



Substation of the future

Efficient and reliable automation of electrical substations is becoming more dynamic and demanding with the growing amount of DER and more stringent regulations.

Technology innovation allows integrating advanced distribution and transmission control functions with legacy applications, through the use of edge computing, and provides enhanced flexibility and reliability in substation automation. Utilities can therefore collect data and perform faster, more flexible and more reliable automation applications for better grid performance.

Advanced Substation Automation

Edge+ is the new generation solution for substation management and control that offers modern edge computing features and performs reliable and fast computational functions directly at the substation. It features connectors to OT field devices to collect and process data and to send control commands. **Edge+** provides a solid and highly secured environment, to host customer-developed applications or any other third-party application, to perform Protection and Control, manage grid constraints and treat DER-related contingencies.

The applications deployed on **Edge+** are remotely manageable (Over-The-Air) for diagnostics, configuration and software updates. Field visits become less frequent with significant saving in cost and time.

Edge+ is specifically designed to reliably perform substation automation functions and to support the digital transformation of utilities.

The **Edge+** family of solutions offers multiple expansion modules to quickly adapt specific business requirements:

- **IO Expander** with digital and analog interfaces for multiple field signals
- Real-time high-speed data acquisition to monitor **Power Quality**
- Additional **cybersecurity** edge module for threat and break-in detection and to spot anomalies

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Features Highlight

Edge+ provides:

- BYO for Applications to be distributed through a specific AppStore
- An open platform (SDK) to develop applications or to host third-party applications
- IT/OT convergence to support quick integration with backend systems through standard protocols such as MQTT, AMQP, HTTPs, etc.
- Secure Communication: through industry-leading encryption protocols to safeguard all communication channels, and temper-proof the access to data
- Remote management: troubleshooting, configuration and updates are provided Over-the-air
- OT integration: a suite of standard field protocols such as MODBUS, OPC, IEC 60870-5-101/104, DNP3, etc.
- Application consolidation: one platform for several applications with the simplicity of a single sw framework and unified administration
- Real-time Data Processing: high performance data calculation with minimal latency and for large data sets, leveraging AI + ML directly at the substation

Technical specifications

Environmental

Operating temperature -4 to +158 °F (-20 to +70 °C)
Storage temperature -40 to +185 °F (-40 to +85 °C)

Power

Power input 24 Vdc
Power consumption 4 W

Certifications

Regulatory CE, FCC
Safety UL94
Environmental ROHS3, REACH

Mechanical

Enclosure ABS plastic
Dimensions 5.9" x 14.6" x 2.76" (LxWxH)
Mounting DIN brackets
Ingress protection IP20

IO interfaces

Ethernet 2x 10/100/1000 - RJ45
USB 1x USB type A (host)
Serial 1x RS485 (Half Duplex), 1x RS485/RS
Digital 2x Digital Input, 2x Digital Output
Expansion connector 2x SPI, 2x I2C, 4x GPIO

Other

RTC Yes
TPM TPM2.0 (factory option)
RAM 4GB
Storage 64GB eMMC
Cellular LTE (option)

Use cases in substations



Power management and monitoring:

- MV Protection, Power Quality
- HV Power Quality
- Phasor Measurement Unit (PMU)
- Recloser controller
- Partial Discharge Measurement
- Substation-to-Substation automation



Facility supervision and environmental conditions monitoring:

- Sensors for Temperature, Humidity, Flooding, Break-In, etc.
- Ozone, SF6 gas quality analysis
- Triggers for air extractor based on temperature/humidity
- Triggers for water extractor pump
- Analysis of structural health and monitoring
- Fire and smoke detection



Predictive maintenance for:

- Legacy equipment
- Electromechanical devices
- Digital Devices

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