

PRODUCT NOTE

SACE Emax 3

Enhanced Cybersecurity and IEC 62443 Certification



01
SACE Emax 3 dedicated
secure protection unit
and CAN modules

With the increasing digitalization and connectivity of electrical infrastructures, protecting critical power distribution systems from cyber threats has become a key priority.

As electrical systems become more interconnected, they also become more exposed to potential cyberattacks. Critical infrastructures, such as electrical distribution networks, are particularly vulnerable because cyber incidents can lead to service interruptions, economic losses, and potential risks to public safety. For this reason, it is essential to adopt robust cybersecurity measures that ensure the integrity, availability, and resilience of electrical infrastructures, safeguarding both operational continuity and system reliability.



SECURE

SACE Emax 3 with Ekip Aware trip unit is the first air circuit breaker that gained IEC 62443-4-2 SL-C 2 certification by TÜV Rheinland. By integrating hardware-based authentication, role-based access control, and complete audit trails, Emax 3 safeguards against cyber threats while ensuring compliance with international standards. This embedded security approach enhances the overall resilience and safety of electrical distribution systems.

IEC 62443-4-2 SL-C 2 Certification

Emax 3 air circuit breakers have been meticulously designed to offer robust cybersecurity features, ensuring the safety and integrity of electrical distribution systems.

Emax 3 with Ekip Aware provides two distinct offerings: a standard configuration and an advanced IEC 62443-4-2 SL-C 2 certificated version, that incorporates enhanced security measures for organizations with stringent cybersecurity requirements.

Both configurations of the Emax 3 air circuit breakers are designed to provide a high level of cybersecurity, catering to different organizational needs. The following table summarizes the features available in the standard offer and the IEC 62443-4-2 SL-C 2 offer, highlighting the key cybersecurity capabilities of each configuration.

Feature	Description	Emax 3 standard	Emax 3 IEC 62443
PIN	Pin to access and modify settings from HMI, Laptop and mobile	●	●
Secure Firmware Update	Digitally signed FW. Anti roll-back.	●	●
Secure Storage	Anti tampering of device parameters	●	●
Modbus TCP Security Protocol	Dedicated communication protocol (digital upgrade). This protocol follows the Modbus Security Protocol Specification.	●	●
Secure Communications - BLE	Pairing (HMI PIN-protected). A change of HMI PIN will force the removal of all bonded devices. BLE Encryption.	●	●
Remote/Local setting optimized	Each communication module can be in local/remote mode independently from the other	●	●
Dedicated module portfolio	Ensure that circuit breaker communicate only with original modules thanks to security artifacts. Anti spoofing and tampering features.		●
Secure USB	Ensure that circuit breaker communicate only with original ABB tools thanks to security artifacts		●
Secure BLE	Ensure that circuit breaker communicate only with original ABB tools thanks to security artifacts		●
Role based access	ABB account management will allow role-based access (Owner, Admin, Engineer, Operator, Viewer)		●

Benefits



RISK MITIGATION

IEC 62443-4-2 SL-C 2 certification: meets international cybersecurity requirements for critical infrastructures. Reduces the risk of service interruptions and economic damages caused by cyberattacks, ensuring operational continuity of critical infrastructures.



COMPLETE TRACEABILITY

Role-based access control: minimizes human error and insider threats, improving operational efficiency. Every access and violation is recorded, facilitating audits, forensic analysis, and compliance demonstrations.



DATA INTEGRITY & AVAILABILITY

Hardware-based authentication: Secure communication between circuit breaker and original modules prevents unauthorized access and tampering.

