# Form 6 Triple-Single Loop Scheme Control Reference

Read equipment manufacturer's manual and this material before using this product. Failure to do so can result in death, severe personal injury, and equipment damage. G164.0

## Control / Recloser Status

Status of the triple-single loop scheme recloser and control are easily viewed via the operator panel. Press any key to wake the operator panel.

The default menu, Recloser Status, displays the active Triple-Single mode and the status of each phase.

- *In Single-Phase Trip, Three-Phase Lockout and Single-Phase Trip, Single-Phase Lockout modes, each phase operates independently with protection parameters the same for all three phases.*
- *In Single-Phase Trip, Three-Phase Lockout mode, all three phases trip to lockout when one phase sequences to lockout.*
- *In Single-Phase Trip, Single-Phase Lockout mode, each phase independently sequences to lockout.*

- **CONTROL OK:** Normally on. The CONTROL OK LED will extinguish if certain battery, RAM, ROM, AC, Power Supply, and/or RIF alarms are active.
- **CONTROL POWER:** An illuminated CONTROL POWER LED indicates there is adequate VTC voltage to successfully trip (or close) the mechanism. It does NOT indicate the presence of AC or battery power.
- **CONTROL LOCKOUT:** On only when the control is in a Locked-Out state. It does NOT indicate the recloser is open.
- **RECLOSER OPEN:** On only when the Recloser is Open.
- **RECLOSER CLOSED:** On only when the Recloser is Closed.

## Hot Keys

A **LAMP TEST** key, **CHANGE** key and six (6) HOT keys provide instant, direct-access, to the following menu items:

- **METERING**: Press to view instantaneous current and voltage metering values.
- **RESET TARGETS**: Press to immediately reset FAULT TARGET indicators on the operator panel.
- **EVENTS**: Press EVENTS and ENTER to view the 25 most recent events. Navigate through the Sequence of Events (SOE) using the UP and DOWN arrows.
- **SETTINGS**: Press to gain instant access for viewing or modifiying recloser settings on the LCD display.
- **OPERATIONS COUNTER**: Press for instant access to view the Trip Counter and Target Counters for each Phase, Ground, and SEF. Two reset functions are also available: RESET TARGET COUNTERS and RESET TRIP COUNTER.
- **ALARMS**: Press to view alarm status. Active alarms are indicated by a "1", inactive alarms are indicated by a "0".

## Navigating the LCD Display

**Note:** *Press the MENU key and then press the (+) or (–) key to increase or decrease the LCD contrast.*

- **LCD FUNCTION KEYS (F1, F2, F3, F4)**: The four LCD menu function keys activate specific menu commands. When a command appears in the LCD display directly above one of the four LCD menu function keys, press the key to accept/select the command.

**Note:** *Function keys not active in all Menus.*

- **MENU**: The MENU key displays the root menu. It also returns the display to the previous menu each time it is pressed.
- **ENTER**: The ENTER key is used to:
  - *Confirm a settings modification.*
  - *Confirm a selection from within a MENU.*
- **( + and - ) Keys**: are used to step through values when in the MODIFY / SETTINGS mode.
- **ARROW Keys**: Navigate vertically through the displayed MENU using the UP and DOWN arrow keys; arrow keys are located just below the display. In some menus, the cursor position can be moved horizontally using the LEFT and RIGHT arrow keys.
- **RESET ALARMS**: Press the ALARMS hotkey, move the cursor ( > ) to the left of the RESET ALARMS menu item, press the ENTER key, then the F4 function key.

## Basic Control Operations

- **CHANGE**: The CHANGE key must be pressed prior to actuating any of the nine (9) Function Key Buttons.

**Note:** *The CHANGE key remains active for 10 seconds after which time the LCD display returns to the basic menu.*

- **LAMP TEST**: When the LAMP TEST feature is actuated, all front panel LEDs will illuminate for approximately five seconds.
- **TRIP**: Pressing the TRIP pushbutton trips the recloser to the "RECLOSER OPEN" position and places the control in "CONTROL LOCKOUT" mode (automatic reclosing is inhibited).
- **CLOSE**: Pressing the CLOSE pushbutton closes the recloser. The control is now ready to follow OCP programming.

**Important:** *Verify the phase or phases you want activated are selected prior to pressing the TRIP or CLOSE button.*

## Hot Line Tag

Provided for live-line work applications.

- Does not cause the recloser to trip open. It only prevents the recloser from closing.
- Prevents all closing attempts from the control and shifts protection to one trip-to-lockout on the composite curve of the Hot Line Tag definite time and the TCC1 curve (whichever is faster). Takes precedence over Cold Load Pickup, Non-Reclosing, and Fast Trips Disabled.
- Activated from either the operator front panel toggle switch, local or remote communications, or configurable logic.
- Can only be reset by the source which initiates it.

## Loop Scheme (LS) Status

- **TIE**: On only when the control is in tie mode and will respond to voltage conditions on Source I and/or Source II.

- **SECTIONALIZER**: On only when the control is in sectionalizing mode and will respond to voltage conditions on Source I.

**Note:** *When in Sectionalizing mode, the SOURCE II ENABLED function key is not responding to voltage even though it is illuminated.*

- **LS DISABLED**: On only when LS is disabled and the control will not respond to the programmed LS loss of voltage parameters.

**Notes:** *In the event of loss of AC control power to the control (without battery back-up power), the LS functionality will be disabled when power is restored to the control.*

*In TIE or SECTIONALIZING mode, once voltage is restored, the LS is disabled until locally or remotely enabled.*

*LS functionality must be enabled via the ProView interface software.*

- **A, B, and C PHASE VOLTAGE**: When on, these LEDs indicate the phase(s) that initiated the LS action.
- **X, Y, Z PHASE VOLTAGE**: When on, these LEDs indicate Source II (load) voltage is present on X, Y, or Z phase(s).
  - *If LS is enabled, at the moment loss of voltage occurs, the LEDs for the phases that lost voltage turn off and the (TD1) Loss of Voltage Transfer Timer begins timing.*

**Note:** *The TIE mode will not initiate any loss of voltage timing if both sources are lost. If one source is available, while the TIE mode is timing on loss of voltage, and the available source also loses voltage, the TIE will reset the (TD1) Loss of Voltage Transfer Timer.*

  - *If voltage is restored before the voltage transfer time delay elapses, the LEDs for the phases with restored voltage illuminate and the TD1 timer resets.*
  - *If voltage is not restored before the Voltage Transfer time delay elapses, the LEDs remain off even if voltage returns to a particular phase. This identifies the phase that caused the LS to operate.*

Activating the LS RESET function key resets the LS function and illuminates the voltage LEDs (if voltage is present).

- **INDICATOR 7, 8**: Customizable LEDs that are used with functions programmed through the Idea Workbench™. The LED indicators do not have active default values. The LEDs are illuminated when the status configured via the Idea Workbench™ is present.

## Default Function Key Buttons

Also, refer to "CHANGE" key description.

- **GND TRIP BLOCKED**: Blocks all ground sensing in the control for the active profile.
- **NON-RECLOSING**: Places the control in 1-Shot-to-Lockout mode. When activated, the control will follow the next programmed TCC and a "Control Lockout" will follow the OCP trip event.
- **SUPERVISORY OFF**: When activated, supervisory commands via Contact I/O or any of the communications accessories are ignored.
- **PHASE SELECT BUTTONS**: Pressing the Change button followed by a press of the A or B or C Phase Select button activates the respective phase; repeating the button press sequence a second time deactivates the phase. The control panel Trip and Close pushbuttons will operate any active phase(s).
  - **1-Phase Trip / 3-Phase Lockout, mode**
  - **3-Phase Trip / 3-Phase Lockout (ganged) mode**
    - *Only 3-Phase manual Trip / Close operations are permitted - cannot select or deselect individual phases.*
    - *Pulling the yellow handle down on any phase will open and lockout all three phases.*
    - *CONTROL LOCKOUT, RECLOSER OPEN and RECLOSER CLOSED control panel LEDs reflect the status of all three devices.*
  - **1-Phase Trip / 1-Phase Lockout mode**
    - *Capable of independent manual Trip / Close operations.*
    - *Capable of Independent yellow handle operation to lockout.*
- Control panel LEDs for CONTROL LOCKOUT, RECLOSER OPEN and RECLOSER CLOSED blink for mixed recloser status.
- **LS RESET**: When the LED is illuminated, the LS function has been reset and the control is ready to respond to the next loss of voltage occurrence. This LED cannot be de-selected. It will only turn off when an LS action occurs.
- **SOURCE I ENABLED**: When the LED is illuminated, the control is in LS mode and responding to voltage conditions on Source I (source-side Phases A, B, and C).
- **SOURCE II ENABLED**: When the LED is illuminated, the control is in Tie mode and responding to voltage conditions on Source II (load-side Phases X, Y, and Z).

**Note:** *When the control is in Sectionalizing mode, the SOURCE II ENABLED function key may or may not be illuminated (depending on the LS Enable SII setting in the Loop Scheme Settings Dialog box). It is not responding to Source II voltage.*

- **OPTION BUTTONS**: Three (3) OPTION buttons are unassigned by default.

**Note:** *All nine (9) function key buttons can be customized via the Idea Workbench™.*

**Note:** *Non-standard, LS, and Triple-Single controls incorporate different Function Key default function configurations.*

## View / Change Settings

1. Press the SETTINGS hotkey, the LCD will display: "Mod/View Settings."
2. Press the ENTER key, the LCD will display « Enter Password «. The default password is «0» - therefore, if a password has not been assigned just press the ENTER key again, otherwise, enter your password and then press ENTER.

**Note:** *Use the + and – keys to enter a password. Press-and-hold the key to skip through the values faster.*

## Accept / Cancel Settings Change

Following a settings change press the ENTER key and then the MENU key. If you made a change to one or more settings either:

- Accept and USE a changed setting – press the F1 function key.
- REVERT to the previously saved setting – press the F2 function key.
- Step BACK to the previous dialog – press the F4 function key.

Refer to the Form 6 Triple-Single Loop Scheme Control Installation Instructions included with this control for additional information.

For assistance, contact the Switchgear Support Group at **1-800-497-5953**. 24/7 emergency support also available.

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