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SIPROTEC 7VK87

Breaker management device

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Description

The SIPROTEC 7VK87 circuit breaker management device has specifically been designed for circuit-breaker management. With its modular structure, flexibility and the powerful DIGSI 5 engineering tool, the SIPROTEC 7VK87 device offers future-oriented system solutions with high investment security and low operating costs.

Main function	Automatic reclosing, synchrocheck, circuit breaker failure protection
Tripping	1-pole and 3-pole or 3-pole
Inputs and outputs	12 predefined standard variants with 4/4 or 8/8 current/voltage transformers, 5 to 31 binary inputs, 8 to 46 binary outputs
Hardware flexibility	Flexibly adjustable I/O quantity structure within the scope of the SIPROTEC 5 modular system
Housing width	1/3 × 19 inch to 2/1 × 19 inch

Applications

- Automatic reclosing after 1/3-pole tripping
- Synchrocheck before reclosing
- Circuit-Breaker Failure Protection
- Also used in switchgear with breaker-and-a-half layout
- Backup overcurrent and voltage protection
- Protection data communication over different distances and physical media, such as optical fiber, two-wire connections, and communication networks
- Phasor Measurement Unit (PMU)



SIPROTEC 5 Device with Expansion Module

Functions

DIGSI 5 permits all functions to be configured and combined as required.

- Automatic reclosing function and synchrocheck for line protection applications with 1-pole and 3-pole tripping
- Circuit-breaker failure protection for 1-pole and 3-pole tripping
- Control, synchrocheck and switchgear interlocking protection
- Voltage controller for transformers
- Arc protection
- Voltage protection
- Graphical logic editor to create powerful automation functions in the device

Efficient and modular

- Single-line representation in small or large display
- Integrated electrical Ethernet RJ45 for DIGSI 5 and IEC 61850 (reporting and GOOSE)
- Up to 4 optional pluggable communication modules, usable for different and redundant protocols (IEC 61850, IEC 60870-5-103, IEC 60870-5-104, Modbus TCP, DNP3 serial and TCP, PROFINET IO)
- Serial protection data communication via optical fibers, twowire connections and communication networks (SDH networks, MPLS electrical power systems, for example using IEEE C37.94, and others), including automatic switchover between ring and chain topology.
- Reliable data transmission via PRP and HSR redundancy protocols
- Extensive cyber security functionality, such as role-based access control (RBAC), protocolling security-related events or signed firmware
- Simple, quick and secure access to device data via a standard Web browser - without additional software
- Phasor measurement unit (PMU) for synchrophasor measured values and IEEE C37.118 protocol
- Time synchronization using IEEE 1588
- Powerful fault recording (buffer for a max. record time of 80 sec. at 8 kHz or 320 sec. at 2 kHz)
- Auxiliary functions for simple tests and commissioning
- Flexibly adjustable I/O quantity structure within the scope of the SIPROTEC 5 modular system

Benefits

- Safe and reliable automation and control of your systems
- Purposeful and easy handling of devices and software thanks to a user-friendly design
- Cyber security in accordance with NERC CIP and BDEW Whitepaper requirements
- Highest availability even under extreme environmental conditions by "conformal coating" of electronic boards
- Powerful communication components warrant safe and effective solutions
- High investment security and low operating costs due to future-oriented system solutions



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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), cryptographic software written by Eric Young (eay@cryptsoft.com) and software developed by Bodo Moeller.