TPT2020Lite

Reduced terminal for control of HV/MV substations

Reduced peripheral terminal for remote monitoring and supervision of digital substations

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General features

TPT2020Lite is a complex RTU (Remote Terminal Unit) expressly designed to be used in new generation HV/MV substations, based on IEC61850 protocol networks. It performs control and supervision operations, sampling information from field equipment like breakers, transformers, protection devices, auxiliary services, etc. It can also carry out commands instructed by the central system.
TPT2020Lite is housed in a 19”/1U standard metallic rack. It includes processing unit, 12 digital inputs and 4 digital output module and the power supply.
TPT2020Lite manages all the substation apparatus using communication based on IEC61850 protocol, over the primary LAN.

Main functionalities

- Manages Observability data, received by MT users CCI RTUs and to be sent to TSO.
- Digital signals and analogue measures acquisition.
- Execution of local correlation processing to produce summary virtual events to be sent to the central system.
- Stand-alone performing of local automation sequences.
- Commands execution.
- Data storage and events chronological recording management.
- Electrical loads management.
- Different communication carriers over LAN and/or WAN.
- Self-diagnostic available through a resident Web Server.

Technical specifications

- Optical ethernet port: 100BaseFx (1310nm), SC connector, multimode fiber.
- Wired ethernet port: 100BaseT.
- 2 serial ports: V.24
- 1 RS485 serial port
- 12 digital galvanically insulated inputs (24Vcc).
- 4 digital outputs
- 1 supply output 12V/8W for external DCE
- Power supply: 24Vdc±20% 10W

Communication interfaces

TPT2020Lite can establish a multi-vectors communication with the Central System using ethernet interface, switched telephone line, leased line, wireless GSM/GPRS network. Furthermore, it can collect data from field IEDs (Intelligent Electronic Devices) using the ethernet port over IEC61850 protocol and using RS485 port over ModBus RTU.
Time synchronization is realized via LAN using the NTP service.

Configuration software

The TPT2020Lite device is completely programmable and configurable. For this purpose, a dedicated application software TMF, executable in Windows© OS, is provided with the device.
With the TMF suite, through a user-friendly graphical interface, the operator can populate the whole substation with all its elements: transformers, breakers, etc. All input / output attributes can be defined for each element. The program can also show a schematic sketch of the substation elements. Once the new substation configuration is ready, it can be saved and uploaded on the TPT2020Lite via network connection.

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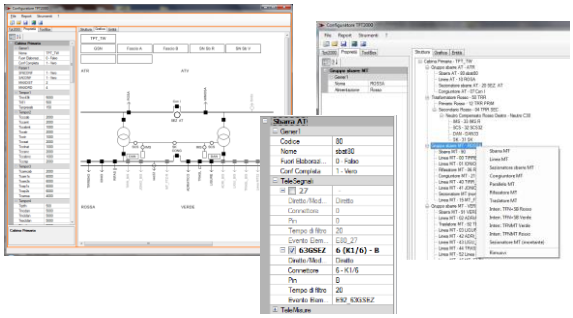
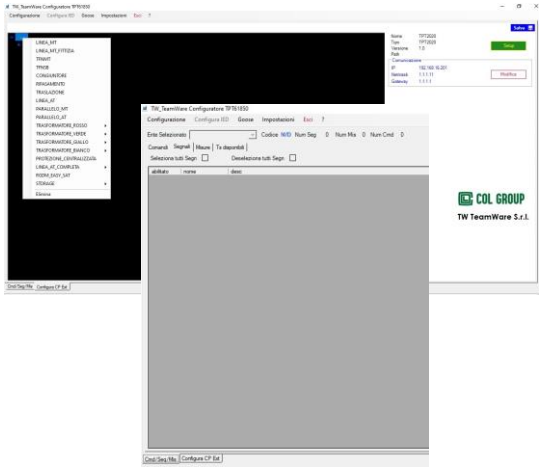
The TPT61850 software suite is specific for IEC61850 configuration design:

In detail it's possible to configure TPT2020Lite to interface the new generation IEDs, i.e.:

- Transformer integrated protection relay
- Medium voltage feeder protection relay.
- Medium voltage fault detector and protection relay with monitoring
- MV users RTUs (CCI)





A typical TPT2020Lite application