

Station Automation Series COM600

Protection and control from ABB



ABB

Future-proof Concept: Extensive Substation System Integration and Interoperability

The Station Automation Series COM600 is a dedicated system for providing interoperability between industrial or utility substation IEDs (Intelligent Electronic Devices) and local or higher-level systems, such as local operator interfaces or higher-level Network Control Centres (NCC) or Distributed Control Systems (DCS). The series features gateway functionality supporting a variety of commonly used substation device communication protocols. The COM600 series comprises three products, the Control and Monitoring Unit COM605, the Communication Gateway COM610 and the Station Computer COM615.

System range

The Control and Monitoring Unit

COM605 offers web server functionality, providing a human machine interface (HMI) for local substation monitoring and control.

COM605 is mainly used in applications requiring basic-level local and/or remote access using web technology. Secure communication enables the access of the substation HMI over the internet or LAN/WAN for any authorized user with a standard PC and a web browser. By connecting a laptop computer to the unit locally, an HMI for full monitoring and control functionality is obtained on the substation level.

The Communication Gateway COM610

maps signals and data between the protection and control IEDs in industrial or utility substations and higher-level systems. The gateway interfaces with any master system using de facto master protocols.

The **Substation Computer COM615** offers the combined features and functionality of the Control and Monitoring Unit COM605 and the Communication Gateway COM610. The Station Computer provides gateway functions for mapping data and signals between substation level equipment and higher-level systems.

Further, the Station Computer COM615 offers HMI functionality to satisfy local and remote monitoring and control needs. The entire COM600 series is designed for smooth system integration and interoperability based on pre-configured solutions utilizing connectivity packages for ABB IEDs.

The Station Automation Series COM600 with three products enhancing your system

- 1 **Control and Monitoring Unit COM605** for local/remote control and monitoring of substation IEDs.
- 2 **Communication Gateway COM610** for interoperability between the bay level and the NCC level.
- 3 **Station Computer COM615** for full station automation functionality.



COM615

COM610

■ Station Communication
■ NCC Communication
■ External OPC client access
■ Remote parameter setting & DR upload

COM605

■ Station Communication
■ Control and Monitoring
■ Parameter settings & DR upload
■ Local HMI

LAN/WAN/Internet/Intranet

Station Automation
COM600 concept

Industrial Embedded Computer

Advantages

Open access to real-time information

The COM600 products incorporate OPC Server functionality, which provides one entry point to all the information of a substation, and the IEC 61850 support enables connectivity and seamless communication with application-specific equipment.

Full IEC 61850 compliance

The COM600 series products are fully compliant with the IEC 61850 standard for distribution automation. Thus they provide full interoperability with any IEC 61850 compliant IEDs, tools and systems, which simplifies system design and commissioning.

Fast commissioning of ABB IEDs

The commissioning of ABB IEDs is straight forward due to the support of ABB's unique connectivity package concept, which simplifies system configuration and reduces the risk of errors in the system integration, minimizing device configuration and set-up times.

Features

Comprehensive supervision

The COM600 series products can easily be monitored either using the dedicated Communication Engineering Tool (CET) or a web browser. The CET tool enables the process data flow to be viewed through COM600, thus reducing the need for additional protocol analyzers.

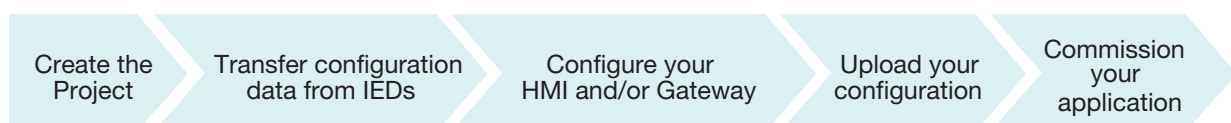
Embedded technology

With their compact and robust design, the COM600 series products are well adapted for harsh environments. They meet the IP4x degree of protection by enclosure and contain no moving parts subject to wear and tear. The COM600 series products are based on embedded technology for durability and maximum availability.

Efficient protocol mapping

The Communication Engineering Tool (CET) is an efficient instrument for creating protocol mappings. Based on the IEC 61850-7 model, cross-referencing between protocols is unified and simplified. The drag-and-drop signal mapping enables complete structures to be mapped from the source data.

Configuration workflow of a COM600 device.



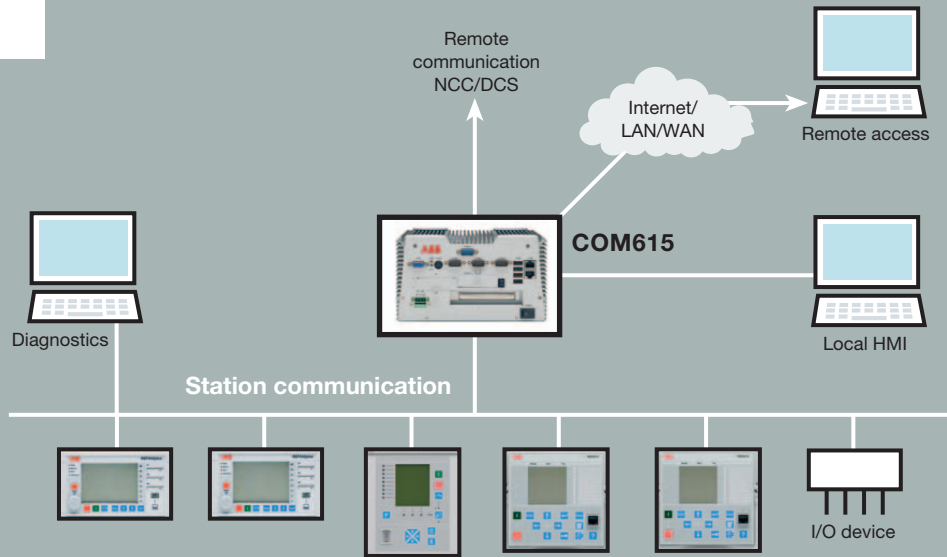
Secure Web Technology for Safe Communication

User management & information security

Information security is an issue of growing importance today. With its built-in security features for confidentiality, integrity, authentication, authorization, and auditing, the COM600 series addresses this issue. All COM600 products feature an integrated firewall on the dedicated WAN port to stop external unauthorized connection attempts. User accounts and access rights can be defined for both the COM600 software and the HMI, and are protected with individual passwords. Every user login/logout event is recorded. Connections from the web are to ensure confidentiality, integrity, and the authenticity of your remote monitoring and control data when data are transmitted over public networks. The operating system and applications are hardened and tested to withstand threats like worms or viruses from a public network. With their security features, COM600 products can defend themselves. For usage scenarios with higher security

assurance requirements, they can also act as part of a defense-in-depth information security architecture involving an external firewall, intrusion detection systems, etc, to support your enterprise security policy.





Station Computer COM615

COM600 features

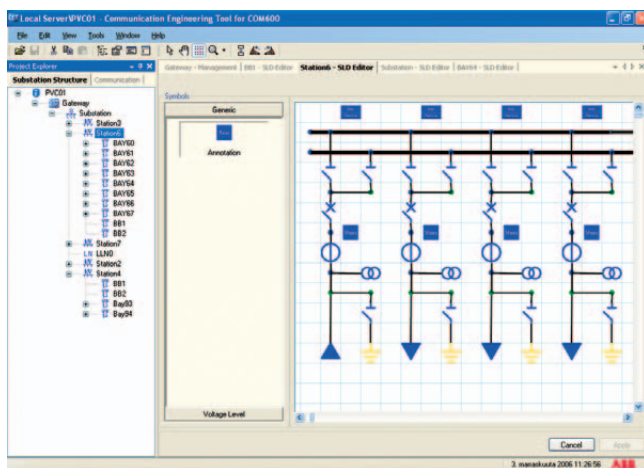
- Substation control
- Busbar mimic diagram
- Busbar colouring
- Alarms and events
- User-definable web links
- Measuring and metering
- Disturbance record upload
- Parameter setting
- System diagnostics
- User management
- Local language support
- MS IE web interface
- Security and authentication

The Station Computer COM615 combines the features and functionality of the Control and Monitoring Unit COM605 and the Communication Gateway COM610.

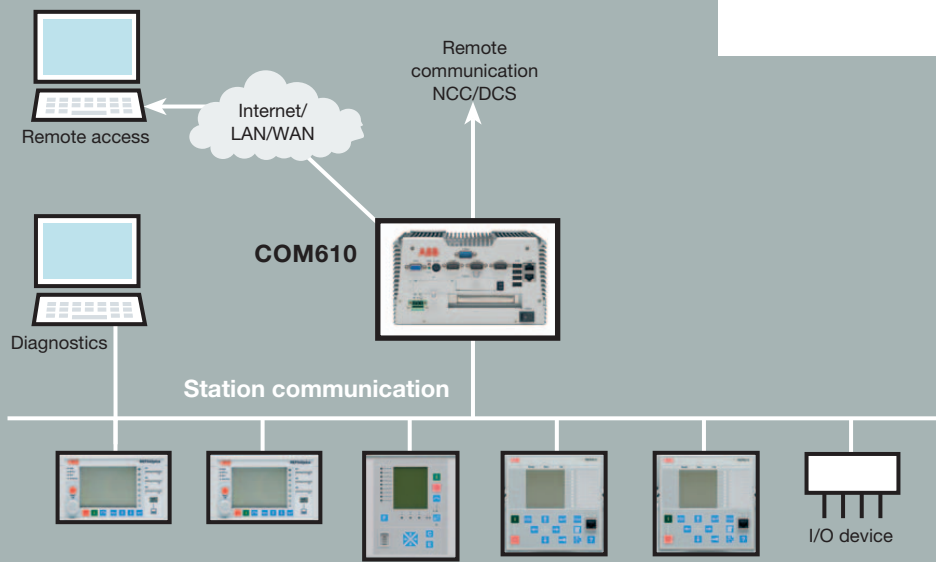
Full station automation functionality

COM615 provides gateway functions for mapping signals between protection and control IEDs in industrial or utility substations and higher-level systems, and an HMI (Human Machine Interface) that provides an interface for data and information between the substation and the users. COM615 gathers the data from protection and control IEDs as well as process devices using different communication protocols. Control and monitoring data are displayed to different users in a well-arranged and user-friendly manner utilizing standardized web technology and transferred to the Network Control Centre or Distributed Control System.

The Station Computer COM615 transfers information between the protection, control and automation equipment of a substation and a higher-level system by providing interoperability between different systems using different standard protocols.



CET tool of COM615.



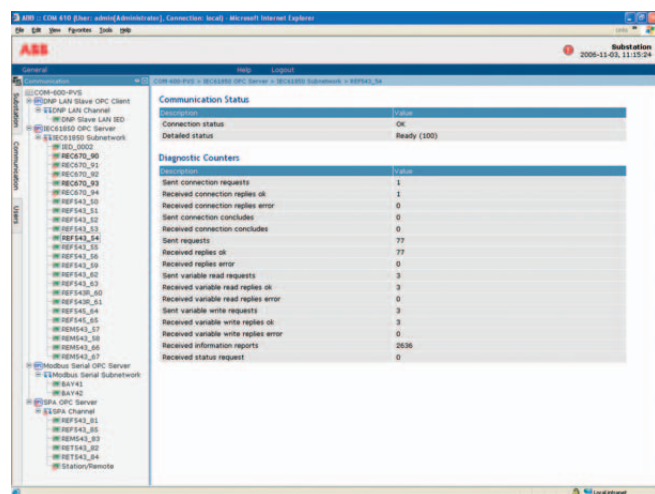
Communication Gateway COM610

COM610 is a communication gateway that maps signals between the protection and control IEDs and process devices in industrial or utility substations and higher-level systems such as Network Control Centres or Distributed Control Systems.

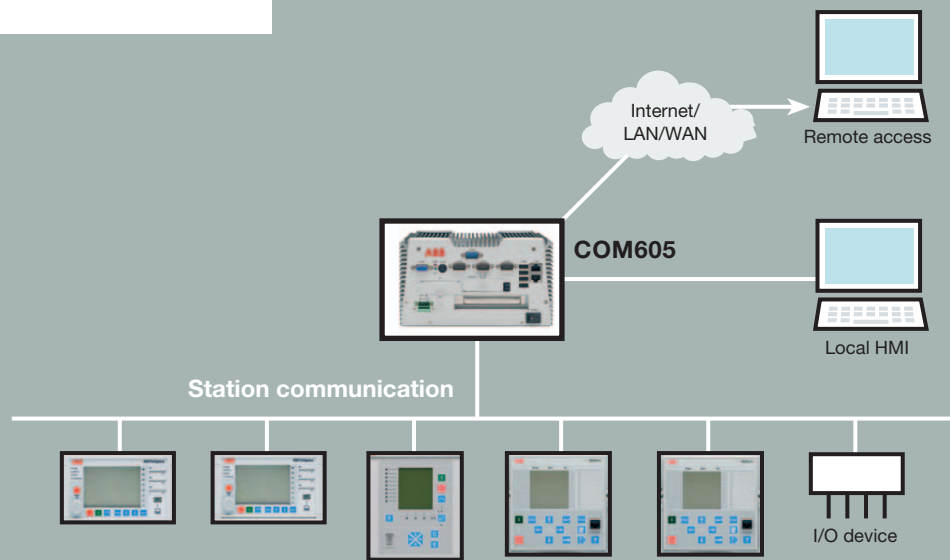
Extended gateway functionality

The Communication Gateway COM610 sends process control and monitoring information to the NCC and DCS and receives process control commands from them. The gateway also handles system co-ordination tasks, such as dynamic assignment of control command authorisation and communication supervision. COM610 is typically connected to an NCC via a telecontrol protocol, or to a DCS using the OPC Server/Client technology. Various protocols can be used to connect process devices to the communication gateway. COM610 is a true IEC 61850 gateway supporting all applicable IEC 61850 parts.

The integrated system diagnostics functions provide accurate information on the operation of every network component. The detailed diagnostic information facilitates commissioning work and shortens the overall delivery time of the project. The system diagnostics functions also enhance fault location and clearance capabilities.



Example of communication diagnostic view of COM610.



Control and Monitoring Unit COM605

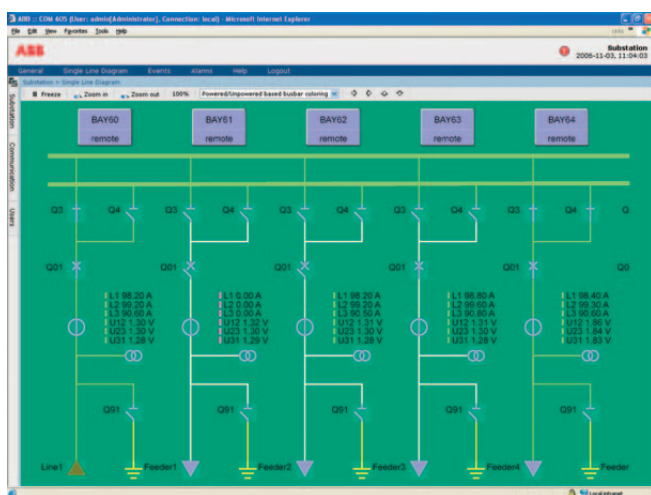
COM605 is a control and monitoring unit allowing a stand-alone HMI to be used for data and information from the substation. The Control and Monitoring Unit COM605 gathers data from protection and control IEDs and process devices using different protocols. COM605 uses web technology to display data in a professional and user-friendly manner. It includes a web server, which can provide the HMI on a monitor connected either directly to the unit or to any web client, when COM605 is connected to the intranet/internet over LAN/WLAN/WAN networks.

Total control and monitoring of your substation

The COM605 user interface offers easy access to essential information in your substation. A single-line diagram with busbar colouring based on the actual network status gives you a quick overview of the situation and the switching state of your substation. Status data is updated in real time and the single-line diagram is re-coloured accordingly. Intuitive control dialogs guide you through the control commands in a safe, select-before-execute manner. To facilitate information access, web links to any reference documentation can be added to the control dialogs, e.g. functional descriptions and maintenance information.

Easy-to-read, clear and well-organized alarms and events are always just a mouse-click away. Lists are updated in real time but can be frozen, when needed. Filtering can be applied to sort the information you need, and alarms are coloured and classified by their current status. Naturally, you can acknowledge single, multiple or all alarms. The event lists can be exported to Microsoft Excel.

The user interface also includes a context-sensitive on-line help function which guides the operator and provides specific information on demand.



Single-line diagram of COM605.

