

SmartCELL

Compact SF6-Free Switchgear
For Controlled Switching Up to 24 kV

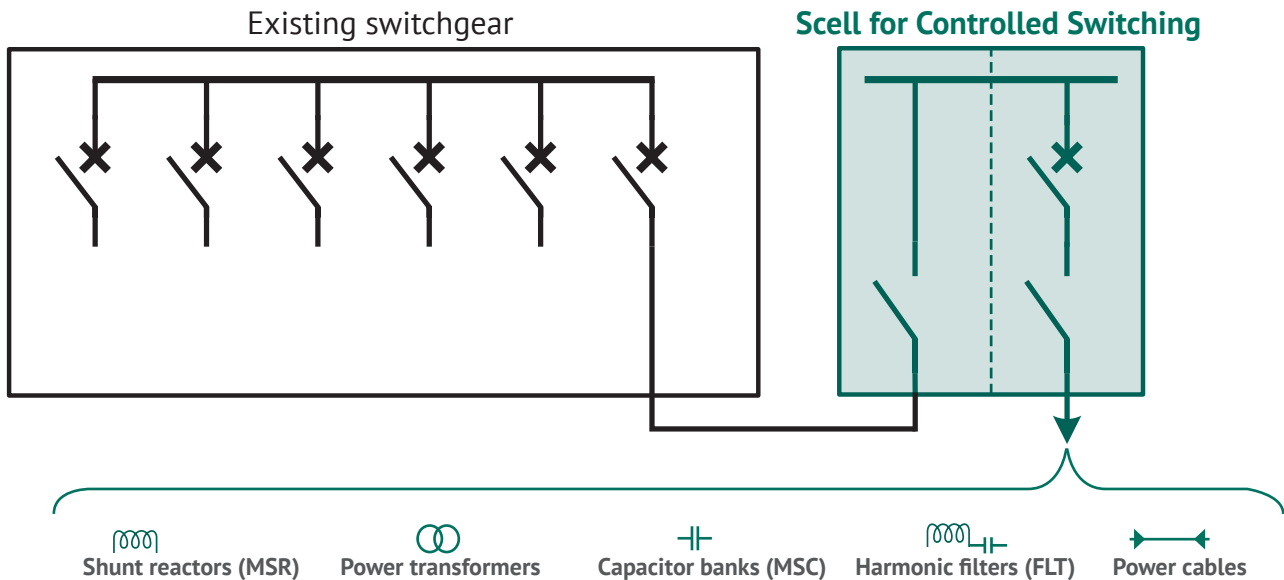


Advanced Synchronous and Transient-Free Switching Strategies

- Transformers
- Capacitors
- Harmonic filters
- Reactors
- Cables

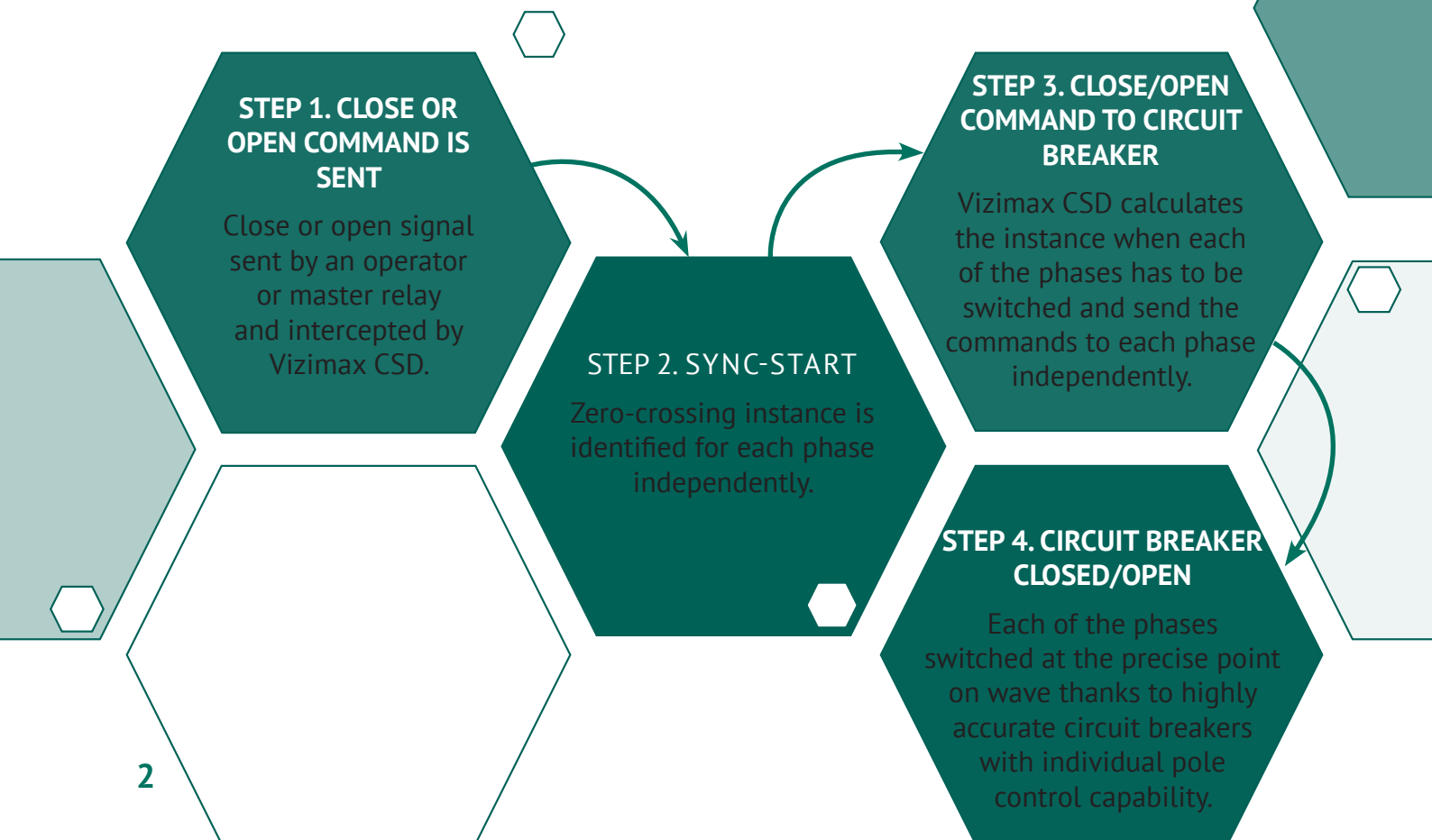
What is It?

World-first, compact and SF6-free, single-pole operated 24kV switchgear, with advanced, synchronous and transient-free switching strategies.



How does It Work?

The Vizimax SynchroTeq(R) controlled switching device (CSD) monitors phase currents and voltages and issues trip and close commands to each phase independently to switch at the specified instances and ensure the transient-free operation.



Advantages:

- Ultimate preservation of apparatuses, loads and connected equipment.
- Optimal reduction of switching transients, over-currents and over-voltages.
- Maximum reduction of restrikes and re-ignitions occurrence.
- Overcome harmful transients, inrush currents and voltage dips
- Reduce the stress on power networks and components
- Improve the Power Quality
- Enhance the electrical life & performance of VCB
- Help simplify power network designs
- Decrease the costs of the overall system.

Energizing Power Transformers:

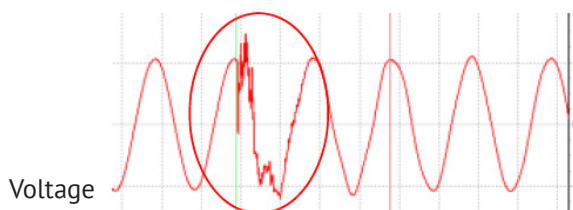
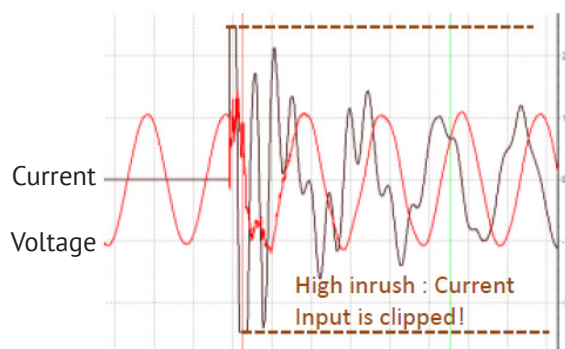
- Achieve extremely low near-zero inrush currents and voltage dips
- Limit the impacts of transformer operations on power networks
- Preserve apparatuses, power transformers and connected load
- Improve the stability of power system and Power Quality

For MSC, FLT, MSR, Cables:

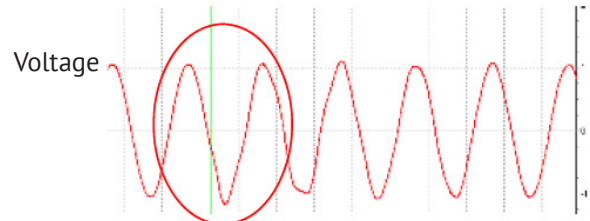
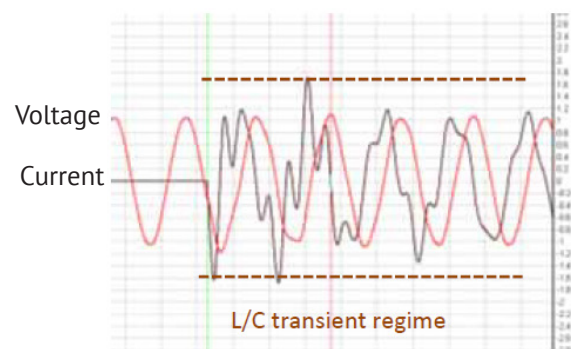
- Improve transient, restrike, re-ignition performance when switching
- Mandatory for Volt/Var/PF control and Reactive power management
- Allow for fast-switching (dynamic switching) of capacitors and filters
- Switch anytime without the limitations of “fast discharge PTs”
- Enable Hybrid-STATCOM designs: decrease the cost/MVar

Mitigation/elimination of current & voltage transients of capacitive loads:

Without mitigation

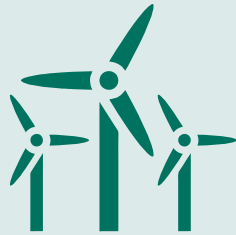


Mitigation/elimination of inrush current

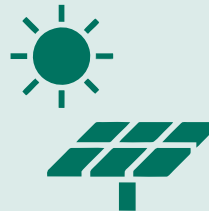


Renewables – IPPs and OEMs:

- Grid connection of WTGs, PV solar inverters, Hydro, Biomass
- Allow for increased, connectable power transformer capacities
- Facilitate compliance with grid code requirements
- Implement Volt/Var/PF control – Reactive power management – Ancillary Services



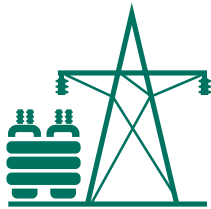
Wind farms



Photovoltaic parks

Power Grids:

- Maximize the use of existing power infrastructures, defer CAPEX, limit OPEX
- Swiftly connect generators/IPP and electro-intensive industrial consumers
- Flexibly perform system re-configurations: DAR cycles, load-shedding...etc
- Secure the grid stability, improve Power Quality, optimize protection schemes
- Implement flexible reactive power management strategies



Primary substations



Zone substations



Power stations

Transportation and railways – Datacenters

Heavy industry (Oil & Gas: rigs, LNG, FLNG, FPSO... - Mining: CCV, SVC... - Metal: EAFs, SVC...)

- Increase revenues, secure the supply of energy, get the most out of existing power assets
- Preserve gensets, power electronics (VFDs, starters, inverters) and sensitive equipment
- Improve the service life of power transformers, VCBs, connected MV and LV loads
- Postpone maintenance, avoid facility shutdowns, avoid production/revenue losses



Metro stations



Railways

Inside SCELL

Compartments

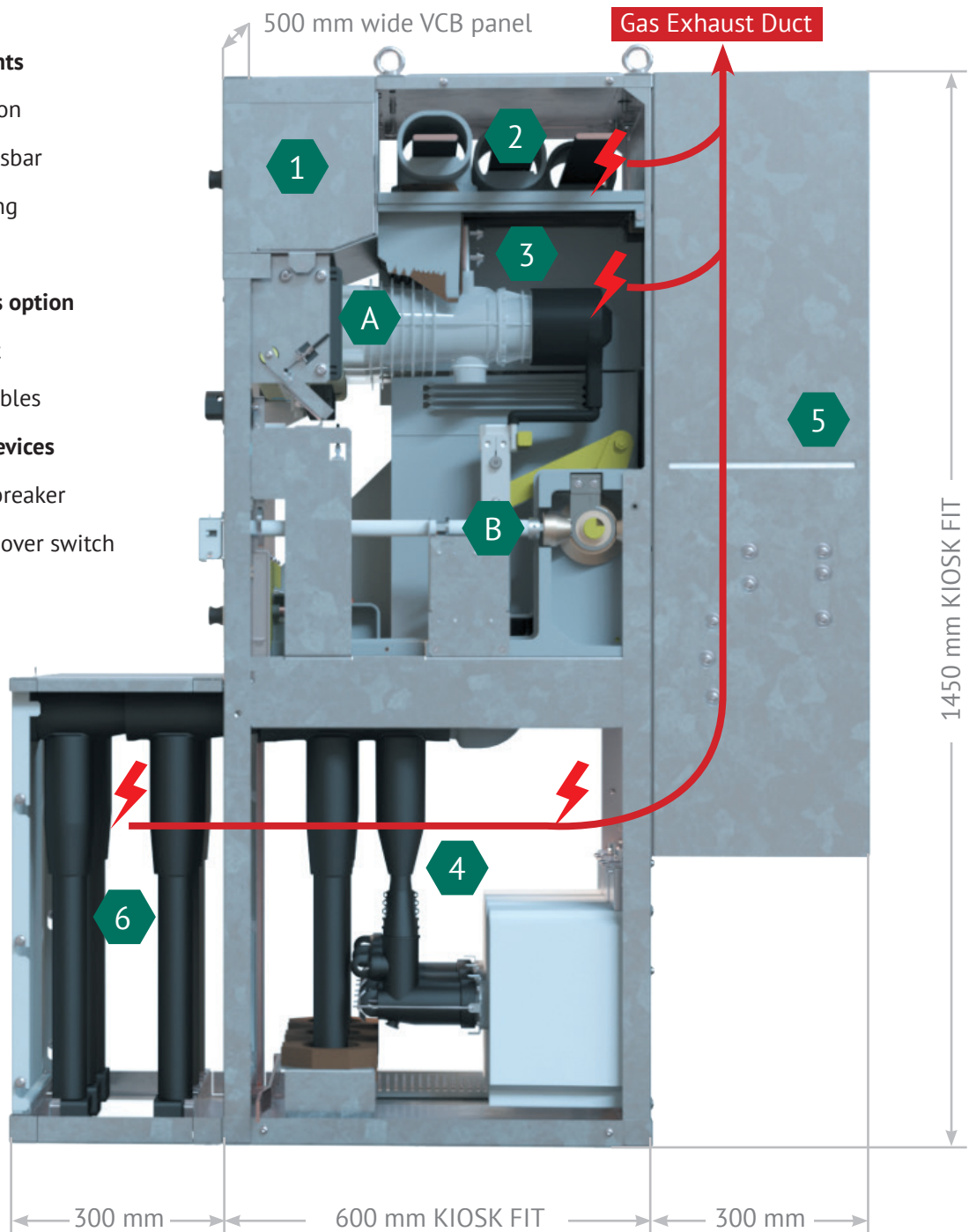
- ① Protection
- ② Main busbar
- ③ Switching
- ④ Cable

Attachments option

- ⑤ Arc duct
- ⑥ Extra cables

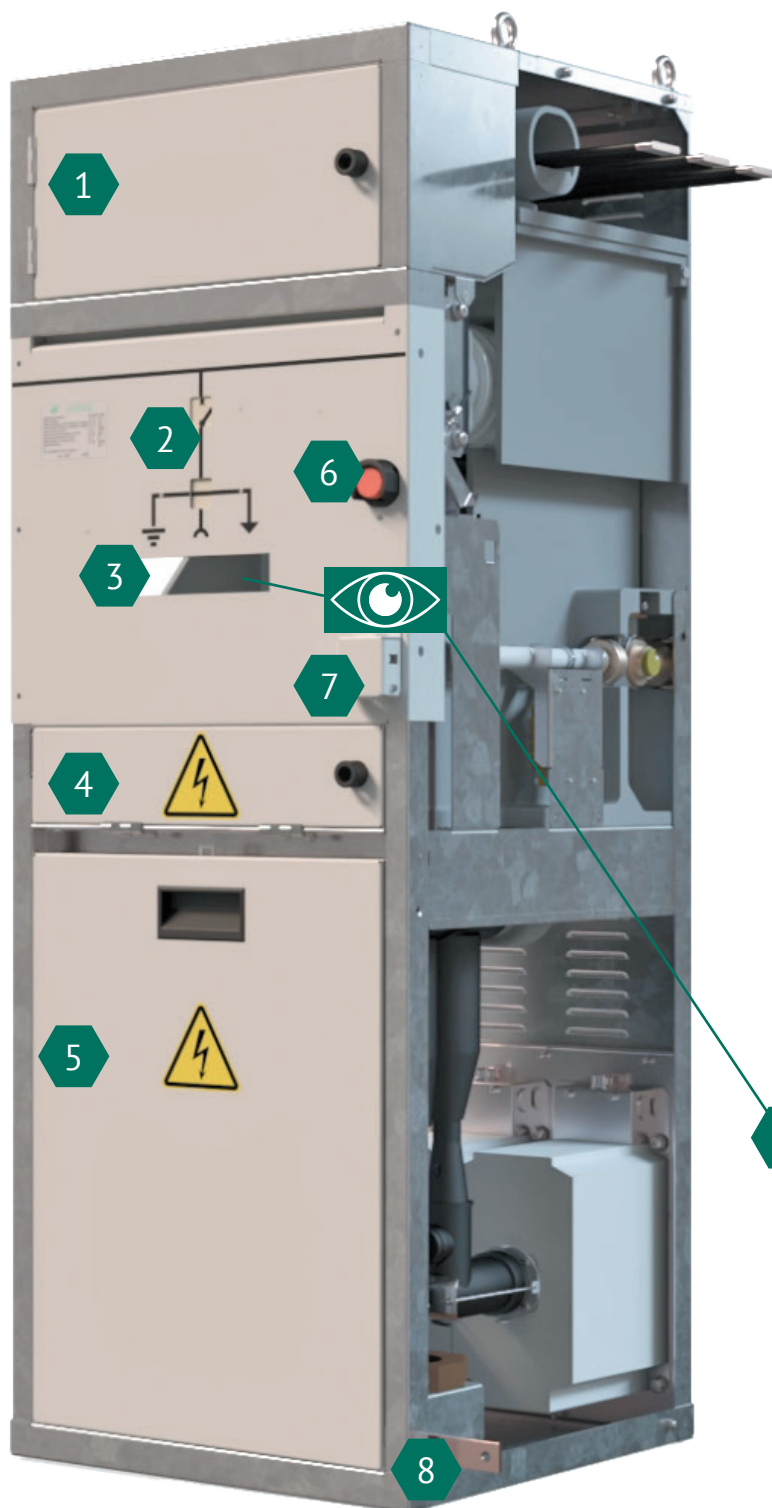
Switching devices

- A Circuit breaker
- B Change over switch



- SF6 free, environmental friendly
- No sealed reservoir with insulation medium subjected to periodical inspections
- Sandwich insulation (air and solid combination), PD free
- LSC2B-PI Class as for Heavy Withdrawable Switchgear
- IAC: AFL and AFLR with optional ARC DUCT
- Maximum Feeder Current : 1250 Amp
- Maximum Current per switchgear/VCB : 630/800 Amp

In Front of the SCELL



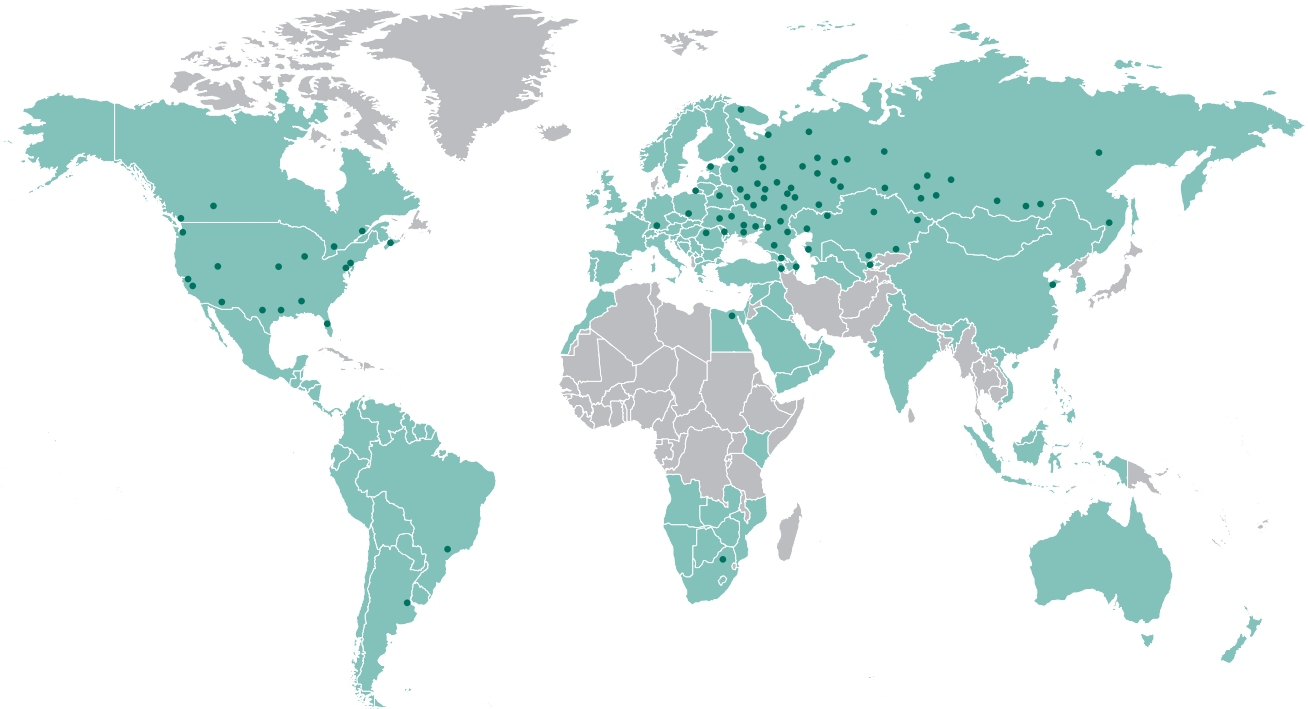
- ① Protection compartment standard or extended
- ② Mimic diagram with dynamically changing elements of switching devices
- ③ Inspection window
- ④ Cable test facility
- ⑤ Cable access door
- ⑥ VCB manual trip
- ⑦ COS operational slot
- ⑧ Earthing bar
- ⑨ Visual gap

Technical Parameters

Type of panel	SG15_SCELL	SG25_SCELL
Applicable VCB	ISM15_MD	ISM25_LD
Rated voltage (Ur), kV	17,5	24
Rated Frequency, Hz	50/60	50/60
Rated PF withstand voltage (Ud), kV	38	50
Across change over switch (COS) and circuit breaker* open contacts, kV	45	60
Rated lightning impulse withstand voltage, kV kV(peak), kV (Up)	95	125
Across COS and circuit breaker* open contacts, kV	110	145
IAC Classification	A-FL; A-FLR with rear attachment	
Internal arc withstand current	25kA, 1s	
Loss of service continuity	LSC2B	
Partition type	PI	
Partial discharge level at 1.1 x U _{rated} , pC	<20	
Degree of protection indoor	IP4X (IP41)	
Degree of protection outdoor	IP54 (outdoor design)	
Temperature range	-25 +55°C	
Maximum relative humidity	95%	
Maximum altitude, m a.s.l.	1000	
Auxiliary voltage, V	24/48/110/220DC; 230AC	
Rated peak withstand current (Ip), kA	64	40
Rated short-time withstand current (Ik), kA	25	16
Rated duration of short circuit current (t), s	3	3
Rated current, A	630	630
	1250	
Circuit breaker Classes	M2 (30.000CO), S2, E2, C2	
Autoreclosing cycle	O-0,3s-CO-10s-CO	
COS Class as Disconnecter	M1	
COS Classes as Earthing switch	M1, E2	

*As per IEC61140 an "isolation device"

If you would like to obtain more detailed information about our solutions
or become one of our local partners, please feel free to contact us



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