

# SIEMENS

Ingenuity for life

## SIPROTEC 7VK87

Breaker management device

[www.siemens.com/siprotec](http://www.siemens.com/siprotec)

### 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 solutions for protection, control, automation, monitoring, and Power Quality – Basic.

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
- Serial protection communication with SIPROTEC 5 and SIPROTEC 4 devices over different distances and physical media, such as optical fiber, two-wire connections, and communication networks
- Phasor Measurement Unit (PMU)
- Detection and recording of power-quality data in the medium-voltage and subordinate low-voltage power system

### Functions



SIPROTEC 5 Device with Expansion Module

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



# Modular und flexibel

- 1-pole automatic reclosing function secondary arc detection (SAD)
- Circuit-breaker failure protection for 1-pole and 3-pole tripping
- Point-on-wave switching
- Control, synchrocheck, and switchgear interlocking protection
- Voltage controller for transformers
- Fault locator plus for accurate fault location with inhomogenous line sections and targeted automatic overhead-line section reclosing (AREC)
- Arc protection
- Voltage protection
- Graphical logic editor to create high-performance automation functions in the device
- Single-line representation in the small or large display
- Fixed integrated electrical Ethernet RJ45 interface for DIGSI 5 and IEC 61850 (reporting and GOOSE)
- Up to 4 optional, pluggable communication modules, usable for different and redundant protocols (IEC 61850-8-1, IEC 61850-9-2 Client, IEC 60870-5-103,

**Siemens Sans Bold 9pt**  
Siemens Sans Roman 9pt  
75 Lorem ipsum dolor  
Consecte tuer  
Adipiscing 10256

**Dolor sit amet sit amet**  
75 Lorem ipsum dolor  
Consecte tuer  
Adipiscing 10256

# Efficient and modular

- IEC 60870-5-104, Modbus TCP, DNP3 serial and TCP, PROFINET IO, PROFINET IO S2 redundancy)
- Virtual network partitioning (IEEE 802.1Q - VLAN)
- Serial protection communication via optical fibers, two-wire connections, and communication networks (IEEE C37.94 and others), including automatic switch-over between ring and chain topology.
- PQ - Basic: Voltage unbalance; voltage changes: over-voltage, dip, interruption; TDD, THD, and harmonics
- Reliable data transmission via PRP and HSR redundancy protocols
- Extensive cybersecurity functionality, such as role-based access control (RBAC), logging of security-related events, signed firmware, or authenticated IEEE 802.1X network access
- Simple, fast, and secure access to the device via a standard Web browser to display all information and diagnostic data, vector diagrams, single-line and device display pages
- Phasor Measurement Unit (PMU) for synchrophasor measured values and IEEE C37.118 protocol
- Time synchronization using IEEE 1588
- High-performance fault recording (buffer for a max. record time of 80 s at 8 kHz or 320 s 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
- 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 standard coating of the modules

## Benefits

- Safe and reliable automation and control of your systems



Siemens 2020  
Smart Infrastructure  
Digital Grid  
Humboldtstrasse 59  
90459 Nuremberg,  
Germany

For the U.S. published by  
Siemens Industry Inc.

100 Technology Drive  
Alpharetta, GA 30005  
United States

Customer Support: <http://www.siemens.com/csc>

© Siemens 2020. Subject to changes and errors.  
SIPROTEC 7VK87\_Profile V1.docx \_12.20

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](http://www.openssl.org)), cryptographic software written by Eric Young ([eay@cryptsoft.com](mailto:eay@cryptsoft.com)) and software developed by Bodo Moeller.