



The solution for substation automation and integration

Eaton's Cooper Power™ series Substation Modernization Platform (SMP™) is the solution that simplifies all maintenance, engineering and planning of operations across the enterprise. The SMP 16 Gateway is capable of protocol translation, data concentration, and distribution. It also has the functionality of a port switch with added security to connect remote users to substation devices. It is the most versatile product for improved grid management. It is easy to use and both field- and operator-proven.

SMP 16 Gateway includes these functionalities to help successfully implement substation automation projects:

- Supports up to 128 devices¹, 64 control centers and 20,000 data points per system
- Extracts and concentrates data from any device, regardless of protocol
- Sends data to SCADA, control centers, and enterprise applications
- Automates data processing and device control
- Passthrough to any device
- Alarm annunciator provides immediate access to substation real-time data and alarms without a laptop or substation computer
- Alarm panel can now also be accessed remotely via the SMP web interface.
- SMP Gateway HMI provides local and remote single-line diagram display
- Optional built-in GPS clock

The SMP Gateway is the ideal solution to facilitate access to substation data. SMP 16/CP and SMP 16/SG include these benefits:

- Meet all IEEE and IEC requirements for substation-grade equipment
- Create a NERC-compliant electronic perimeter

Upgrade your substations, not your RTUs

- Integrate existing / legacy RTUs, IEDs, PLCs, and multiple control centers
- Universal ports allow you to connect any serial device to any serial port

Add controls to your substation equipment

- Create sophisticated automation scripts, such as automatic load and feeder management
- Extend the capabilities of legacy devices with high level functions such as binary debouncing

Strengthen cyber-security

- Ensure uninterrupted access to substation data
- Act as a NERC CIP electronic perimeter for all managed devices
- Protect data flows with the built-in firewall and secure maintenance connection (TLS, formerly known as Secure Sockets Layer or SSL)
- Protect your system with built-in firewall
- Enforce authentication with X.509 certificates
- Secure SCADA protocol and maintenance connection using TLS 1.2

Provide a single point of access

- Create a homogenous system with a single entry point for each substation
- Install cascading SMP Gateways and multiply the number of connected devices
- Extract non-operational data for planning, maintenance, engineering, and fault analysis



Powering Business Worldwide

¹ The maximum number of IEDs that can be monitored by a SMP Gateway is a function of the type and quantity of protocols in use, the number of supervised points and the scan interval. Under most conditions, the SMP Gateway can communicate to a maximum of 128 IEDs. For a more accurate evaluation of the number of supported IEDs in your actual configuration, please contact your Eaton's Cooper Power Systems sales representative.

General Features

Data concentration
Protocol translation
NERC CIP-compliant security
Hardware and software redundancy
Built-in web server
Automation functions
Passthrough connections
Dial-up connections
IEC-61131 compatible SoftPLC
Microsoft® Windows®-based configuration and maintenance tools
Windows CE® operating system
Built-in self-diagnostics
Real-time clock with battery backup
Built-in watchdog timer
Power supply monitoring
Flexible licensing
Built-in annunciator (optional)
Built-in communication dashboard
Single-line diagram local and remote display (SMP Gateway HMI)

Processor

600 MHz , Intel® Celeron® M
1.4 GHz Pentium M (optional)

Standards Compliance

Protective Relay Standards¹
IEEE C37.90
IEC 60255
¹ With some exceptions
EMI Immunity Type Tests and Specifications
IEC-61850-3
IEEE-1613
Telephone Terminal Equipment
TIA-968-A
CS-03
Unit test list available upon request

Security Features

Built-in firewall
Secure maintenance connection (TLS)
Authentication using X.509 certificate
Modem connection management
Passthrough management
Account management:
Strong passwords
User accounts and user groups
Detailed group permissions
Access management
Access attempts logs
Account lock upon failed access attempts
Retrievable access logs for auditing
Supports syslog for remote log storage
All system components signed
Continuous file monitoring for system integrity
DNP3 Secure Authentication (versions 2 and 5)
Secure ICCP

Protocols

DNP3, IEC 60870-5-101/103/104, IEC 61850 GOOSE, UCA 2.0, ICCP, MODBUS, SEL, GE, ABB, AREVA, FTP, RUGGEDCOM, L&G, COOPER, CONITEL 2020 and other bit protocols, Most electrical industry proprietary protocols, OPC

Connectivity

Up to 128 device connections
Up to 64 control center connections
Up to 20,000 data points

Time Synchronization

Input: Modulated/demodulated IRIG-B
Output: Demodulated IRIG-B, on all ports and on terminal block
Option: Factory installed GPS clock, with 400 ns accuracy

Expansion Modules (SMP 16/SG)

Maximum 2 per system
16-port universal serial module

Communications

Serial
SMP 16/CP: Up to 16 RS-232/485
SMP 16/SG: Up to 48 RS-232/485
1 RS-232 console
Modem
Built-in 56 Kbps V.90
Ethernet (2 Ethernet ports)
2 10/100BASE-TX standard or
2 100BASE-FX (optional)
Multi-mode Fiber
ST Connector
1300 nm
Up to 2 km

I/O

1 NC system health contact
1 NO software-controlled relay contact

Electrical

Power supply options
21-29 VDC
42-56 VDC
85-264 VAC / 105-370 VDC
Maximum consumption
SMP 16/CP : 50 W
SMP 16/SG : 75 W

Environmental

Operating:
-30 °C to 65 °C
-22 °F to 149 °F
Storage:
-40 °C to +85 °C
-40 °F to +185 °F
Humidity:
5 to 95%, non-condensing
Low pressure (operation and storage altitude):
Up to 4572 m (15,000 ft)¹

¹ MIL-STD-810G Method 500.5 Procedure I and II

Dimensions

Height: 132.6 mm (5.22 in.) — 3U
Width: 482.6 mm (19 in.)
Length: 280 mm (11.02 in.)
Weight: 20 lbs. (9 kg)

5-Year Limited Warranty

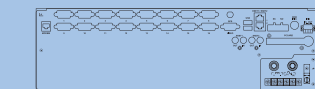
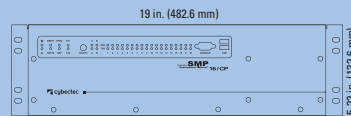
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Rugged & reliable

SMP Gateways are rugged, reliable, and tailored to your requirements. They are easy to setup and use. Thousands of SMP Gateways have been installed worldwide. Eaton has decades of experience in substation gateway design, making SMP Gateways a product line that utilities can depend on.

SMP 16/CP: Standard

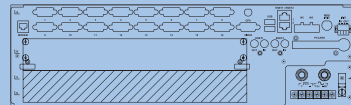
The SMP 16/CP Gateway is the ideal first step in a substation automation project. As the entry-level solution, it supports redundancy, features advanced automation functions and delivers strong security features—all in the same box.



SMP 16/SG: Maximum Expandability

The most advanced and flexible solution in the SMP Gateway family, the SMP 16/SG includes all of the SMP 16/CP features, with added expandability—still all in the same box.

Up to 48 universal RS-232/485 serial ports.



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