



Type GM-SG
switchgear



Type GM-SG-AR
switchgear



Type GM38
switchgear

Smart-Gear® power distribution switchgear solution

Siemens, a world leader in innovative technologies, has taken another step forward by creating one of the most advanced medium-voltage, metal-clad switchgear solutions in the industry.

Smart-Gear® PDS is a programmable and self-monitoring power distribution solution that combines Siemens switchgear type GM-SG non-arc-resistant 5 kV-15 kV, type GM-SG-AR arc-resistant 5 kV-15 kV or type GM38 non-arc-resistant 38 kV and Siemens SIPROTEC® protective relay technologies to offer one of the most advanced standardized switchgear solutions in the industry.

Smart-Gear PDS is equipped with standard self-monitoring features, designed specifically to enhance the performance and reliability of the switchgear. With Smart-Gear PDS, the user is notified in advance of potential problems such as those in trip circuits and space heater circuits. Also, based on the usage of the equipment, the user will be notified through the indicating lights on the protective relay or through the remote human machine interface when periodic recommended preventive maintenance is needed.

Features and benefits include:

- Reduced control wiring for increased reliability using digital and fiber-optic circuits instead of hard-wired circuits
- Self-monitoring for increased operational reliability
- Programmable – having easy to implement complex schemes with flexibility for future changes

- IEC 61850 communication protocol providing integrated control, monitoring and protection
- Usage-based preventative maintenance
- Faster commissioning and start-up.

Types SG-64 and SG-80

Smart-Gear PDS is available in two types: SG-64 and SG-80. The specific functionality of the self-monitoring features are dependent on the Smart-Gear PDS type selected.

Application-based specifying

Application modules are the building blocks used for configuring a Smart-Gear PDS switchgear lineup.

The five classes of modules for pre-configured applications designed to perform specific functions include:

- System application modules
- Auxiliary application modules
- Circuit breaker application modules
- Remote control application modules
- Special application modules.

With Smart-Gear PDS, specifying medium-voltage, metal-clad switchgear is easy. All of the information can be found in "The complete application guide to specifying a Smart-Gear® power distribution solution (PDS)" available electronically at <http://www.energy.siemens.com/us/en/power-distribution/medium-voltage-switchgear/smart-gear-power-distribution-solution.htm> or from your local Siemens sales representative.

Programmable and self-monitoring power distribution switchgear solution

Answers for energy.

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Features available via protective relay devices	Type SG-64 ¹	Type SG-80 ²
Circuit breaker operating cycles monitoring	Standard	Standard
Circuit breaker trip-circuit monitoring	Standard	Standard
Circuit breaker close-circuit monitoring	Standard	Not available ³
Vacuum interrupter wear monitoring	Standard	Standard
Integrated controls	Standard	Standard
Circuit breaker racking position indication	Standard	Not available ³
Integrated power monitoring	Standard	Standard
Programmable circuit breaker control interlocking	Optional	Optional
Programmable main-tie-main transfer scheme	Optional	Optional
Fan cooling monitoring for 4,000 A circuit breaker	Standard	Not available ³
Voltage transformer monitoring	Standard	Standard
Current transformer monitoring	Standard	Standard
Bus protection (device 50B)	Standard	Standard
Space heater operation monitoring	Standard	Standard
Large protective relay display screen	Standard	Not available ³
IEC 61850 communication protocol (only)	Standard	Standard
Arc-flash detection	Optional	Optional

Footnotes:

1. Type SG-64 Smart-Gear PDS is equipped with type 7SJ6415 protective relays on feeder, main and tie circuit breakers.
2. Type SG-80 Smart-Gear PDS is equipped with type 7SJ8041 protective relays on feeder circuit breakers and type 7SJ6415 protective relays on main and tie circuit breakers.
3. Standard for type 7SJ6415 protective relays furnished on main circuit breakers.
4. MOC and TOC are not required for remote control and monitoring using communications.
5. Circuit breaker operation provided through protective relays. Control switches are not provided.
6. All functions are available via intelligent electronic device in a Siemens protective relay.

Table 1: Types SG-64 and SG-80 features^{4,5,6}

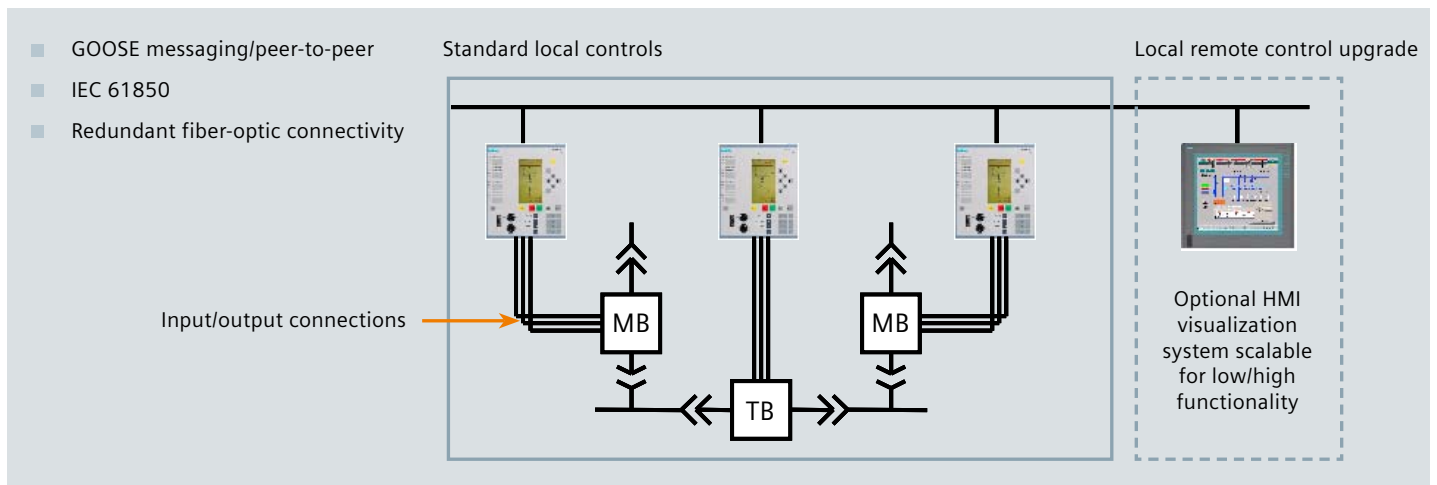


Figure 1: Extended Smart-Gear PDS network with local human machine interface (HMI)

For more information, please contact your local Siemens representative.

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