imeb

QUADRI NORMALIZZATI MEDIA E BASSA TENSIONE
STANDARDIZED MEDIUM AND LOW-VOLTAGE SWITCHBOARDS
TABLEAUX MODULAIRES MOYENNE ET BASSE TENSION

QUADRI PROTETTI DI MEDIA TENSIONE MISTI ARIA/GAS

AIR/GAS INSULATED METAL-ENCLOSED SWITCHGEARS

CELLULES HTA MIXTES AIR/GAZ

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GENERALITÀ

I quadri protetti di media tensione misti Aria/Gas IM.E.B. serie UG , di tipo LSC2, sono utilizzati nella distribuzione elettrica secondaria di media tensione. Sono infatti impiegati per cabine di trasformazione e per il comando e la protezione di linee e di trasformatori di potenza.
La caratteristica principale di questi quadri è l'isolamento in esafluoruro di zolfo dei contatti di potenza, dei sezionatori e degli interruttori di manovra-sezionatore, mentre per le connessioni in ingresso ed in uscita, i collegamenti verso interruttori, i trasformatori voltmetrici ed amperometrici, è realizzato in aria.
Ne consegue, un elevato grado di isolamento con un quadro di dimensioni molto contenute e la massima semplicità di collegamento grazie alla possibilità di impiegare terminali a secco di tipo tradizionale. Tutte le apparecchiature e le connessioni sono accessibili dal fronte quadro. I contatti di potenza degli organi di sezionamento, utilizzati da IM.E.B., sono contenuti in involucri di acciaio inox, e garantiscono una elevata sicurezza, anche in ambienti ad alto grado di inquinamento ambientale.

Ogni modulo è provvisto di apposite aperture per il passaggio dei cavi di media tensione e dei cavi dei circuiti ausiliari contenuti in canalette e guaine flessibili metalliche e cablati su morsetti, accessibili con scomparto in esercizio. Dispongono inoltre di fori per il fissaggio al pavimento.
Particolari interblocchi permettono l'apertura delle porte solo in condizione di sicurezza.

GENERAL DESCRIPTION

IM.E.B.'s UG Air/Gas metal-enclosed medium-voltage cubicles LSC2 type are used in medium-voltage secondary distribution systems. These switchgears feature sulphur hexafluoride insulation for power contacts, isolators and switch-disconnectors, and air insulation for incoming and outgoing connections, connections to circuit-breakers and voltage and current transformers. The result is a compact switchgear with an high level of insulation as well as easy connection thanks to support for traditional dry glands.
All equipments and connections can be accessed from the front of the board. The power contacts of the isolating equipment used by IM.E.B. are housed in stainless steel casings to guarantee safety, even when environmental pollution levels are high.

Each module has special openings for medium-voltage cables and auxiliary-circuit cables, which are contained in auxiliary cables duct and flexible metal sheaths and wired on terminals that can be accessed while the compartment is in operation. The panels also have fixing points allowing the fixing to the floor.
Special interblocks ensure that doors can be opened only in safety conditions.

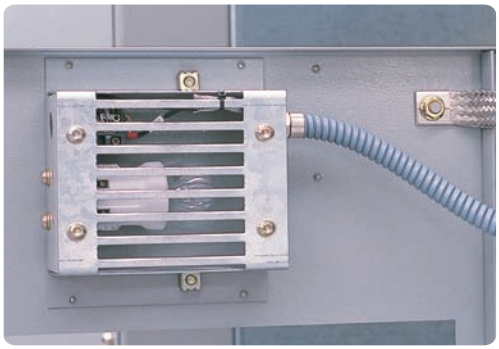
GÉNÉRALITÉS

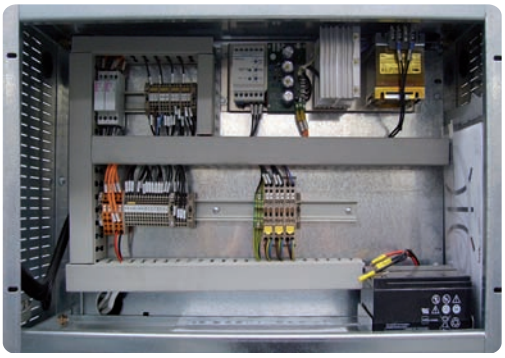
Les cellules HTA mixtes air/gaz IM.E.B. UG type LSC2, sont utilisés pour la distribution électrique secondaire de moyenne tension. La principale caractéristique de ces tableaux est l'isolement à l'hexafluorure de soufre des contacts de puissance, des sectionneurs et des interrupteurs, tandis que l'isolement des connexions d'entrée et de sortie, la liason vers les disjoncteur, les transformateurs de tension et de courant est réalisé dàns l'air. On obtient ainsi un degré élevé d'isolement avec un tableau de dimensions très réduites et une grande facilité de car on peut utiliser des tête de câbles sec de type traditionnel. Toues les appareils et les raccordements sont accessibles par la façade du tableau. Les contacts de puissance utilisés par IM.E.B. sont contenus dans des enveloppes en acier inox et garantissent le maximum de sécurité, même dans des locaux présentant un degré élevé de pollution de l'environnement.

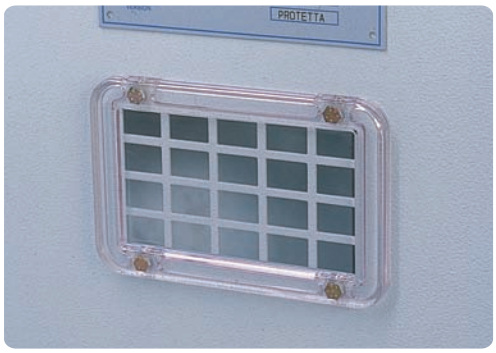
Chaque module est équipé d'ouvertures pour le passage des câbles de moyenne tension et des câbles des circuits auxiliaires contenus dans des gaines rigides et des gaines flexibles en métal, raccordé sur des bornes, auxquels on peut accéder même si le compartiment est en service. Ils disposent aussi de trous de fixation au sol. Des verrouillages spéciaux n'autorisent l'ouverture des portes qu'en condition de sécurité.

CARATTERISTICHE PRINCIPALI

- Modularità che permette la realizzazione di molteplici soluzioni.
- Possibilità di ampliamento anche di quadri già installati.
- Segregazione tra compartimento barre e compartimento linee.
- Facile accessibilità ai comandi delle apparecchiature.
- Tutti i modelli possono essere equipaggiati con:
  - lamiere di fondo
  - illuminazione interna con lampada sostituibile con scomparto in esercizio
  - resistenza anticondensa
  - trasformatori amperometrici e voltmetrici per misura e protezione
  - soccorritore con batterie secondo CEI - 016
  - scomparti risalita cavi
  - zoccolo rialzo altezza standard 300 mm
  - isolatori capacitivi con lampade presenza tensione
- Cassonetto BT con possibilità di applicazione di dispositivi di comando, segnalazione, protezione e dialogo con sistemi di supervisione
- Sicurezza per gli utenti garantita da una segregazione dei compartimenti con grado di protezione IP2X a porta aperta.
- Struttura interamente zincata con messa a terra e involucro in acciaio inox dei sezionatori.







MAIN FEATURES

- *Modularity allowing multiple solutions*
- *Easy extension of existny switchgears*
- *Segregation of bus-bar and compartments cables*
- *Easy access to equipment controls.*
- *All models may be fitted with:*
  - *bottom plates*
  - *internal lighting with bulbs that can be replaced when the compartment is in operation*
  - *anti-condensation heater*
  - *current and voltage metering and protection transformers*
  - *24Vdc Power Supplier in accordance with Italian CEI 0-16*
  - *cable riser compartments*
  - *standard elevation 300mm plinth*
  - *capacitors dividers with voltage signalling lamps*
- *Low - voltage compartment for application of control, system, signalling metering and protection devices with differents communicating protocols.*
- *User safety guaranteed by compartment segregation with IP2X open-door protection.*
- *Fully galvanised earthed enclosure with stainless steel casing for isolators.*

PRINCIPALES CARACTÉRISTIQUES

- Modularité permettant de réaliser de multiples solutions.
- Possibilité d'agrandir aussi des tableaux déjà montés.
- Séparation entre compartiment des barres et compartiment des lignes.
- Access facile aux commandes des appareils.
- Tous les modèles peuvent être équipés de:
  - plaque du fond
  - éclairage intérieur avec une lampe qui peut être remplacée pendant que le compartiment est en service
  - résistance de chauffage
  - transformateurs de courant et de tension pour la protection et le comptage
  - Source auxiliaire 24Vdc selon les norme italianne CEI 0-16
  - compartiments de remontée des câbles
  - socle d'élévation standard 300 mm
  - diviseurs de capacité avec lampes de présence de tension
- Coffret BT avec possibilité d'appliquer des dispositifs de commande, de comptage, de signalisation, de protection et de dialogue avec le systèmes de supervision
- Sécurité des usagers garantie par une séparation des compartiments degré de protection IP2X la porte avant ouverte.
- Structure entièrement galvanisée avec mise a la terre et enveloppe en acier inox des sectionneurs.

CARATTERISTICHE PRINCIPALI ED ELETTRICHE

Grado di protezione

- sull'involucro esterno	IP3X
- sull'involucro interno	IP2X

Condizioni di servizio

- temperatura ambiente max.	40°C
- temperatura ambiente min.	-5°C
- umidità relativa	95 %
- altitudine	1000 m

Trattamenti e verniciatura

I quadri misti aria/gas sono realizzati con lamiera prezincata, mentre le portelle e i pannelli di chiusura sono verniciati (RAL 7035), previo trattamento di lavaggio e fosfatazione.
A richiesta possono essere approntati modelli personalizzati secondo necessità del cliente.

MAIN AND ELECTRICAL FEATURES

Protection degrée

- external enclosure	*IP3X*
- internal enclosure	*IP2X*

Operating conditions

- max. ambient temperature	*40°C*
- min. ambient temperature	*-5° C*
- relative humidity	*95 %*
- altitude	*1000 m*

Finishes and painting

The air/gas cubicles are made from pre-galvanised sheet-metal, while inspection doors and cover panels are painted (RAL 7035) after a washing and phosphating treatment. On request, units can be built according to customer specifications.

CARACTÉRISTIQUES PRINCIPALES ET ÉLECTRIQUES

Degré de protection

- sur l'enveloppe extérieure	IP3X
- sur l'enveloppe intérieure	IP2X

Conditions de service

- température ambiante maxi	40° C
- température ambiante minimale	-5° C
- humidité relative	95 %
- altitude	1000 m

Traitements et peinture

Les cellules mixtes air/gaz sont fabriqués en tôle pré-galvanisée, tandis que les portillons et les panneaux de fermeture sont peints (RAL 7035) après avoir été traités par lavage et phosphatation.
Sur demande nous pouvons fournir des modèles personnalisés, selon les désirs des clients.

Caratteristiche elettriche	*Electrical features*	*Caractéristiques électriques*		
Tensione nominale	*Rated voltage*	*Tension assignée*	U [kV] 12	U [kV] 24
Tensione di prova (50-60 Hz/1min)	*Test Voltage (50-60 Hz/1min)*	*Tension d'essai à 50 ùhz pour 1 min.*	U (1 min[kV] 28	U (1 min) [kV] 50
Tensione di tenuta all'impulso	*Impulse withstand voltage*	*Tension de tenue aux chocs*	Uw [kV] 75	Uw [kV] 125
Frequenza nominale	*Rated frequency*	*Fréquence assignée*	F [Hz] 50-60	F [Hz] 50-60
Corrente nominali delle sbarre principali (1)	*Rated main busbar current (1)*	*Courant assignée des barres*	In [A] 400/630	In [A] 400/630
Corrente termica nominale (1)	*Rated thermal current (1)*	*Courant thermal assignée*		
* *Interruttori*	* *circuit-breakers*	* *disjoncteurs*	In [A] 630	In [A] 630
* *Interruttori di manovra sezionatori*	* *load - break switch*	* *interrupteurs*	In [A] 400/630	In [A] 400/630
* *sezionatori*	* *isolators*	* *sectionneurs*	In [A] 400/630	In [A] 400/630
Corrente ammissibile nominale di breve durata (1s)	*Rated short-time withstand current (1s)*	*Courant assignée de courte durée pour 1 sec.*		
* *U500G/C*	* *U500G/C*	* *U500G/C*	Icw [kA] 12,5/16	Icm [kA] 12,5/16
* *U500G*	* *U500G*	* *U500G*	Icw [kA] 12,5/16/20/25	Icm [kA] 12,5/16/20
* *U,U10,U20G,U50G,U210G,U220G*	* *U,U10,U20G,U50G,U210G,U220G*	* *U,U10,U20G,U50G,U210G,U220G*	Icw [kA] 12,5/16/20/25	Icm [kA] 12,5/16/20/25
Corrente di cresta	*Peak current*	*Courant de cr ète*		
* *U500G/C*	* *U500G/C*	* *U500G/C*	Icw [kA] 31,5/40	Icm [kA] 31,5/40
* *U500G*	* *U500G*	* *U500G*	Icw [kA] 31,5/40/50/63	Icm [kA] 31,5/40/50
* *UG,U10G,U20G,U50G,U210G,U220G,U500G*	* *UG,U10G,U20G,U50G,U210G,U220G,U500G*	* *UG,U10G,U20G,U50G,U210G,U220G,U500G*	Icw [kA] 31,5/40/50/63	Icm [kA] 31,5/40/50/63

(1) I valori indicati sono validi per temperatura ambiente massima 40°C
(1) The values indicated are valid for maximum ambient temperature of 40°C
(1) Les valeurs indiquée sont valides pur ambiences avec température maximum de 40°C

CARATTERISTICHE COSTRUTTIVE

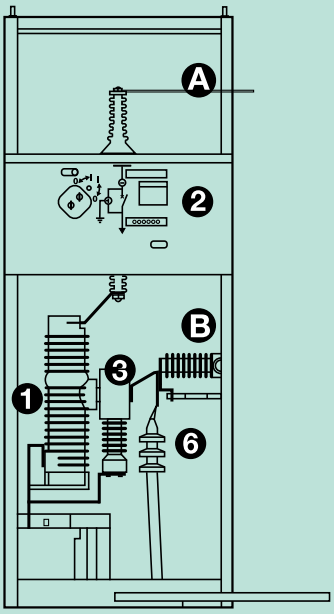
CONSTRUCTIONAL FEATURES

CARACTÉRISTIQUES CONSTRUCTIVES

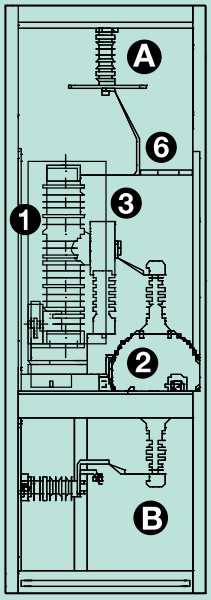
1 Interrutore
2 Sezionatore
3 Sensori di corrente
4 Interruttore di manovra-sezionatore
5 Fusibili
6 Sezionatore di terra

1 *Circuit-breaker*
2 *Isolating switch*
3 *Current sensors*
4 *Load break switch*
5 *Fuses*
6 *Earthing switch*

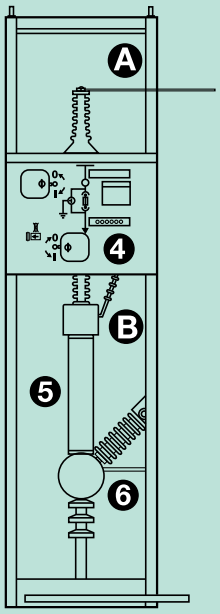
1 Disjoncteur
2 Sectionneur
3 Capteur de courant
4 Interrupteur
5 Fusibles
6 Sectionneur de terre



Unità con interruttore
Unit with circuit-breaker
Unité avec disjoncteur



Unità con interruttore capovolto
Upside down circuit breaker unit
Cellule disjoncteur reversé



Unità con interruttore di manovra-sezionatore e fusibili
Unit with load break switch and fuses
Unité avec interrupteur et fusibles

Compartimento Sbarre (A)

Il sistema di sbarre principali sono contenute nel compartimento A e sono collegate ai terminali del sezionatore di isolamento o dell'interrutore di manovra-sezionatore.

Compartimento Linea (B)

Il compartimento linea è segregato dal compartimento sbarre tramite un sezionatore di isolamento o un interrutore di manovra-sezionatore.

Bus-Bar Compartment (A)

The main bus-bars are housed in compartment A and are connected to the isolator or the load break switch.

Cables Compartment (B)

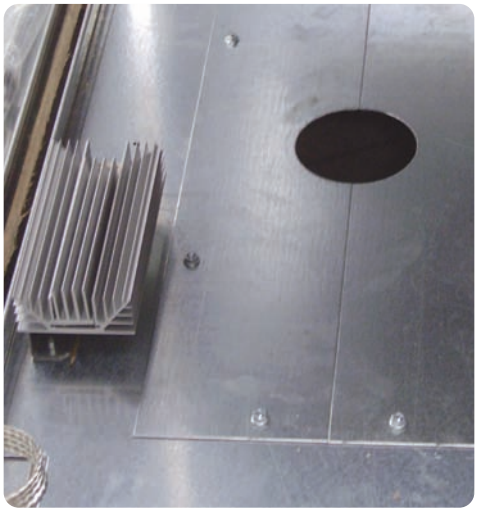
This cables compartment is segregated from the bus-bar compartment by an isolator or a load break switch.

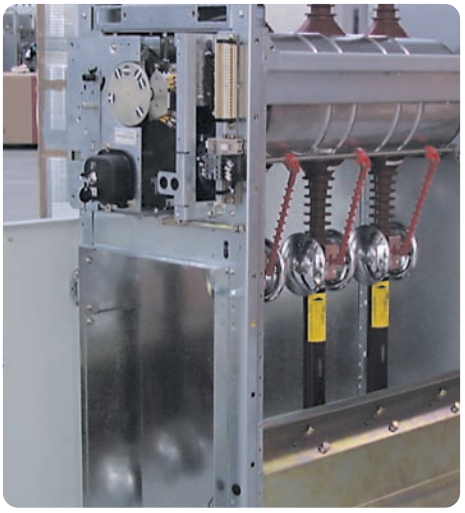
Compartiment des jeux de Barres (A)

Le jeux des barres principales est contenu dans le compartiment A; elles sont raccordées sur le sectionneur ou l'interrupteur.

Compartiment de raccordement des câbles (B)

Le compartiment est séparé de jeux des barres par un sectionneur ou par un interrupteur.





INSTALLAZIONE

Distanze di rispetto per installazione

- da retro: 50 mm
- da laterali: 50 mm
- da fronte:
  - 1000 mm per scomparti con sezionatore
  - 1400 mm per scomparti con sezionatore più interruttore

Conformità alle norme

I quadri misti aria/gas sono conformi alle norme IEC - EN 60298 e IEC - EN 62271 - 200.

INSTALLATION

Installation distances

- from rear: 50 mm
- from side: 50 mm
- from front:
- 1000 mm for compartments with isolator
- 1400 mm for compartment with isolator plus circuit-breaker

Standard compliance

IM.E.B. air/gas compartments comply with the IEC - EN 60298 and *IEC - EN 62271 - 200 standards.*

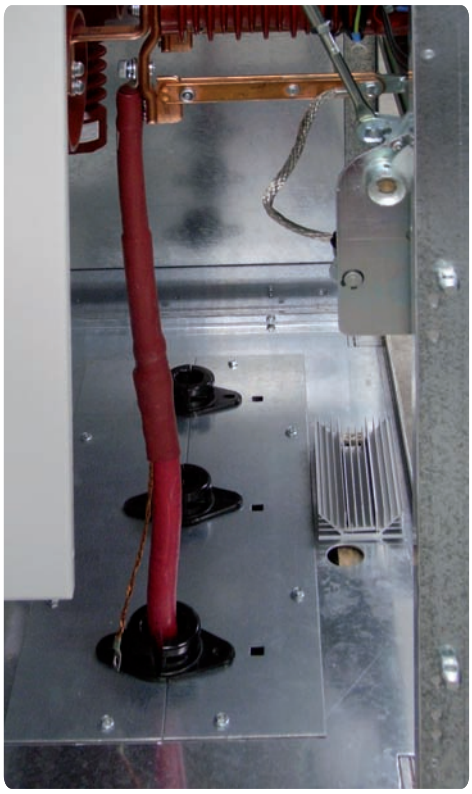
INSTALLATION

Distances de respect de l'installation

- à l'arrière: 50 mm
- sur les côtés: 50 mm
- à l'avant:
  - 1000 mm pour les compartiments avec sectionneur
  - 1400 mm pour les compartiments avec sectionneur plus disjoncteur

Conformité aux normes

Les cellules mixtes air/gaz sont conformes à les normes IEC - EN 60298 et IEC - EN 62271 - 200.

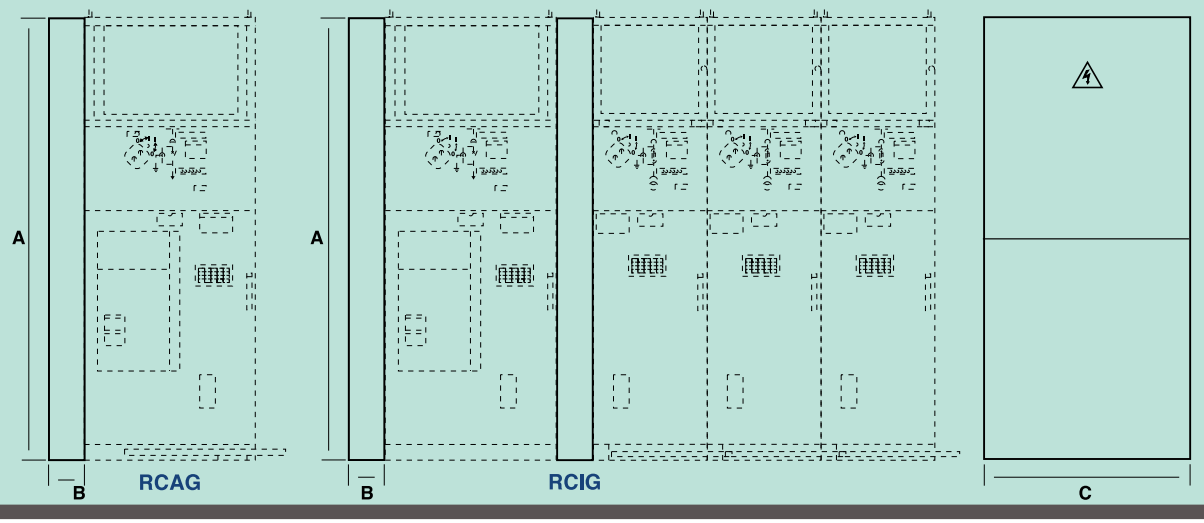


MODELLI

MODELS

MODÈLES

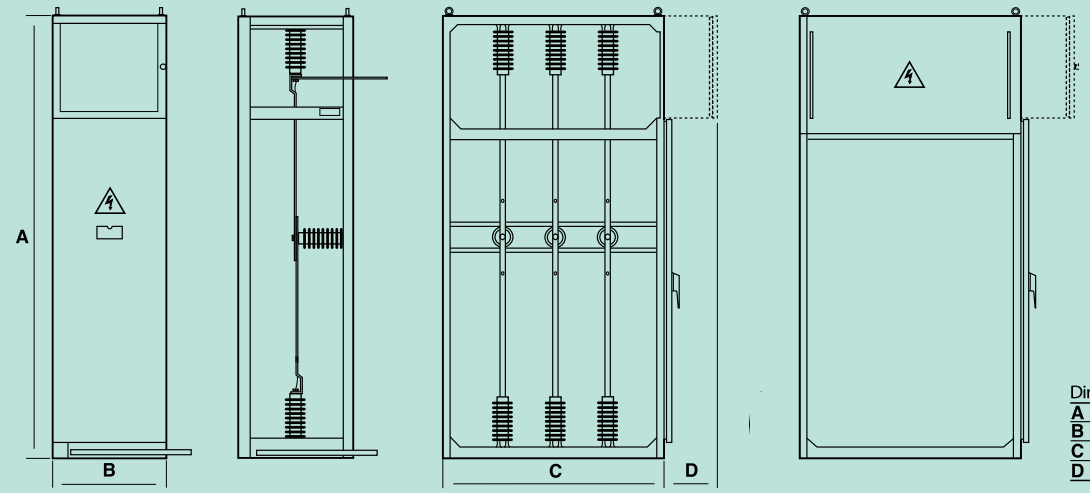
RCAG / RCIG

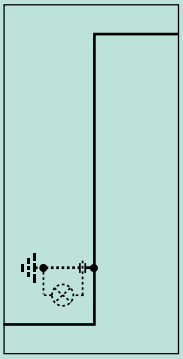


Dimensioni
Dimensions
Dimensions

A	1950 mm
B	100/250/350 mm
C	975 mm

UG

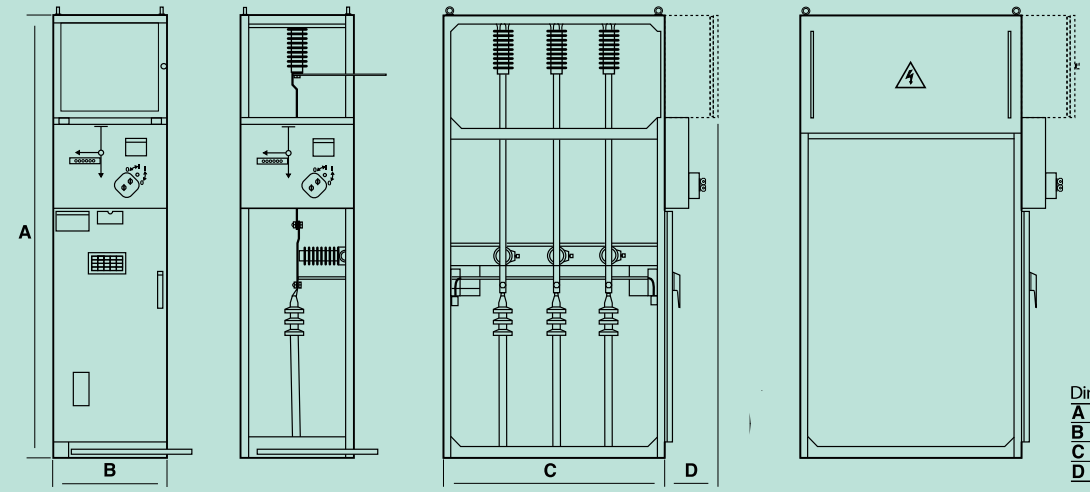


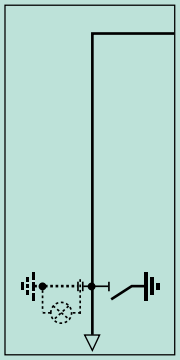


Dimensioni / Dimensions / Dimensions

A	1950 mm
B	500 mm
C	975 mm
D	230 mm

U10G





Dimensioni / Dimensions / Dimensions

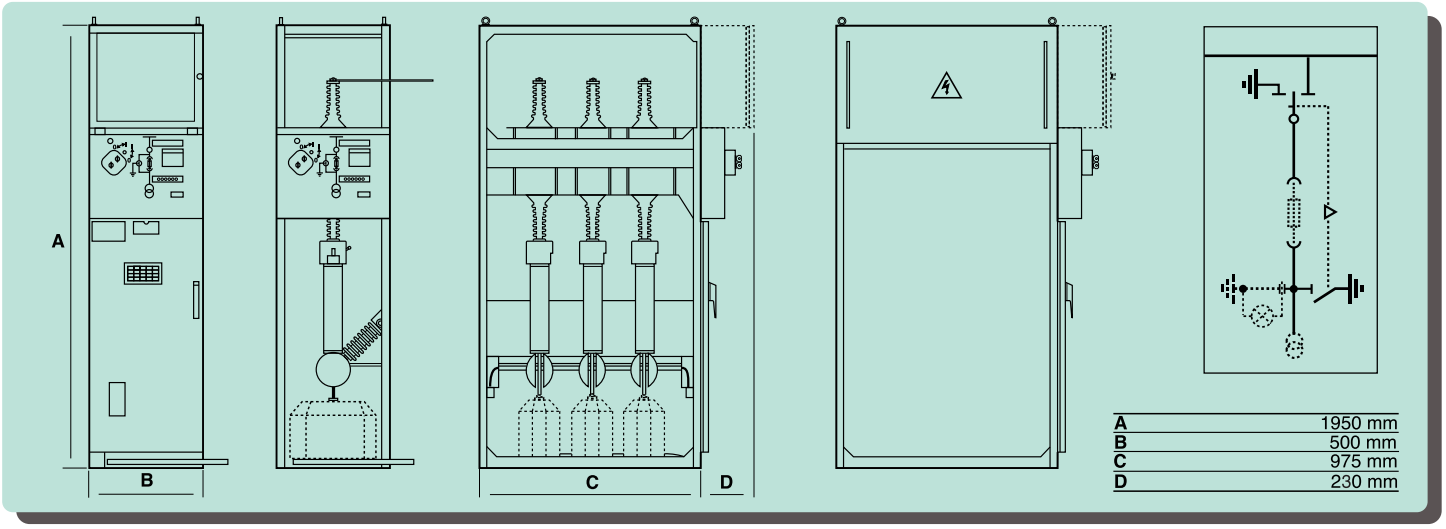
A	1950 mm
B	500 mm
C	975 mm
D	230 mm

MODELLI

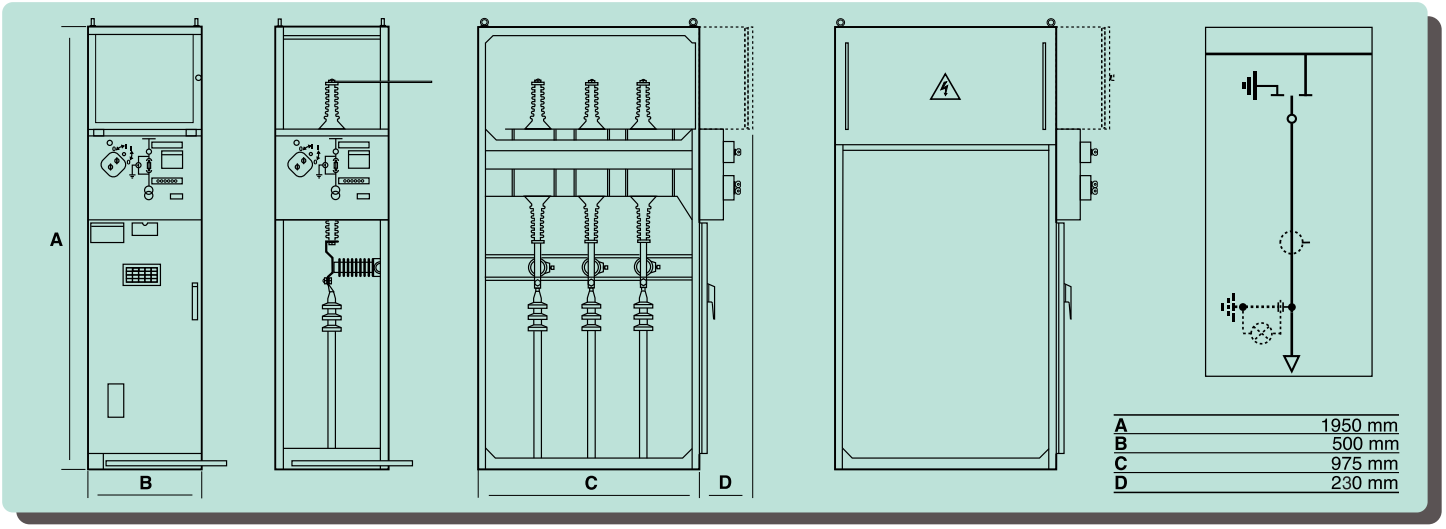
MODELS

MODÈLES

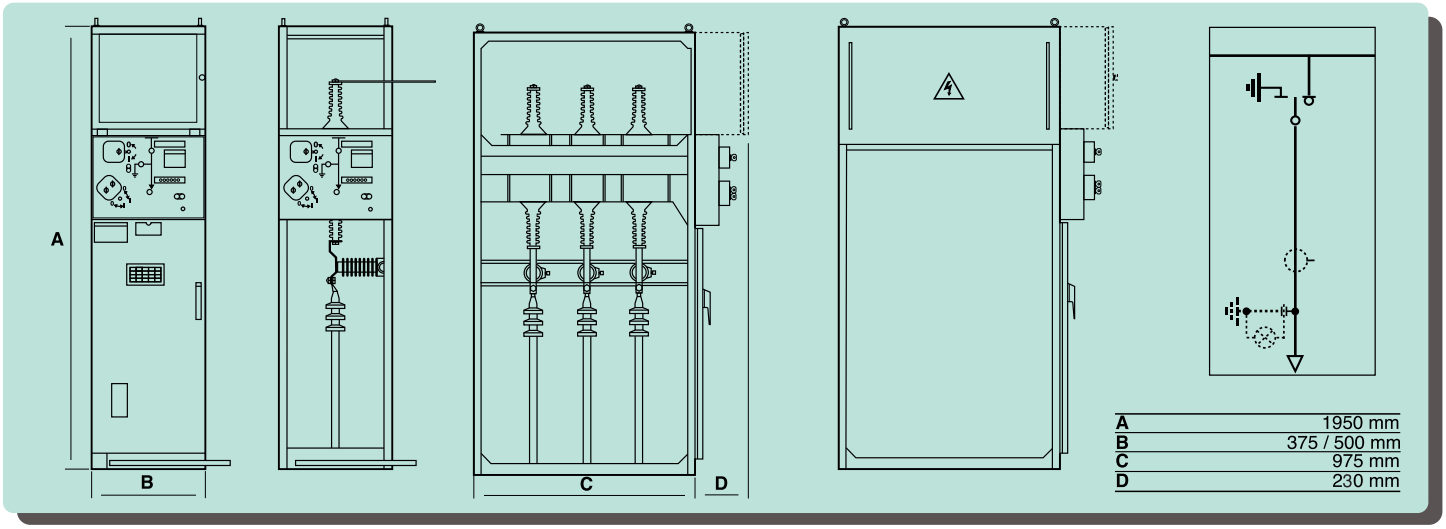
U20G



U50G



U210G

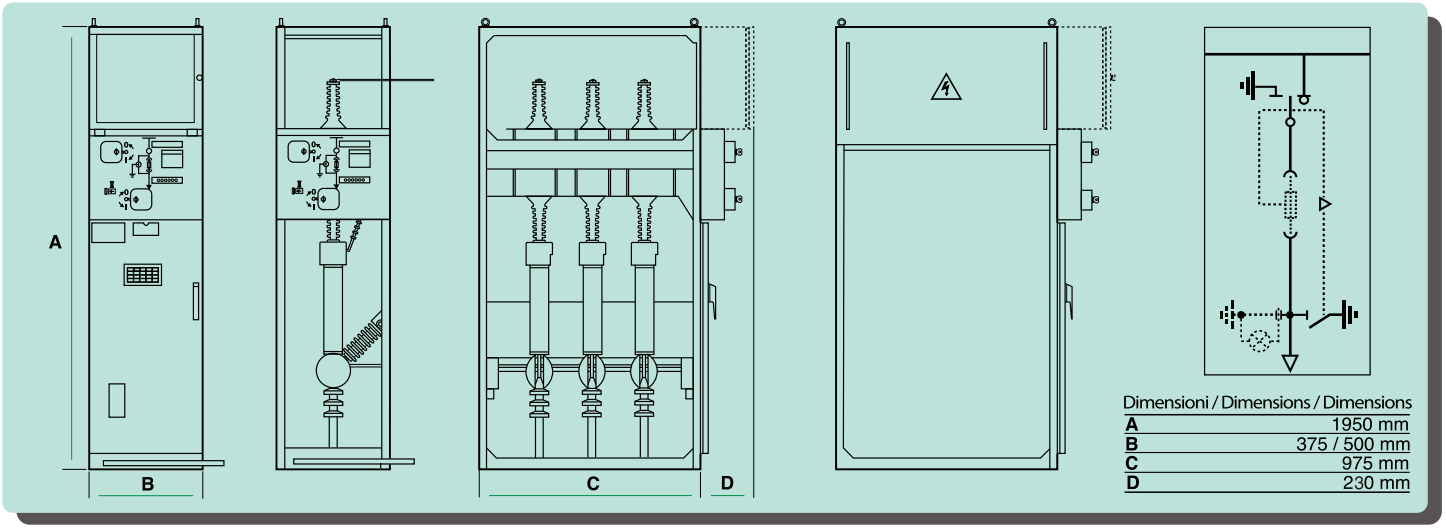


MODELLI

MODELS

MODÈLES

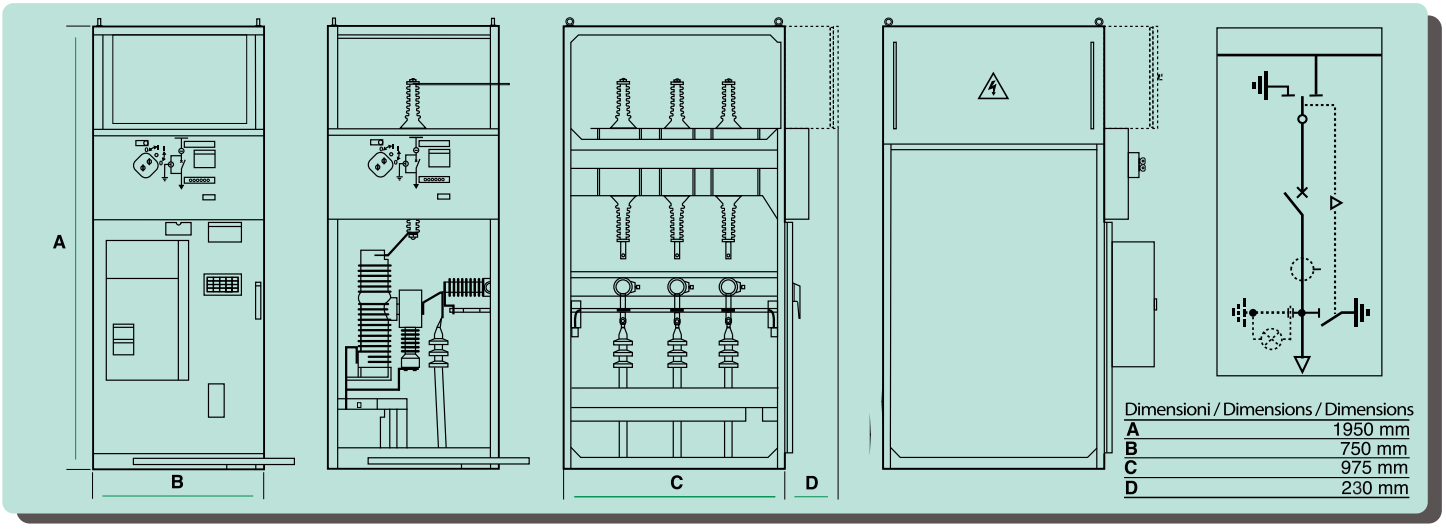
U220G



Dimensioni / Dimensions / Dimensions

A	1950 mm
B	375 / 500 mm
C	975 mm
D	230 mm

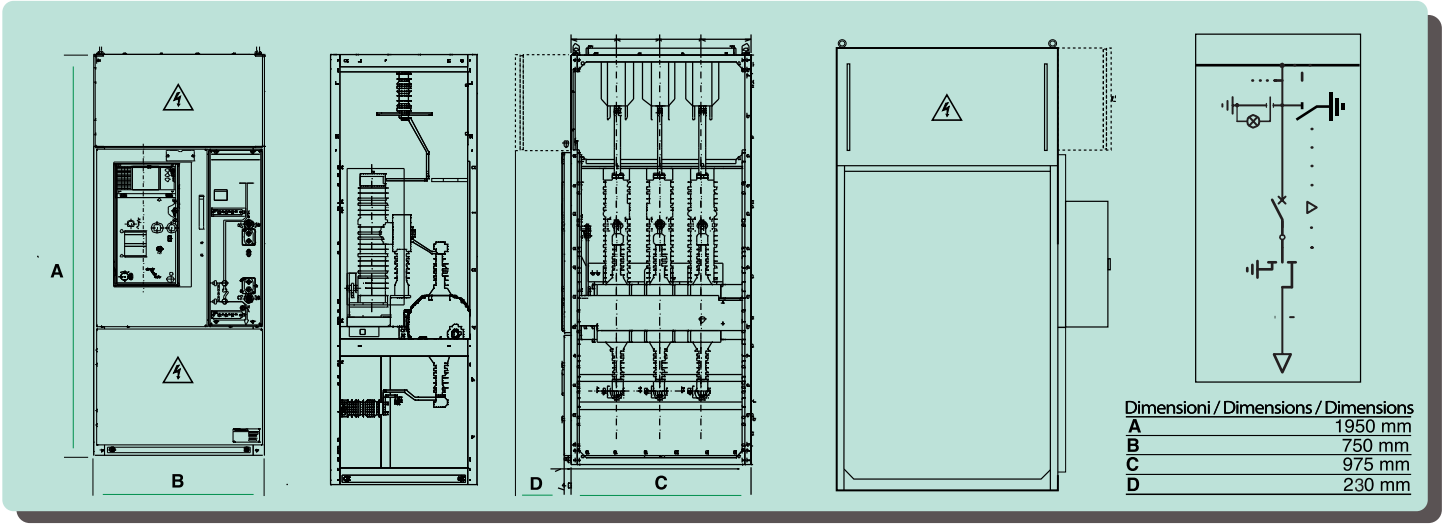
U500G



Dimensioni / Dimensions / Dimensions

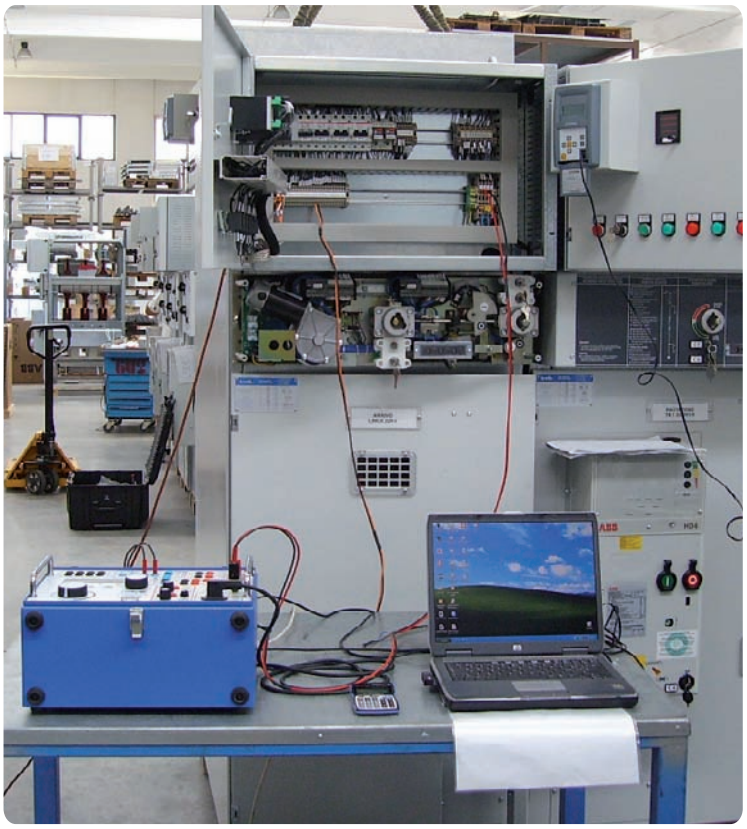
A	1950 mm
B	750 mm
C	975 mm
D	230 mm

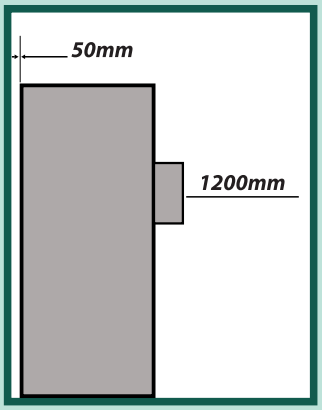
U500G/C

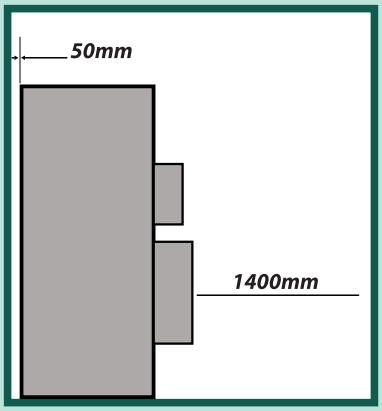


Dimensioni / Dimensions / Dimensions

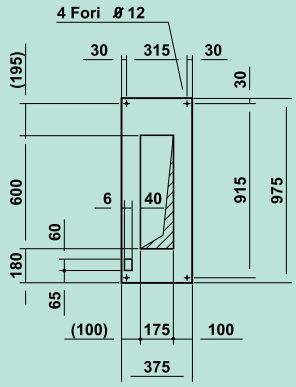
A	1950 mm
B	750 mm
C	975 mm
D	230 mm



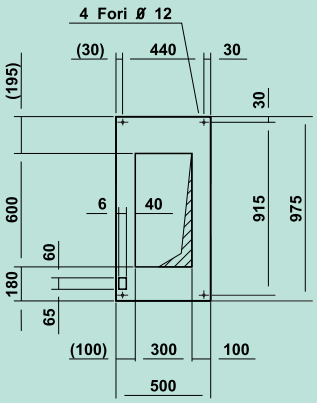




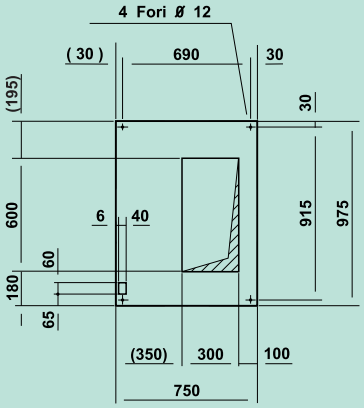
Forature per passaggio cavi / *Slab drillings* / Perçage des trous de passage des câbles



Larghezza / *Width* / Largeur 375 mm



Larghezza / *Width* / Largeur 500 mm



Larghezza / *Width* / Largeur 750 mm

NOTE:

Certificazioni / *Certifications* / Certifications

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