

#### Case studies

## Data Center and SACE Emax 2 Smaller and more efficient

Power and productivity  
for a better world™



## The customer

ILS Electro Mechanical Supplies Ltd was founded in 1989. The company's core business is the production of IEC 61439-compliant low voltage panels, approved by the Israeli Standards Institute for manufacturing of unlimited current low voltage electrical switchgear assemblies.

## The challenge

The volume of power installed in Data Center requires significant efforts to maximize the efficiency: Data Center designers are constantly searching for solutions to optimize the total cost of ownership (TCO) and power usage effectiveness (PUE) of facilities. A Data Center's electrical infrastructure must be correctly sized, not only to support the critical load of the computing equipment and auxiliary systems (e.g. cooling, lighting, power conditioning, etc.), but also to leave the maximum usable footprint for the computing equipment.

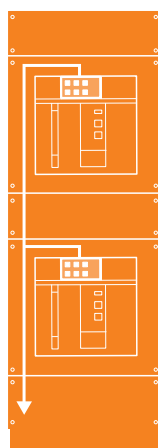
While developing a new Data Center for a financial services organization, ILS Electro Mechanical Supplies faced the challenge of providing low voltage main distribution systems able to:

- reduce the area dedicated to electrical infrastructure to increase the footprint of IT equipment
- guarantee the highest reliability and safety, by integrating measurements and events logs into a DCIM (Data Center Infrastructure Management) system through Modbus RS-485
- improve the total accuracy of energy measurement with a class 1 metering device for currents, 0.5 for voltages, 2 for power and energies.

### What does 15 sqm mean for a Data Center?

**1584 extra terabytes (TB):  
the data stored in  
100,000 smartphones.**

15 sqm allows for six additional rack enclosures, with a total data storage capacity of 1584 TB.



SACE Emax 2's design and performance in a switchboard allows for significantly reduced footprint for switchgears. In addition, the integrated Ekip Touch trip unit and on board Ekip Com Modbus module ensure the accuracy of measurements and connectivity with the communications network.

## The ABB solution

SACE Emax 2 series air circuit-breakers offer tailored performance to meet the demands of today's demanding data center installations. Four sizes are available to create switchgear with compact dimensions and high performance, with main busbars of optimized length and cross-sections.

The installation of 50 SACE Emax 2 E1.2 up to 1600A; 60 E2.2 up to 2500A; and 20 E4.2 up to 4000A resulted in 20% saving in footprint for electrical infrastructures switchboard, providing an additional 15 sqm available for IT equipment.

The SACE Emax 2 breakers were equipped with the new trip unit Ekip Touch; no other embedded trip unit on the market can provide 1% accuracy in current (class 1 in accordance with IEC 61557-12).

All the measurements and the trip units' historical logs (events, measurements, trips) are continuously available in the Data Center Infrastructure Management system via Modbus RTU, through the integrated Ekip Com Modbus RS485 module.

## This solution requires the following components/accessories

SACE Emax E1.2, E2.2, E4.2 3 poles withdrawable



Emax 2 range is made up of 4 sizes: E1.2, E2.2, E4.2 and E6.2 up to 6300A, which enable switchgear of compact dimensions and high ratings to be built with busbars of reduced length and cross-section.

E2.2 2500A is the most compact air circuit breaker in this range of current (it can be installed in 600mm width column), but also E4.2 4000A and E1.2 1600A can boast smaller installation requirements (800mm and 600mm column width respectively).

Ekip Touch and Ekip Measuring



Ekip Touch trip unit is the new touch-screen protection trip unit embedded within the Emax 2 breakers. Currents are measured with great accuracy (1%). Ekip Touch is equipped with the optional add-on module Ekip Measuring, which gives voltage and voltage-related (power, energy, power factor, frequency) measurements with an accuracy of 0.5 % on voltages and 2% on power and energy.

Ekip Modbus RS485



The Ekip Com modules enable all SACE Emax 2 circuit-breakers to be integrated into an industrial communication network for remote supervision and control of circuit-breakers without the need for external interface devices. They are mounted within the terminal box, which means that communication can be maintained with withdrawable circuit-breakers, even while in the racked-out position.

# Contact us

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