

Smart Trafo[®]

Digitalization Smart Trafo



The SmartTrafo System is a tool for the digitalization and integration of the control, protection, and supervision systems of power transformers and reactors. The SmartTrafo is a Windows based platform that utilizes specialized equipment and sensors of IED-type (Intelligent Electronic Device) by Tree Tech. Each device has the autonomy to make local control and protection decisions, creating a decentralized data acquisition system. All the IED devices by Tree Tech can be utilized in a Smart Trafo system. The following is an example of a possible grouping of IED-type devices:

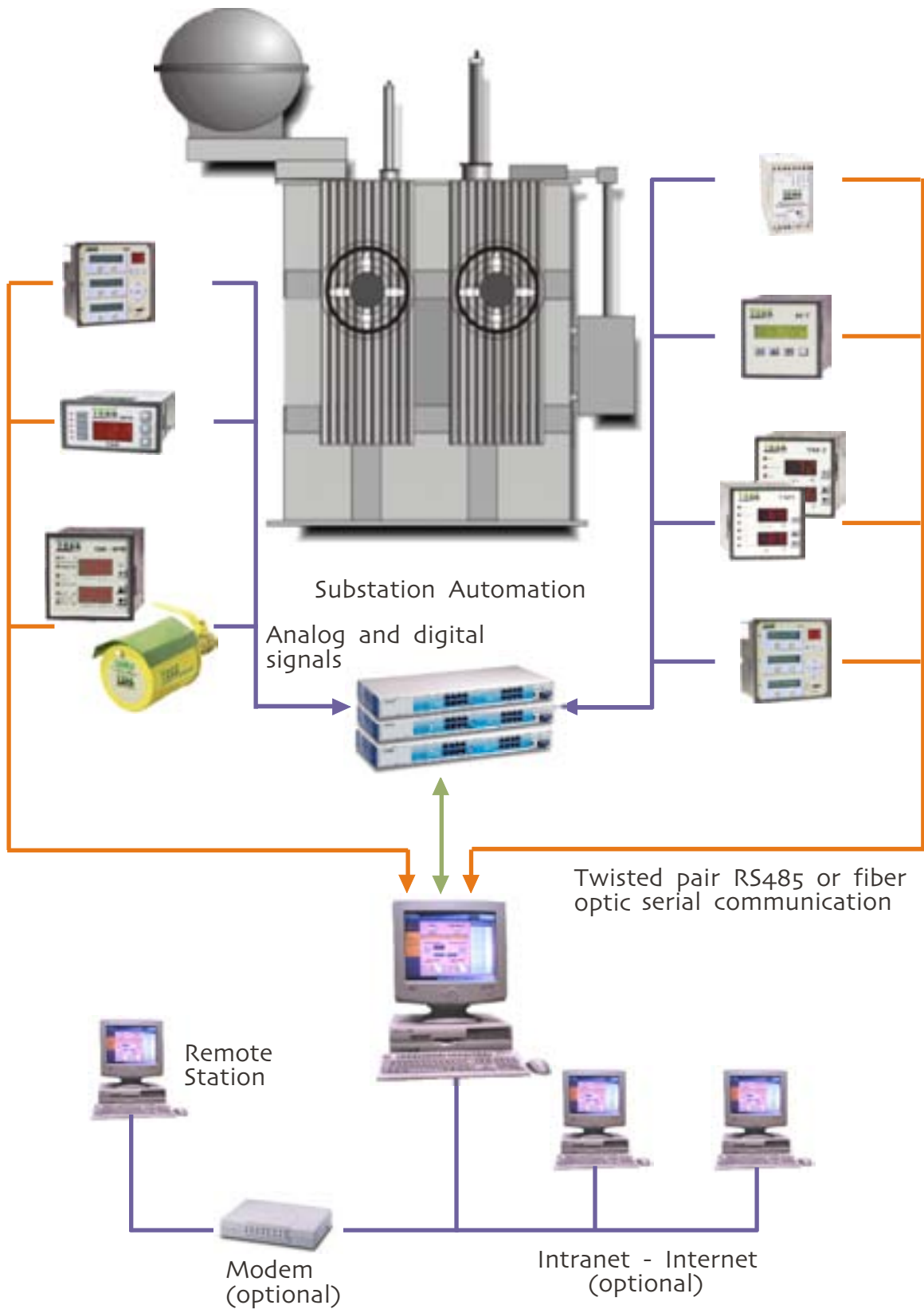
- Temperature Monitors TM1, TM2 or TM (oil, winding, ambient and load tap-changer temperatures);
- Synchronous Parallelism Supervisor SPS (tap position, parallelism selections, raise/lower commands, etc.);
- Events Annunciator AN (alarm and trip contacts from pressure relief device, membrane/bag break relay, etc.);
- Gas and Moisture Monitor GMM (hydrogen, relative humidity, temperature and water content in oil).

These devices are interconnected in a RS-485 network, providing data that will be transmitted to SmartTrafo (in the control room) through a twisted-pair cable (RS-485 standard), or through fiber optics.



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Basic System Architecture



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Features and Functions

Main Features and Functions:

- On-line visualization of measurements (temperatures, tap position, voltage, current, etc.);
- On-line visualization and acknowledgment of alarm and trip events in the software Events Annunciator;
- Recording of measurements and events in historical databanks. Easy consult to databanks;
- Remote parametering and command of devices on the transformer (forced cooling, parallelism, load tap-changer);
- Configurable and adaptable system for each application regarding the number of transformers and data acquisition devices;

Expandable system from the transformer to other equipment of the substation such as Disconnecting Switches, Circuit Breakers, Surge Arresters, Voltage Regulators, Battery Banks, among others.

Optional Functions:

- Control of access and rights for each user in the system, by user names and passwords;
- Complete remote access to the system from any point on the Intranet or Internet using just a standard browser (e.g. Internet Explorer);
- Consult to databanks by graphs and export of databanks to text files;
- Integration with sensors from other manufacturers and with supervisory systems using standard protocols (Modbus, DNP3.0, etc.).





Tree Tech USA
685 Mosser Rd. Ste 124 McHenry, MD 2154
Phone: 301-387-7012 - Fax: 301-387-7013
e-mail: info@treetechusa.com
www.treetechusa.com

Tree Tech Brasil
Praça Claudino Alves, 141 • Centro -
Atibaia - SP - CEP 12940-040
Tel./Fax (+55 11) 4413-5787
e-mail: comercial@treetech.com.br
www.treetech.com.br

