



ADVANCED POWER
TECHNOLOGIES

2.4kV-38kV GLQC Switchgear



MVFS-Series Generator, Loadbank Quick Connection Solutions Brochure

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**SAFE SMART SIMPLE SWITCHGEAR &
ENGINEERED POWER SYSTEM SOLUTIONS**



ALN: 515 Rev. 01

Standard Construction



Figure 1: Floor Standing Carbon Steel NEMA 3R Enclosure



Figure 2: 200A GLQC Switchgear Loadbreak NEMA 3R



Figure 3: Power Quality Metering & Phase Rotation Indication



Figure 4: Isolated Customer Low Voltage Control Power Wiring Panel

2.4kV-38kV Generator Quick Connection Switchgear

- ⊙ System Ratings:
 - Voltage: 2.4kV-38kV (3Ø)
 - Current: 200A-1200A (3Ø)
 - BIL: 60, 75, 90, 150 kV
- ⊙ Dual purpose termination cabinet allows for safe and clean connection of a portable temporary generator or loadbank
- ⊙ Isolated customer low voltage control power wiring panel
- ⊙ Silver-plated copper phase bus bar for permanent connection to the facility.
- ⊙ Rear phase barriers physically isolate each phase to minimize the possibility of phase to phase contact
- ⊙ Standard air-insulated bushing wells allow the versatility to connect either a portable temporary generator or loadbank to the same receptacle
 - ANSI/IEEE Std. 386 connectors compatible
 - 200A Air insulated loadbreak bushing wells, inserts, and caps
 - Up to six (6) connections per phase
 - 600A Air insulated dead break bushing wells, caps
 - Up to two (2) connections per phase
- ⊙ Hanger for insulated caps when cables are connected to the bushings
- ⊙ Insulated caps installed on bushing inserts when cables are not connected using elbows
- ⊙ Grounding wires for insulating caps
- ⊙ 200A, 600A, 1200A Manually operated loadbreak switch with visible disconnect
 - Unfused
 - Fused: 50 – 1200A
- ⊙ Standard Enclosure:
 - Filtered ventilation louvers
 - Pad-lockable hinged main access door
 - Pad-lockable integral lower flip door (allows the main door to be closed with the mobile generator/loadbank cables connected)
 - Powder coated ANSI 61 Gray
 - NEMA 1/3R for indoor/outdoor applications
 - Bottom Entry/Exit
 - Typical Dimensions:
 - 80"H x 44"W x 62"D

Switchgear Features



Figure 5: 3 x 200A GLQC Switchgear Loadbreak NEMA 3R



Figure 6: 600A GLQC Switchgear Deadbreak NEMA 1

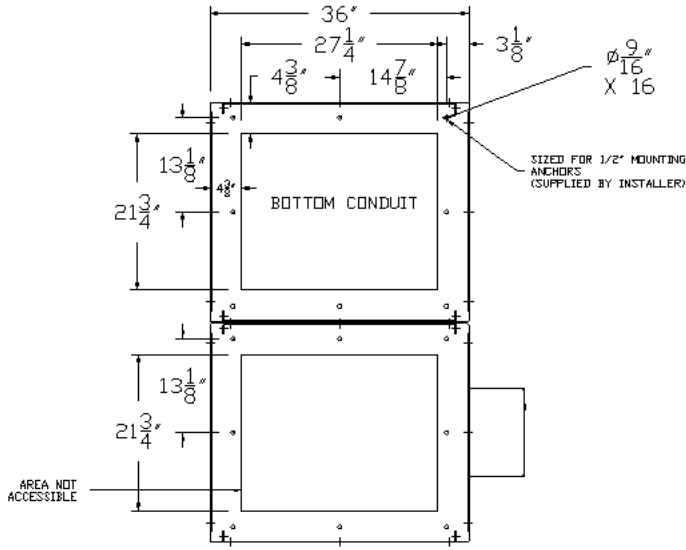


Figure 7: Rear View - PTs & CTs for GLQC Switchgear NEMA 3R

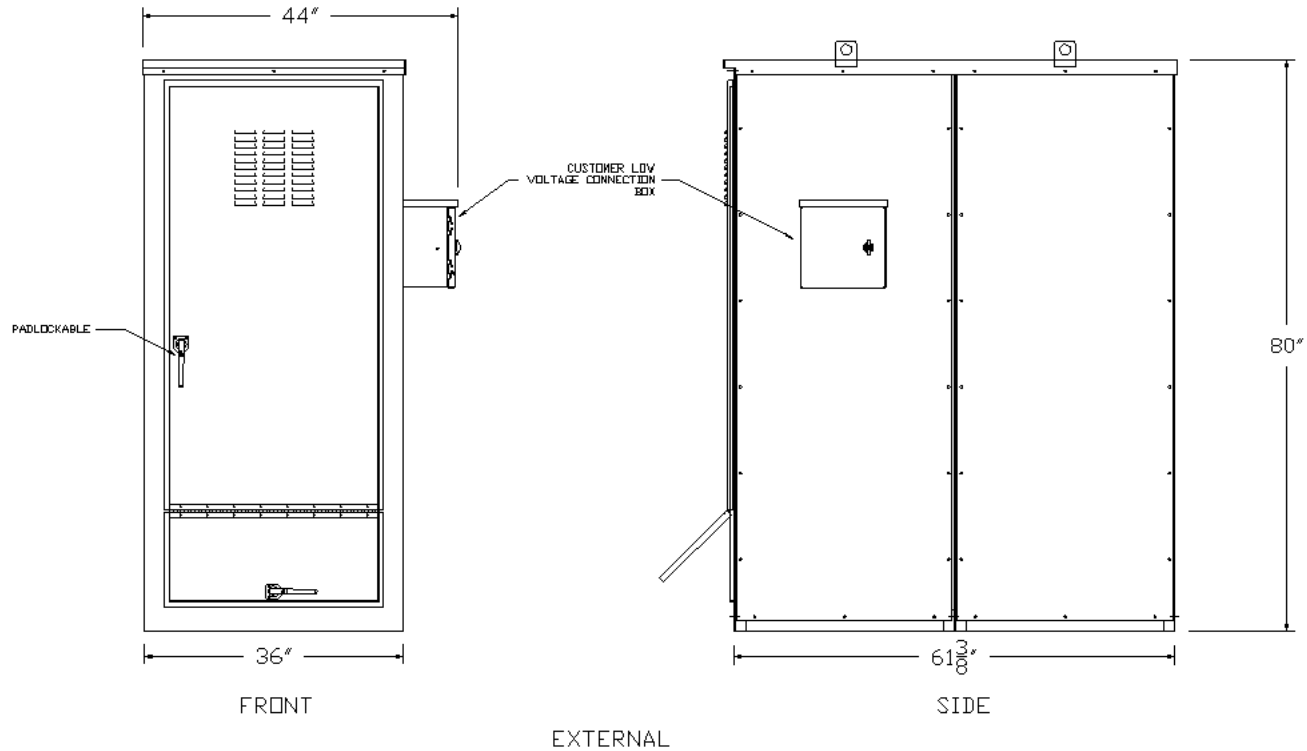
Interlocking, Monitoring, and Metering

- ⊙ Interlocking:
 - NEC 700.3 compliant key interlocking to prevent inadvertent paralleling of the temporary generator source with normal source(s) available upon request
- ⊙ Internal Climate Control to include (2) Space Heaters with a Thermostat
 - Requires customer supplied 120VAC, 10A circuit
- ⊙ Surge Protection:
 - One set of three distribution, intermediate, or station class surge arresters for incoming permanently connected cables from switchgear
- ⊙ Monitoring:
 - Phase Rotation Monitoring
 - Insures portable genset phase rotation matches facility phase rotation
 - "Rotation Correct" light provides visual assurance of correct phasing
- ⊙ NEC 700.3 compliant temporary generator source connected indication
- ⊙ Current Transformers (CTs):
 - One set of three current transformers and mounting assembly insulated for the full voltage rating of the switchgear
- ⊙ Potential Transformers (PTs):
 - Fused, fixed mounted, potential transformers connected in open delta configuration to the load side of the loadbreak switches for temporary source sensing
- ⊙ True RMS, 3 Element Power Quality Metering:
 - Metering accuracy shall be in accordance with ANSI C12.20-1998 and rated as follows:
 - Class 10 0.5% for energy.
 - 0.2% of reading and 0.02% of full scale for voltages and currents.
 - 0.3% of reading and 0.02% of full scale for active and apparent power
 - Dedicated high-brightness digital LED displays are visible in the bright sun light or in the dark

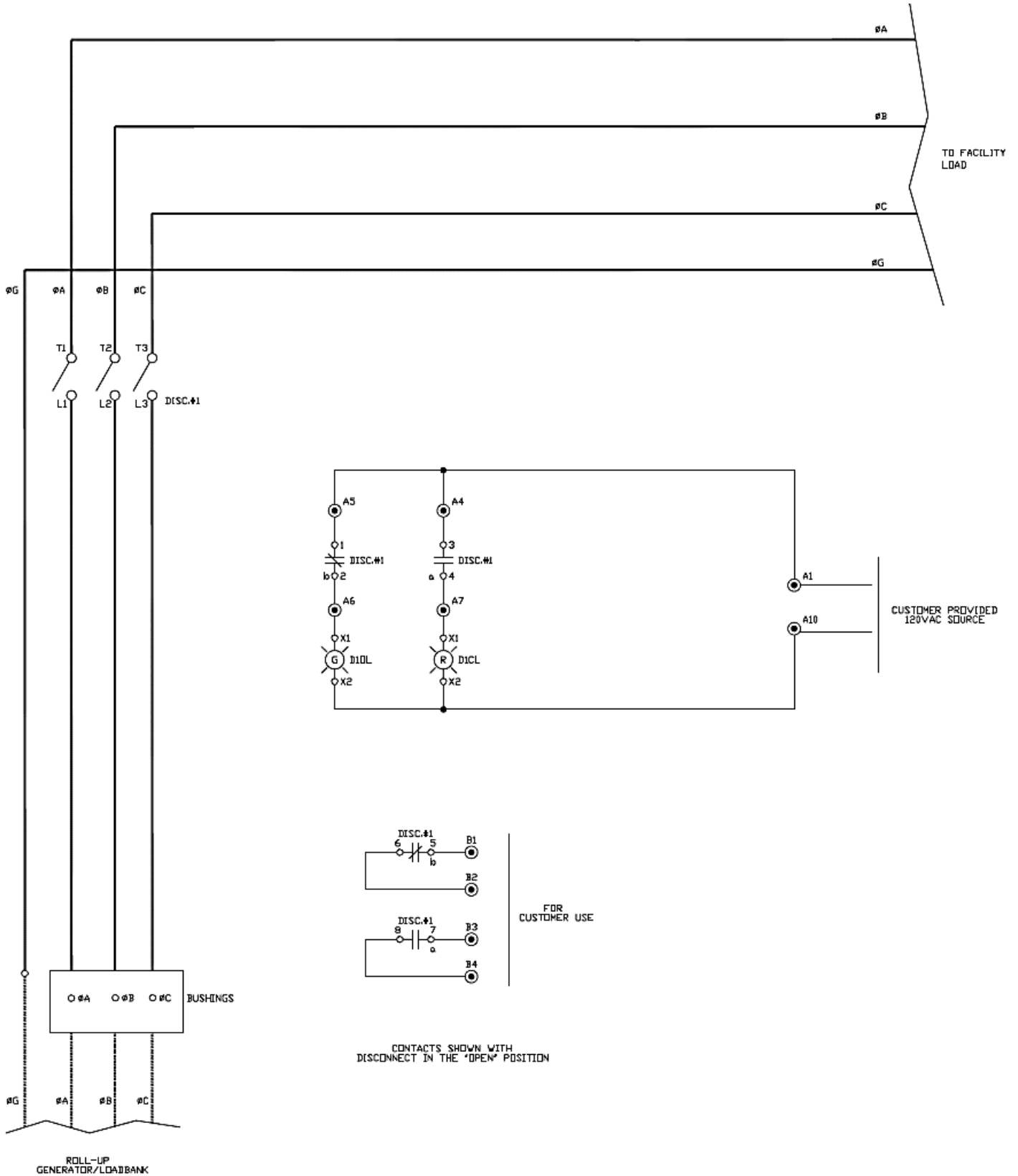
Switchgear Layout Drawing



BOTTOM CONDUIT ENTRY



Switchgear Wiring Diagram



About Advanced Power Technologies



Advanced Power Technologies (APT) is on the cutting edge of the latest engineered power system smart technologies, as it relates to microgrid & storage management, renewable & conventional energy source deployment, demand peak shaving, and facility back-up and co-generation power systems. Located in the central United States and headquartered in Lafayette, Indiana with solutions development engineers around the country, APT provides domestic and international products and services to industry leading companies from around the world. APT engineers have decades of power system experience from working with some of the largest companies in industry. Over the last two decades, we have produced successful solutions for hundreds of large-scale electric power projects involving utility/generator paralleling, transfer, peak shaving, and distribution. We pride ourselves in providing electrical power systems that are engineered and custom built, utilizing state-of-the-art technologies to fit our customer's exact needs. The core of our business is low & medium voltage engineered power systems for a wide range of indoor & outdoor applications, such as:

- ⊙ Utility(ies) and Generator(s) Paralleling/Transfer/Peak Shaving/Distribution Switchgear
- ⊙ Microgrids, Microgrid Master Control Panels, SCADA systems
- ⊙ Containerized Battery Energy Storage Systems (BESS)
- ⊙ Photovoltaic (PV) Solar Power Collection/Distribution & Renewable Energy Storage Systems
- ⊙ Low & High Resistance Grounding Systems, Grounding Systems for Photovoltaic Effective Grounding
- ⊙ High Efficiency Combined Heat and Power Switchgear & Control Systems (CHP, Co-generation)
- ⊙ Outdoor Walk-In electrical houses (e-houses) & Skid-Mounted Switchgear
- ⊙ Motor Control Centers & Motor Control Switchgear
- ⊙ Automatic & Manual Load Transfer Switchgear
- ⊙ Bypass/Isolation & Power Distribution Circuit Breaker Switchboards
- ⊙ Generator/Loadbank Quick Connection Switchgear, Switchboards, & Tap boxes
- ⊙ Industrial Control Panels

Please see our product webpages on www.appt-power.com for product brochures and relevant information. Actual products may look different from images shown on the website and in brochures, based on actual specifications.

APT cares and understands that each power system is different. We will evaluate various solutions in order to develop the best solution for a site. APT focuses on our ability to a combine several traditional pieces of equipment/functionality into as little of a footprint possible. This saves on space, the cost of equipment, cost of installation, and accomplishes the most optimal/state-of-the-art design your facilities. APT's desires to foster and grow a culture of continued open communication with each customer. Let APT be your source to provide fully engineered power system equipment solutions for the full customer facility on time, on or under budget, and in the smallest footprint possible. We are always available to assist customers and engineers representing customers in the development of complex power solutions for all facility types.