The LTC®3890/-1 is a high voltage dual output synchronous step-down DC/DC controller that draws only 50µA when in standby mode with one output active and the output voltage in regulation. The 4V to 60V input supply range is designed to protect against high voltage transients, continue operation during automotive cold crank and cover a broad range of input sources and battery chemistries. Each output can be set from 0.8V to 24V at output currents up to 25A with efficiencies as high as 95%, making it well suited for 12V or 24V automotive, heavy equipment, industrial control, robotics and telecom applications.

**Features**
- Input Voltage Range: 4V to 60V
- Low Quiescent Current
- Up to 25A per Output
- High Step-Down Ratios: 95ns Min On-Time
- Multiphase Capable
- Powerful 1.1Ω Gate Drivers
- Very Low Dropout: 99% Duty Cycle
- $R_{\text{SENSE}}$ or Inductor DCR Sensing
- PLL Fixed 75kHz to 850kHz Operating Frequency

**Applications**
- Double Battery Automotive/Trucks
- Motor Controls
- Braking Systems
- Infotainment/GPS Systems
- Industrial Controls
- Heavy Equipment
- Robotics
- Telecom
- Avionics
60V Input Eliminates Surge Suppression in Most Applications

Application Schematic for 3.3V/8.5V Outputs from a 9V to 60V Input

Greater Than 95% Efficiency Capable

Fast Recovery from a Step-Load

<table>
<thead>
<tr>
<th>Related DC/DC Controllers</th>
<th>V_IN Range (V)</th>
<th>V_OUT Range (V)</th>
<th>I_OUT Max (A)</th>
<th>I_Q (µA)</th>
<th>Comments</th>
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<tbody>
<tr>
<td>LTC3891</td>
<td>4 to 60</td>
<td>0.8 to 24</td>
<td>25</td>
<td>50</td>
<td>Single Synchronous Step-Down</td>
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<tr>
<td>LTC3824</td>
<td>4 to 60</td>
<td>0.8 to V_IN</td>
<td>5</td>
<td>40</td>
<td>Single Non-Synchronous Step-Down</td>
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<tr>
<td>LTC3845A</td>
<td>4 to 60</td>
<td>1.23 to 36</td>
<td>25</td>
<td>120</td>
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<tr>
<td>LTC3857/-1</td>
<td>4 to 38</td>
<td>0.8 to 24</td>
<td>25/25</td>
<td>50</td>
<td>Dual Synchronous Step-Down</td>
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<tr>
<td>LTC3858/-1</td>
<td>4 to 38</td>
<td>0.8 to 24</td>
<td>25/25</td>
<td>170</td>
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<tr>
<td>LTC3868/-1</td>
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<td>0.8 to 14</td>
<td>25/25</td>
<td>170</td>
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<tr>
<td>LTC3859</td>
<td>4.5 to 38</td>
<td>0.8 to 24</td>
<td>10/10/10</td>
<td>55</td>
<td>Triple Synchronous Buck/Buck/Boost</td>
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</tbody>
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