

INTELLIGENT **SYSTEMS** FOR THE **SMART GRID**



SynchroTeq


vizimax

- **GRID MODERNIZATION**
- **SUBSTATION AUTOMATION**
- **HV C/B CONTROL & MONITORING**

SynchroTeq SA™

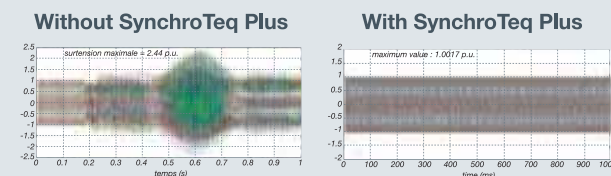
SynchroTeq Plus™

SynchroTeq™

SynchroTeq Plus

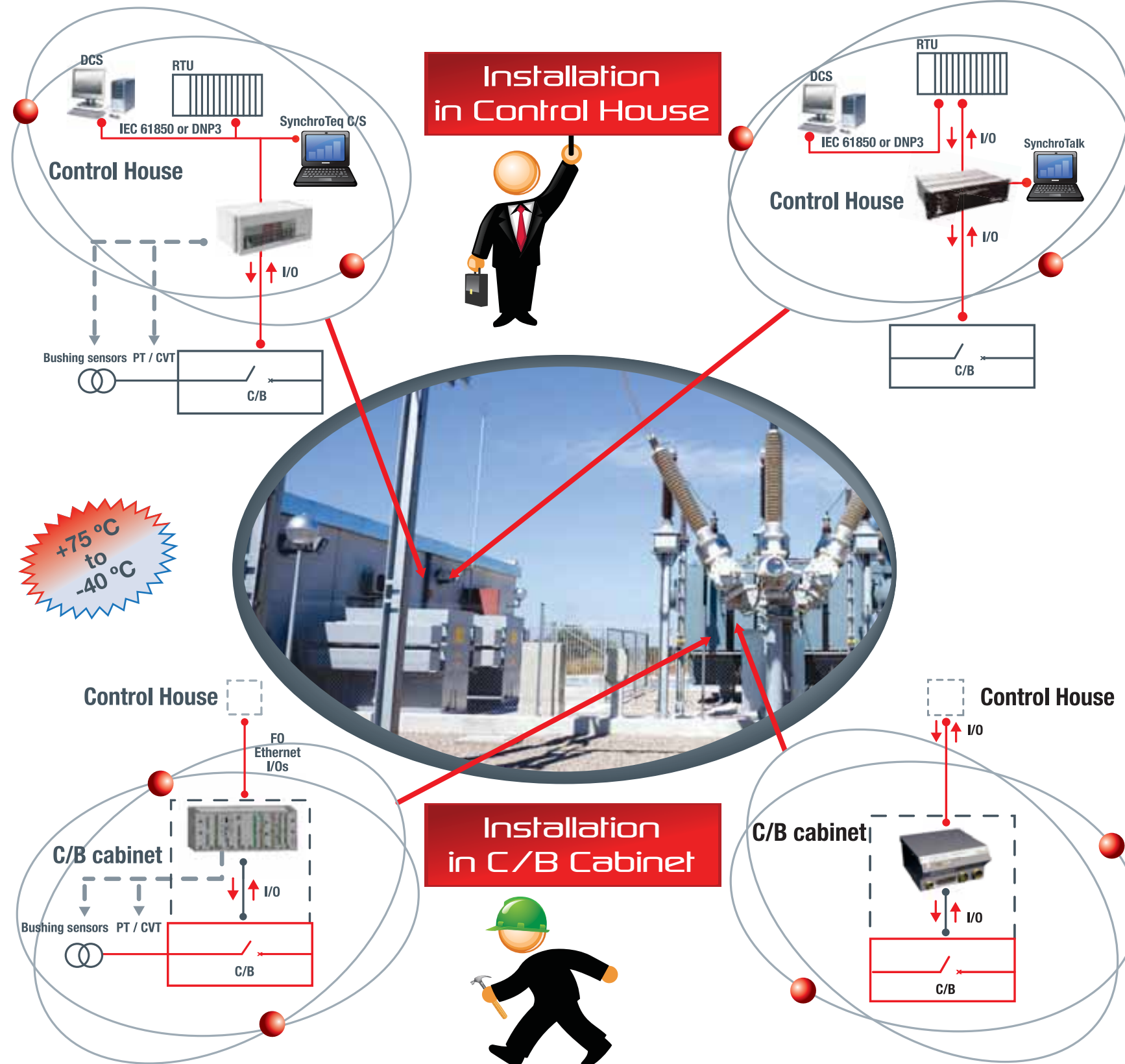
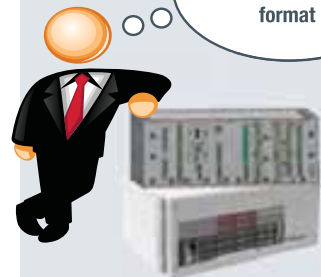
- Modular and expandable Point On Wave switching platform for **ALL** High Voltage Circuit Breakers.
- One single housing, suitable for rackmount installation in substation control house or integration within HV C/B's control cabinet, receives up to three expansion boards for outstanding capabilities.
- State-of-the-art acquisition and control, through CT, PT, CVT, Bushing sensors for Power Transformers, digital and analog rugged & compensated I/Os.
- **IEC 61850** Server + GOOSE, DNP3, IEC 60870 on Ethernet copper and Fiber Optic links, with additional **ring compliant, insulated port**.
- NERC CIP, IEEE std 1686-2007 and IEEE std C37.231-2006 compliant.
- **Merging unit** functionality, **IEC 61850-9-2** LE support (256 s/p and above)
- Scalable **e-Monitoring System** for HV Circuit Breakers and Power Transformers.

Seamless Power Transformer Energization



- Provides Residual Flux Management for Power Transformer
- Reduces inrush current
- Eliminates voltage disturbances
- Limits mechanical and electromagnetic stresses on transformers
- Web based Interface and COMTRADE file format
- Learns, predicts and corrects C/B operations

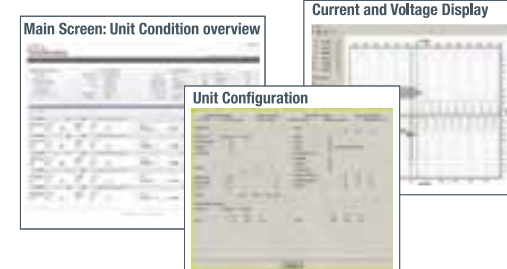
Key benefits



USER INTERFACE



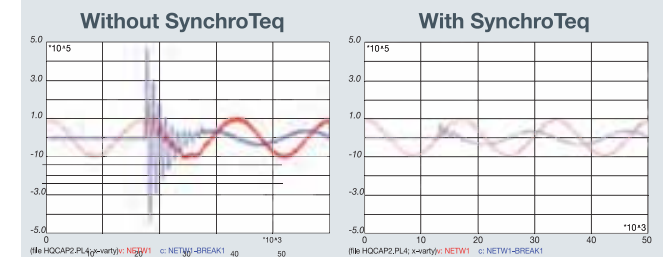
- Multi-language software for SynchroTeq /SynchroTeq Plus units
- Configuration tool : PC based software for operation parameters
 - Waveform viewer: Captures, records, analyzes and exports in COMTRADE format
 - Event logger: Web or PC enabled module for event journals and alarms
 - Windows based software suite for MICROSOFT - Windows XP/7
 - Remote access to SynchroTeq units for data analysis and maintenance



SynchroTeq SynchroTeq SA

- Field proven Point On Wave switching platforms for all customer needs.
- Four units, suitable for **ALL** High Voltage Circuit Breakers.
- Dedicated housings to accommodate either rackmount installation in substation Control House or integration within HV C/B's control cabinet.
- Optional SynchroTeq Communication Module with **IEC 61850** Server + GOOSE, DNP3, IEC 60870 protocols on Ethernet Copper or Fiber Optic links.
- Dependable and cost effective alternative to insertion resistors.

Effective mitigation of disturbances on Power Networks and equipment



- Reduces stresses on electric networks and power equipment
- Records abnormal operation
- Increases power line quality
- Enhances operational safety
- Extends HV equipment life
- Lowers maintenance costs

Key benefits



Point On Wave Platforms

FEATURES	SynchroTeq RACKMOUNT	SynchroTeq COMM ENABLED	SynchroTeq SA	SynchroTeq SA COMM ENABLED	SynchroTeq Plus
Enclosure	Rackmount unit 3U / 19"		Rugged panel mount enclosure		Rackmount unit 4U / 19" panel mount capable
Dimensions (mm)	483 (W) / 130 (H) / 305 (D)		452 (W) / 330 (H) / 165 (D)		483 (W) / 180 (H) / 300 (D)
Installation	In substation control house		HV C/B's cabinet and /or substation control house		HV C/B's cabinet and /or substation control house
Acquisition duration			230 ms		2 s
Historical data (events)			30 events		1,000 events
SynchroTeq Communication Module	N/A	IEC 61850 server + GOOSE, DNP3 Modbus	N/A	IEC 61850 server + GOOSE, DNP3, Modbus	
Interface	Serial RS485	Ethernet copper or FO, RS485	Serial RS485	Ethernet copper or FO, RS485	
Power Supply or I/O Voltages	110Vdc, 125Vdc, 220Vdc, 250Vdc				24Vdc, 48Vdc, 110Vdc, 125Vdc, 220Vdc, 250Vdc
Current input (line current)			1 or 5 Amps RMS nominal current		
Expansion boards			N/A		Three slots for function boards
Residual Flux Management for Power Transformer			N/A		Acquisition boards Three types for bushing sensors, PTs, CVTs w/ or w/o analog compensation
Options					IEC 61850-9-2, I/O expansion monitoring functions
External Connectors	PCB Soldered Screw cage terminal on rear panel		MIL-C-5015 in front panel		Screw type connectors on rear panel
Configuration and operation interface	PC based configuration software, Current & Voltage record viewer				PC based configuration and data management software Suite with COMTRADE viewer, Web based operation
Operation temperature			-20 to +60 °C		-40 to +75 °C

Also consider the **RightWON** Product Line:

- **REMOTE MANAGEMENT** : Alarms broadcast by email, SMS, pagers, remote Web interface with tag, event journal, trending and graphic HMI.
- **SUBSTATION AUTOMATION** : Modular, expandable, secure and rugged RTU; bi-directional gateway, IEC 61850 Client/Server+GOOSE, DNP3, OPC; data concentrator.
- **DISTRIBUTION AUTOMATION** : Volt/VAR Optimization, Feeder Protection/Control and Fault Detection/Isolation & Restoration (FDIR), Ethernet switches.
- **PRIVATE PRODUCTION** : Secure IPP connection to the Grid.



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