:
- 10,000,000 Operations (no load)

Contact ratings:
- 1A @ 24V dc, 120V ac (resistive)

Dielectric strength (coil/contacts): 1000V ac 50/60Hz (1 min.)
Subminiature - V23101/5 Series

- SPCO bifurcated contacts
- Sealed to IP67 suitable for immersion cleaning

Contact arrangement: SPCO
Contact rating: 1.25A (switching) / 1.25A (continuous)
Max. voltage: 120V dc/10V ac
Max. power: 30VA
Contact material: Silver nickel, Gold Overlay
Coil consumption: 140mW
Operate/Release: 3/4 ms typical
Temperature range: -40°C to +85°C

Order Code | Mfrs. List No. | Type
--- | --- | ---
421-9995 | 1393788-3 | V23079B1201B301
117-5001 | 1-1393788-1 | V23079-A1003-B301
117-5002 | 1-1393788-6 | V23079-A1203-B301
421-9995 | 1-1393788-3 | V2307891B1001B301
162-9015 | 1-1393789-5 | V23079A1001B301

2A, Subminiature P2 V23079 Series

- Standard telecom relay (Ringing and test access)
- Through Hole Type and Surface Mount Type available
- SA maximum switching current
- Bifurcated contacts
- High sensitivity - 140mW
- High mechanical shock resistance
- Immersion cleanable
- UL Recognised

L: 10mm, B: 7.5mm, H: 9.9mm
### Signal Relays - Tyco Electronics - continued

**2A, Ultraminature - continued**

<table>
<thead>
<tr>
<th>IM Series - continued</th>
</tr>
</thead>
<tbody>
<tr>
<td>COIL</td>
</tr>
<tr>
<td><strong>HTL Standard - Latching - DPDT</strong></td>
</tr>
<tr>
<td>5V 250</td>
</tr>
<tr>
<td>12V 1.44k</td>
</tr>
<tr>
<td>24V 2.88k</td>
</tr>
<tr>
<td><strong>HTL Narrow - Latching - DPDT</strong></td>
</tr>
<tr>
<td>5V 250</td>
</tr>
<tr>
<td>12V 1.44k</td>
</tr>
<tr>
<td>24V 2.88k</td>
</tr>
<tr>
<td><strong>SMT Gull Wing - Latching - DPDT</strong></td>
</tr>
<tr>
<td>5V 250</td>
</tr>
<tr>
<td>12V 1.44k</td>
</tr>
<tr>
<td>24V 2.88k</td>
</tr>
<tr>
<td><strong>SMT Gull Wings - Non-Latching - High Sensitive - DPDT</strong></td>
</tr>
<tr>
<td>5V 250</td>
</tr>
<tr>
<td>12V 1.44k</td>
</tr>
<tr>
<td>24V 2.88k</td>
</tr>
<tr>
<td><strong>DPCO 2A</strong></td>
</tr>
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</table>

- **DPCO MT2 Series, non-latching**

<table>
<thead>
<tr>
<th>COIL</th>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td><strong>DPCO 2A</strong></td>
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</table>

**FX2 Series, single coil**

<table>
<thead>
<tr>
<th>COIL</th>
<th>Order Code</th>
<th>Price Each</th>
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<tbody>
<tr>
<td><strong>High Sensitivity</strong></td>
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</table>

- **D2n Series**

<table>
<thead>
<tr>
<th>COIL</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BT 47 Type - 3A</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Power Relays - SPC MultiComp**

### 5A/10A Vertical - MCHRS4 Series

- **MCHRS4**
  - H = 15.8, W = 15.5, D = 19.0mm

- **MCHRS4E**
  - H = 17.0, W = 15.5, D = 21.5mm

#### SPCO contacts
- Sealed to allow washing after flow soldering

#### Contact Details
- **SPCO**
  - Voltages: 5V dc, 12V dc, 24V dc
  - Operate/Release: 10ms/5ms
  - Dielectric Strength: 1000VAC, 1min between open contacts
  - Contact Rating: SPST: 10A @ 125VAC, 5A @ 250VAC/30VDC
  - Dimensions: H = 16, W = 18.6, D = 10.4mm

### 5A/10A/16A Vertical - MCHRM Series

- **MCHRM1**
  - H = 20.8, W = 29, D = 12.6mm
- **MCHRM2**
  - H = 20.6, W = 29, D = 12.6mm
- **MCHRM3**
  - H = 25, W = 24.4, D = 10.4mm

#### SPCO or DPST contacts
- Sealed to allow washing after flow soldering

### 5a and 10A - Miniature MCHR53T Series

- **Contact Details**
  - **SPST/SPDT**
    - Voltages: 12V dc, 24V dc
    - Operate/Release: 720mW Standard
    - Dielectric Strength: 1000VAC, 1min between open contacts
    - Contact Rating: SPST: 10A @ 125VAC, 5A @ 250VAC/30VDC
    - Dimensions: H = 16, W = 20.9, D = 10.4mm

### 10A - Miniature MCHR53 Series

- **Contact Details**
  - **SPST**
    - Voltages: 12V dc, 24V dc
    - Operate/Release: 540mW Standard
    - Dielectric Strength: 1000VAC, 1min between open contacts
    - Contact Rating: 10A @ 125VAC, 5A @ 250VAC/30VDC
    - Dimensions: H = 16, W = 18.6, D = 10.4mm

### 30A - Sealed MCCMP8 Series

- **Contact Details**
  - **SPDT**
    - Voltages: 12V dc, 24V dc
    - Operate/Release: 900mW Standard
    - Dielectric Strength: 1500VAC, 1min between open contacts
    - Contact Rating: 30A @ 250VAC/30VDC
    - Dimensions: H = 27, W = 27.4, D = 32mm

---

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Power Relays - Finder

2A Subminiature DIL Relays
30 Series

- 2 Pole changeover contacts
- Sensitive DC coil - 200 mW
- Low level switching capability
- Subminiature - industry standard DIL package

Contact arrangement: SPDT - CO
Rated contact current/Peak current: 2A / 3A
Rated contact voltage: 125V
Contact Material: AgNi + Au
Operate/Release: 6 / 3ms typical
Temperature range: -40 to 85°C

-----------|----------------|-----------|----------------
121-7368 | 30.22.7.005.0010 | 176-5075 | 30.22.9.030.0010
121-7369 | 30.22.7.012.0010 | 121-7371 | 30.22.7.024.0010

Table 1 - Selected Characteristics

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V</td>
<td>121-7364</td>
<td>1+</td>
</tr>
<tr>
<td>12V</td>
<td>121-7369</td>
<td>1+</td>
</tr>
<tr>
<td>24V</td>
<td>121-7371</td>
<td>1+</td>
</tr>
</tbody>
</table>

6A Ultra-slim
34 Series

- Ultra slim, only 5mm wide
- Sensitive DC coil (170mW)
- 6A insulation between coil and contacts

Contact arrangement: SPCO
Contact rating: 6A @ 250V ac
Switching capacity: 250V ac
Coil consumption/Power lost:
L = 28, W = 5, H = 15 mm

-----------|----------------|-----------|----------------
116-9338 | 34.51.7.005.0010 | 194-7878 | 34.51.7.005.0019
116-9339 | 34.51.7.012.0010 | 194-7879 | 34.51.7.012.0019
116-9430 | 34.51.7.024.0010 | 194-7880 | 34.51.7.024.0019
176-5076 | 34.51.7.048.0010 | 194-7881 | 34.51.7.048.0019
116-9431 | 34.51.7.005.0010 | 194-7882 | 34.51.7.005.0010

Table 2 - Selected Characteristics

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V</td>
<td>116-9343</td>
<td>1+</td>
</tr>
<tr>
<td>12V</td>
<td>116-9339</td>
<td>1+</td>
</tr>
<tr>
<td>24V</td>
<td>176-5076</td>
<td>1+</td>
</tr>
</tbody>
</table>

8/10A/15A Vertical - 40 Series

- 1 Pole changeover contacts
- Miniatures - "Sugar cube" package
- DC coil - 360 mW

Contact arrangement: SPCO
Rated contact current/Peak current: 6A / 15A
Rated contact voltage: 250V ac
Switching capacity: 250V ac
Coil consumption:
L = 28, W = 5, H = 15 mm

-----------|----------------|-----------|----------------
187-2907 | 36.11.9.012.4001 | 187-2908 | 36.11.9.024.0001
548596

Table 3 - Selected Characteristics

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V</td>
<td>187-2937</td>
<td>1+</td>
</tr>
<tr>
<td>12V</td>
<td>187-2939</td>
<td>1+</td>
</tr>
<tr>
<td>24V</td>
<td>187-2940</td>
<td>1+</td>
</tr>
</tbody>
</table>

-fkm-
**35mm Rail Bases and Clips**

- **PCB type**
  - L = 30, W = 13, H = 10

- **35mm rail/surface**
  - Type: PCB
  - Mounting hole dia. = 3.5

- **35mm rail/surface**
  - Type: IP20
  - L = 65, W = 15.5, H = 35.5

- **Marking tag**
  - Order Code: 116-9369

- **Order Code**
  - 116-9334, 116-9335

- **Price Each**
  - Volts: 1+ 25+ 100+ 250+ 500+
  - Price: £

- **Marking tag for sockets**
  - Order Code: 116-9371

- **Order Code**
  - 116-9302, 116-9303

- **Price Each**
  - Volts: 1+ 25+ 100+ 250+ 500+
  - Price: £

**35mm Rail Mount Socket & Accessories - 40 Series**

- **Eject/retaining clip**
  - Order Code: 116-9218

- **Order Code**
  - 116-9216, 116-9230

- **Price Each**
  - Volts: 1+ 25+ 100+ 250+ 500+
  - Price: £

**Sockets**

- **Order Code**
  - 116-9370

- **Order Code**
  - 116-9371

- **Order Code**
  - 913-7696

**Order Multiple**

- **5**

**Diode module 6-220VDC**

- **Order Code**
  - 116-9333

- **Order Code**
  - 116-9334

- **Order Code**
  - 116-9335

**Accessories - Sockets**

- **Order Code**
  - 116-9311

- **Order Code**
  - 116-9310

- **Order Code**
  - 116-9308

- **Order Code**
  - 116-9307

- **Order Code**
  - 116-9309

- **Order Code**
  - 116-9312

- **Order Code**
  - 116-9313

- **Order Code**
  - 116-9314

**7A/10A Miniature - 5512, 5513, 5514 Series**

- **Order Code**
  - 116-9293

- **Order Code**
  - 116-9294

- **Order Code**
  - 116-9295

- **Order Code**
  - 116-9296

- **Order Code**
  - 116-9297

- **Order Code**
  - 116-9298

**8A/12A/16A Low Profile 41 Series**

- **Order Code**
  - 116-9318

- **Order Code**
  - 116-9319

- **Order Code**
  - 116-9320

- **Order Code**
  - 116-9321

- **Order Code**
  - 116-9322

- **Order Code**
  - 116-9323

**Price Each**

- **Volts**
  - 6V
  - 12V
  - 24V

- **Order Code**
  - 116-9306
  - 116-9307
  - 116-9308
  - 116-9309

- **Price Each**
  - £

- **Price Each**
  - £

- **Price Each**
  - £

**Relays & Solenoids**

- **Order Code**
  - 116-9330

- **Order Code**
  - 116-9331

- **Order Code**
  - 116-9332

- **Order Code**
  - 116-9333

- **Order Code**
  - 116-9334

- **Order Code**
  - 116-9335

- **Order Code**
  - 116-9336

- **Order Code**
  - 116-9337

- **Order Code**
  - 116-9338

- **Order Code**
  - 116-9339

**COIL**

- **Volts**
  - 24V ac
  - 110V ac

- **Order Code**
  - 116-9151
  - 116-9152
  - 116-9153

- **Price Each**
  - £

**DIN rail/surface sockets**

- **Order Code**
  - 116-9176
  - 116-9177

- **Price Each**
  - £

**Electromechanical**

- **Order Code**
  - 116-9171

- **Order Code**
  - 116-9172

- **Order Code**
  - 116-9173

- **Order Code**
  - 116-9174

- **Order Code**
  - 116-9175

- **Order Code**
  - 116-9176

- **Order Code**
  - 116-9177

- **Order Code**
  - 116-9178

- **Order Code**
  - 116-9179
### Power Relays - Finder - continued

#### 7A/10A Miniature - 5512, 5513, 5514 Series - continued

<table>
<thead>
<tr>
<th>COIL</th>
<th>Price Each</th>
<th>Order Code</th>
<th>1+</th>
<th>25+</th>
<th>100+</th>
<th>250+</th>
<th>500+</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPCO, 10A - 5512 Series</td>
<td>230V ac</td>
<td>1.7</td>
<td>116-92430</td>
<td></td>
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<tr>
<td>12V dc</td>
<td>140</td>
<td>116-92520</td>
<td></td>
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</tr>
<tr>
<td>24V dc</td>
<td>600</td>
<td>116-92510</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3PCO, 10A - 5513 Series</td>
<td>230V ac</td>
<td>-1.7</td>
<td>116-93250</td>
<td></td>
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<tr>
<td>12V dc</td>
<td>140</td>
<td>116-93250</td>
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<td>24V dc</td>
<td>600</td>
<td>116-93240</td>
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<tr>
<td>4PCO, 7A - 5514 Series</td>
<td>24V</td>
<td>-</td>
<td>132-97380</td>
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<tr>
<td>230V ac</td>
<td>-1.7</td>
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<td>12V dc</td>
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<td>24V dc</td>
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#### 10A - 60 42/43 Series

<table>
<thead>
<tr>
<th>COIL</th>
<th>Price Each</th>
<th>Order Code</th>
<th>1+</th>
<th>25+</th>
<th>100+</th>
<th>250+</th>
<th>500+</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPCO - 60 42 Series</td>
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<td>110</td>
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<tr>
<td>24V dc</td>
<td>440</td>
<td>116-91810</td>
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</tr>
<tr>
<td>3PCO - 60 43 Series</td>
<td>230V ac</td>
<td>7.25</td>
<td>116-91830</td>
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<tr>
<td>12V dc</td>
<td>110</td>
<td>116-91840</td>
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<tr>
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#### 12A - 5642, 5644 Series

<table>
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<th>100+</th>
<th>250+</th>
<th>500+</th>
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</thead>
<tbody>
<tr>
<td>DPCO - 5642 Series</td>
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<td>5.2</td>
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#### 16A Modular Latching-20 Series

- A range of latching relays with EN 50022, 17.5mm wide housing
- Mechanical indicator for each contact
- AC and DC operation
- 1 hour rated coils
- Offset terminals to facilitate wiring
- IMO, UR, NF, Lloyds Reg. approved

#### Modlar Contactors - 22 Series

- Single and double pole versions 17.5mm wide
- Four pole versions 35mm wide
- Manual test push button
- AC or DC coil and AC/DC coil versions
- Staging clamp terminals
- IP20 rating

<table>
<thead>
<tr>
<th>COIL</th>
<th>Contact</th>
<th>Mfrs.</th>
<th>Price Each</th>
<th>Order Code</th>
<th>1+</th>
<th>25+</th>
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<th>250+</th>
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</table>
### Power Relays - IMO

**8A/12A Low Profile**

**SRHN Series**

- **SPOC or DPDCO contacts**
- **VDE 4kV isolation**
- **Fully sealed**
- **UL Recognised**

**Contact arrangement**
- SPOC/DPDCO

**Contact rating**
- DC 48V @ 48V ac

**Switching capacity**
- SPOC 300VA/360W

**Contact material**
- Silver Tin Oxide

**Power Relays - Omron**

**5A Miniature**

**GSNB-E Series - 10kV Withstand Voltage**

- **SPST contacts**
- **High sensitivity (200mW)**
- **Clearance/creepage distance of 7.1/7.2mm**
- **Tracking resistance CTi=250**
- **Approved to CSA & VDE . UL Recognised**

**Contact arrangement**
- Single pole single throw (SPST)

**Contact rating**
- DC 5A @ 250V

**Switching capacity**
- 150VA 90W

**Dielectric strength**
- Coil and contacts

**Temperature range**
- -40°C to -85°C

---

**Contact arrangement**
- SPOC

**Contact rating**
- 18A @ 250V ac

**Switching capacity**
- 2770VA/210W

**Operating time**
- 10ms/5ms

**Contact Material**
- Silver Tin Oxide

**Temperature range**
- 75% - 130%

---

**Contact arrangement**
- SPOC

**Contact rating**
- 18A @ 250V ac

**Switching capacity**
- 2770VA/210W

**Operating time**
- 10ms/5ms

**Contact Material**
- Silver Tin Oxide

**Temperature range**
- 75% - 130%

---

**Contact arrangement**
- 40A, 14V dc rated

- **Fully sealed**

**Voltage, switching max**
- 30Vdc

**Power, switching max**
- 630W

**Contact arrangement**
- SPNO/SPCO

**Voltage**
- 5V dc

**Time, operate/release**
- 5ms/3ms

---

**Contact arrangement**
- SPNO

**Voltage**
- 12V dc

**Time, operate/release**
- 10ms/5ms

---

**Contact arrangement**
- SPCO

**Voltage**
- 24V dc

**Time, operate/release**
- 10ms/5ms
# Power Relays - OMRON - continued

## 5A/8A Subminiature - G6B Series

### 5A Subminiature - G6D Series

- **SPNO contacts**
- **Fully sealed**
- **UL Recognised and CSA approved**
- **Permanent magnet construction, requires correct coil polarity**
- **PCB socket available for SPNO version**

### Contact arrangement
- SPNO and DPNO contacts
- Operate/release (max.): 10ms/5ms
- Temperature range: -20°C to +70°C
- PCB socket available for SPNO version

### Contact values
- **Coil consumption (nom.)**: 200mW
- **Operate/release**: 10ms/5ms
- **Temperature range**: -20°C to +70°C
- **Rating**: 5A @ 250V ac, 30V dc
- **Rated load**: 10A @ 125V ac

### Order Code
- 981-2660: G6D-1A-ASI 5DC
- 981-2687: G6D-1A-ASI 24DC

### Relay Sockets
- Single Pole Relay: 984-9259
- G6B-2 Relays: 118-1039

## 5A Subminiature - MY4-02 Series

- **Direct PCB mounting version of the Omron MY4 power relay**
- **UL Recognised**

### Contact arrangement
- 4PCO
- Switching capacity (max.): 10A (NO), 5A (NC)
- Temperature range: -20°C to +70°C
- **Contact rating**: 5A @ 250V ac, 30V dc

### Contact values
- **Coil consumption**: 200mW
- **Operate/release**: 10ms/5ms
- **Temperature range**: -20°C to +70°C

### Order Code
- Mftrs. List No.: P6B-04P = 994-9259
- **Rated carry current**: 5A (NO) / 3A (NC)
- **Operating temperature**: -40 to 70°C
- **Max. switched current**: 5A (NO) / 3A (NC)
- **Max. switched voltage**: 250VAC, 30VDC

### Mechanical life
- 5,000,000 operations

### Electrical life
- 100,000 operations

### Order Code
- Mftrs. List No.: P6B-04P = 994-9259

## 5A Miniature - MY4-02 Series

### Contact arrangement
- 4PCO
- **Operate/release**: 10ms/5ms
- **Temperature range**: -25°C to +70°C

### Contact values
- **Coil consumption**: 200mW
- **Temperature range**: -25°C to +70°C

### Order Code
- Mftrs. List No.: P6B-04P = 994-9259

## G6B-2214P

- **Contact rating**: 5A @ 250V ac, 30V dc
- **Rated load**: 10A @ 125V ac
- **Max. switched current**: 5A (NO) / 3A (NC)
- **Max. switched voltage**: 250VAC, 30VDC

### Order Code
- Mftrs. List No.: P6B-04P = 994-9259

---

## 5A Subminiature - G6D Series

- **SPNO and DPNO contacts**
- **Fully sealed**
- **UL Recognised and CSA approved**
- **Permanent magnet construction, requires correct coil polarity**

### Contact arrangement
- SPNO and DPNO contacts
- Operate/release (max.): 10ms/5ms
- Temperature range: -20°C to +70°C
- **Coil operation range (0-23°C)**: 80 - 110%

### Contact values
- **Coil consumption**: 200mW
- **Operate/release**: 10ms/5ms
- **Temperature range**: -20°C to +70°C

### Order Code
- Mftrs. List No.: P6B-04P = 994-9259

---

## 5A Miniature - MY4-02 Series

### Contact arrangement
- 4PCO
- **Operate/release**: 10ms/5ms
- **Temperature range**: -25°C to +70°C

### Contact values
- **Coil consumption**: 200mW
- **Operate/release**: 10ms/5ms
- **Temperature range**: -25°C to +70°C

### Order Code
- Mftrs. List No.: P6B-04P = 994-9259
### 8A Low Profile - G6RN Series

- Coil operating range: 10% - 70%
- Operate/Release: 10ms/5ms
- Contact material: AgNi

### 10A & 16A - Miniature G6SL Series

- Low profile - 12.3mm
- Max. switching capacity: 2500VA (NO)
- Dielectric strength: 5kV
- Clearance and creepage distance: 10mm
- VDE Approved, UL Recognised

### 10A - Low Profile G6RL Series

- Contact arrangement: SPCO/SPNO
- High impulse withstand voltage of 4.5kV coil/contacts
- Fully sealed or flux sealed construction
- UL Recognised and CSA approved

### 15A Sub-Miniature - Flat GSCA Series

- SPNO contacts
- Power consumption: 200W
- UL Recognised, CSA and TÜV approved

### 7A/10A Low Profile - G6 Series

- SPNO and SPNO+SPNC contacts
- Permanent magnet construction correct coil polarity must be observed
- UL Recognised, CSA and SEV approved
## Power Relays - Omron - continued

### 7A/10A Low Profile - - continued

#### GS Series - continued

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<tr>
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<th>Price Each</th>
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<td>Coll</td>
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### 5A/10A/16A Vertical - G2R Series

- **SPNO** contacts
- **Dielectric strength 5kV ac coil** contacts
- With creepage distance 8mm minimum
- **Pin sealed base to facilitate flow soldering**
- **UL Recognised, CSA, SEMKO and SEV approved**

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<td>COL</td>
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### 8A/12A/16A General purpose - Flux protection

- **SPC0 and DCPCO contacts**
- **Low profile 15.7mm in height**
- **High sensitivity 400mV/m coil**
- **Contact arrangement**
  - **Contact rating**
    - SPC0/DCPCO
    - SPC0 12A@240V ac,30Vdc
    - SPC0 16A@240V ac,30Vdc
  - **Contact rating**
    - Operate/Release
  - **Temperature range**
    - -40°C to +85°C

<table>
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<tr>
<th>Coll</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
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### 16A, Low Profile

#### Q2RL Series

- **Class B & F coil insulation available**
- **Low Profile (15.7mm height)**
- **UL Recognised**

**G2RL Series**

- **Coil consumption** 250mW
- **Temperature range** -40°C to +85°C
- **Switching capacity** 4000VA
- **Coil operating range** 10 - 70%
- **Contact material** Ag Alloy (Cd free)
- **Operate/Release** 15ms/5ms

**Contact Material**

- **5V dc**
  - **Resistance** 62.5ohm
  - **Flux Protection**
  - **SPST-NO**
  - **SCS**

**Price Each**

- **Company**
  - **206-5786**
  - **206-5805**
  - **206-5783**

**Dimensions (mm): H=15.7, W=29, D=12.7**

#### Class B Insulation

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<tr>
<td>12V dc</td>
<td>360ohm</td>
</tr>
<tr>
<td>24V dc</td>
<td>1.44kohm</td>
</tr>
<tr>
<td>48V dc</td>
<td>5.358kohm</td>
</tr>
</tbody>
</table>

**Fully Sealed, SPDT, 12A**

- **5V dc** 62.5ohm
- **6V dc** 90ohm
- **12V dc** 360ohm
- **24V dc** 1.44kohm
- **48V dc** 5.358kohm

**High Capacity, Flux Protection, SPST-NO, 16A**

- **5V dc** 62.5ohm
- **12V dc** 360ohm
- **24V dc** 1.44kohm

**High Capacity, Fully Sealed, SPDT-NO, 16A, DC Terminals**

- **5V dc** 62.5ohm
- **12V dc** 360ohm
- **24V dc** 1.44kohm

**High Capacity, Fully Sealed, SPDT, 16A**

- **5V dc** 62.5ohm
- **12V dc** 360ohm
- **24V dc** 1.44kohm
- **48V dc** 5.358kohm

**High Sensitivity, Flux Protection, SPST-NO, 10A**

- **5V dc** 100ohm
- **12V dc** 576ohm
- **24V dc** 2.34kohm

**High Sensitivity, Flux Protection, SPST-NO, 10A**

- **5V dc** 100ohm
- **12V dc** 576ohm

**Class F Insulation**

<table>
<thead>
<tr>
<th>Coil</th>
<th>Price Each</th>
</tr>
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<tbody>
<tr>
<td>5V dc</td>
<td>62.5ohm</td>
</tr>
<tr>
<td>12V dc</td>
<td>360ohm</td>
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</table>

#### 16A Low Profile

**GSRL Series**

- **SPST or SPDT contacts**
- **Power consumption 0.75VA**
- **Clearance/creepage distance (coil to contacts) of 8mm**
- **UL Recognised, CSA and VDE approved**

**Contact arrangement**

- **SPDT / SPST**
- **Contact rating**
  - **(Resistive) (NC)**
    - 16A @ 250V, 24V
    - 5A @ 250V ac, 24V dc
  - **Coil consumption**
    - 0.75VA
  - **Operate/release**
    - 20ms/20ms
  - **Temperature range**
    - -40°C to 70°C

**Contact Material**

- **5V dc** 62.5ohm
- **5V dc** 62.5ohm

**Price Each**

- **Company**
  - **206-5780**
  - **206-5781**

**UL & CSA Marked**

- **High Capacity, Flux Protection, SPDT, 16A**
  - **5V dc** 62.5ohm
  - **12V dc** 360ohm
  - **24V dc** 1.44kohm
  - **48V dc** 5.358kohm

**20A with Quick Connect Terminals**

**GA4 Series**

- **SPNO contacts**
- **5000VA switching capability**
- **Dielectric withstand voltage of 4.5kV with 80A surge current capacity**
- **Ideal for motor load and high power switching**
- **UL Recognised, CSA and TUV approved**

**Contact arrangement**

- **SPST**
- **Contact Rating**
  - **16A @ 250V ac, 250V dc**
  - **Dielectric Strength**
    - 4500V ac (coil/contact)
    - 1000V/m (contact/contact)
- **Operate/Release**
  - **Operation**
    - 20ms/10ms
  - **Operation Temperature**
    - -20°C to 60°C

**Price Each**

- **Company**
  - **995-0249**
  - **995-0257**

**25A-G7J Series**

- **Screw and PCB Termination**
- **High capacity, high withstand-voltage multi-pole relay**
- **Can be used like a contactor**
- **Miniature hinge for maximum switching capacity of motor loads as well as resistive and inductive loads**
- **PCB or Screw termination**

**Dimensions (mm): H=64, W=51.5, D=34.5 mm**

**Relays & Solenoids**

- **Electromechanical**
- **20A**
  - **250V**
  - **20A**
  - **250V**

**Price Each**

- **Company**
  - **995-0249**
  - **995-0257**

**Figures & Tables**

- **Dimensions (mm): H=64, W=51.5, D=34.5 mm**
- **Operating Temperature**
  - **-20°C to 60°C**
### Power Relays - Omron - continued

#### 25A-G7J Series - continued

- No contact chattering for momentary voltage drops up to 50% of rated voltage
- Withstands more than 4KV between coil/contacts and contacts of different polarity
- Fire resistant case (UL94V-0 qualifying)
- Approved to CSA and UL Recognised

**Contact rating**: NO, 25A @ 220Vac/30Vdc applications

**Coil consumption**: 2W

**Contact Material**: SPST-NO

**Contact Rating**: 30A @ 250VAC Operate/release 15ms/10ms

<table>
<thead>
<tr>
<th>Volts</th>
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<td>155</td>
<td>1+</td>
</tr>
<tr>
<td>24V</td>
<td>155</td>
<td>5+</td>
</tr>
<tr>
<td>36V</td>
<td>155</td>
<td>10+</td>
</tr>
</tbody>
</table>

**Screw Terminal**

- DPST-NO/DPST-N, G7J-2A2 Series
- 24V 288 G7J-2A2B 24DC 118-1264
- 24V 288 G7J-3A1B 24DC 118-1265

**4PST-NO, G7J-4A Series**

- 24V 288 G7J-4A-8 24DC 118-1266

**PCB Terminal**

- Mounting Bracket R9904 118-1263

#### 30A PCB Power Relay

**G8P Series - Open Enclosure**

- Complies with UL873 and UL508 column A spacings (1/16” through air, 1/8” over surface)
- UL Class F insulation standard
- Compact, yet capable of switching up to 30A loads
- Ideal for home and industrial appliances, HVAC (heating, ventilating, and air conditioning), and many other applications
- Open enclosure rating

**Contact Rating**: 30A @ 250VAC

**Dielectric Strength**: 2500 VAC @ 50/60Hz

**Contact Material**: AgNi

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V</td>
<td>27</td>
<td>1+</td>
</tr>
<tr>
<td>24V</td>
<td>660</td>
<td>5+</td>
</tr>
</tbody>
</table>

**SPOT**

- 12 155 207-6399
- 24 660 207-6460

**Terminal Cover**

- H = 86.7, W = 98, D = 44mm

**G9EC-1 Series**

- Compact size capable of interrupting high-voltage, high-current loads
- Sealed construction requires no arc space
- SPST-NO contacts

**Rated load - Standard models**

- 66A @ 400V, 10A @ 120V dc
- 99A @ 400V

**Switching capacity**

- 66A @ 400V

**Switching voltage - Max.**

- 400V

<table>
<thead>
<tr>
<th>Volts</th>
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</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>24V</td>
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<td>5+</td>
</tr>
<tr>
<td>100A</td>
<td>1,864</td>
<td>10+</td>
</tr>
</tbody>
</table>

#### 30A SPNO/SPCO

**G8P Series**

- Heavy duty, capable of switching up to 30A loads
- SPNO or SPDC contact configuration

**Contact arrangement**

- SPST/SPDT
- 30A @ 250V ac, SPNO,SPDC

**Dielectric Strength**

- 1.5kV @ 50/60Hz

**Contact Material**

- SPST/SPDT

<table>
<thead>
<tr>
<th>Volts</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>24V</td>
<td>660</td>
<td>5+</td>
</tr>
</tbody>
</table>

**SPNO - PCB**

- 12V 155 995-0296
- 24V 660 995-0214

**SPDC - PCB**

- 12V 155 995-0222
- 24V 660 995-0230
- 48V 2.4A@60Hz 207-6401

### 100A DC Switching

**G9EA-1 Series**

- Compact size capable of interrupting high-voltage, high-current loads
- Sealed construction requires no arc space
- SPST-NO contacts

**Rated load - Standard models**

- 66A @ 400V, 10A @ 120V dc
- 99A @ 400V

**Switching capacity**

- 66A @ 400V

**Switching voltage - Max.**

- 400V

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>100A</td>
<td>1,864</td>
<td>10+</td>
</tr>
</tbody>
</table>

**G9EA-1B Series**

- Ideal for home and industrial appliances, HVAC (heating, ventilating, and air conditioning), and many other applications
- Open enclosure rating

**SPST-NO contacts**

- M 3.5 screw terminals
- Sealed construction requires no arc space
- Compact size capable of interrupting high-voltage, high-current loads

**Rated load - UL Listed**

- 66A @ 400V, 10A @ 120V dc
- 99A @ 400V

**Switching capacity**

- 66A @ 400V

**Switching voltage - Max.**

- 400V

<table>
<thead>
<tr>
<th>Volts</th>
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<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V</td>
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</tr>
<tr>
<td>100A</td>
<td>1,864</td>
<td>10+</td>
</tr>
</tbody>
</table>

**Terminal Cover**

- H = 86.7, W = 98, D = 44mm

**G9EC-1 Series**

- Compact size capable of interrupting high-voltage, high-current loads
- Sealed construction requires no arc space
- M 3.5 screw terminals
- SPST-NO contacts
- UL / CSA Standard UL508 Approved

**Switching capacity**

- 66A @ 400V, 10A @ 120V dc
- 99A @ 400V

**Switching voltage - Max.**

- 400V

<table>
<thead>
<tr>
<th>Volts</th>
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</thead>
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</tr>
<tr>
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<td>10+</td>
</tr>
</tbody>
</table>

**200A DC Switching**

**G9EA-1 Series**

- Ideal for home and industrial appliances, HVAC (heating, ventilating, and air conditioning), and many other applications
- Open enclosure rating

**SPST-NO contacts**

- M 3.5 screw terminals
- Sealed construction requires no arc space
- Compact size capable of interrupting high-voltage, high-current loads

**Rated load - Standard models**

- 66A @ 400V, 10A @ 120V dc
- 99A @ 400V

**Switching capacity**

- 66A @ 400V

**Switching voltage - Max.**

- 400V

<table>
<thead>
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<th>Price Each</th>
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<tbody>
<tr>
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<td>5+</td>
</tr>
<tr>
<td>100A</td>
<td>1,864</td>
<td>10+</td>
</tr>
</tbody>
</table>

**Terminal Cover**

- H = 86.7, W = 98, D = 44mm

**B64 Series**

- High current models
- 60A @ 400V
- 100A @ 120V dc
- 200A @ 120V dc

**Switching capacity**

- 60A @ 400V

**Switching voltage - Max.**

- 400V

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5+</td>
</tr>
<tr>
<td>100A</td>
<td>1,864</td>
<td>10+</td>
</tr>
</tbody>
</table>

**Mftrs.List No.**

- G9EC-1B 12DC = 125-7578
- G9EC-1B 24DC = 125-7579
- G9EC-1B 100DC = 125-7580
- G9EC-1B 48DC = 125-7581

**Price Each**

- Coil: 1+ 5+ 10+ 50+

**Above table continues**
Power Relays - Panasonic

5A - Ultra Slim - PA Series.

- Wide switching capacity - 100mA, 100mA to 3A 250Vac
- Contact arrangement: SPNO
- Contact material: Silver Alloy
- Contact consumption: 12V 120mW, 24V 180mW
- Temperature range: -55°C to +70°C
- Contact material: Silver Alloy, Gold Plated
- Max. power: 90W/1000VA
- Contact rating: 4A @ 250V ac, 3A @ 30V dc
- Contact arrangement: DPNO, 4NO
- Coil consumption: 24V 2.85W
- UL Recognised and CSA approved
- Temperature range: -40°C to +70°C
- High surge voltage resistance: 4000V
- High insulation resistance
- Long life expectancy
- Recognised and approved
- 24V dc S2-L2-12VDC 720 + 720
- 24V dc 24VDC 2.85 + 1177-5727N

3A @ 277V ac, 30V dc
LD Series SPST - NO

- Low operating power
- Long life expectancy
- High shock resistance
- High insulation resistance
- CSA, VDE, TUV approved, UL Recognised
- Contact material: Silver Palladium, Gold Clad
- Temperature range: -40°C to +85°C
- Contact rating: 300mA @ 125V ac, 1mA @ 30V dc
- Operate/Release: 4ms/4ms
- Contact arrangement: DPCO
- Coil consumption: 140mW
- 12V dc 1.028 + 310-4801
- 24V dc 1.44 + 310-4783

Miniature - S2/S4 Series
Latching/Non-latching

- Available as a monostable or bistable device with bifurcated contacts ensuring low contact resistance
- Unique five layer contact design permits load switching between 1mA and 1kVA
- Pivoting rotating armature ensures high shock and vibration resistance
- Permanent magnet field is used in conjunction with the coil force resulting in a high reliability, high sensitivity relay
- Contact material: Silver Alloy
- Temperature range: -55°C to +65°C
- Contact rating: 5A @ 250V ac/30Vdc
- Contact arrangement: DPNO
- Coil consumption: 24V 2.025 + 209-5589N
- 4.5V dc 145 + 310-4813

4A/5A Low Profile - NC2D/4D Series
Latching/Non-latching

- DPNO and 4PCO bifurcated contacts
- Flux protected
- Contact arrangement: DPNO
- Coil consumption: 24V 2.025 + 209-5589N
- 4.5V dc 145 + 310-4837

Ultraminiature - AGN/AGQ Series

- Ultra slim and Ultra flat body styles available
- Through hole or surface mount options
- Twin crossbar contacts for high reliability
- High sensitivity coil (140mW)
- Satisfies BELL-CORE requirements for 2.5kV coil/contact
- Applications include Telecomms, Measuring instruments and Multimedia TVs

- Contact arrangement: DPCO
- Contact material: Silver Palladium, Gold Clad
- Coil consumption: 4mA/4ms
- Temperature range: -40°C to +85°C
- 140mW
- 12V dc 1.028 + 310-4849
- 24V dc 1.44 + 310-4837

Relays & Solenoids

Electromechanical

2541
The first online technical portal for design engineers
Log on, research, refine and design

5A - LKS Series - Slim
- High sensitivity
- High insulation resistance between contact and coil
- High noise immunity realized by the card separation structure between contact and coil
- Popular terminal pitch in AV equipment field
- Space saving slim type

Dimensions: L=24, W=11, H=25mm
Contact Configuration SPST-NO
Contact Rating 5A @ 277VAC / 30VDC
Contact material AgSnO2
Coil consumption 250mW
Operate/Release 15ms/5ms
Temperature range -40°C to 70°C

Price Each
Volts Ω Mfrs. List No. Order Code 1+ 25+ 50+ 100+
24V dc 2.30Ω LKS1A4-24V-T 209-563350

5A - ALD Series - Slim
- Nominal switching capacity
- Excellent heat resistance and slim type
- High insulation resistance

Dimensions: L=20.5, W=7.2, H=15.3mm
Contact Configuration SPST-No
Contact Rating 5A @ 277VAC / 30VDC
Contact material Ag
Coil consumption 200mW
Operate/Release 10ms/5ms
Temperature range -40°C to 85°C

Price Each
Volts Ω Mfrs. List No. Order Code 1+ 25+ 50+ 100+
5V dc 125 ALDP105 209-563650
12V dc 720 ALDP112 209-563750
18V dc 1.82k ALDP118 209-563850
24V dc 2.8k ALDP124 209-563950

5A/8A - DSP Series - Polarized
- Compact with high contact rating
- High switching capability
- High sensitivity
- High breakdown voltage
- Sealed construction allows automatic washing

Dimensions: L=20.2, W=11, H=10mm
Contact Configuration 1 Form A 1 Form B
Contact Rating 1 Form A 1 Form B
Contact material AgSnO2 AgSnO2
Coil consumption 300mW 300mW
Operate/Release 10ms/5ms 10ms/5ms
Temperature range -40°C to 70°C

Price Each
Volts Ω Mfrs. List No. Order Code 1+ 25+ 50+ 100+
3V dc 30 DSPST-NC 209-562450
5V dc 50 DSPST-NC 209-562550
12V dc 80 DSPST-NC 209-563250
48V dc 209-563350

1 Coil Latching

TROUBLESHOOTING TIPS
Chat online to one of our technical engineers at farnell.com
5A/10A - JW Series - Compact

- Miniature package with universal terminal footprint
- High dielectric withstand for transient protection
- Sealed construction
- VDE, TÜV, SEMKO, SEV, FMKO, TV-5 approved

Dimensions: L=28.6, W=12.8, H=20mm

Contact Configuration
Switching Voltage
Coil consumption
- 250mW / 300mW
- Temperature range: -15°C to 85°C

Coil Consumption
<table>
<thead>
<tr>
<th>Voltage</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V dc</td>
<td>550mW</td>
</tr>
<tr>
<td>9V dc</td>
<td>950mW</td>
</tr>
<tr>
<td>12V dc</td>
<td>1250mW</td>
</tr>
</tbody>
</table>

2 Coil Latching
- Contact Configuration: SPST-NO / SPST-NC
- Contact Rating: 10A @ 277VAC / 30VDC
- Contact Material: AgSnO2
- Coil Consumption: 360mW
- Temperature Range: -40°C to 70°C

8A/10A - JK Series - Polarized

- Compact with high capacity
- High capacity switching in a small package
- High sensitivity
- High breakdown voltage
- Sealed construction allows automatic washing

Dimensions: L=24, W=11, H=25mm

Contact Configuration
Switching Voltage
Coil consumption
- 100mW / 150mW
- Temperature range: -40°C to 65°C

Coil Consumption
<table>
<thead>
<tr>
<th>Voltage</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V dc</td>
<td>250mW</td>
</tr>
<tr>
<td>12V dc</td>
<td>550mW</td>
</tr>
</tbody>
</table>

10A - LKP Series - Slim

- High switching capacity
- High insulation resistance between contact and coil
- High noise immunity realized by the card separation structure between contact and coil
- Popular terminal pitch in AV equipment field
- Space saving slim type

Contact Configuration
Switching Voltage
Coil consumption
- 300mW
- Temperature Range: -40°C to 70°C

Coil Consumption
<table>
<thead>
<tr>
<th>Voltage</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V dc</td>
<td>125mW</td>
</tr>
<tr>
<td>12V dc</td>
<td>250mW</td>
</tr>
</tbody>
</table>

6A/10A/15A Miniature - JS/JS Series

- Miniature size with universal terminal footprint
- High switching capacity 10A @ 125Vac/6A 277Vac
- Fully sealed construction
- Automotive version available for high capacity DC switching 15A 16Vdc
- Approvals include UL and CSA for JS Series

Contact Configuration
Switching Voltage
Coil consumption
- 250mW
- Temperature Range: -40°C to 70°C

Coil Consumption
<table>
<thead>
<tr>
<th>Voltage</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V dc</td>
<td>550mW</td>
</tr>
<tr>
<td>12V dc</td>
<td>1250mW</td>
</tr>
</tbody>
</table>

8A/10A - DE Series - Polarized

- Conforms to European safety standards (VDE0700 and VDE831)
- Surge voltage between contact and coil 12 kV
- Low operating power
- Compact body saves space

Dimensions: L=25, W=12.5, H=12.5mm

Contact Configuration
Switching Voltage
Coil consumption
- 200mW
- Temperature range: -40°C to 70°C

Coil Consumption
<table>
<thead>
<tr>
<th>Voltage</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>5V dc</td>
<td>250mW</td>
</tr>
<tr>
<td>12V dc</td>
<td>550mW</td>
</tr>
</tbody>
</table>

48V dc 550mW
## Power Relays - Panasonic - continued

### 16A - DE Series - Low Profile

- Low profile type
- High insulation resistance
- Anti-surge voltage is 10 kV and higher. (Supported European reinforced insulation requirement.)
- Superior heat resistance
- Low operating power
- UL/C-UL, VDE approved.
- Superior heat resistance and tracking resistance

**Dimensions:** L = 28.8, W = 12.5, H = 5.7 mm

**Contact Rating:** 16A @ 350VAC / 30VDC

**Contact material:** AgSnO2

**Operate/Release:** 15ms/5ms

### 16A - JVN Series - Flat Compact

- For heating loads
- High A capacity
- Compact, flat case
- High sensitivity at 200 mW
- Reduces contact terminal heat
- UL/C-UL, TÜV approved

**Dimensions:** L = 22, W = 16, H = 10.9 mm

**Contact Configuration:** SPST-NO

**Contact material:** AgSnO2

**Coil consumption:** 200mW

### 16A - 277V ac LE Series SPST-NO

- Excellent heat resistance
- High insulation resistance
- Low operating power
- Approved to CSA & TÜV, UL Recognised

**H = 24.9, W = 28.6, D = 12.4 mm**

**TMP type:** PCB side with 4 terminals

**Coil Mfrs.:**

**Order Code:**

**Price Each:** £

### Power Relays for Home Appliances - 25A

- Ideal for compressor and inverter loads
- High insulation resistance
- PCB and TMP types available
- Conforms to the various safety standards

**Contact Configuration:** SPST-NO

**Contact Rating:** 25A @ 250V

**Contact material:** AgSnO2

**Coil consumption:** 900mW

**Operate/Release:** 20ms/15ms

**Temperature range:** -40°C to 80°C

**Dimensions:** L = 30.1, W = 15.7, H = 23.3 mm

## High Capacity LF-G Relays - 22A/31A

### ALF Series

- SPST (1 Form A)
- High Capacity
- Compact size
- Contact gap 1.5mm
- Energy saving - Low coil holding voltage
- High insulation resistance
- VDE Approved and UL Recognised

**H = 23.3, W = 30.1, D = 15.7 mm**

### HE Power Relays - 48A

- SPST (1 Form A)
- High Capacity
- Compact size
- Contact gap 2.5mm (VDE0126 compliant)
- Energy saving - Reduced coil holding voltage
- High insulation resistance
- High surge breakdown voltage between contacts and coil
- Wide terminal blade connection
- VDE Approved and UL Recognised

**H = 36.3, W = 38, D = 33 mm**

### EP Power Relays - 80A

- SPST (1 Form A)
- High voltage, high current control capability
- Compact package
- Low operating sound
- Enclosed contacts
- Arc space unnecessary
- High contact reliability
- Mounting direction not specified
- Provided with one female connecting wire

**H = 79, W = 75.5, D = 40mm**

---

### Tables:

<table>
<thead>
<tr>
<th>COIL</th>
<th>Mfrs.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£</td>
<td>List No.</td>
<td></td>
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</table>

#### 16A - DE Series - Low Profile

<table>
<thead>
<tr>
<th>COIL</th>
<th>Contact</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volt(s)</td>
<td>£</td>
<td></td>
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</table>

#### 16A - JVN Series - Flat Compact

<table>
<thead>
<tr>
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<th>Contact</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volt(s)</td>
<td>£</td>
<td></td>
</tr>
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</table>

#### 16A - 277V ac LE Series SPST-NO

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<th>Contact</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volt(s)</td>
<td>£</td>
<td></td>
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</tbody>
</table>

#### Power Relays for Home Appliances - 25A

<table>
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<th>Contact</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volt(s)</td>
<td>£</td>
<td></td>
</tr>
</tbody>
</table>

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**Important Notes:**

- Coils have high surge breakdown voltage between contacts and coil.
- High insulation resistance.
- Energy saving - Reduced coil holding voltage.
- High insulation resistance.
- Ideal for compressor and inverter loads.
- Conforms to the various safety standards.
### Power Relays - Schneider

#### RSB Series Relay Interface Modules
- Relays approved to CSA and UL
- 12A relays with C/O contact, 16A relays with 1 C/O contact and 8A relays with 2 C/O contacts
- Comprises sockets with separate contact terminals

<table>
<thead>
<tr>
<th>Contact voltage</th>
<th>Resistance</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V dc</td>
<td>1.44kohm</td>
<td>205-6370</td>
</tr>
<tr>
<td>120V ac</td>
<td>4.43kohm</td>
<td>205-6380</td>
</tr>
<tr>
<td>240V ac</td>
<td>180ohm</td>
<td>205-6390</td>
</tr>
</tbody>
</table>

#### DPOT, 8A - 1 C/O contact type

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<th>Resistance</th>
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<td>1.44kohm</td>
<td>205-6370</td>
</tr>
<tr>
<td>120V ac</td>
<td>4.43kohm</td>
<td>205-6380</td>
</tr>
<tr>
<td>240V ac</td>
<td>180ohm</td>
<td>205-6390</td>
</tr>
</tbody>
</table>

#### DPOT, 8A - 2 C/O contact type

<table>
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<tr>
<th>Contact voltage</th>
<th>Resistance</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
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<td>24V dc</td>
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</tr>
<tr>
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<td>205-6380</td>
</tr>
<tr>
<td>240V ac</td>
<td>180ohm</td>
<td>205-6390</td>
</tr>
</tbody>
</table>

#### Accessories
- Socket for 1 C/O relay RSZ 205-6370
- Label for relay socket RSZ 205-6380
- Maintaining clip for relay socket RSZ 205-6390

#### RXM Series Miniature Plug-In Relay
- Relays approved to CSA and UL
- 12A relays with 2 C/O contacts, 16A relays with 3 C/O contacts, 8A relays with 4 C/O contacts
- Comprises sockets with mixed or separate contact terminals
- Locking components for plastic and metal maintaining clamps available

<table>
<thead>
<tr>
<th>Operating temperature</th>
<th>Contact material</th>
<th>Silver alloy (Ag/Pt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40°C to +55°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### RUM Series Universal Plug-in Relays
- Relays approved to CSA and UL
- 10A relays with 2 and 3 C/O contacts
- Comprises sockets with separate contact terminals
- A metal maintaining clamp for all sockets

<table>
<thead>
<tr>
<th>Operating temperature</th>
<th>Contact material</th>
<th>Silver alloy (Ag/Pt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40°C to +55°C</td>
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</tbody>
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---
Power Relays - Schneider - continued

RUM Series Universal Plug-in Relays - continued

Nominal Coil Price Per Pack

<table>
<thead>
<tr>
<th>Coil voltage</th>
<th>Resistance</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
<th>25+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>230V ac</td>
<td>7.2ohm</td>
<td>205-8350</td>
<td></td>
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<tr>
<td>240V</td>
<td>470ohm</td>
<td>205-8360</td>
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<tr>
<td>220V ac</td>
<td>7.2ohm</td>
<td>205-8370</td>
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</table>

Accessories

| Socket for relay RUMC2 | 205-8330 |
| Socket for relay RUMC2/3 | 205-8340 |
| Screw connector, socket RUS | 205-8361 |
| Socket for relay RUMC2 | 205-8370 |
| Socket for relay RUMC2 | 205-8390 |
| Metal mounting clamp for socket RUS | 205-8396 |
| Bus jumper 0-pole | 205-8398 |

Power Relays - Tyco Electronics

SPN0 3A

- Slim, only 5mm deep
- Load range 1mA to 3A
- Sensitive coil of 120mW
- Cadmium-free contacts
- Reinforced insulation, washlight
- Approved to VDE, UL (United States and Canada) Recognised

Contact arrangement Type of contact Contact rating Rated voltage

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs. List No.</th>
<th>Voltage</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>444-8380</td>
<td>PCN-10D3M3W1</td>
<td>5V</td>
<td>1+</td>
</tr>
<tr>
<td>444-8342</td>
<td>PCN-11D3M3W2</td>
<td>12V</td>
<td>+</td>
</tr>
<tr>
<td>444-4954</td>
<td>PCN-14D3M4M2</td>
<td>24V</td>
<td>+</td>
</tr>
</tbody>
</table>

5A Miniature - PE Series Bistable

- SPC0 contacts
- Low profile, 10mm height
- 4 V coil/contact insulation
- Sensitive coil, 200mW
- VDE approved, UL Recognised

Contact arrangement Contact Rating Contact Material Mechanical life Contact resistance (initial) Operating temperature

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs. List No.</th>
<th>Coil Consumption</th>
<th>200mW</th>
<th>5 x 10^6 operations</th>
<th>47Ω</th>
<th>-40°C to +85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>206-9102</td>
<td>0-1393217-1</td>
<td>SPC0</td>
<td></td>
<td></td>
<td>47Ω</td>
<td></td>
</tr>
</tbody>
</table>

6A - Ultra Slim

V23092 Series

- Ultra slim package, 5mm width
- Sensitive coil - 170mW
- IV dielectric strength, coil/contact
- SIL terminal layout
- Upright and Flatpack versions available
- VDE approved, UL Recognised

Contact arrangement Contact Rating Contact Material Coil Consumption

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Type No.</th>
<th>Mfrs. List No.</th>
<th>Voltage</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>311622</td>
<td>515-851</td>
<td>0-1393217-1</td>
<td>5V</td>
<td>-10°C to +10°C</td>
</tr>
<tr>
<td>311631</td>
<td>515-851</td>
<td>0-1393217-1</td>
<td>12V</td>
<td>-10°C to +10°C</td>
</tr>
</tbody>
</table>

5A Miniature - U Series

- Small size
- High dielectric capacity
- Immersion cleanable with vented (flux-tight) cover
- Cadmium-free contacts
- Approved to CSA and VDE, UL Recognised

Contact arrangement Contact Rating Contact Material Mechanical life Minimum load Contact resistance (initial) Coil Consumption Mechanical life

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs. List No.</th>
<th>Voltage</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>117-7782</td>
<td>0-1393223-0</td>
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</tr>
<tr>
<td>117-7784</td>
<td>0-1393223-7</td>
<td>12V</td>
<td>10+</td>
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</tbody>
</table>

SPST-NO 5A

PCJ Series

- Single pole 5A 1NO contact
- Sensitive coil 200 mW
- Optimized height 10.6mm
- PCB area 200 mm²
- Wash tight

Contact arrangement Contact Rating Contact Material Coil Consumption Temperature Range

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Type No.</th>
<th>Mfrs. List No.</th>
<th>Voltage</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>117-7782</td>
<td>515-851</td>
<td>0-1393217-1</td>
<td>5V</td>
<td>-10°C to +10°C</td>
</tr>
</tbody>
</table>
**SPST-NO - 6A @ 240V ac**

**RE Series - Sensitive Coil**
- Single Pole, 1 NO contact
- Sensitive coil 200 mW
- 4 kV coil-contact dielectric strength
- Wash tight
- Only occupies 200 mm² PCB area

**Contact arrangement**
- SPNO
- Dielectric voltage between coil and contacts 1000VAC

**Break rating (max)**
- 1500 VA

**Power - Coil**
- 200 mW
- Contact plating: Gold
- Coil operating temperature: -40 to 70°C

**Dielectric voltage between coil and contacts**
- Mfrs. List No.: RE032005
- Order Code: 965-9676
- Mfrs. List No.: RE032012
- Order Code: 965-9684

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
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<th>20+</th>
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<th>100+</th>
<th>250+</th>
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</table>

**A8 and 5A Low Profile/Vertical - Card E Series**

**SPC0 contacts**
- Low profile or vertical packages
- 4.4V coil-contact isolation

**Contact arrangement**
- SPNO
- Max. continuous current: 8A/4A with AgNi 0.15 contacts 250V
- Contact material: AgNi 0.15
- Coil: 500 mW
- Operating temperature: 7ms/3ms

<table>
<thead>
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<th>Voltage</th>
<th>Order Code</th>
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<tr>
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<td>24V</td>
<td>119-7650</td>
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**Low Profile - Fine Silver Nickel (AgNi 0.15) Contacts - V23057-AK-A101 (5A)**

<table>
<thead>
<tr>
<th>Voltage</th>
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<th>100+</th>
<th>250+</th>
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</thead>
<tbody>
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<td>119-7660</td>
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<tr>
<td>12V</td>
<td>24V</td>
<td>119-7650</td>
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</table>

**Low Profile - Nickel (AgNi 20) Contacts - V23057-AK-A201 (5A)**

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<th>20+</th>
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<tbody>
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<td>24V</td>
<td>119-7649</td>
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</table>

**Vertical - Fine Silver Nickel (AgNi 0.15) Contacts - V23057-BK-A201 (5A)**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>1+</th>
<th>20+</th>
<th>50+</th>
<th>100+</th>
<th>250+</th>
</tr>
</thead>
<tbody>
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<td>119-7650</td>
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<tr>
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<td>24V</td>
<td>119-7649</td>
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</table>

**Vertical - Nickel (AgNi 20) Contacts - V23057-BK-A20 (5A)**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
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<tr>
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<td>119-7650</td>
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<td>12V</td>
<td>24V</td>
<td>119-7649</td>
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</tbody>
</table>

**6A Miniature PT Series**

- A pole contact arrangement
- Industry standard terminal layout
- Cadmium free AgNi contacts
- Mechanical Flag
- VDE approved

**Contact arrangement**
- SPNO
- Max. continuous current: 6A @ 240V ac
- Contact material: AgNi 0.15
- Coil: 1VA ac, 750mW dc
- Temperature Range: -45°C to +70°C

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>307-2624</td>
<td>PT517024</td>
</tr>
<tr>
<td>307-3014</td>
<td>PT517130</td>
</tr>
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</table>

**Coil**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>1+</th>
<th>20+</th>
<th>50+</th>
<th>100+</th>
<th>250+</th>
</tr>
</thead>
<tbody>
<tr>
<td>4V</td>
<td>123</td>
<td>307-2624</td>
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<td></td>
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<td></td>
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<tr>
<td>230V</td>
<td>19-465</td>
<td>307-3014</td>
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<td></td>
</tr>
</tbody>
</table>

**8A Low Profile MSR Series**

- SPC0 contacts
- 4kV isolation and 8mm creepage/clearance
- Gold contact version has minimum load of 1mA/6Vac
- VDE and CSA approved, UL Recognised

**Contact arrangement**
- SPNO
- Max. continuous current: 8A @ 240V ac/30V dc
- Contact material: Silver Cadmium Oxide / AgNi 0.15
- Coil consumption: 210 to 260mW
- Temperature Range: -40°C to +70°C

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>102-3957</td>
<td>V23061/B1005A301</td>
<td>102-4038</td>
<td>V23061/B1005A601</td>
</tr>
<tr>
<td>102-3958</td>
<td>V23061/B1005A301</td>
<td>102-4038</td>
<td>V23061/B1005A601</td>
</tr>
</tbody>
</table>

**Single Pole CO or NO - 8A @ 240V ac**

**RY Series**

- SPCO / SPNO
- 8A @ 240V ac
- Breaking capacity (max): 2000 VA
- Power - Coil: 2000W
- Dielectric voltage between coil and contacts: 1000VAC
- Operating temperature: -40 to 70°C

**Contact arrangement**
- SPNO
- Max. continuous current: 8A @ 240V ac
- Contact material: AgNi 0.15
- Coil: 1VA ac, 750mW dc
- Temperature Range: -40°C to +70°C

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>102-3957</td>
<td>V23061/B1005A301</td>
<td>102-4038</td>
<td>V23061/B1005A601</td>
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<td>102-3958</td>
<td>V23061/B1005A301</td>
<td>102-4038</td>
<td>V23061/B1005A601</td>
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</table>

**Coil**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>1+</th>
<th>20+</th>
<th>50+</th>
<th>100+</th>
<th>250+</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V</td>
<td>115</td>
<td>965-9706</td>
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<tr>
<td>12V</td>
<td>24V</td>
<td>965-9714</td>
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<td></td>
</tr>
</tbody>
</table>

**Single CO or NO - 8A @ 240V ac**

- Reinforced insulation
- Wash tight

**Contact arrangement**
- SPNO
- Max. continuous current: 8A @ 240V ac
- Contact material: AgNi 0.15
- Coil: 1VA ac, 750mW dc
- Temperature Range: -40°C to +70°C

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs. List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-4038</td>
<td>V23061/B1005A601</td>
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</table>

**Coil**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>1+</th>
<th>20+</th>
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<th>100+</th>
<th>250+</th>
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</thead>
<tbody>
<tr>
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<td>965-9706</td>
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<td>12V</td>
<td>24V</td>
<td>965-9714</td>
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</tbody>
</table>

**8A Low Profile RY2 Series**

- SPC0 contacts
- 5 kV / 8mm coil-contact
- Low profile, 12.3mm height
- Reinforced insulation
- VDE Approved, UL Recognised

**Contact arrangement**
- SPNO
- Max. continuous current: 8A @ 240V ac/30V dc
- Contact material: Silver Cadmium Oxide / AgNi 0.15
- Coil consumption: 210 to 260mW
- Temperature Range: -40°C to +85°C

<table>
<thead>
<tr>
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<td>RYA3105</td>
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<td>965-9757</td>
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</tbody>
</table>
### Power Relays - Tyco Electronics - continued

**Relays:**
- Fully sealed construction
- Cadmium-free contact material
- IP20 protected terminals
- Coil/contact 5V/10mA
- Sensitive coil 400mW (250mW high sensitivity)

10/12A and 16A SPCO and 8A DPCO power relays with industry standard 3.5mm and 3.9mm footprint, but with a height of only 15.7mm. Approvals to VDE, OVE, SEV, UL, and pending to CSA, BEAB. DIN rail sockets available for panel mount applications.

<table>
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<tr>
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<td>10/12A</td>
<td>117-5043</td>
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<tr>
<td>DPCO, 8A</td>
<td>250Vac</td>
<td>117-5085</td>
<td>117-5086</td>
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<tr>
<td></td>
<td>115V ac</td>
<td>117-5039</td>
<td>117-5040</td>
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</tr>
<tr>
<td></td>
<td>24V ac</td>
<td>117-5037</td>
<td>117-5038</td>
<td></td>
</tr>
</tbody>
</table>

**SPST-NO - 16A @ 240V ac**

**RT1 Series**
- Single Pole, 1 NO contact
- 10A / 250V ac making and breaking capacity (IEC 60998-1)
- 16A / 20 ms inrush peak current
- 5 kV / 10mm coil-contact
- Reinforced insulation

**Contact arrangement**
- SPST NO
- Dielectric voltage between coil and contacts: 4000VAC
- 16A @ 240V ac
- 10A / 250V ac making and breaking capacity (IEC 60998-1)
- 16A / 20 ms inrush peak current
- 5 kV / 10mm coil-contact
- Reinforced insulation

**DIN Rail Sockets with Retainer/Ejector**
- Retainer Clip - 3.5mm
- PCB Sockets and Clips
- 3.5mm
- 5mm
- Order Multiple = 5

**ordering information**
- 5 + 20 + 50 + 100 +
- 1 + 20 + 50 + 100 +
- 1 + 20 + 50 + 100 +

### coil characteristics

<table>
<thead>
<tr>
<th>COIL</th>
<th>Volts</th>
<th>Order Code</th>
<th>1+</th>
<th>20+</th>
<th>50+</th>
<th>100+</th>
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<tbody>
<tr>
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<td>12V dc</td>
<td>360</td>
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<td>24V ac</td>
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<tr>
<td></td>
<td>115V ac</td>
<td>8.1k</td>
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<td>230V ac</td>
<td>32.5k</td>
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<td>32.5k</td>
<td>162-9051</td>
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</table>
**SPC-CO 12A/16A**

**RZ Series**

- 1 pole 12 / 16 A
- 1 CO contact
- DC coil 400mW
- 5 kV / 10 mm coil-contact, reinforced insulation

**Applications:**
- Household appliances
- Boiler control
- Timers
- Garage door control
- POS automation

Rated voltage: max 250V AC

Operating / release time DC coil: 8ms/2ms

**Contact Rating**
- SPNO, 16A @ 250Vac
- SPCO, 12A @ 250Vac

**Dimensions:**
- H=15.7, W=29, D=12.7mm

**Order Code**
- Mfrs. List No.
- Order Code
- PTMD004=991-3556
- PTMLB024=991-3584

---

**SPST-NO - 33A @ 12V dc**

**Applications:**
- Control of mains power
- Hazard warning signal
- Switched power supply

**Dimensions:**
- W=16, H=15.9, D=18.3mm

**Rated Voltage**
- 12V

**Rated Current**
- 33A

**Contact Material:**
- Silver Based

**Contact Configuration:**
- SPST-NO

**Contact Rating:**
- 16A @ 250V Vac / 24V dc

**Inrush Current (max):**
- 120A (20 ms)

**Price Each**
- Order Code
- Price

**8A/12A/16A Vertical**

**RP Series**

- 8A/12A/16A Vertical
- Protection and Indication Modules

**Applications:**
- Protective and indicator for electronic circuits
- Board mount relays
- Solid state relays

**Dimensions:**
- L=29, W=12.6, H=25.5mm

**Order Code**
- Mfrs. List No.
- Order Code
- PTMD004=991-3556
- PTMLB024=991-3584

**8A/12A/16A RX Series**

**Applications:**
- Protection category II to Class 2
- Rated carry current of 16A @ 250V Vac

**Contact Material:**
- Silver Cadmium oxide

**Contact Rating:**
- 8 / 12 / 16A @ 250V

**Inrush Current (max):**
- 120A (20 ms)

**Price Each**
- Order Code
- Price

---

**8A/12A/16A RX Series**

**Applications:**
- 4 kV/8 mm coil-contact
- Reinforced insulation (protection class II)
- Flux-light case

**Contact Material:**
- Silver Cadmium oxide

**Contact Rating:**
- 8 / 12 / 16A @ 250V

**Inrush Current (max):**
- 120A (20 ms)

**Coil Consumption:**
- ac coil/dc coil 500mW / 0.75VA

**Price Each**
- Order Code
- Price
Power Relays - Tyco Electronics - continued

8A/12A/16A RX Series - continued
AC and DC Versions of SPCO and DPCO - continued

<table>
<thead>
<tr>
<th>COL</th>
<th>VOLTS</th>
<th>£</th>
<th>ORDER CODE</th>
<th>PRICE EACH</th>
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</thead>
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<tr>
<td>SPST-NO 16A</td>
<td>12V dc</td>
<td>360</td>
<td>965-9312B</td>
<td>£1.28</td>
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<tr>
<td></td>
<td>24V dc</td>
<td>2.8</td>
<td>965-9340B</td>
<td>£2.46</td>
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</table>

SPST-NO 16A @ 240V ac
Quick Connect Terminals - RF Series

- Single Pole 16A NO contact
- Switching capacity 4000 VA
- Coil power 400 mW
- Quick connect terminals for load side
- Reinforced insulation

10A @ 125V ac/5A @ 30V dc - Miniature
PCH Series

- Compact size
- Sealed plastic case
- High surge voltage - 8000V
- CSA and VDE approved, UL Recognised

10A, Miniature PB Series

- Minimal footprint
- PCB Through Hole Tyco mounting
- UL recognised, VDE approved

10A/30A - PCB or Panel Mount
T9A Series

- SPNO and SPCO contacts
- Quick connect power output terminals and PCB terminal for both coil and contact or
- All PCB terminal versions available
- Water-tight (Washable) plastic case
- CSA approved and UL Recognised

The first online technical portal for design engineers
Log on, research, refine and design
## Quick Connect Terminals with PCB Mount Pins

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
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<tbody>
<tr>
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<td></td>
<td></td>
<td>V23086</td>
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</tr>
<tr>
<td>20/40A</td>
<td></td>
<td></td>
<td>30A</td>
<td></td>
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<tr>
<td>SPST-NO</td>
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<td></td>
<td>SPST-NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Form A</td>
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<td></td>
<td>SPDT-NO</td>
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</tbody>
</table>

### Micro Power K - 30A

**V23086 Series**

- Sealed to IP67
- PCB Terminals
- Immersion cleanable
- Small size with minimum weight
- Double version with two separate systems

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
<th>Order Code</th>
<th>Mftrs. List No.</th>
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<tr>
<td>20/40A</td>
<td></td>
<td>Double</td>
<td>20/40A</td>
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<td></td>
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</table>

### High Power - 100A

**SPST - NO (1 Form X)**

- Hermetically sealed - Intrinsically safe
- No contamination or oxidation of contacts, including long periods of non-operation
- 6kV isolation between open contacts
- Designed and built in accordance with AIAG QS9000
- Flying leads (0.4m) for coil connections (Not shown)

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
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<tr>
<td>20/40A</td>
<td></td>
<td>Double</td>
<td>20/40A</td>
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</table>

### High Power - 500A

**SPST - NO**

- High contact rating - 2000A interrupt at 320V dc
- Built in coil economiser - 1.7W holding power at 12V dc
- Hermetically sealed - Intrinsically safe
- No coil back EMF
- Auxiliary contact version - Monitor for contact position
- CE marked and UK Recognised

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
<th>Order Code</th>
<th>Mftrs. List No.</th>
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<tr>
<td>20/40A</td>
<td></td>
<td>Double</td>
<td>20/40A</td>
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</tbody>
</table>

## 15A, Low Profile

**PCD Series**

- Low profile (10mm)
- Sealed plastic case
- Sensitive coil (200mW)
- UL Recognised, CSA, TUV approved

<table>
<thead>
<tr>
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<th>Mftrs. List No.</th>
<th>Type</th>
<th>Order Code</th>
<th>Mftrs. List No.</th>
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<td>V23076</td>
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</tr>
<tr>
<td>20/40A</td>
<td></td>
<td>Double</td>
<td>20/40A</td>
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</tr>
</tbody>
</table>

## 20/40A, Single Pole

**V23076 Series**

- Immersion cleanable (waterproof)
- PCB terminals
- Power Relay K

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mftrs. List No.</th>
<th>Type</th>
<th>Order Code</th>
<th>Mftrs. List No.</th>
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<td>20/40A</td>
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<td>Double</td>
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</tbody>
</table>

## Relays & Solenoids

### Farnell element14

[View the full list of relays and solenoids on the Farnell element14 website.](https://www.element14.com)
Automotive Relays

Single Pole
V23134 Series

Contact Ratings - SPNO
12V - 240A on/70A off
24V - 240A on/50A off
Switching Current, Min.
1.0A @ 5V
Coil Power (nominal) 1.5W
Contact Material Silver

991-3769 1393304-9 117-5079
991-3767 1-1393304-1 117-5078 5-1393302-6 V23134A0001X038-EV-144
991-3777 9-1393303-7 V23134J1052D642 162-9100 1-1414167-0 V23134J1053C643

With or without mounting bracket

High Current Automotive Relay
Star Point

- Full, symmetric star-point disconnection of an electric (Power steering) motor
- Limiting continuous current 90A
- Disconnection of high over-currents up to 200A
- Contact arrangement fulfills 42V power net requirements
- Resistant to high ambient temperature up to 135°C
- Contact resistance typically less than 2 mΩ per path of load current 20A

H = 17.5, W = 23.0, D = 15.5mm
Contact arrangement 3NO - 1 Tripple make contact/Form 3
Contact Rating, current 12V - 15A, NO - 20A
Contact Rating, voltage 12V
Operator Release Time 20ms/10ms
Temperature Range -40°C to +125°C

162-9096 1-1414170-0 V23135W1001A309

Battery Disconnect Switch

- Limiting continuous current 190 A at 65°C
- Electrically settable and resettable ON/OFF bistable device
- Suitable for voltage levels up to 42V
- High peak current carrying capability up to 1500 A

Dimensions: W=83, H=33, D=68mm

Applications:
- Preheating systems (e.g. for diesel engines, catalytic converters)
- Battery disconnection to prevent fire caused by short circuits during an accident
- Dual battery applications provide the start reliability by a separate starter battery
- Energy-management
- Seasonal, service and transport deactivation

Contact Configuration
Contact Material: Silver Based
Rated Voltage 12V or 24V
Rated Current 190A

Order Code Mfrs. List No.
177-0635 V23130C2021A412
177-0636 V23130C2421A431

Automotive Power
SPCO - 30A

- 30A, 14V dc rated
- Plug-in quick connect terminals

H = 25.4, W = 23.0, D = 15.5mm
Contact arrangement SPNO
Contact rating 30A @ 14V dc
Power, switching max 540W
Voltage, switching max 27V dc

Temperature, operating -40°C to +125°C

Order Code Mfrs. List No.
109-4086 SRZ-1CT-DL-12VDC 109-4088 SRZ-1CT-DL-24VDC

SPCO Type

102-4020 23070210624303 SRZ-1CT-12VDC 109-4086 SRZ-1CT-24VDC

INTELLIGENT ONLINE BUYING SYSTEM PROVIDING

Complete cost control, reduced administration time, visibility of your spend, flexibility and personalised to your company’s needs.
farnell.com/iBuy
Forcibly Guided Contacts

- Contact Rating: 8A
- Mechanical life: 10 x 10^6 operations
- 6 kV surge resistance between poles

SR6Z Safety Relay

- Rated current: 8A
- Forcibly guided contacts according to EN50025

Safety Relays

- 4 or 6 pole safety relay
- Rated current: 8 A
- Forcibly guided contacts according to EN50025

- Emergency shut-off
- Press control
- Machine control
- Elevator and escalator control

Rated Voltage: 250V ac

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Power (mW)</th>
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<tbody>
<tr>
<td>15/25A, Single Pole</td>
<td>500 mW</td>
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<tr>
<td>6/8A, SF4 Series</td>
<td>500 mW</td>
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</table>

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>3NO / 3NC</td>
<td>24V dc</td>
<td>991-3491O</td>
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<tr>
<td>3NO / 3NC</td>
<td>230V ac</td>
<td>177-0613O</td>
</tr>
<tr>
<td>4NO / 2NC</td>
<td>24V dc</td>
<td>177-3505O</td>
</tr>
</tbody>
</table>

6A, 2 Pole

- Low cost SR2M Safety Relay
- Forcibly guided contacts according to EN 50205 - Type II
- 700mW coil
- UL recognised, TUV approved, VDE Component mark

Rated Voltage: 24V dc

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>DPDT, 2 C/O (2 Form C)</td>
<td>500 mW</td>
<td></td>
</tr>
</tbody>
</table>

6A Plug-In GTS Series

- GTS Series Positively Guided Contacts

Safety Modules

- Dimensions: W=55, H=16.5, D=16.5mm

<table>
<thead>
<tr>
<th>Rated Voltage</th>
<th>Contact Material</th>
<th>Power (mW)</th>
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<tr>
<td>12V dc, 105V</td>
<td>15/25A, Single Pole</td>
<td>500 mW</td>
</tr>
<tr>
<td>24V dc, 347V</td>
<td>6/8A, SF4 Series</td>
<td>500 mW</td>
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</table>

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>4NO + 2NC and 3NO + 3NC versions available</td>
<td>500 mW</td>
<td></td>
</tr>
<tr>
<td>Forcibly guided contacts</td>
<td>500 mW</td>
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</tbody>
</table>

Contact Clearance: >0.75mm maintained at all times
Conforms to EN50025

Plug-In Sockets

- Relay: L=62, W=22.5, H=37
- DIN Rail Socket: L=80, W=40, H=47

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>4NO + 2NC</td>
<td>24V dc</td>
<td>118-1248O</td>
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<tr>
<td>3NO + 3NC</td>
<td>24V dc</td>
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<table>
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<tr>
<th>Contact</th>
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<tbody>
<tr>
<td>8A PCB - SR6Z Safety Relay on DIN Rail</td>
<td>Forcibly Guided Contacts</td>
<td>137-2571O</td>
</tr>
</tbody>
</table>

8A PC6 - SR6Z Safety Relay on DIN Rail

- Forcibly Guided Contacts

8A PCB - SR6Z Safety Relay on DIN Rail

- Forcibly Guided Contacts

- Dust protected
- Plug-in terminals
- Micro Power Relay A
- Contact arrangement: SPOT, 1 C/O (1 Form C)
- Contact rating: 25A into resistive load
- Switching Current, Min.: 1.0A
- Coil Power (nominal): 1.37W
- Contact Material: Silver Tin Ode

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>3NO / 3NC</td>
<td>24V dc</td>
<td>991-3491O</td>
</tr>
<tr>
<td>3NO / 3NC</td>
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</tr>
<tr>
<td>4NO / 2NC</td>
<td>24V dc</td>
<td>177-3505O</td>
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- UL recognised, TUV approved, VDE Component mark

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDT, 2 C/O (2 Form C)</td>
<td>500 mW</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
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<td>24V dc</td>
<td>118-1248O</td>
</tr>
<tr>
<td>3NO + 3NC</td>
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<td>118-1249O</td>
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<table>
<thead>
<tr>
<th>Contact</th>
<th>Coil</th>
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<tbody>
<tr>
<td>8A PCB - SR6Z Safety Relay on DIN Rail</td>
<td>Forcibly Guided Contacts</td>
<td>137-2571O</td>
</tr>
</tbody>
</table>
Safety Relays - continued

DPCO 8A
50 Series - Forcibly Guided Contacts

- High physical separation between adjacent contacts
- 8mm, 6 kV (1,2/50 μs) isolation, coil-contacts
- Flux proof: RT II
- Approved to CE, IMQ and UL Recognised

Contact arrangement
DPDT - CO
Coil consumption 700mW
Operate/Release 10 / 4ms typical
Temperature range -40 to 70°C

8A, 4 Pole - Safety
SRH Series

- Very small footprint
- Forcibly guided contacts according to EN 50205
- 2 N/O + 2 N/O + 1 N/O + 1 N/C versions available
- Weight to IEC 61810 RTIII
- UL (United States and Canada) Recognised and VDE approved

Contact arrangement
2 N/O + 1 N/C
Continuous thermal load 8A
Minimum contact load >50mA
Rated voltage 250V ac
Breaking voltage (max) 440V ac
 maximal breaking capacity 2000VA

Contact Style and Rating - X versions
Coil consumption 2.7VA (ac), 2.7VA (dc)
Coil operating range 80% - 110%
Temperature range -40°C to 60°C

10A PCB - SF2 Series
Positively Guided Contacts

- Low profile compact packages with PCB terminals
- 2NO + 2NC contacts
- IP67 sealed
- Approved to TUV, SEV and CSA, UL Recognised
- Complies with IEC225

Contacts arrangement
DPCO
Max. switch frequency 10Hz
Switch voltage (max) 250V
Power consumption 500mW

Plug-In Relays

10A with Contact Indicator
MX-S Series

- DPDT and 3PDT contact
- Built-in operation indicator
- Up to 10A switching on the NO contacts
- UL Recognised

Contact rating N.O. contact (resistive) 10A @ 250V ac / 30V dc
Contact rating N.O. contact (inductive pf 0.4) 7A @ 250Vac
Contact material AgSnIn
Dielectric strength 2500V
Operate/Release ac 20ms, dc 20ms/20ms
Coil consumption 2.7VA (ac), 2.7VA (dc)
Coil operating range 80% - 110%
Temperature range -40°C to 60°C

5A Plug In
R10 Series - Form C contacts

- Forcibly guided contacts according to EN 50205
- UL Recognised
- CE, IMQ and TUV, SEV
- Recognised UL

Contact arrangement
3PDT - CO
Coil consumption 620mW
Coil operating range 80% - 110%
Temperature range -40°C to 60°C

Cradle Relay Sockets and Accessories

Cradle Socket

- Terminal Type
- Contact Material
- Plating, Contact Mating Area
- Body Material
- PC, Yes
- Copper Tin, Silver
- Polycarbonate

2 pole PCB Socket & clip
6 pole PCB Socket & clip
4 pole PCB Socket & clip

53533
5A Miniature Plug In - HY Series

- 4 Pole changeover with manual test button
- CSA, TUV, and VDE approved, UL Recognised
- Gold flashed silver nickel contacts for high reliability

Contact arrangement: 4PCO
Contact rating: 5A @ 250V ac
Temperature range: -55°C to +70°C
Coil consumption: 1.2VA

4PCO with LED Indicator

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V ac</td>
<td>46</td>
<td>109-3976</td>
</tr>
<tr>
<td>24V ac</td>
<td>194</td>
<td>109-3979</td>
</tr>
<tr>
<td>110V ac</td>
<td>4.43</td>
<td>109-3980</td>
</tr>
<tr>
<td>230V ac</td>
<td>14.4</td>
<td>109-3981</td>
</tr>
<tr>
<td>12V dc</td>
<td>160</td>
<td>109-3982</td>
</tr>
<tr>
<td>24V dc</td>
<td>650</td>
<td>109-3983</td>
</tr>
</tbody>
</table>

Sockets + Clips
DIN Rail Socket
993-9237

5A/10A Miniature - MY2(S), MY4(S) Series

- With Mechanical and LED Indicators, Labelling Facility, Test Button, ac and dc Suppression
- Versatile, full featured miniature power relays
- DPCO and 4PCO contact arrangements
- All relays have mechanical flag indication and label facility
- Other features include - LED indication, push to test button, CR or diode suppression
- VDE and CSA approved, UL Recognised

Contact arrangement: DPCO/4PCO
Contact rating: DPCO, 10A @ 250V ac/30V dc
Operate/release time: 20ms
Contact material: DPCO, Silver/4PCO, Silver, Gold Flashed Silver
Temperature range: -55°C to +70°C
Coil consumption: 0.9-1.2VA ac, 0.95A/10A

Volts | Order Code | Price Each |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5A Miniature - MY2(S) Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12V dc</td>
<td>160</td>
<td>186-235</td>
</tr>
<tr>
<td>24V ac</td>
<td>636</td>
<td>186-247</td>
</tr>
<tr>
<td>12V ac</td>
<td>46</td>
<td>186-259</td>
</tr>
<tr>
<td>24V ac</td>
<td>190</td>
<td>186-260</td>
</tr>
<tr>
<td>220/240V ac</td>
<td>18.79</td>
<td>186-264</td>
</tr>
</tbody>
</table>

DPCO with LED Indication - MY2(S) Series

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V dc</td>
<td>636</td>
<td>186-302</td>
</tr>
<tr>
<td>24V ac</td>
<td>18.79</td>
<td>186-346</td>
</tr>
</tbody>
</table>

DPCO with LED Indicator and Push to Test Button - MY2N(S) Series

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V dc</td>
<td>160</td>
<td>186-351</td>
</tr>
<tr>
<td>24V ac</td>
<td>636</td>
<td>186-363</td>
</tr>
<tr>
<td>24V ac</td>
<td>180</td>
<td>186-367</td>
</tr>
<tr>
<td>24V ac</td>
<td>18.79</td>
<td>186-406</td>
</tr>
</tbody>
</table>

DPCO with LED Indicator and Diode Suppression - MY2N(S) Series

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V dc</td>
<td>636</td>
<td>186-429</td>
</tr>
</tbody>
</table>

DPCO Latching - MY2(K) Series

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>4PCO</td>
<td>470/440</td>
<td>134-0951</td>
</tr>
</tbody>
</table>

4PCO - MY4(S) Series

<table>
<thead>
<tr>
<th>Volts</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V dc</td>
<td>160</td>
<td>186-454</td>
</tr>
<tr>
<td>24V dc</td>
<td>636</td>
<td>186-466</td>
</tr>
<tr>
<td>48V ac</td>
<td>2.56</td>
<td>315-8668</td>
</tr>
<tr>
<td>110V ac</td>
<td>11.1</td>
<td>315-8650</td>
</tr>
<tr>
<td>6A ac</td>
<td>12.2</td>
<td>315-8618</td>
</tr>
<tr>
<td>12V ac</td>
<td>46</td>
<td>186-478</td>
</tr>
<tr>
<td>24V ac</td>
<td>180</td>
<td>186-480</td>
</tr>
<tr>
<td>50V ac</td>
<td>788</td>
<td>315-8622</td>
</tr>
<tr>
<td>120V ac</td>
<td>4.43</td>
<td>186-451</td>
</tr>
<tr>
<td>240V ac</td>
<td>18.79</td>
<td>186-508</td>
</tr>
</tbody>
</table>

Volts | Order Code | Price Each |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4PCO with LED Indication - MY4N(S) Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24V dc</td>
<td>636</td>
<td>186-521</td>
</tr>
<tr>
<td>12V ac</td>
<td>4.43</td>
<td>186-557</td>
</tr>
<tr>
<td>24V ac</td>
<td>18.79</td>
<td>186-589</td>
</tr>
</tbody>
</table>

6/10/12A Miniature - PT Series

- 2, 3 and 4 pole contact arrangements
- Industry standard terminal layout
- Cadmium free AgNi contacts
- Mechanical Flag
- VDE approved

Dimensions: L = 28, W = 22.5, H = 29mm
### 6/10/12A Miniature - PT Series - continued

<table>
<thead>
<tr>
<th>Contact rating</th>
<th>12A @ 240V ac</th>
<th>Operate/release time</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPCO</td>
<td>10ms</td>
<td>116-9231</td>
<td></td>
</tr>
<tr>
<td>3PCO</td>
<td>15ms</td>
<td>116-9236</td>
<td></td>
</tr>
<tr>
<td>2PCO</td>
<td>20ms</td>
<td>116-9240</td>
<td></td>
</tr>
</tbody>
</table>

| Temperature range | -20°C to +60°C |

<table>
<thead>
<tr>
<th>Screw Term.</th>
<th>35mm rail/surface socket - Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = 75, W = 27, H = 43</td>
<td></td>
</tr>
<tr>
<td>L = 60, W = 29.2, H = 29.5</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
</tbody>
</table>

- 4 pole changeover with manual test button and mechanical flag indicator
- Standard 35mm rail/surface socket has touch proof terminals to IP20 and accepts one module for added facilities
- Slim line 35mm rail/surface socket has rising clamp terminals, leaf connection for positive relay connection and accepts standard 40 series modules page 735723
- All sockets are complete with clips
- DIN rail sockets have a user removable identification tab
- Relays approved to IMQ, SEMKO, CSA, DEMKO, VDE, SEV and UL Recognised
- Sockets approved to CSA, SEV and UL Recognised. PCB type also SEV approved

### 7A Miniature - 5534 Series

**With Contact Indicator, Test Button, Module Facility**

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>7A @ 240V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB</td>
<td>10A @ 250V</td>
</tr>
<tr>
<td>Panel</td>
<td>10A @ 250V</td>
</tr>
</tbody>
</table>

| Temperature range | -40°C to +70°C |

<table>
<thead>
<tr>
<th>Screw Term.</th>
<th>35mm rail/surface socket - Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = 27.5, W = 20.6, H = 33.5</td>
<td></td>
</tr>
<tr>
<td>L = 25.1, D = 11.5</td>
<td></td>
</tr>
</tbody>
</table>

- All sockets are complete with clips
- DIN rail sockets have a user removable identification tab
- Relays approved to IMQ, SEMKO, CSA, DEMKO, VDE, SEV and UL Recognised
- Sockets approved to CSA and UL Recognised. PCB type also SEV approved

### 4PCO - 5534 Series

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>7A @ 240V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB</td>
<td>10A @ 250V</td>
</tr>
<tr>
<td>Panel</td>
<td>10A @ 250V</td>
</tr>
</tbody>
</table>

| Temperature range | -20°C to +60°C |

<table>
<thead>
<tr>
<th>Screw Term.</th>
<th>35mm rail/surface socket - Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = 75, W = 27, H = 43</td>
<td></td>
</tr>
<tr>
<td>L = 60, W = 29.2, H = 29.5</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
</tbody>
</table>

- All sockets are complete with clips
- DIN rail sockets have a user removable identification tab
- Relays approved to IMQ, SEMKO, CSA, DEMKO, VDE, SEV and UL Recognised
- Sockets approved to CSA and UL Recognised. PCB type also SEV approved

### 10A Miniature - 5532, 5533 Series

**With Module Facility**

- 10A @ 240V ac (resistive) Temperature range -5°C to +45°C
- 10A @ 240V ac (resistive) Temperature range -20°C to +60°C
- 10A @ 240V ac (resistive) Temperature range -40°C to +70°C

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>10A @ 240V ac (resistive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB</td>
<td>10A @ 250V</td>
</tr>
<tr>
<td>Panel</td>
<td>10A @ 250V</td>
</tr>
</tbody>
</table>

| Temperature range | -5°C to +45°C |

<table>
<thead>
<tr>
<th>Screw Term.</th>
<th>35mm rail/surface socket - Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = 75, W = 27, H = 43</td>
<td></td>
</tr>
<tr>
<td>L = 60, W = 29.2, H = 29.5</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
</tbody>
</table>

- All sockets are complete with clips
- DIN rail sockets have a user removable identification tab
- Relays approved to IMQ, SEMKO, CSA, DEMKO, VDE, SEV and UL Recognised
- Sockets approved to CSA and UL Recognised. PCB type also SEV approved

### 10A - LY2/LY4 Series

**Sensitive relay connection and accepts standard 40 series modules page 735723**

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>7A @ 240V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB</td>
<td>10A @ 250V</td>
</tr>
<tr>
<td>Panel</td>
<td>10A @ 250V</td>
</tr>
</tbody>
</table>

| Temperature range | -20°C to +60°C |

<table>
<thead>
<tr>
<th>Screw Term.</th>
<th>35mm rail/surface socket - Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = 75, W = 27, H = 43</td>
<td></td>
</tr>
<tr>
<td>L = 60, W = 29.2, H = 29.5</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
</tbody>
</table>

- All sockets are complete with clips
- DIN rail sockets have a user removable identification tab
- Relays approved to IMQ, SEMKO, CSA, DEMKO, VDE, SEV and UL Recognised
- Sockets approved to CSA and UL Recognised. PCB type also SEV approved

### Modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diode</td>
<td>PMT10040</td>
</tr>
<tr>
<td>LED</td>
<td>PMU5064</td>
</tr>
<tr>
<td>LED</td>
<td>PMU5370</td>
</tr>
</tbody>
</table>

- 116-9256
- 116-9263
- 116-9267
- 116-9249
- 116-9240

### Accessories

<table>
<thead>
<tr>
<th>Module</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marking Tab</td>
<td>94.84.56</td>
</tr>
</tbody>
</table>

- 93-7861

### 7A Miniature - 5534 Series

**With Contact Indicator, Test Button, Module Facility**

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>7A @ 240V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB</td>
<td>10A @ 250V</td>
</tr>
<tr>
<td>Panel</td>
<td>10A @ 250V</td>
</tr>
</tbody>
</table>

| Temperature range | -20°C to +60°C |

<table>
<thead>
<tr>
<th>Screw Term.</th>
<th>35mm rail/surface socket - Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = 75, W = 27, H = 43</td>
<td></td>
</tr>
<tr>
<td>L = 60, W = 29.2, H = 29.5</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
<tr>
<td>Mounting holes = 3.2 dia.</td>
<td></td>
</tr>
</tbody>
</table>

- All sockets are complete with clips
- DIN rail sockets have a user removable identification tab
- Relays approved to IMQ, SEMKO, CSA, DEMKO, VDE, SEV and UL Recognised
- Sockets approved to CSA and UL Recognised. PCB type also SEV approved

### Modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diode</td>
<td>PMT10040</td>
</tr>
<tr>
<td>LED</td>
<td>PMU5064</td>
</tr>
<tr>
<td>LED</td>
<td>PMU5370</td>
</tr>
</tbody>
</table>

- 116-9256
- 116-9263
- 116-9267
- 116-9249
- 116-9240

### Accessories

<table>
<thead>
<tr>
<th>Module</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marking Tab</td>
<td>94.84.56</td>
</tr>
</tbody>
</table>

- 93-7861
16A, Faston Terminals
RM 2 Series

● 2 pole 16A CO contacts
● Switching capacity up to 6000 VA
● AG or DC coil versions
● Mechanical indicator
● Quick connect 6.3mm terminals
● AgNi 90/10 contact material
● VDE Approved. UL Recognised

Body: H = 48.5, W = 38.5, D = 35.5mm

Contact arrangement
DPCO
Contact Rating
16A @ 400VAC Temperature Range - DC Coil -45 to +70°C

Order Code
Type No.
Mfrs. List No.
Order Code
Type No.
Mfrs. List No.

Order Multiple=1

Volts £ Order Code 1+ 20+ 50+ 100+

12V dc 110 162-90270
230V ac 8.3 162-90290

12A - 5632/5634 Series
With Module Facility

L = 27.8. W = 41, H = 35.5
H = 33.5, W = 46, D = 78mm

General purpose 2-pole and 4-pole changeover power relays approved to VDE, IMQ, NF, SEV, UL Recognised

The 35mm rail/surface sockets have touchproof terminals to IP20 and will accept an additional module to give the extra facilities of protection diode and/or LED indication.

Contact arrangement
DPCO
Contact rating (resistive)
12A @ 250v ac
Contact material
Silver Nickel

Order Code
Type No.
Mfrs. List No.
Order Code
Type No.
Mfrs. List No.

Order Multiple=5

Order Code
Type No.
Mfrs. List No.
Order Code
Type No.
Mfrs. List No.

Order Multiple=5

Volts £ Order Code 1+ 20+ 50+ 100+

12V dc 110 162-90270
230V ac 8.3 162-90290

15A - Double Pole
PT Faston Series

● 2 pole contact arrangement
● DC and ac coil versions
● DIN rail socket or flange mounting
● Cadmium free AgNi contacts
● Mechanical indicator
● UL Recognised

H = 29, W = 28, D = 22.5mm
H = 28.3, W = 27.8, D = 21.8mm

Contact Rating
16A ac @ 240V
Operate/Release
15ms/10ms
Temperature Range
- AC Coil -45 to +55°C
Contact Rating
16A dc @ 240V
Temperature Range
- DC Coil -45 to +70°C

Contact Material
AgNi 90/10

Order Code
Type No.
Mfrs. List No.
Order Code
Type No.
Mfrs. List No.

Order Multiple=1

Volts £ Order Code 1+ 20+ 50+ 100+

24V dc 61 176-50890
115V ac 1.9 116-92592
230V ac 7.7k 116-92530
12V dc 123 116-92540
24V dc 490 116-92550

25A/30A/3.0 HP Motor Load
GTL Series

Relay with mounting bracket fitted
DIN rail socket

A heavy duty power relay available in 1 or 2 pole format with 25A inductive rating, and UL rated at 3.0 HP motor load at 265V ac. Typical loads include motors, heaters, lighting controls, and lamps.

The relay may be either surface mounted using bracket 472-530 or DIN rail mounted using bracket 478-003. Terminal connections are by 0.250 push-on connectors. Alternatively the DIN rail/socket 478-003 has finger protected screw terminals.

Contact arrangement
DIN/Surface Mounting - 3.0 HP Motor Load

Order Code
Type No.
Mfrs. List No.
Order Code
Type No.
Mfrs. List No.

Order Multiple=1

Volts £ Order Code 1+ 20+ 50+ 100+

24V dc 777 965-93580
24V ac 196 965-93020
230V ac 19.465k 965-94200

Plug-In Relays - continued

25A/30A/3.0 HP Motor Load - continued

5A with Contact Indicator
MK2P, MK3PS Series

Two and three pole changeover power relays for plug-in octal and 11 bases. The relays have serrated contacts giving low contact resistance and a mechanical flag indicator to show contact operation. The relays are available either with or without a manual test button. See this section for suitable bases etc.

8 and 11 Pin Power Relays

COIL | Mfrs. | Price Each
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPNO - G7L-1A-T Series</td>
<td>20 to 240 VAC</td>
<td>195-9640</td>
</tr>
<tr>
<td>24</td>
<td>195-9640</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>195-9640</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>195-9640</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>195-9640</td>
<td></td>
</tr>
<tr>
<td>SPNO - G7L-1A-U Series</td>
<td>240 to 240 VAC</td>
<td>207-6386</td>
</tr>
<tr>
<td>24</td>
<td>207-6386</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>207-6386</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>207-6386</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>207-6386</td>
<td></td>
</tr>
</tbody>
</table>

10A with Contact Indicator and Test Button

MT2/2 Series

H=57 (above socket) 2 Pole Socket
W=35.5, D=35.5, H=26, W=38, L=62

10A with Contact Indicator and Test Button

60-12/13 Series

Two and three pole changeover power relays for plug-in octal and 11-pin bases. The relays have manual test button and mechanical flag contact operating indicator. AC coils are dual frequency 50/60 Hz. VDE, CSA, RINA, BEAB, IMQ, DEMKO and SEV approved, UL Recognised. The cover is flame retardant. See this section for suitable bases etc.

With Test Button and Contact Indicator

DPCO - MK2P, MK3P Series

<table>
<thead>
<tr>
<th>COIL</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V ac</td>
<td>169-14980</td>
<td></td>
</tr>
<tr>
<td>125Vac</td>
<td>12.4K</td>
<td></td>
</tr>
<tr>
<td>230Vac</td>
<td>6.17K</td>
<td></td>
</tr>
<tr>
<td>24Vac</td>
<td>430</td>
<td></td>
</tr>
</tbody>
</table>

MT2/3 Series

<table>
<thead>
<tr>
<th>COIL</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V ac</td>
<td>169-14980</td>
<td></td>
</tr>
<tr>
<td>125Vac</td>
<td>12.4K</td>
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<td>6.17K</td>
<td></td>
</tr>
<tr>
<td>24Vac</td>
<td>430</td>
<td></td>
</tr>
</tbody>
</table>

10+20+100+500+

SEV
UL

COIL | Mfrs. | Price Each |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DPCO</td>
<td>169-14980</td>
<td></td>
</tr>
<tr>
<td>125Vac</td>
<td>12.4K</td>
<td></td>
</tr>
<tr>
<td>230Vac</td>
<td>6.17K</td>
<td></td>
</tr>
<tr>
<td>24Vac</td>
<td>430</td>
<td></td>
</tr>
</tbody>
</table>

MT2/3 Series

<table>
<thead>
<tr>
<th>COIL</th>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V ac</td>
<td>169-14980</td>
<td></td>
</tr>
<tr>
<td>125Vac</td>
<td>12.4K</td>
<td></td>
</tr>
<tr>
<td>230Vac</td>
<td>6.17K</td>
<td></td>
</tr>
<tr>
<td>24Vac</td>
<td>430</td>
<td></td>
</tr>
</tbody>
</table>

10+20+100+500+

SEV
UL
35mm Rail/Surface Mounting

- 60.12 & 60.13 Series relays SEE WEBSITE

- 60.12 Series

- 60.13 Series

Protection and Indication Modules

These modules can be easily inserted in the special relay sockets Order Codes 116-9213 and 116-9215 (detailed above) to provide extra facilities for Finder 8 and 11 pin series relays. The modules provide back EMF diode protection, LED indication, or both.

The modules are also suitable for use with Finder PCB power relays and bases (see Order Code 116-9216).

- 90 Series

<table>
<thead>
<tr>
<th>Mftrs. List No.</th>
<th>Description</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.01 Series</td>
<td>Diode + LED 6 - 24V dc</td>
<td>176-5096</td>
<td>99.02 Series</td>
</tr>
<tr>
<td>99.02 Series</td>
<td>Diode + LED 6 - 24V dc</td>
<td>176-5096</td>
<td>99.03 Series</td>
</tr>
</tbody>
</table>
8 and 11 Pin Power Relays - continued

DIN Rail/Surface Mount Screw Terminals

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 pin MCCCDA-08</td>
<td>163-8152</td>
<td>8 pin MCCCDA-08</td>
<td>250+</td>
</tr>
<tr>
<td>8 pin MCCCDA-11</td>
<td>163-8153</td>
<td>8 pin MCCCDA-11</td>
<td>250+</td>
</tr>
</tbody>
</table>

Spring Attachment

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 pin MCCCDSB-08</td>
<td>163-8155</td>
<td>8 pin MCCCDSB-08</td>
<td>250+</td>
</tr>
<tr>
<td>11 pin MCCCDSB-11</td>
<td>163-8156</td>
<td>11 pin MCCCDSB-11</td>
<td>250+</td>
</tr>
</tbody>
</table>

Chassis, Panel or DIN Rail Mount Sockets

10A @ 250V ac Rated

Compact screw terminal bases for mounting on 35mm DIN rail or for screw mounting to flat surfaces. This range of sockets is manufactured in flame retardant UL94 V0 rated nylon. All screw terminals are shrouded and are finger proofed to maximise safety. The bases can easily be removed from DIN rail by a release tab. The cover can have a cable entry knockout at each end.

FOR SUITABLE 35mm DIN RAIL SEE Web

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 pin base MCC8F</td>
<td>154-7943</td>
<td>8 pin base MCC8F</td>
<td>250+</td>
</tr>
<tr>
<td>11 pin base MCC11F</td>
<td>154-7944</td>
<td>11 pin base MCC11F</td>
<td>250+</td>
</tr>
</tbody>
</table>

Chassis Mount Sockets

10A @ 250V ac Rated

Compact screw terminal bases for screw mounting to flat surfaces. This range of sockets is manufactured in flame retardant UL94 V0 rated nylon. All screw terminals are shrouded and are finger proofed to maximise safety. The screw terminals are on the reverse side, allowing access with the unit mounted on the panel.

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 pin base MCC8RB</td>
<td>154-7943B</td>
<td>8 pin base MCC8RB</td>
<td>250+</td>
</tr>
<tr>
<td>11 pin base MCC11R</td>
<td>154-7944B</td>
<td>11 pin base MCC11R</td>
<td>250+</td>
</tr>
</tbody>
</table>

Chassis Mounting

Body dia.:30mm

Fixing centres:40mm (slots)

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 pin bases PLE8</td>
<td>118-1272</td>
<td>PLE8</td>
<td>250+</td>
</tr>
<tr>
<td>11 pin bases PLE1</td>
<td>118-1273</td>
<td>PLE1</td>
<td>250+</td>
</tr>
</tbody>
</table>

PCB Mounting

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLE8-0</td>
<td>170-403</td>
<td>PLE8-0</td>
<td>250+</td>
</tr>
<tr>
<td>PLE8-1</td>
<td>331-790</td>
<td>PLE8-1</td>
<td>250+</td>
</tr>
<tr>
<td>PLE11-0</td>
<td>118-1274B</td>
<td>PLE11-0</td>
<td>250+</td>
</tr>
</tbody>
</table>

8/11 Way Free Sockets

10A @ 250V ac Rated

The sockets incorporate an adjustable cable clamp and are terminated via solder lugs. Suitable for many types of panel mounted relays and timers, or as an inline connector. This range of compact sockets is manufactured in flame retardant UL94 nylon.

<table>
<thead>
<tr>
<th>No. of Mtr.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 pin MCS8F</td>
<td>154-7941</td>
<td>8 pin MCS8F</td>
<td>250+</td>
</tr>
<tr>
<td>11 pin MCS11F</td>
<td>154-7942</td>
<td>11 pin MCS11F</td>
<td>250+</td>
</tr>
</tbody>
</table>

Panel Mounted Relays - Finder

2 and 3 pole power relays available with either changeover or normally open contacts. The normally open contact relays have 3mm contact gaps conforming to IEC730 regulations for office and domestic appliances.

Contact arrangement DPDO/DPDN/DPCO/3PCO

Contact material Silver Cadmium Oxide

<table>
<thead>
<tr>
<th>Mtr. No.</th>
<th>Order Code</th>
<th>Name</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>62.82.9.024.0300</td>
<td>116-9287</td>
<td>62.82.9.024.0300</td>
<td>250+</td>
</tr>
<tr>
<td>62.82.9.024.0300</td>
<td>116-9287</td>
<td>62.82.9.024.0300</td>
<td>250+</td>
</tr>
<tr>
<td>62.82.9.024.0300</td>
<td>116-9287</td>
<td>62.82.9.024.0300</td>
<td>250+</td>
</tr>
<tr>
<td>62.82.9.024.0300</td>
<td>116-9287</td>
<td>62.82.9.024.0300</td>
<td>250+</td>
</tr>
<tr>
<td>62.82.9.024.0300</td>
<td>116-9287</td>
<td>62.82.9.024.0300</td>
<td>250+</td>
</tr>
</tbody>
</table>

62 Series

16A/CO and NO Types

No. of Mtr. | Order Code | Name | Price Each |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 25+ 50+ 100+ 250+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20/30A 6531 Series

Single pole power relays with VDE, C3A, SEV approvals. UL Recognised. Transparent polycarbonate case has fixing lugs for screw mounting.
<table>
<thead>
<tr>
<th>SPNO, 30A - Panel Mount</th>
<th>T92 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature range</strong></td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td><strong>Contact Material</strong></td>
<td>Silver Cadmium Oxide/Silver Tin Indium Oxide</td>
</tr>
<tr>
<td><strong>Rated contact voltage</strong></td>
<td>250V</td>
</tr>
<tr>
<td><strong>Rated Load</strong></td>
<td>10A @ 240V ac/30V dc, 7.5A @ 240V ac, 5A @ 30V dc</td>
</tr>
<tr>
<td><strong>Contact arrangement</strong></td>
<td>DPNO-DPCO</td>
</tr>
<tr>
<td><strong>Minimum switching voltage</strong></td>
<td>250V ac/30V dc</td>
</tr>
<tr>
<td><strong>Maximum switching voltage</strong></td>
<td>3000V ac/375V dc</td>
</tr>
<tr>
<td><strong>Operating Time</strong></td>
<td>250ms Max.</td>
</tr>
<tr>
<td><strong>Dielectric strength</strong></td>
<td>4000V rms</td>
</tr>
<tr>
<td><strong>Contact material</strong></td>
<td>Silver Cadmium Oxide/Silver Tin Indium Oxide</td>
</tr>
<tr>
<td><strong>Contact resistance</strong></td>
<td>250µΩ</td>
</tr>
<tr>
<td><strong>Base material</strong></td>
<td>Polymer, UL94V-0</td>
</tr>
<tr>
<td><strong>Rated current</strong></td>
<td>30A, 50A</td>
</tr>
<tr>
<td><strong>Rated voltage</strong></td>
<td>240V ac/375V dc</td>
</tr>
<tr>
<td><strong>Maximum power output</strong></td>
<td>2500W</td>
</tr>
<tr>
<td><strong>Insulation resistance</strong></td>
<td>10GΩ</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td>500 units per reel</td>
</tr>
<tr>
<td><strong>Price Each</strong></td>
<td>£2.96</td>
</tr>
</tbody>
</table>

### Panel Mounted Relays - IMO

**General Purpose 10A Power Relay**

**DPDC - Flange Mount**

- **Contact arrangement**: DPNO-DPCO
- **Contact rating**: 30A @ 240V ac
- **Maximum switching voltage**: 3000V ac/375V dc
- **Operating Time**: 250ms Max.
- **Dielectric strength**: 4000V rms
- **Contact material**: Silver Cadmium Oxide/Silver Tin Indium Oxide
- **Contact resistance**: 250µΩ
- **Base material**: Polymer, UL94V-0
- **Rated current**: 30A
- **Rated voltage**: 240V ac/375V dc
- **Maximum power output**: 2500W
- **Insulation resistance**: 10GΩ
- **Ambient temperature**: -40°C to +70°C
- **Packaging**: 500 units per reel
- **Price Each**: £2.96

### Panel Mounted Relays - Tyco Electronics

**16A/25A/30A - RM Series**

**General Purpose 10A Power Relay**

- **Contact arrangement**: DPNO-DPCO
- **Contact rating**: 30A @ 240V ac
- **Maximum switching voltage**: 3000V ac/375V dc
- **Operating Time**: 250ms Max.
- **Dielectric strength**: 4000V rms
- **Contact material**: Silver Cadmium Oxide/Silver Tin Indium Oxide
- **Contact resistance**: 250µΩ
- **Base material**: Polymer, UL94V-0
- **Rated current**: 30A
- **Rated voltage**: 240V ac/375V dc
- **Maximum power output**: 2500W
- **Insulation resistance**: 10GΩ
- **Ambient temperature**: -40°C to +70°C
- **Packaging**: 500 units per reel
- **Price Each**: £2.96
Panel Mounted Relays - IMO - continued

General Purpose 10A Power Relay - continued

DPCO - Flange Mount - continued

10A - SPCO
G2R-K-T Series

- SPCO relays capable of switching 10A
- Quick connect terminals, ideal for panel mounting
- Terminals accept 4.8 x 0.5 "faston" connectors
- CSA, TUV, VDE, SEMKO, NEMKO, IMQ approved, UL Recognised

Connect arrangement
Contact rating
Contact material

SPCO
10A @ 250 Vac/30Vac/250Vac
Silver Cadmium Oxide

Coil consumption
Coil operating range

530mA/1.8W 500mA/1.2W 500mA/0.9W
70-110% 80-110% 70-110% ac

H=29.5 W=45 D=4
Fixing Centres = 38

Mftrs. List No.
Ω
1SNA607002R0100
189-5901

Price Each

<table>
<thead>
<tr>
<th>List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SNA607002R0100</td>
<td>189-5901</td>
<td>1.1</td>
<td>999-9880</td>
<td></td>
</tr>
</tbody>
</table>

Mftrs.
List No.

1SNA645014R0200 | 189-5914 |
1SNA645016R0100 | 189-5916 |
1SNA645017R2200 | 189-5917 |
1SNA645018R0200 | 189-5918 |
1SNA645019R0100 | 189-5919 |
1SNA645020R0200 | 189-5920 |
1SNA645021R0100 | 189-5921 |
1SNA645022R0000 | 189-5922 |

Price Each

<table>
<thead>
<tr>
<th>List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SNA645008R0000</td>
<td>189-5913</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1SNA645009R0100 | 189-5914 |
1SNA645010R0200 | 189-5915 |
1SNA645011R0300 | 189-5916 |
1SNA645012R0400 | 189-5917 |
1SNA645013R0500 | 189-5918 |

Panel Mounted Relays - Omron

Interface Relays

Optocouplers

ABB NEW

Relay Interfaces

On-off

Optocoupling

Compliant

Non-compliant

RoHS
Terminals with Isolator

**TermoOpt Series**
- 8mm pitch
- Protected Input and Output circuit
- Input / Output Opto isolation
- Status indication by LED
- Push-in connection
- Standardized marking with WS12/6 Multicard

**Electromechanical and SSR**

### Electromechanical and SSR - 38 Series Relay Interface Modules

<table>
<thead>
<tr>
<th>List No.</th>
<th>Voltage</th>
<th>Current</th>
<th>Volts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>184-3900</td>
<td>12V dc</td>
<td>0.1A</td>
<td>12V dc to 30V dc</td>
<td>Push-in connection, 2 membrane + 2 solder contacts, 10 mm pitch</td>
</tr>
<tr>
<td>116-9346</td>
<td>5V dc</td>
<td>0.5A</td>
<td>12V dc to 30V dc</td>
<td>Push-in connection, 2 membrane + 2 solder contacts, 10 mm pitch</td>
</tr>
</tbody>
</table>

### SSR - DIN Rail Microopto Series

- Short circuit protected output with thermal protection
- Overvoltage protection at all connections
- Output error LED
- Signal LED
- Direct connection for 3-wire actuators
- plugable cross connection

<table>
<thead>
<tr>
<th>List No.</th>
<th>Voltage</th>
<th>Current</th>
<th>Volts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8957940000</td>
<td>24V dc</td>
<td>10A</td>
<td>24V dc to 33V dc</td>
<td>Push-in connection, 2 membrane + 2 solder contacts, 10 mm pitch</td>
</tr>
<tr>
<td>8957970000</td>
<td>24V dc</td>
<td>5A</td>
<td>24V dc to 30V dc</td>
<td>Push-in connection, 2 membrane + 2 solder contacts, 10 mm pitch</td>
</tr>
</tbody>
</table>

### 35mm DIN rail (EN 50022) mounting
- DC and AC/DC versions available
- Supplied with integral coil indication and protection circuit
- Instant removal of relay using plastic retaining clip
- 5AW/6mm isolation between coil and contacts
- Screw terminal and Screwless terminal types available
- Relays approved to CSA, VDE, UL, and CE regulations
Electromechanical Relays Specification
- Max. "ON-state" Voltage Drop 0.12V
- Max. "OFF-state" Leakage Current 0.001mA
- Switching Voltage Range 1.5V to 24V
- Rated Voltage/Max. Blocking Voltage 24V / 33V

Solid State Relays Specification
- Output with fuse module option
- DIP-switch for selection of 4 time scales and 8 functions

Timer adjustment via top mounted rotary knob accessible after assembly and its connection to electromagnetic valves and similar output devices
- Jumper link option for the quick and easy distribution of supply voltage to output side
- Jumper link option for the quick and easy distribution of supply voltage to proximity

Voltage Current List No.
- 190-3498 125V 8.4mA 39.31.3.125.0060
- 190-3492 230V 4.6mA 39.31.7.024.9024
- 190-3486 125V 5.6mA 39.21.0.125.0060
- 190-3476 24V 10.5mA 39.11.0.024.9024
- 190-3472 12V 20.7mA 39.10.7.012.9024
- 190-3499 6V 35mA 39.31.0.006.0060

Interface Relays - continued

Relay Interface Modules
- Space saving 6.2 mm wide
- Connections for 16-way jumper link
- Integral coil indication and protection circuit
- Secure retention and easy ejection by plastic clip
- Dual screw head (blade + cross) terminals
- 35 mm rail mounting
- Master/BASIC
- For general use in any type of system

Master/INPUT
- Jumper link option for the quick and easy distribution of supply voltage to proximity switches and similar input devices

Master/OUTPUT
- Jumper link option for the quick and easy distribution of supply voltage to output side and its connection to electromagnetic valves and similar output devices

Master/TIMER
- Timer adjustment via top mounted rotary knob accessible after assembly
- Control signal terminal
- DIP-switch for selection of 4 time scales and 8 functions
- Output with fuse module option

Solid State Relays Specification
- Rated Current/Max. Peak Current 24 / 20A
- Rated Voltage/Max. Blocking Voltage 24V / 300V
- Switching Voltage Range 1.5V to 24V
- Min. Switching Current 1mA
- Max. "OFF-state" Leakage Current 0.001mA
- "ON-state" Voltage Drop 0.12V

Electromechanical Relays Specification
- Rated Current/Max. Peak Current 6A / 10A
- Rated Voltage/Max. Switching Voltage 250V / 400V
- Rated Load AC1 / AC15 1500VA / 300VA
- Min. Switching Current 1mA
- Single Phase Motor Rating 0.18kW
- Breaking Capacity 6A / 0.2A / 0.12A
- D.C. 15 / 110 / 220V

Nominal Voltage 4V 7.5mA 190-3522
- Current 190-3528 Order Code 1+ 25+ 50+
- Mftrs. 190-3527 List No.

EMR - MasterPLUS - SPDT - Coil Leakage Current Suppression
- 125V 8.4mA 39.31.3.125.0060 190-3506#
- 230V 5.9mA 39.31.3.230.0060 190-3506#
- 24V 4.3mA 39.31.8.230.9024 190-3507#

SSR - Master/INPUT - SPST-NO - Input AC/DC
- 24V 17.5mA 39.40.0.024.9024 190-3508#
- 125V 5.5mA 39.40.1.125.0060 190-3509#

SSR - Master/INPUT - SPST-NO - Input Sensitive DC
- 6V 7.5mA 39.40.7.006.9024 190-3510#
- 12V 20.7mA 39.40.7.012.9024 190-3511#

SSR - Master/INPUT - SPST-NO - Input AC
- 230V 4.3mA 39.41.8.230.5060 190-3513#

EMR - Master/INPUT - SPDT - Coil AC/DC
- 6V 35mA 39.41.0.006.5060 190-3514#
- 12V 15mA 39.41.0.125.0060 190-3515#
- 24V 11mA 39.41.0.240.5060 190-3516#
- 125V 5.6mA 39.41.1.125.0060 190-3517#

EMR - Master/INPUT - SPDT - Coil AC
- 230V 4.3mA 39.41.8.230.5060 190-3518#

SSR - Master/TIMER - SPST-NO - Input AC
- 12V 15mA / 23mA 39.40.0.125.9024 190-3519#
- 24V 11mA / 19mA 39.40.0.240.9024 190-3520#

EMR - Master/TIMER - SPST-NO - Input AC/DC
- 12V 15mA / 23mA 39.41.0.125.9024 190-3521#
- 24V 11mA / 19mA 39.41.1.125.0060 190-3522#

Accessories
- 16 Way Jumper Link (Blue) 093.16
- 16 Way Jumper Link (Black) 093.16
- 16 Way Jumper Link (Red) 093.16
- Separator (1.8mm or 6.2mm) 093.60
- Output Fuse Module 093.63
- Adapter 093.68.14.1 093.68

3A, 4 x SPNO Relay Modules

G6D-4B Series
- Compact terminal relay with 4 x SPNO Outputs
- Equipped with 4 G6D1A-1 relays providing 3A switching capability
- LED operation indicator
- Equipped with diode to absorb coil surge
- DIN rail or screw mountable
- Individual relays are UL Recognised and CSA approved

OMRON

Shipping Afree Delivery
- H = 94 W = 28 D = 45

Contact arrangement 4 SPNO 190-3523#
- Contact rating 3A 4@ 250Vac/30Vdc4@24Vdc
- Contact material Silver
- Coil consumption 200mW
- Designed and manufactured in Japan
- 100% Inspection
- VDE and UL Listed for the USA and Canada
- CE Approvals

Interface
- 48 x 48 x 16 + 25.5 mm
- DIN rail (35 mm) or wall mounting
- Electro-mechanical components protected
- High quality components

Order Code
- 24V dc 39.40.0.240.9024 190-3503#
- 24V dc 39.41.0.006.5060 190-3503#
- 24V dc 39.41.1.125.0060 190-3503#
- 24V dc 39.41.8.230.5060 190-3503#

4 SPNO-G6D-4B Series
- 24V dcV2.88 G6D-4B 24DC
- 994-5466

Replacement Relays
- 12V dcV2.88 G6D-1A-ASI 12DC 981-2687
- 24V dcV2.88 G6D-1A-ASI 24DC 981-2687

Single Pole Change Over - 6A

ST Relay Package
- Package consists of DIN-rail socket and ST relay
- Electrical indicator LED standard
- AC and DC versions
- Protection circuit
- Screw terminals
- VDE Approved and UL(United States and Canada) Recognised

For individual ST relays see the V23092 Series relay section of the main catalogue

Contact arrangement 1+ 25+ 50+
- Contact current rating 6A
- Dielectric strength - coil to contacts 2500Vdc / 240Vac
- Contact material Silver
- Contact rating (695463 & 969510 Only) 093.68

H = 94, W = 80, D = 6.2mm

Tyco Electronics

Compliant
- Non-compliant
OMRON

G2R Series

- Environmentally friendly construction - Cd and Pb free
- AC type with coil disconnection self diagnostic function
- High switching power
- Lockable test button model available

5A & 10A with Opto Indicator

G2RS Series

- Contact rating (DPCO) 10A @ 250Vac / 30V dc
- Coil operating range 80 - 120% @ 50°C
- Contact material Silver Cadmium Oxide
- Temperature range -40°C - 70°C
- Contact arrangement SPCO/SPCO
- Coil consumption 530mW

2 pole 12A, 3 pole 10A and 4 pole 6A PT Relay Package

- Package consists of DIN-rail socket, plastic retaining clip, module with red LED and PT relay
- Mechanical and electrical indicator
- Manual test tab
- UL (United States and Canada) Recognised and VDE approved

For individual PT relays see the Relay section of the main catalogue

"H = 58, W = 73.5, D = 27mm"

Relay ejection/retaining clip included
- Identification label included
- 15.5mm wide
- 35mm rail mounting
- Approvals include UL, CSA, VDE and Lloyds register

Output
- Rated Current/Peak Current 10/20A
- Minimum Switching Load 300mW
- Rated Voltage/Motor Switching Voltage 250/400VAC
- Contact Material AgNi
- Rated Load AC1 230V

Single Pole Motor Rating 230Vac 0.37kW Protection Category IP20

- Maximum breaking capacity ac 3000 VA 2500 VA 1500 VA
- Rated voltage 250V 250V 250V
- Contact arrangement DPCO 3PCO 4PCO
- Rated Load AC1 2500 VA
- Electrical Life at Rated Load AC1 200,000 Cycles

- Rated Load AC1 2500 VA
- Internal Current 62.5mA 12V 4.3mA 230V
- Rated Load AC1 2500 VA
- Internal Current 31.3mA 24V 62.5mA 12V

- Ideal interface for PLC and electronic control systems
- Insulation between coil and contacts 64x (6mm)
- Supply status indication and coil suppression module included
- Relay ejection/retaining clip included
- Identification label included
- 15.5mm wide
- 35mm rail mounting
- Approvals include UL, CSA, VDE and Lloyds register

Output
- Rated Current/Peak Current 10/20A
- Minimum Switching Load 300mW
- Rated Voltage/Motor Switching Voltage 250/400VAC
- Contact Material AgNi
- Rated Load AC1 230V

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- Rated Load AC1 2500 VA
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- Rated Load AC1 2500 VA
- Internal Current 62.5mA 12V 4.3mA 230V
- Rated Load AC1 2500 VA
- Internal Current 31.3mA 24V 62.5mA 12V

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Interface Relays - continued

58 Series Relay Interface Module
7A 4PCO
- 35mm DIN rail (EN 50022) mount
- DC version complete with LED and protection diode module
- AC version complete with LED and varistor module
- Isolation to VDE0110
- 24V isolation between coil and contacts, 1.55kV contact to contact
- Relays approved to CSA, DEMKO, NEMKO, SEMKO, SEV, BEAB, GOST, IMQ, and UL

Contact arrangement 4PCO 7A
Current rating Max/peak 7/15A
Voltage Rating/switching max 250/400 VA
Load rating AC1/AC15 250/500 VA

Load switching min. 500mW
Load rating AC1/AC15 250/500 VA

Order Code Mfrs. List
116-9314 58.34.8.024.0060SMA 116-9316 58.34.9.024.0050SMA
116-9315 58.34.8.230.0060SMA 116-9317 58.34.9.024.0050SMA
176-5089 58.34.8.110.0060SMA

COIL Price Each
Volts $\Omega$ Order Code
24V ac 0.1 1+ 25+ 100+ 250+ 500+
24V dc 0.1 1+ 25+ 100+ 250+ 500+

8A/10A/16A SPCO & DPCO
48 Series Relay Interface Module
- 35mm DIN rail (EN 50022) mount
- DC version complete with LED and protection diode module
- AC version complete with LED and varistor module
- Sensitive coil
- 4kV/8mm isolation between coil and contacts
- Relays approved to CSA, VDE, SEV, SETI, BEAB, SEMKO, DEMKO, IMQ, and UL
- Recognised

Contact arrangement SPCO 10A DPCO 8A
Current rating Max/peak 10/20A 8/16A
Voltage Rating/switching max 250/400 VA 250/400 VA
Load rating AC1/AC15 250/500 VA 250/500 VA
Load switching min. 500mW 500mW
Temperature Range -40°C to 70°C

Order Code Mfrs. List
116-9360 48.31.7.024.0050SPA 116-9361 48.31.7.042.0050SPA
116-9327 48.61.7.024.0050SPA 116-9326 48.61.7.042.0050SPA
116-9364 48.62.7.012.0050SPA 116-9365 48.62.7.024.0050SPA
176-5089 58.34.8.110.0060SPA

COIL Price Each
Volts $\Omega$ Order Code
110V ac 6.9K 116-5089
240V ac 0.1 1+ 25+ 100+ 250+ 500+
240V dc 0.1 1+ 25+ 100+ 250+ 500+

Solenoids

Miniature - SM0
- H=18.3, W=15.9, Leads=150
- A solenoid suitable for light high speed duty and capable of operating in excess of 300 cycles/minute. Pull or push-thrust action. Maximum stroke 16mm.

Pull force, continuous 25gf @ 0.8mm, 70gf @ 3.0mm
Pull force, 25% duty: 70gf @ 1.6mm, 50gf @ 3.0mm
Coil consumption: 5W continuous, 24W(25% duty)

Order Code Mfrs. List
110-1451B

Standard - SM2 Series
- The solenoids are designed not to jam even in the event of coil collapse. Pull or push-thrust action. Maximum stroke at continuous rating 16mm. Fixing is by 2 x 4BA tapped holes on both side and end plates.

Pull force, continuous 70gf @ 16.0mm, 150gf @ 10.0mm
Pull force, 25% duty: 250gf @ 16.0mm, 50gf @ 3.0mm
Coil consumption: 6W continuous, 24W(25% duty)

Order Code Mfrs. List
110-1448B

Miniature and Standard Size Solenoids
- Monostable - Pull Action

44 Series
- Stroke 10mm
- 24Vdc
- Voltage: 24Vdc
- Pull Type: 1A

Order Code Mfrs. List
119-4490B

42 Series
- Stroke 10mm
- 24Vdc
- Voltage: 24Vdc
- Pull Type: 1A

Order Code Mfrs. List
119-4490B

41 Series
- Stroke 10mm
- 12Vdc
- Voltage: 12Vdc
- Pull Type: 1A

Order Code Mfrs. List
118-1449B

43 Series
- Stroke 10mm
- 12Vdc
- Voltage: 12Vdc
- Pull Type: 1A

Order Code Mfrs. List
119-4490B

44 Series
- Stroke 10mm
- 12Vdc
- Voltage: 12Vdc
- Pull Type: 1A

Order Code Mfrs. List
119-4490B

A range of general purpose, monostable, pull action solenoids designed to give a range of force/size ratios. The coils are all continuously rated at the stated voltages. The 43 series is suitable for heavy-duty applications and the 42 and 147 series provide high forces over longer strokes. The miniature 44 series offers high force for short stroke applications,
where the sub-miniature 133 and 134 series are ideal for discrete small force/stroke applications where space is at a premium. 120-7155, 120-7156 and 120-7157 come complete with an anti-residual “push-off” spring.

Series Pull force, continuous Pull force, 25% duty Closed power, continuous
41, dc 400gf @ 4mm, 100gf @ 8.0mm gf @ 16.0mm, gf @ 3.0mm 6.5W
41, ac 300gf @ 4mm, 200gf @ 10.0mm 150gf @ 4.0mm, 700gf @ 10.0mm 10.5W
42, dc 300gf @ 4mm, 150gf @ 8.0mm 120gf @ 6.0mm, 300gf @ 18.0mm 10W
43, dc 110gf @ 3mm, 150gf @ 9.0mm 370gf @ 3.0mm, 150gf @ 9.0mm 12W
44, ac 80gf @ 2.0mm, 25gf @ 8.0mm 230gf @ 2.0mm, 55gf @ 8.0mm 3W

44 Series

Pull type - Latching

A latching or bi-stable solenoid incorporates a set of permanent magnets that allows the solenoid to offer hold force even after the power has been disconnected. The term bi-stable is given to this type of solenoid because it has two stable positions. The first is when the solenoid is de-energised and the plunger is fully extended in the open position. The second position is when the solenoid is energised and the plunger is attracted into its closed position. The power can then be removed and the plunger will be held in place with the permanent magnets. The electrical force moves the solenoid from the open position to the closed position. The closed stable position can be neutralised by applying a reverse voltage consumption force @ 25°C.

Series Voltage Mftrs. List No. Order Code
65 12V dc 120-610 620 968-7884
66 12V dc 120-610 620 968-7947
67 12V dc 120-611 620 968-7904
68 12V ac 120-611 620 968-7906
69 12V dc 120-611 620 968-7866

Cylindrical Solenoids

R16 x 16 cylindrical solenoid

24 100% 25 25.3 0.1 5.5 R16X16,24V100% 968-7874
24 15% 25 35.6 0.1 5.5 R18X16,24V15% 968-7914

HIGH-PERFORMANCE, LONG-LIFE SOLENOIDS

MAGNETSCHULTZ

High-performance device for push-and-pull operation
Armature supported by PTFE-lined bearings for arduous, long-life applications
Vibration and shock-resistant injection-moulded coil with class F insulation
Optimised flux-path design for maximum force from minimum electrical power in compact space envelope
Electroplated iron, armature and pole pieces for corrosion resistance
Conical spring-return assembly / shotbolt end (accessory pack)
Tapped armature / threaded pushrod for attachment to host mechanism
High force dc solenoid for arduous applications requiring long-term reliability and highly repeatable operation. Available with 24volt 100% or 15% rated coils (24v 15% coil can be used for 12V 100% rated applications if solenoid is mounted on a suitable heatsink).

Supply Voltage Y. dc Duty Rating % Maximum Stroke @ 25°C Holding Force @ Max. Stroke Magnetic Force at Rated Stroke Power Consumption Mftrs. List No. Price Each
24 100% 0.1 5.5 R18X16,24V100% 968-7874
24 15% 0.1 5.5 R18X16,24V15% 968-7914

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Cylindrical Solenoids - continued

Duty Rating  

<table>
<thead>
<tr>
<th>Duty Rating</th>
<th>Price Each</th>
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<tbody>
<tr>
<td>Continuous</td>
<td>116-2567#</td>
</tr>
<tr>
<td>Intermittent</td>
<td>116-2568#</td>
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</table>

Power consumption figures: 20°C oil temperature

Supply Voltage Duty Power mm Voltage Duty Power

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<tr>
<th>Supply</th>
<th>Duty</th>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
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<tr>
<td>12</td>
<td>100</td>
<td>12.9</td>
<td>116-2571#</td>
<td>1+ 5+ 10+ 25+ 50+ 100+</td>
</tr>
</tbody>
</table>

Proportional Double-Acting

- Double-acting function (by reversing polarity of supply)
- Torque output proportional to current input and constant over rotation angle
- Rapid response: function of low magnetic and mechanical inertia
- Long service life and accurate positioning through use of precision ball bearings
- Pure rotary motion through 110° angle of rotation (no axial/linear movement)
- Encapsulated coil with insulation to class B
- Low temperature rise by use of voltage control
- Fail-safe mode provided by spring return (optional)

Proportional double-acting rotary solenoid for applications requiring long service life and high reliability. Available with 24 volt 100% or 15% rated coils (24V 15% coil can be used for 12 volt 100% rated applications, if solenoid is mounted on a heatsink).

Miniature Solenoid Valves

Connector supplied

- H=22, W=58, D=30 (excl latches), D=61 (overall with connector)
- Mounting holes=2 x M4 tapped, fixing centres=134

A range of direct action, 3-way solenoid operated valves singularly mounted with 1/8” BSP ports. By inserting a 148-372 plug (M5 thread) with a 148-373 nylon washer in the venting port, the valve is converted to a 2-way valve.

The body is manufactured in brass with stainless steel inner parts and nitrile rubber seals making it ideally suited for controlling the flow of air and other non-corrosive gases with a maximum differential pressure of 150psi (10 bar). Electrical connection is by a three pin DIN 40050 connector which is available separately.

The connector is complete with sealing ring and fixing screw giving protection to IP65. Connection pins are 6.35mm blade types allowing the connection by ‘Fast-on’ connectors as an alternative.

Valve

- Temperature range -10°C to +50°C
- Fluid temperature 50°C max
- Orifice size 1.5mm (exhaust 1.8mm)

DIN Valve Connectors

New generation external-thread DIN Valve Connectors with unsurpassed IP67 sealing properties and superior cable retention increase performance and reliability, simply the manufacturing process and reduce overall applied costs for hydraulic, pneumatic and electromagnetic devices.

- Ergonomic external-nut design provides greater and consistent torque for a more uniform seal between connector and cable
- Conforms to industry standard interface EN 175301-803 (formerly DIN 43650)
- Cable retention force increased by up to 115% over internal-nut designs for increased reliability
- Waterproof rating of IP67
- Accommodates PG9, PG11 cable and up to 9mm outer cable diameter
- Connectors supplied in a ‘ready-to-use’ disassembled condition; saves the customer time
- One size fits all cables! Reduces customer inventory, contributing to cost savings; eliminates installation errors
- Plus / minus screw head on terminal enables the use of air tools in volume production
### Electromechanical

#### Relays & Solenoids

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<table>
<thead>
<tr>
<th>Description</th>
<th>Mfrs. List No.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form A to M12, 5 Pole</strong></td>
<td></td>
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</tr>
<tr>
<td>0.3m lead</td>
<td>121035-0207</td>
<td>190-0564</td>
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<tr>
<td>0.5m lead</td>
<td>121035-0208</td>
<td>190-0565</td>
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<td>1m lead</td>
<td>121035-0201</td>
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<td>3m lead</td>
<td>121035-0290</td>
<td>190-0566</td>
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<tr>
<td>5m lead</td>
<td>121035-0291</td>
<td>190-0567</td>
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<tr>
<td><strong>Form A to M12, 5 Pole with LED</strong></td>
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<tr>
<td>0.3m lead</td>
<td>121036-0399</td>
<td>190-0574</td>
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<td>0.6m lead</td>
<td>121036-0192</td>
<td>190-0565</td>
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<tr>
<td>1.5m lead</td>
<td>121036-0193</td>
<td>190-0569</td>
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<td>2m lead</td>
<td>121036-0194</td>
<td>190-0570</td>
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<td>3m lead</td>
<td>121036-0356</td>
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<td>10m lead</td>
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<td>190-0575</td>
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<td><strong>Form A, 2 Pole</strong></td>
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<tr>
<td>1m lead</td>
<td>121040-0092</td>
<td>190-0576</td>
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<td>2m lead</td>
<td>121040-0644</td>
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<td>3m lead</td>
<td>121040-0096</td>
<td>190-0577</td>
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<td>5m lead</td>
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<td>10m lead</td>
<td>121040-0614</td>
<td>190-0579</td>
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<tr>
<td>PG9 with 12 o'clock ground</td>
<td>1210320238</td>
<td>190-0605</td>
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<tr>
<td>PG11 with 12 o'clock ground</td>
<td>1210320278</td>
<td>190-0605</td>
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<tr>
<td>With ground</td>
<td>121016034</td>
<td>190-0610</td>
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<tr>
<td>Black Nitrile Gasket</td>
<td>121287-0001</td>
<td>190-0585</td>
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<tr>
<td><strong>Form A, 2 Pole with LED</strong></td>
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<tr>
<td>2m lead</td>
<td>121050-2471</td>
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<td>3m lead</td>
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<td>190-0591</td>
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<td>190-0585</td>
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<td><strong>Form A, 3 Pole</strong></td>
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<tr>
<td>Cylindrical</td>
<td>1210120019</td>
<td>190-0595</td>
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<td>2 hole mount</td>
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<tr>
<td>4 hole mount</td>
<td>1210120099</td>
<td>190-0600</td>
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<td>PG9 with 12 o'clock ground</td>
<td>1210230341</td>
<td>190-0607</td>
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<td>PG11 with 12 o'clock ground</td>
<td>1210230377</td>
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<td><strong>Form B, 2 Pole</strong></td>
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<tr>
<td>10mm with nitrile gasket</td>
<td>121033-0001</td>
<td>190-0586</td>
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<tr>
<td>11mm with nitrile gasket</td>
<td>121033-0001</td>
<td>190-0586</td>
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<td>10mm with ground</td>
<td>1210330009</td>
<td>190-0610</td>
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<tr>
<td>11mm with ground</td>
<td>1210330012</td>
<td>190-0612</td>
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<td>PG9 with 12 o'clock ground</td>
<td>1210230122</td>
<td>190-0604</td>
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<td><strong>Form B, 2 Pole with LED</strong></td>
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<tr>
<td>10mm with nitrile gasket</td>
<td>121039-0037</td>
<td>190-0590</td>
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<tr>
<td>11mm with nitrile gasket</td>
<td>121039-0070</td>
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<td><strong>Form C, 2 Pole</strong></td>
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<tr>
<td>PG9 with 6 o'clock ground</td>
<td>1210230085</td>
<td>190-0603</td>
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<tr>
<td>PG7 with 12 o'clock ground</td>
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<td>Preassembled ground</td>
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<td><strong>Micro DIN Form</strong></td>
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<td>Preassembled ground</td>
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<td><strong>Bases</strong></td>
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<tr>
<td>2 pole with ground</td>
<td>1210120006</td>
<td>190-0592</td>
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<td>3 pole with ground</td>
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<tr>
<td>2 pole with 4 hole mount</td>
<td>1210120095</td>
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