



Products for modern energy grids

SIPROTEC 5 Protection, automation, and monitoring



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SIPROTEC 5 Innovative, modular, and high quality

Based on more than 100 years of experience: SIPROTEC 5, the highly modular and flexible generation of smart digital field devices for innovative solutions in modern medium-, high-, and extra high-voltage grids, featuring these functions:

- Protection
- Automation
- Monitoring



Innovation focal points

Customized: Perfectly tailored fit

Individually configurable devices deliver customized and cost-efficient solutions over the entire life cycle.

Networked: Designed to communicate

With this groundbreaking system architecture, you have all your communication under control.

Integrated: Comprehensive workflow

Integrated engineering from end to end, from system design to operation facilitates system development all along the line.

Secure: Safety and security inside

Multilayered security mechanisms throughout the entire chain ensure maximum security and availability.

All advantages at a glance

- Safety for employees and equipment
- Cost savings on initial investment, spare part inventory, maintenance, and expansion
- Efficient functioning with optimized operating concepts using the unique DIGSI 5 engineering tool for all applications and devices
- Reliable, high-performance communication solutions
- User-friendly thanks to new system solutions and ergonomic operating concepts
- Flexibility thanks to modular functionality and hardware

SIPROTEC 5 Secure, reliable, and interoperable

Certified quality and conformity - confirmed by independent test laboratories worldwide



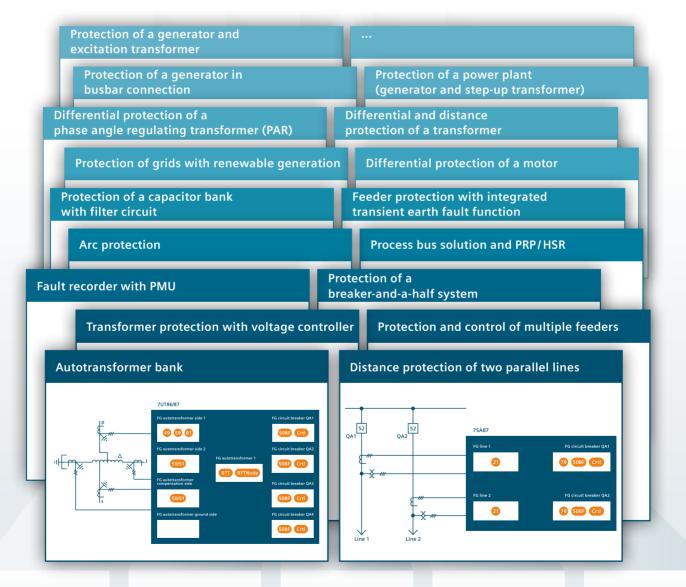
The SIPROTEC 5 portfolio – suitable for every application

| Main function | Device types | Main function | Device types | |
|---|---------------------|---|-------------------------------|--|
| Overcurrent protection Overcurrent protection and control | 75J82, 75J85 | Transformer differential protection Transformer differential protection, control and monitoring | 7UT82, 7UT85, 7UT86, 7UT87 | |
| Line protection Distance protection and | | Motor protection Motor protection and control | 7SK82, 7SK85 | |
| control Line differential protection and | 7SA82, 7SA86, 7SA87 | Generator protection Generator protection and control | 7UM85 | |
| control Combined line differential and | 7SD82, 7SD86, 7SD87 | Busbar protection Centralized busbar protection | 75585 | |
| distance protection and control Breaker management and | 7SL82, 7SL86, 7SL87 | Bay controller Bay controller with control/ | | |
| control Overcurrent protection | 7VK87 | interlocking functions and monitoring, optionally with protection functions | 6MD85, 6MD86 | |
| as backup for lines | 7SJ86 | Fault recorder and power quality recorder Fault recorder with PMU 7KE85 | | |

Devices are flexibly expandable with system functions like PMU and arc protection. All devices 7XX85, 86, and 87 can be enhanced with expansion modules.

Applications Flexible, versatile, and integrative

Discover these and many other application options with SIPROTEC 5 – thanks to the DIGSI 5 function library.



System solutions Consistent, individual, and configurable

Perfectly tailored fit

- Completely tailored to your needs thanks to a modular system design in hardware, functionality, and communication
- Functional integration of diverse applications including protection, control, measurement, monitoring, power quality, and fault recording
- Identical expansion and communication modules for all devices
- Straightforward installation and interchangeability plus optimal reliability – with innovative terminal block technology
- Lower training costs, higher security thanks to identical functions across the entire system family

Holistic workflow

- Integrated end-to-end system and device engineering – from the single line of the plant to device parameterization
- Simple and intuitive graphical linking of primary and secondary technologies
- Adaptable application templates convenient for most common applications
- Open interfaces such as XML for seamless integration into the processing world
- Integrated tools for reliable testing during the engineering and start-up phases and for simulation of operating scenarios
- Highest interoperability, efficient replacement and expansion concepts – guaranteed by flexible IEC 61850 object modeling
- Comprehensive one IEC 61850 system configurator for all IEC 61850 devices in your plant

Your immediate advantage:

Save money on your initial investment and spare part inventory with individually configurable devices.

Your immediate advantage:

Make the most of your substantial time savings and high level of data security and transparency throughout the entire life cycle of your system using the unique DIGSI 5 engineering tool for all applications and devices.



Communication

Comprehensive, interoperable, and secure

Designed to communicate

- Straightforward adaptation to existing communication structures
- Scalable redundancy according to requirements in hardware and software
- Seamless redundancy protocols PRP, HSR and RSTP
- Several parallel communication channels for integrated solutions
- Always matching communication modules plug-in, retrofittable
- Two independent serial protocols on one module
- Process bus interfaces conforming to standards IEC 61850-9-2 and IEEE 1588
- Comprehensive test routines integrated

Safety and security inside

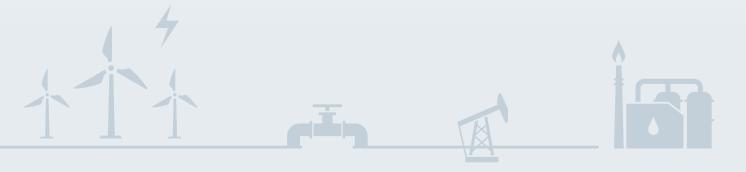
- Maximum protection of personnel and equipment with proven functions
- Highest strength in terms of voltage, EMC, and climatic and mechanical stress thanks to durable and ruggedized hardware and an ingenious layout of the entire electronics
- High availability the result of sophisticated self-monitoring routines
- Compliant to the strict cyber security requirements according to the BDEW Whitepaper and NERC CIP
- Security through encryption on the entire communication chain between DIGSI and device
- Automatic logging for safety-critical actions and attempts to access devices and systems

Your immediate advantage:

With innovative communication as a central component in your system architecture, you will take advantage of the essential flexibility and security that is required within the highly networked system landscape of the future.

Your immediate advantage:

Enjoy an exceptionally high level of system security and reliability with our multilayered integrated security and safety mechanisms.



Hardware Modular, robust, and innovative

- Precise adaptation of the hardware to your needs and application
- High availability thanks to dust-tight, sealed, and temperature-optimized housing
- Simple installation and interchangeability with maximum safety through innovative terminal technology
- Retrofittable and exchangeable plug-in modules
- Simple stocking of spare parts thanks to identical expansion and communication modules for all devices



Subject to changes and errors.

The information given in this document only contains general descriptions and / or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

For all products using security features of OpenSSL the following shall apply:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (www.openssl.org).

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

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