Pedestrian Crossing Using the SEL-2411 Programmable Automation Controller
• The SEL-2411 is a programmable automation controller that is typically used to control cooling fans and pumps for electrical power applications
• SEL wants to find new industry markets for the SEL-2411, preferably in an existing market
• Other groups around the country are also participating in this contest
• Output Contacts
  – Impulse Withstand Voltage: 4000 V
  – Mechanical Durability: 10,000 no load operations
• DC Output Ratings
  – Rated Operational Voltage: 250 Vdc
  – Make: 30 A @ 250 Vdc
  – Continuous Carry: 6 A @ 70°C; 4 A @ 85°C
  – Thermal: 50 A for 1 s
  – Contact Protection: 360 Vdc, 40 J MOV
• Operating Time
  – Pickup or Dropout time ≤ 8 ms typical
• Our plan is to utilize the SEL-2411 as a traffic controller in a pedestrian crosswalk system.
  – cost efficient both in the initial installation as well as operating and maintenance costs.
  – Using the SEL-2411 will effectively cut the upfront cost of the system because it is significantly cheaper than the standard traffic controller.

• The crosswalk will consist of:
  – 2 pedestrian buttons
  – 2 pedestrian signal lights
  – Tri-color traffic signals (LED type)
    • using LEDs will cut the energy cost of the system.
<table>
<thead>
<tr>
<th>Speed Setting</th>
<th>Walk Time</th>
<th>Flash Count</th>
<th>Don’t Time</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>5 sec</td>
<td>8 x</td>
<td>7 sec</td>
<td>20</td>
</tr>
<tr>
<td>80%</td>
<td>7</td>
<td>10</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>50%</td>
<td>8</td>
<td>12</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td>20%</td>
<td>9</td>
<td>16</td>
<td>27</td>
<td>52</td>
</tr>
<tr>
<td>0%</td>
<td>8</td>
<td>16</td>
<td>30</td>
<td>56</td>
</tr>
</tbody>
</table>
• Currently available small, simple controller
  – Stuck with what the factory sets
  – Very few inputs/outputs
  – Not “portable” to other applications
Caution: Hazardous Voltage
120VAC/150W Max-1A Fuse
• Recent success
  – Received two SEL-2411 from SEL
  – Programming front panel buttons and LEDs
  – Timing chart outlined

• Partial success/Difficulties
  – Timed state changes on front LEDs
    • Leads directly to timed pedestrian buttons and signals
  – SELogic equation difficulty
  – LED Dimming and Failure detection
• What is Left?
  – Peripherals
  – Working settings sheet
  – Test setup
  – Try communication between two units
• Pedestrian signals are on the way (donated)
• Pedestrian buttons from Dr Wall
• Need $$ for traffic lights
  – Tri-color pods for $230 each (non LED)
  – LED available by special order
  – Proposal for money from research budget