# Generator Connection Panels







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Bulletin: GCP-114A

## Who We Are

Union Connector has been manufacturing electrical equipment since 1929. In that time we have earned a well deserved reputation for building safe, dependable products that satisfy our customer's needs. Our products are UL Listed and designed to meet national and local codes. Our three facilities, strategically located around the country, provide engineering, fabrication, finishing and assembly. We have the resources to build equipment from simple, portable power distribution boxes to room–sized, power distribution centers.

## **Generator Connection Panels**

When normal utility power is interrupted due to natural disaster or utility system failure it may become necessary to bring in portable generators to provide power or augment emergency gen-sets. Generator Connection Panels are intended for use as a temporary service connection point between portable power units and the facility service entrance. Connection of these portable power units to building wiring should be through a connection panel specifically designed for this application.

A Union Connector Generator Connection Panel (GCP) contains standard connectors for portable cable connection to the facility. The devices are mounted inside a NEMA 3R, 1 or 4X enclosure with a secure cable entry door on the bottom of the enclosure. Quick, safe connection of portable cables by qualified personnel is through this cable entry door. The front door can be secured with a padlock.

GCP's are available with switching mechanisms to transfer power input from a normal utility to a portable/alternate power source. The switching mechanism is designed to prevent cross-connection of normal and alternate power supplies.

Options are available to custom design a unit to meet specific applications. These options include a variety of device types, enclosures and instrumentation.





# **Applications**

**Emergency Power** – When utility power is interupted for an extended time, a Union Connector GCP can provide a safe means of connection from a portable generator to a facility's electrical system. The use of industry standard Series 16 cam type devices makes connection simple and quick. Some typical users are:

- Storm Shelters
- Gas Stations
- Convenience Stores
- Cell Sites
- Pharmacies
- Hotels



**Industrial** – Planned maintenance or system testing may require disconnection from normal utility power. A GCP provides a convenient and cost-effective way to connect an alternate power source for critical loads or load testing. Typical locations include:

- Wastewater Treatment
- Oilfield / Oilpatch
- Healthcare Facilities
- Manufacturing
- Petrochemical
- Airports



**Commercial** –Sometimes power requirements exceed available utility power. Using a GCP in co-ordination with portable generators can provide a temporary solution to that problem. Typical applications would include:

- Convention Centers
- Outdoor Stages
- Stadiums
- Fairgrounds



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## **Standard Features**

## Construction

- Type 3R steel enclosure with powder-coat finish
- Surface mount
- Latching trap door access for portable cable entry
- Dead front panel design
- Cable connection protected from the elements while in-use

#### Electrical

- Single phase 120V., 2W+G
- Single Phase 120/240V., 3W+G
- Three phase 120/208V., 4W+G
- Three phase 208V., 3W+G
- Three phase 277/480V., 4W+G
- Three phase 480V., 3W+G
- 100 to 3200 Amps
- Copper bus with dual-rated mechanical lugs for facility connection

#### Connection

- Series 16 Cam devices color-coded per electrical standards
- Multiple sets of Cams with snap back protective covers on units rated over 400A.

#### Listing

• UL Listed



## Options

## Construction

- Type 1 enclosure
- Type 4X enclosure
- Pad mount
- Stainless steel enclosure
- Aluminum enclosure

#### **Electrical**

- Molded case circuit Main breaker
- Fused disconnect
- Non-fused disconnect
- Dual Neutral
- Reverse Neutral/Ground
- Phase sequence meter

#### Connectors

- Posi-Lok<sup>™</sup>
- Mechanicall lugs direct to bus connection
- Pin & Sleeve (IEC 309)

#### Miscellaneous:

- Meters
- Remote Operation
- Contactors
- Isolated Ground



- Convenience Outlets
- Reverse Neutral/Ground

## **Custom Designs**

Union Connector has the engineering and manufacturing experience to build custom GCP units to meet the needs of unique situations. Our staff is willing to work with you or your contractor to design and build a GCP that will be suited to your specific needs. For more information, contact our Engineering Dept. to begin the design consultation process.

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- 1. The enclosure shall be Type 3R, fabricated from galvanized steel, and powder coated gray.
- 2. The enclosure shall contain mounting tabs for surface mounting.
- 3. A drip shield shall be provided above the door opening.
- 4. The enclosure shall have a hinged front door provided with a latch able to accept a padlock.
- 5. The bottom of the enclosure shall contain a hinged door for the entry of portable cable. The door shall be secured by a latch accessible only from inside the enclosure.
- 6. The conduit entrance shall be through the top of the enclosure. The line building wire shall terminate directly to the inlets or to mechanical lugs on the phase and neutral bus. Each inlet shall have (1) lug associated with it. The Ground building wire shall terminate to a dual rated lug bonded to the enclosure
- 7. A dead front cover shall prevent access to the internal electrical components when the main access door is open.
- 8. When Cam connection is provided, the inlets shall accept standard E1016/Series 16 type connectors. Cams shall be color-coded to indicate phase, neutral and ground. The dead-front inlet panel shall contain slots between devices to eliminate heating by hysteresis, as required by NEC Art. 300.20(B).
- 9. When Posi-Lok<sup>™</sup> connection is provided, the inlet panel shall be an EO400 Series and shall be mounted on an internal dead front panel.
- 10. When dual-rated mechanical lugs are provided, they shall be mounted on bus bars in a cable connection chamber. A hinged door on the internal dead front panel shall be provided for access to the cable connection chamber. This door shall have a key lock. The internal cable connection end panel shall contain color coded, protective snapback covers. There shall be slots between the covers to eliminate hysteresis, as required by NEC Art. 300.20(B).
- 11. The Ground Lug shall be wired to the enclosure frame and a Ground connection lug shall be provided for contractor termination of the building ground wire.
- 12. Device connection shall be made inside the enclosure and the connectors shall remain inside the enclosure while connected to the inlets.
- 13. A warning label to specify the proper sequence for connection and removal of portable cable and shall be mechanically fastened to front cover of the enclosure.
- 14. The Generator Connection Box shall meet or exceed all applicable NEC standards and shall be UL Listed. A label denoting the UL Listing shall be permanently affixed to the unit.
- 15. The Generation Connection Box shall be a PBS model as manufactured by Union Connector.

Example: Generator Connection Panel, no switches, 120/208V., 400A., Cam connectors (single Neutral) in a NEMA 3R enclosure, with no options or customization -

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# **Physical Layout**



## **Related Equipment**

**Connectors** – The most common type of connector found on portable generators is the Series 16 cam connector - sometimes referred to as E1016. Union Connector is an OEM/Distributor for Leviton wiring devices, including their entire line of cam connectors, adapters and panel mount devices.. In addition, we carry the internationally rated IEC 309 Pin & Sleeve type devices.





**Cable Assemblies** – Union Connector can provide an entire power distribution package for connection of a generator to facility wiring. This includes cables with the correct type of connectors and/or lugs. Cable assemblies are assembled of the correct gauge and length as required per application.



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