

Customer Services

GM Metal-Clad Switchgear

Utilizing the GMI circuit breaker - 5-15kV



Siemens GM 5kV, 7.2kV and 15kV metal-clad power switchgear assemblies with horizontal drawout type GMI vacuum circuit breakers take advantage of the latest developments in vacuum interrupter technology. Up to two circuit breakers can be stacked in a single vertical section, allowing significant space savings. The equipment meets or exceeds ANSI, IEEE, and NEMA standards. UL listing is available where the arrangement allows. GM switchgear is widely used in industrial plants, commercial building, electric utility systems, cogeneration installations, and other electrical systems. It is commonly used for protection and switching of transformers, motors, generators, capacitors, buses, distribution feeder lines, and, in general, for protection of any medium voltage power circuit. Siemens experience gained in nearly 100 years of supplying metal-clad switchgear in the U.S.A. has been captured in the GM design.

Siemens Vacuum Interrupters

The vacuum interrupters used in the GMI circuit breaker are manufactured by Siemens and have been proven in thousands of installations since 1976.

Front Mounted Operating Mechanism

The simple GMI operating mechanism makes maintenance and inspection easy.

Five Year Maintenance Cycle

If applied under ANSI "usual service" conditions, maintenance is only needed at 5 year intervals.

Universal Spare Breaker

The physical configuration and interlock logic allow the use of a single circuit breaker to serve as a "universal" spare breaker. The interlock logic checks the four principal rating characteristics (continuous current, maximum voltage, interrupting current, and close and latch current), and allows a circuit breaker to be inserted in a breaker cell, provided that the breaker equals or exceeds the ratings required by the cell.

Single Source

Single source is assured since the complete equipment is designed, manufactured and tested in a single facility in the USA.

Full ANSI design Background

Full design integrity is assured. ANSI C37.09 and C37.20.2 require design tests on circuit breakers and structures together. Since both the structures and the circuit breakers are produced in a single facility, Siemens controls the entire product.

UL listing Available

Where the arrangement of components allows, UL listing is available.

GMI Circuit Breaker Ratings

Circuit Breaker Type	kV Class	MVA Class	Max Rated Voltage (E kV rms)	Rated Continuous Current (Amps)	Rated Interrupting Time (Cycles)
5-GMI-250	4.16	250	4.76	1200 2000	5
5-GMI-350	4.16	350	4.76	1200 2000 3000	5
7-GMI-500	7.2	500	8.25	1200 2000 3000	5
15-GMI-500	13.8	500	15	1200 2000	5
15-GMI-750	13.8	750	15	1200 2000 3000	5

Vacuum Circuit Breaker Cell

The circuit breaker cell is a bolted, reinforced, sheet steel enclosure, with provisions for a type GMI vacuum circuit breaker. It includes a hinged front door, inter-compartment and inter-unit barriers, primary and secondary disconnects, automatic shutters, racking mechanism, interlocks, instruments and relays, control wiring and devices, and current transformers.

Vacuum Circuit Breaker Element

The GMI vacuum circuit breaker includes a stored energy operating mechanism, primary and secondary disconnects, automatic shutters, auxiliary switches, ground contact, control wiring, and interlocks.

Auxiliary Cell

An auxiliary cell is similar to a circuit breaker cell, except without provisions for a circuit breaker. Space may be used for VTs, CPTs and fuses, batteries, chargers, and other auxiliary devices.

Bus Compartment

The bus compartment is a separately enclosed space for three-phase insulated main power bus bars, supports, and connections to circuit breaker cells.

Primary Termination Compartment

The rear area of the unit includes space for connecting incoming or outgoing power cables, busway connections, transformer connections, or surge protection devices.

Circuit Breaker Cell Features Floor Rollout

Breakers in the lower cell can be rolled out directly on the floor in front of the unit, without a handling device, lift truck, or hoist for indoor and shelter-clad installations. A lift truck accessory is optionally available for handling circuit breakers in upper cells, or in non-walk-in outdoor enclosures.

Closed Door Racking

The circuit breaker can be racked in or out with the cell door open or closed. For racking, a manual drive crank or an optional electric motor drive may be used.

Interlock

Interlocks prevent moving a closed circuit breaker in the cell, by preventing engagement of the racking crank if the breaker is closed. A second interlock lever holds the circuit breaker mechanically and electrically trip-free between positions. The racking mechanism can be pad locked to restrict unauthorized racking of the circuit breaker. Separate padlock provisions may be used to hold the circuit breaker in trip-free condition.



Siemens Type GM Switchgear

- Available in 250 MVA through 1000 MVA
- Single - unit or stackable configuration, manufactured in Wendell, N.C.
- Closed door racking
- Indoor / outdoor designs
- Five year maintenance interval
- Replacement circuit breakers and spare parts are readily available

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