The new MachineAlert family of dedicated function electronic motor protection relays offers state-of-the-art supplementary protective functions that are easily added and applied to motor control circuits. A full range of products exists to allow selective addition of motor protective enhancing functions to meet specific application requirements. The MachineAlert relays are an economical choice for protecting equipment investments and minimizing production downtime.

**Protective Functions**
- Phase Loss
- Phase Reversal (Sequence)
- Phase Imbalance (Asymmetry)
- Undervoltage
- Overvoltage

**Advantages**
- Microprocessor technology provides highly accurate and repeatable protection
- Built-in LCD and keypad afford a precise, digital setting
- Wide adjustment ranges allow for application flexibility
- Password protection hinders unauthorized programming access
- Compact 45 mm Euronorm housing
- Global application with CE, CSA, and UL approvals
- Independent programmable trip settings for undervoltage, overvoltage, and phase imbalance
- Programmable relay trip and reset delay settings
- RMS voltage monitoring / operating ranges up to 690V AC
- Pre-start as well as running protection
- Automatic reset
- (1) N.O. and (1) changeover contact

**Typical Applications**
- Pumps
- Fans
- Blowers
- Compressors

**Ordering Information**

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Operating Range</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>115V AC</td>
<td>200...500V AC</td>
<td>813S-E2BD</td>
</tr>
<tr>
<td>230V AC</td>
<td>480...690V AC</td>
<td>813S-E2CD</td>
</tr>
<tr>
<td>24V DC</td>
<td>813...E2BZJ</td>
<td>813...E2CZ</td>
</tr>
</tbody>
</table>

*The Cat. No. as listed is incomplete. Complete the Cat. No. by specifying the line frequency (50 or 60 Hz). Example: Cat. No. 813S-E2BD60*
**Electrical**

**Main**
- Rated Operating Voltage (Ue): 690V AC (IEC) / 600V AC (UL/CSA)
- Operating Range:
  - Type E2B: 200 ... 500V AC, 2V resolution
  - Type E2C: 480 ... 690V AC, 3V resolution

**Supply**
- Rated Supply Voltage (Us):
  - AC: 115, 230V AC 50/60 Hz
  - DC: 24V
- Operating Range:
  - AC: 0.8 ... 1.1 Us
  - DC: 0.85 ... 1.1 Us
- Maximum Power Consumption: 2 VA

**Output Relay**
- Type of Contacts: (1) Form C, (1) Form A
- Rated Insulation Voltage: 250V AC
- Rated Operating Voltage: 250V AC
- Rated Thermal Current: 5 A
- Utilization Category: AC15/DC1

**Mechanical**

**Environmental**
- Ambient Temperature: -20°C ... +80°C (storage)
- -5°C ... +60°C (operating)
- Humidity: 5 ... 95% Non-condensing
- Maximum Altitude: 2000 m
- Pollution Degree: 2
- Degree of Protection: IP 20

**Terminal Cross Section**
- Terminal Screws: M3
- Conductor Size: 0.2 ... 2.5mm² / 22 ... 12 AWG

**Dimensional Diagrams**

- Dimensional Diagrams showing dimensions such as 45 mm, 75 mm, 4.5 mm, and 109.5 mm.