



power
switchgear



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Point on Wave Energy Reducing Switchgear (power switchgear).

Prime Engineering is a full service electrical engineering firm that specializes in medium and high voltage equipment design, commissioning, and power systems electrical and control system designs.

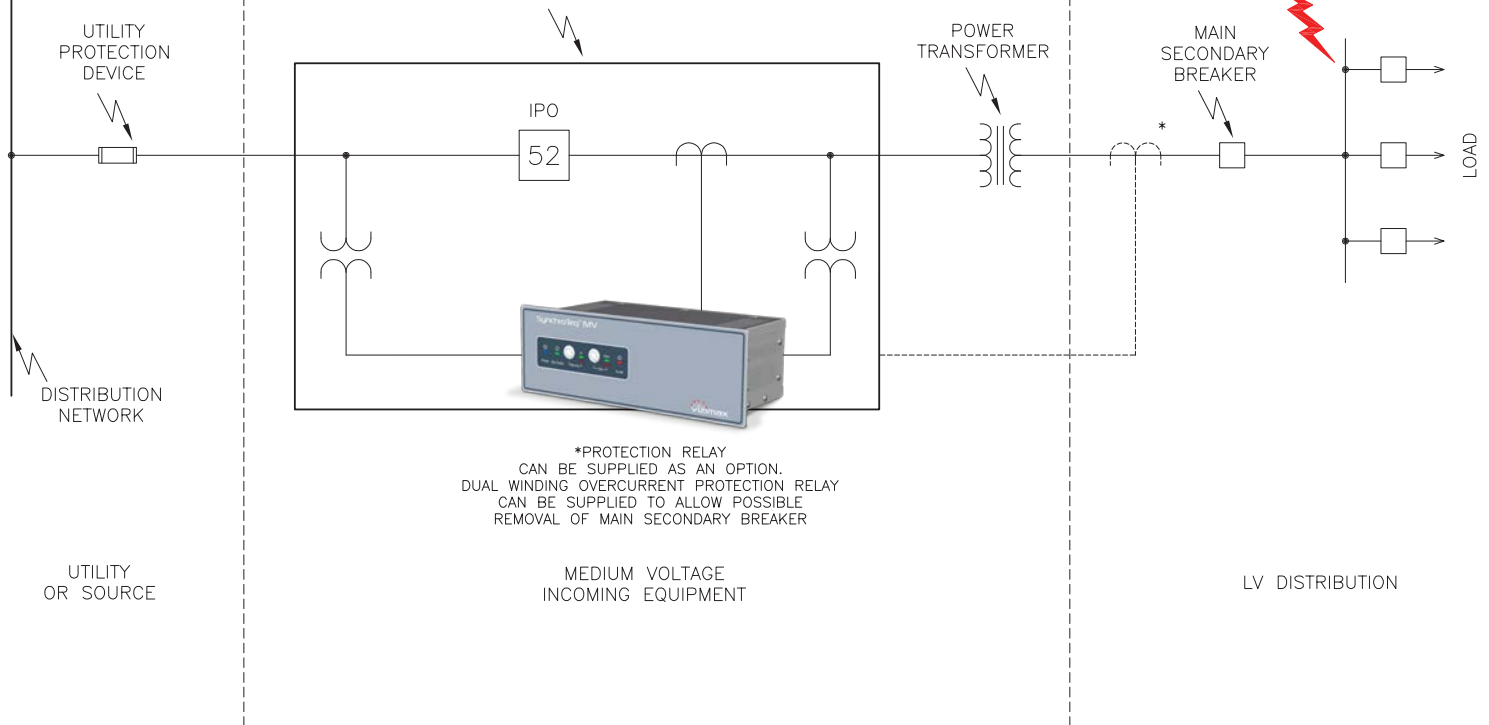
Prime Engineering Ltd. in partnership with Vizimax Inc., have developed the

power switchgear line that contains a multitude of innovative features and improvements over typical designs:

1. Provides lower Arc Flash incident energy levels and improved personnel safety.
2. Allows the connection of larger transformers to the distribution system.
3. Eliminates severe system disturbances and voltage dips from transformer energization.
4. Prolongs equipment life.
5. Provides circuit breaker monitoring and event reporting.

Improved Personnel Safety and Reduced Incident Energy Levels

The Prime Engineering Medium Voltage **power switchgear** line employs an innovative Point on Wave Controlled Switching Device to control an Independent Pole Operated breaker to eliminate transformer in-rush currents. By mitigating transformer in-rush currents, this patent pending design allows the integral (or external) protection relaying to be set with lower instantaneous settings. This improves device and personnel protection by minimizing downstream incident energy levels and thereby improves Arc Flash ratings and PPE requirements. In addition, the **power switchgear** line can be provided with optional time-delayed breaker close control to give personnel the ability to vacate the area prior to circuit breaker closing and/or planned opening.

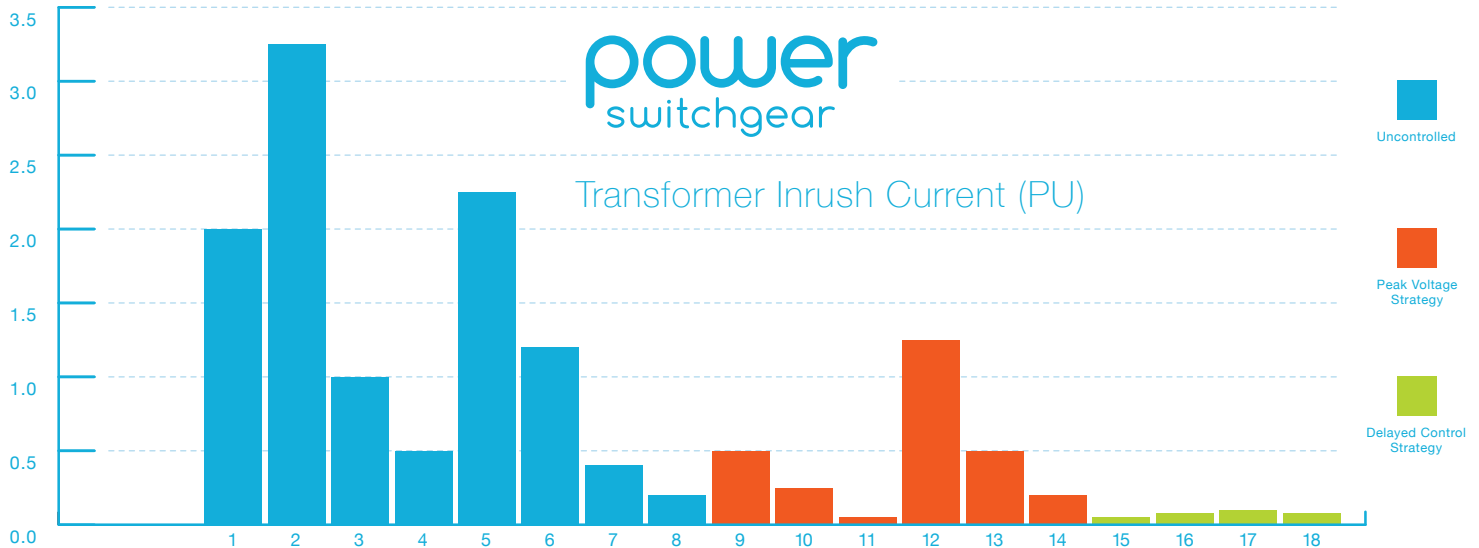


Connect Larger Transformers to the Network without Costly System Upgrades

On distribution systems, transformer size is typically limited by the ability of the transformer protection to clear in-rush and still coordinate fully with the utility fuse or upstream protection device. Also, when being energized, larger transformers can cause severe voltage disturbances on local networks and distribution systems. By eliminating in-rush currents with its delayed controlled strategy, the **power switchgear** lineup allows coordination with standard utility fuse sizes for larger distribution transformers. It also reduces or completely eliminates system disturbances due to transformer in-rush.

power switchgear ALLOWS SYSTEM EXPANSION WITHOUT COSTLY INFRASTRUCTURE UPGRADES





Prolong Equipment Life

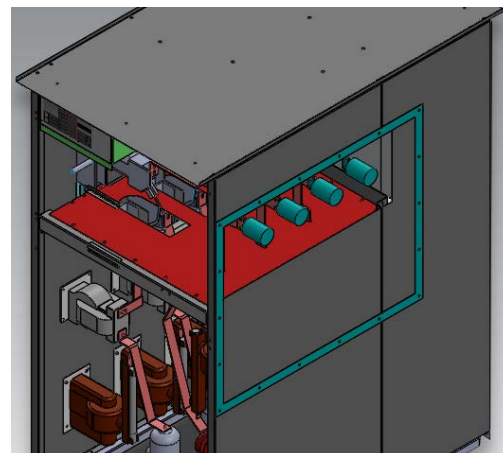
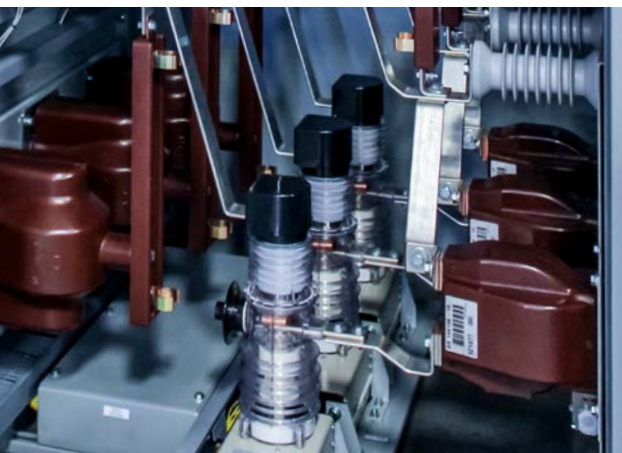
Large magnitude in-rush currents high in harmonics are typically generated when a transformer core is driven into saturation during initial energization. These in-rush currents cause magnetic stresses in the transformer with potential to damage and/or shorten a unit's lifespan.

Likewise, circuit breakers subjected to large in-rush currents during initial transformer energization are subjected to additional stresses which may shorten their lifespan.

The elimination of in-rush currents during transformer energization will minimize the stresses mentioned and equipment life will be extended.

Built-in Monitoring

The built in SynchroTeq Controlled Switching Device allows real-time monitoring and visualization of events, digital status, fluctuations of critical parameters including a network's voltages, currents, circuit breaker operation timing and parameters, ambient temperature, and more. Based on time-stamped events, the SynchroTeq controller allows analysis of circuit breaker parameters as well as operations monitoring in order to plan future maintenance and repair.





Technical Specifications

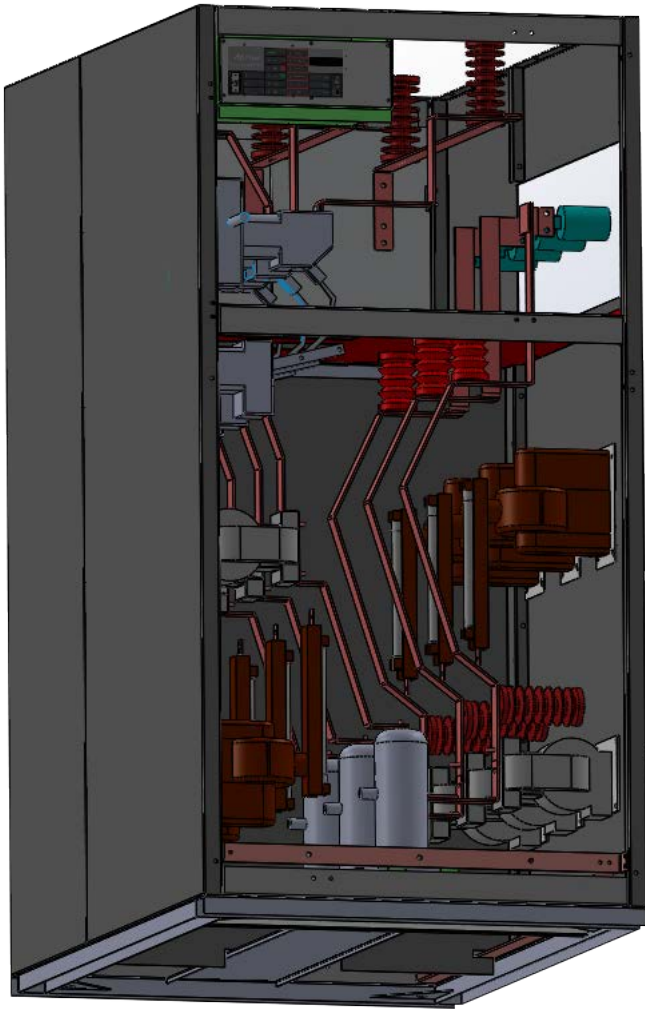
ELECTRICAL DATA

RATED VOLTAGE	12.5kV		25kV	
	Rated Current / Max Rated Current (A)	600	1000	600
Peak Withstand Current (kA)	20	20	16	16
Short Time Current (kA)	20	20	16	16
Lighting Impulse Withstand (kV)	95	95	125	125
Rated Power Frequency Withstand (KV)	36	36	60	60
Frequency (Hz)	60			

BREAKER MECHANICAL DATA

RATED VOLTAGE	12.5kV		25kV	
	Operations at Rated Current (CO – cycles)	50,000	50,000	30,000
Opening Time (ms)*	15	15	15	15
Closing Time (ms)	30	30	35	35
Operating Sequence	O-0.3s-CO-10s-CO			

**Improve Arc Flash safety with sub-cycle breaker operating times.*



The **power switchgear** has the following features included:

1. Visual load break disconnect switch
2. Controlled Switching Device
3. Line and load current transformers
† for customer use*
4. Line and load voltage transformers
† for customer use*
5. Protection relaying* (Dual winding overcurrent or overcurrent with voltage protection)
6. Maintenance free designed breaker
7. Remote open/close functionality*

**Optional | † Ratio based on circuit breaker sizing*

For new installations we can supply a complete turnkey package consisting of the Controlled Switching Device (CSD), Independent Pole Operated (IPO) breaker, and associated switchgear for your project.

For existing sites our solution can be installed into existing switchgear lineups by replacing the main breaker cell: The CSD, IPO breaker, and associated switchgear cell has been designed to integrate into industry standard switchgear cell widths and depths.

PLEASE CONTACT US FOR FURTHER DETAILS





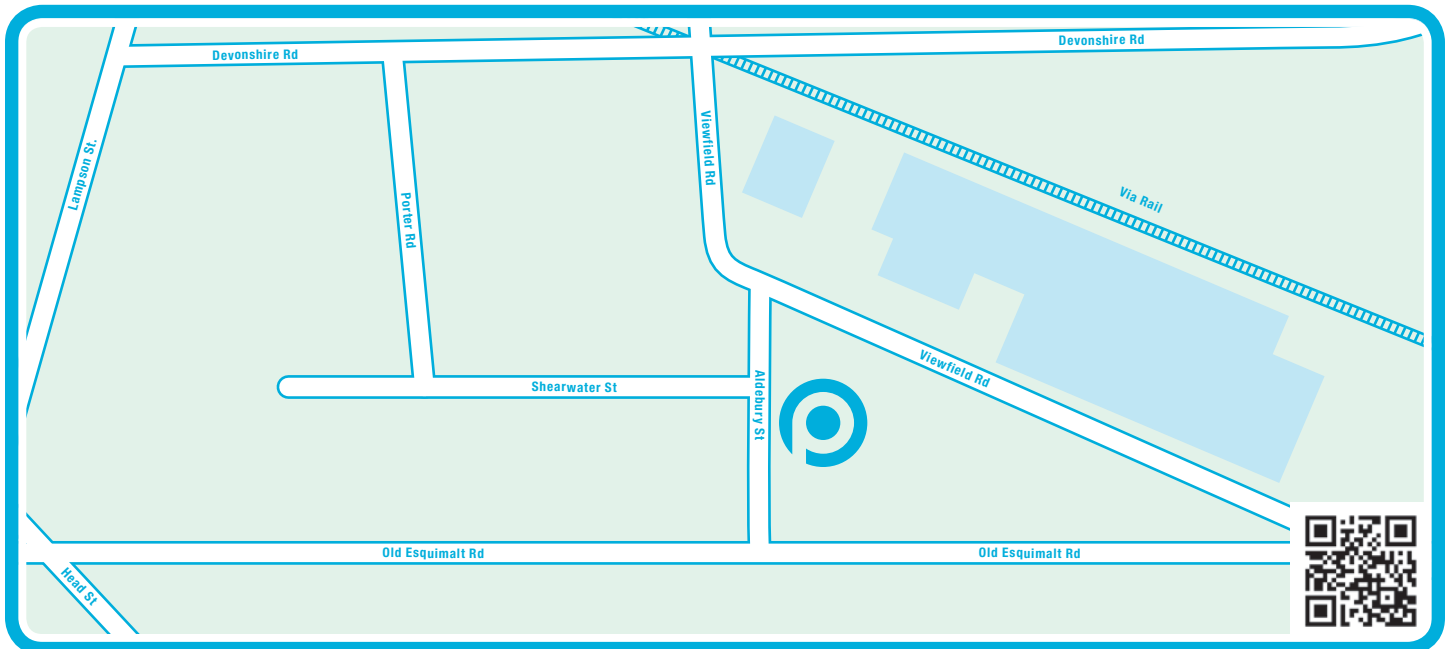
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Prime Engineering is a full service electrical engineering firm specializing in power system design and commissioning. We provide our customers with:

- Power System Protection and Electrical Design
- Control and Automation System Design
- Power System Studies: Load Flow, Coordination, Short Circuit, Arc Flash and Ground Grid
- Acceptance and Maintenance Testing and Commissioning
- Project Quality Assurance Programs

We manufacture and supply unit substations and electrical switchgear by integrating only the highest quality and industry proven equipment and manufacturers into our designs.

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