

Medium Voltage Metal Clad Switchgear

Ulusoy UMC



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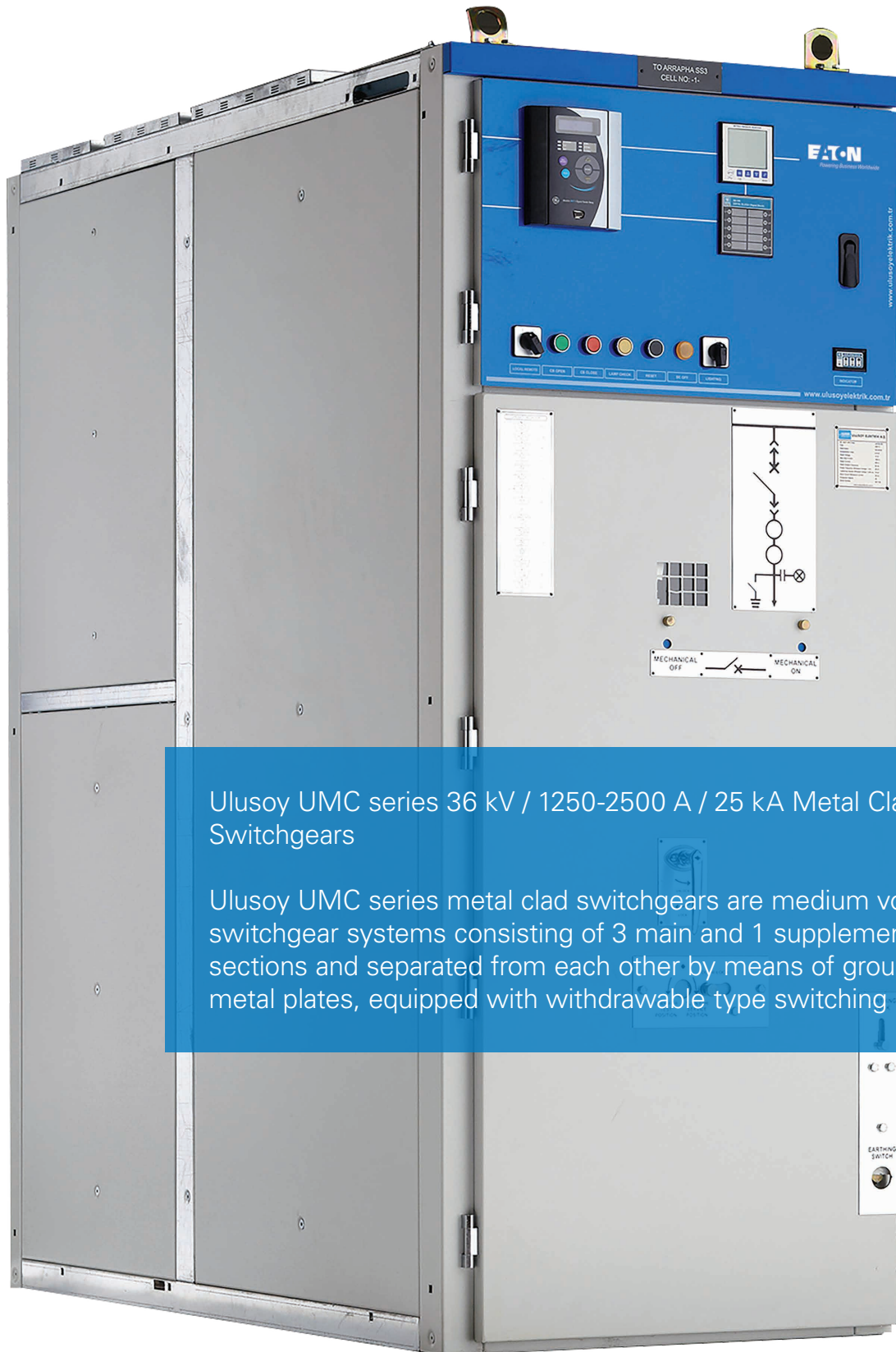
We make what matters work.

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Metal clad



Ulusoy UMC series 36 kV / 1250-2500 A / 25 kA Metal Clad Switchgears

Ulusoy UMC series metal clad switchgears are medium voltage switchgear systems consisting of 3 main and 1 supplementary sections and separated from each other by means of grounded metal plates, equipped with withdrawable type switching devices.

Ulusoy UMC series

Metal clad switchgear

Up to 36 kV

Introduction

Ulusoy UMC metal clad withdrawable switchgear system is produced in accordance with IEC standards and suitable for a wide range of applications in primary distribution, industrial plants and infrastructure up to 36 kV. Ulusoy UMC withdrawable primary switchgear is designed with safety in mind, offering a reliable and flexible solution to meet the needs of your most demanding applications.

Advantages

- Resistance to high current and short circuit (25 kA / 3 seconds).
- Requirement to less space due to the compact design (1200 mm of panel width for 36 kV).
- All divisions are separated by means of grounded metal and they are fully insulated systems.
- Ability to use with various types and properties of vacuum.
- Easily replaceable withdrawable type switching devices between the panels.
- Maintenance, reparation and on-site installation can be done from front or back side of the switchgear.

Mechanical interlocking systems

- Vacuum circuit breaker (VCB) door can be opened only when breaker is in test position. (St)
- VCB cradle cannot be switched to service position before being fixed on the panel. (St)
- VCB door cannot be closed before the low voltage control cable is installed on its place (Jag). (St)
- The VCB cannot be switched into service position before the breaker door is properly closed. (St)
- Breaker cart cannot be taken inside before the earthing switch opens. (St)
- If the breaker is in service position, earthing switch cannot be closed. (St)

Electrical interlocking systems

- VCB can be commanded only in test and service positions. (St)
- Incoming panel rear door cannot be opened before cutting the energy from the previous station. (Op)
- Outgoing panel rear door cannot be opened before the VCB cradle is switched into test position. (Op)
- If the breaker is in service position, earthing switch cannot be closed. (Op)
- Incoming panel earthing switch cannot be closed before cutting the energy from the previous station. (Op)

*St: Standard

Safety

- Pressure relief flaps are at the top and IAC class is A-FLR.
- All manoeuvres can be made when the panel door is properly closed.
- Possibility of wrong manoeuvre is prevented by means of mechanical and electrical interlocks.
- It is a fully insulated system and division class is PM.
- Equipped with E2 class earthing switch which can close 5 times to short circuits.



Shopping malls



Hospitals



Oil pump stations



Airports

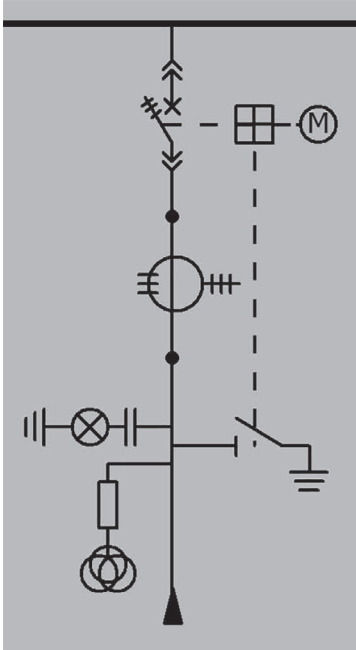
Application areas

- Energy generation and distribution facilities
- HV / MV substations
- Mines
- Cement and petro chemical factories
- Iron & steel factories
- Water & oil pump stations
- Airports, ports, railways
- Shopping malls
- Hospitals

Ulusoy UMC product types

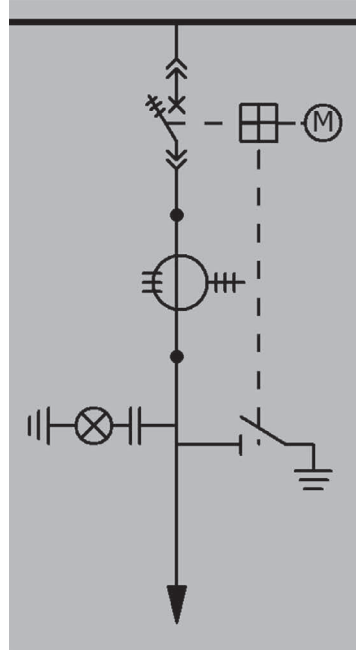
UMC Feeder Panel

UMC 36 Current & Voltage Transformer Incoming - Outgoing Feeder with Circuit Breaker



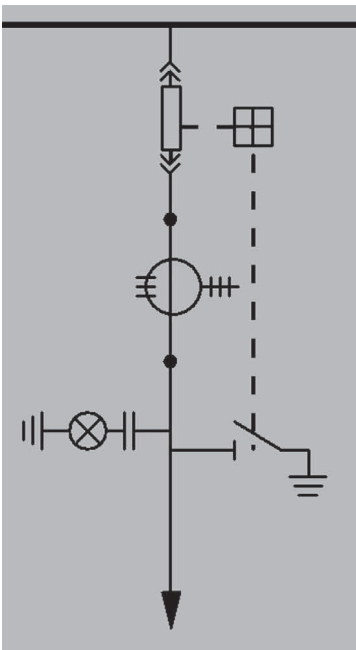
Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	3000	2300

UMC 36 Current Transformer Incoming – Outgoing Feeder with Circuit Breaker



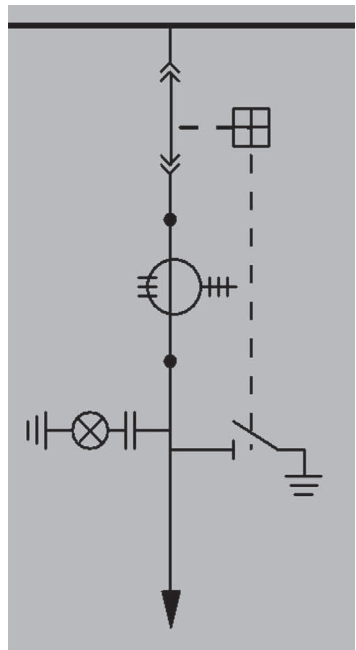
Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

UMC 36 Outgoing Feeder with Fuse



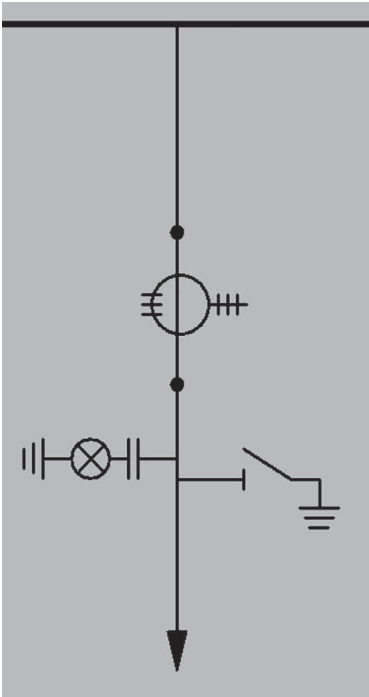
Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

UMC 36 Disconnect Panel



Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

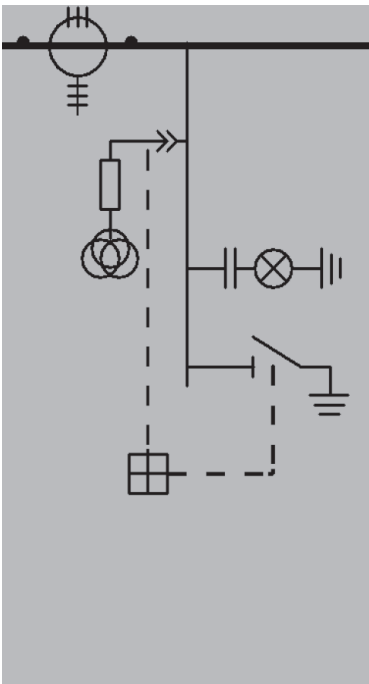
UMC 36 Direct Connection Panel



Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

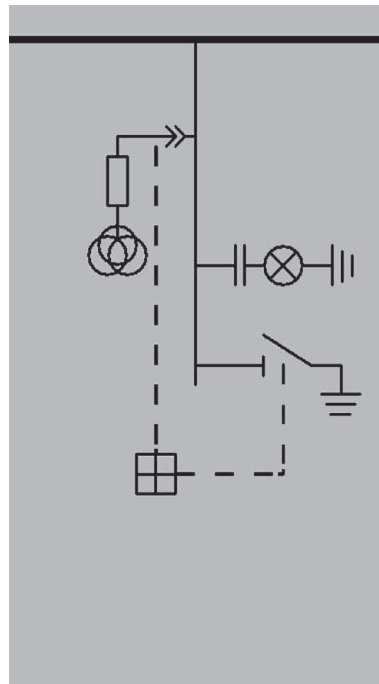
UMC 36 Metering panel

1. UMC 36 Current and Voltage Metering Panel with Busbar Earthing Switch



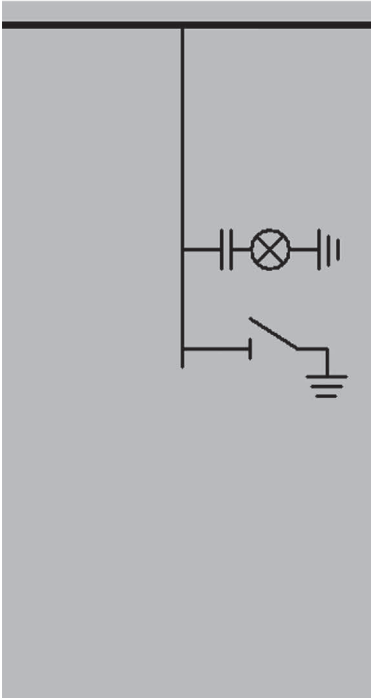
Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

2. UMC 36 Voltage Metering Panel with Busbar Earthing Switch



Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

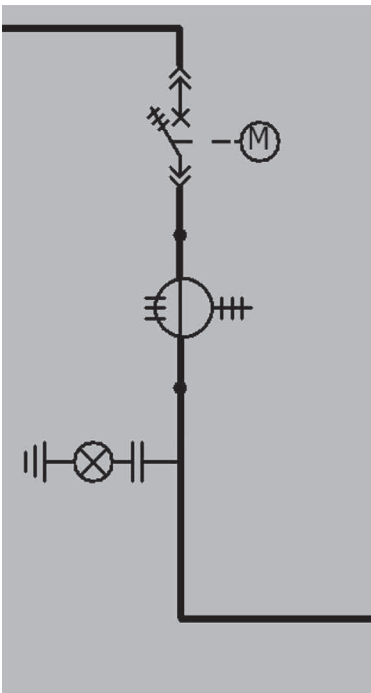
3. UMC 36 Busbar Earthing Panel



Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

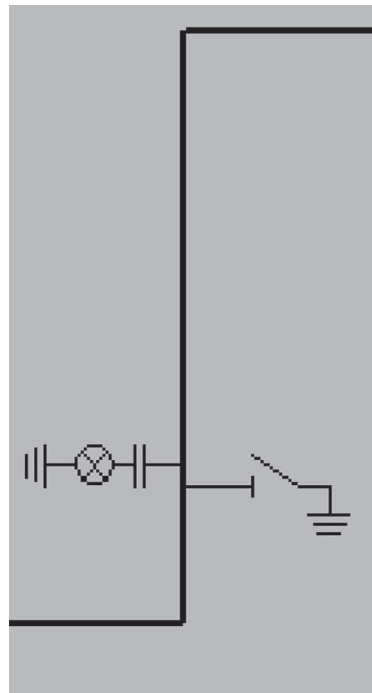
Bus section

UMC 36 Current Transformer Busbar Couplage Switchgear with Circuit Breaker



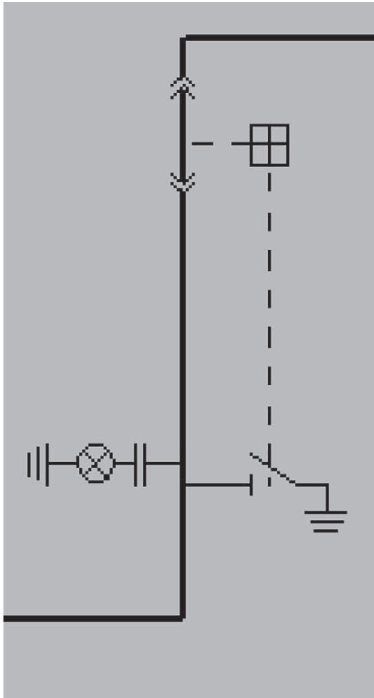
Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

UMC 36 Bus Riser Switchgear (3 Options) Direct Connection



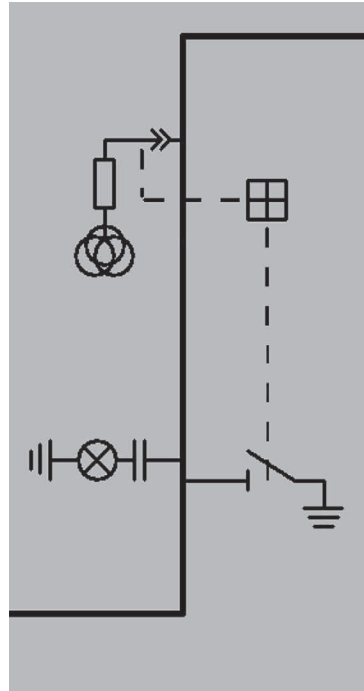
Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

Equipped with Voltage Metering



Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

Equipped with Disconnecter



Rated voltage(kV)	Width (mm)	Depth (mm)	Height (mm)
36	1200	2450	2300

Technical specifications

TYPE	UMC 36
Class	LSC2B-PM
Nominal Voltage	36 kV
Lightning Impulse Voltage	170 kV
Network Frequency	70 kV (1min)
Rated Current	630/2500A
Short Circuit Current	25 kA t=3 sec
Short Circuit Current (peak)	62,5 kA
Internal Arc Current	25 kA t=1 sec
Internal Arc Class (IAC)	IAC-AFLR
Protection Class	IP3X
Minimum Ambiance Temperature	-5°C
Maximum Ambiance Temperature	+40°C
Maximum Moisture	%80
Elevation	1000m
Board Dimensions (mm) (Width x Height x Depth)	1200x2200x2450
Paint	Electrostatic Powdered Paint (RAL 7035)
Standard	IEC62271-200

Earthing Switch	
Class	Class E2, IEC 62271-102
Short Circuit Current	25 kA t=1 sec
Short Circuit Current (peak)	62,5 kA

Tests and standards

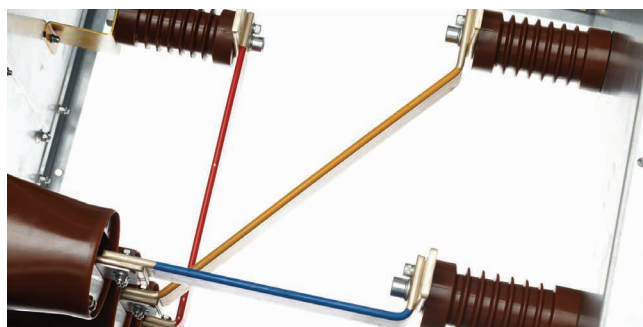
Ulusoy UMC series metal clad switchgears have successfully passed all type tests stipulated by IEC standards in international accredited and reputable independent laboratories (KEMA) and have been entitled to document its quality. Apart from IEC standards, within the framework of the total quality approach of Eaton, all controls and corrections required by the highest quality level at production, testing and after sales stages are performed in due diligence.

Primary components

Busbar compartment

It is the metal section which contains the copper conductors which can resist to high current and short circuit and provides energy transmission between the boards and the epoxy resin support insulators and case isolators which fixes these conductors to the board. The access to the Busbar section is from the top and when desired, the access can also be through the breaker section without removing the cases and metal curtains by removing the front sheet.

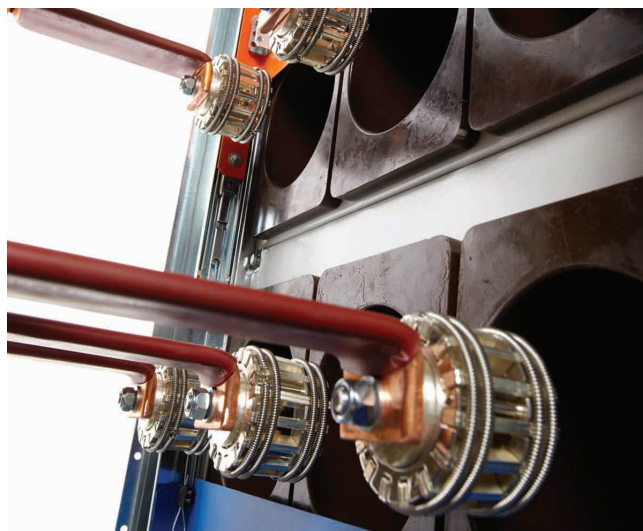
During the busbar transmission between the boards, the expansion of the board in both directions can be easily provided by use of busbar joint apparatus.



Circuit breaker compartment

It is the section which contains the medium voltage switching elements (vacuum breakers, vacuum contactors) and the metal shutters LSC2B/ PM (Partition metal) which separate the shelved type car, busbar and breaker sections carrying these items from each other. In line with special requests, voltage transformers and MV fuses can be placed on the cart. The breakers used in the switchgears with the same current values can be changed quickly for energy continuity.

A shutter movement system has been designed which opens the front of epoxy resin cases so that the movement of the breaker cart is not forced in service position and which is safely closed when being switched into test position. Breaker cart is at all times in contact with the main ground of the board with its spring-loaded ground busbar. Due to the interlock which obtains its movement from the earthing switch, it cannot be closed in service position. Status information for the breaker is transported to low voltage board by means of socket outlet system. Breakers have been tested within the panel in accordance with IEC62271-100 and IEC62271-200 standards.



Low voltage control & protection compartment

It is the section which is equipped with every kind of protection relays, control elements and measuring instruments in line with system requirements. It is contained in a grounded metal case in order to prolay any damage to staff and materials in case of an internal arc arises within the board. Control and monitoring materials have been designed at a height easy to control. The transmission between the boards can be easily performed by means of cable connection (supplementary feeding and locks). Board mimics are located on front door or low voltage cover and circuit flow is easy understandable.

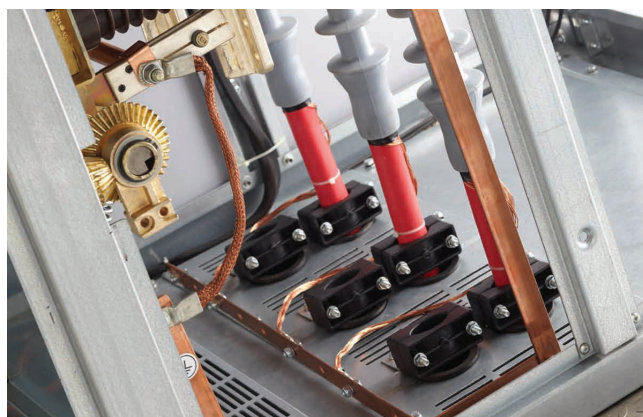


Cable compartment

It is the section which contains different types of current, voltage transformers, epoxy case isolators which provide transmission with breaker section and switchgear components such as earthing switch, surge arrester and capacitive insulators. In case of a replacement need of the measurement transformers, their installation is fast and easy due to the sliding structure.

Cables are fixed on the board base by use of sleeves. When necessary mechanical and electrical locks are made/ unlocked the access into the cable section, in consideration of the dimensions of the buildings and user's ease, has been designed so to allow the access from front and back.

This safety has been approved by IAC:
A FLR type specified in IEC62271-200 standard.





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10,5кВ

10,5кВ

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November 2021

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