SMP Products

Turn Substation Data into Valuable Enterprise Information

COOPER Power Systems

SMP Products

FOR A SMART SUBSTATION

SMP products are designed to simplify substation integration and automation while giving clients vendor independence:

- Protocol translation
- Data concentration
- System-wide device automation and integration
- Automatic event file retrieval and file pushing
- Remote control and passthrough
- Data distribution
- Substation-hardened computing
- Substation I/O monitoring and control
- NERC CIP-compliant security

SMP products work with Yukon IED Manager Suite for centralized management, increased security and even more network reliability.

- Reduce total cost of ownership
- Reduce substation downtime
- Improve network reliability

Upgrade Your Substation and Keep Your Legacy Devices

The SMP products can integrate existing / legacy RTUs, IEDs, PLCs, and multiple control centers. They also allow utilities to add new network technologies and protocols without sacrificing data or legacy devices.

- Automates data processing and device control
- Permits secure passthrough to any device
- Extracts and concentrates data for SCADA, planning, maintenance, engineering, and fault analysis
- Universal ports permit connecting **any serial device to any serial port**
- Can be installed in cascading configuration to multiply the number of connected devices
- **Extends the capabilities of legacy devices** with high-level functions such as grouped controls

Add Intelligence to Substation Equipment

- Automatic load shedding
- Feeder management
- Automatic breaker control

Take Control of Your Automation Project

The SMP product line streamlines your automation project by giving you complete control.

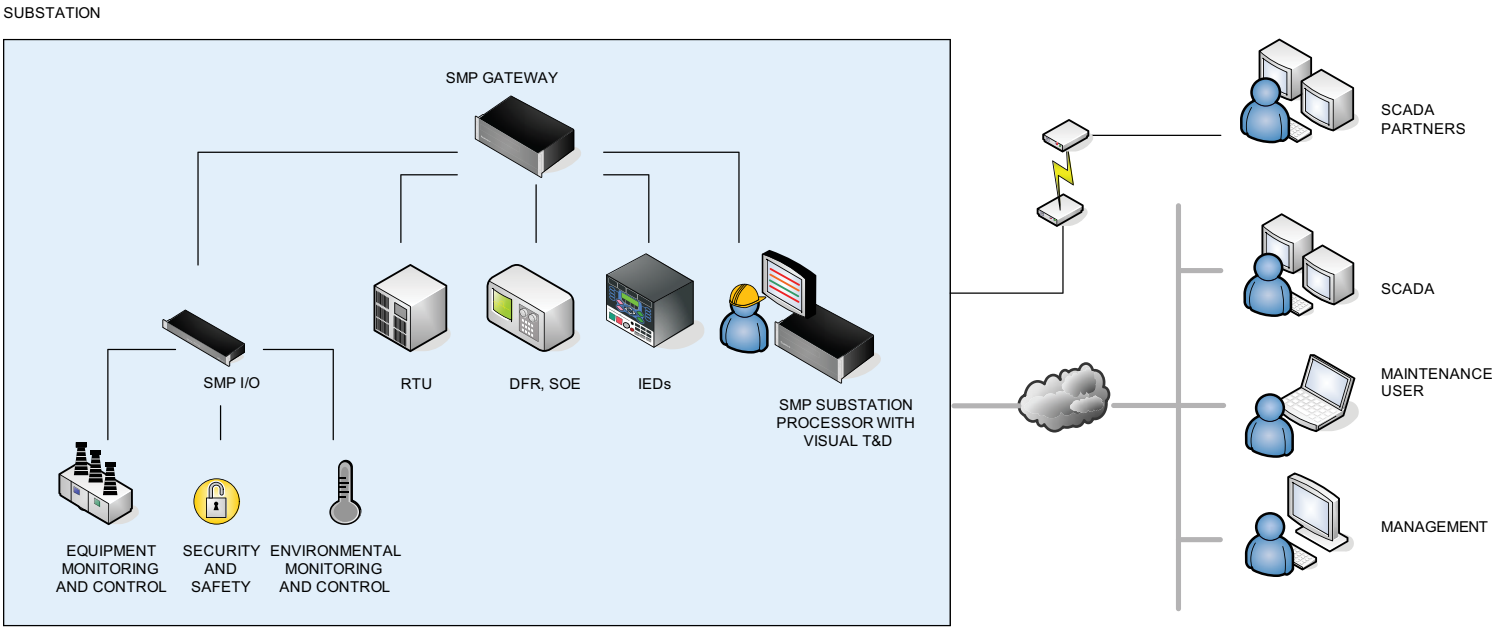
- Processes data locally
- Seamlessly integrates legacy and new SCADAs, PLCs, RTUs, IEDs, **regardless of protocol**
- Reduces overall network bandwidth
- Gives local and remote clients access to all substation data **regardless of the application used**
- Simplifies native format data access
- Supports local or remote HMIs
- Built on an open and flexible architecture

A System to Depend on

- Extensive redundancy options
- Meets IEEE and IEC requirements for vibration, electrical surges, fast transients, and extreme temperature ranges
- Rugged, reliable and tailored to users' needs
- Thousands of installed systems worldwide
- User-friendly configuration tools for simple substation upgrades

The Result?

- A modern communication architecture
- Improved performance
- True device integration
- Proven robustness
- Increased flexibility



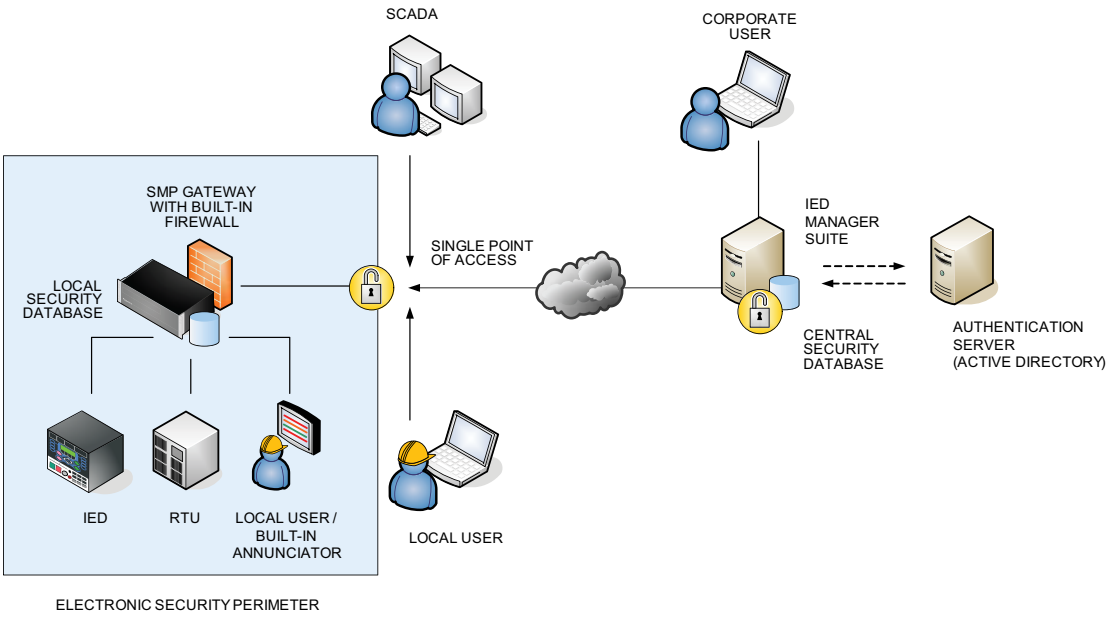
SECURITY AND NERC CIP AT THE SUBSTATION

SMP Gateway provides a secure access point to substation devices.

The SMP Gateway's Sophisticated Software Includes a Comprehensive Set of Security Features

- **Built-in firewall**—all TCP/IP ports are blocked, except those required for control center communications and status monitoring.
- **Modem connection management**—modem access can be enabled or disabled by the control center. All accesses are logged and limited to authorized users.
- **Passthrough management**—passthrough access can be enabled or disabled by the control center. All accesses are logged and limited to authorized users.
- **Authentication**—users can be authenticated locally, by the SMP Gateway, by IED Manager Suite, or by a corporate authentication server such as Microsoft Active Directory, for strong 2-factor authentication.
- **Account management**—strong passwords, individual user accounts, user groups, and detailed group permissions protect critical system functions from unauthorized access.
- **Access management**—all access attempts are logged. Accounts are locked out in the event of multiple failed attempts.
- **Auditing**—SMP Gateway logs can be retrieved remotely for auditing.

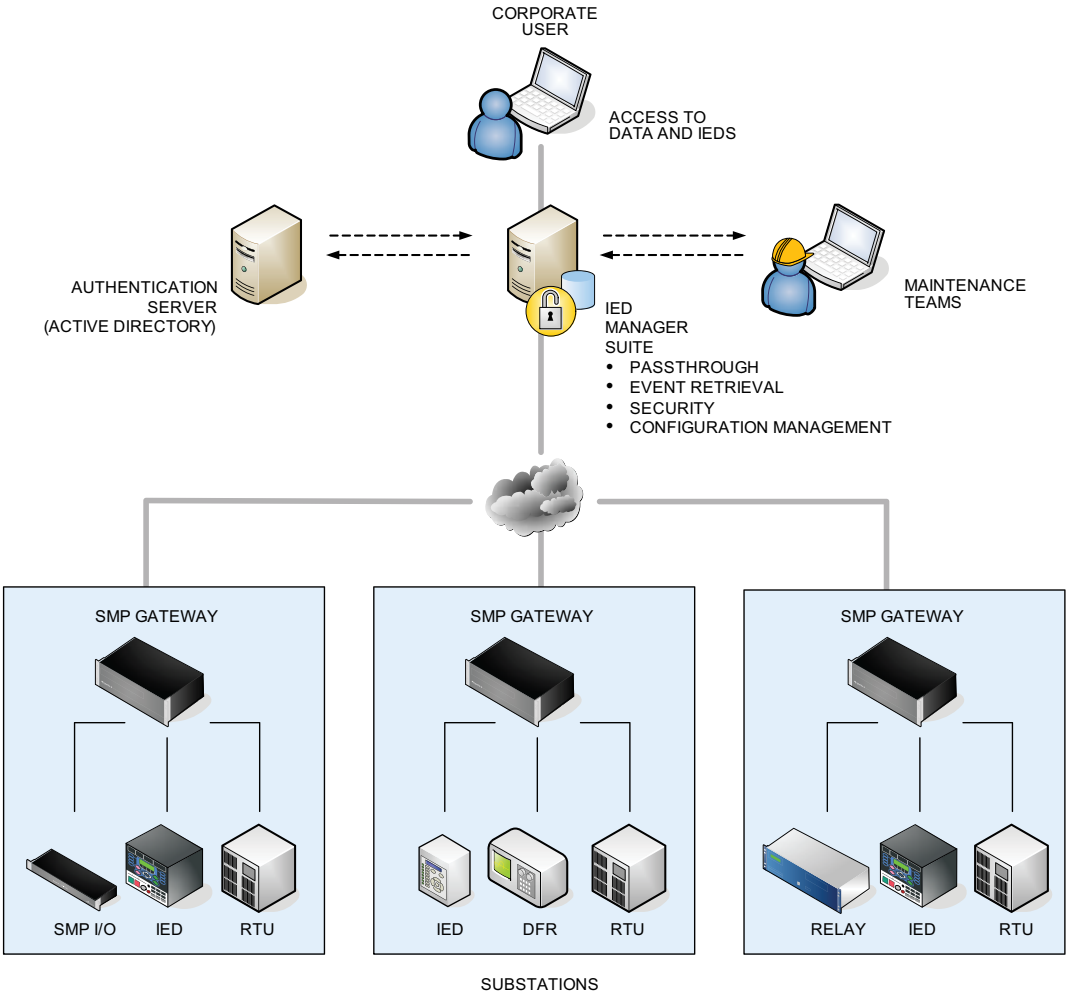
Get all the benefits of IED integration within a secure NERC-compliant framework.



BEYOND SECURE REMOTE ACCESS TO IEDS

Just like the SMP Gateway in the substation, the Yukon IED Manager Suite creates a single point of access to substation data for all corporate users.

- **Secure remote access**—Allow operations, protection and maintenance personnel to securely connect to all substation IEDs from a central server on the corporate network and send commands as if they were connected directly.
- **Proactive reporting**—Warn maintenance and operations teams of a potential problem as it happens. The SMP Gateway automatically pushes event files to the SCADA or any other enterprise application for automated processing.
- **Automated alerts**—Diagnose the problem and restore service within minutes. Event Manager emails or pages personnel immediately when an event is detected on a protective relay.
- **Centralized management**—Manage IEDs, SMP Gateways, events and security right from the corporate offices. IED Manager Suite disseminates security settings, device passwords and configuration changes automatically for all IEDs in the network.



SMP Products

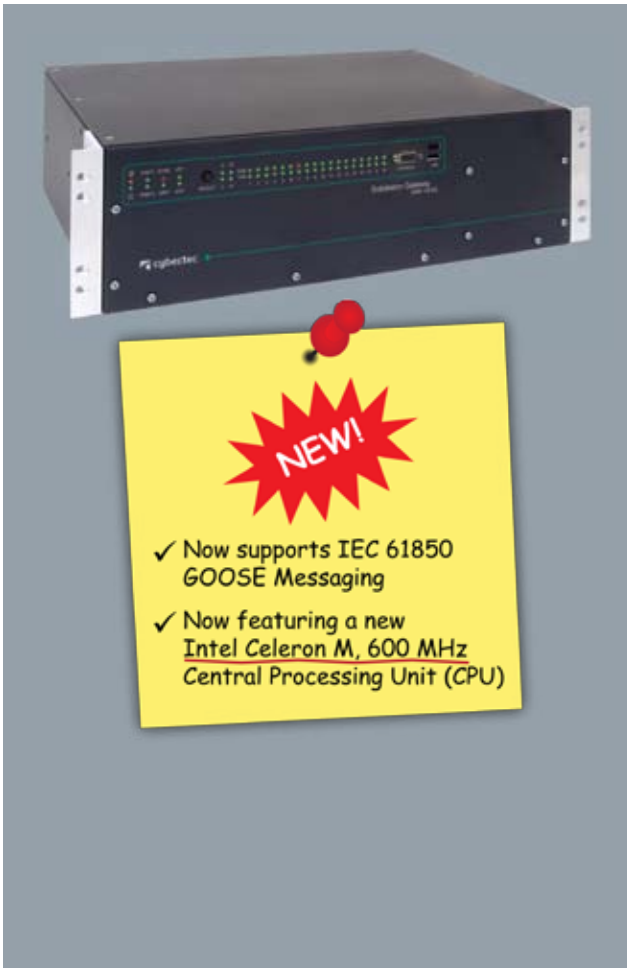
SMP GATEWAY PRODUCT LINE

SMP Gateways bridge the gap between substation IEDs and control centers.

SMP 4/DP: Entry-Level

Typically installed directly in protective relay enclosures or in the switchyard, the SMP 4/DP Gateway is perfect for space-sensitive applications. Its 2 Ethernet ports enable easy integration of complex and IEC-61850 based network architectures.

- Compact enclosure
- Extended operating temperature range
- Cost-effective



SMP 16/CP: Standard

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

- Automatically pushes event files to the control center
- Optional Annunciator/HMI and GPS clock
- Up to 128 devices, 64 control centers and 10,000 data points per system[1]

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's features, with added expandability—still all in the same box.

- Up to 48 universal RS-232/422/485 serial ports
- Automatically pushes event files to the control center
- Optional Annunciator/HMI and GPS clock
- Up to 128 devices, 64 control centers and 10,000 data points per system[1]

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

SMP I/O FOR TODAY'S SUBSTATIONS

Today's substation automation projects require RTUs that feature seamless network integration and minimized cabling. The **SMP I/O** helps trim down costs and save time by reducing both required wiring and configuration.

The **SMP I/O** is a scalable, distributed I/O module perfectly adapted to substation automation requirements. Both rack-mount and wall-mount formats present the following benefits:

- Field-upgradeable and scalable
- The rack-mount format with his compact enclosure fits in 1U of 19-inch relay racks
- The wall-mount format can be fixed everywhere such as cabinet walls or inside switchyard cabinets
- Minimized configuration time when used with the SMP Gateway

Substation Grade

- Ensures data integrity between the data point and the control center
- Installs directly in relay racks or fixed to any type of surface for distributed, cable-saving architecture
- Monitors and controls up to 34 points, including analog values
- Can operate relays directly – high load carrying capability reduces the need for interposing relays
- Meets IEEE and IEC requirements for vibration, electrical surges, fast transients, and extreme temperature ranges
- Supports 1ms transition time tagging

Seamless Networking

- Ensures data integrity between the data point and the control center
- Works standalone or with an SMP Gateway
- Communicates via the DNP3 protocol over RS-485 or TCP/IP, using fiber or copper Ethernet
- Supports IRIG-B synchronization

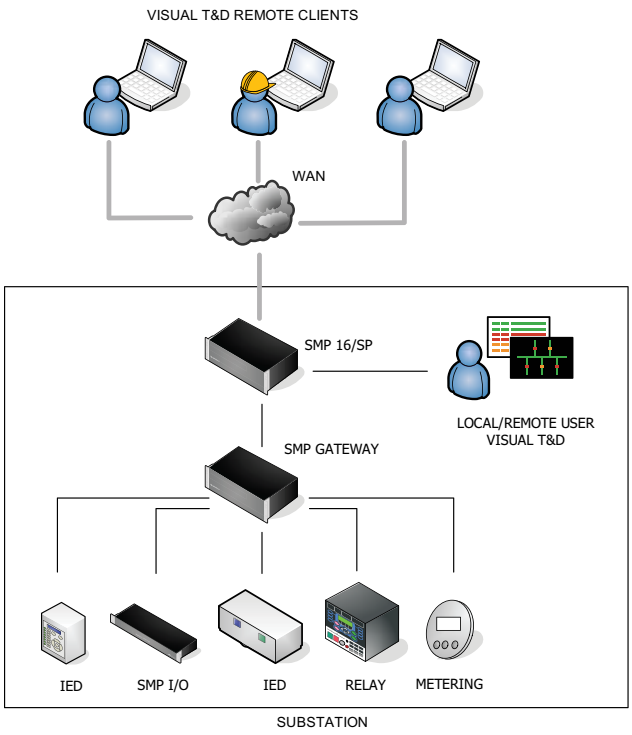
Designed for Growth

- Four field-upgradable I/O cards
- Scalable for more I/O capacity
- Requires minimal configuration efforts, either when used with SMP Gateway or as a standalone solution
- Helps trim down costs and save time by reducing both required wiring and configuration

Reliable

- Ensures safe operation with the local/remote control switch
- Supports select-before-operate (SBO) or direct execute outputs
- Uses optically isolated inputs with built-in error detection
- Outputs are protected against single component failure

SMP 16/SP
SUBSTATION PROCESSOR



The SMP 16/SP is a substation-grade computer designed for Microsoft® Windows® operating system-based applications that demand extreme reliability. Its flash memory and extended operating temperature range, combined with the absence of any fans or moving parts, provides a reliable computing platform while requiring minimum maintenance.

Key Features and Benefits

- Built to conform to high rugged standards
- Substation grade-compliant to IEEE Std C37.90™ -1989 and IEC 60255 for operation in harsh environments
- No moving part, results in increased Mean Time Between Failures (MTBF) and reduced maintenance requirements
- Supports both copper and fiber connections on its 2 Ethernet ports
- Uses industry-standard ST fiber optic connectors
- Built-In IRIG-B synchronization and distribution
- Optional built-in Global Positioning System (GPS) clock for more accurate event-time stamping and sequence of events (SOE) recording
- Optional industrial-grade hard disk (40 GB) for extended storage
- Optional video unit for local or remote (up to 250m via optical fiber) HMI interface capability (keyboard, mouse, and up to four screens for display)
- Watchdog timer for an improved reliability of applications operating on the SMP 16/SP computer by rebooting automatically in case of malfunction

SMP 16/SP with Visual T&D

The SMP 16/SP computer combined with the Yukon Visual T&D software offers a highly-reliable HMI that includes the following features:

- Email and pager alarm notification
- Real-time data trending
- Single-line diagrams with control capabilities
- Sophisticated alarm features
- Integrated power status, temperature monitoring and alarming
- Manages the 2 relay contacts to provide system health and alarm buzzer features on external devices

OPTIONS

SMP products

Processors

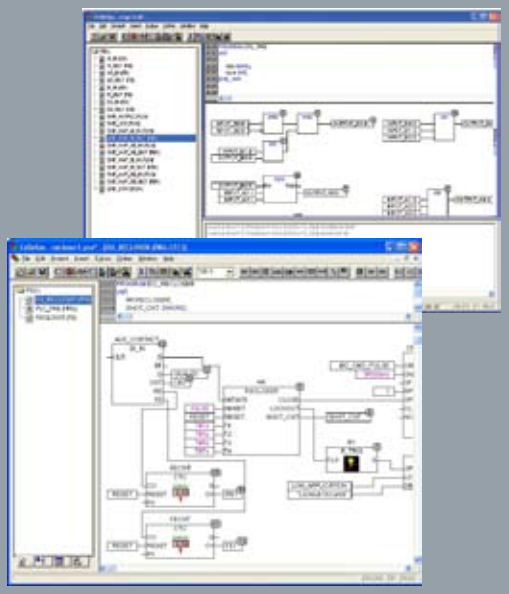
The SMP 16/CP and SMP 16/SG can be ordered with the optional 1.4 GHz Pentium processor, increasing the SMP Gateways' processing capability tenfold. The faster processor option is ideal for high-capacity applications, where a high number of devices are connected or many automation scripts are used.

GPS Clock

The SMP GPS clock installs directly on SMP 16/CP, SMP 16/SG and SMP 16/SP models to provide a highly accurate internal time source. This factory-installed option provides a cost effective solution to maintain substation devices in accurate synchronization, as recommended by NERC.

- Synchronizes the internal SMP 16 clock
- Distributes IRIG-B to all connected devices
- Alerts SCADA via a binary data point in case of signal loss
- Maintains accurate time, even with GPS signal loss
- Reduces total system complexity

Automation Functions



All SMP models come with a built-in logic processor. The optional Soft PLC is also available for advanced automation.

- Introduces sophisticated control functions
- Creates new logical data points from computations
- Processes data in real-time

The built-in **Logic Processor** creates logical data points from mathematical expressions. It can be used for simple tasks such as combining alarms signals, or more complex ones like calculating phase imbalance from existing voltage and current data points.

The **Soft PLC** module creates sophisticated automation scripts, such as circuit breaker control and load balancing. Used with the CoDeSys development platform, it supports the IEC 61131 programming languages:

- Instruction List (IL)
- Structured Text (ST)
- Function Block Diagram (FBD)
- Continuous Function Chart (CFC)
- Ladder Diagram (LD)
- Sequential Function Chart (SFC)

SMP Products

Annunciator/HMI

This software option, available with SMP 16/CP and SMP 16/SG, provides immediate access to all substation data. Simply connect a standard touch screen[1] display to the built-in video connector.

With the SMP Annunciator option, personnel onsite get immediate access to substation real-time data and alarms without a laptop or substation computer.

- Visual and audio alarms
- Data point values and statuses
- Statistics
- Alarm and event history

Annunciator alarms are tailored to local user needs:

- Set on binary state changes or analog levels
- Can be blocked/unblocked
- Configurable alarm acknowledgement sequence

SMP 16/SG: 16-Port Serial Card

The SMP 16/SG adds expansion capabilities to the 16 existing ports for more device management.

- Each serial expansion card adds 16 universal serial ports that support RS-232/422/485
- Up to 2 expansion cards can be installed in the SMP 16/SG, for up to 48 serial ports
- Serial port expansion cards have the same characteristics as the standard serial ports

Redundancy

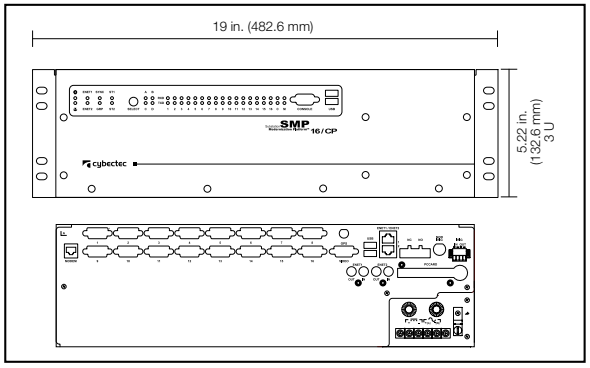
The SMP Gateway is a critical component in the data acquisition chain. Consequently, it offers several redundancy scenarios to prevent downtime:

- SMP Gateway redundancy
- Connection redundancy with the control center
- Connection redundancy with the devices
- Device redundancy
- NIC teaming

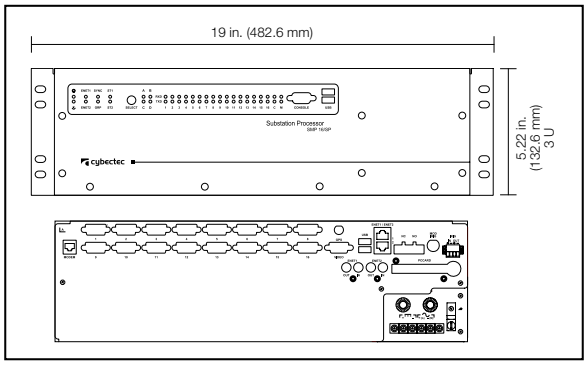
[1] The touch screen must be ELO compatible.

TECHNICAL DRAWINGS

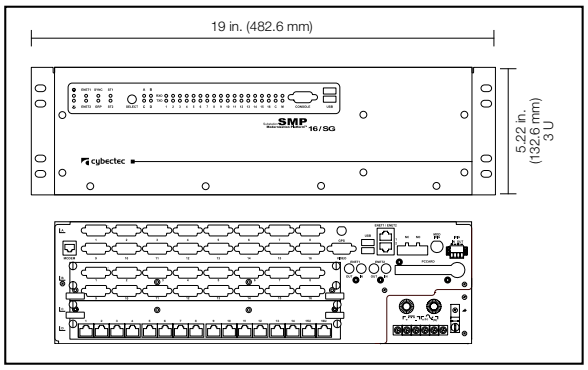
SMP 16/CP



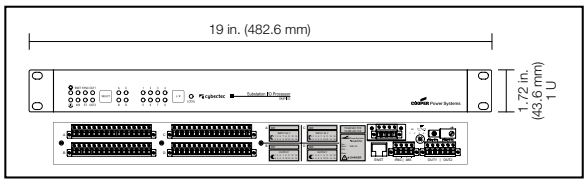
SMP 16/SP



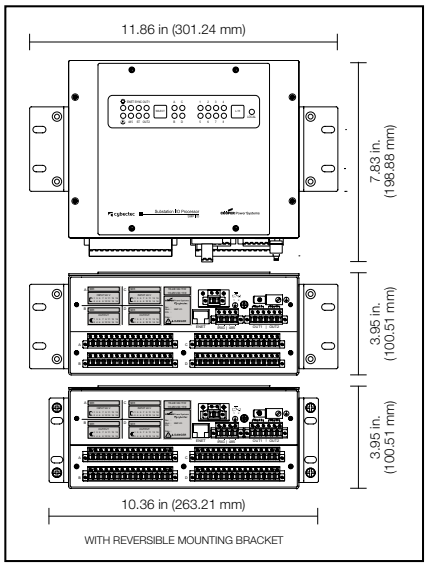
SMP 16/SG



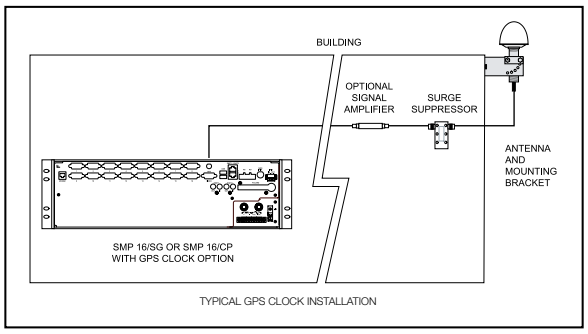
SMP I/O Rack-Mount



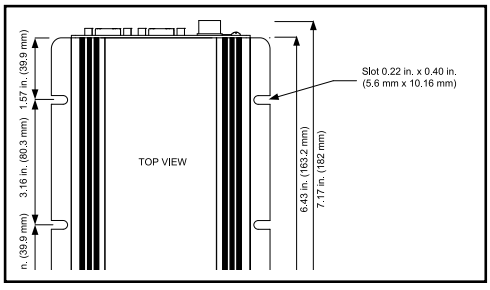
SMP I/O Wall-Mount



GPS Clock Option



SMP 4/DP



SMP Products

TECHNICAL SPECIFICATIONS

SMP Gateways: SMP 4/DP and SMP 16

	SMP 4/DP	SMP 16/CP	SMP 16/SG
Ideal for:	Space-sensitive applications: relay enclosures, pole-top installations	First step in your substation automation project	Advanced, high-capacity, expandable automation projects
General Features			
Data concentration	√	√	√
Protocol translation	√	√	√
NERC CIP-compliant security	√	√	√
Built-in Web server	√	√	√
Automation functions	√	√	√
Built-in optional annunciator	-	√	√
Passthrough connections	√	√	√
Hardware redundancy	-	√	√
Flexible licensing	√	√	√
Dialup connections	√	√	√
IEC-61131 compatible Soft-PLC	√	√	√
Windows-based configuration and maintenance tools	√	√	√
Built-in self-diagnostics	√	√	√
Windows CE operating system	√	√	√
Real-time clock with battery backup	√	√	√
Built-in watchdog timer, power supply monitoring	√	√	√
Processor			
Standard	600MHz Texas Instruments OMAP3503CUSA	600 MHz , Intel® Celeron® M	
Optional	-	1.4 GHz Pentium™ M	
Security Features			
Dual network adapters for network segregation	√	√	√
Built-in firewall	√	√	√
DNP3 Secure Authentication	√	√	√
Secure maintenance connection using SSL/TLS	√	√	√
Modem connection management	√	√	√
Passthrough management	√	√	√
Account management Complex passwords User accounts User groups Detailed group permissions	√	√	√
Access management	√	√	√
Access attempts logs	√	√	√
Account lock upon failed access attempts	√	√	√
Retrievable access logs for auditing	√	√	√
All system components signed	√	√	√
Anti-malware protection	√	√	√
Continuous file monitoring for system integrity	√	√	√
Failed firmware update protection	√	√	√
X.509 certificates	√	√	√
Communications			
Ethernet	2 10/100BASE-TX	2 10/100BASE-TX, 2 100BASE-FX optional	
Serial ports	1 RS-232/422/485 3 RS-232 1 USB console	16 RS-232/422/485 1 RS-232 console	16 RS-232/422/485 32 additionnal RS-232/422/485 (optional) 1 RS-232 console
Modem	Optional 56 kbps V.92 V.54 modem	Standard built-in 56 Kbps V.90 modem	
I/O	-	1 NC system health contact 1 NO software-controlled relay contact	

	SMP 4/DP	SMP 16/CP	SMP 16/SG
Ideal for:	Space-sensitive applications: relay enclosures, pole-top installations	First step in your substation automation project	Advanced, high-capacity, expandable automation projects
Supported Protocols			
	DNP3, IEC 60870-5-101/103/104, IEC 61850, MODBUS, SEL, GE, ABB, L&G, COOPER, most electrical industry proprietary protocols, OPC	DNP3, IEC 60870-5-101/103/104, IEC 61850 GOOSE, UCA 2.0, ICCP, MODBUS, SEL, GE, ABB, AREVA, RUGGEDCOM, L&G, COOPER, HARRIS, COURIER, CONITEL 2020 and other bit protocols, most electrical industry proprietary protocols, OPC	
Connectivity			
Maximum device connections	16[1]	128[1, 2]	128
Maximum control center connections	4[1]	64[1]	64
Maximum data points	5,000	10,000	10,000
Expansion modules	-	-	Up to 2 16-port expansion module 16-port Ethernet switch (possibility to replace one module by one 16-port Ethernet switch)
Standards Compliance			
EMI Immunity Type Tests and Specifications IEC-61850-3, IEEE-1613	√	√	√
Protective Relay Standards IEEE C37.90, IEC 60255	√	√	√
Telephone Terminal Equipment TIA-968-A, CS-03	√	√	√
CE Marking for Low Voltage Electrical Equipment	√	√	√
Time Synchronization			
Input	Demodulated IRIG-B	Modulated or demodulated IRIG-B	
Output	-	Demodulated IRIG-B, on all ports and on terminal block	
Option	-	Optional internal GPS clock receiver with 400 ns accuracy	
Environmental			
Operating temperature (at CPU 100% usage)	(DC)-40°C to +70°C / -40°F to +158°F (AC)-40°C to + 55°C / -40°F to +131°F	-30°C to 65°C / -22°F to 149°F	
Storage temperature	-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)[3]		
Power Supply			
Options	10-36 VDC 19-75 VDC 85-264 VAC / 105-370 VDC	21-29 VDC 42-56 VDC 85-264 VAC / 105-370 VDC	
Maximum consumption	5 W	50 W	75 W
Physical			
Height	1.81 in. (46 mm)	5.22 in. (132.6 mm) — 3U	
Width	5.47 in. (139 mm)	19 in. (482.6 mm)	
Length	7.17 in. (182 mm)	11.02 in. (280 mm)	
Weight	1 lbs (454 g)	20 lbs (9 kg)	
Warranty			
	5-year limited	5-year limited	

1 Purchase option.

2 The maximum number of IED's 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 pooling interval. Under most conditions, the SMP Gateway can communicate to a maximum of 128 IED's. For a more accurate evaluation of the number of supported IED's in your actual configuration, please contact your Cooper Power Systems sales representative.

3 MIL-STD-810G Method 500.5 Procedure I and II.

SMP Products

SMP I/O

General Features
- Designed to be used with SMP Gateway or standalone
- Can simultaneously operate up to 18 relays
- Local/Remote switch
- Front panel status LEDs
- Watchdog timer can be mapped to built-in output relay
- Power supply monitoring
- Windows-based configuration tools

Redundancy
- Can connect to redundant SMP Gateways
- No transitions lost during failover

Time Synchronization
- Demodulated IRIG-B input for 1 ms accuracy
- DNP3 protocol synchronization

Available Configurations
- 2 built-in Form-C relay contacts (NC and NO)
- Configurable outputs
  - Watchdog relay
  - Local/Remote
  - User-defined
- Up to 4 cards in one SMP I/O
  - Up to 4 binary input cards
  - Up to 2 binary output cards
  - Up to 3 analog cards

Binary Input Ratings

Range	On (VDC)	Off (VDC)
24 VDC	18.3 - 30	< 5.5
48 VDC	37.5 - 60	< 10.5
110 VDC	82.5 – 137.5	< 21.3
125 VDC	91.5 – 156	< 23.5
220 VDC	169.5 - 275	< 42.2
250 VDC	187.5 – 312.5	< 46.5

- Dielectric isolation
  - 3000 VAC / 4000 VDC

Binary Output Ratings
- Make and carry
  - 30 A as IEEE-C37.90.1989
- 10 A continuous carry at 85°C
- 8 A @ 250 VAC resistive
  8 A @ 30 VDC resistive
  0.4 A @ 125 VDC resistive
  0.2 A @ 150 VDC resistive
  ½ HP @ 125 VAC
  ¼ HP @ 250 VAC
- Dielectric isolation
  - 2500 VAC / 3500 VDC

Analog Input Ratings
- Input Range
  - Voltage mode: ± 10V
  - Current mode: ± 4ma
- Input Impedance
  - Voltage mode: > 10 Mohms
  - Current mode: 2.5 kohms
- Resolution
  - ±0.02% of full scale @ 25°C
  - ±0.0015% per °C of full scale
- Isolation
  - Standard model:
    1500 VAC / 2100 VDC channel to ground
  - High Isolation model:
    1500 VAC / 2100 VDC channel to ground
    1500 VAC / 2100 VDC channel to channel
- CMR @ 50/60Hz: > 90 dB

Communications
- Serial
  1 rear panel RS-485 terminal block
  - 9.600 to 115,200 bps
  - Multidrop capability
- Ethernet
  1 10/100BASE-TX, or
  1 100BASE-FX optional
  - Multimode fiber
  - LC connector
  - 1300 nm
  - Up to 2 km

Security
- Built-in firewall, can be tied to a specific SMP Gateway or master device

Input Module
- 8 isolated status inputs
- Each input electrically isolated
- Can be wired to a common negative
- Front panel LED indications
- Transition time tagging with 1 ms resolution
- Advanced two-phase debounce filtering
- Pulse and transition accumulators
- Optional error detection circuit for each input

Output Module
- 8 NO form A relay outputs
- Supports DNP3 modes and operations
  - Select-Before-Operate (SBO)
  - Direct Operate
  Available output functions
  - Trip/Close pair
  - Latch
  - Pulse
  - Pulse pairing
- Relay auxiliary contact integrity scan every 1 ms for error detection
- Protection against single component failure

Analog Module
- 8 Isolated DC analog input
- Factory calibrated
- Configurable voltage or current mode
- Min/Max values recording for each input
- Alarm/Warning capability

Protocols
- DNP3, serial or TCP/IP

Standards Compliance
- Protective Relay Standards[1]
  - IEEE C37.90
  - IEC 60255

[1] See datasheet for more details

- EMI Immunity Type Tests & Specifications
  - IEC-61850-3
  - IEEE-1613

Environmental
- Operating and storage temperature
  - Rack-Mount:
    -40°C to +80°C (-40°F to +176°F)
  - Wall-Mount:
    -40°C to +75°C (-40°F to +167°F)
- Humidity
  - 5 to 95%, non-condensing

Electrical
- Power supply options
  - 24-48 VDC
  - 100-250VDC / 100-240VAC
  - Consumption max. 15 watts
  - Terminal block connector
- Life-time built-in battery

Mechanical
- Rack-Mount
  - 1.72" H x 19" W x 8" L
  - 43.6 mm H 482.6 mm W x 203 mm L
  - 2.3 kg (5 lbs)
- Wall-Mount
  - 4" H x 11.9" W x 6.85" L
  - 101 mm H 302 mm W x 174 mm L
  - 2.5 kg (5.5 lbs)
- Removable I/O connectors
  - 300 V / 15 A maximum
  - 28-12 AWG solid
  - 30-12 AWG stranded

Warranty
- 5-Year Limited Warranty

SMP 16/SP

General Features
- 1.4 GHz Pentium-M processor
- 512 MB RAM
- 8 GB flash drive, industrial grade
- 512 KB NVRAM
- 4 USB 2.0 ports
- Cable retainers on USB ports
- Built-in watchdog timer
- Hardware diagnostics
- On board VGA 2048x1536

Visual T&D
- Take advantage of additional Visual T&D capabilities when installed on the SMP 16/SP
  - No hardware dongle
  - Power status monitoring and alarming
  - Temperature monitoring and alarming

Warranty
- 5-year limited

Optional Hardware
- 40 GB hard-disk industrial grade for non-critical data logging[1]

[1] Operating temperature : -20°C to +65°

- RAM upgrade to 1 GB
- Matrox Extio$_{TM}$ video unit[1] (XTO-F1400F model with XTOA-FP66LPAF card)[2]

[1] Distance up to 250m from SMP 16/SP (via optical fiber)
[2] Operating temperature : -20°C to +55°C

Note: ESD compliance: 4kV

Communications
- Serial
  - 16 universal (RS-232/422/485) ports with IRIG-B distribution
- Ethernet
  - 2 10/100BASE-TX, or
  - 2 100BASE-FX optional
  - Multimode Fiber
  - ST Connector
  - 1300 nm
  - Up to 2 km
- Modem
  - Built-in 56 kbps V.90 modem

Standards Compliance
- Protective Relay Standards
  - IEEE C37.90
  - IEC 60255
- EMI Immunity Type Tests & Specifications
  - IEC-61850-3
  - IEEE-1613
- Telephone Terminal Equipment Specifications
  - TIA-968-A
  - CS-03
- Unit test list available on demand

Environmental
- Operating (at CPU 100% usage)
  -40°C to +65°C (-40°F to +149°F)
- Storage
  -40°C to +85°C (-40°F to +185°F)
- Industrial-grade hard-disk
  -20°C to +65°C (-4°F to +149°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

I/O
- 1 NC system health contact
- 1 NO software-controlled relay contact

Time Synchronization
- Optional built-in GPS clock
- IRIG-B time synchronization and distribution for connected devices

Electrical
- Power supply options
  - 21-29 VDC
  - 42-56 VDC
  - 85-264 VAC / 105-370 VDC
  - Terminal block connector
- 50 W consumption
- Lifetime built-in battery

Mechanical
- 3U
  5.22 in. H × 19 in. W × 11.02 in. L
  132.6 mm H × 482.6 mm W × 280 mm L
  9 kg / 20 lbs

GPS Clock Option

General Features
Synchronizes internal SMP clock
Distributes IRIG-B to connected devices
Logical data point signals SCADA in case of signal loss
Maintains accurate time, even with GPS signal loss
Electrical
Powered by SMP Gateway
Output
Modulated IRIG-B through BNC connector
Demodulated IRIG-B through terminal block
Short-circuit protected on 16, 32 or 48 serial ports 0.4 A at 4 VDC 0.4 A at 9 VDC

Input
Female TNC RF connector for GPS antenna
Accuracy
Demodulated IRIG-B ± 400 ns, worst case
Modulated IRIG-B ± 200 µs, worst case
Free-Running Accuracy
Demodulated IRIG-B ± 0.4 ms/hour
Output Format IRIG-BXX0 IEEE 1344 IRIG-BXX2 (without year) IRIG-BXX6 (with year)
Mechanical
Requires 1 SMP 16/SG, SMP 16/CP or SMP16/SP

Annunciator/HMI Option

Hardware Requirements
SMP 16/CP or SMP 16/SG
ELO-touch driver-compatible touch screen, USB or serial
Software Requirements
SMP firmware version 4.0 and up
SMP software version 4.0 and up

Configuration
In SMP Config application
Capacity
Up to 5000 alarms
Up 1000 history events kept in log
Up to 16 user-defined Readings Pages

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Cooper Power Systems product is aimed at implementing solutions to enhance the performance of electrical power networks. The developers of the Cooper Power Systems have a 25 year track record in meeting customers needs with the innovative and reliable solutions for all their substation integration and automation requirements.

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B1100-07021 • April, 2011 • Supercedes 01/2011

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