**Overview**

**Products & Capabilities**

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**Single Phase Voltage Relays**

**Application:**
Monitoring of low voltage in control circuits.

**Benefits:**
Provides alarm or terminates operation when voltages get too low (or too high). Avoids damage or mis-operation of equipment.

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**Three Phase Voltage Relays**

**Application:**
Monitors three phase voltages for voltage and sequence inconsistencies.

**Benefits:**
Monitors line voltages for:
- Over Voltage
- Under Voltage
- Phase Loss (single phasing)
- Incorrect Phase Rotation (motor rotates the wrong way)
- Phase Imbalance (one phase too high or too low – unbalanced).
Avoids damage to three phase motors due to line voltage problems.

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**AC Current Sensing Relays**

**Application:**
Monitoring of AC current to verify correct operation of the load.

**Benefits:**
Simple GO No-Go relays to verify current draw (or lack of).
Over current sensing as in jams.
Undercurrent sensing as in broken belts of open circuits (heater burn-out).

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**Pump Controls**

**Applications:**
Simplex, duplex, triplex and quadplex pumping control components.
Monitoring of levels in tanks.

**Benefits:**
Control components to simplify pump control circuits.
Intrinsically safe relays for use with probes and switches in hazardous locations.
Multiple pump controls with alarms.

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**Transient Voltage Filters – Suppressors**

**Applications:**
Voltage spike protection for 4-20mAmp or 0-10VDC circuits.
Absorbs transients generated by inductive loads, 1Ø and 3Ø up to 600VAC.

**Benefits:**
Allows sensing of analog signal while transients are clipped to avoid damage to sensing electronics.
Absorbs transients when inductive loads are disconnected to avoid damage or mis-operation of electronic controls.
<table>
<thead>
<tr>
<th>Component Type</th>
<th>Application</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero Speed Sensing Relays &amp; DC Current Sensing Relays</td>
<td>Monitoring of motors coasting to a stop. Frequency sensing of rotation sensing devices (prox). Monitoring of DC current levels.</td>
<td>Senses a stop motor condition (coasting) by monitoring 1 phase of the motor. Monitors the frequency of pulses from a sensor to determine over or under speed and supplies the low voltage for a prox. Senses over or under DC current with very low impedance in the current line.</td>
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<tr>
<td>Electronic Time Delay Relays</td>
<td>Provide various types of delays in the operation in control circuits.</td>
<td>Many functions are available: On Delay – Delays to turn on load after application of power. Off Delay – Turns on when signal is received, but delays turning off after signal is removed. “True” Off Delay – Turns On when power is applied and times out after power is removed. Interval On – Turns on immediately, times out and turns off. One Shot – Turns on when signal is received, times out and turns off. Cycle – Cycles between On and Off continuously while power is available.</td>
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<tr>
<td>Embedded Processor Based Controllers</td>
<td>Consolidation of electrical and electronic automation components into one design to meet each customer’s unique needs.</td>
<td>50% or greater reduction in sub panel area requirements. 80% decrease in assembly &amp; labor time. 20% improvement in features and benefits. $0 cost change from component based control. 100% your own control.</td>
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