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SIPROTEC 7UT82

Two-winding transformer differential protection

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Description

The SIPROTEC 7UT82 transformer differential protection has been designed specifically for the protection of two-winding transformers. It is the main protection for the transformer and contains many other protection and monitoring functions. The additional protection functions can also be used as backup protection for subsequent protected objects (such as cables or lines). In this process, you are also supported by the modular expandability of the hardware. With its modular structure, flexibility and the powerful DIGSI 5 engineering tool, SIPROTEC 7UT82 offers future-oriented system solutions with high investment security and low operating costs.

| | |
|-------------------------|---|
| Main function | 1 differential protection function (standard or auto transformer) with additional stabilization; up to 2 restricted ground-fault protection functions |
| Usable measuring points | 2 x 3-phase current measuring points, 2 x 1-phase current measuring points |
| Inputs and outputs | 1 predefined standard variant with 8 current transformers, 7 binary inputs, 7 binary outputs |
| Hardware flexibility | The 1/3 base module is available with the IO103 module; it is not possible to add 1/6 expansion modules, available with large and small display |
| Housing width | 1/3 x 19 inches |

Applications

Application templates are available in DIGSI 5 for standard applications. They contain basic configurations and default settings. These can be used directly or as a template for application-related adaptation. The available measuring



SIPROTEC 7UT82 Transformer Differential Protection (1/3 device = standard variant W1)

points make varied applications possible. Prior to ordering a device, please configure the application with DIGSI 5. Table "Functions and application templates" shows the scope of functions of the device. Use the configurator to determine the necessary function points.

Functions

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

- Transformer differential protection for two-winding transformers with versatile, additional protection functions
- Transformer differential protection for phase-angle regulating transformers of the single core type
- Universal usability of the permissible measuring points
- Applicable from average up to extra-high voltage

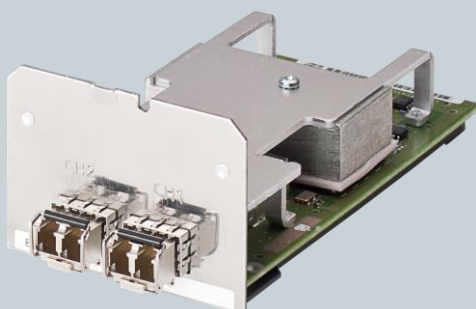
Compact and efficient

- Protection of standard power transformers, auto transformers and motors
- Increased sensitivity with near-neutral-point ground faults through a separate restricted ground-fault protection
- Flexible adaptation to the transformer vector group
- Controlling closing and overexcitation processes
- Safe behavior in case of current-transformer saturation with different degrees of saturation
- Adaptive adaptation of the operate curve to the transformer tap position
- Arc protection
- Graphical logic editor to create powerful automation functions in the device
- Single line representation in small or large display
- Integrated electrical Ethernet RJ45 for DIGSI 5 and IEC 61850 (reporting and GOOSE)
- Up to 2 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, two wire connections and communication networks (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
- 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.

Benefits

- Compact and low-cost transformer differential protection
- Safety due to powerful protection functions
- Data security and transparency over the entire lifecycle of the plant, saving time and money
- Increased reliability and quality of the engineering process
- 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
- Full compatibility between IEC 61850 Editions 1 and 2



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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.