

The new SACE Emax 2 All the advantages for Panel builders

Easier, safer, more efficient, more connected than ever.

SACE Emax 2 is the new Air Circuit-Breaker by ABB SACE. The new, cutting edge technology implemented in Emax 2 not only provides a complete new generation of trip units but also the most compact footprint ever seen in the LV distribution world. Inside this optimized envelope, ABB SACE created new solutions for its panel builder customers.

Easier connection to the busbars, easier installation of the breaker, easier connections in the terminal box are just the starting point. Enhanced safety is the second pillar, hinged on the new safe accessory area inside the breaker.

Last but not least, comes the communication. SACE Emax 2, for the first time in the LV market, offers the ultimate ensemble of communication options embedded inside the breaker; from twisted pair to Ethernet protocols, all the solutions are available.

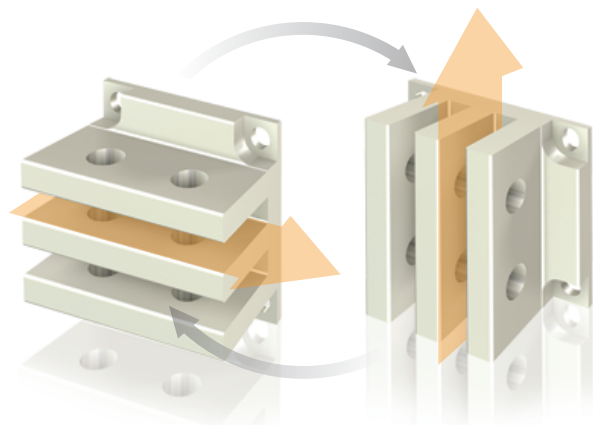
SACE Emax 2: busbar friendly

New terminals. SACE Emax 2 terminals can be changed from horizontal to vertical on-site by rotating 90°. In addition to the flexibility this feature creates for the design and installation of switchboards, the terminals have been designed specifically to fit the most common bus sizes per amperage, creating fast, easy connection of one to four bus runs.

Each terminal has been created to the standard width of busbar for that amperage and is equipped with one, two or three terminal stabs for easy connection.



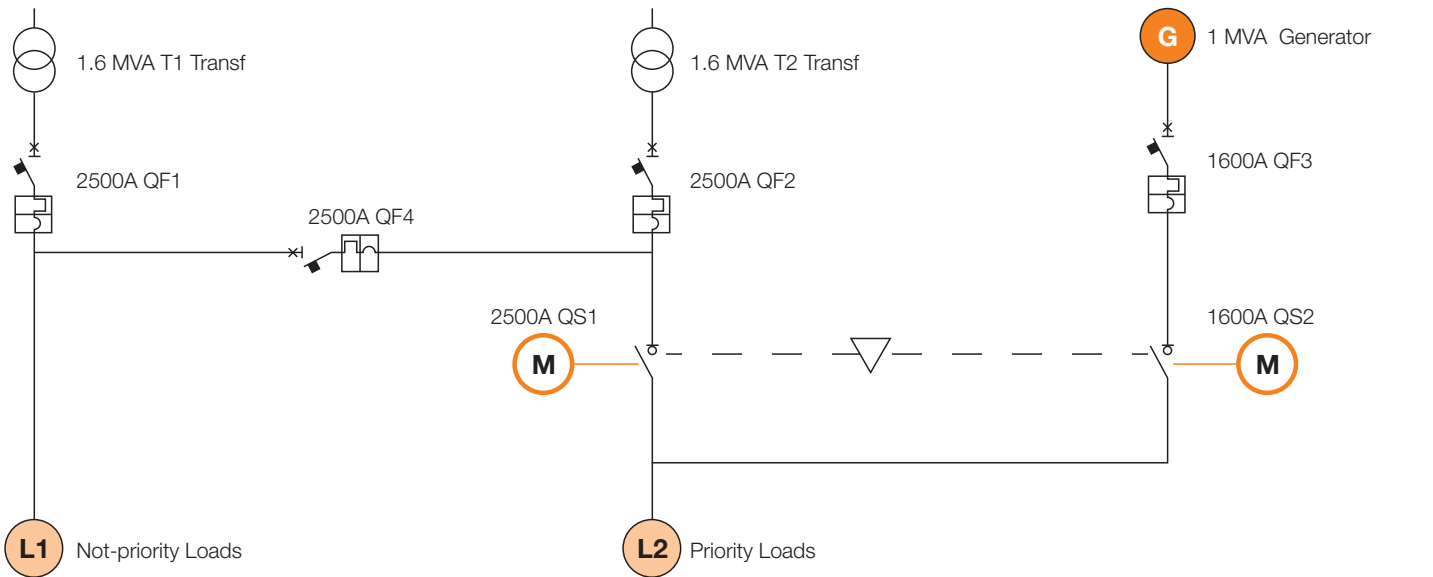
As a consequence, it is no more a necessity to stock lots of busbars types. Moreover, no more bending or additional work is now required to connect multiple bus bars layers to the main terminals.



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Sketch of the power distribution section of a Mall: two transformers in parallel, bus tie, GenSet.



Breaker	In	Emax	Emax 2	Column nr	Column Width: with Emax	Column Width: with Emax 2	Bus compartments
QF1	2500	E3 3P	E2.2 3P	1	600 mm	400 mm	300 mm
QF2	2500	E3 3P	E2.2 3P				
QF3	1600	E1 3P	E1.2 3P				
QF4	2500	E3 3P	E2.2 3P	2	800 mm	600 mm	300 mm
QS1	2500	E3 MS 3P	E2.2 MS 3P				
QS2	1600	E1 MS 3P	E1.2 MS 3P				

SACE Emax 2: more efficient

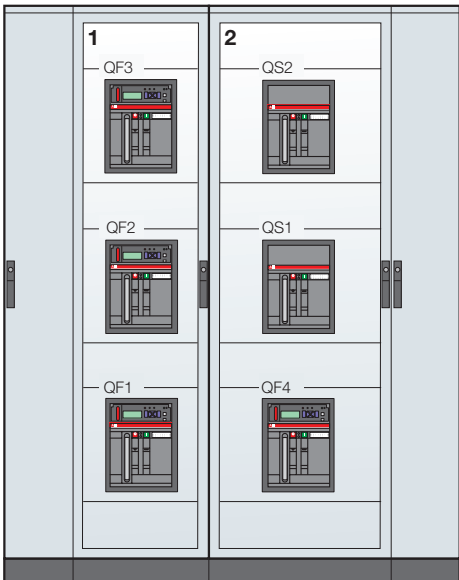
- Smaller footprint
- Less copper
- Less steel

Savings on copper are due to both reduction of footprint and reduction of power losses.

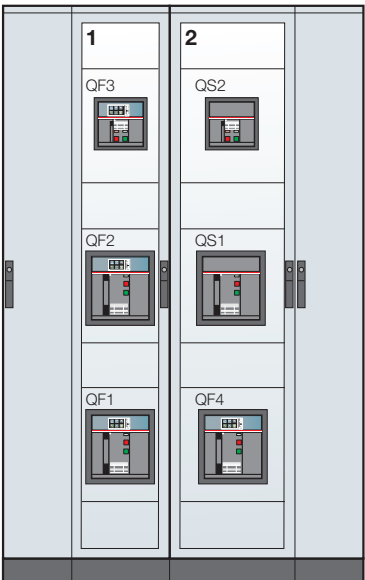
Saving on copper:

Busbar lenght -20%;
Busbar section -8%.

W= 2000 mm with Emax

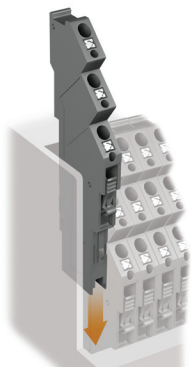


W= 1600 mm with Emax 2



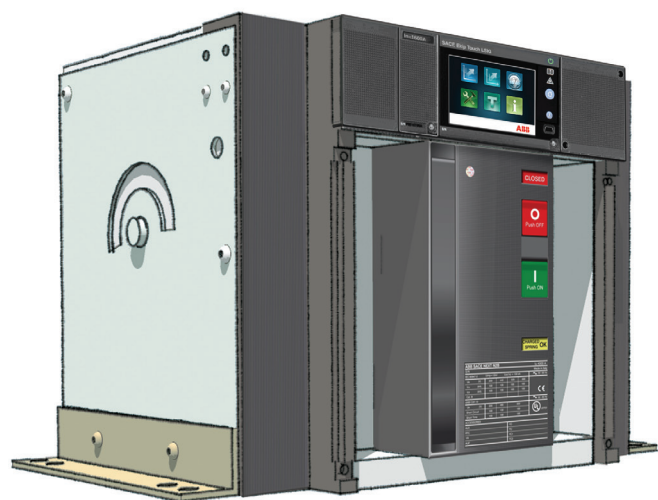
SACE Emax 2: more connected

- Every Emax 2 circuit breaker can be equipped with multiple cartridge-type communication modules that can be easily installed directly on the terminal box at any time. The communication units allow the circuit breakers to be integrated into all automation and energy management systems through the use of Modbus, Profibus and Device-net protocols as well as the modern Modbus TCP, Profinet and Ethernet IP protocols. Emax 2's communication abilities eliminate the need for costly and difficult conversion components.
- With the new terminal box with spring clamps, cabling has never been so easy: no tools are required for the connection.



SACE Emax 2: safer

- Safe accessory installation. Removal of the main Emax 2 cover allows access to the accessory area only, not to the area containing the operating mechanism. This feature provides additional safety, both to maintenance personnel and to the possibility of damaging the breaker itself. The operating

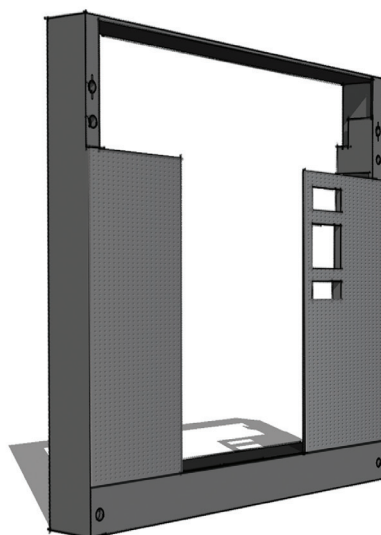


mechanism can still be accessed for maintenance by removing an internal series of protective covers.

- Locking shutters. Shutters on the fixed part of withdrawable circuit breakers can be locked from the front, without access through the inside of the fixed part, so the moving breaker does not need to be taken out in order for locking to occur. In addition the upper and lower shutters are independent of each other for simplified, safe maintenance activities

SACE Emax 2: easier

- Ease of installation. Dedicated guide rails simplify movement and allow correct and locked positioning from “racked-out” to “test” to “racked-in”. In addition, the guide rails extend outside the fixed part so that the mobile part can be easily installed by setting it into the rails using a crane or lift. This allows easy and safe installation
- Easy to upgrade. The characteristics of Emax 2 permit an easy substitution of the Emax in the switchboards already certified according to IEC61439-2 without retesting them. The requirements for what concern device substitutions (paragraph 10.10.3.5 and table 13 of the IEC61439-1) are fulfilled.
- Neutral pole flexibility. The neutral position for Emax 2 circuit breakers can be modified directly from the trip unit to change from N, L1, L2, L3 to L1, L2, L3, N.
- Ease to segregate. Special spacing along the fixed part allows the insertion of insulating separators, simplifying the implementation of the different segregation forms.



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