

SPRECON[®]-E-T3

Compact Remote Terminal Units
for Automation and Remote Control

INTRODUCTION

Remote control systems have become essential for supervisory control and monitoring of separated or geographically spread processes regarding energy distribution or industrial networks. Depending on the field of application, various requirements have to be met regarding:

- various inputs and outputs
- Process signals
- Environmental conditions
- Communication protocols
- Communication technology
- as well as essential logical functions

The concept of the SPRECON-E automation and remote control system is based on technical and economical considerations in order to provide optimal solutions by simultaneously sustaining the overall system concept.

The SPRECON-E automation and remote control system consists of the following devices of the SPRECON-E product family:

- Multifunctional automation systems SPRECON-E-Cx2/-Cx4/-Cx6
- Protection devices SPRECON-E-P
- Compact RTUs SPRECON-E-T3

All devices are based on a uniform system architecture in terms of data structures, communication, logical functions as well as engineering and service tools. They are distinguished by their rack sizes as well as their application-based parameters.

RANGE OF FUNCTIONS

The SPRECON-E-T3 series has especially been developed for low I/O numbers. The systems can be applied both as gateways and local RTUs with or without automation functions. The applied standard communication protocols are IEC 60870-5-104 (Ethernet), IEC 60870-5-101 and IEC 61850. Optionally, all other protocols which are implemented into the SPRECON system family can be used (i. e. Modbus, measuring interface).

Due to their modular and compact system design, the SPRECON-E-T3 devices allow various combinations which therefore results in high flexibility and scalability.

AREAS OF APPLICATION

The SPRECON-E-T3 series can be applied to:

- Electric power supply
- Switchgears and distribution systems
- Caloric power plants, hydroelectric power plants and wind power stations
- Traction power supply
- Industrial networks
- Smart Grid, Feed-In Management
- Municipal utilities
- Water supply and sewage systems
- Gas and oil supply, district heating
- Traffic control systems

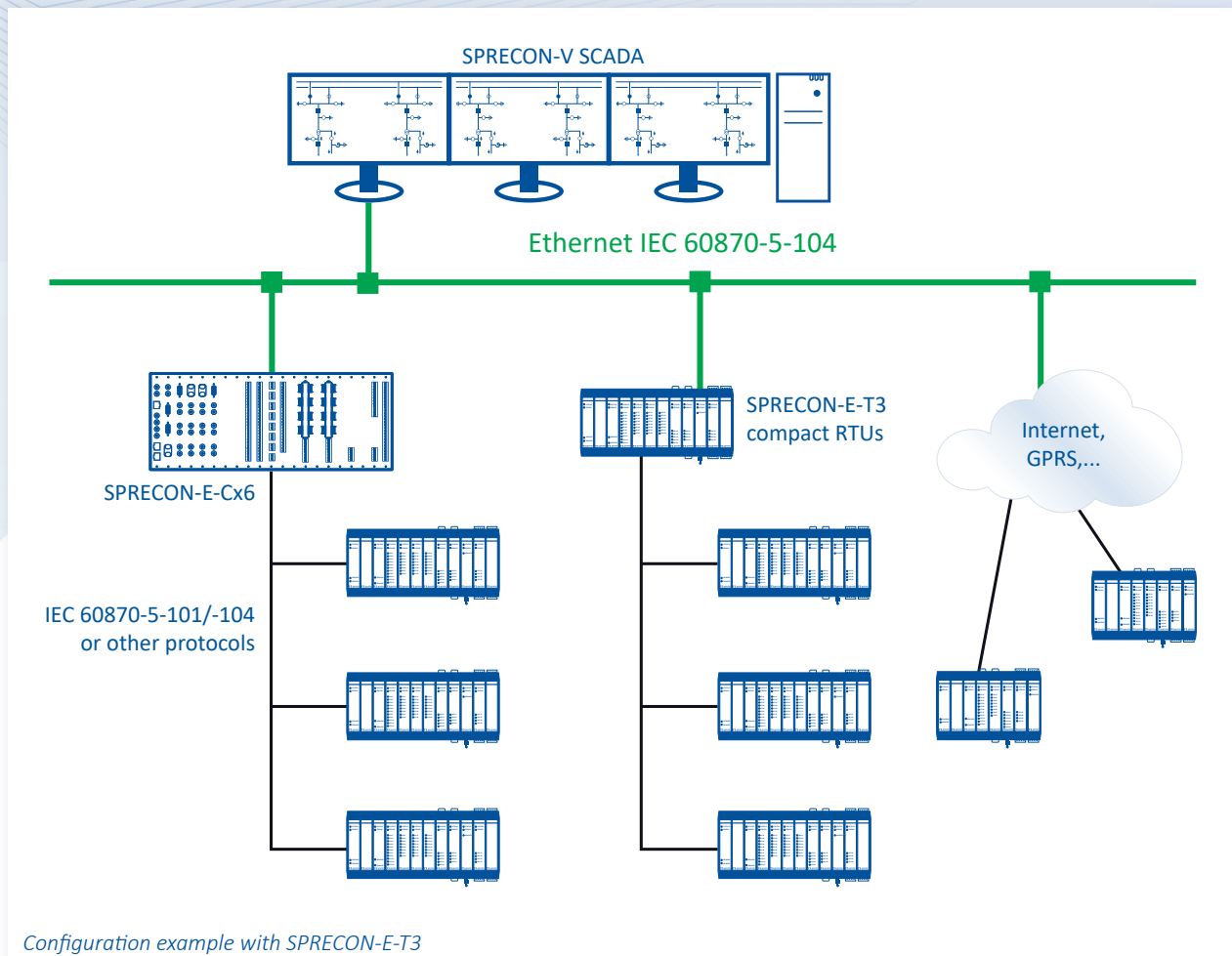
CONFIGURATION

Each SPRECON-E-T3 device consists of a CPU module and certain I/O modules, which are connected via an internal bus as well as via a power supply module. The devices use serial, Ethernet and wireless connections (GPRS and UMTS modem) for the data exchange. A control panel can be optionally connected to the RTUs.

By combination of different I/O modules, the devices can be individually assembled in order to meet particular requirements. All functions can be configured individually whereby system functions and project settings are kept separate. Parametrisation is accomplished with the SPRECON-E-Designer (parametrisation data).

FEATURES

- Integrated Web server (shows process and system information)
- Parametrisation data can be stored on a removeable storage medium, which can be also used for device back-up and therefore for device recovery
- I/O modules for (direct) measurement
- Pluggable screw terminals for process signalling
- Function diagram acc. to IEC 61131-3 (optional)
- Control panel (optional)
- CPU for communication via standard interfaces or GSM/GPRS/UMTS modem with IPsec encryption directly by CPU (option)
- 2 Ethernet interfaces for network separation and gateway functions
- Network communication via VPN



SPRECON-E-T3 – TECHNICAL DATA (EXCERPT)

MODULES (W X H X D)

- 22,5 x 114,5 x 99 mm
- 45 x 114,5 x 99 mm

DIN rail mounting, pluggable screw terminals for process signalling (RM 5,08)

PERFORMANCE CHARACTERISTICS

- Max. number of inputs/outputs per module
 - Up to 16 digital inputs
 - 24/48-60/110/220 V DC
 - Time resolution: 1 ms
- Up to 16 digital outputs 250 V AC/DC
- Up to 8 digital control outputs
- 250 V AC/DC
- Up to 8 analog inputs
 - 0 to ± 20 mA / 0 to ± 10 V
- Up to 4 analog inputs
 - PT100 (-100 to 300 °C)
- Up to 8 I/O modules per CPU
- Transducer inputs 3 VT/ 4 CT
 - 1A / 5A
 - (Direct) Measurement 230 V AC/400V AC
 - Transducer inputs 110 V
 - 50/60 Hz
 - Up to 15 modules per CPU
- NCIT (non-conventional instrument transformer)
 - low power inputs 3 VT/ 4 CT
 - Power input 225 mV
 - Voltage input 3,25 V V3
- Power supply
 - 24V DC to 60 V DC or 110 to 250 V DC and 110 to 230 V AC / 50/60 Hz

COMMUNICATION PROTOCOLS

- IEC 61850
- IEC 60870-5-101/-103/-104
- Modbus, DNP3
- IEC 62056 (IEC 1107)

COMMUNICATION INTERFACES

- LAN
 - 1 x Ethernet 10/100 Mbit/s (RJ45)
- RS232
- RS422/485
- GSM/GPRS/UMTS modem

TESTS

Acc. EN 55022, IEC 60255, IEC 60870-2-1, IEC 61000-4, IEC 61000-6-5, CE designation

ENVIRONMENTAL CONDITIONS

- Recommended temp. -5 to +55 °C
- Limits: -25 to +70 °C (on request)

FUNCTIONS

- Control and monitoring of electric devices and process elements
- LED signalling at the I/O modules
- Single and double commands with 1-, 1½-, 2-pole control
- Automatic functions for switching sequences
- Programmable logic (IEC 61131), AWL, FUP, boolean
- Switching authority and command levels
- Switching device interlocking
- Switching device blocking
- Substitution of switching device status
- Group-assigned indication and measure value blocking
- Limit value monitoring
- Maximum demand value calculation
- Maximum value calculation
- Configurable transmission mode for measured values
- Metered value capturing and processing
- Elapsed hour meter, operations counter
- On-site archives
- Archiving and configuration on removable storage medium
- Remote maintenance and configuration
- Time synchronisation with DCF77, GPS, NTP, control/remote control
- Continuous self-monitoring
- Open interfaces for connection to intelligent electronic devices (IED)
- Support of common standards and, optionally, proprietary protocols
- IPsec encryption directly by CPU

HMI CONTROL PANEL

- Mountable attached or detached
- Full graphical colour display (high resolution)
- 25 individually configurable LEDs (red, green, orange)
- Expandable to up to two alarm panels

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