SERIES J
RELAY - NONLATCH
2 PDT, 12 AMPS

APPLICATION NOTES:
023

APPLICABLE SOCKET:
SO-1049-8309/8987
SO-SSL

All welded construction
Contact arrangement 2 PDT
Qualified at 10 Amps to MIL-PRF-83536

PRINCIPLE TECHNICAL CHARACTERISTICS

Contacts rated at 28 Vdc; 115 Vac, 400 Hz, 1 phase and 115/200 Vac, 400 Hz, 3 phases
Weight 0.088lb max
Dimensions of case 1.01in x .51in x 1.00in

Special models available upon request.
Hermetically sealed, corrosion resistant metal can.
Contact factory for information on MIL-qualified part numbers.

CONTACT ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Contact rating per pole and load type [1]</th>
<th>Load current in Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>@28 Vdc</td>
</tr>
<tr>
<td>Resistive</td>
<td>12</td>
</tr>
<tr>
<td>Inductive [3]</td>
<td>8</td>
</tr>
<tr>
<td>Motor</td>
<td>4</td>
</tr>
<tr>
<td>Lamp</td>
<td>2</td>
</tr>
<tr>
<td>Overload</td>
<td>40</td>
</tr>
<tr>
<td>Rupture</td>
<td>50</td>
</tr>
</tbody>
</table>

Featuring LEACH© power and control solutions
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Data sheets are for initial product selection and comparison. Contact Esterline Power Systems prior to choosing a component.

Date of issue: 07/10
## Coil Characteristics (Vdc)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal operating voltage</td>
<td>28</td>
<td>12</td>
<td>6</td>
<td>48</td>
<td>28</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Maximum operating voltage</td>
<td>29</td>
<td>14.5</td>
<td>7.3</td>
<td>50</td>
<td>29</td>
<td>14.5</td>
<td>7.3</td>
</tr>
<tr>
<td>Maximum pickup voltage</td>
<td>18</td>
<td>9</td>
<td>4.5</td>
<td>36</td>
<td>18</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>- Cold coil at +125° C</td>
<td>19.8</td>
<td>9.9</td>
<td>5</td>
<td>38</td>
<td>19.8</td>
<td>9.9</td>
<td>5</td>
</tr>
<tr>
<td>- During high temp test at +125° C</td>
<td>22.5</td>
<td>11.25</td>
<td>5.7</td>
<td>42</td>
<td>22.5</td>
<td>11.25</td>
<td>5.7</td>
</tr>
<tr>
<td>- During continuous current test at +125° C</td>
<td>7</td>
<td>4.5</td>
<td>2.5</td>
<td>14</td>
<td>7</td>
<td>4.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Maximum drop-out voltage</td>
<td>320</td>
<td>80</td>
<td>20</td>
<td>1000</td>
<td>320</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Coil resistance Ω ±10% at +25° C, except types &quot;C&quot; and &quot;V&quot; +20%, -10%</td>
<td>320</td>
<td>80</td>
<td>20</td>
<td>1000</td>
<td>320</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>

### General Characteristics

- Temperature range: -70°C to +125°C
- Minimum operating cycles (life) at rated load: 100,000
- Minimum operating cycles (life) at 25% rated load: 400,000
- Dielectric Strength at sea level - All circuits to ground and circuit to circuit: 1250 Vrms
- Dielectric Strength at sea level - Coil to ground: 1000 Vrms
- Dielectric Strength at altitude 80,000 ft: 500 Vrms [5]
- Insulation resistance - Initial (500 Vdc): 100 MΩ min
- Insulation resistance - After environmental tests (500 Vdc): 50 MΩ min
- Sinusoidal vibrations (A, D and J mounting): 0.12DA / 10 to 70 Hz, 30 g / 70 to 3000 Hz
- Sinusoidal vibrations (G mounting): 0.12DA / 10 to 57 Hz, 20g /57 to 3000 Hz

#### Random Vibrations
- Applicable specification: MIL-STD-202
- Method: 214
- Test condition - A, D and J Mounting: 1G (0.4g²/Hz, 50 to 2000 Hz)
- Test condition - G Mounting (E in Track): 1E (0.2g²/Hz, 50 to 2000 Hz)
- Duration: 15 minutes each plane
- Shocks (A, D and J mounting): 200 g / 6 ms
- Shocks (G mounting): 100 g / 6 ms
- Maximum contact opening time under vibrations and shocks: 10 μs
- Operate time at nominal voltage@25°C: 10 ms max
- Release time at nominal voltage@25°C: 10 ms max
- Contact make bounce at nominal voltage@25°C: 1 ms max
- Contact release break bounce at nominal voltage@25°C: 0.1 ms max [6]
- Weight maximum: 0.088lb

Unless otherwise noted, the specified temperature range applies to all relay characteristics.
[2] 60 Hz load life, 10,000 cycles.
[4] "N" R & V coils have back EMF suppression to 42 volts maximum.
[5] 500 Vrms with silicone gasket compressed, 350 Vrms all other conditions.
[6] Applicable to suppressed coils only.

8. Special models available: Dry circuit, established reliability testing, etc.
9. Time current relay characteristics per MIL-PRF-83536.
10. Relay will not operate, but will not be damaged by application of reverse polarity to coil.

NUMBERING SYSTEM

Basic series designation__________________________| J - A 1 A |
1-Mounting Style (A,D,G,J)__________________________|  |
2-Terminal Types (1,2,4)___________________________|  |
3-Coil Voltage see coil characteristics (A,B,C,M,N,R or V)______

MOUNTING STYLES

MOUNTING STYLE A

MOUNTING STYLE D

MOUNTING STYLE G

MOUNTING STYLE J

MOUNTING STYLE W

FOR USE WITH TRACK MOUNT SYSTEM. NOTE: TRACK SYSTEM NOT AVAILABLE FROM LEACH.
TERMINAL TYPES

SERIES J

TERMINAL TYPE 1
FINISH: TIN/LEAD PLATE

TERMINAL TYPE 2
FINISH: TIN/LEAD PLATE

TERMINAL TYPE 4
FINISH: CASE: TIN/LEAD PLATE
TERMINALS: GOLD PLATE
POLARIZED PIN: TIN/LEAD PLATE

TERMINAL TYPE 7
FINISH: TIN/LEAD PLATE

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SCHEMATIC DIAGRAM

STANDARD TERMINAL LAYOUT

WIRING DIAGRAM

STANDARD TOL: ±.010

Date of issue: 07/10

- 124 -

Page 4 of 4