



PCS-9705

Bay Control Unit

The PCS-9705 Bay Control Unit (BCU) is used for bay level controlling and monitoring in substation, power plant and industrial domain. It is suitable for an application in Substation Automation System (SAS) with distributed control IEDs.

PCS-9705 is designed for controlling and monitoring switchgears such as circuit breaker, disconnector, and earthing switch. Additionally, it supports tap changer control for transformer and shunt reactor.

The PCS-9705 can be applied into SAS via Ethernet network in using different protocols. It can send/receive Generic Object Oriented Substation Event (GOOSE) message in a station level network.

The PCS-9705 can be used for single bay, multiple bays and 1½ breakers arrangements.

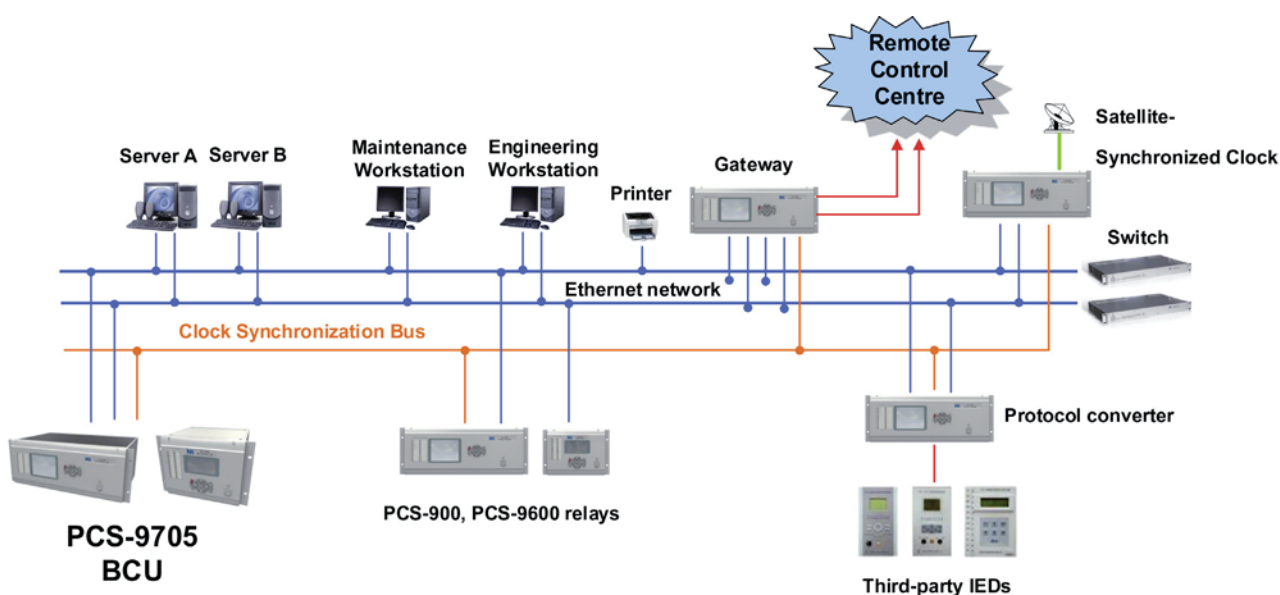


Figure 1 Typical substation communication network

Functions

Control

- Switchgear control
- On load tap changing for transformer
- Synchronism check
- Interlocking logic

Measurement

- Analog CT/VT sampling method using copper cable with 24 samples per cycle
 - U, I, P, Q, Cos
 - Positive, negative and zero sequences
 - Max.15th harmonics
- DC transducer input for temperature, humidity, etc.

Monitoring

- Flexibly configurable binary inputs
- Flexibly configurable binary outputs
- VT circuit supervision (VTS)
- CT circuit supervision (CTS)
- Self diagnostic
- Event recorder including 1024 change-of-state events, 1024 supervision events, 256 control logs and 1024 device logs
- Single line diagram representation in display

Communication

- Support of various protocols
 - IEC 60870-5-103
 - IEC 61850 ed1 & ed2, IEC 61850-8-1 (MMS GOOSE)
 - IEC 62439 Parallel Redundancy Protocol
 - IEC 62439 HSR Ring Redundancy Protocol
 - DNP3.0
- 10Base-T/100Base-TX copper Ethernet ports

- 100Base-FX optical Ethernet ports
- RS-485 serial ports for communication
- RS-485/TTL serial port for clock synchronization
- RJ-45 debugging port

Features

- The PCS-9705 adopts a fully closed chassis with a complete panel. Complete isolation for electronic and electrical systems is provided. Electrical and electronic circuits are strictly separated to enhance EMC immunity performance.
- A back plug-in module structure is adopted.
- The PCS-9705 adopts NR Electric new UAPC hardware platform, 16 bits parallel A/D converter, graphic dot matrix LCD, and multi-task operating system for industrial purpose so as to realize the high-capacity, high-precision, fast and real-time information processing.
- With the high-precision A/D converter, synchronization sampling can be conducted for all the AC signals to ensure the accuracy of analog measurement.
- Software and hardware clock synchronization modes are both adopted with 1ms timing accuracy to ensure the resolution of Sequence Of Events (abbreviated as SOE).
- Large scale LCD providing graph and text makes a convenient human-machine interaction.
- Support of both IEC 61850 ed1 & ed2 substation communication protocol
- Support of PRP (Parallel Redundancy Protocol) and HSR (High-availability Seamless Redundancy) communication network.
- Low power consumption and wide ambient temperature range.
- Powerful PC configuration software can realize function configuration, setting modification, customized logic programming and waveform analysis.