



ENERGY AUTOMATION PRODUCTS

# SIPROTEC 5 Compact – 7SX800

## Universal protection device

[siemens.com/7SX800](https://www.siemens.com/7SX800)

### General

SIPROTEC 7SX800 is a universal, compact protection device forming part of the SIPROTEC 5 device series. As a universal device it helps you renewing your device variants and the associated training and spare parts costs.

It has been specifically developed for the efficient and compact protection of feeders, lines and motors in medium-voltage systems, but can also be used in the low and high voltage range. It covers the most diverse protection, automation, and monitoring applications with its modular functional scope.

The new universal device enables the connection of a large number of inputs and outputs within a very small space and boasts a comprehensive library of protection functions that you can easily activate for your application using function points.

SIPROTEC 7SX800 already features future-proof functions today. Virtual testing with SIPROTEC DigitalTwin considerably cuts the testing and fault analysis times. IoT connectivity is required to provide simple access to your device data and guarantee quick response times. The integrated cybersecurity functions comprehensively protect your device and support your power system's maximum availability.

Based upon the SIPROTEC 5 platform and the powerful DIGSI 5 engineering tool, the functional scope and thus applications of SIPROTEC 7SX800 are continuously enhanced. Future-proof system solutions, high investment security and low operating costs – this is what SIPROTEC 7SX800 stands for.

Main function	<ul style="list-style-type: none"> <li>• Feeder and overcurrent protection for all voltage levels</li> <li>• Motor protection for small to medium-sized motors (100 kW to 2 MW)</li> <li>• Voltage and frequency protection</li> </ul>
Inputs and outputs	4 current transformers, 4 voltage transformers, 4, 14 or 17 binary inputs, 5, 11 or 8 binary outputs
Width of housing	1/6 × 19 inches

### Function overview

- Directional and non-directional overcurrent protection with additional functions
- Detection of ground faults of any type in arc-suppression-coil-grounded or isolated neutral power systems using the following functions: 3I0>, V0>, fleeting contact, cos φ, sin φ, harmonic, directional detection of intermittent ground faults and admittance, pulse pattern detection
- Optimized tripping times thanks to directional comparison
- Motor protection functions: Startup time monitoring, thermal overload protection for stator and rotor, restart inhibit, unbalanced-load protection, load-jam protection

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- Stator and bearing temperature monitoring via temperature sensors with external RTD unit.
- Sensitive ground-fault protection (non-directional, directional) to detect stator ground faults
- Targeted automatic reclosing (AREC) of overhead line sections
- Overvoltage and undervoltage protection
- Frequency protection and frequency change protection for load shedding applications
- Underfrequency load shedding in case of underfrequency, taking into consideration changed infeed conditions thanks to decentralized power generation
- Power protection, configurable as active or reactive power protection
- PQ – Basic: Voltage unbalance; voltage changes: Overvoltage, dip, open circuit; TDD, THD and harmonic component
- Directional reactive power undervoltage protection (undervoltage-controlled reactive power protection)
- Control, synchrocheck and switchgear interlocking protection
- Circuit-breaker failure protection and reignition monitoring
- Graphical logic editor
- Single line display
- Detection of idling drives of pumps and compressors, for example
- Detection of ground faults and short circuits on the motor
- Protection against instability due to undervoltage.
- Detection and recording of power quality data in the medium-voltage and subordinate low-voltage power system
- Load shedding applications
- Retrofits

### Benefits

- Compact and inexpensive universal protection device for a wide variety of applications
- Safety thanks to powerful as well as tried-and-tested protection functions
- Easy to use thanks to the graphic display with single-line representation
- Intuitive device operation using web UI
- Cybersecurity in accordance with NERC CIP and BDEW white paper requirements is available as standard
- Full compatibility between IEC 61850 Editions 1, 2.0 and 2.1

### Our tip:

Register in the Industry Mall, create an account and benefit fully from our SIPROTEC 5 configurator.

### Applications

- Detection and selective 3-pole tripping of short circuits in electrical equipment of star networks, lines with infeed at one or two ends, parallel lines and open-circuited or closed ring systems of all voltage levels
- Detection of ground faults in isolated or arc-suppression-coil-ground power systems in star, ring, or meshed arrangement
- Backup protection for differential protection devices of all kind for lines, transformers, generators, motors, and busbars
- Protection and interfacing of regenerative infeeds
- Protection and monitoring of double star connection capacitor banks
- Protection against thermal overload of the stator due to overcurrent, cooling problems, or pollution as well as of the rotor during startup due to frequent startups, excessively long startups or locked rotor
- Monitoring for voltage unbalance or phase outage
- Monitoring the thermal state and the bearing temperatures with temperature measurement

### Advantages/benefits for users registered and logged in to the Industry Mall:

- Personal product list, with automatic storage of the last 50 configurations
- Insertion of comments (e. g. naming of a branch name for the configured device)
- Automatic saving of the function point calculation
- Visibility of regional list prices (non-logged-in users get the message: Price on request)

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