Balanced-Force Design
Hermetically sealed
Designed to the performance standards of MIL-PRF-6106

PRINCIPLE TECHNICAL CHARACTERISTICS

Contacts rated at 28 Vdc and 115 Vac, and 115/200 Vac, 400Hz, 3 Ø

Weight
See Mounting

Special units available upon request, including models with auxiliary contacts.

CONTACT ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Contact rating per pole and load type</th>
<th>Load current in Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>400 Hz</td>
</tr>
<tr>
<td>Resistive</td>
<td>50</td>
</tr>
<tr>
<td>Inductive [2]</td>
<td>30</td>
</tr>
<tr>
<td>Motor</td>
<td>30</td>
</tr>
<tr>
<td>Load transfer, resistive[6]</td>
<td>-</td>
</tr>
</tbody>
</table>

Featuring LEACH® power and control solutions
www.esterline.com

AMERICAS
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Buena Park, CA 90622
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2 Rue Goethe
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Units 602-603 6/F Lakeside 1
No.8 Science Park West Avenue
Pak Shek Kok, Tai Po, N.T.
Hong Kong
Tel: (852) 2 191 3830
Fax: (852) 2 389 5803

Data sheets are for initial product selection and comparison. Contact Esterline Power Systems prior to choosing a component.

Esterline Power Systems
## COIL CHARACTERISTICS (Vdc)  
**SERIES ZJ**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<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>115</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Maximum operating voltage</td>
<td>29</td>
<td>14.5</td>
<td>7.3</td>
<td>124</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Maximum pickup voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Nominal</td>
<td>18</td>
<td>9</td>
<td>4.5</td>
<td>90</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>- High temp test</td>
<td>20</td>
<td>10</td>
<td>5</td>
<td>95</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>- Continuous current test</td>
<td>22.5</td>
<td>11</td>
<td>5.7</td>
<td>100</td>
<td>22.5</td>
<td>22.5</td>
<td>22.5</td>
</tr>
<tr>
<td>Drop-out voltage, maximum</td>
<td>7</td>
<td>4.5</td>
<td>2.5</td>
<td>30</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Coil resistance in Ohms ±10% at +25°C</td>
<td>113</td>
<td>28</td>
<td>7</td>
<td>-</td>
<td>113</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Coil current Amp max. @ Nom. Volt. and +25°C</td>
<td>0.31</td>
<td>0.60</td>
<td>1.2</td>
<td>0.12</td>
<td>0.31</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### GENERAL CHARACTERISTICS

- **Temperature range**: -55°C to +71°C
- **Minimum operating cycles (life) at rated load**: 50,000
- **Minimum operating cycles (life) at 25% rated load**: 100,000
- **Dielectric strength at sea level**
  - All circuits to ground and circuit to circuit: 1500 Vrms
  - Coil to ground and Aux. contacts: 1250 Vrms
- **Dielectric strength at altitude**
  - 700 Vrms (Main contacts)
  - 500 Vrms (Coil and Auxiliary contacts)
- **Insulation resistance**
  - Initial (500 Vdc): 100 M Ω min
  - After environmental tests (500 Vdc): 50 M Ω min
- **Sinusoidal vibration** (55 to 1000 Hz): 10 G
- **Shock (10-12 ms duration)**: 15 G
- **Maximum contact opening time under vibration and shock**: 10 μs
- **Operate time at nominal voltage (Including bounce)**
  - DC: 60 ms max
  - AC: 25 ms max (Economizer coil)
- **Release time at nominal voltage (Including bounce)**
  - DC: 40 ms max
  - AC: 125 ms max
- **Release time at nominal voltage (Including bounce): Economizer**
  - DC: 35 ms max
  - AC: 100 ms max
**GENERAL CHARACTERISTICS CONTINUED**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact bounce at nominal voltage</td>
<td>4 ms max</td>
</tr>
<tr>
<td>Weight</td>
<td>Noted</td>
</tr>
<tr>
<td>Overload</td>
<td>1000 Amp @ 115/200 Vac, 400 Hz</td>
</tr>
<tr>
<td>Rupture</td>
<td>1500 Amp @ 115/200 Vac, 400 Hz</td>
</tr>
<tr>
<td>Altitude</td>
<td>50,000 Feet</td>
</tr>
</tbody>
</table>

**NUMBERING SYSTEM**

<table>
<thead>
<tr>
<th>Relay family</th>
<th>ZJ - X 0 X</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Mounting Style (A, B, Etc.)</td>
<td></td>
</tr>
<tr>
<td>2-Terminal &amp; Circuit (1, 2, 3, Etc.)</td>
<td></td>
</tr>
<tr>
<td>3-Coil Voltage (A, B, C, F, N, Y, YN)</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

[1] Auxiliary contact rating - see page 5, note [2].
[4] Alternate contact configurations and other special models available upon request. Please contact factory.
[6] Suitable for transfer between unsynchronized AC power sources at rating shown.
[8] Economizer coils have a lower resistance primary coil for faster operate time. Once relay operates, the coil switches to a higher resistance for lower power drain. Do not ramp up voltage on these coils.
[9] This series drawing is for general use only. Please consult factory for special requirements.
CONFIGURATION STYLES

SERIES ZJ

Standard Tolerance: .XX ±.03 .XXX ±.010

Date of issue: 01/07
TERMINAL TYPE 9
IS A GENERAL CATEGORY USED FOR ALL TERMINAL TYPES NOT ILLUSTRATED. FOR OTHER VARIATIONS OF TERMINAL CONFIGURATIONS—PLEASE CONTACT FACTORY.

NOTE: Although all configuration and/or terminal type options are available, some combinations may require a setup charge and be subject to minimum order size.