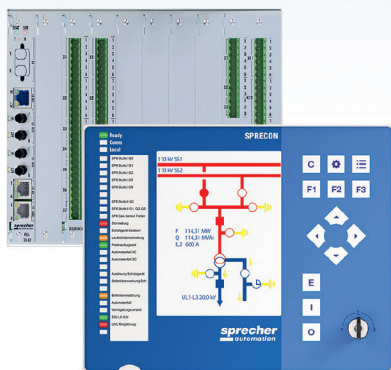




SPRECON[®]-E-C

Multifunctional Devices for Automation,
Control and Remote Control

INTRODUCTION

Modern automation, control and remote control systems have become essential for optimised and secure control and monitoring of processes regarding power distribution and industrial networks. Depending on the specific field of application, different requirements have to be met by the devices regarding:

- Various I/O quantities
- Various signal types
- Environmental conditions
- Communication and transmission technology
- Logical functions

The concept of the SPRECON-E automation, control 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 platform consists of the following devices of the SPRECON-E product family:

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

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

Due to their high scalability, these automation, control and remote control devices can be applied to a wide range of different types of plants and utilities.

The uniform design allows various applications such as station computers, bay computers, remote control units or other automation devices.

Standard protocols like IEC 61850, IEC 60870-5-101,-103 and -104 allow easy communication and data transmission to the higher-levelled control system. The SPRECON-E system platform also features integration of various proprietary protocols. The redundancy protocols PRP / HSR and the corresponding hardware variants are also provided for maximum availability. Furthermore, the series integrate communication technology like switch, media converter and GPRS-modem.

AREAS OF APPLICATION

The SPRECON-E-C Series is especially qualified for the following application areas:

- Electric power supply
 - High and medium voltage switchgears, distribution systems
 - Caloric power plants, hydroelectric power plants and wind power stations, photovoltaic power plants
- Traction power supply
- Industrial networks
- Smart Grid
- Municipal utilities
 - Water supply and sewage systems
 - Gas and oil supply, district heating

CONFIGURATION

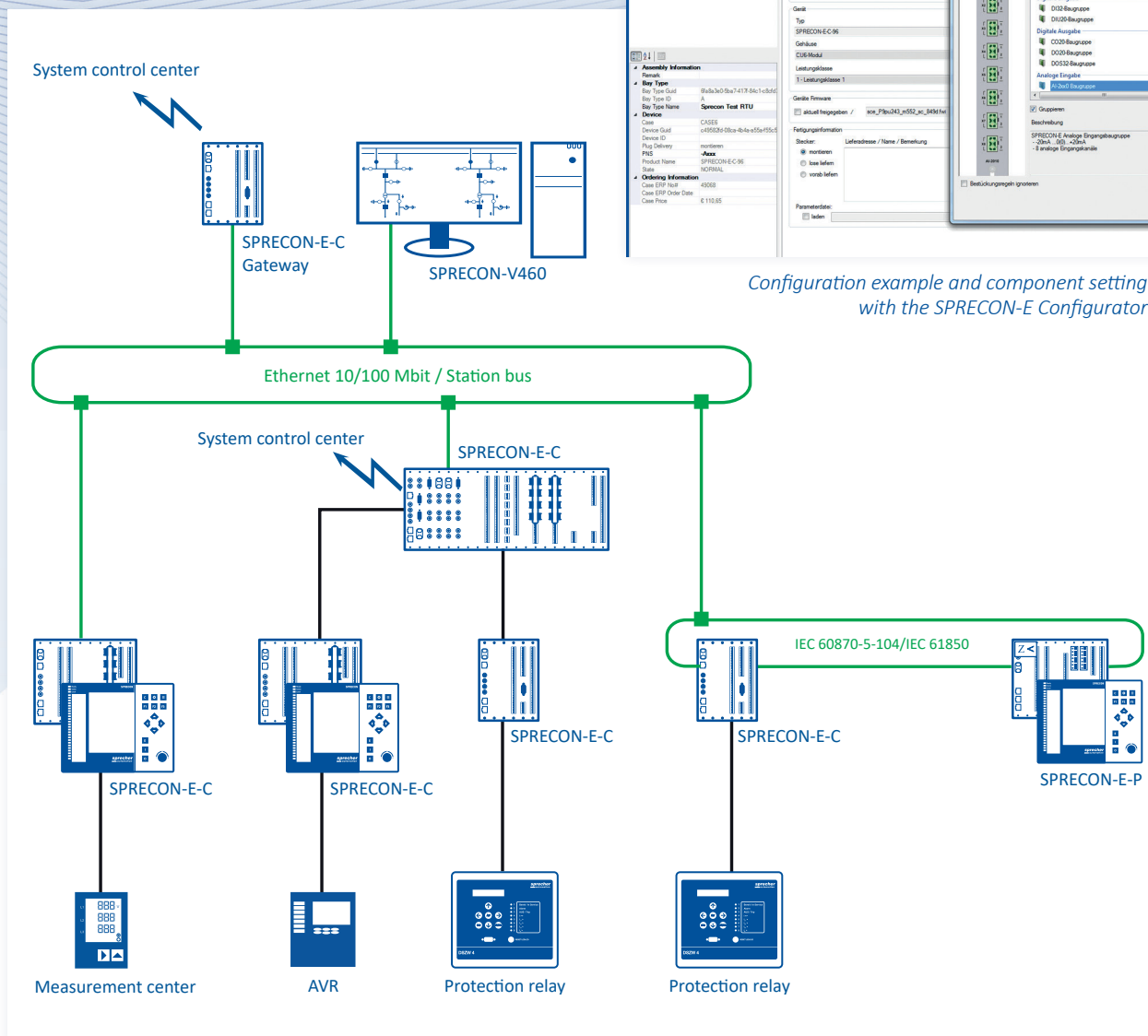
Each SPRECON-E-C device consists of a basic frame (rack, power supply, CPU, I/O modules) and, if required, a detachable HMI control panel. By combination of different pluggable modules, the devices can be assembled individually in order to meet particular requirements.

All functions can be configured separately, whereas system parameterisation is distinguished from device-specific settings.

The SPRECON-E Engineering Center offers specific software modules for local, network-supported or remote engineering and maintenance.

OPERATION

Beside remote control via standard or custom-er-specific SCADA protocols, comfortable and clear operation is guaranteed by the detachable HMI control panel with a full graphical display. The devices are also equipped with interfaces to connect them to a local HMI workstation as well as to a SCADA system (SPRECON-V460).



Configuration example and component setting with the SPRECON-E Configurator

SPRECON-E-C – TECHNICAL DATA (EXCERPT)

CASES (W X H X D)

- Cx2/24HP 8 (3 free slots): 131 x 176 x 170 mm
 - Cx4/40HP (7 free slots): 212 x 176 x 170 mm
 - Cx6/84HP (18 free slots): 436 x 176 x 170 mm
- Flush and surface-mounted, individually connectable

PERFORMANCE CHARACTERISTICS

- Max. number of inputs/outputs per slot
 - Up to 20 digital inputs
24 to 220 V DC and 110 to 230 V AC/50/60 Hz
 - Up to 20 digital outputs 250 V AC/DC
 - Up to 10 digital control outputs 250 V AC/DC
 - Up to 8 analog inputs or 4 outputs 0 to ± 20 mA
 - Up to 8 PT100 inputs for 2-wire or 4-wire circuit
 - Up to 8 measurement inputs
 - 1 A / 2 A / 5 A / 10 A
 - 100 V / 220 V
 - 16,7 Hz / 50 Hz / 60 Hz
 - Up to 32 binary inputs 24/48/60 V DC
 - Up to 32 signalling outputs 24 up to 48 V DC (short-circuit-proof)
- Power supply 24 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, Courier, DNP3.0, Profibus DP Master
- Extensive library of proprietary protocols

COMMUNICATION INTERFACES

- LAN
 - 2 / 3 x Ethernet 10/100 Mbit/s (RJ45) or
 - Ethernet switch for optical ring 2 x opt. (BFOC) and 1/3 electr. (RJ45)
- RS232
- RS422/485
- Fibre-optic
- Star coupler

TESTS

Acc. to EN 55022, IEC 60255, IEC 60255-22, IEC 60870-2, 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 switching devices and process elements
- Single and double commands with 1-, 1½-, 2-pole control
- Power output with high making/breaking capacity for direct motor control via switching device
- Control of transformers and Petersen coils
- Automatic functions for switching sequences
- Programmable logics (IEC 61131)
- Switching authority and command levels
- Station and bay interlocking
- Measured value capturing with direct connectivity to current and voltage transformers
- Switching device blocking
- Substitution of switching device status
- Event recording
- CityRuf, SMS notification
- Group-assigned indication and measured value blocking
- Limit value monitoring
- Max/min demand value calculation
- Average value calculation
- Configurable transmission mode for measured values
- Metering
- Elapsed hour meter, operations counter
- Remote maintenance and configuration
- Time synchronisation with DCF77, GPS, SCADA protocol, NTP
- Continuous self-monitoring
- Synchrocheck, parallel connection
- AVR, protection (SPRECON-E-P)
- Web server for diagnosis and system analysis
- Open interfaces for connection to intelligent electronic devices (IEC)
- Support of common standards and proprietary protocols
- Highest communication performance with max. number of 18 independent interfaces concurrently

HMI CONTROL PANEL

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

ALARM PANEL

- 100 individually configurable LEDs
- Expandable with an additional alarm panel

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