



Case studies

New Ferryboat Emax 2 for the highest efficiency in panelbuilding

The customer

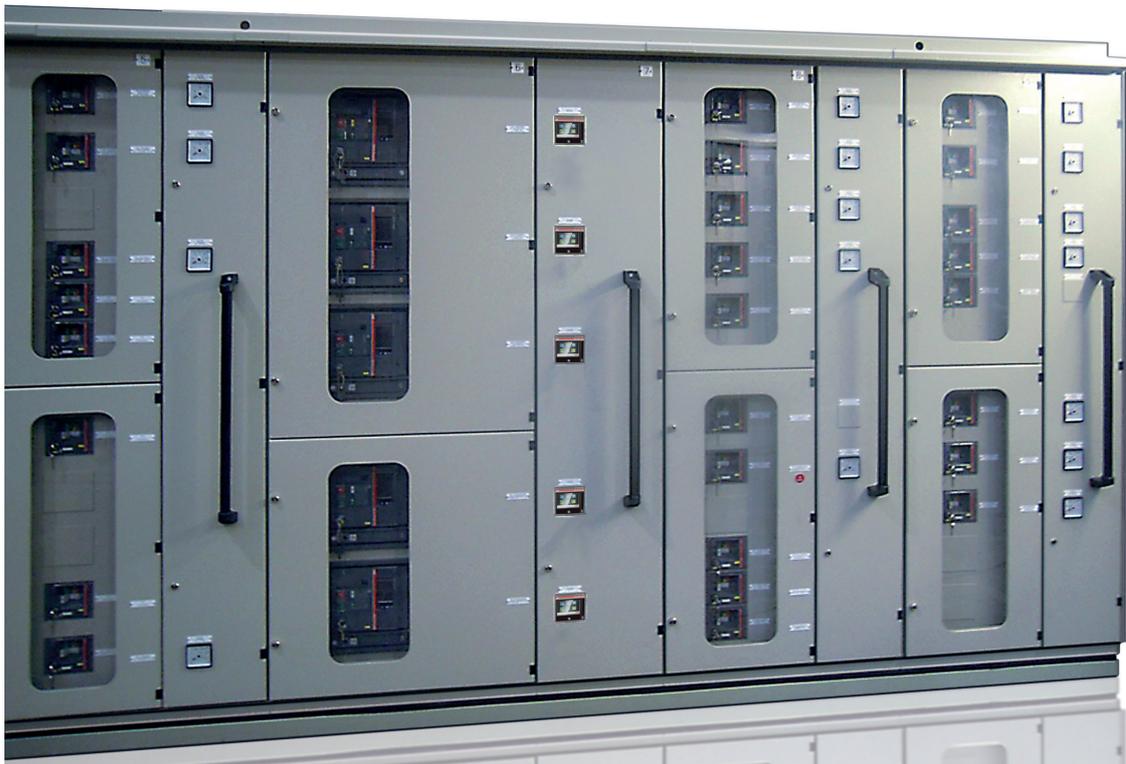
I.M.E.S.A. (based in Jesi, near Ancona - Italy) is a company that has been operating since 1972 in the field of electromechanical constructions. IMESA is one of the leaders in Europe in the production of Low Voltage and Medium Voltage switchboards, SF6- insulated switch-disconnectors for internal and external installations for MV, supervision and control systems as well as turnkey electrical systems.

The challenge

In the context of a diesel-electric state-of-the-art ferryboat, I.M.E.S.A. faced the challenge of creating a switchgear column – feeding main distribution and motors- able to:

- Be full selective with downstream circuit-breakers (Tmax T4)
- Grant a service short-circuit breaking capacity of 50 kA @ 600V AC
- Have a horizontal bussing distribution system
- Realize the most compact solution compatible with the use of withdrawable circuit-breakers.

These requirements originate by the need for extremely compact switchgear, typical requirement that can arise from a marine environment.



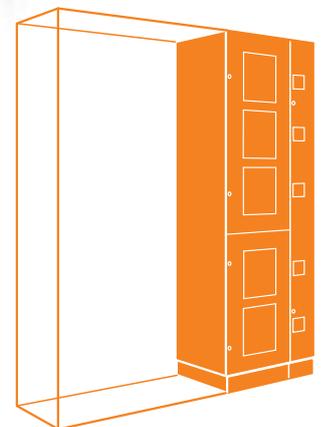
Saving compared with a traditional solution

- 45% in space

Thanks to the unique features of Emax E1.2 a reduction of 45% of the footprint of the column was reached.



In a footprint equivalent to the one saved, it would be possible to fit one distribution switchboard large enough to accommodate the whole electrical distribution for a 6-story condominium (3 kW per apartment)



The ABB solution

These requirements are really challenging. The first and second requirements clearly call for a category B circuit-breaker, while the third and the fourth are apter for a moulded-case circuit-breaker (able to be mounted in horizontal position, compact in dimension).

No product other than ABB Emax E1.2 in the world of the Low Voltage Breakers could entirely fulfil the above requirements. ABB Emax 1.2, the most compact size of the Emax 2 range of ACBs, is an innovative product, able to break up to 66 kA @ 440V AC (or 50 kA @ 690V AC) and to withstand 50 kA for one second.

Thanks to these unique features, IMESA was able to realize a high-efficiency switchboard, with five Emax E1.2 fitted in one column. The E1.2 chosen for this project are equipped with the new Ekip Touch trip units (LSI version).

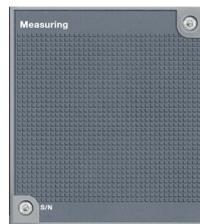


- Emax E1.2: the only ACB that can be mounted in horizontal position
- Emax E1.2: so compact that you can have 5 ACBs in the same column
- Emax E1.2: the solution for optimizing any kind of switchboard



5 x Emax 1.2 with Ekip Touch LSI & Ekip Measuring

Ekip Touch trip unit (in this project present with its LSI version) is the new touch-screen protection trip unit embedded in Emax 2 Low Voltage CB. Fine tuning of the protection thresholds and easiness of use are the key point of this unit, that is setting a new standard for protecting low voltage loads.



Ekip Measuring

Ekip Measuring is an optional add-on module that gives voltage and voltage-related (power, energy, power factor, frequency) measurement capabilities at Ekip Touch trip units. With an accuracy of 0.5 % on voltages and 2% on power and energy, Ekip Measuring is a performant instrument that does not need any external CT or VT to be used.



Ekip Multimeter

Ekip Multimeter is a display unit to be installed on the front of the switchgear for SACE Emax 2 circuit-breakers equipped with Ekip electronic trip units. The device (96mmx96mm sized) is equipped with a large touch screen display and enables measurements to be displayed with the same levels of precision. If connected to trip units with a display, Ekip Multimeter enables the adjustment of parameters and protection thresholds.

Contact us

ABB SACE

A division of ABB S.p.A.

L.V. Breakers

Via Baioni, 35

24123 Bergamo - Italy

Tel.: +39 035 395 111

Fax: +39 035 395306-433

www.abb.com