

TP10

Teleprotection Terminal Unit



MAIN FEATURES

- GUARANTEED DELAY NOT EXCEEDING **2 ms**
- SUPPORT FOR **TDM** and **IP** NETWORKS
- SUPPORT OF DISTANCE AND DIFFERENTIAL PROTECTION RELAYS
- UP TO **10** COMMANDS

Signal transmission of distance and differential protection relays requires reliable, safe and super fast environment. **TP10 MULTIPLEXER** provides transmission of up to ten commands in such demanding circumstances with a guaranteed delay of 2 ms (5ms in IP network). No matter what transmission environment is used: E1, 64 kbps data circuit or the up-to-date IP data network.

The scalability of **TP10** device makes it possible to choose service the customer really needs. The command transmission can be combined with data transmission. The devices can be connected together to form complex Point-to Multipoint installations, or transmission paths in backup scenarios.

SUITABLE FOR



TRANSMISSION AND
DISTRIBUTION ELECTRIC ENERGY
NETWORKS (750-110 KV)



ENERGY DISTRIBUTION
NETWORKS FOR RAILWAYS



HEAVY INDUSTRY



ADDITIONAL PROPERTIES

- TELEPROTECTION AND DATA
- SUPPORT OF VARIOUS TOPOLOGICAL STRUCTURES (P2P, DROP-INSERT, STAR, T-LINE, ETC.)
- PROTECTION SWITCHING TO A BACKUP PATH/ROUTE NOT EXCEEDING 5 ms
- LMS3 LOCAL MANAGEMENT SYSTEM
- SUPPORT OF CROSS-CONNECT

TECHNICAL SPECIFICATION

COMMAND TRANSMISSION

10 optically insulated inputs and outputs
 Input voltages of 24, 48, 110 and 220 VDC
 Maximum output current: 5A/15s, 2A permanently
 Speed of transfer under 1ms including output relay
 Four independent groups of commands
 Recording of the command transfer time with the accuracy of 1ms
 Dependability > 10⁻⁴⁰ and security > 10⁻⁴
 Support of the IEC 60870-5 (101 to 104) protocol

GENERAL SPECIFICATIONS

Power supplies: for 48, 110 and 220 VDC, 230 VAC
 Two power supplies with backup
 Weight 3 kg
 Width 19", height 1U, depth 285 mm

INTERFACES

Electrical - 2xE1
 - 2 x 100Base T
 - 2x RS232 / 422
 Optical - 2x SFP module
 - 850, 1310, 1550 nm depending on the SFP module

FIBRE-OPTIC INTERFACE OF DIFFERENTIAL PROTECTION RELAYS

ST connector, wavelength 820 nm
 C37.94 Protocol
 proprietary protocols of the protection relays:
 ABB (REL551, RED670), Siemens (7SD511, 72D512, 7SD523, 7SD61), SEL (SEL311L)

LOCAL MANAGEMENT SYSTEM

100Base T interface

CENTRAL MANAGEMENT SYSTEM

100Base T interface
 SNMP protocol

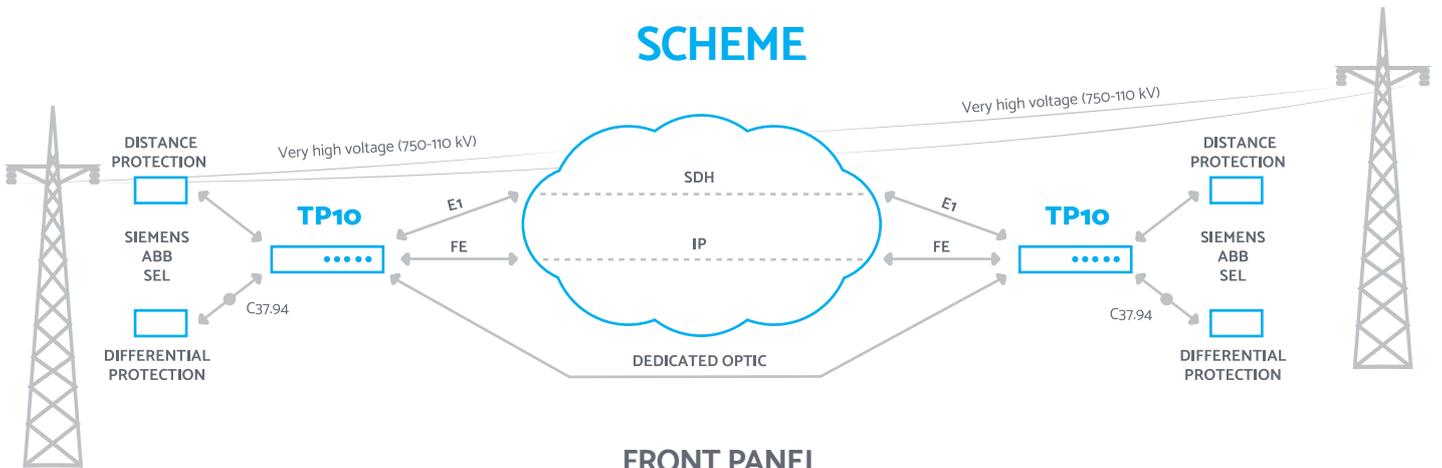
EMC

Resistance EN 61000-4-2,3,4,5,6,9,12,16,17,18,29
 Emission EN 61000-6-4

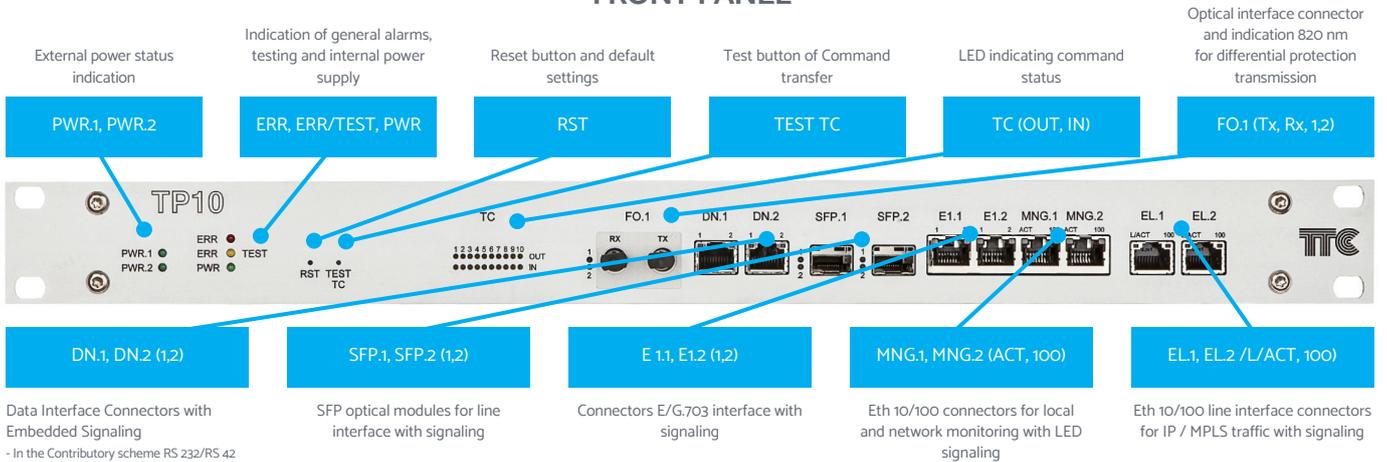
OPERATING CONDITIONS

Operating temperature range -5° to + 55°C
 Humidity 95% non-condensing
 Altitude 3500 m above sea level

SCHEME



FRONT PANEL



BACK PANEL

