COM581 Communication Gateway
Integrated part of substation automation systems
COM581 communication gateway
The reliable, high performance solution for communication with and within substations

The COM581 communication gateway is an extremely flexible and reliable solution for establishing communication links between bay, substation and network control center levels.

Availability, safety and freedom from maintenance
The COM581 meets the highest demands with regard to availability and safety. Because the gateway requires no maintenance and has no moving parts, it is particularly well suited for use in unmanned stations and wherever high reliability at low operational cost is important over the whole life cycle.
COM581 communication gateway
Industrial design with proven technology

Efficiency and expandability
The modular design allows flexible configuration, and thereby customized communications solutions. Thanks to the efficiency of the industrial hardware used, very extensive systems can be created, as well as systems with large signal volumes and high transmission rates. Standardized protocols, such as IEC 60870-5-101, IEC 60870-5-104 / IEC 61850, for the linking of systems from other suppliers ensure the openness of the system.

Proven technology successfully in use worldwide
Since its introduction in 1999, the COM581 has successfully proved itself with our customers throughout the world. The basis of the COM581 is the well-proven and well-tested technology of the numerical REB500/sys busbar and station protection from ABB.

An integral part of ABB’s Station Automation System
The COM581 connects substations with network control centers, as well as system components within the substations.

Protocols
The COM581 supports a growing number of standardized and proprietary protocols.

Architecture
The architecture is designed for parallel processing and multi-protocol operation.

Performance
Thanks to the efficient CPU cards, a very large volume of signals can be processed with high data throughput.

Monitoring
The high level of reliability and availability is ensured by comprehensive monitoring of the system components, the power supply, all connections (serial, optical or Ethernet), the radio clock receiver and other COM581 units in the system.
COM581 communication gateway

Brief overview

CPU card for protocol connections to the process or to the network control center.

Star coupler card for the link to up to 5 protection devices via IEC 60870-5-103.

**Communication protocols**
- IEC 61850: Client & Server
- LON Inter Bay Bus: Client & Server
- IEC 60870-5-103: Master
- IEC 60870-5-101: Slave
- IEC 60870-5-104: Server (Point to Point)
- DNP 3.0: Master
- DNP 3.0: Slave
- RP570/RP571: Slave
- … further protocols on request

**Communications interfaces**
- Optical RS232 PC interface
- Electrical RS232
- Electrical/optical Ethernet
- Optical LON/IEC103

**Performance data**
- Up to 8 different protocols to NCC
- Up to 16 IEC60870-5-101 connections to NCC
- Up to 105 protection and control units via LON bus
- Up to 80 protection units via IEC60870-5-103
- Up to 200 protection and control units via IEC 61850
- Maximum of 50,000 signals per system

**Internal logic**
Extensive range of logical modules for signal linking and type conversion.

**Monitoring**
- Time synchronization
- Redundant power supply
- Links to the connected units (protection and control units, radio clock receiver, other COM581 units in the system), as well as all serial, optical and Ethernet connections.

**Monitoring contacts**
- 2 contacts for independent signalling
Integration of third party IEDs

IEC 60870-5-103

LON bus / IEC 61850

Integration of ABB control and protection IEDs

SPA bus

IEC 60870-5-104

Transmission capacity to control centers: up to 8 different protocols at the same time, or up to 16 IEC61870-5-101 links at the same time

Station monitoring

Network control center

Network control center 1

Network control center 2

Maintenance center

Network level

Station level

Network control center

LON bus / IEC 61850

IEC 60870-5-103

Integration of third party IEDs

COM581

Bay level

Integration of third party IEDs

IEC 60870-5-103

IEC 60870-5-104

Integration of ABB control and protection IEDs

LON / dpa gateway

DNP3.0

IEC60870-5-101

GEP3

COM581
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For the COM581 are training courses available.
More information via Internet
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