

GMA

Medium Voltage Gas-Insulated Switchgear up to 24 kV

When you are purchasing MV switchgear, there are many different factors which can influence your specification and choice. Apart from the obvious need for the correct ratings and functions, your choice may be influenced by life cycle costs, ecological features, available space, the need to minimise maintenance and maximise plant availability or the guarantee of safe and easy operation.

Schneider Electric's GMA Gas-Insulated Switchgear provides modern solutions to meet the diverse needs of small and medium sized substation installations in the fields of primary distribution, industry and infrastructure. GMA has been specifically developed for container and ship substation applications wherever space is limited and every millimeter counts. If you are replacing switchboards in an existing substation and want to minimise the cost and disruption, GMA is your answer. With its modular construction, installation and connection times are reduced - minimising total system down-time.

GMA, extremely compact

GMA is a fully gas insulated switchgear equipment. It combines up to four functional units mounted side-by-side, forming an extremely compact module, with ratings up to 24 kV, 1250 A and 25 kA:

- Circuit breakers
- Switch-disconnector or switch-fuse combinations
- Busbar sectionalizer or coupler
- Metering unit or busbar voltage transformer.

For larger switchboards, two or more modules can be supplied, ready for interconnection to produce the required board configuration. GMA meets the requirements of IEC 62271-200 / EN 62271-200 and the national provisions of the above international standards.



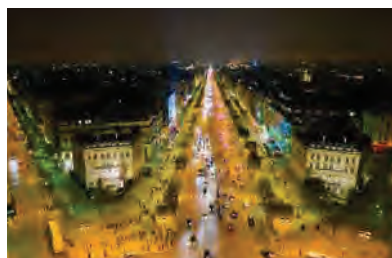
Customer Benefits

- Gas insulation system sealed-for-life
- Space saving, installation size is reduced
- Insensitive for environmental influences
- Long service life and low maintenance
- No on-site gas work required during installation
- Clear and safe operation
- Short delivery time

PM103282



PM103283



PM103284



Medium Voltage Gas-Insulated Switchgear

Independence from environmental influences, corrosion resistant gas-filled metal compartments made of Cr-Ni steel and continuous interlocking systems ensure maximum operating reliability and operator safety. The medium voltage compartment of GMA has been designed as a sealed pressure system to IEC 62271-1 standard. It is not necessary to refill the compartment with gas during the life of the switchgear.



Clear operation and indication

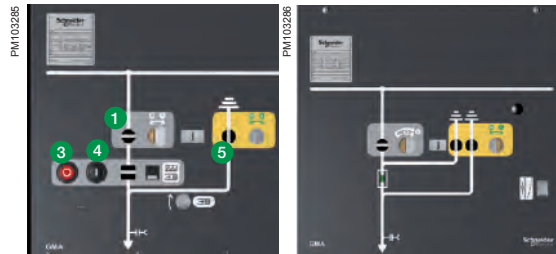
GMA operation is simple and safe, with clear displays and reliable mechanisms:

- Mimic diagram integrating mechanical position indicators and logical operating facilities,
- Interrogating interlocks protection against maloperation
- Voltage detection or indication systems for verification of safe isolation from supply and testing of phase rotation at the instrument niche.

Easy installation and cabling

GMA has been designed to make on-site installation as fast, easy and safe as possible. The multi-functional units in one module, minimises the civil installation work and eliminates or minimises the number of busbar connections to be made on site. When a switchboard is composed of two or more modules, busbar connection is simple, using a self-filling coupling chamber, requiring no on-site gas work. Future extensions at both ends of the switchboard are possible (optional)

A spacious cable connection compartment allows easy access for reliable cabling, with space for up to four cables per phase.



Circuit breaker unit

Switch-disconnector fuse combination

- 1 - Position indicator of disconnector
- 2 - Position indicator of circuit breaker
- 3 - Push button circuit breaker TRIP
- 4 - Push button circuit breaker CLOSE
- 5 - Position indicator of earthing switch

GMA

A complete, type tested, factory-assembled 'plug and play' system ready for connection, 'straight from the crane'

GMA design

Space saving

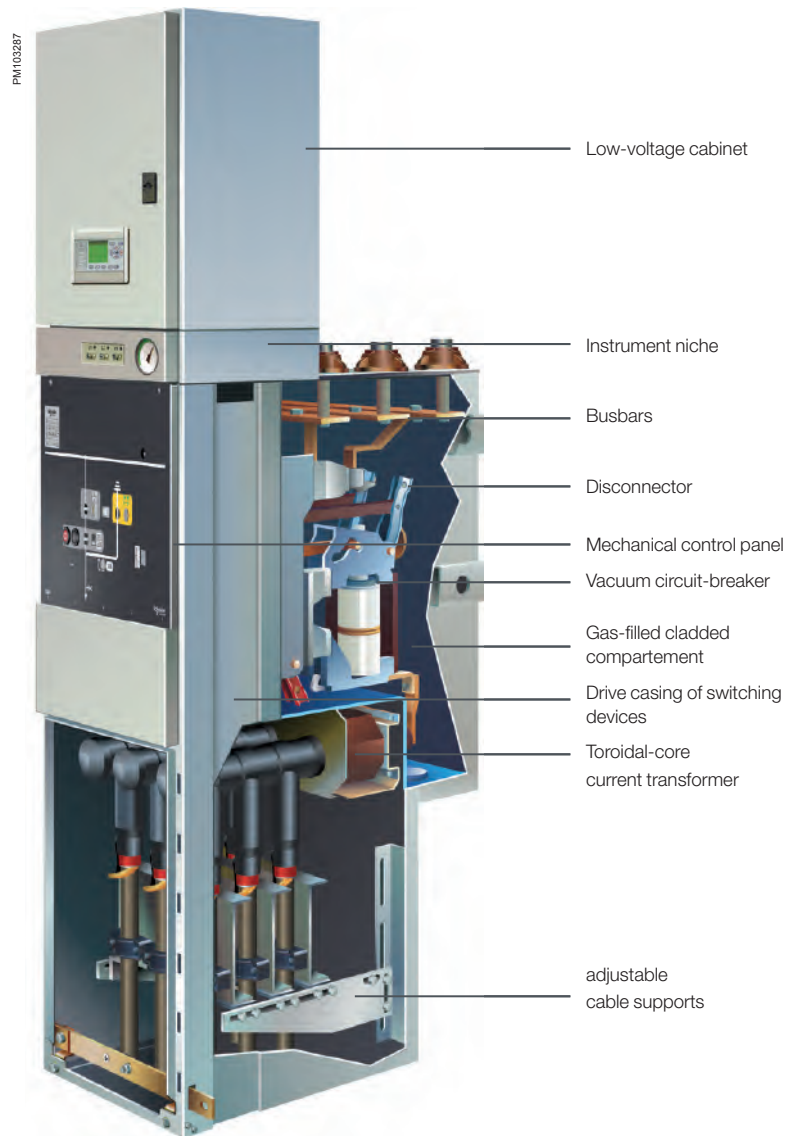
With its compact design and extremely small dimensions, GMA is ideal for use in confined spaces such as prefabricated substations. In addition, as installation and operation can be performed from the front, GMA is suitable for back-to-back or back-to-wall installations on applications such as containerized substations and ships.

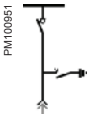
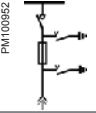
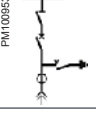
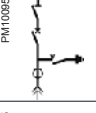
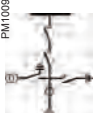
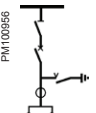

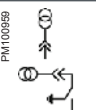
The optimum solution: Vacuum switching combined with gas insulation

GMA combines the advantages of gas insulation and vacuum interruption technology: All active medium voltage components - including the busbar system - are enclosed in a hermetically sealed, gas insulated, metal compartment that is insensitive to humidity, corrosive atmosphere, dust, insects and small animals.

Vacuum circuit breaker interruption provides reliable load and fault switching operation. Our latest range of interrupters combines improved contact design with proven manufacturing techniques to provide unrivalled performances with zero maintenance throughout their life cycles.

The combination of these two technologies enables us to offer a cost-effective medium voltage switchgear solution giving maximum reliability and maximum maintenance to ensure maximum plant availability and minimum life-cycle cost.



Functional Units	TYPE	Components	Dimensions (mm):			Modules with
			Height	Depth	Width	
 PM100951	C	Switch-disconnector Earthing switch	2100	800	450	1-4 Functional units
 PM100952	T1	Switch-disconnector Fuses Earthing switch	2100	800	450	1-2 Functional units
 PM100953	CB6	Switch disconnector Circuit breaker (630 A) Earthing switch	2100	800	450	1-4 Functional units
 PM100953	CB6	Switch disconnector Circuit breaker (630 A) Earthing switch	2100	800	600	1-3 Functional units
 PM100955	CB6	Disconnecter Circuit breaker (630 A) Earthing switch Plug-in type disconnectable voltage transformers	2100	860	600	
 PM100956	CB12	Disconnecter Circuit breaker (1250 A) Earthing switch	2100	1000	600	
 PM100957	CB12	Disconnecter Circuit breaker (1250 A) Earthing switch Plug-in type disconnectable voltage transformer	2100	1000	600	
 PM100959	BB-VT BB-VTS	Busbar module plug-in and optional disconnectable VT	without additional cubicle width			



TYPE CB12



TYPE T1



TYPE CB6

Technical characteristics	kV	12	15/17.5	24
Rated power frequency withstand voltage	kV	28	38 (42)	50
Rated lightning impulse withstand voltage	kV	75	95	125
Rated current: busbar up to	A	1250	1250	1250
Rated current: circuit breaker up to	A	1250	1250	1250
Rated current: disconnector up to	A	1250	1250	1250
Rated current: switch-disconnector up to	A	630	630	630
Rated short-circuit making current up to	kA	63	63	63
Rated short-circuit breaking current up to	kA	25	25	25
Rated short-time withstand current (3s) up to	kA	25	25	25
Rated peak withstand current up to	kA	63	63	63
Internal arc classification (IAC) in accordance to IEC 62271-200	kA	25 (1s)	25 (1s)	25 (1s)

Degree of Protection
Hermetically enclosed gas compartment:
IP65

Cable compartment cover: IP3X*
Low voltage compartment: IP3X*
Control and indication panel: IP2X*

* Higher ratings on request