

Disclaimer of Liability

Although we have carefully checked the contents of this publication for conformity with the hardware and software described, we cannot guarantee complete conformity since errors cannot be excluded.

The information provided in this document is checked at regular intervals and any corrections that might become necessary are included in the next releases. Any suggestions for improvement are welcome.

Subject to change without prior notice.

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NOTE

Dimensions, Installation and Connection Notes, General Diagrams, and Technical Data are part of the device manuals.

The device manuals are available in the SIPROTEC Download Area on the Internet (http://www.siemens.com/siprotec).

Notes on Safety

This manual contains notes that must be adhered to for your own personal safety and to avoid damage to property.

However, it does not constitute a complete description of all safety measures required for installation, service, and maintenance of the equipment (module, device) in question. Details are to be taken from the device manual and those are mandatory.



WARNING

Danger of severe personal injury or substantial damage to property

Hazardous voltages may occur in devices and modules during operation depending on the design and application.

- Always observe the instructions given in "Qualified Electrical Engineering Personnel" below.

Qualified Electrical Engineering Personnel

Only qualified electrical engineering personnel may commission and operate the equipment (module, device) described in this document. Qualified electrical engineering personnel in the sense of this document are people who can demonstrate technical qualifications as electrical technicians. These persons may commission, isolate, ground and label devices, systems and circuits according to the standards of safety engineering.

Use as Prescribed

The equipment (device, module) may only be used for such applications as set out in the catalogs and the technical description, and only in combination with third-party equipment recommended and approved by Siemens.

Problem-free and safe operation of the product depends on the following:

- Proper transport
Proper storage, setup, and installation
Proper operation and maintenance



WARNING

Danger of death, personal injury or substantial property damage

Non-observance of the following measures can result in death, personal injury or substantial property damage.

- The equipment must be grounded at the grounding terminal before any connections are made.
All circuit components connected to the power supply may be subject to hazardous voltages.
Hazardous voltages may be present in equipment even after the supply voltage has been disconnected (capacitors can still be charged).
Equipment with exposed current-transformer circuits must not be operated. Before disconnecting the equipment, ensure that the current-transformer circuits are short-circuited.
The limit values stated under "Technical Data" in the corresponding device manuals may not be exceeded. This must also be considered during testing and commissioning.

If you require further information, or if particular problems occur that are not handled in sufficient depth in the instructions of the respective product, you can request help through your local Siemens Office or representative.



CAUTION

Danger of damage due to static electrical charges

The printed circuit boards of numerical relays contain CMOS circuits. These shall not be withdrawn or inserted under live conditions! The modules must be so handled that any possibility of damage due to static electrical charges is excluded.

- During any necessary handling of individual modules, the recommendations relating to the handling of electrostatically endangered components (EEC) must be observed.
In installed conditions, the modules are in no danger.

Statement of Conformity

CE EMC Council Directive 2004/108/EC
This conformity is based on the compliance with the following harmonized standards: EN 61000-6-2, EN 61000-6-4 and EN 60255-27

Further Standards

IEC 60255, VDE 0435, ANSI/IEEE C37.90.



NOTE

Battery disposal

The batteries must only be replaced with the same type or another type recommended by the manufacturer. Improper replacement involves explosion hazard. For disposing the batteries it is necessary to observe the local national/international directives.



CAUTION

Danger of fire or chemical burn hazard

The battery used in this device may present a fire or chemical burn hazard if mistreated.

- Do not recharge, disassemble, heat above 100 °C (212 °F) or incinerate.
Dispose the used battery promptly.
Keep away from children!

Current Terminals

Table with 2 columns: Terminal description and dimensions. Wire cross-section: AWG 14-12 (2.6 mm² to 3.3 mm²) / AWG 14-10 (2.6 mm² to 6.6 mm²). Stripping length: 10 mm (0.39 in) to 11 mm (0.43 in); only solid copper wires may be used.

Table with 2 columns: Terminal description and dimensions. Permissible tightening torque at the terminal screw: 2.7 Nm (23.9 lb.in.)

Table with 2 columns: Terminal description and dimensions. Location on protection device: Port Q (for conventional CTs)

Voltage, BI, BO, PS Input

Table with 2 columns: Terminal description and dimensions. Wire cross-section: AWG 18-12 (0.8 mm² to 1.5 mm²). Stripping length: 10 mm (0.39 in)



NOTE

The plug terminal is screwed tightly with the housing. The multi-conductor with cross-section 0.8 mm² to 1.5 mm² and the cold-pressed terminal with 10 mm length are recommended.

Unpacking a Device

Devices are tested prior to delivery. Devices are packed on site in a way that meets the requirements of standard ISO 2248.

- Check the packing for external transport damage. Damaged packing may indicate that the devices inside have also sustained damage.
Unpack devices carefully; do not use force.
Visually check the devices to ensure that they are in perfect mechanical condition.
Check the enclosed accessories against the delivery note to make sure that everything is complete.
Keep the packing in case the devices must be stored or transported elsewhere.
Return damaged devices to the manufacturer, stating the defect. Use the original packaging or transport packaging that meets the requirements of standard ISO 2248.

Repacking a Device

- If you store devices after incoming inspection, pack them in suitable storage packaging.
If devices are to be transported, pack them in transport packing.
Put the accessories supplied and the test certificate in the packing with the device.
Before initial energization with supply voltage, or after storage, the relay shall be situated in the operating area for at least two hours in order to ensure temperature equalization and to avoid humidity influences and condensation.

Storing a Device

- Only store devices on which you have carried out an incoming inspection, thus ensuring that the warranty remains valid. The incoming inspection is described in the Operating manual.
SIPROTEC devices must be stored in rooms, which are clean and dry. Devices or associated replacement modules must be stored at a temperature of -25 °C to +55 °C (-13 °F to 131 °F).
The relative humidity must be at a level where condensate and ice is prevented from forming.
Siemens recommends that you observe a restricted storage temperature range of +10 °C to +35 °C (50 °F to 95 °F), in order to prevent the electrolytic capacitors used in the power supply from aging prematurely.
If the device has been in storage for more than 2 years, connect it to an auxiliary voltage for 1 to 2 days. This will cause the electrolytic capacitors to form on the printed circuit board assemblies again.
If devices are to be shipped elsewhere, you can reuse their transport packaging. If using other packaging, ensure that the transport requirements according to ISO 2248 are met. Storage packaging for individual devices is not adequate for transport purposes.
The lithium batteries contained in SIPROTEC devices meet all international requirements of the hazardous goods specifications for the various carriers (Special Provision 188 of the UN Recommendations on the Transport of Dangerous Goods, Special Provision A45 of the IATA Dangerous Goods Regulations, and the ICAO Technical Instructions). This only applies to the original battery or genuine replacement batteries.

Nominal Values

The nominal values shown on the name plate of the device have to be observed.

Operating Temperature

Permissible temperature range for permanent operation: - 5 °C to + 55 °C (+ 23 °F to + 131 °F)

Degree of Protection (acc. to IEC 60529)

For use in environment with degree of pollution 2.

Table with 2 columns: Protection type and IP rating. Panel flush: IP 51. Protection against contact: IP 10.

Operating Preconditions

For most of the operational functions, the input of passwords is necessary. This applies for all entries which concern the operation of the device, for example configuration, setting of functional parameters, or initiation of test procedures. If the device provides control functions which allow operation of the switch gear, passwords are equally required before any switching commands be carried out.

Password input is not required for read-out of annunciations, operating data or fault data, or for read-out of setting parameters.

The following ranges of access authorization are defined:

- switching/markings/matching
non-interlocked switching
tests and diagnosis
individual parameters
hardware tests
parameter groups

Depending on the scope of functions of the device, one or the other access authorization may be omitted.

Input of the password is requested, if applicable, during operation with DIGSI or from the front of the device. Configuration parameters, e.g. functional scope, allocation, and configuration of the logical functions, can only be changed with DIGSI.



NOTE

All passwords are preset with the 6-figure code 000000.

You should change the passwords at last after completion of commissioning in order to prevent the device from unintentional alterations or from unauthorized operation. Passwords can be changed only by means of the program DIGSI.