



Smart single-phase automation and protection solutions



With full system protection, the SPEAR recloser system is perfect for multiple grid applications, up to 38 kV.

Using field-proven recloser technology and the industry-leading ProView™ NXG platform, Eaton's Cooper Power™ series SPEAR™ single-phase recloser and control hosts a complete set of protection, automation, metering and data acquisition functionality to maximize system performance and reduce customer outages.

Improve customer reliability and lower total life-cycle costs

The SPEAR recloser design is based on field-proven NOVA™ recloser technology. The encapsulated axial-magnetic vacuum interrupter and a lightweight, solid cycloaliphatic-epoxy design make the SPEAR recloser a durable and flexible single-phase choice for demanding application requirements.

Environmentally preferred

Using Eaton's Cooper Power series NOVA solid-insulation system, SPEAR reclosers are designed and manufactured to be SF₆ gas-free and oil-free.

NOVA solid insulation eliminates the need for insulating gas or liquid; thereby, greatly reducing the recloser life-cycle maintenance costs and easing the user's environmental concerns.

Reduce installation time

The SPEAR recloser, with its compact size and narrow profile, simplifies pole installation, which reduces total installation time. Operators can be confident with handle, indicator and control functions being similar in look and feel to decades of Eaton's installed electronic reclosers.

Reduce maintenance costs

SPEAR recloser technology provides durable service and reliability:

- Solid outdoor cycloaliphatic epoxy—no gas, oil or foam to check and maintain, and no noxious byproducts to dispose
- Vacuum interruption with axial-magnetic field—enables extended contact and mechanical life
- Magnetic-actuator operated mechanism—low power mechanism provides reliable operation, year after year



Powering Business Worldwide

Adding Eaton's Cooper Power series intelligent single-phase SPEAR reclosers and controls to distribution lines can meet today's system reliability needs and easily transition for future smart grid applications.

SPEAR single-phase recloser control

The microprocessor-based SPEAR recloser control integrates real-time valuable grid and outage data to be ported to your SCADA or feeder automation system. Complete with a separate regulated power supply, the control is automation-ready for your choice of radio. Also, tailor your digital communications performance with the user-configurable mapping of protocol DNP3. The control can be easily configured through the simple front panel display or with a laptop through a USB port on the front panel.

- Smart grid ready
- Improve customer reliability
- Lower total life-cycle costs
- Easy operation
- Greater application flexibility
- Full metering
- Data acquisition
- Remote monitoring
- Simple, intuitive programming
- Common look and feel to other Eaton Cooper Power series controls
 - CBC-8000 capacitor control
 - Form 4D recloser control
 - CL-7 regulator control

Protection flexibility

The two separate protection profiles include:

- Overcurrent protection including 54 standard time-current curves available
- Time current curve modifiers including minimum response time adder
- High-current trip and high-current lockout sequence coordination
- Cold load pickup
- Hot-line tag
- Fast trip disabled
- Reclose retry

Metering data

The SPEAR recloser control has instantaneous and demand metering with programmable integration intervals for system loading and planning:

- Demand power
- Demand current
- Instantaneous current and voltage
- Energy and power factor
- Frequency
- Power metering

Data acquisition

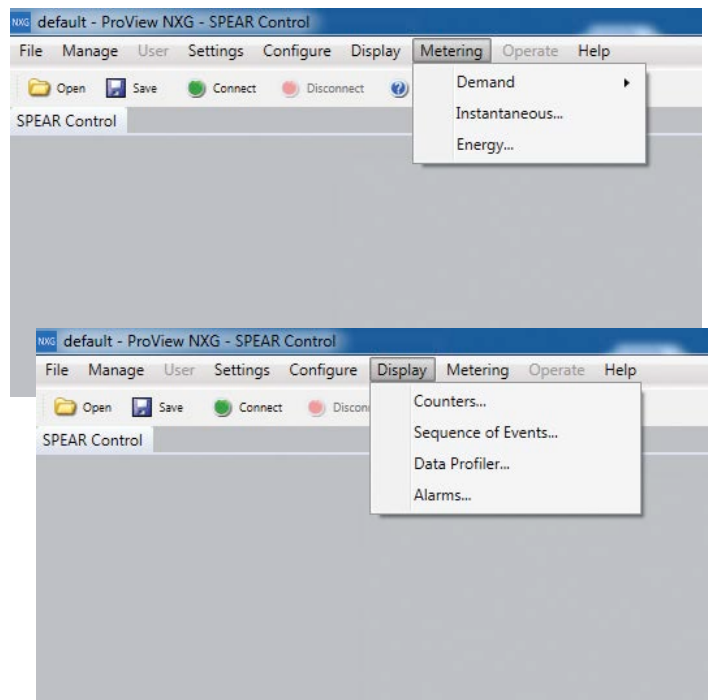
To prevent future outages and improve grid performance, numerous data acquisition features are standard:

- Data profiler, user configurable with memory of 21 days for 10 analogs
- Event recorder with a 1000 event memory

Receive real-time system data

- Metering
- Sequence of events
- Data profiler
- Active control data
- Recloser status
- Hot-line tag
- Non-reclosing
- Alternate profile
- Battery test voltage and current

Metering data



SPEAR display

SPEAR technical specifications

Voltage (kV)	Continuous amperes	Interrupting rating (kA)	BIL (kV)
15	400	8	110
	630	12.5	110
	800	12.5	110
27	400	8	125
	630	12.5	125
	800	12.5	125
38	400	8	170
	630	12.5	170
	800	12.5	170

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