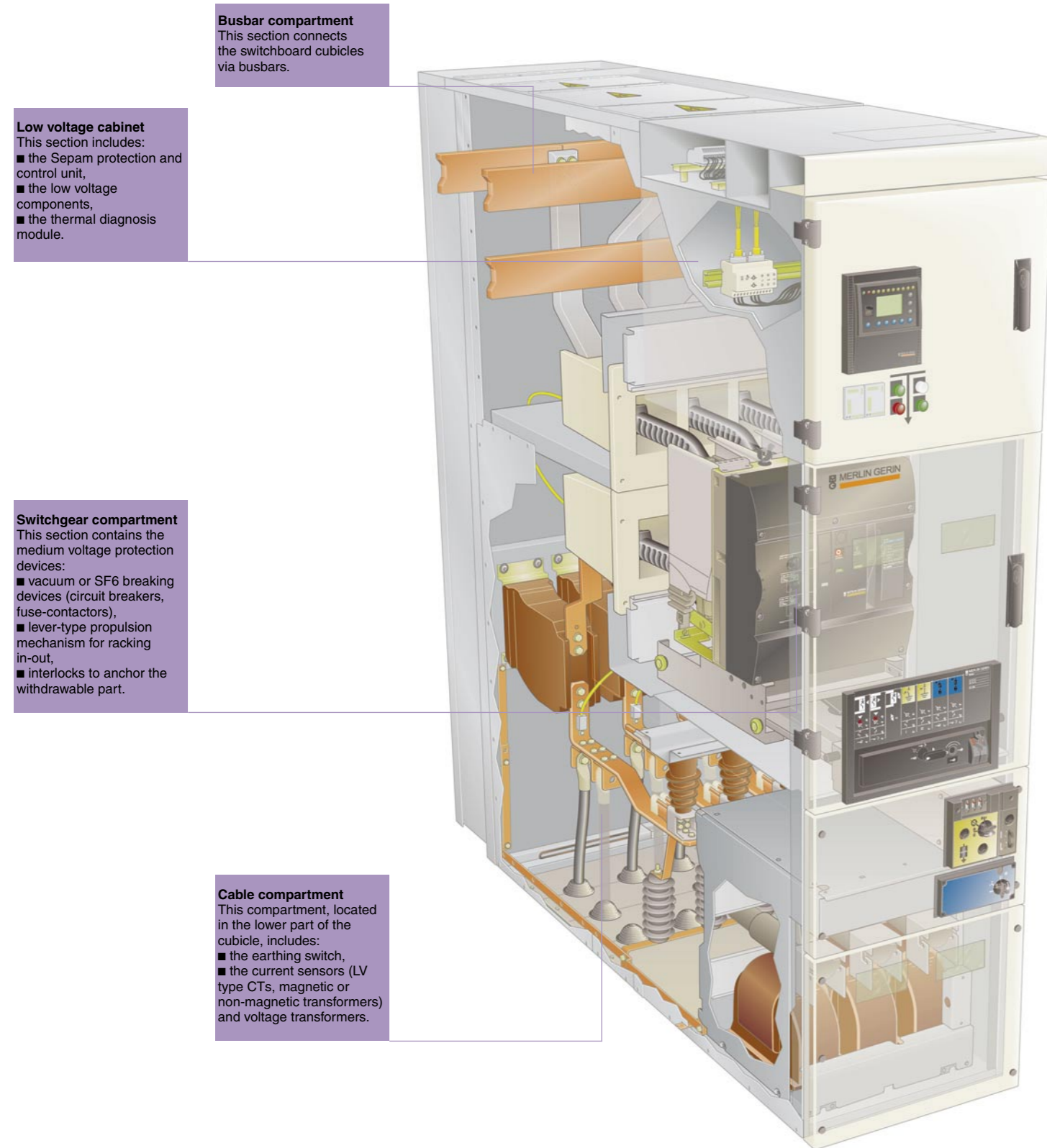


Innovation at every level



Busbar compartment
This section connects the switchboard cubicles via busbars.

Low voltage cabinet
This section includes:
■ the Sepam protection and control unit,
■ the low voltage components,
■ the thermal diagnosis module.

Switchgear compartment
This section contains the medium voltage protection devices:
■ vacuum or SF6 breaking devices (circuit breakers, fuse-contactors),
■ lever-type propulsion mechanism for racking in-out,
■ interlocks to anchor the withdrawable part.

Cable compartment
This compartment, located in the lower part of the cubicle, includes:
■ the earthing switch,
■ the current sensors (LV type CTs, magnetic or non-magnetic transformers) and voltage transformers.

MCset: the range of functional units

The MCset range includes 13 functional units, based on 4 functions.

Incomer/Feeder		
<ul style="list-style-type: none"> ■ line (LI-B, LF-B) ■ transformer (TI-B, TF-B, TF-S) ■ generator (GI-B) 		<ul style="list-style-type: none"> 1 busbar 2 LV compartment 3 withdrawable part 4 current sensors 5 earthing switch 6 voltage transformers 7 MV connections
Feeder (motor, capacitor)		
<ul style="list-style-type: none"> ■ motor (MF-B, MF-C) ■ capacitor (CB-B, CB-C) 		<ul style="list-style-type: none"> 1 busbar 2 LV compartment 3 withdrawable fuse-contactor 4 current sensors 5 earthing switch 6 voltage transformers 7 MV connections
Bus-sectioning		
<ul style="list-style-type: none"> ■ switchboard (BS-B) ■ substation (SS-B) 		<ul style="list-style-type: none"> 1 busbar 2 LV compartment 3 withdrawable part 4 current sensors 5 voltage transformers
Metering and busbar earthing		
<ul style="list-style-type: none"> ■ switchboard (BB-V) 		<ul style="list-style-type: none"> 1 busbar 2 LV compartment 3 earthing switch 4 voltage transformers

Transparent
Ready
Web enabled
Power & Control



Medium voltage switchgear with withdrawable circuit breakers
MCSet

Choosing for tranquility



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The answer to all your needs

MCset: a universal solution

MCset is the result of experience acquired worldwide and provides you with a high level of safety and reliability. It is particularly suitable for the MV section of HV/MV substations and high power MV/MV substations. MCset meets MV substation supply needs for all applications.

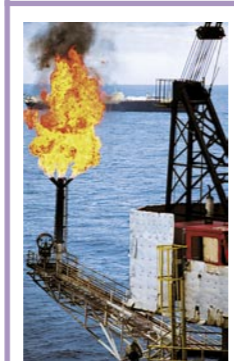
MCset: outstanding references

With its strong reputation, MCset has become over time the switchgear trusted by all those who supply the most delicate installations and need to ensure uninterrupted service:

- **oil industry**
 - Sincor (Total-Pdvsa), Venezuela
 - Pertamina, Indonesia
 - Exxon, Netherlands
- **chemical industry**
 - Pequiven Jose, Venezuela
 - Janssen Pharmaceutica, Belgium
- **gas industry**
 - Technip, Turkey
 - Bhp steele, Australia
- **metallurgy**
 - Alba, Bahrain
 - Sicartsa, Mexico
- **mining**
 - Western mining, Australia
 - Mersin Soda Sanayii, Turkey
- **cement plants**
 - Bursa Cimento, Turkey
 - Cruz azul, Venezuela
- **water treatment**
 - Direction general de construccion y obras hidraulicas, Mexico
 - Sagep, France
- **airports**
 - Brussels Int. Airport company, Belgium
- **hospitals**
 - Cps, Saudi Arabia
- **Internet data centers**
 - Global Switch, Australia
- **marine**
 - Finaval/Marnavi-I, Italy
 - P&O North Sea, United Kingdom
 - Vietxopetro-VT, Vietnam

MCset is an indoor switchgear assembly that provides maximum user safety. It is intended to meet all electrical distribution needs from 1 to 24kV and incorporates a set of innovative solutions designed using proven techniques:

- high-performance breaking devices (SF6 or Vacuum),
- digital protection and control system,
- a range of cubicles designed and tested for internal arc resistance.



Recognized reliability

MCset: ISO 9001 certified quality

Each Schneider Electric site has a functional department whose main mission is to check quality and ensure compliance with the standards. This system gives you the guarantee of consistent quality, whatever the manufacturing site, anywhere in the world. The reliability achieved by the system is recognized by a large number of customers and officially approved organizations.

The strict, measured implementation of the system has been acknowledged by an independent organization: the AFAQ (French Quality Assurance Association). MCset's quality system for design and manufacturing is certified according to the requirements of the ISO 9001: 2000 quality assurance standards.



MCset: through, systematic testing

During manufacturing, each cubicle undergoes systematic routine testing aimed at checking quality and conformity:

- testing of circuit breaker and contactor tightness,
- measurement of closing and opening speeds,
- measurement of operating torque,
- dielectric testing,
- testing of safety systems and interlocks,
- testing of low voltage components,
- conformity of drawing and diagrams.

The results are recorded and initialed by the quality control department on the test certificate for each device.



MCset: main characteristics

rated voltage (kV)	7,2	12	17,5	24	
insulation level	50 Hz/1 mn (kV rms)	20	28	38	50
	1,2/50 μs (kV peak)	60	75	95	125
maximun nominal current and short-time withstand current⁽¹⁾					
functional unit with SF6 circuit breaker					
	lth max (kA/3 s)	40	40	31,5	31,5
	In max (A)	3900	3900	3900	2500
functional unit with SF6 contactor					
	lth max (kA)	50	50		
	In max (A)	250	200		
functional unit with vacuum circuit breaker					
	lth max (kA)	40	40	40	
	In max (A)	2500	2500	2500	
functional unit with vacuum circuit					
	lth max (kA)	50			
	In max (A)	250			

(1) For functional units equipped with circuit breakers or fuse-contactors, the breaking capacity is equal to the short-time withstand current. In all cases, the devices' making capacity is equal to 2.5 times the short-time withstand current.



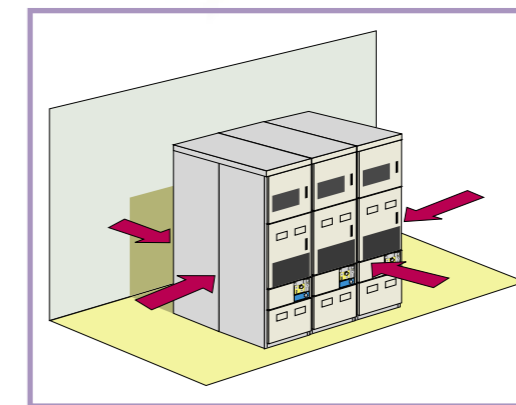
Safety comes first

MCset: high-level protection of people

MCset is designed to protect users through its resistance to faults due to internal arcing.

MCset offers several options for switchboard layouts:

- 3-sided internal arc protection: installation of a switchboard against a wall,
- 4-sided internal arc protection: installation of a switchboard requiring rear access in the middle of a room.



MCset: simple for everyone to use metal-clad enclosed switchgear

Since the MCset range comprises, each section is isolated from the others by earthed, metal partitions. This means that servicing can be carried out in one of the compartments while the others are still energized.

The earthing switch has full making capacity and provides total user protection in the event of closing on a dead short-circuit.

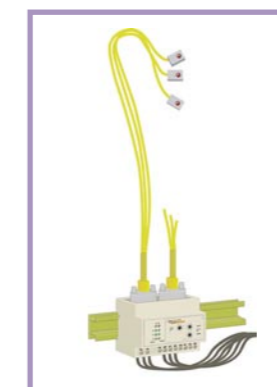


MCset: safety operation

The risks of operating errors are rigorously ruled out with MCset.

In fact, the range offers an unprecedented level of user protection against risks that might otherwise occur during operation. To summarize, the MCset design gives priority to 4 points:

- simple use,
- clear, reliable status information,
- safety interlocking,
- safety systems that prevent all unauthorized operations.



MCset: reduced maintenance

Specially designed for MCset, an innovative thermal diagnosis system continuously monitors the temperature rise, using optical fibres and sensors installed at the heart of the sensitive areas:

- monitoring of temperature rise in busbars, cable connectors, switchgear,
- indication of the fault zone,
- 2 trip thresholds are available.

This system reduces the probability of failure and reduces maintenance time.