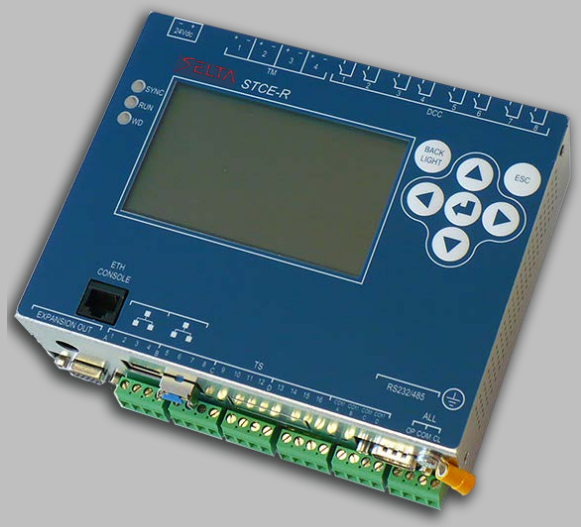


STCE-R

DIN RAIL REMOTE CONTROL UNIT (RTU)

STCE-R is the new Selta DIN rail RTU, cost effective and compact sized, conceived for implementing several functions including remote control, chronological events recording and local automation of the electrical power networks. Modular, flexible and compatible with all the main protocols, both standard and proprietary, it is the ideal solution for every kind of network, even the most complex ones.
STCE-R manages the information from and towards the power plant in an integrated way with the other electronic devices available in the station and it allows a fast, punctual and flexible communication with the network management centres. It is the ideal solution for controlling different network infrastructure, even though the excellent performances make it perfectly fitting, above all scenarios, to the power networks, as in the HV/MV distribution substations.
The modular architecture and the distributed intelligence optimize its employment. Advanced configuration and diagnostic equipment allow easy, prompt and effective maintenance intervention.

Main integrated functions

RTU

- Acquisition of simple or multiple digital signals, analogue or digital measurements, power impulses
- Setting of commands and set-points
- Programming of filters, scale factors and threshold values
- Up to 6 control centres with IEC 60870-5-101 and 104 protocols
- Possibility to enable a IEC 61850 server
- Employment within dedicated, switched or IP networks
- Realization of distributed architectures with station LAN
- Concentration of information coming from remote equipment or from local IEDs with standard or proprietary protocols
- Conversion from proprietary to standard protocols

ADVANCED MONITORING

- Chronological events recording with 1 ms resolution
- Storing and scheduled transmission of timed events
- Time synchronization from the control centre or via NTP server
- Phase Measurement and return of complex Alac measurements (calculated from CT and VT inputs available on additional card)

LOCAL PROCESSING - PLC

- Processing and correlations among the gathered data
- Configuration of complex SW algorithms for the generation of local automations and commands sequences
- Programming compliant with the IEC 61131-3 standard
- Interlocking functions

CONFIGURATION AND DIAGNOSTIC

- Full functionality with a PC locally or remotely connected through IP network
- Web server access using secure protocols (SSL, HTTPS) to diagnostic data and to stored files
- Direct generation of plant documentation at the end of the configuration

Flexibility of the plant architecture

STCE-R device is characterized by a high degree of modularity: the basic version is equipped with an integrated I/O enough to cover most of the applications that require a limited interaction capability with the field.

The STCE-R device allows realizing distributed systems: the optical fiber station LAN connects many STCE-R devices, anyone of which is dedicated to a bay unit or to a plant portion. The whole system offers all performances, included the possibility to manage interrelations among the different plant units. An operator station for the local control and one or more remote control centres can be connected to the station LAN. The remote control centres communicate with STCE-R through several protocols of IEC, IEEE or legacy suites, which are enabled at on board firmware level as Server/Slave role.

The distributed systems with STCE-R device can be configured to be compliant with the data structures and with the protocols required by the IEC 61850 standards.

With a multi-level architecture the STCE-R device can be employed as a concentrator operating in two distinct ways:

Proxy: it concentrates the plant information, rerouting them in a transparent way respecting procedures and exchanged applicative data, without modifying the used protocol addressing.

Gateway: this function allows converting serial or not standard protocols to IP based protocols, having interoperability as a goal, especially in smart grids context.

I/O Modules

Each basic STCE-R can be connected up to 3 I/O modules

16DI-4DC

16 optoisolated digital input

4 indipendent continuous commands

Optional connection to PT100 Temperature Detector

16DI-4AI

16 optoisolated digital input

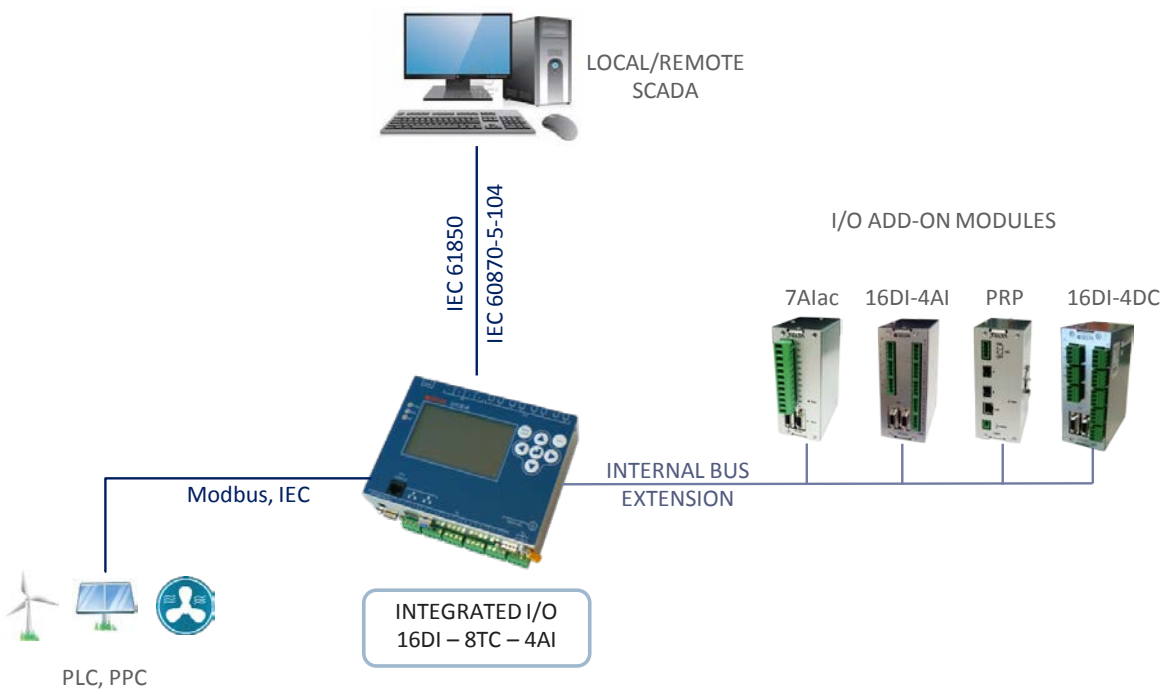
4 optoisolated analog inputs

7 Aiac:

7 analog input in alternating current

PRP (Parallel Redundancy Protocol)

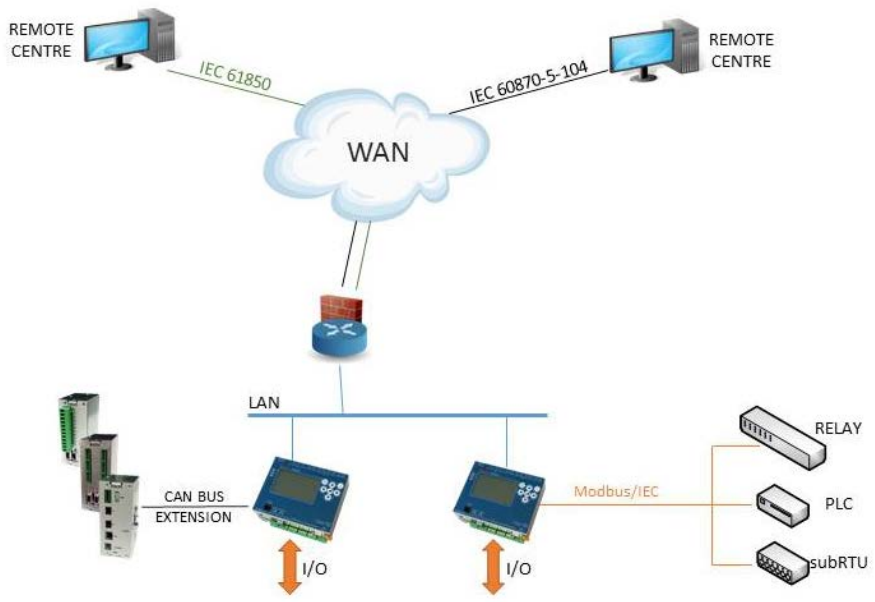
It allows to redound the phisical level of the ethernet link



Fast configuration and maintenance

All configuration and maintenance functions can be carried out by mean of a simple personal computer, locally connected or remotely through IP network.
STCE-R device offers a **WEB server function** as well, to access via a browser to the diagnostic information and to the events history. The web Server manages two user levels:
normal for the only visualization;
privileged for the device restart, the CPU FW transfer operations, the COMTRADE file management and the password change.
The starting configuration or the following updating are guided by a window menu, to fulfil in a very fast and secure way all parameters of communication and of plant interface.

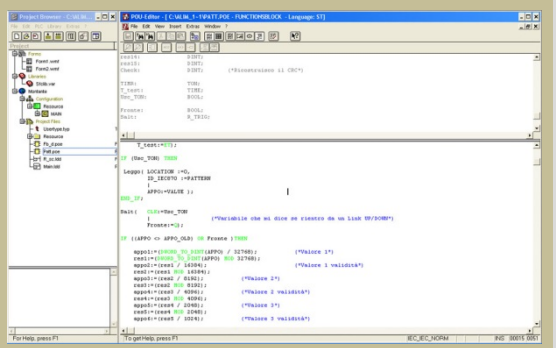
Possible faults during the data enter or incongruence among the same data are immediately notified to the operator.
Specific programs allow the data enter for high level structures, contemporaneously obtaining an effective plant documentation. In an analogue way it is possible to visualize the whole device diagnostic, the state of all inputs, all communications in progress with their own statistic data.
STCE-R is provided with a **display** that allows to visualize events, alarms, diagnostic information, measurements and points acquired by serial protocols.



Automation Functions - PLC

The PLC software package allows realizing freely programmable automation sequences, without any additional hardware and guaranteeing the complete integration with STCE/RTU peripheral units (SELTA Functional Blocks) and the direct interaction with runtime database, besides:

- Customization of the Functional Blocks
- Possibility to verify on-line the automation state
- Internal simulator for the automations check
- Availability of several programming languages compliant with IEC 61131:
  - Ladder Diagram (LD)
  - Functional Block Diagram (FBD)
  - Structured Text (ST)
  - Instruction List (IL)



Advanced Monitoring

Chronological events recording
- 1ms resolution
- Trigger events
- Configurability of number of registrations, number of events per registration, maximum duration and prefault time

Time synchronization
- Via NTP server
- Via IEC 60870-5-101/104 protocol

Proprietary Real Time Data Base (RTDB)
Information flows differentiated by management centers
Phasor analysis (add-on card only)
Measurements of:
- current phase: 1A or 5A
- voltage phase (phase to ground): 57.7 Vac or 230 Vac
- voltage phase (phase to phase): 100 Vac or 325 Vac
- active and reactive power, cosϕ and frequency

Technical data

Power Supply
Power supply voltage: **24 Vcc** -48 Vcc
Power consumption: 12 W, 500 mA @ 24 Vdc
250 mA @ 12 Vdc

Digital Input
Max. Input on main board: 16
Input voltage/current: 24 Vdc, 2 mAì 48 Vdc, 4 mA
Scan period: 1 ms

Analog Input
Max. Input on main board: 4
Input voltage/current:-10/10V (and intermediate)
-20/20mA (and intermediate)
- 4-20mA
Scan period & Accuracy: 20 ms, 0.2% full scale

Digital Output
Max. Output on main board: 8
Output Type: electromechanical relay
Nominal current: up to 6A @ 250Vac

EMC
ESD CEI EN 61000-4-2: 2011, Level 3 (+6kV contact, +8kV on air)
EMC CEI EN61000-4-3:2007+A1:2009+A2:2011
ENV 50204 : 1996
CEI EN 61000-4-8:1997+A1:2001
CEI EN 61000-4-10:1997+A1:2001

Power supply	
Surge	Level 3 (±2kV / ±1kV)
Burst	Level 4 (±4kV)
Communication port:	
Surge	Level 3 (±2kV)
Burst	Level 4 (±4kV)

Environmental
Operating temperature: -25 ÷ +70°C
Storage temperature: -40 ÷ +70°C
Relative humidity: ≥ 93% a 40°C
Insulation degree : IP 20

PT100 probe
Value read: -100°C ÷ +100°C

Communication
Network type: IPv4
Protocols:
Slave IEC 60870-5-101/104
Server IEC 61850 + Goose Pub/Sub
Client IEC 61850
Master IEC 60870-5-101/103/104
Master MODBUS (RTU / TCP)

Interfaces
ITU-T X.24/X.27 (EIA RS 232/485)
IEEE 802.3 100BaseTX and 100BaseFX

Dimensions
Basic STCE-R
Installation on DIN rail
Dimensions (WxDxH): 179.5 x 162 x 55 mm
Weight: <1.2 Kg
Expansion Module
Installation on DIN rail
Dimensions (WxDxH): 60 x 150 x 100 mm
Weight: <0.8 Kg

Diagnostic
Display: 250 x 138 pixel
WEB Server (HTTPS)

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