

## CROWN CLIP Series Sockets

### Product Facts

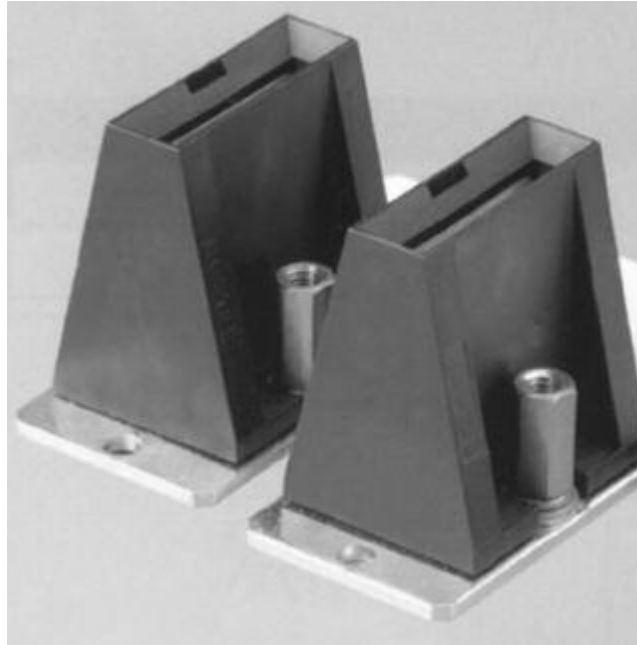
- Compact design
- High performance CROWN BAND contacts
- Currents to 350 Amps<sup>1</sup>
- Mates with solid or laminated blades
- Supports true Hot-Plug (Current Interruption)<sup>2</sup>
- Float Mount option reduces mating forces
- Meets UL (USR & CNR), and CSA safety requirements
- All CROWN CLIP Products in this section are RoHS compliant.

### Typical Applications

- Bus Bar based power distribution
- Power racks
- Rack mounted switching power supplies

#### Notes:

- 1 Dual CROWN CLIP Socket using nickel plated mating tab, equivalent rating for other CROWN CLIP Socket designs is 300A
- 2 Current interruption requires a gold plated, solid mating tab, and is not currently supported using a laminated mating tab



CROWN CLIP sockets are compact, high-current socket connectors for high current bus bar power distribution. Using ELCON high performance CROWN BAND technology, CROWN CLIP Sockets are available in single pole format to mate with a solid blade, handling up to 350 Amps, or in dual pole format to mate with laminated bus bar tabs for feed and return currents.

### Product Highlights

#### Hot-Plug Design

CROWN CLIP sockets also comply with safety regulatory requirements for current interruption under load. Compliance is achieved by a contact design that restricts the effects of arcing to areas that do not compromise the integrity of the connection. Hot-plugging requires a gold plated mating blade.

### Safety Agency Compliance

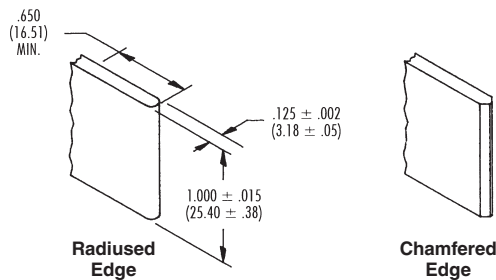
CROWN CLIP sockets comply with the UL1977 standard and CSA standard C22.2 No. 182.3-M1987. Tyco Electronics will work with customers to obtain application specific regulatory certifications if needed.



### Sample Application

CROWN CLIP Sockets allow hot-plugging of rack-mounted switching power supplies.

Photo reproduced courtesy of Unipower Corporation.



### Mating Blades

Recommendations for customer supplied mating blades are:

**Insertion Length** — .650 [16.50] minimum, 1.00 [25.40] maximum

**Thickness** — .125 [3.18] or .118 [3.00]

**Material** — Copper, gold or nickel plated, with chamfered or rounded mating edge



**CROWN CLIP Series Sockets** (Continued)

**Original CROWN CLIP Sockets**  
**Part Number 1643906-1**

**Product Specifications**

**Materials**

**Insulator** — Polyester, UL 94V-0  
**CROWN BAND** — Beryllium copper alloy, selectively plated with gold (30 micro inches minimum), over nickel  
**Crown Holder** — Copper alloy

**Electrical**

**Current Rating, Steady State** — Nickel plated solid tab: 300 Amp maximum; 200 Amp at 30°C maximum temperature rise  
**Current Rating, Hot-Plug** — Gold plated solid tab: 200 Amp maximum, 42V; 100 Amp maximum, 48V

**Mechanical**

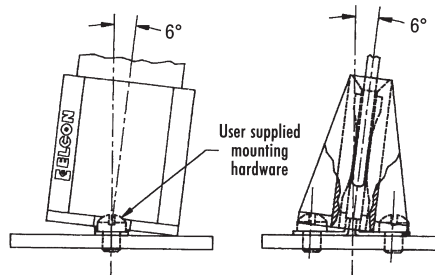
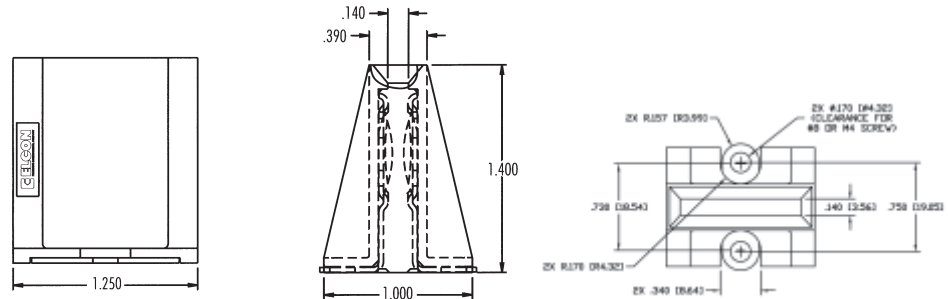
**Insertion Force** — 10.0 lbs (4.54 Kg) maximum  
**Extraction Force** — 5.0 lbs (2.72 Kg) minimum

Single Pole, Float Mount Socket design delivers 300 Amp current capability plus current interruption.

Float mount design provides alignment for blind mating of rack-mounted power supply units. Parallel cantilever design contacts include

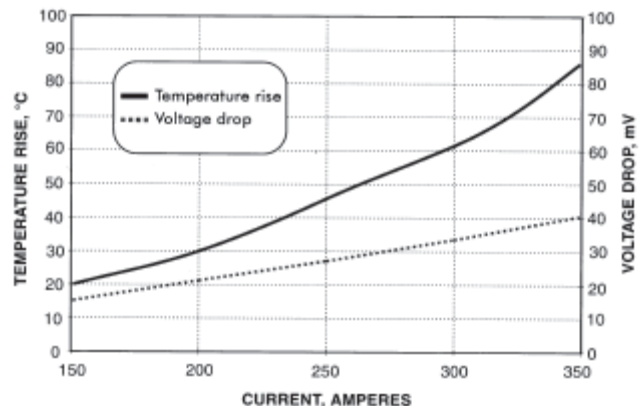
ELCON CROWN BAND contact elements to ensure low voltage drop and heat generation, plus consistent insertion and extraction forces. Current interruption ratings are 100A at 48V and 200A at 42V, both using a gold plated, solid tab.

**Customer Drawing available upon request.**



**CROWN CLIP Sockets**  
**Electrical Performance**

The graph at right shows the electrical performance of CROWN CLIP Sockets in terms of temperature rise and volt-age drop at currents from 150 Amps to 350 Amps. The set up used for the test had six CROWN CLIP Socket samples mounted on a .25" x 1.75" x 6.0" bus bar, mating with 1.0" long by .125" thick nickel plated blades connected in series using 1/0 AWG wire.



**CROWN CLIP Series Sockets (Continued)**

**CROWN CLIP II Sockets  
Part Number 1643903-1**

**Product Specifications**

**Materials**

**Insulator** — Polyester, UL 94V-0  
**Contact** — Copper alloy, selectively plated with gold (30 micro inches minimum), over nickel

**Electrical**

**Current Rating, Steady State** — Nickel plated solid tab: 300 Amp maximum; 230 Amp at 30°C maximum temperature rise

**Current Rating, Hot-Plug** — Gold plated solid tab: 200 Amp maximum, 42V; 100 Amp maximum, 48V

**Mechanical**

**Insertion Force** — 20.0 lbs (9.08 Kg) typical

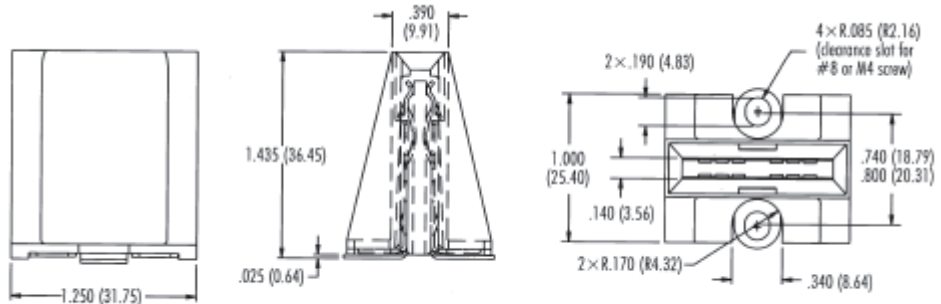
**Extraction Force** — 10.0 lbs (4.54 Kg) typical

Dual Pole, Float Mount Socket design delivers 300 Amp current capability plus current interruption.

Float mount design provides alignment for blind mating of rack-mounted power supply units. The Dual Pole contact design allows mating to a two pole

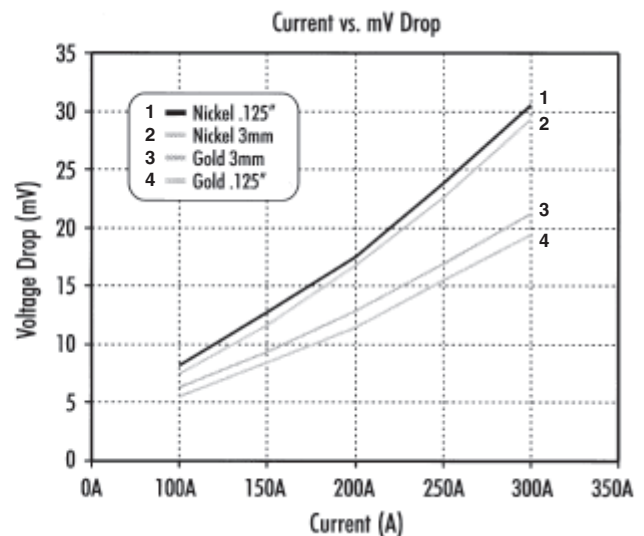
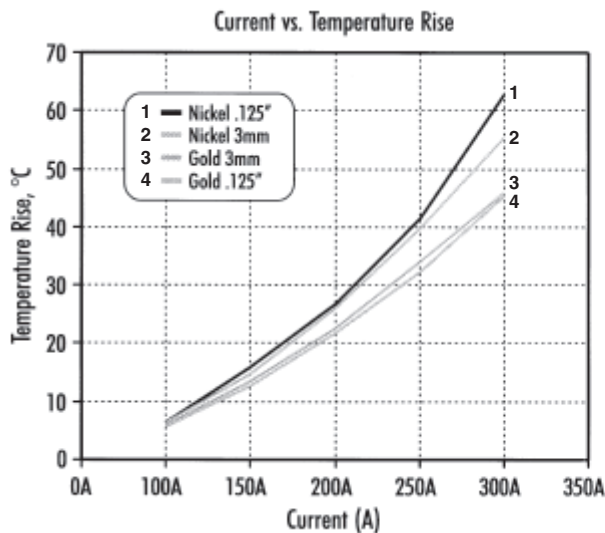
laminated bus bar or double sided PCB tab, adding design flexibility by providing feed and return using a single socket. Current interruption ratings are 100A at 48V and 200A at 42V, both using a gold plated, solid tab.

Customer Drawing available upon request.



**CROWN CLIP Sockets II Connector Electrical Performance**

The graphs below show the electrical performance of CROWN CLIP II sockets in terms of temperature rise and voltage drop at currents from 150 Amps to 350 Amps. The set up used for the test had samples of six CROWN CLIP Sockets mounted on a .25" x 1.75" x 6.0" bus bar, mating with 1.0" long by .125" thick nickel plated blades connected in series using 1/0 AWG wire.



**CROWN CLIP Series Sockets (Continued)**

**Dual CROWN CLIP Sockets  
Part Number 1643902-1**

**Product Specifications**

**Materials**

**Insulator** — Polyester, UL 94V-0  
**CROWN BAND** — Beryllium copper alloy, selectively plated with gold (30 micro inches minimum), over nickel  
**Crown Holder** — Copper alloy

**Electrical**

**Current Rating, Steady State** — Nickel plated solid tab: 350 Amp maximum; 225 Amp at 30°C maximum temperature rise

**Current Rating, Steady State** — Laminated bus bar tab: 130 Amp per side (260 A total) maximum; 75 Amp per side (150 A total) at 30°C maximum temperature rise

**Current Rating, Hot-Plug** — Gold plated solid tab: 200 Amp maximum, 5V; 100 Amp maximum, 60V

**Mechanical**

**Insertion Force** — 20.0 lbs (9.08 Kg) typical

**Extraction Force** — 13.0 lbs (5.9 Kg) typical

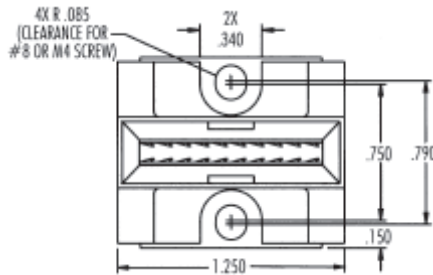
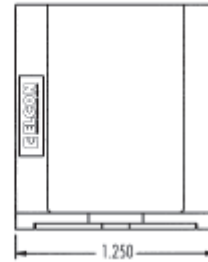
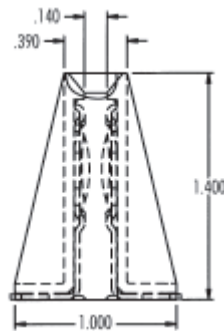
Dual Pole, Feed-through Socket design delivers 350 Amp current capability plus current interruption. The Dual Pole contact design allows mating to a two pole laminated bus bar or double sided PCB tab, adding design flexibility by providing feed and return using a single socket. The Feed-through design aspect allows insertion of mating

blade from both top and bottom of socket. The contacts include ELCON CROWN BAND contact elements to ensure low voltage drop and heat generation, plus consistent insertion and extraction forces. Current interruption ratings are 100A at 60V and 200A at 5V, both using a gold plated, solid tab.



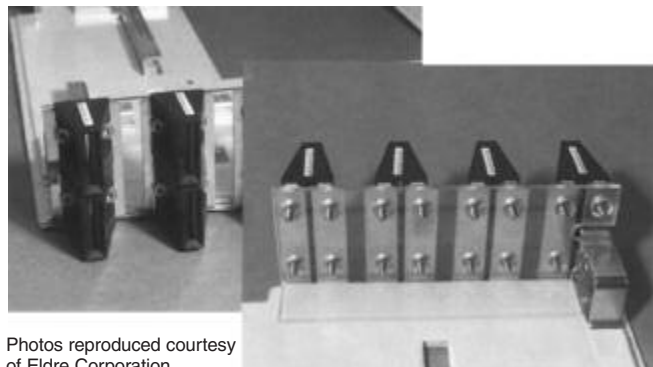
Feed-Thru View

Customer Drawing available upon request.



**Sample Application**

ELCON Dual CROWN CLIP connectors mounted on a laminated power distribution bus bar in a large server.



Photos reproduced courtesy of Eldre Corporation