Smart substation control and protection SSC600 / SSC600 SW

Centralized protection for distribution substations

With SSC600 all protection and control functionality is centralized in one single product on the substation level. IEC 61850-compliant and ready to change with the evolving grid, SSC600 supports optimal asset management for the digital substation's entire lifetime.

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01 Smart substation control and protection SSC600

Extensive application coverage for optimal cost-effectiveness

Smart Substation Control and Protection SSC600 introduces an innovative way of thinking of protection and control in distribution networks, yet building on ABB's proven technological foundation manifested in the Relion® protection and control relays. The ability to protect and control a wide variety of utility and industrial applications with a single device on substation level allows convenient station-wide visibility, minimal engineering, easy and cost-efficient process management, as well as brings optimal, lifelong asset management.

Bay-level merging units provide the measurements and physical interface between the primary equipment in the switchgear and SSC600. Together, SSC600 and the merging units create ABB's centralized protection and control solution, which is IEC 61850-compliant for maximum benefit of substation-level Ethernet communication and extensive interoperability of substation automation devices.

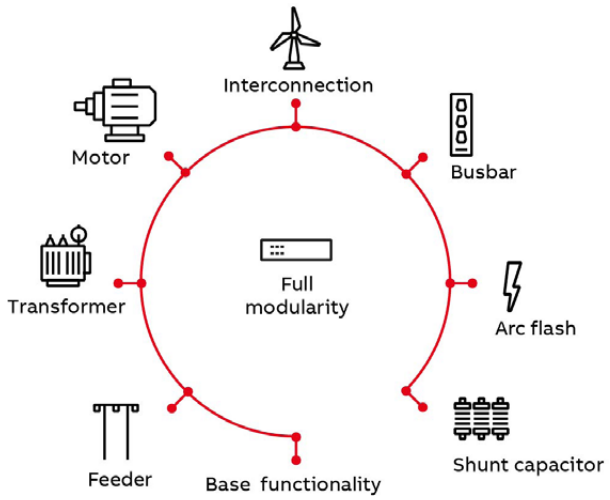
SSC600 is equally suitable for retrofitting substations as for new installations. Adding SSC600 to an existing installation is an excellent way to provide the entire substation with the latest technological developments within protection and control. After integrating SSC600, the existing protection relays can serve as backup protection.

New installations will only need bay-level merging units in addition to SSC600. Adding another SSC600 device will create a centralized protection and control solution with full redundancy.

Application package concept for maximum convenience and flexibility

SSC600 comes with a variety of convenient, ready-made application packages to choose from. The application packages include various protection and control functions, which can be flexibly combined to meet application-specific requirements. The available packages support the following applications:

- Feeder protection
  - Line differential protection
  - Line distance protection
  - Extensive earth-fault protection
  - Fault locator
- Interconnection protection
- Power transformer protection
  - Two-winding differential protection
  - On-load tap-changer control
- Motor protection
- Busbar protection
  - Protection against arc flash
  - Low impedance-based busbar differential protection
- Shunt capacitor protection



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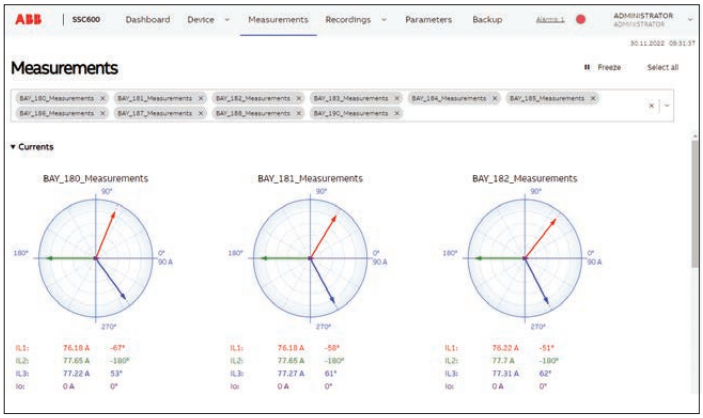

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01 Application packages
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02 Substation-wide visibility

Fully modular software for maximum flexibility during the entire lifetime of the substation
The modularity of the software allows you to create your own, unique solution for your specific protection requirements. One and the same hardware together with the ready-made application packages make ordering your SSC600 smooth and easy. Or, you can order only the software, SSC600 SW, and install it on the hardware of your choice.

When requirements change, for example, when overhead lines are replaced with cables, the SSC600 can adapt. The software can be flexibly modified anytime to adapt to changing protection requirements. SSC600 also offers continuous access to new software developments – throughout the substation's entire life cycle.

What sets the centralized approach apart from the conventional one is the advantage of only having to modify one product instead of all bay-level protection and control devices. Upgrading the entire substation system is easy with ABB's cloud-based fleet management system, ADAM.

Station-wide visibility with ABB's centralized protection and control solution
Centralizing all protection and control functionality in one device in the substation makes power distribution process management convenient and efficient. The ability to view and monitor processes on substation level allows easy access to valuable information.

The ability to monitor and control the great variety of substation devices via a centralized human-machine interface (HMI) offers increased situational awareness and allows access to valuable power distribution process information.

SSC600 – innovative, flexible and easy to use
- Centralized protection and control in one single device for reduced network complexity
- Easy and efficient process management with station-wide process visibility
- IEC 61850-compliant communication and interoperability between substation automation devices and also between substations
- Extensive application coverage with one device for flexibility and optimal cost-effectiveness
- Ready-made application packages for convenient and smooth ordering
- Fully modular software for maximum flexibility and easy adaption to changing network protection requirements
- Continuous access to the latest software developments with software maintenance agreement
- Cost-effective communication with integrated IEC 60870-5-104 and DNP3 protocols
- Fast, easy and cost-effective substation system upgrade with centralized protection and control solution
- Same IEC 61850-compliant setting and configuration tool – PCM600 – as for the Relion protection relays

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ABB Oy
Distribution Solutions
P.O. Box 699
65101 Vaasa, Finland

go.abb/digitalsubstations

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