

SafePlus 12 - 24 kV 630A

SF₆-insulated compact switchgear for secondary distribution



SafePlus is a SF₆-insulated, extendable compact switchgear system for secondary distribution. The switchgear has a unique flexibility due to its extendibility and the possible combination of fully modular and semi modular configurations.

SafePlus is manufactured according to our strict quality and environment procedures. Our ISO 9001 and ISO 14001 certifications assure the quality and environmental excellence.

SafePlus is supplied with the following standard equipment

- Earthing switches
- Operating mechanisms with integral mechanical interlocking
- Operating handle
- Facilities for padlocks on all switching functions
- Bushings for cable connection in front with cable covers
- Manometer for SF₆-pressure/density monitoring
- Lifting lug for easy handling
- All units are designed for the subsequent fitting of an integral remote control and monitoring unit

Modularity and external busbar

All modules except the metering panel are only 325 mm wide. The metering panel is 650 mm wide. SafePlus can be configured with a maximum of 5 modules in one SF₆ tank with an internal busbar. To configure switchgear with more than 5 modules, the required number of tanks can be joined together by use of an external busbar. Alternatively, the complete switchgear can be configured fully modular with the use of the external busbar between all modules. The external busbar is fully insulated and screened in order to maintain climatic independence and a maintenance free solution. All modules can be delivered prepared for future extension.

Transformer protection

SafePlus offers a choice between a switch-fuse combination and circuit-breaker with relay for transformer protection. The switch-fuse combination offers optimal protection against short-circuits, while the circuit-breaker with relay option offers better protection against low overcurrents. Circuit-breaker with relay is always recommended for larger transformers.

Additional equipment

- Arc suppressor
- Motor operation
- Integrated control and monitoring
- Extra base frame (h=290 or 450 mm)
- Arc proof cable covers complete incl. interlocking
- Cable cover with window
- Cable cover for double T
- Interlocked cable covers
- Cable test bushings
- Busbar extension LHS/RHS
- External busbar
- Low voltage compartment
- Metering
- Signal (1NO/1NC) from pressure indicator wired to terminals
- Trip coil open
- Trip coil open and close
- Auxiliary switches for all switching functions
- Capacitive voltage indication
- Short-circuit indicator
- Smart grid solutions

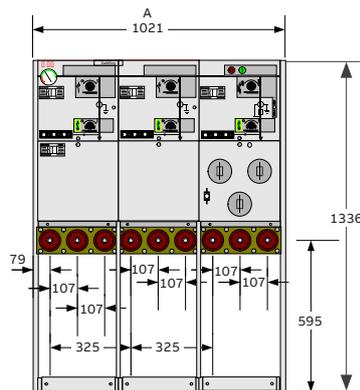
Technical Data	C-module		F-module		V-module		V20/V25 module		
	Switch disconnecter	Earthing switch	Switch-fuse combination	Earthing switch	Vacuum circuit-breaker	Earthing switch	Vacuum circuit-breaker	Earthing switch	
SafePlus									
Rated voltage	kV	12/17,5/24	12/17,5/24	12/17,5/24	12/17,5/24	12/17,5/24	12/17,5/24	12/24	12/24
Power frequency withstand voltage	kV	28 ⁶⁾ /38/50	28 ⁶⁾ /50	28 ⁶⁾ /50					
Impuls withstand voltage	kV	95/95/125	95/95/125	95/95/125	95/95/125	95/95/125	95/95/125	95/125	95/125
Rated normal current	A	630/630/630		200 ¹⁾		630/630/630		630/630	
Breaking capacities:									
- active load	A	630/630/630							
- closed loop	A	670/670/670							
- off load cable charging	A	141/141/141							
- off load transformer				20/20/20					
- earth fault	A	205/160/160							
- earth fault cable charging	A	117/91/91							
- short-circuit breaking current	kA			see ²⁾		21/16/16		25/20	
Making capacity	kA	65/52,5/52,5	62,5/52,5/40	see ²⁾	12,5/12,5/12,5	52,5/40/40	52,5/40/40	65/50	62,5/50
Short time current 0,5 sec. ³⁾						16/16/16	16/16/16		
Short time current 1 sec. ⁴⁾		25/-/-	25/-/-		5/5/5	16/16/16	16/16/16	25/21	25/21
Short time current 3 sec. ⁵⁾	kA	25/21 ⁷⁾ /21	25/21 ⁷⁾ /21			21/16/16	21/16/16	25/21	25/21

¹⁾ Depending on the current rating of the fuse-link ²⁾ Limited by high voltage fuse-links ³⁾ Maximum rating for bushings Interface A (200 series plug-in)

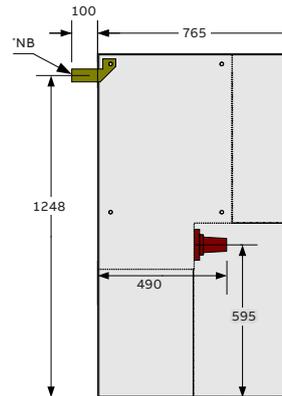
⁴⁾ Maximum rating for bushings Interface B (400 series plug-in) ⁵⁾ Maximum rating for bushings Interface C (400 series bolted)

⁶⁾ GOST version is available with 42kV power frequency withstand voltage ⁷⁾ Tested at 15,2kV

Dimensions

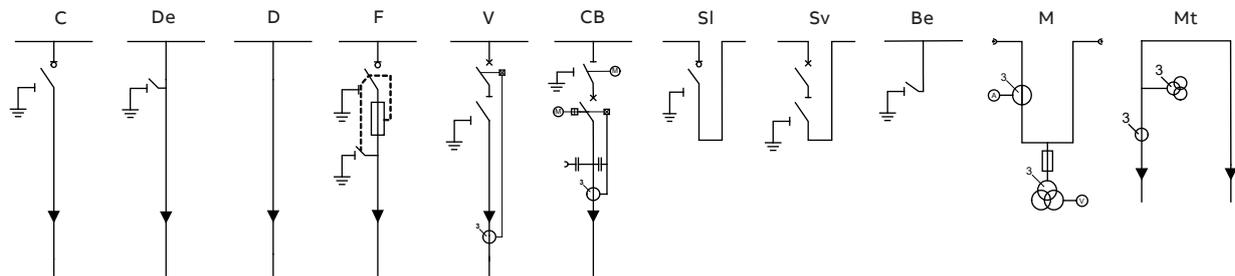


Type of unit	A (mm)
1-way	371
2-way	696
3-way	1021
4-way	1346
5-way	1671



*NB: Wall fixing bracket

Available modules



C - Cable switch
 De - Direct cable connection with earthing switch
 D - Direct cable connection
 F - Switch-fuse disconnecter
 V - Vacuum circuit-breaker
 CB - Circuit-breaker module

SI - Bus sectionalizer, load break switch
 Sv - Bus sectionalizer, vacuum circuit breaker
 Be - Busbar earthing
 M - Metering module
 Mt - Metering tariff module

For standard ring main unit applications ABB recommend the use of SafeRing ring main unit. Please contact your local ABB for more information on SafeRing and SafePlus products.

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