APPLICATION BRIEF:

**Industrial Cobots** (Collaborative Robots)

**TYPICAL ENVIRONMENTS**
Manufacturing and Warehousing/Logistics

**APPLICATION DESCRIPTION**
Collaborative robots, or cobots, are designed to support and work with a human in a defined collaborative workspace. Applications in factories and warehouses include machine tending, material handling, welding, finishing, assembly, inspection and palletizing.

Defining features of cobots:
- Safety-rated stop monitoring
- Hand guiding – teaching by demonstration
- Power and force limiting

Cobots also tend to have smaller payload capacities (< 20 kg) and shorter reach (< 178 cm) than traditional industrial robots.

**BUSINESS CHALLENGES**
- Industrial customers are facing challenges such as factory labor shortages (hire/train/retain), worker safety requirements and the need for flexibility to redeploy quickly.
- Demand volatility leads to lower capital investment and the need for quick implementation with a fast ROI.
- Industrial customers want to minimize downtime, safety issues and lost productivity.

**TECHNICAL/OPERATIONAL CHALLENGES**
- Unlike traditional industrial robots, cobots have a quick adoption time (weeks vs. quarters) and the ability to move frequently between jobs/machines. This means that source power is not planned for the cobot and power reliability is not assured, especially during teaching and operational modes.
- Considerable work from a teaching/programming session for a cobot can easily be lost if there is unexpected power loss. Power sags, surges and outages can also cause performance glitches that are undetected by the cobot and difficult to recreate, making maintenance support challenging.

**TRIPP LITE SOLUTIONS**
- **UPS Battery Backup Systems for Cobots**
  - Ensure quality, reliability and availability of source power.
  - Prevent lost programming, downtime, safety problems and operational errors.

<table>
<thead>
<tr>
<th>Industrial Cobot User Need</th>
<th>UPS Model</th>
<th>UPS Type</th>
<th>Form Factor</th>
<th>Load Capacity (VA/W)</th>
<th>Estimated Runtime (50%/100% Load)</th>
<th>Surge Protection</th>
<th>Alerts/Comms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Mode</td>
<td>BC450</td>
<td>Standby</td>
<td>Desktop</td>
<td>450/255</td>
<td>6.9/1.5 min.</td>
<td>Yes (316 Joules)</td>
<td>LED, Audible</td>
</tr>
<tr>
<td></td>
<td>BC500</td>
<td>Standby</td>
<td>Desktop</td>
<td>500/260</td>
<td>6.9/1.5 min.</td>
<td>Yes (316 Joules)</td>
<td>LED, Audible</td>
</tr>
<tr>
<td></td>
<td>BC600TU</td>
<td>Line Interactive (AVR)</td>
<td>Desktop</td>
<td>600/360</td>
<td>5.7/0.5 min.</td>
<td>Yes (316 Joules)</td>
<td>LEDs, Audible, USB</td>
</tr>
<tr>
<td>Operational Mode</td>
<td>SU1000XLCD</td>
<td>On-Line (Double Conversion)</td>
<td>Tower</td>
<td>1000/900</td>
<td>12.8/3.8 min. (Expandable)</td>
<td>Yes (570 Joules)</td>
<td>LCD, Audible, USB, RS232</td>
</tr>
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<td></td>
<td>SU750RTXLC2U + SNMP Card (TLNETCARD)</td>
<td>On-Line (Double Conversion)</td>
<td>2U Rack/Tower</td>
<td>750/675</td>
<td>13.9/4.3 min. (Expandable)</td>
<td>Yes (570 Joules)</td>
<td>LCD, Audible, USB, RS232, SNMP, Modbus TCP</td>
</tr>
<tr>
<td></td>
<td>SU1000RTXLC2U + SNMP Card (TLNETCARD)</td>
<td>On-Line (Double Conversion)</td>
<td>Rack/Tower</td>
<td>1000/900</td>
<td>14/4.8 min. (Expandable)</td>
<td>Yes (570 Joules)</td>
<td>LCD, Audible, USB, RS232, SNMP, Modbus TCP</td>
</tr>
</tbody>
</table>

- **Industrial Cables – Ethernet, USB, HDMI, AV**
- **Industrial USB Hubs**
- **PoE Network Switches**

Contact your Tripp Lite representative for more information.