



Medium voltage products

# UniSec DY803 - Ed. 6

## Air-insulated 24 kV medium voltage switchgear to e-Distribuzione specifications

# UniSec DY803

## Characteristics

### Cubicles available

#### Unit e-Distribuzione specifications (ed. 6)

UniSec IMS/1	DY803/1
UniSec IMS/2	DY803/2
UniSec IMS/3	DY803/3
UniSec IMS/5	DY803/5
UniSec IMS/6	DY803/6
UniSec IMS/7	DY803/7
UniSec IMS/8	DY803/8
UniSec IMS/9	DY803/9
UniSec IMS/10	DY803/10
UniSec IMS/12	DY803/12
UniSec IMS/13	DY803/13
UniSec IMS/14	DY803/14



### Characteristics of UniSec DY803 switchgear

UniSec DY803 switchgear is arc-proof and suitable for secondary distribution requirements.

UniSec DY803 switchgear uses SF<sub>6</sub> insulated 3-position switch disconnecter (line, isolated and earth).

The switch disconnecter is made of two materials: the top part is made of epoxy resin so as to guarantee the required degree of insulation while the bottom part is in steel, thereby providing metallic segregation and earthing between the busbar compartment and cable compartment.

This guarantees maximum safety for the operators when work is performed in the line compartment, even when the main busbars are energized.

Thanks to this technical solution, panel classification is partition metallic (PM), in accordance with IEC 62271-200.

All the live parts of the switch disconnecter are SF<sub>6</sub> insulated and this guarantees a higher level of protection over time against strongly aggressive outdoor environments.

All the compartments are arc-proof in accordance with the provisions established by standard IEC 62271-200.

The IAC classification of the various types, restricted to authorized persons alone (class A), complies with the 5 criteria established by the standard.

UniSec DY803 compartments are classified AF on the front side.

# UniSec DY803

## Rated electrical specifications

### Cubicle

Maximum insulation voltage	24 kV
Rated insulation level, withstand voltage:	
with lightning impulse to earth and and line-to-line	125 kV
with power-frequency to earth and and line-to-line	50 kV
with power-frequency between the open contacts of the disconnecter	60 kV
Rated frequency 50 Hz	50 Hz
Continuous duty rated current for the busbars 630 A	630 A
Admissible short-time withstand current for the busbars and branch lines 16 kA	16 kA
Admissible short-time peak current value for the busbars and branch lines 40 kA	40 kA
Rated short-circuit time 1 s	1 s
External protection class IP3X	IP3X
Internal arc withstand value:	
IAC classification	AF
test voltage	24 kV
test current	16 kA
test duration	0.5 s

### Switch Disconnecter type GSec - LBS

Rated insulation level, withstand voltage	
Rated lightning impulse withstand voltage	125 kV
with impulse between the open contacts of the disconnecter	145 kV
Rated current	630 A
Admissible rated short-time withstand current	16 kA
Rated short-time peak current	16 kA
Admissible rated short-circuit time	1 s
Mechanical life	1000 operations Class M
Electrical life class (ref. IEC 62271-102)	E30

### Switch Disconnecter type GSec – Earthing switch

Admissible rated short-time withstand current	16 kA
Rated short-time peak current	40 kA
Rated short-circuit making capacity	40 kA
Admissible rated short-circuit time	1 s
Mechanical life	1000 operations Class M
Electrical life class (ref. IEC 62271-102)	E30

# UniSec DY803

## Characteristics

### Reference Standards

	Technical Specification e-Distribuzione and indicated references
CEI EN 60447	Human-Machine Interface. Operating principles
CEI EN 60529	Protection class of enclosures. Classification
CEI EN 62271-200	Metal-enclosed factory-built assembly for voltage values ranging from 1 kV to 52 kV
CEI EN 62271-100	Alternating current circuit-breakers with voltage values from 1 kV to 52 kV
CEI EN 62271-102	Disconnectors and earthing switches for voltage values exceeding 1000 V
CEI EN 62271-1	Common specifications for high voltage switchgear and controlgear
CEI EN 62271-103	Switches for rated voltages above 1 kV up to and including 52 kV
CEI EN 62271-105	Alternating current switch-fuse combinations for rated voltages above 1 kV up to and including 52 kV

### Normal installation conditions

Maximum ambient air temperature: + 40 °C

Minimum ambient air temperature: - 15 °C

Relative humidity: < 95% without condensation

Altitude: < 1000

Comply with the indications in the product standards if other installation conditions are involved. Please contact us for special installation requirements.

The areas through which power conductors or auxiliary circuit conductors are routed must be protected against the access of animals, as this could lead to damage or disservice.

### Protection class

The protection classes of the switchgear conform to IEC 60529 standards.

UniSec IMS switchgear is normally supplied with the following protection classes:

- IP 3X for the enclosure
- IP 2X for the segregation between compartments.

### Characteristics of the switch disconnector

#### Main components

UniSec DY803 compartments use the same, previously described, switch disconnector equipment comprising the following functional components:

The enclosure of the GSec switch-disconnector consists of two half-shells, the top part being made of resin and the bottom part in stainless steel.

Smaller sized apparatus can be created thanks to the top part in resin while still guaranteeing a high insulation capacity.

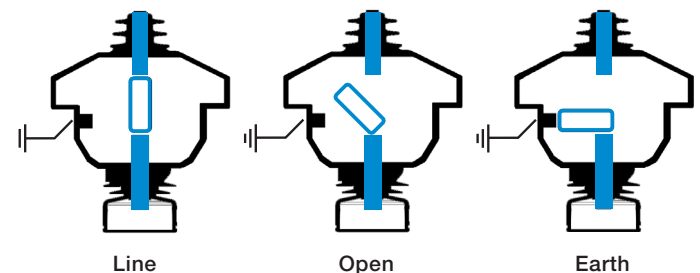
The stainless steel part provides metallic segregation between the cable and busbar compartments, ensuring that the cable compartment is fully earthed and therefore making conditions safer for the personnel. GSec can be used to create panels in the PM (Metallic Partitions) class because it provides metallic segregation between the busbar and cable compartments of the panel.

The power section of the GSec is filled with SF6 at 148 kPa absolute pressure. The gas is used as an interruption and insulation medium. Gas tightness is guaranteed for 30 years, in accordance with the specifications established by standard IEC 62271-1 GSec apparatus is called "sealed for life" for this reason.

The GSec contacts can set to the following positions:

- LINE: The line contacts are closed
- OPEN: the apparatus ensures that there is insulation between the cable side and busbar side
- EARTH: the contacts on the cable side are earthed.

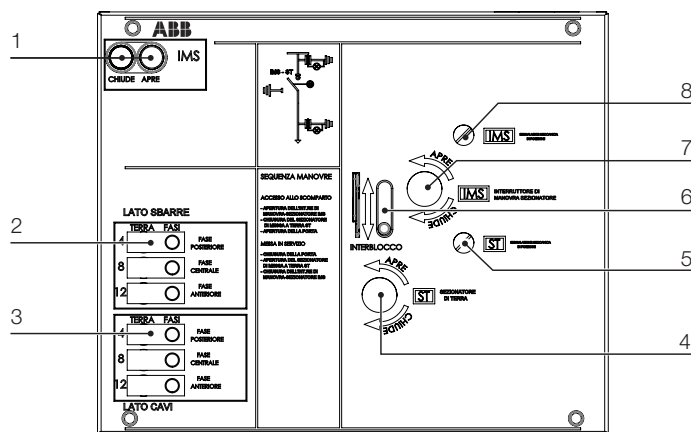
The operating mechanism has separate lever seats for the line and earthing operations.



- 1 Fixed contact of line disconnector SL
- 2 Moving contact of disconnector
- 3 Fixed contact of earthing switch ST

## Voltage signalling device

DY803 panels are equipped with a voltage signalling device conforming to the indications in the e-Distribuzione DY 811 and DY 1811 specifications. They are installed on the front of UniSec DY803 cubicles and signal the presence-absence of voltage in the MV lines of secondary substations. Power is supplied to the voltage signalling devices by capacitive coupling situated inside the lower part of the switch disconnector and the other situated inside the top cover of the switch disconnector. The device is indicated on the mimic plate as “CABLE SIDE” and as “BUSBAR SIDE”.



- 1 Electrical push-buttons of the switch-disconnector
- 2 Voltage indicator lamps - busbar side
- 3 Voltage indicator lamps - cable side
- 4 ST switching lock
- 5 ST position state
- 6 Switch-disconnector interlock
- 7 SL switching lock
- 8 SL position state

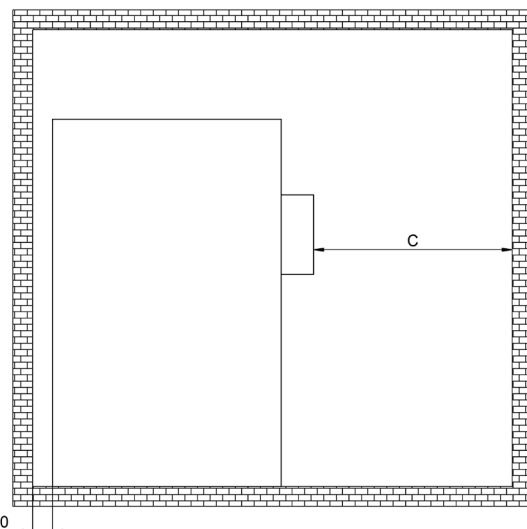
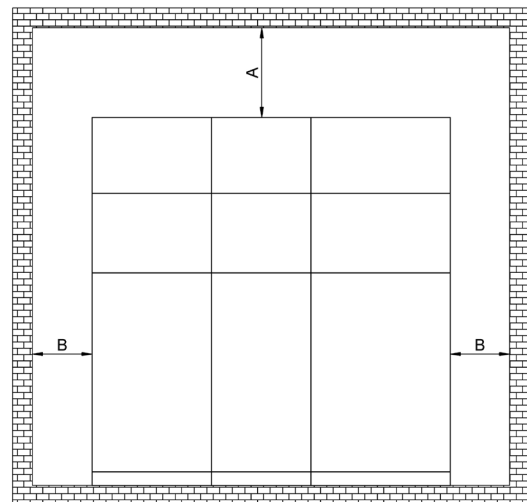
## Interlocks

UniSec switchgear is equipped with all the interlocks and accessories able to ensure top-level safety and reliability for both the installation and operators. This equipment guarantees the very highest level of reliability even when accidental errors occur and allows what ABB calls an “error-free” system of interlocks to be created.

## Information about installation

### Installation site

The installation site must be prepared to suit the dimensions and version of the switchgear. Compliance with the distances indicated will ensure that the equipment functions correctly and safely. Consult ABB if the installation conditions differ from those indicated.



A [mm]	B [mm]	C [mm]
≥ 450	≥ 300	≥ 1200 <sup>(*)</sup>

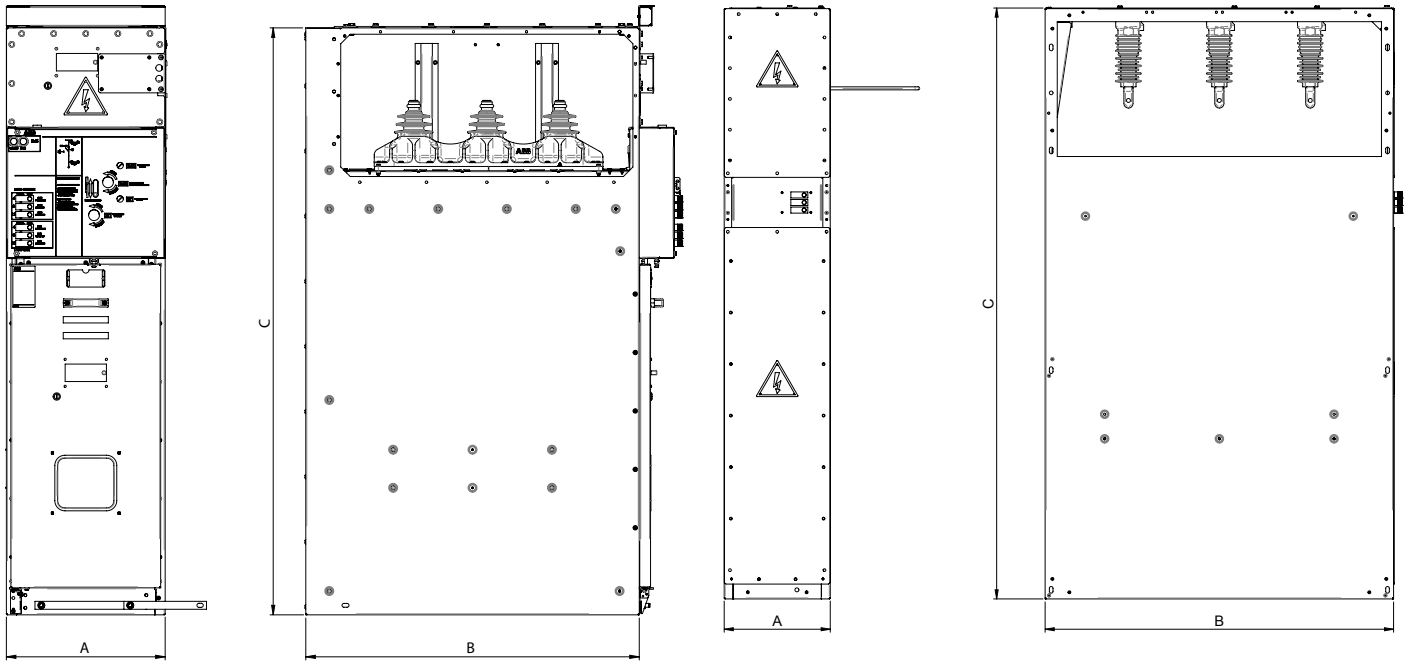
(\*) Dimension C indicates the necessary space to withdraw the cubicle.

# UniSec DY803

## Characteristics

### Dimensions of the units

The drawings merely show indicative dimensions of typical units but do not depict the switchgear front or sections.

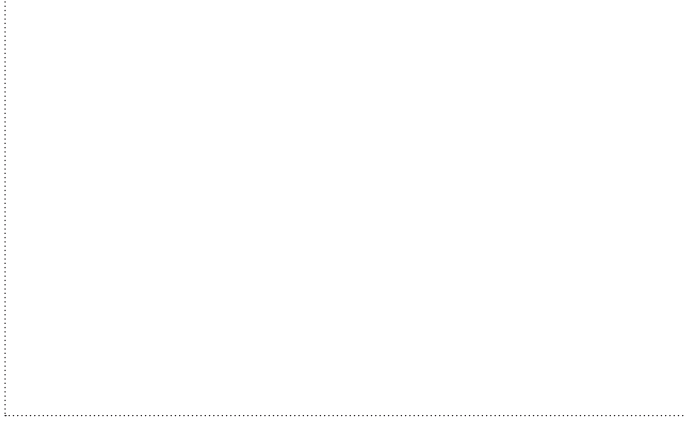


Units	A [mm]	B [mm]	C [mm]	Weight [kg]
DY803/2 – LE	500	1050	1850	225
DY803/3 – T	600	1050	1850	265
DY803/9 – IM	700	1150	1950	250
DY803/10 – TM	700	1150	1950	285

Units	A [mm]	B [mm]	C [mm]	Weight [kg]
DY803/1 – RC	350	1050	1850	130
DY803/5 /6 /7 – TMA	350	1050	1850	220
DY803/8 – RC	350	1150	1950	137
DY803/12 /13 /14 – TM	350	1150	1950	227



# Contacts



Your sales contact: [www.abb.com/contacts](http://www.abb.com/contacts)

More product information: [www.abb.com/productguide](http://www.abb.com/productguide)

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