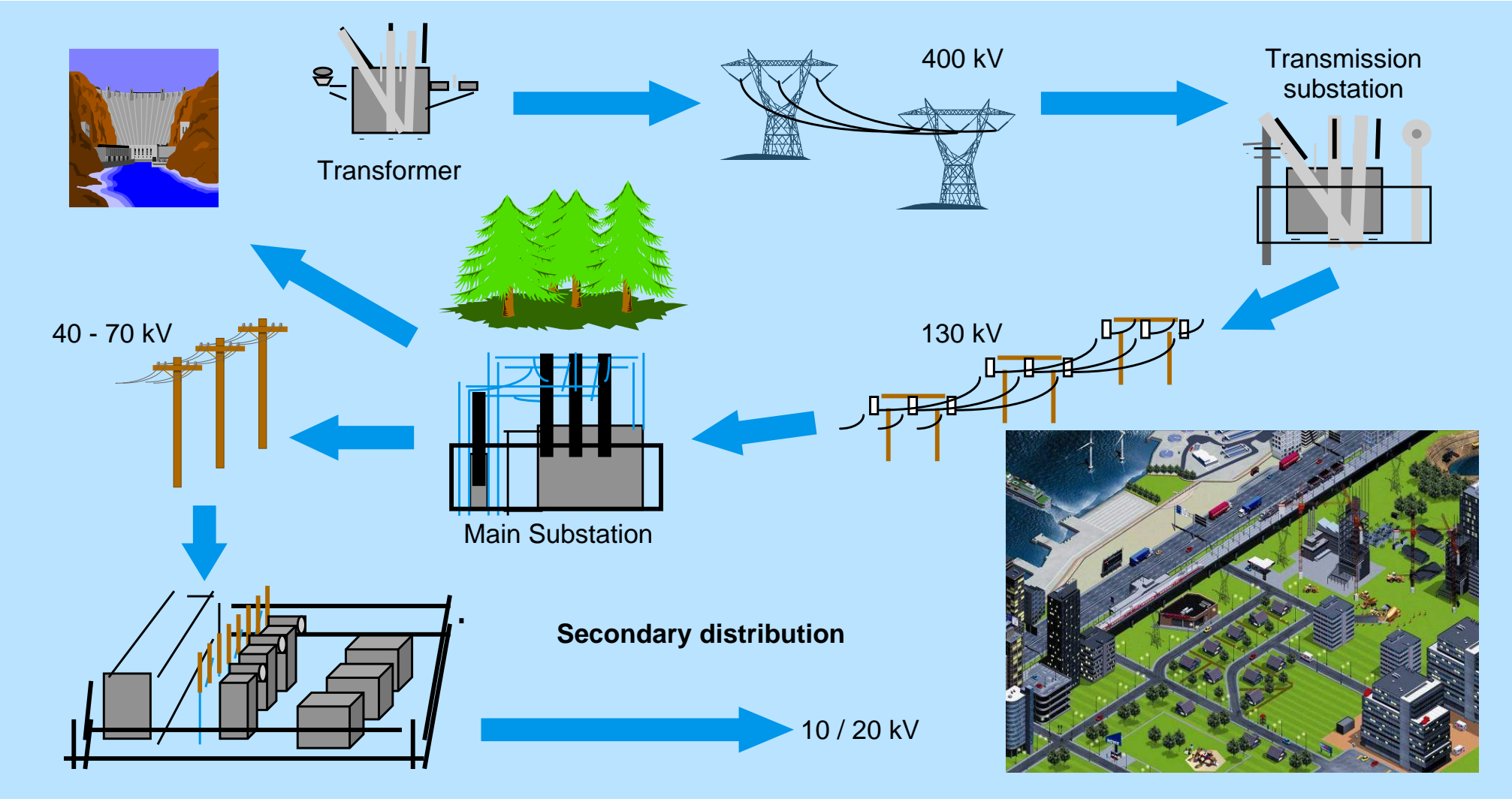
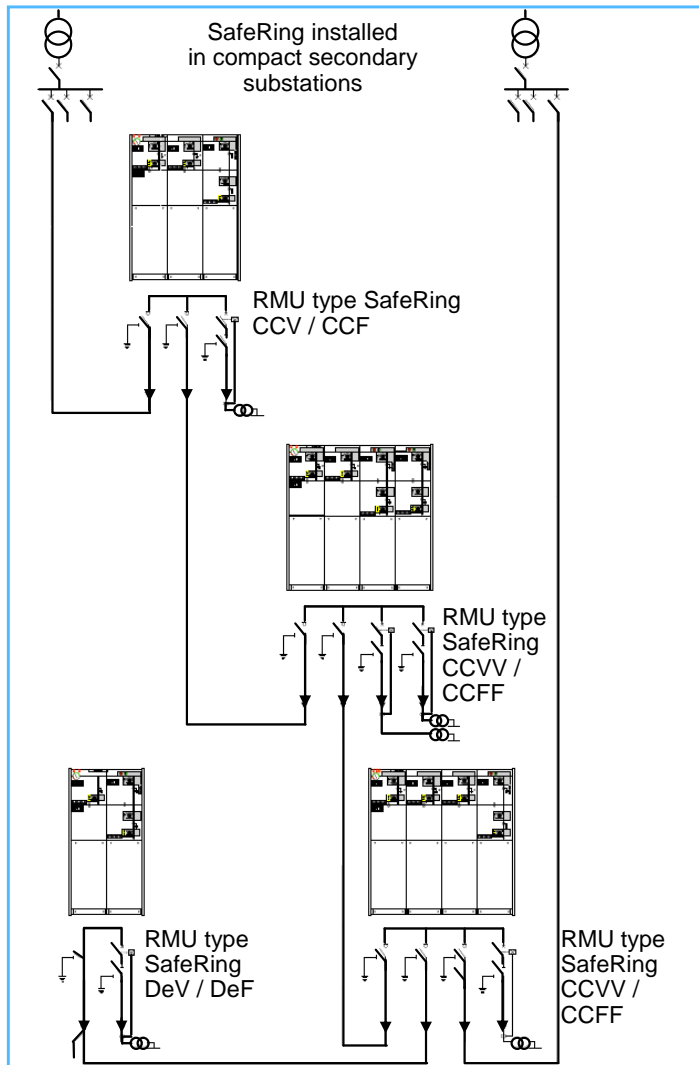


SF₆ gas insulated RMU – SafeRing 24 kV

SF₆ gas insulated RMU – SafeRing Secondary distribution



SF₆ gas insulated RMU – SafeRing RMU installed within secondary distribution network



Can be applied where

- compact,
- flexible
- and economic solutions are required.

SF₆ gas insulated RMU – SafeRing Applications



Compact secondary substation

- Wind power plants
- Small industries
- Buildings
- Mining
- Airports
- Underground installations

SF₆ gas insulated RMU – SafeRing Applications

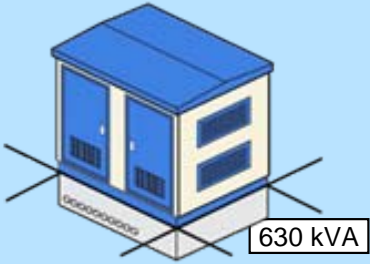
Buildings



Wind power plants

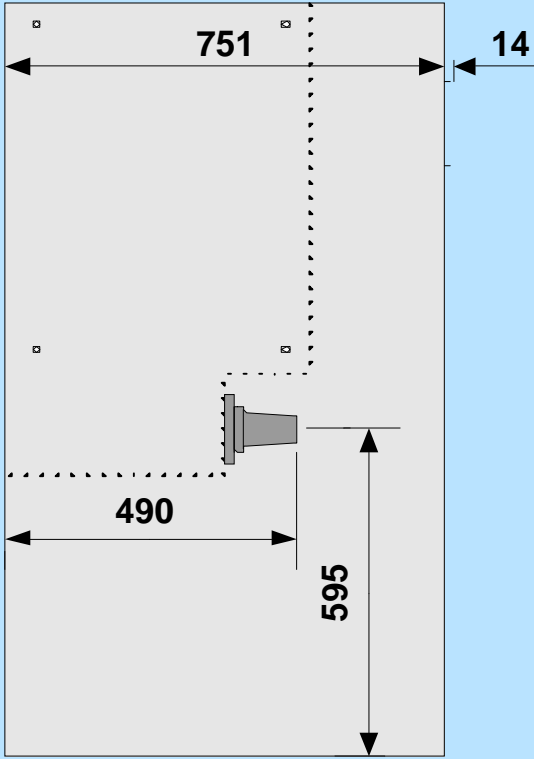
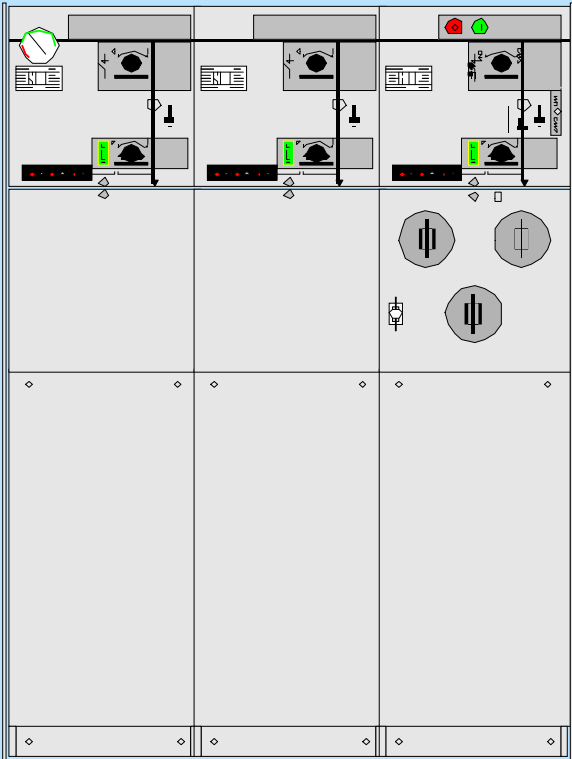


Compact secondary substation

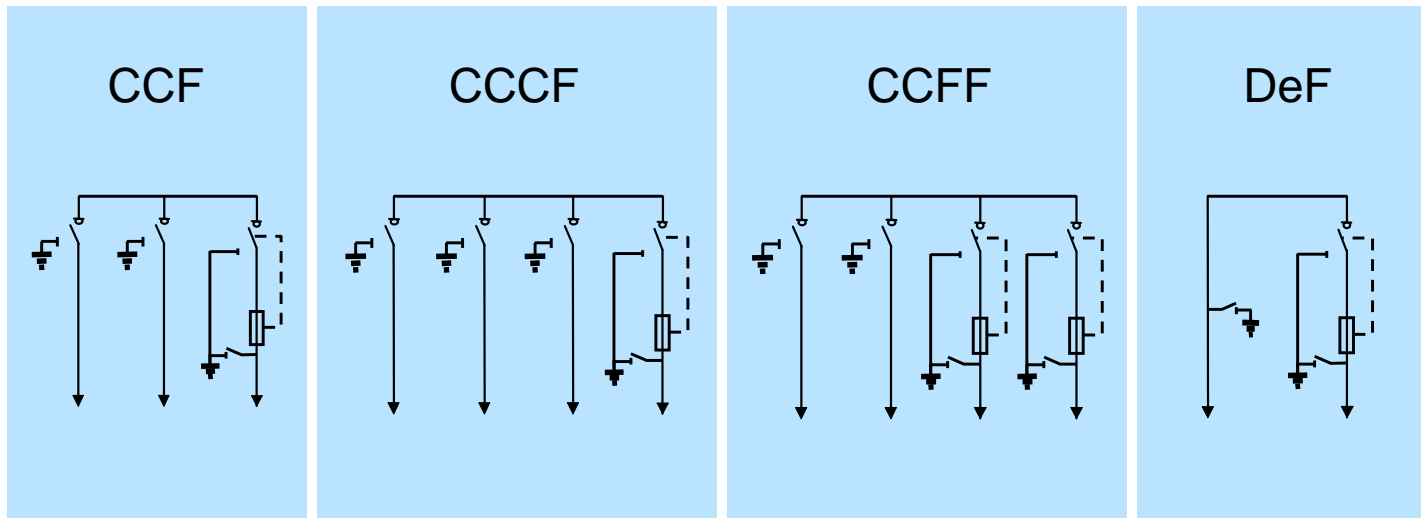


SF₆ gas insulated RMU – SafeRing Dimensions

- Width 2way unit - 696 mm
- Width 3way unit - 1021 mm
- Width 4way unit - 1346 mm



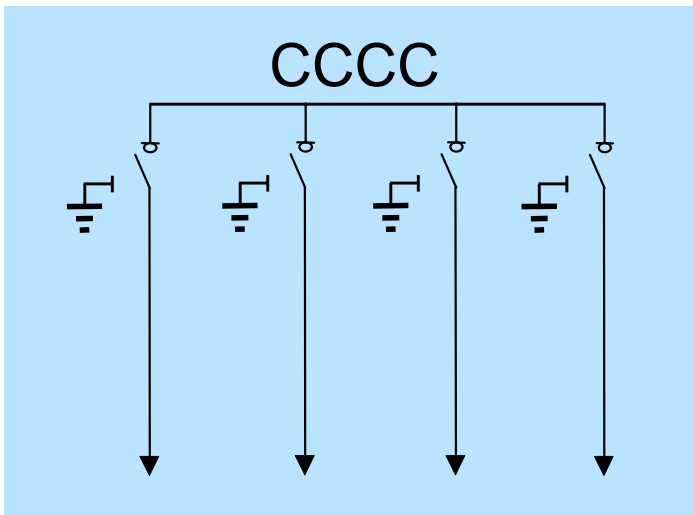
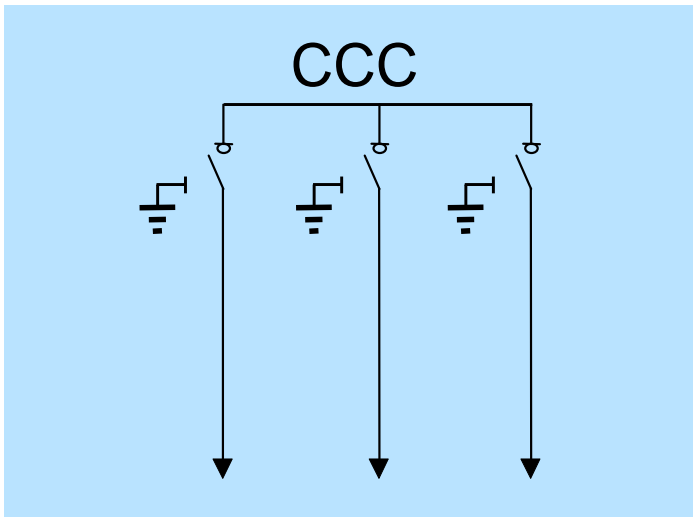
SF₆ gas insulated RMU – SafeRing Transformer protection by fuses



Flexible:

- Protection by load break switch-fuse-combination
- C - Load break switch
- F - Load-break-switch-fuse-combination
- De - Direct cable connection

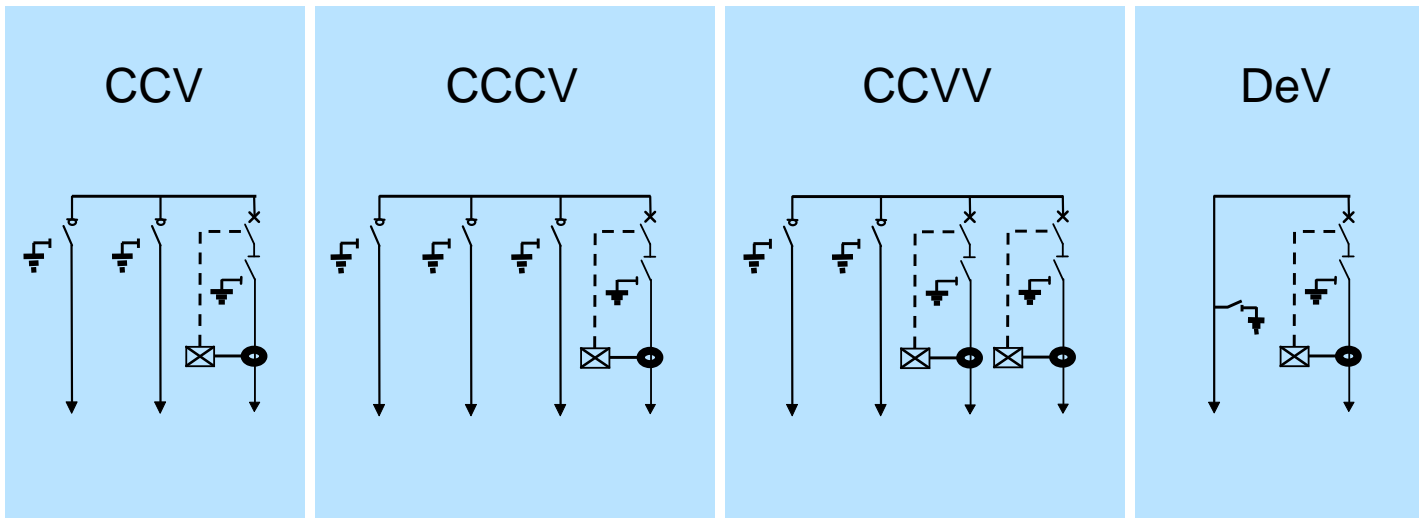
SF₆ gas insulated RMU – SafeRing Load break switch combinations



Economic:

- Compact
 - Simple to install – factory routine tested
 - Simple operation
 - Maintenance-free
 - Standard design
 - Easy retrofit of accessories
-
- C – Load break switch

SF₆ gas insulated RMU – SafeRing Transformer protection by relays



Safe and environmental friendly:

- Completely sealed system
- Stainless steel tank
- Arc suppressor available
- Recyclable

- V – Vacuum circuit-breaker

SF₆ gas insulated RMU – SafeRing

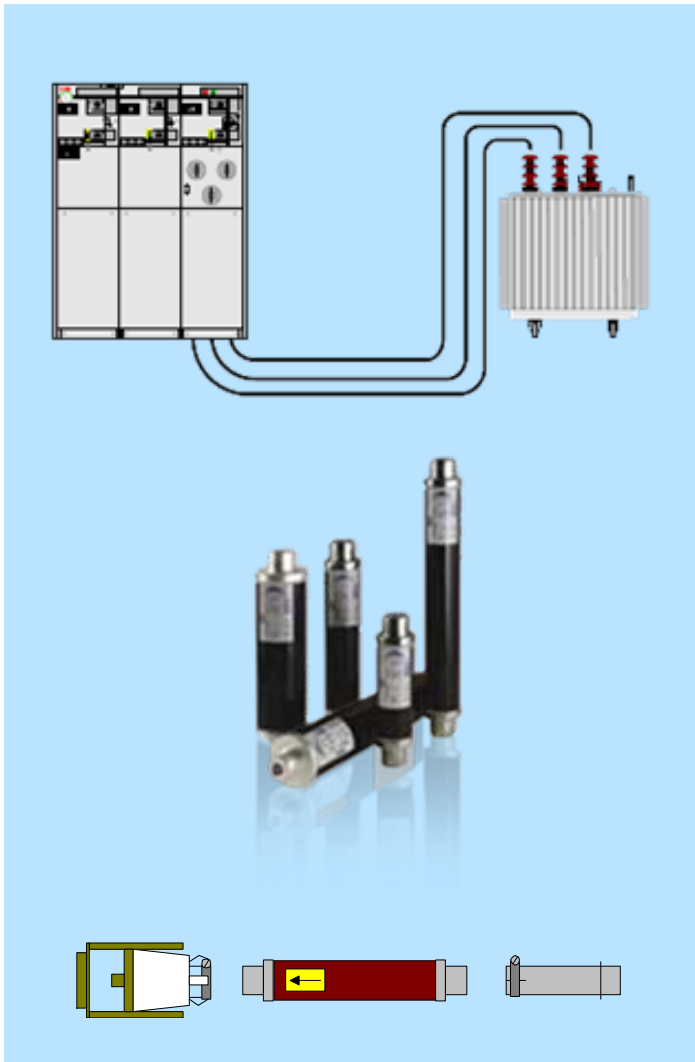
Technical Data

	C	F	V
	Cable switch	Switch fuse	Vacuum circuit-breaker
Rated voltage	12 / 15 / 17.5 / 24	12 / 15 / 17.5 / 24	12 / 15 / 17.5 / 24
Rated current	630	200	200
Short-circuit breaking current		limited by fuse	16 / 16 / 16 / 16
Making capacity	52.5 / 52.5 / 40 / 40	limited by fuse	
Short-circuit current 1s	**		
Short-circuit current 3s	21 / 21 / 16 / 16		16* / 16* / 16* / 16*

* Requires series 400 bolted M16 bushings

** 1s Values on request

SF₆ gas insulated RMU – SafeRing Fused protection



Switch-fuse-combination offers

- Optimal short-circuit protection:
- Fast interruption
- Current limiting – reduces stress
- Cost efficient

Considerations:

- Fuses are consumables
 - Availability of stock
 - Transformer size
-
- Fuse selection table supplied with each switchgear – accounting for thermal derating

SF₆ gas insulated RMU – SafeRing Relays – self powered



- CT powered protection relay (no external power supply necessary)
- Economical
- Easy adjustment
- Perfect for large distribution transformers

Delivery range:

- Circutor MPRB 99:
Easy to adjust, the classic solution
- WIC1:
New flexible relay with several characteristics including definite time
- PR512:
Relay with advanced earth fault functions
- REJ 603:
New ABB protection relay

SF₆ gas insulated RMU – SafeRing

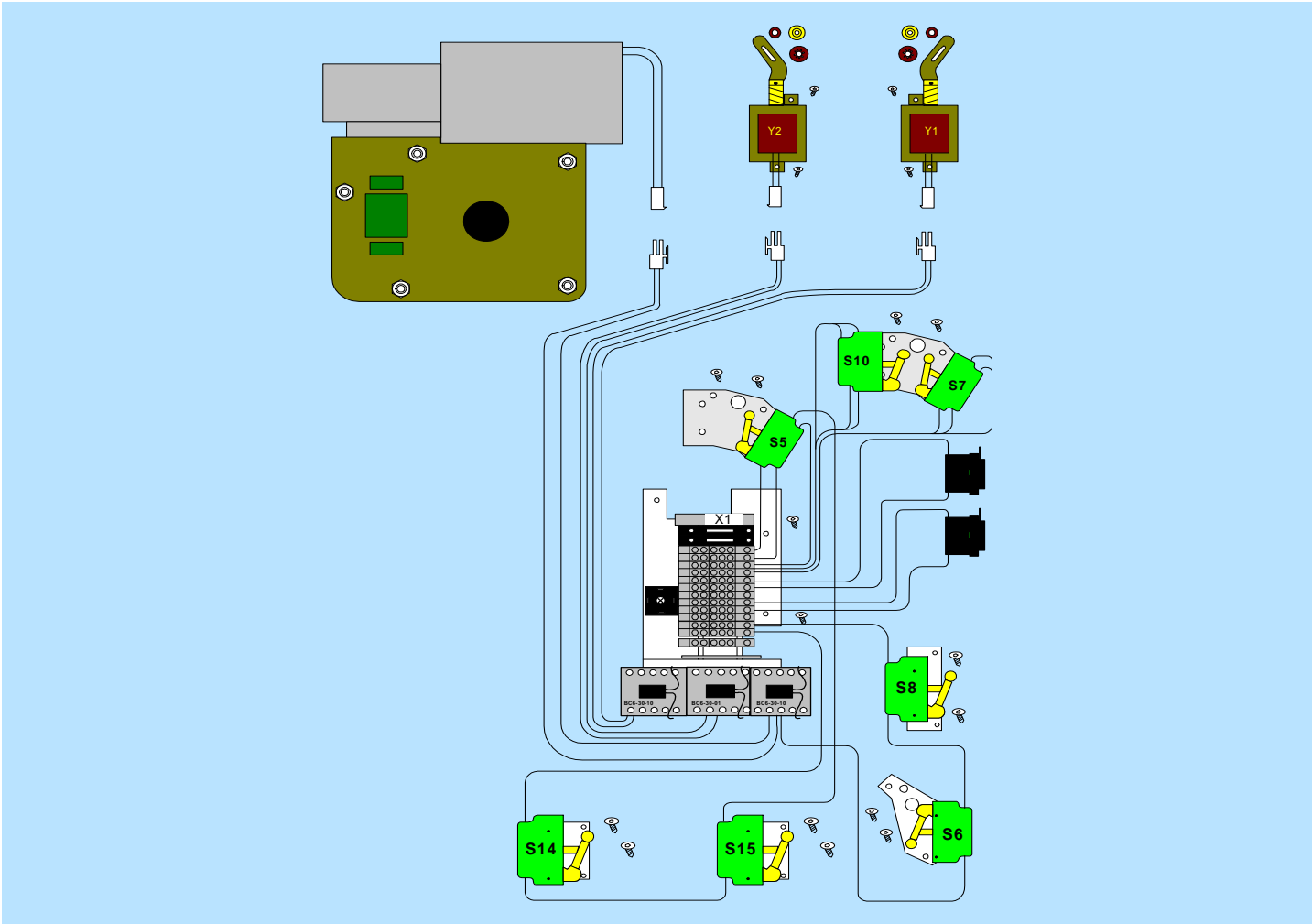
Remote control and monitoring of RMU



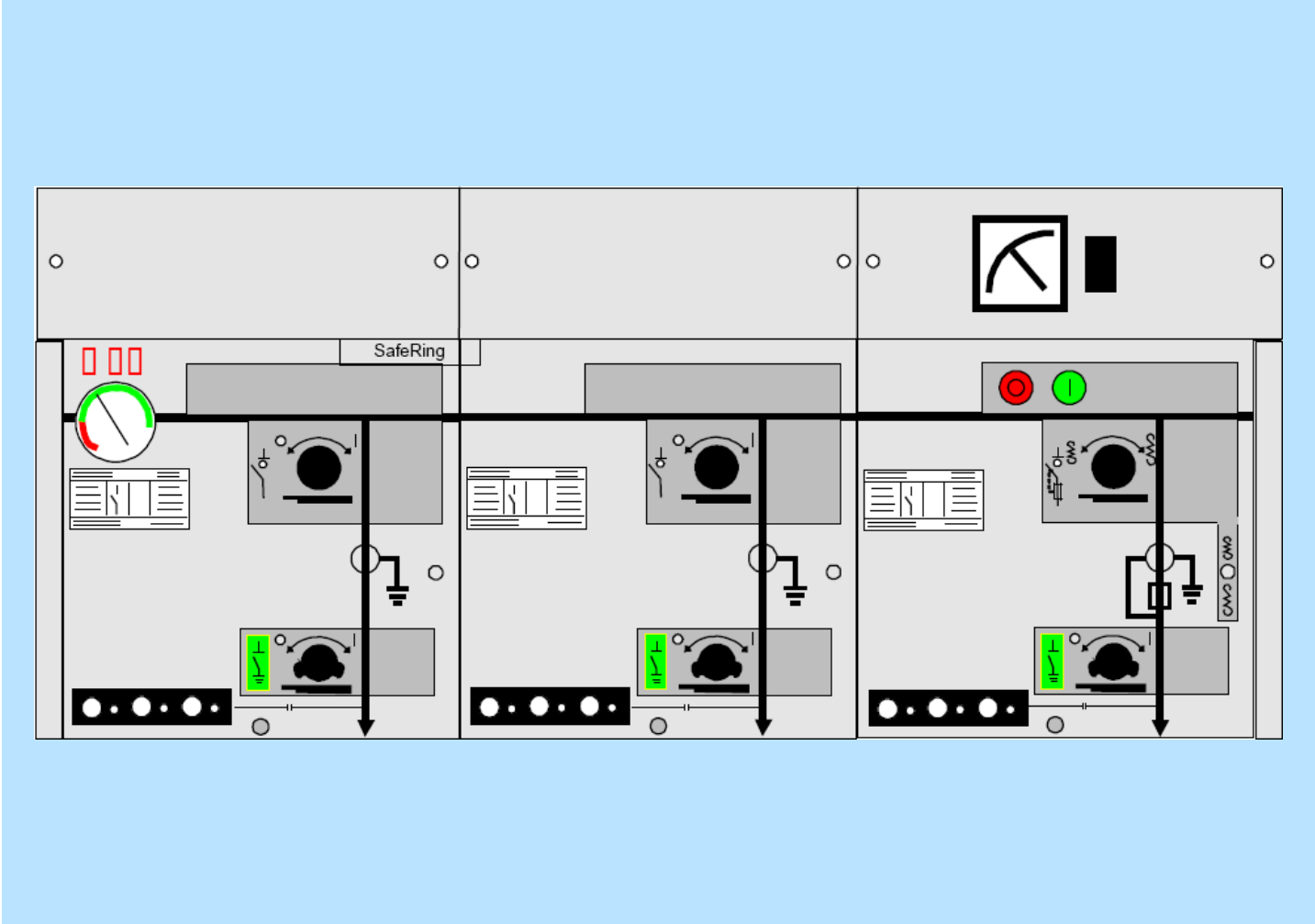
Integrated solution with main components:

- RTU211:
16DI, 8DO, 6AI, 24-110 V DC
- Additional I/O:
16DI (optional)
- Battery charger:
(110 or 220 V AC / 24 V DC)
- Batteries:
2 x 12 V DC (20 Ah)
- Communication devices:
 - V23 fixed line modem
 - Dial up modem
 - RS-232 for external devices
- Heater (optional)
- Surge arresters (auxiliary supply and communication interface)

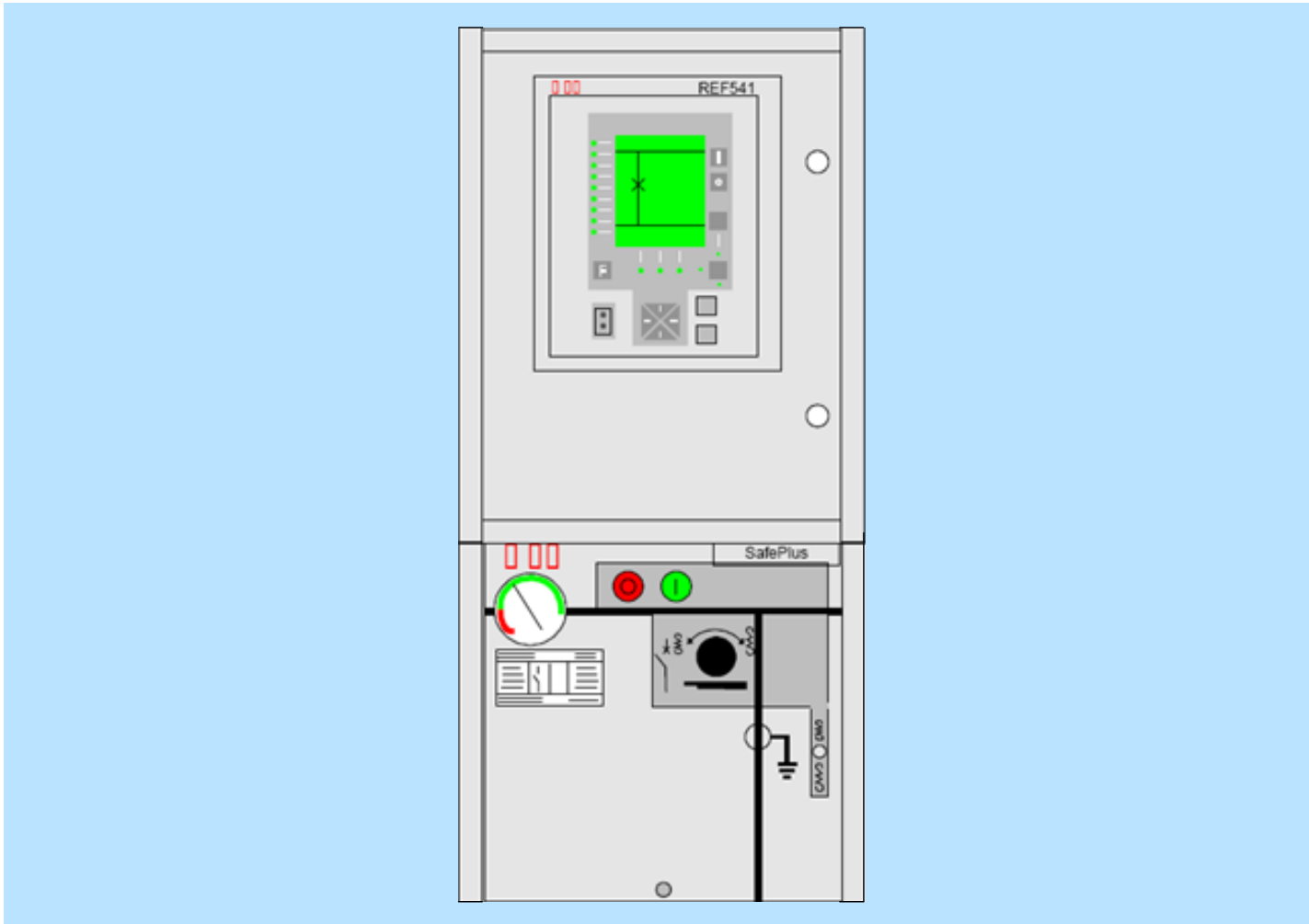
SF₆ gas insulated RMU – SafeRing Accessories – Motor operation, complete



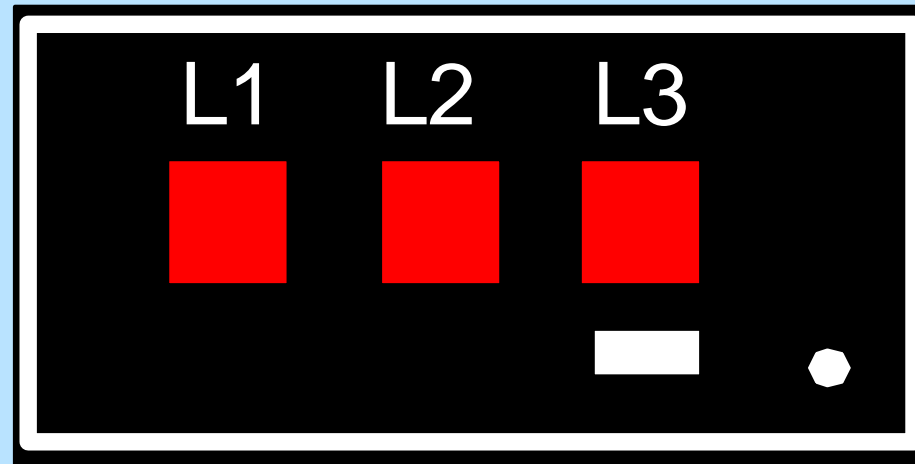
SF₆ gas insulated RMU – SafeRing Accessories – Top entry unit



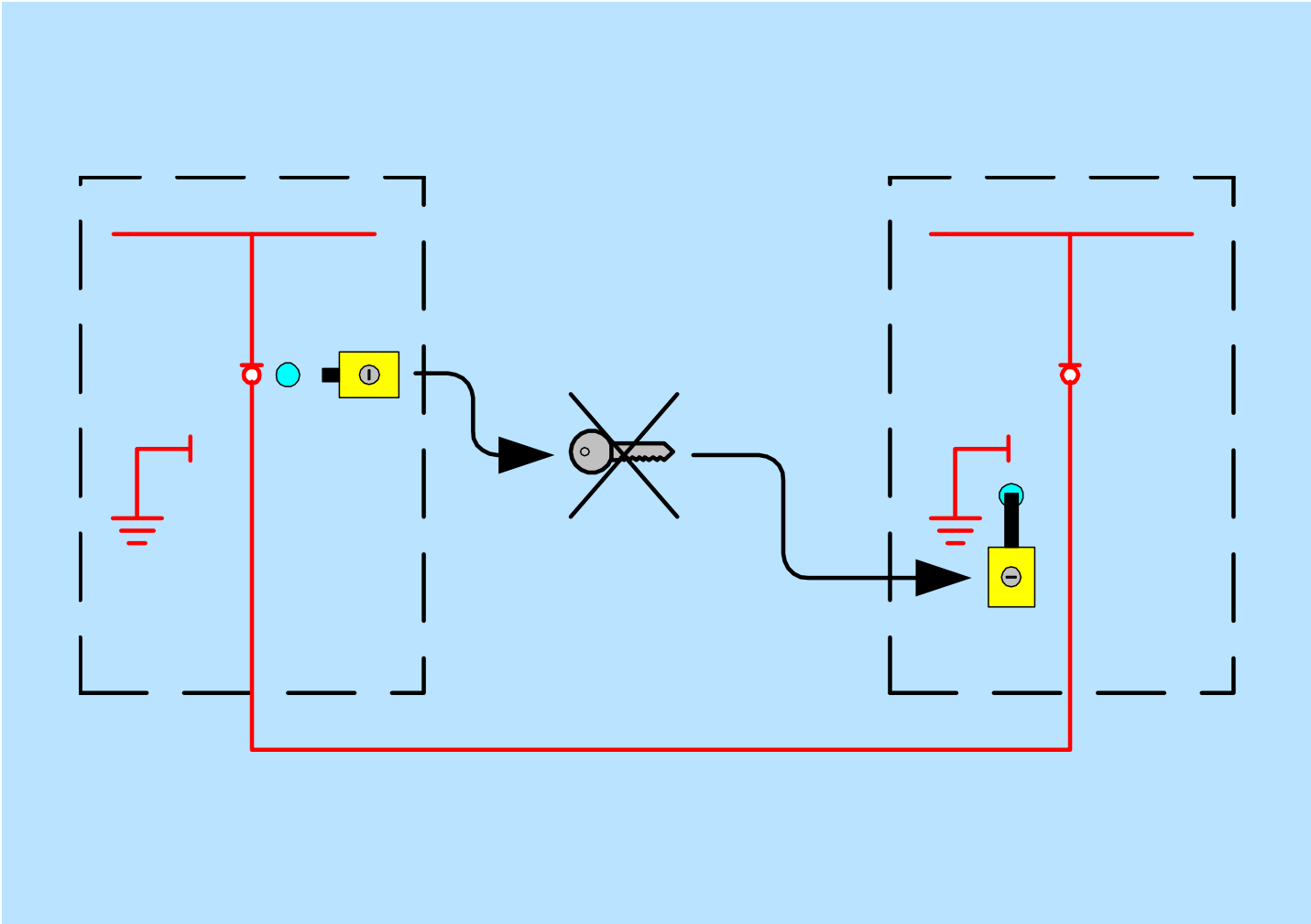
SF₆ gas insulated RMU – SafeRing Accessories – Low voltage box



SF₆ gas insulated RMU – SafeRing Accessories – Short circuit indicator

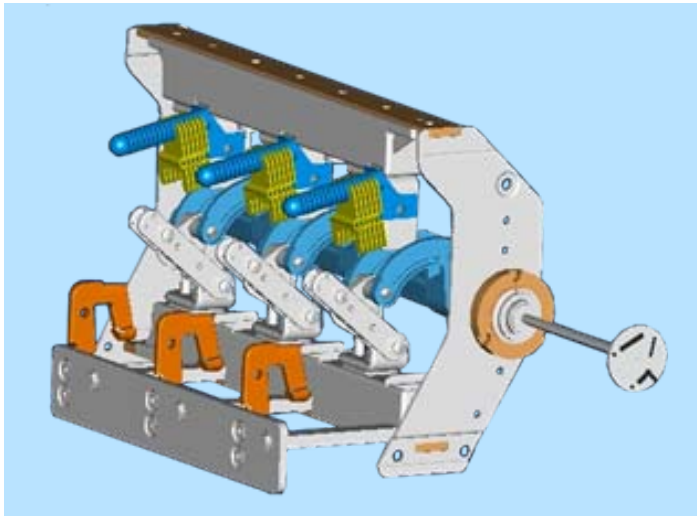


SF₆ gas insulated RMU – SafeRing Accessories – Ronis interlocking



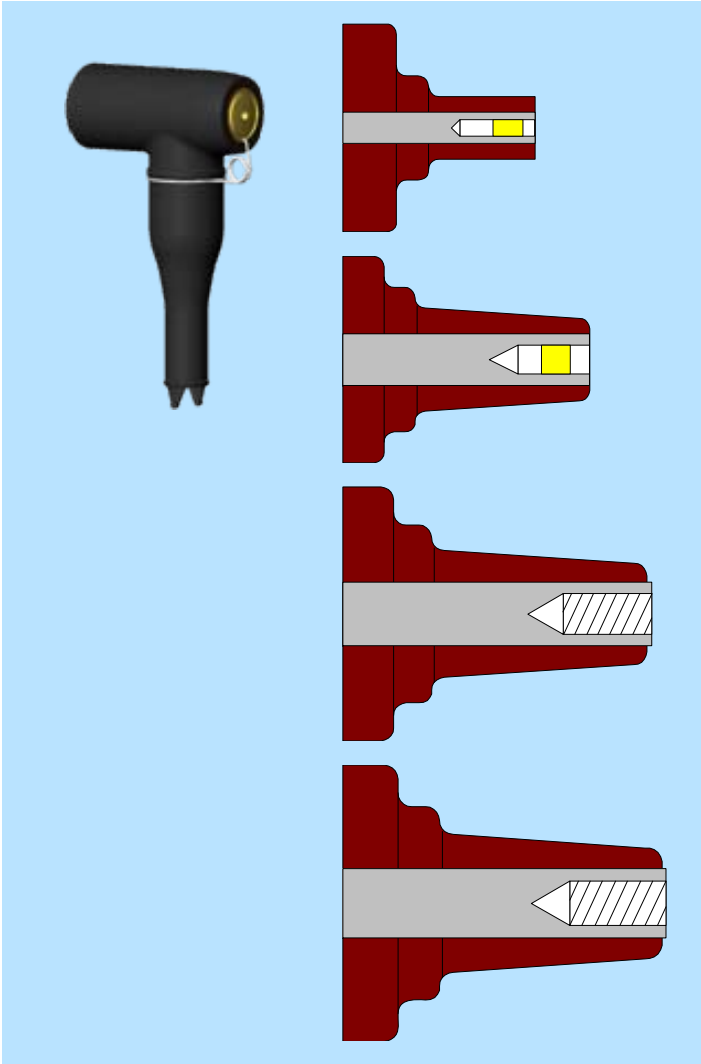
SF₆ gas insulated RMU – SafeRing

Direct position indication



- Direct indication of switch-device's shaft
- Laser graved indication
- Indication can be stressed 2 times the torque of the operation operations shaft

SF₆ gas insulated RMU – SafeRing Cable termination – bushings



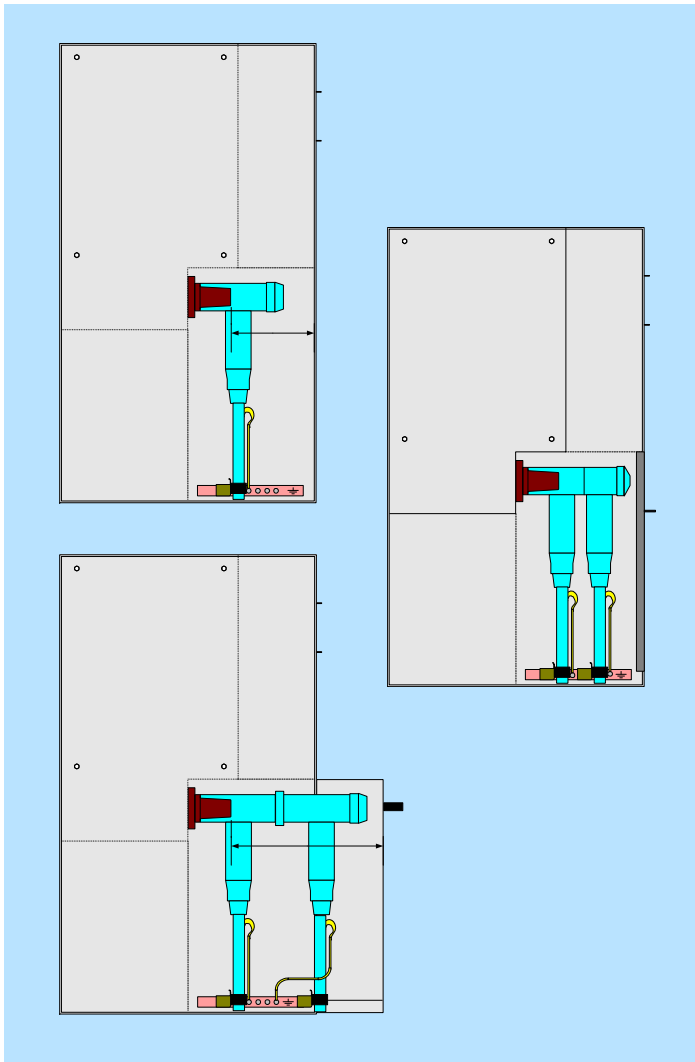
Series 200, plug-in, 200 A

Series 400, plug-in, 400 A

Series 400, bolted, 630 A

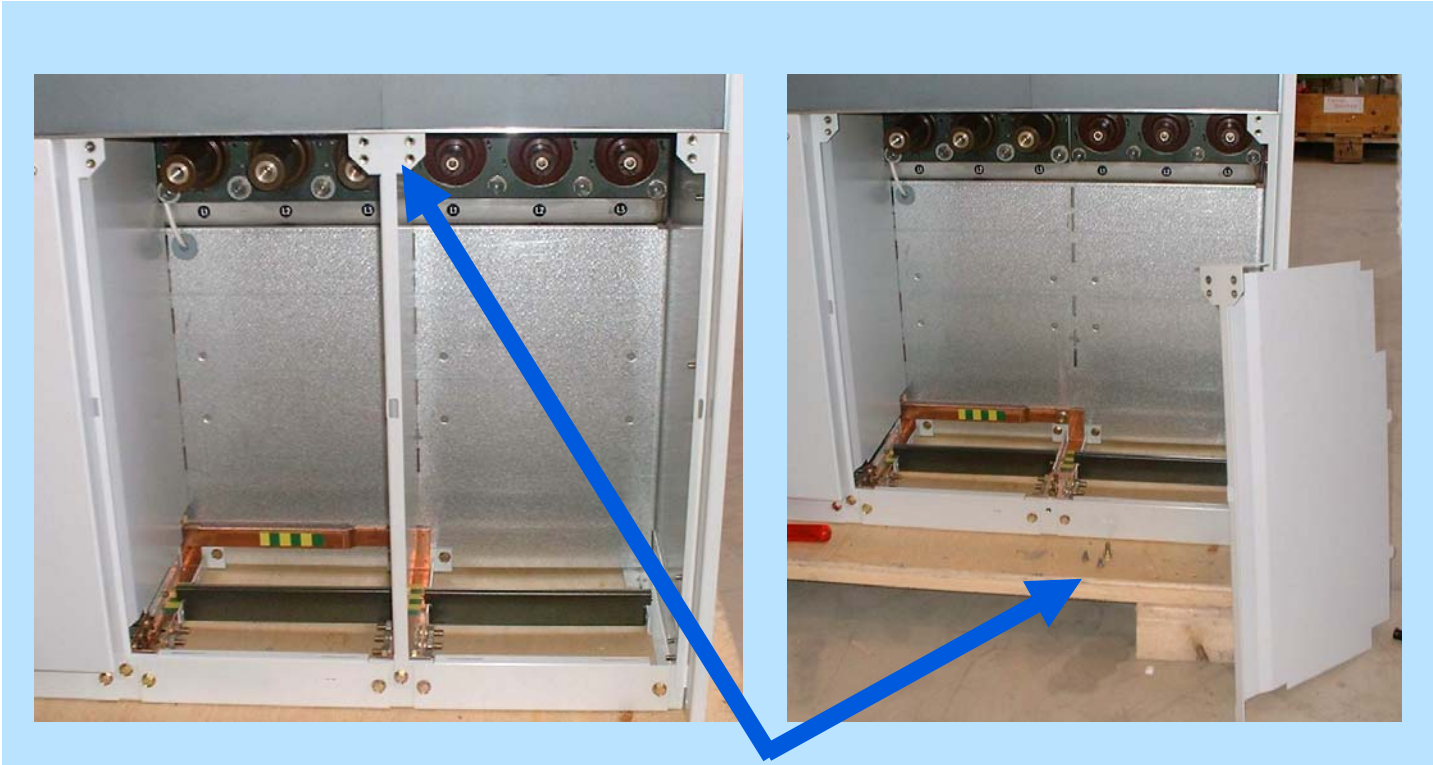
Series 600, bolted, 630 A

SF₆ gas insulated RMU – SafeRing Cable connection



- All bushings – same height
- Simplified installation:
 - Front dismantle
 - Cable cut one length
 - Revolving
 - Adjustable cable support
- Double adapters (e.g. NTK) and surge arresters fits behind cable cover
- Double front covers available
- Arc proof cable compartment available

SF₆ gas insulated RMU – SafeRing Cable compartment



Remove segregation walls by loosening 3 screws only!

SF₆ gas insulated RMU – SafeRing

Special execution for wind applications



- Pressure relief channel with integrated absorber and pressure relief upwards into the tower
- Available for 2 and 3 way applications

Power and productivity
for a better world™

