

QMT-B Metal-clad Medium Voltage Switchgear

The **QMT-B** is a primary power distribution Medium Voltage Switchgear, that is characterized by:

- Extreme modularity and compact structure;
- Withdrawable circuit breaker compartment;
- Mechanical interlocks for safe procedures;
- Having a possible air or SF6 insulation;
- Having internal arc proof;
- Guarantee service continuity and maximum safety;
- An easy inspection and maintenance.

Standards and Certifications

International standard	IEC 62271-200 IEC 60529
Italian Standard	CEI EN 62271-200 CEI EN 60529
Reference technical rules for the connection of active and passive consumers to the HV and MV electrical networks of distribution Company	CEI 0-16

Constructive Features

External Protection degree	IP4X
Opened doors Protection degree	IP2X

Service and Environmental condition

Type of installation	indoor
Maximum environmental temperature	+ 40° C
Minimum environmental temperature	- 5° C
Relative Humidity	95%



Main Electrical Features

Rated voltage	kV	12	17,5	24
Rated insulation voltage	kV	12	17,5	24
Rated power frequency withstand voltage	kV 1 min	28	38	50
Rated short time withstand current	kA 3 sec	50	50	31,5
Peak current	kA	125	125	80
Rated lightning impulse withstand voltage towards the ground and between phases	kV	75	95	125
Frequency	Hz	50/60	50/60	50/60
Internal arc withstand 1 sec	kA	50	50	31,5
Main busbar Rated current	A	3150	3150	3150
Classification related to personnel safety in case of internal arc (Annex "C" CEI EN 62271-200)		IAC AFLR		

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Switchgear composition

The switchgear is designed for Medium Voltage electrical distribution up to 24kV, for isolation, protection and measurement; it is designed for internal arc proof, while, on request it could be insulated on air, vacuum or on SF6.

The metal-clad MV is suitable for feeding devices and motors and for its constructive feature guarantees maximum safety and service continuity thanks to the possibility of extract some compartments and have a total segregation among the functional units.

Particularly the segregation is made between the main switching devices, power busbars and terminal connection cables.

The Metal-clad M.V. switchgear has a structure composed by one or more compartments for specific functions, as determined by the needs and system configuration. This M.V. switchgear withstands internal arc proof and it is designed with conduits vent for smoke, produced by internal arc, as per standard requirements.

This kind of switchgears is suitable for the supervision of an external automating system that could manage single devices with programmable sequences made by the operator.

The Metal-clad M.V. switchgear in the standard version, just for electrical distribution, is composed by:

1 - Main busbar compartments:

It is usually put on the upper side of the unit and it is segregated by the other functional units and contains the copper bars that are arranged along the entire length of the framework.

2 - Disconnecter and circuit breaker compartment:

It contains the vacuum circuit breaker with air, vacuum or SF6 gas isolation; the contacts are accommodated in such a way as to be isolated and segregated metallically to ensure also that the grounding between the cell of the main busbar and cable compartments. It may contain several types of equipment in relation to the functions required by the customer. In the front of the compartment are arranged controls the switch-disconnector, earthing disconnector, the mechanical interlocks, position indicators, and they can be housed auxiliary contacts, release coils and voltage indicators. The compartment is withdrawable thanks to a guided manoeuvre.

3 - Cable compartment:

It contains the terminals for power connection to switch- disconnector contacts in the below side of the equipment. This compartment is protected by a interlocked door, while the switchgear is on service.

4 - Auxiliary circuit compartment:

It is usually located above the switch-disconnector compartment and inside it there are low voltage equipment of normal use, including accessories and breaker auxiliary compartment such as measuring instruments, protection relay, devices command and signaling devices, fuses, low voltage switches.

The switchgear can be equipped with measuring transformers or sensors for current and voltage measurement or other units of control and protection.

Further configurations of the Medium Voltage cubicles may vary the dimensions and housing of the components inside the compartments.

5 - Gas exhaust pipe:

The gas exhaust pipe is located above the switchboard along its entire length

Standard Dimensions

The dimensions may vary in function of:

- Type of units that make up the switchgear;
- Internal arc proof version;
- Version with air or SF6 insulation.