R10 series

General Purpose
Dry Circuit to 7.5 Amp
Multicontact AC or DC Relay
- R10-E – Clear Dust Cover Version
- R10-R – Sealed, Immersion Cleanable Type
- R10S – Super Sensitive, Logic Compatible

Features
- Broad range of coil options provide sensitivity ranging from 25 to 750mW.
- Various contacts switch from dry circuit to 7.5 amps.
- Many mounting and termination options.

Contact Data @ 25°C

Arrangements: 1 Form C (SPDT) through 8 Form C (8PDT). See Ordering Information tables for more details regarding availability.

Contact Materials, Styles & Ratings @ +25°C

<table>
<thead>
<tr>
<th>Contact Code</th>
<th>Contact Material</th>
<th>Contact Style</th>
<th>Coil Codes Available</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>Silver-Cadmium Oxide</td>
<td>Single Button</td>
<td>V, Q, S, J</td>
<td>500mA</td>
<td>7.5A</td>
<td>5A</td>
</tr>
<tr>
<td>X</td>
<td>Silver-Cadmium Oxide</td>
<td>Single Button</td>
<td>V, Q, S, J</td>
<td>500mA</td>
<td>5A</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Fine Silver</td>
<td>Single Button</td>
<td>All</td>
<td>100mA</td>
<td>2A</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>Fine Silver</td>
<td>Bifurcated Crossbar</td>
<td>All</td>
<td>1mA</td>
<td>2A</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Gold overlay on Silver</td>
<td>Bifurcated Crossbar</td>
<td>All</td>
<td>Dry Circuit</td>
<td>1mA</td>
<td>2A</td>
</tr>
</tbody>
</table>

Ratings are at 28VDC or 155VAC unless otherwise specified. Total load must not exceed 30A per relay.

Initial Insulation Resistance
- Between Contacts: 2 pf, typ.
- Between Contacts and Coil: 2 pf, typ.
- Between Coil and Frame: 30 pf, typ.

Environmental Data
- Storage Temperature Range: -65°C to +125°C.
- Operating Temperature Range: -55°C to +75°C.

Mechanical Data
- Terminal Finish: Tin plating standard.
- Weight: 0.8 to 1.4 oz. (23 to 40g) approximately.

Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

R10 Ultra-Sensitive "SS" and "JJ" Typical Ranges of Operation
(Curves for reference only. If specific values are required, testing is required.)

Initial Dielectric Strength
- Between Open Contacts: 500V rms, for contact codes P and Z.
- 1,000V rms for contact codes W, X and Y with coil code V.
- Between All Other Conductors: 1,000V rms.

Capacitance
- Between Contacts: < 30 pF, typ.
- Between Contacts and Coil: < 100 pF, typ.
- Between Coil and Frame: < 300 pF, typ.

Operate Data @ 25°C

R10 Relays (DC Only) Typical Ranges of Operations
(Curves for reference only. If specific values are required, testing is required.)
One of the boldface resistance or voltage values from a table below is to be inserted in step 6 of the ordering chart on the next page.
### Ordering Information

<table>
<thead>
<tr>
<th>Typical Part Number</th>
<th>R10</th>
<th>-E</th>
<th>1</th>
<th>Y</th>
<th>4</th>
<th>-V700</th>
</tr>
</thead>
</table>

#### 1. Basic Series:
- R10 = Relay with Form C contacts.
- R10S = Super sensitive R10 (case and terminals E1 & E2 only, J coil adj. only).

#### 2. Case Style:
- E = Non-sealed polycarbonate cover.
- R = Immersion cleanable, tape sealed plastic case (R10 only; Form C, terminal code 2 & 9 only [std. PCB]).
  - No ground or stud included. Not available on R10S.

#### 3. Terminals & Mounting:
1. Solder/plug-in terminals with #3-48 stud.
2. Printed circuit terminals (std.): 0.064" (1.62mm) clearance, 1.25" (31.75mm) seated ht.
3. Side mounting plate with #6-32 stud, solder/plug-in terminals (#3-48 stud not included).
4. Narrow (0.04" [1.02mm] wide) printed circuit terminals: 0.013" (0.33mm) clearance, 1.2" (30.48mm) seated ht.
5. Non-shouldered, narrow (0.04" [1.02mm] wide) printed circuit terminals in a staggered arrangement (1 to 6 poles only).

#### 4. Contact Style & Rating:

<table>
<thead>
<tr>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Contact</td>
<td>Single Contact</td>
<td>Single Contact</td>
<td>Bifurcated, Low Level Contacts</td>
<td>Bifurcated Crossbar, Dry Circuit Contacts</td>
</tr>
<tr>
<td>Max. 7.5A†</td>
<td>Max. 5A‡</td>
<td>Typ. 100mA</td>
<td>Typ. 1mA</td>
<td></td>
</tr>
<tr>
<td>Min. 500mA</td>
<td>Min. 100mA</td>
<td>Max. 2A</td>
<td>Max. 3A</td>
<td></td>
</tr>
<tr>
<td>R10</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>R10S</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Ratings are at 28VDC or 115VAC. Total load must not exceed 30A per relay.
† Use ungrounded frame for AC loads of 5A or greater. Max. ratings are 7.5A at 115VAC and 4A at 28VDC for coil codes S & J.
‡ Use ungrounded frame for AC loads of 5A or greater. Max. ratings are 5A at 115VAC and 3A at 28VDC for coil codes S & J.

#### 5. Number of Poles:
- 1 = 1 pole.
- 2 = 2 pole.
- 3 = 3 pole.
- 4 = 4 pole.
- 6 = 6 pole (not available with W contacts).
- 8 = 8 pole (available on case style E only; not available with W contacts).

#### 6. Coil (Refer to Coil Data Tables):
- AC Voltage (available on R10 only):
  - Specify nominal coil voltage followed by V (example: 24V).
- DC Voltage:
  - Specify coil adjustment code letter followed by coil resistance (example: V700).

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Our authorized distributors are more likely to stock the following items for immediate delivery.

- R10-E1P2-115V
- R10-E1X2-24V
- R10-E1Y2-J1.0K
- R10-E1Y4-V700
- R10-E2P4-V185
- R10-E2X4-V185
- R10-E2X6-V430
- R10-E1Y2-J5.0K
- R10-E1Y2-J1.0K
- R10-E1Y4-V2.5K
- R10-E1Y4-V52
- R10S-E1Y2-J5.0K
- R10S-E1Y2-J1.0K
- R10S-E1Y4-V2.5K
- R10S-E1Y4-V52
- R10S-E2Y1-J1.0K
- R10S-E2Y1-J5.0K
- R10S-E2Y1-J1.0K
- R10S-E2Y1-J5.0K
Outline Dimensions

Dimensions are shown for reference purposes only. Dimensions are in inches over (millimeters) unless otherwise specified. Specifications and availability subject to change.

www.tycoelectronics.com
Technical support: Refer to inside back cover.

Downloaded from Arrow.com.
R10 Socket & Accessory Information

Ordering Data – Stock items are boldfaced.

<table>
<thead>
<tr>
<th>Socket Part No.</th>
<th>No. of Poles</th>
<th>Type of Terminal</th>
<th>Grounding Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>27E125</td>
<td>2</td>
<td>Solder</td>
<td>Strip</td>
</tr>
<tr>
<td>27E126</td>
<td>4</td>
<td>Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E127</td>
<td>6</td>
<td>Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E162</td>
<td>2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>27E163</td>
<td>4</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>27E164</td>
<td>6</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>27E128</td>
<td>2</td>
<td>Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E129</td>
<td>4</td>
<td>Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E130</td>
<td>6</td>
<td>Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E254</td>
<td>8</td>
<td>Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E212</td>
<td>2</td>
<td>PC Stag.</td>
<td>None</td>
</tr>
<tr>
<td>27E213</td>
<td>4</td>
<td>.180” long</td>
<td>None</td>
</tr>
<tr>
<td>27E271</td>
<td>6</td>
<td>(4.57mm)</td>
<td>None</td>
</tr>
<tr>
<td>27E258</td>
<td>8</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>27E193</td>
<td>2</td>
<td>Terminal</td>
<td>Terminal</td>
</tr>
<tr>
<td>27E194</td>
<td>4</td>
<td>Terminal</td>
<td>Terminal</td>
</tr>
</tbody>
</table>

Solder or PC Terminal Terminals
Rugged, molded socket body retains floating terminals of either solder or printed circuit pin configuration. PC terminal sockets are offered with pins in either 0.1” (2.54mm) grid or in-line arrangement.

Grounding Provisions
Pre-installed on sockets
Not for use at 5A AC and above.

Grounding Strip: Mounting stud of relay contacts grounding strip. Grounding strip is grounded with screw or rivet through round hole in socket.

Grounding Terminal (PC sockets only): Mounting stud of relay contacts ground terminal through square hole in socket.

Caution:
Printed circuit sockets are manufactured with “floating” (loose) terminals. This permits them to align with holes in the circuit board and with the relay terminals. During the mounting and soldering of the socket, vertical float should be eliminated and the terminals seated on the board. (This may be accomplished by inserting a dummy relay in the socket.) Failure to eliminate float may cause fracture of the solder joint or separation of the copper conductor from the printed circuit board when a relay is inserted in the socket after soldering.

Solder & PC Terminal Socket Outline Dimensions

37D645 – Mounting Strip
Strip of .060” (1.52mm) aluminum contains ten pre-punched, breakaway mounting plates. Each plate accommodates a 2, 4 or 8 pole solder terminal R10 relay or socket to facilitate chassis- or rack mounting.

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R10 Socket & Accessory Information (Continued)

Ordering Data – Stock items are boldfaced.

<table>
<thead>
<tr>
<th>Socket Part No.</th>
<th>No. of Poles</th>
<th>Type of Terminal</th>
<th>Grounding Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>27E317</td>
<td>2</td>
<td>Solder/Strip</td>
<td>Strip</td>
</tr>
<tr>
<td>27E152</td>
<td>4</td>
<td>Bracket</td>
<td>Strip</td>
</tr>
</tbody>
</table>

Bracket Mount Socket
Allows solder terminal relay to mount flat on a chassis.

Flange Mount Socket
Solder terminal socket with tin-plated terminals and grounding strip pre-assembled on .065" (1.65mm) steel mounting plate. Requires only one chassis cutout.

Track Mount Socket
Provides front wiring, screw terminal connections for R10 family relays. No grounding provision.

---------|--------------|-------------|-------------|-------------
27E460   | 2            | 1.800       | 2.300       | .200        |
27E461   | 4            | 2.125       | 2.830       | .337        |
27E462   | 6            | 2.612       | 3.830       | .494        |

See preceding page for hold down springs.

Suggested Track Mounting

Suggested Chassis Mounting

|--------------|-------------|-------------|-------------|
2 Pole        | 1.87 MIN. (4.75) | 1.375 (34.93) | .1375 (3.49) |
4 Pole        | 1.87 MIN. (4.75) | 1.375 (34.93) | .1375 (3.49) |
6 Pole        | 1.87 MIN. (4.75) | 1.375 (34.93) | .1375 (3.49) |

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