

# SynchroTeq® Plus

Circuit Breaker Controlled Switching

## Smart Coding & Options Selection

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Vizimax Reference Number

Enter option code to complete the part number

STP030000

Choose among the following options

## 1 - SynchroTeq Plus Unit Configuration ( Ref : STP030000)

### a - Hardware version & Mounting

The "Standalone" version comes with a protection cover

|   |    |  |  |  |
|---|----|--|--|--|
| 19" Rack (to be installed in protection&control building) | RM |  |  |  |
| Standalone (to be installed in circuit breaker cabinet)   | SA |  |  |  |

### b - Language

The selected language applies to the face plate, front display and software user interfaces

|         |    |  |  |  |
|---------|----|--|--|--|
| French  | FR |  |  |  |
| English | EN |  |  |  |
| Spanish | ES |  |  |  |
| Turkish | TR |  |  |  |
| Chinese | ZH |  |  |  |

### c - Voltage

The selected voltage applies to the main power supply, control inputs, coil outputs, 52a/52b inputs

|         |  |  |   |  |
|---------|--|--|---|--|
| 48 Vdc  |  |  | 1 |  |
| 110 Vdc |  |  | 2 |  |
| 125 Vdc |  |  | 3 |  |
| 220 Vdc |  |  | 4 |  |

### d - Current Input (CT Connections) - see Note 1

|                            |  |  |  |   |
|----------------------------|--|--|--|---|
| 1 Amp RMS nominal current  |  |  |  | 1 |
| 5 Amps RMS nominal current |  |  |  | 5 |

Note 1: Universal PT input (37,5 - 150Vac), line-to-ground connection recommended

### Smart coding examples

SynchroTeq Plus Unit, rackmount, English version, 125Vdc, 1A CT

STP030000 RM EN 3 1

## 2 - SynchroTeq Plus Communication and Synchronization Options

All the options below are not included in the price of SynchroTeq Plus unit (STP030000). Additional costs may apply, please contact your Sales Rep for more information

### 2.1 SynchroTeq Plus Options - additional Communication ports and synchronization module - see Note 2

Standard: Two Ethernet 100BASE-T / RJ45 port + one RS485 + One USB port

| Description   | Reference | Quantity |
|---|-----------|----------|
| One (1) Ethernet 100BASE-LX10 port / Single Mode F.O          | RWC0P0000 |          |
| One (1) Ethernet 100BASE-FX port / Multi Mode F.O             | RWC0D0000 |          |
| One (1) Ethernet 100BASE-T port / RJ45                        | RWC0C0000 |          |
| One (1) IRIG-B module (synchronization module in connector U) | RWC0Y0000 |          |

Note 2 : The Ethernet communication port on rear panel can be used for remote data analysis, maintenance and time synchronization. Up to Two additional ports may be ordered.

### 2.2 - SynchroTeq Communication module - Additional communication ports and protocols

| Description  | Reference | Select your option |
|--|-----------|--------------------|
| SynchroTeq Communication module with Two (2) isolated Ethernet 100BASE-T port + one (1) 100BASE-FX Ethernet Fiber Optic Multimode port + two (2) isolated Serial RS485/RS232 ports + one (1) Digital Output and supported protocols : DNP3.0 Slave, Modbus Slave, IEC 61850 Server - Integrated XCBR LN. | RWK000016 |                    |

### 2.3 - SynchroTeq Unified Communication Services software

| Description   | Reference | Select your option |
|---|-----------|--------------------|
| SynchroTeq Unified Communication Services: For automatic data transfer to a centralized site of events and waveforms.<br>Base for ten (10) SynchroTeq units, expandable by pack of 10 or 25 licenses. | RWS055000 |                    |

### 3 SynchroTeq Plus Options - Function boards

All the options below are not included in the price of SynchroTeq Plus unit (STP030000). Additional costs may apply, please contact your Sales Rep for more information

#### 3.2 Bypass Module (STP030302) Control option

| Description : SHL-1 - DCO type - Bypass module  | Reference        |
|---|------------------|
| Bypass module configured in 'automatic mode' (default manufacturing configuration) - See Note 3 | STP030302 (std)  |
| Bypass module configured in 'Timed mode' - See Note 3   | STP030302 (temp) |
| Bypass module configured in 'Memorized automatic mode' - See Note 3                             | STP030302 (mem)  |

|                    |
|--------------------|
| Select your option |
|                    |
|                    |
|                    |

**Note 3 :** SHL modules are "Standalone Hardwired Logic" units and are independent from the main unit software. By default, the bypass module is set to "Automatic Mode", if you wish to use another mode, please select one of the available configuration. Please refer to the Bypass manual

#### 3.2 C/B coil control outputs (SBO - Select Before Operate) module option

Standard: standard SPSBO module with 'source' configuration shared by all 6 outputs.

| Description :   | Reference |
|---|-----------|
| SPSBO-F module 'Select Before Operate' with 6 floating coil control outputs - Note 4<br>(The STP030304 option is free of charge and replaces the standard SPSBO board in the AA-BB slot). | STP030304 |
| Dual Batteries SPSBO module - Note 5<br>(The STP030305 option is free of charge and replaces the standard SPSBO board in the AA-BB slot).   | STP030305 |

|                    |
|--------------------|
| Select your option |
|                    |
|                    |

**Note 4 :** This option provides 6 potential free isolated solid state outputs. These outputs are designed to 'source' or 'sink' the current from the C/B coils connected to the positive bus, or to drive a C/B electronic controller. Please refer to the STP030304-UG manual for more details.

**Note 5 :** This option allows to separate CLOSE and OPEN coil power supply circuits. The C/B (3)CLOSE and (3)OPEN outputs are controlled in 'source' configuration. Please refer to the STP030305-UG manual for more details.

#### 3.3 Additional three phase voltage measurement module with residual Flux calculation (STP03010x) option

Standard: no additional voltage measurement module

| Description   | Reference |
|---|-----------|
| <b>SPFLUX module for PT sensors:</b> including three (3) additional PT inputs + three (3) 4-20 mA sensor inputs + residual flux calculation algorithm.  | STP030103 |
| <b>SPFLUX module for HV bushing sensors:</b> including three (3) additional Power Transformer High Voltage Bushing Sensors inputs+ three (3) 4-20 mA sensor inputs + residual flux calculation algorithm - (This option requires an active junction box: See Note 6). | STP030101 |

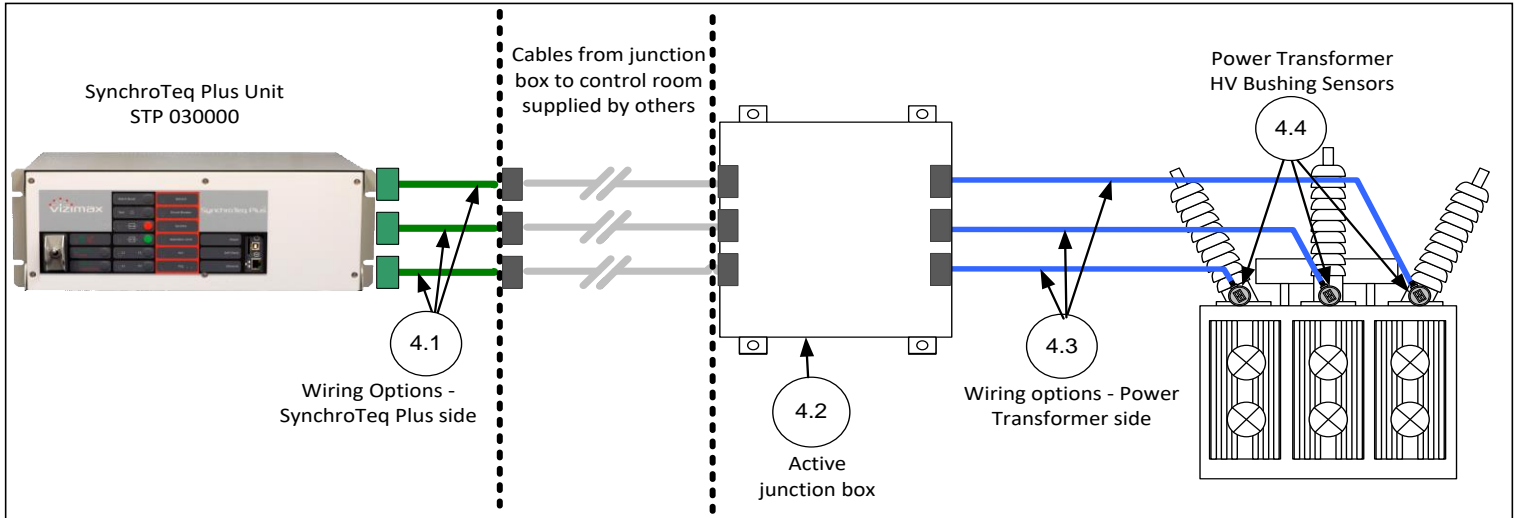
|                    |
|--------------------|
| Select your option |
|                    |
|                    |

**Note 6 :** if you select this option, you have to select items in section 4 - SynchroTeq Plus - Bushing Sensors, active junction box and connections.

#### 4 SynchroTeq Plus - Bushing Sensors, active junction box and connections

This section must be filled ONLY if you selected the STP030101 option.

All the options below are not included in the price of SynchroTeq Plus unit (STP030000). Additional costs may apply, please contact your Sales Rep for more information



#### 4.1 - Wiring Options - SynchroTeq Plus side

All cables are equipped and terminated for an immediate connexion to the main unit - Other side: free wires

| Description  | Reference |
|--|-----------|
| Three (3) cables - SynchroTeq Plus to terminal block - 3m/10 feet each | STP030170 |
| Three (3) cables - SynchroTeq Plus to terminal block - 5m/15 feet each | STP030180 |

| Select your option |
|--------------------|
|                    |
|                    |

#### 4.2 - Junction box

Active Junction Box includes free wires connectors on SynchroTeq Plus side and Power Transformer side

| Description                            | Reference |
|--|-----------|
| Active Junction Box with 3 connections | STP030200 |
| Active Junction Box with 1 connection  | STP030201 |

| Select your option |
|--------------------|
|                    |
|                    |

#### 4.3 - Wiring Options - Power Transformer side - Note 7

Sensor cable, with pre-assembled connector on sensor side, free wires on the junction box side

| Description   | Reference |
|---|-----------|
| One (1) cable - junction Box to bushing sensor - 15m/50feet   | STP030315 |
| One (1) cable - junction Box to bushing sensor - 30m/100 feet | STP030330 |
| One (1) cable - junction Box to bushing sensor - 50m/164 feet | STP030350 |

| Quantity |
|----------|
|          |
|          |
|          |

Note 7 - One (1) cable per phase has to be ordered. For other cable length - Please inquire

#### 4.4 - Power Transformer HV Bushing sensors - Technical Data - Mechanical fitting - Note 8

Set of three (3) sensors - one per phase - to be installed on the Power Transformer

| Description   | Reference |
|---|-----------|
| Three (3) bushing sensors for residual flux calculation of power transformer - note 8 | STP030400 |

| Select your option |
|--------------------|
|                    |

Note 8 : You must fill out the Bushing Sensor Configuration in section 6 to determine the exact type of bushing sensors.

## 5 - Transformers Re-energization Advisory System (TRAS)

Transformers Re-energization Advisory System allows re-energization of up to three power transformers, please contact VIZIMAX's technical expert for project feasibility

| Description  | Reference | Select your option |
|--|-----------|--------------------|
| Transformers Re-energization Advisory System available for the re-energization of two or three power transformers in parallel operated by one circuit breaker - Note 9 | BDL000004 |                    |

Note 9: Project feasibility must be confirmed by VIZIMAX's technical experts

## 6 - Bushing Sensor Configuration

This section must be filled ONLY if you selected HV bushing sensors in section 4.4

\*The following information 6.1 to 6.3 is MANDATORY

### 6.1 Bushing sensors - Technical Data - Electric environment\*

|   |  |    |
|---|--|----|
| V nominal : Rated transformer voltage on bushing side ( normally High side)                             |  | kV |
| Maximum phase to ground expected transient voltage (limited by surge arrester), typical value is 2 P.U. |  | PU |

### 6.2 Transformer HV Bushing manufacturer (including the location of the manufacturing facility)\*

### 6.3 Transformer HV Bushing part number\*

Please provide the following information

### 6.4 - C1: Bushing main capacitance to test tap - note 9

Note 9 - Please provide the following information. If not available, section 6.6 transformer HV Bushing serial number becomes mandatory

|         |  |
|---------|--|
| Phase A |  |
| Phase B |  |
| Phase C |  |

### 6.5 - C2 : Bushing test tap capacitance to ground - Note 10

Note 10 - Please provide the following information. If not available, section 6.6 transformer HV Bushing serial number becomes mandatory

|         |  |
|---------|--|
| Phase A |  |
| Phase B |  |
| Phase C |  |

### 6.6 Transformer HV Bushing serial number

|         |  |
|---------|--|
| Phase A |  |
| Phase B |  |
| Phase C |  |

### 6.7 Technical Contact of the HV Transformer Bushing (name, Email, phone number...)

### 6.8 Test Tap

|  |  |     |
|--|--|-----|
| Male or female tap                                 |  | M/F |
| Width of tap (thread level) - inch or mm (specify) |  |     |

Note: VIZIMAX will do its best sending a model of bushing sensors that fits (mechanically) the taps. **Customer is required to verify upon their receipt that the sensors actually fit**, to not delay the commissioning of the system in the unlikely case they do not and a model change is required.

### For VIZIMAX Use Only

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