E2Energy
On time with Confidence

AIR-INSULATED COMPACT SWITCHGEAR UP TO 24 kV FOR PRIMARY AND SECONDARY DISTRIBUTION SYSTEMS

SG25_SCELL | 24 kV, 1250 A, 25 kA

The technology is protected under Patent No.GB2582172/EP3709332

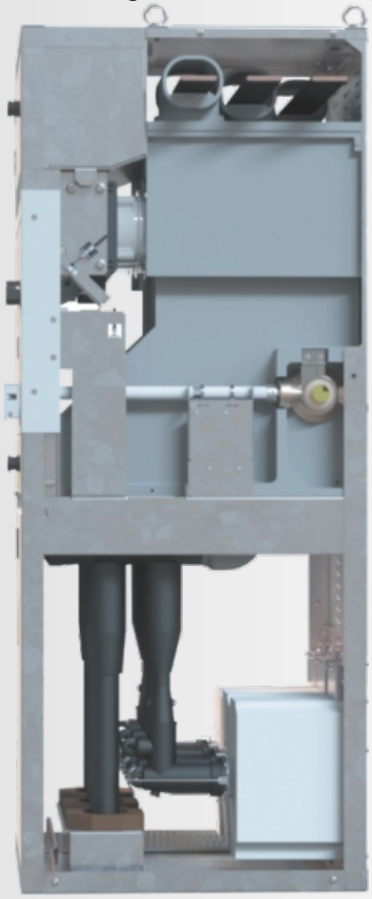
ISO 9001:2015
ISO 14001:2015

BUILDING BLOCKS

Network digitalization

Distribution network operators all over the world produce high demands for the equipment in their ownership in terms of digital network compatibility and variety of typical applications. SmartGrid, SCADA, DMS, remote operations, self-healing network algorithms, fault location, protocol, RTU features are just a few drops in a wide ocean of functionality required by modern digital network.

SCELL panel is a universal building block to build up customer's sophisticated network of any configuration and functionality thanks to its instant digital network readiness, powerful electrical parameters, functional versatility and compact size.



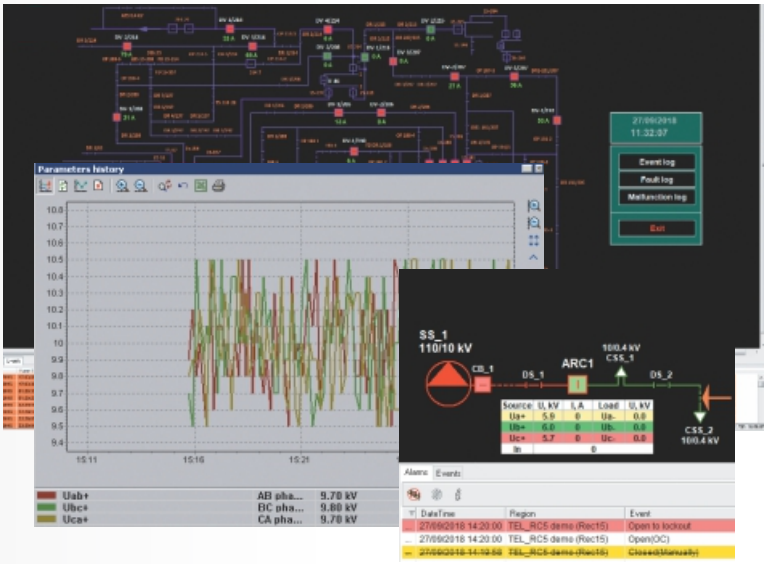
SCELL intelligence is provided by a powerful Intelligent Electronic Device (IED) with digital current and voltage inputs, rich protection, automation and communication features.

SCELL heart represents a standard combination of:
3 position (service, earthed, isolated) change over switch (COS) with detachable earthing blades
Fast vacuum circuit breaker (VCB) with an extremely long electrical and mechanical life.

Both of switching devices are capable of performing as an "isolation device" as per IEC 61140.

SCELL sensing includes digital current and voltage sensors, temperature and PD sensors.

SCELL is a tool to either renovate existing networks or construct a new one. It can be easily integrated into any existing or newly expand SCADA system. As a grid automation ready solution, SCELL can be offered with TELSCADA – a perfect tool, allowing implementation of multi-scale grid automation projects, where other network assets (such as MILE family panels or reclosers) can be integrated.



Adhering to the highest international quality standards, our products are manufactured within the European Union (Tallinn, Estonia) in compliance with ISO 9001 and ISO 14001 certifications.

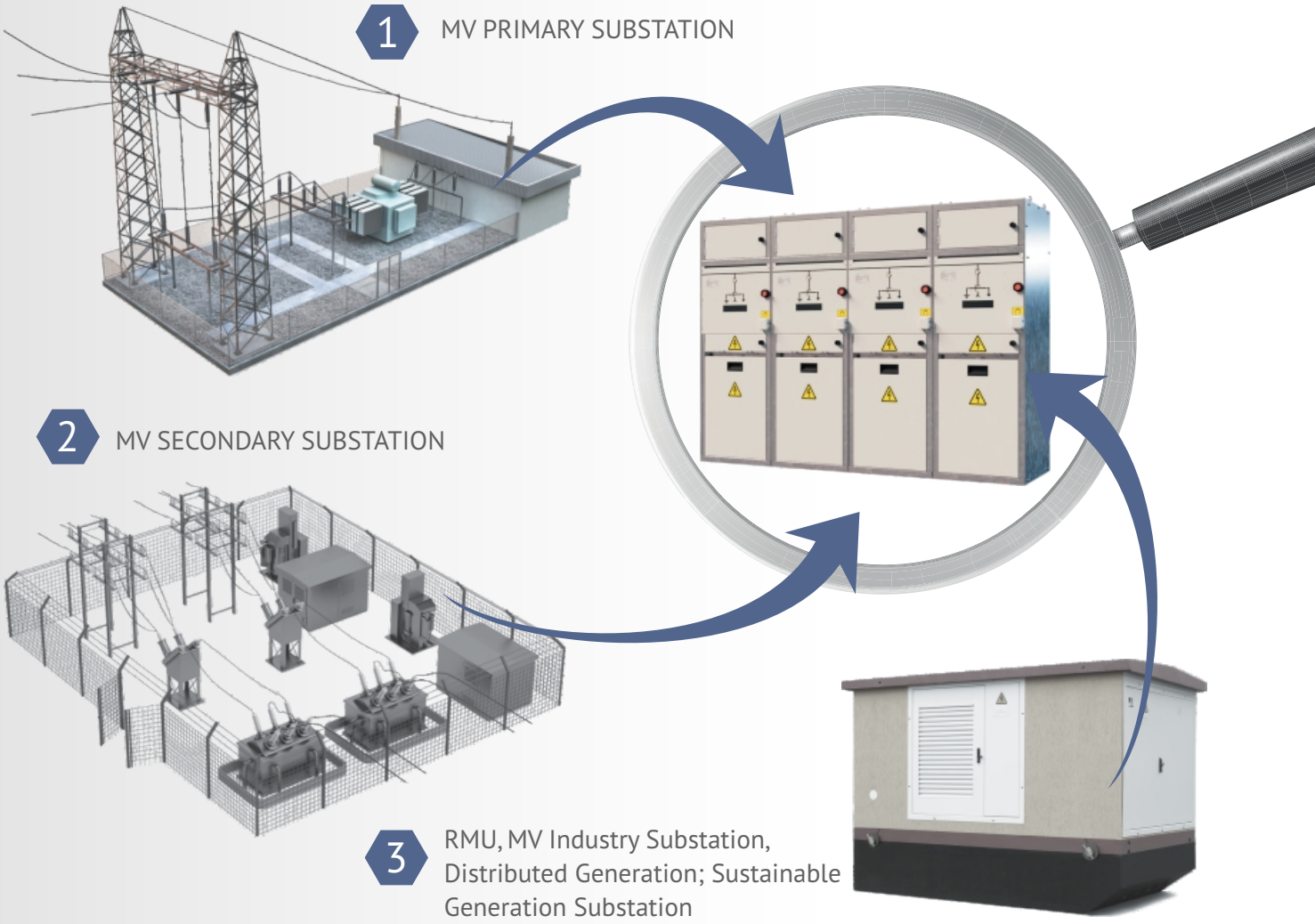
STATE-OF-THE-ART MANUFACTURING

- Application of the latest technologies in sheet metal and copper busbar processing such as laser cutting, CNC machining, powder coating, electroplating, etc. allows SCELL to meet the highest standards in quality product production.

- In-house testing facilities are available to conduct primary and secondary current injection tests as well as high voltage and partial discharge tests which constitute the core of the comprehensive routine testing program on SCELL.

VERSATILE APPLICATIONS

SCELL is designed for indoor installations and applications with voltage level up to 24 kV, continuous rated current up to 1250 A, short-circuit current of up to 25 kA and intended for use in primary and secondary distribution systems.



MV PRIMARY SUBSTATION

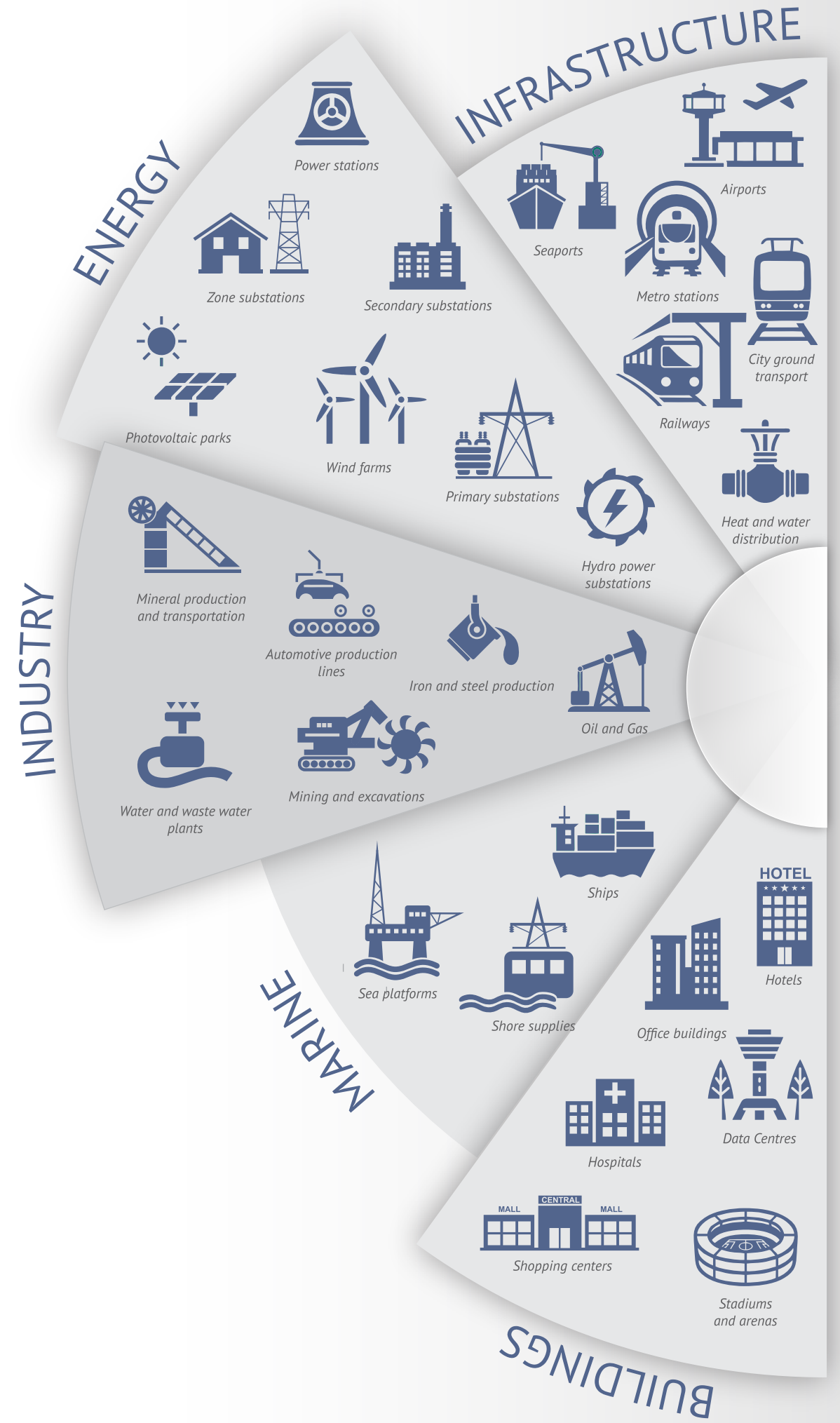
	VCB	Isc rating	Ir rating	Protocol	Protection	Energy metering	IAC AFLR
1		Isc=25kA	Ir=1250A	IEC 61850	IEC Curves	kWh	

MV SECONDARY SUBSTATION

	VCB	Isc rating	Ir rating	Protocol	Protection	Sensors	IAC AFLR
2		Isc=16kA	Ir=1250A	IEC 61850	IEC Curves		

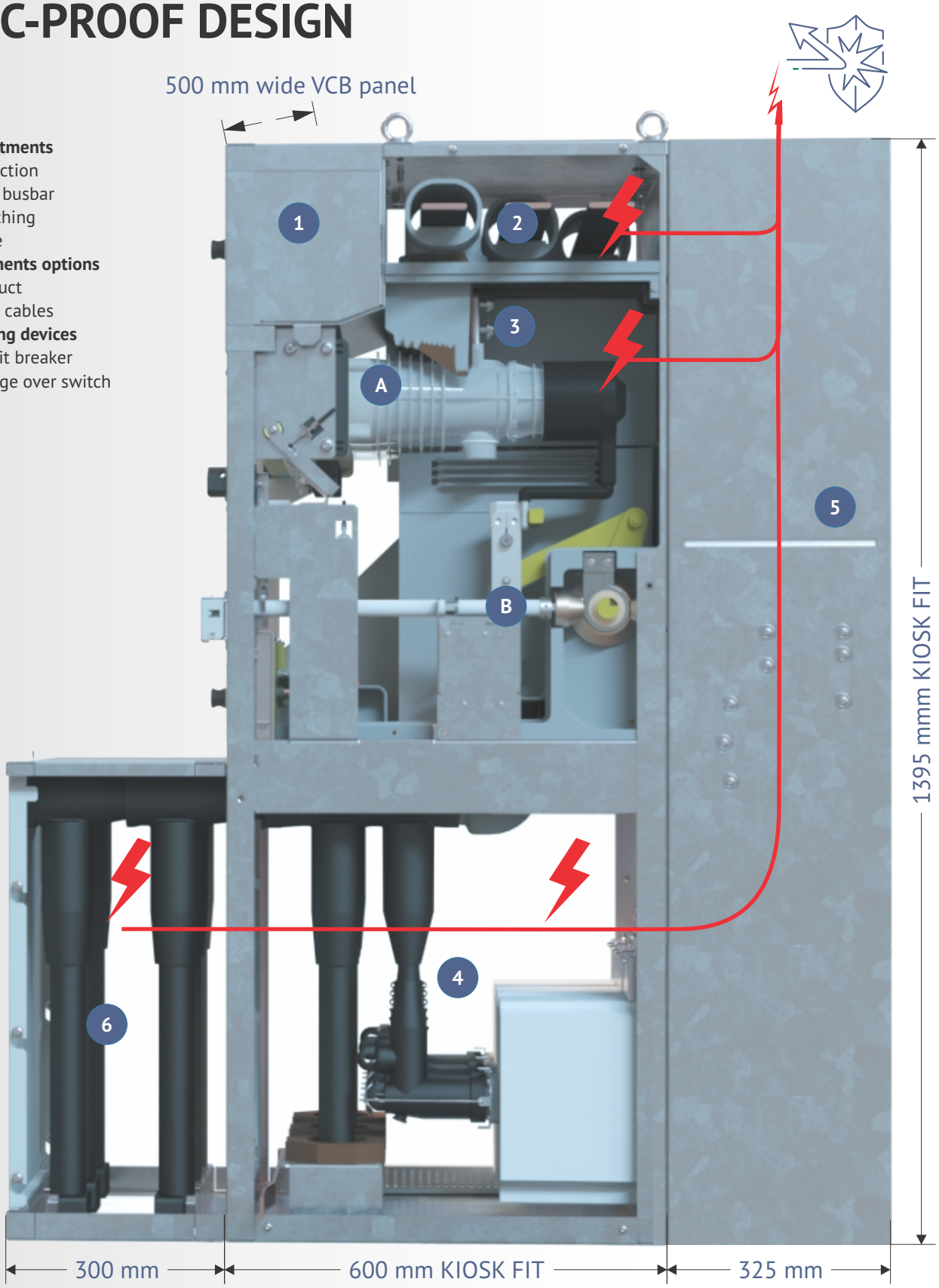
MV RMU, MV INDUSTRY SUBSTATION, DISTRIBUTED GENERATION; SUSTAINABLE GENERATION SUBSTATION

	VCB	Isc rating	Ir rating	RTU	Signaling&Trip	Sensors	IAC AFLR
3		Isc=16kA	Ir=630A				


ENERGY
Power stations
Zone substations
Secondary substations
Photovoltaic parks
Wind farms
Primary substations
Hydro power substations
INFRASTRUCTURE
Airports
Seaports
Metro stations
City ground transport
Railways
Heat and water distribution
INDUSTRY
Mineral production and transportation
Automotive production lines
Iron and steel production
Oil and Gas
Water and waste water plants
Mining and excavations
MARINE
Ships
Sea platforms
Shore supplies
BUILDINGS
HOTEL
Hotels
Office buildings
Data Centres
Hospitals
MALL
CENTRAL
MALL
Shopping centers
Stadiums and arenas

ARC-PROOF DESIGN

Compartments
1 Protection
2 Main busbar
3 Switching
4 Cable
Attachments options
5 Arc duct
6 Extra cables
Switching devices
A Circuit breaker
B Change over switch

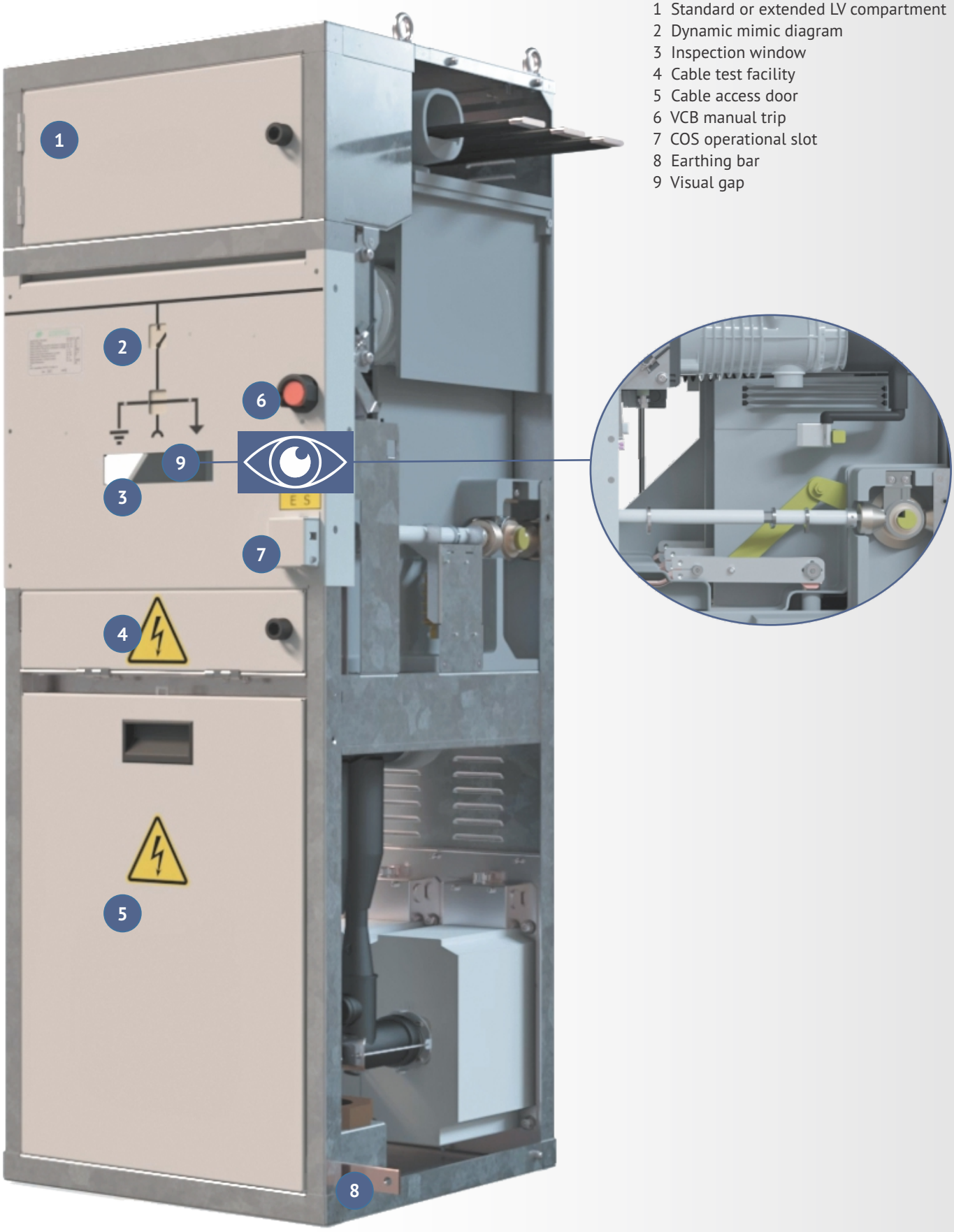


- SF6 free, environmental friendly
- No sealed reservoir with insulation medium subjected to periodical inspections
- Sandwich insulation (air and solid combination), PD free
- LSC2B-PI class as for heavy-duty withdrawable switchgear
- IAC: AFL and AFLR with optional arc duct

SF6 FREE

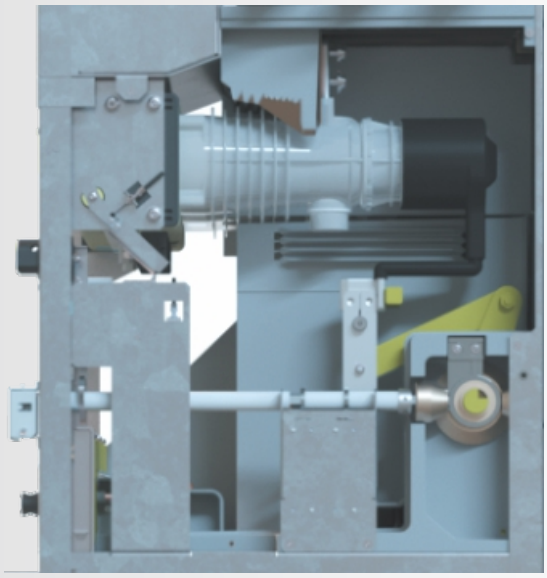
INTUITIVE INTERFACES

1 Standard or extended LV compartment
2 Dynamic mimic diagram
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

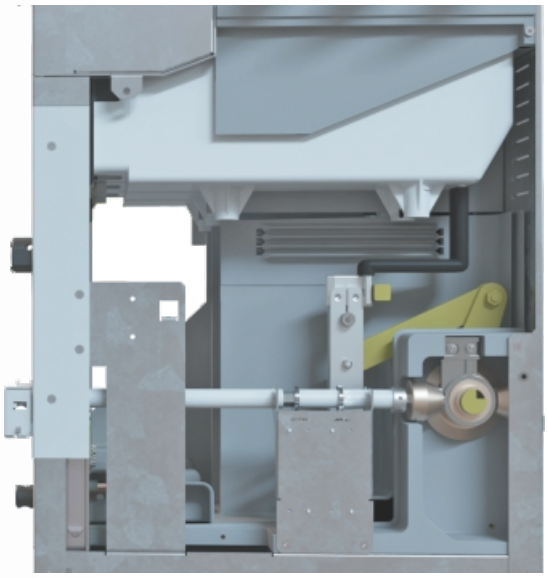


CORE COMPONENTS

Vacuum Circuit Breakers (VCB)

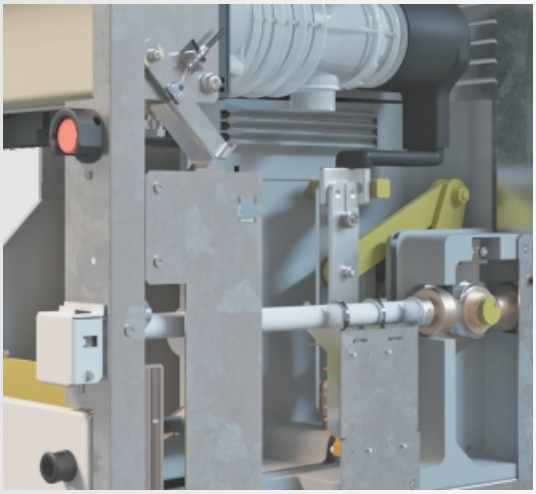


Standard duty ISM25_LD
- 24 kV, 630 A, 20 kA
- M2 (30.000 CO), S2, E2, C2

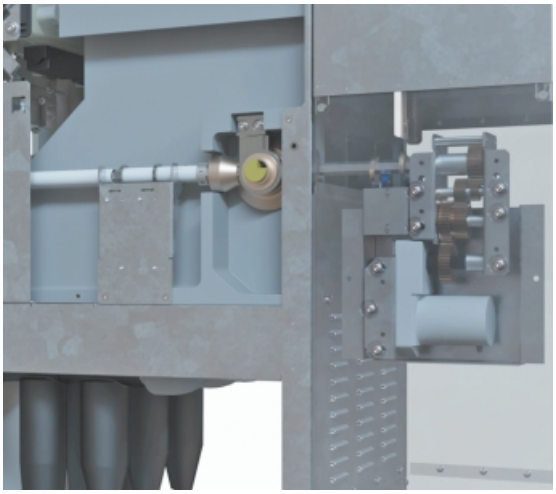


Heavy duty ISM25_Shell
- 24 kV, 1250 A, 25 kA
- M2 (30.000 CO), S2, E2, C2

Change Over Switch (COS)



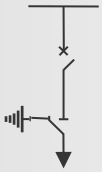
Change ovew switch COS25
- 24 kV, 25 kA / 3 s
- M1 (2.000 CO), E2

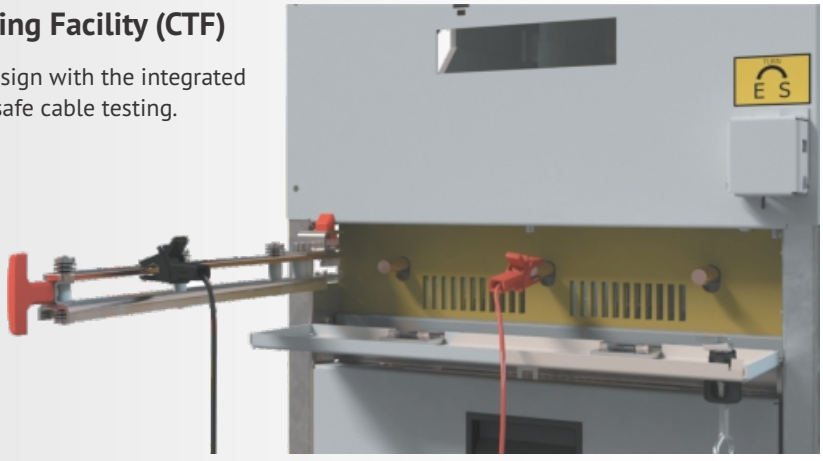


Motorized option for remote control

Cable Testing Facility (CTF)

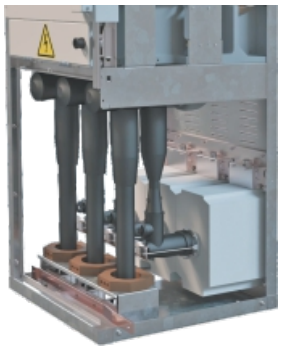
Innovative design with the integrated interface for safe cable testing.





FLEXIBLE ACCESSORIES

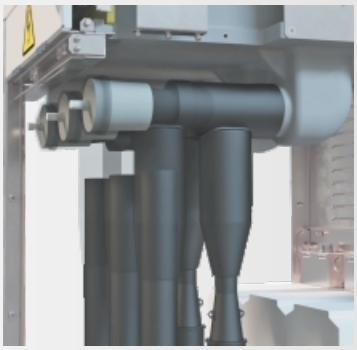
Digital instruments



Phase current sensors

Phase and earth current sensors

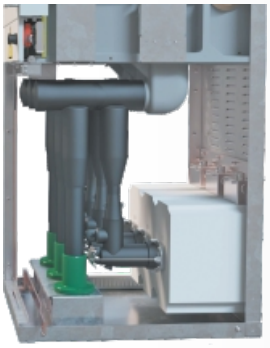
Phase current sensors for T-connectors



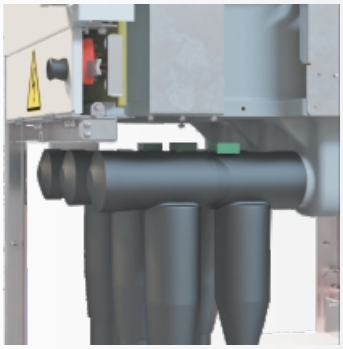
Voltage sensors for T-connectors

Traditional instruments and condition monitoring accessories

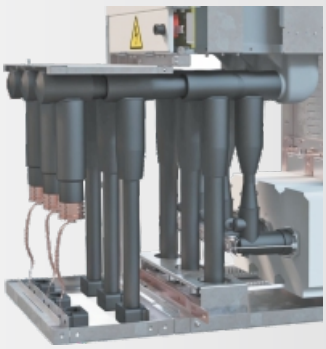
Phase current and voltage



Partial discharge sensors



Temperature sensors



Surge arresters

Intelligent Electronic Devices (IED)

Any digital protection relay can be used, depending on customer's traditions or preferences. However, in line with the modern trends of network digitalization, TE Energy offers it's all new protection relay M-series designed to interface with digital current and voltage sensors. Current sensors of different types (detachable) and diameters (depending on cable size) are available. Voltage sensors compatible with most of well known brands of T-connectors.

BENEFITS

Reducing investment and ownership costs

- Instant digital network functionality allows all type applications in customer network or substation without necessity of later upgrades/investments
- Powerful ratings and reach functionality allows installation of the same product in all levels of distribution network
- Sandwich type insulation does not require periodical inspection for any pressure drops or leakages

Maximum reliability and ease of use

- Unprecedented number of VCB switching operations (30,000 CO at Ir) makes SCELL lifetime the longest available on the market
- Use of field proven drives of VCB and COS, interlock mechanisms guarantee maximum reliability
- Operator friendly interface; dynamically changing mimic indication and availability of cable test facility make SCELL easy to use at installation and during later operation

Minimizing outage time

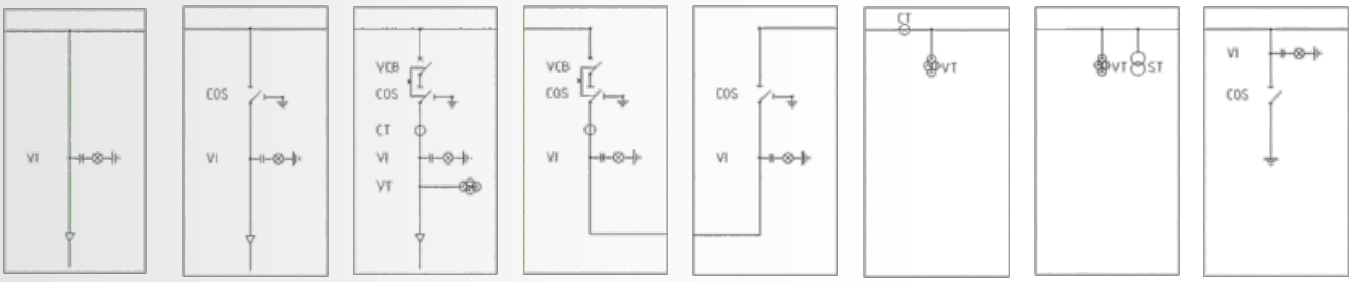
- Events of short circuit, or any other abnormal conditions are instantly detected, reported and isolated, if required
- Remote operation and online network parameters monitoring allow quick restoration of a supply
- Short delivery terms; factory tuned functionality; simplicity of installation and commissioning minimize total project time
- Availability of a typical project and ready-made solutions simplify consultant's life, minimize design time and guarantee error free project

Standards compliance

- Fully type tested as per latest IEC 62271-200; -100; -102
- Always safe, thanks to conformity of all switching devices to "an isolation device" as per IEC 61140
- Produced in EU with care and uncompromised factory testing under ISO9001 and IEC62271-200
- All materials used for production are environmentally friendly and controlled under ISO14001

PANEL SELECTION

LI	LS	LF; LFVT	CB (L or R)	CS (L or R)	M	ST	BE
Line input	Line switch	Line feeder	Coupler breaker	Coupler switch	Metering	Service transformer	Busbar Earthing



TECHNICAL SPECIFICATIONS

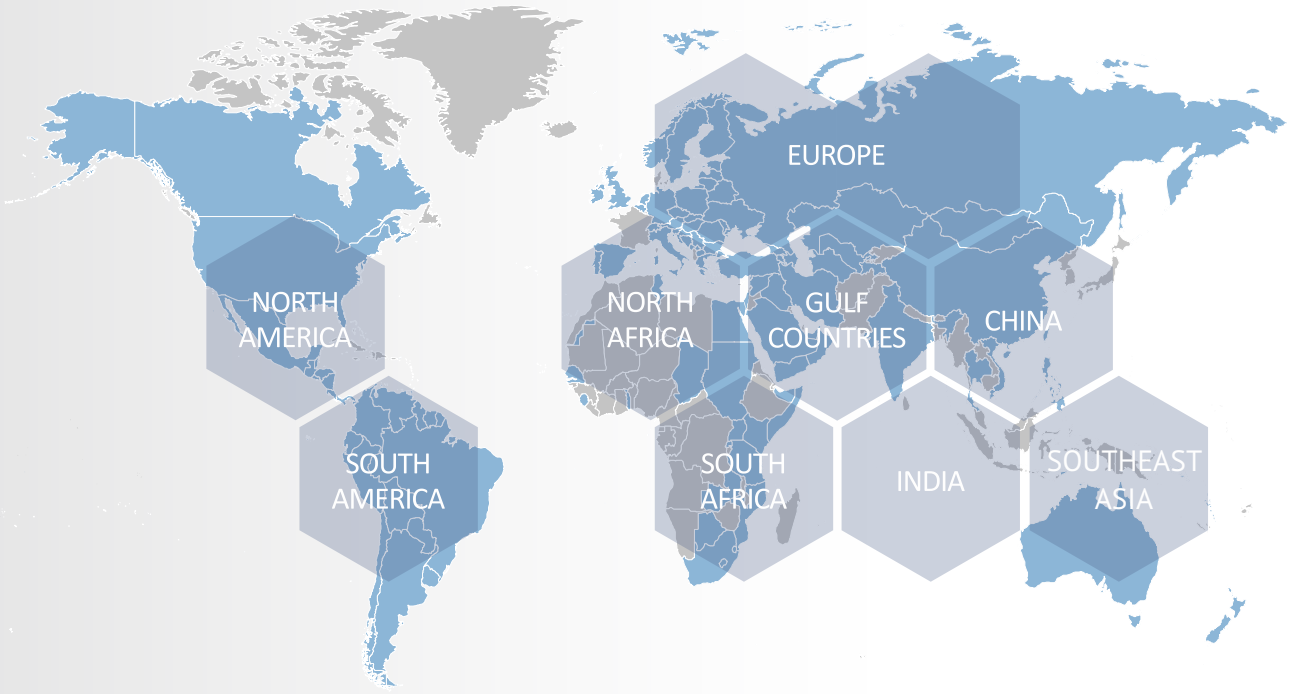
Main technical data:

Insulation type	Air
Rated voltage, kV	24
Rated power frequency withstand voltage, 1 min, kV	50/60*
Rated lightning impulse withstand voltage, kV	125/145*
Rated frequency, Hz	50/60
Rated current, A	630;800;1250
Rated breaking current, kA	20; 25
Rated short-time withstand current (3 s), kA	20; 25
Rated peak withstand current, kA	52; 65
Rated supply voltage for auxiliary circuits, V	24/48/110/220DC; 100-230AC
IAC classification (IEC62271-200)	AFLR 20kA/1s; 25kA/1s
Loss of service continuity and partition class	LSC2B-PI
Partial discharge level at 1.1 x Urated, pC	<20
Circuit breaker class	M2 (30.000CO), S2, E2, C2
Autoreclosing cycle	O-0,3s-CO-10s-CO
COS class as Disconnector	M1
COS class as Earthing switch	M1, E2
Degree of protection	IP4X/IP41**

* Across COS and VCB open contacts. Both of switching devices are capable of performing as an "isolation device" as per IEC 61140
** IP41 on request

Applicable standards:

High-voltage switchgear and control gear – Part 1: Common specifications	IEC 62271-1
High-voltage switchgear and control gear – Part 100: High-voltage alternating current circuit-breakers	IEC 62271-100
High-voltage switchgear and control gear – Part 200: High-voltage alternating current disconnectors and earthing switches	IEC 62271-102
High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	IEC 62271-200
Degrees of protection provided by enclosures (IP Code)	IEC 60529
Instrument transformers - Part 1: General requirements	IEC 61869-1
Instrument transformers - Part 2: Additional requirements for current transformers	IEC 61869-2
Instrument transformers - Part 3: Additional requirements for inductive voltage transformers	IEC 61869-3
Measuring relays and protection equipment	IEC 60255
Surge arresters - Part 4: Metal-oxide surge arresters without gaps for a.c. systems	IEC 60099-4
Voltage detecting systems (VDS)	IEC 61243-5
VPIS systems for rated voltages between 1kV and 52kV	IEC 62271-206
Protection against electric shock - Common aspects for installation and equipment	IEC 61140
EU LV directive; EMC directive	2014/35/EU; 2014/30/EU



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