FEATURES AND CHARACTERISTICS

- Contacts: 2 PDT or 3 PDT
- Hermetically sealed
- Weight: 27 oz. max.
- Sensing range: 90 to 150 Vrms
- Temperature range: -55°C to +125°C
- Custom units available

GENERAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>90 to 150 Vrms, line to neutral 3 phase WYE</td>
</tr>
<tr>
<td>Input frequency</td>
<td>44 to 480 Hz</td>
</tr>
<tr>
<td>Pick-up time delay</td>
<td>50 to 10 ms ±10%</td>
</tr>
<tr>
<td>Drop-out time delay</td>
<td>50 to 10 ms ±10%</td>
</tr>
<tr>
<td>Sensing accuracy</td>
<td>Voltage ±2% to ±10%</td>
</tr>
<tr>
<td></td>
<td>Frequency: ±2% based on a true sinusoidal input wave form</td>
</tr>
<tr>
<td>Phase sequence sensing</td>
<td>ABC</td>
</tr>
<tr>
<td>Configuration and contact rating</td>
<td>2 PDT, 2 Amps or 10 Amps; 3 PDT, 10 Amps</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-55°C to + 125°C</td>
</tr>
<tr>
<td>Maximum operating current per phase</td>
<td>75 milliamperes RMS</td>
</tr>
<tr>
<td>Voltage transients</td>
<td>PER MIL-STD-704A, CAT.B</td>
</tr>
<tr>
<td>Operating cycles at rated resistive load</td>
<td>100,000 cycles min.</td>
</tr>
<tr>
<td>Vibration</td>
<td>0.06” D.A., 5 to 80 Hz, 20 g, 80 to 2000 Hz</td>
</tr>
<tr>
<td>Shock</td>
<td>50 g, 11 ± 1 ms, 1/2 sine, 3 axes</td>
</tr>
<tr>
<td>Acceleration</td>
<td>20 g in any axis</td>
</tr>
<tr>
<td>Finish</td>
<td>Tin Plate PER MIL-T-10727</td>
</tr>
<tr>
<td>Detailed ordering information</td>
<td>See next page</td>
</tr>
</tbody>
</table>

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

Date of issue: 3/07

Export Control Regulation: EAR 99 - These commodities, technology or software are exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.
Basic series designation: AC power monitoring sensor

1. **SERIES NUMBER**
   - Indicates function, physical dimensions and weight
   - V610-AC Power monitoring sensor, 2.18 x 2.31 x 3.20 wt 27 oz. max.

2. **FREQUENCY TRIP POINT**
   - Code Letter | Under Frequency | Over Frequency
   - A          | 390           | 410
   - B          | 380           | 420
   - C          | 370           | 430
   - D          | 360           | 440
   - E          | 350           | 450
   - F          | 58            | 62
   - G          | 56            | 64
   - H          | 54            | 66
   - I          | 52            | 68
   - J          | 48            | 52
   - K          | 46            | 54
   - L          | 44            | 56

3. **OUTPUT CONFIGURATION, CONTACT RATINGS**
   - MIL-R-39016 TYPE
   - MIL-PRF-83536 TYPE
   - J 2 PDT, Leach series J relay, 10 Amp resistive, 2 Amp contacts 1,000 VRMS
   - 2 Amp contacts 1,000 VRMS
   - Across open contacts 500 VRMS
   - Across open contacts 1,250 VRMS

4. **TIME DELAY ON PICKUP**
   - Code Letter | Seconds |
   - A          | .05     |
   - B          | .50     |
   - C          | 1       |
   - D          | 2       |
   - E          | 5       |
   - F          | 10      |

5. **TIME DELAY ON DROPOUT**
   - Code Letter | Seconds |
   - A          | .05     |
   - B          | .50     |
   - C          | 1       |
   - D          | 2       |
   - E          | 5       |
   - F          | 10      |

6. **UNDER VOLTAGE TRIP POINT**
   - Sensing range: 90 to 150 Vrms
   - Specify trip point within indicated sensing range using three digits, e.g.
     - Trip Point: 90 Vrms Specify: 090

7. **OVER VOLTAGE TRIP POINT**
   - Sensing range: 90 to 150 Vrms
   - Specify trip point within indicated sensing range using three digits, e.g.
     - Trip Point: 124 Vrms Specify: 124

8. **TEMPERATURE RANGE AND ACCURACY**
   - Code Letter | Temp. Range | Accuracy |
   - A          | -55° To +85° C | ±2%
   - B          | -55° To +85° C | ±5%
   - C          | -55° To +85° C | ±10%
   - D          | -55° To +125° C | ±5%
   - E          | -55° To +125° C | ±10%
   - F          | -55° To +71° C | ±5%
   - G          | -55° To +71° C | ±10%

9. **MOUNTING STYLES AND TERMINALS**
   - See next page

**NOTES**

1. Operating Mode
   - A. The output relay will energize when all of the following conditions exist:
     1. Each of the three phase voltages is within the under and over trip point limits
     2. The frequency is within the selected under and over trip point limits
     3. The phase rotation is ABC
     4. The pickup time delay period is completed
   - B. The output relay will change to or remain in the de-energized state when any or all of the above conditions are not met (including an open circuit phase)
   - C. The output relay will change state (energize or de-energize) after the selected time delay ±10%
   - D. The time delays for pickup and dropout are independent and an internal signal from the sensing circuit to change the state of the relay always initiates a full time delay period

2. Dielectric Strength
   - Input to case 1,000 VRMS
   - 2 Amp contacts 1,000 VRMS
   - contacts to case 1,000 VRMS
   - 1,250 VRMS
   - Across open contacts 500 VRMS
   - Across open contacts 1,250 VRMS

3. Hysteresis
   - Units have a typical voltage hysteresis of 1% maximum and frequency hysteresis of 1 Hertz maximum to eliminate cycling due to small changes in voltage and/or frequency at each trip point.

4. Contact factory for power monitor sensor requirements such as frequency and voltage trip points and time delay values not covered in this publication.
Standard Tolerances: .xxx +.01, .xx ±.03

SCHEMATIC DIAGRAM

MOUNTING DIMENSIONS

FOR MOUNTING A