



# SafeRing Air 12kV Ring Main Unit for Distribution Networks

Power and productivity  
for a better world™



### New 12kV Ring Main Unit

ABB has developed a new Ring Main Unit with dry air as insulation medium, as a supplement to the existing portfolio. The new Ring Main Unit will be available for 12kV/20kA. It is non-extensible, and will consist of 2 to 5 modules.

Available modules types are load break switch module (C), circuit-breaker module (V) and direct cable connection (D), with the following configurations:

CC, CCC, CCCC, CCCCC

DC, DCC, DCCC, DCCCC

DV, DVV, DVVV, DVVVV

CV, CCV, CCCV, CCVV, CCCVV, CCVVV

### Transformer protection

With SafeRing Air the transformer is protected by a vacuum circuit-breaker combined with relays and current transformers. The standard relays are based on digital technology and do not require an external power supply.

### SafeRing Air 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 pressure monitoring
- Lifting lug for easy handling

### Additional equipment:

- Arc suppressor
- Interlocked cable covers
- Cable cover with window
- Cable cover for double T contacts
- Arc proof cable covers complete incl. interlocking
- Extra base frame (h=450 mm)
- Trip coil open
- Trip coil open and close
- Motor operation
- Auxiliary switches for all switching functions
- Prepared for relay test equipment
- Capacitive voltage indication
- Short circuit indicator
- VCB - tripped signal
- Current metering
- LV compartment
- Top entry box
- Ronis key interlock
- Self Powered Relays
- SEG WIC1-2-P-E
- ABB REJ603



### Applicable Standards

All relevant IEC standards of the latest edition

IEC 62271-1	Common specifications
IEC 62271-200	Metal enclosed switchgear
IEC 62271-100	Circuit breakers
IEC 62271-103	Switches
IEC 62271-102	Disconnectors and earthing switches
IEC 60529	Degrees of protection
EN 50181	Plug-in type bushings

### Protection degrees

SafeRing Air has degree of protection in accordance with IEC 60529:

IP 67 for the tank with high voltage components

IP 2X for the front covers of the mechanism

IP 2X for the cable connection covers

### Remote Control & Monitoring

In line with the agreed combined strategy between secondary GIS and distribution automation product groups, special focus is put on offering integrated and cost competitive control and monitoring solutions for the ring main unit portfolio. A principle model of Grid Automation solution can be installed in the low voltage compartment.

### Quality and Environment

SafeRing Air is manufactured according to our strict quality and environment procedures. Our ISO 9001 and ISO 14001 certifications assure the quality and environmental excellence. SafeRing Air is 90-95% recyclable and plastic parts are individually marked to facilitate the recycling.

## Technical data

SafeRing Air		C-module		V-module	
		Switch	Earthing switch/ disconnecter	Vacuum circuit- breaker	Earthing switch/ disconnecter
Rated voltage	kV	12	12	12	12
Power frequency withstand voltage	kV	28	28	28	28
Impulse withstand voltage	kV	75	75	75	75
Rated normal current	A	630		630	
Breaking capacities:					
- active load	A	630		630	
- closed loop	A	630			
- off load cable charging	A	10		25	
- earth fault	A	200			
- earth fault cable charging	A	115			
- short-circuit breaking current	kA			20	
- single capacitor bank breaking current	A	135			
Making capacity	kA	50	50	50	50
Short time current 3 sec.	kA	20	20	20	20

## Dimensions

Unit	Width mm	Depth mm	Height mm
2-way	696	765	1336
3-way	1021	765	1336
4-way	1346	765	1336
5-way	1671	765	1336

## Service and Retrofit

The product design caters for easy replacement or retrofit of operating mechanisms, easy retrofit of motor operation and easy replacement of auxiliary switches and operating coils. ABBs current portfolio of products covers the basic requirements of all segments in the secondary distribution GIS market today.

The new SafeRing Air will cover the functionality needed typically in utility applications where standardization and compact size play an important role.

The new modules are harmonised with existing SafeRing / SafePlus portfolio as follows:

- Same physical dimensions (fully compatible with existing SafeRing / SafePlus lineup) and look
- Similar operation sequence
- Same technical ratings
- Backwards compatible and modular (C,V and D)
- User interface and operating sequence as for existing SafeRing / SafePlus portfolio
- Smart Grid enabled

## Customer Benefits

- Alternative technologies with low environment impact and high level of recyclability
- Usage of advanced materials
- Low physical weight
- Compact design with small footprint
- Down stream earthing switch
- Intuitive operation sequence and position indication
- Easy retrofitting of C panel to V panel on site
- V-module up to 630A
- Known and proved accessories, additional equipment and spare parts
- Maintenance free solution
- Wide range of standards configurations
- RMU up to 5 modules
- Arc suppressor enabling installation of the unit in closed rooms without the need for expensive exhaust channel solution
- The possibility of integrating Grid Automation solution provides support for smart grid developments

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