HAZARD CATEGORIES AND SPECIAL SYMBOLS

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### DANGER

Danger indicates an immediately hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING

Warning indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.

### CAUTION

Caution indicates a potentially hazardous situation which, if not avoided, can result in minor or moderate injury.

### CAUTION

Caution, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, can result in property damage or improper operation.

NOTE: Provides additional information to clarify or simplify a procedure.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. This document is not intended as an instruction manual for untrained persons. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this manual.
FCC CLASS B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this device that are not expressly approved by Schneider Electric could void the user's authority to operate this equipment.
SAFETY PRECAUTIONS

This section contains important safety precautions that must be followed before attempting to install or maintain electrical equipment. Carefully read and follow the safety precautions below.

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH</strong></td>
</tr>
<tr>
<td>- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.</td>
</tr>
<tr>
<td>- This equipment must be installed and serviced by qualified electrical personnel.</td>
</tr>
<tr>
<td>- Turn off all electrical power supplying this equipment before working on or inside the equipment.</td>
</tr>
<tr>
<td>- Always use a properly rated voltage sensing device to confirm that power is off.</td>
</tr>
<tr>
<td>- Replace all devices, doors, and covers before turning on power to this equipment.</td>
</tr>
</tbody>
</table>

Failure to follow these instructions will result in death or serious injury.
SYSTEM OVERVIEW

Features

All relay panels include the following:
- Enclosure
- Cover
- Interior assembly

The interior assembly can include the following depending on the options selected:

Figure 1: Relay Panel Description

KEY:
A. Class 1 wiring section with cover plate
B. Control relays (one or two poles)
C. Low voltage (Class 2) section
D. Control transformer
E. Electronic control card and devices
F. Mounting holes
G. Knockouts

NOTE: Keep Class 1 and Class 2 wiring separated.
SERPRC401 Relay Controller Card

Figure 2: SERPRC401 Relay Controller Card Description

KEY:
A. 1 to 16: Relay Activation Button / Relay Status (LED)
B. RUN: Run Mode Activation (LED is ON during operation)
C. PROGRAM: Program Mode Activation
D. OPTIONS: Option Selection (Time ON Extension (TOE), Flick Warning, TOE + Warning)
E. ON ONLY: ON Only Action Activation (OFF/ON transition for the selected group)
F. OFF ONLY: OFF Only Action Activation (ON/OFF transition for the selected group)
G. ON: Manual ON Override on Group
H. OFF: Manual OFF Override on Group
I. GROUP SELECT: Group Selection
J. 24VAC Supply and Ground
K. Ry: Relays Return (24V neutral)
   Sw: Group Input Supply (24V in line).
L. Groups Inputs (3 to 6)
M. Communication Port
N. Relays Outputs (1 to 8 and 9 to 16)
SERPTC411 Time Clock/Relay Controller Card

Figure 3: SERPTC411 Time Clock/Relay Controller Card Description

KEY:
A. Relay Outputs (1 to 8) or Group Outputs
B. LCD Screen
C. Run and Program Keys
   - **RUN**: Run Mode Activation (LED is ON during operation)
   - **PGM**: Program Mode Activation
D. Down arrow: Menu down or move cursor
E. Up arrow: Menu Up or move cursor
F. 24VAC Supply and Ground
G. Group Inputs (1 to 2)
H. Photocells Inputs (1 to 2)
I. Communication Port
J. Keypad
   - 0-9: Keys 0 to 9 are used to enter values selected by the cursor (^).
   - **ENTER**: Accept data and go to the next screen or return to the Program screen after entering all values.
   - **CLEAR**: Clear or cancel values entered. Press CLEAR once to reset the current screen to the default values. Press CLEAR twice to end programming the selected item and return to the Program screen.
OPERATION

Relay Status Using the SERPTC411

In RUN mode, relay status is displayed on the LCD main screen (see SERPTC411 LCD Display above). The table below describes the appearance of the relay numbers, their statuses, and the relays' actions.

<table>
<thead>
<tr>
<th>Relay Number</th>
<th>Relay Status</th>
<th>Relay Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number only</td>
<td>OFF</td>
<td>OFF until next command</td>
</tr>
<tr>
<td>Number with black background</td>
<td>ON</td>
<td>ON until next command</td>
</tr>
<tr>
<td>Flashing (fast and regular)</td>
<td>OFF Circuit</td>
<td>Not in operation</td>
</tr>
<tr>
<td>Flashing (long ON, short OFF)</td>
<td>ON with TOE mode</td>
<td>ON for a maximum period of 2 hours</td>
</tr>
<tr>
<td>Flashing (short ON, long OFF)</td>
<td>ON with Flick Warn mode</td>
<td>OFF after a 5-minute delay.</td>
</tr>
</tbody>
</table>

Relay Status Using the SERPRC401

In RUN mode, relay status is displayed on the controller by turning ON or OFF the LEDs next to the relay numbers (see SERPRC401 Relay Controller Card on page 6).

<table>
<thead>
<tr>
<th>LED Pattern</th>
<th>Relay Status</th>
<th>Relay Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON Steady</td>
<td>ON</td>
<td>ON until next command</td>
</tr>
<tr>
<td>OFF Steady</td>
<td>OFF</td>
<td>OFF until next command</td>
</tr>
<tr>
<td>Flashing (fast and regular)</td>
<td>OFF Circuit</td>
<td>Not in operation</td>
</tr>
<tr>
<td>Flashing (long ON, short OFF)</td>
<td>ON with TOE mode</td>
<td>ON for a maximum period of 2 hours</td>
</tr>
<tr>
<td>Flashing (short ON, long OFF)</td>
<td>ON with Flick Warn mode</td>
<td>OFF after a 5-minute delay.</td>
</tr>
</tbody>
</table>
Manual Relay Operation

Relay Status Using the SERPTC411

<table>
<thead>
<tr>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In RUN mode, press a relay's number button to manually operate a relay.</td>
<td>The Confirm State screen for the selected relay displays.</td>
</tr>
<tr>
<td>2. Press the ENTER button.</td>
<td>Confirms the ON or OFF action for the selected relay.</td>
</tr>
<tr>
<td>3. To cancel a relay operation, press the CANCEL button.</td>
<td>Cancels the relay operation.</td>
</tr>
</tbody>
</table>

NOTE: If a relay is performing a TOE or Flick Warning option (see Program Groups on page 24 or Program Photocells on page 28), pressing a relay's number button automatically cancels the option. However, the option reactivates at the time of the next command from the external device connected to the relay's group, such as a switch, time clock, or photocell.

Relay Status Using the SERPRC401

In RUN mode, press a relay's number button to manually turn a relay ON or OFF.

NOTE: If a relay is performing a TOE or Flick Warning option (see Program Groups on page 24 or Program Photocells on page 28), pressing a relay's number button automatically cancels the option. However, the option reactivates at the time of the next command from the external device connected to the relay's group, such as a switch, time clock, or photocell.

Group Status Using the SERPTC411

- In an 8-relay panel using a SERPTC411 controller, two groups are available.
- In RUN mode, group status is displayed on the LCD main screen (see SERPTC411 LCD Display on page 8). The table below describes the appearance of the group numbers and the status of the relays in the group.
- Press the UP or DOWN arrows on the controller to select Group 1 or Group 2.
- Option and action status for a group is visible only in PROGRAM mode (see Program Groups on page 24).

<table>
<thead>
<tr>
<th>Group Number</th>
<th>Relay Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number only</td>
<td>OFF</td>
</tr>
<tr>
<td>Number with black background</td>
<td>ON</td>
</tr>
</tbody>
</table>

Group Status Using the SERPRC401

- In a 16-relay panel, up to six groups are available.
- Group 1 and Group 2 status are viewed using the SERPTC411 controller (see Group Status Using the SERPTC411 above).
- Group 3 through Group 6 status are viewed by pressing the GROUP SELECT button on the SERPRC401 controller. The LEDs on the keypad display all related information for that group.
- The OPTION button's LED flashes a pattern to indicate the assigned option for the selected group.
Table 4: Group status description using the SERPTC411 LCD Display

<table>
<thead>
<tr>
<th>Option</th>
<th>LED Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOE</td>
<td>Flashes (long ON, short OFF, long ON)</td>
</tr>
<tr>
<td>Combination</td>
<td>ON (does not flash)</td>
</tr>
<tr>
<td>Flick Warning</td>
<td>Flashes (short ON, long OFF, short ON)</td>
</tr>
<tr>
<td>No Options</td>
<td>OFF (does not flash)</td>
</tr>
</tbody>
</table>

- Action status is indicated by the LEDs for the ON ONLY and OFF ONLY buttons. If both LEDs are OFF, the group has an ON/OFF action.
- The last command status of a group is indicated by the ON or OFF button LEDs.

NOTE: In RUN mode, the LEDs next to the relay numbers indicate the actual status of the relays (ON or OFF). The LEDs do not indicate the relay assignment to the selected group. To see relay assignments in a group, follow the instructions in Program Groups on page 24.

Manual Group Operation

Manual Group Operation Using the SERPTC411

<table>
<thead>
<tr>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In RUN mode, select Group 1 or Group 2 using the UP or DOWN arrows.</td>
<td>Selects a group.</td>
</tr>
<tr>
<td>2. Press the ENTER button.</td>
<td>Toggles the selected group ON or OFF.</td>
</tr>
<tr>
<td>3. To cancel a group operation, press the CANCEL button.</td>
<td>Cancels the group operation.</td>
</tr>
</tbody>
</table>

Manual Group Operation Using the SERPRC401

- Group 1 and Group 2: Refer to the steps above.
- Group 3 through Group 6: In RUN mode, press the ON or OFF button for the selected group (see Group Status Using the SERPTC411 on page 9 for instructions on how to select Group 3 through Group 6).

PROGRAM THE LPS RELAY PANEL

The LPS relay panel is programmed using the SERPTC411 keypad. This section explains how to use the keypad to configure the following relay panel options:

- Time and astronomical clock
- Events
- Groups
- Photocells
- Relay actions in groups
- Relay options in groups
- Actions for relays assigned to photocells

Operate the Display

The LCD screen displays information as dark text against a light background. Placing the cursor (^) on a value field allows you to change that value. Groups or relays that are OFF are indicated with a dash (-), while those that are ON are indicated with a number.
Start Program Mode

To program a LPS relay panel, both SERPTC411 and SERPRC401 must be in Program mode. Because both controllers are connected, it is important to notice that putting one controller into Program mode automatically puts the other controller into Program mode.

<table>
<thead>
<tr>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
</table>
| Press the **PGM** button on the SERPTC411 keypad. | • **PGM** button LED on the SERPTC411 turns red and the **PROGRAM** button LED on the SERPRC401 flashes.  
• The SERPTC411 becomes the master controller and the SERPRC401 becomes a slave to the SERPTC411.  
• The **Set Event** screen displays on the LCD screen of the SERPTC411. |

*NOTE: Configurations made in Program mode are saved in permanent flash memory when the Run mode is activated. Memory loss does not occur after a loss of power.*

Start Program Mode

After programming the controllers, exit Program mode and enter Run mode.

<table>
<thead>
<tr>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
</table>
| Press the **RUN** button LED on the SERPTC411 when the **Set Event** screen is displayed. | • Turns the **RUN** button LED of the SERPTC411 and the SERPRC401 to red.  
• Displays the **Main** screen on the SERPTC401.  
• Saves the configuration changes. |

*NOTE: Run mode automatically activates after a 2 minutes of inactivity from the keypad.*
Program the Time and Astronomical Clock

To program the time, the following information is required:
- Actual date and time
- Day Light Saving application: Yes or No

To program Solar Time, the following information is required:
- Latitude (degrees, minutes)
- Longitude (degrees, minutes)
- Time zone

For example:
New York City, NY: Latitude = 40 deg 47 min, Longitude = 73 deg 58 min, Time zone = -5
San Diego, CA: Latitude = 32 deg 43 min, Longitude = 117 deg 09 min, Time zone = -8


<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In Program mode, select the Set Time programming screen</td>
<td>Press ENTER to view the Date configuration screen.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Date configuration screen&lt;br&gt;Date format: YEAR/MONTH/DATE</td>
<td>1. Press 0-9 to modify the value above the cursor.&lt;br&gt;2. Press UP or DOWN to move the cursor to a different value.&lt;br&gt;3. Press ENTER to view the Time configuration screen.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Time configuration screen&lt;br&gt;Time format: 00:00 to 23:59</td>
<td>1. Press 0-9 to modify the value above the cursor.&lt;br&gt;2. Press UP or DOWN to move the cursor to a different value.&lt;br&gt;3. Press ENTER to view the Daylight saving configuration screen.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Daylight saving configuration screen&lt;br&gt;Options: YES or NO</td>
<td>1. Press UP or DOWN to turn ON (YES) or OFF (NO) Daylight saving time (DST)&lt;br&gt;2. Press ENTER to view the Latitude configuration screen.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Latitude configuration screen&lt;br&gt;Latitude format:&lt;br&gt;• DEG: 000 to 090&lt;br&gt;• MIN: 00 to 60</td>
<td>1. Press 0-9 to modify the value above the cursor.&lt;br&gt;2. Press UP or DOWN to move the cursor to a different value.&lt;br&gt;3. Press ENTER to view the Longitude configuration screen.</td>
</tr>
<tr>
<td>Step 6</td>
<td>Longitude configuration screen&lt;br&gt;Longitude format:&lt;br&gt;• DEG: 000 to 180&lt;br&gt;• MIN: 00 to 60</td>
<td>1. Press 0-9 to modify the value above the cursor.&lt;br&gt;2. Press UP or DOWN to move the cursor to a different value.&lt;br&gt;3. Press ENTER to view the Time Zone configuration screen.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Time zone configuration screen&lt;br&gt;Options: -12 to 12 GMT/UTC</td>
<td>1. Press UP or DOWN to select the time zone for your area.&lt;br&gt;2. Press ENTER to return to the Set View programming screen.</td>
</tr>
</tbody>
</table>
Program Events (Once, Daily, Weekly, Monthly)

Event Types

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once</td>
<td>One time; specific date</td>
</tr>
<tr>
<td>Daily</td>
<td>Every day</td>
</tr>
<tr>
<td>Weekly</td>
<td>One or more days every week</td>
</tr>
<tr>
<td>Monthly</td>
<td>Selection:</td>
</tr>
<tr>
<td></td>
<td>• Specific date of the month (1-31)</td>
</tr>
<tr>
<td></td>
<td>• First Sunday...Saturday</td>
</tr>
<tr>
<td></td>
<td>• Second Sunday...Saturday</td>
</tr>
<tr>
<td></td>
<td>• Third Sunday...Saturday</td>
</tr>
<tr>
<td></td>
<td>• Fourth Sunday...Saturday</td>
</tr>
<tr>
<td></td>
<td>• Last Sunday...Saturday</td>
</tr>
</tbody>
</table>

Event Priorities

There are four possible priorities for each programmed event. The highest number corresponds to the highest priority.

- **Priority 1**: Normal event; low priority
- **Priority 2**: Seasonal event; medium priority
- **Priority 3 and 4**: Special event (for example, a holiday); high and highest priority respectively
Program "Once" Events

**NOTE:** Before you begin, enter Program mode (see Start Program Mode on page 11), select Set Event, then select Add from the Event configuration screen.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to the Once event type. 2. Press 1-4 to select the priority level for the event (1 lowest, 4 highest). 3. Press <strong>ENTER</strong> to view the Groups and Outputs configuration screen.</td>
</tr>
</tbody>
</table>

**Groups and Outputs configuration screen**

<table>
<thead>
<tr>
<th>Step 2</th>
<th>8-Relay Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups and Outputs configuration screen 8-Relay Panel</td>
<td>1. Use the following key press combinations to select Groups 1 or 2 and Relays 1 or 2:  - Press 1 or 2 on the keypad <strong>one time</strong> to select Group 1 or Group 2.  - Press 1 or 2 on the keypad <strong>two times</strong> to select Relay 1 or Relay 2.  - Press 1 or 2 on the keypad <strong>three times</strong> to select Group 1 or Group 2 and Relay 1 or Relay 2.  - Press 1 or 2 on the keypad <strong>four times</strong> to deselect Groups 1 and 2 and Relays 1 and 2. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to turn ON or OFF the selected Groups or Relays. 3. Press 3-8 on the keypad to select Relays 3 to 8. 4. Press <strong>UP</strong> or <strong>DOWN</strong> to turn ON or OFF the selected Group or Relay. 5. Press <strong>ENTER</strong> when you have configured all of your Groups and Relays to go to the Event Date configuration screen.</td>
</tr>
</tbody>
</table>

| 16-Relay Panel | 1. Use the following key press combinations to select Groups 1, 2, 3, and 4:  - Press 1 or 2 on the keypad **one time** to select Group 1 or Group 2.  - Press 1 or 2 on the keypad **two times** to select Group 3 or Group 4.  - Press 1 or 2 on the keypad **three times** to select Group 1 or Group 2 and Group 3 or Group 4.  - Press 1 or 2 on the keypad **four times** to deselect Groups 1, 2, 3, and 4. 2. Press **UP** or **DOWN** to turn ON or OFF the selected Groups. 3. Press 5 or 6 on the keypad to select Group 5 or 6. 4. Press **UP** or **DOWN** to turn ON or OFF the selected Group. 5. Press **ENTER** when you have configured all of your Groups to go to the Event Date configuration screen. |

| Step 3 | Event Date configuration screen 1. Press 0-9 to modify the value above the cursor. 2. Press **UP** or **DOWN** to move the cursor to a different value. 3. Press **ENTER** to view the Event Time Type configuration screen. |

| Step 4 | Event Time Type Selection – Solar Time or Legal Time 1. Press **UP** or **DOWN** to select Solar or Legal Time. 2. Press **ENTER**. See Step 5 if Legal Time is selected or see Step 7 if Solar is selected. |
**Step 5** Event Start Time (Legal Time) configuration screen  
Format: 00:00h to 23:59h  
1. Press 0-9 to modify the value above the cursor.  
2. Press UP or DOWN to move the cursor to a different value.  
3. Press ENTER to view the Hold Time configuration screen.

**Step 6** Hold Time (duration of the event in hours) configuration screen  
Example configuration: The Event Start Time is set to 8:00h in Step 5. The event will end in 8 hours so the Hold time is set to 8:00h, which are the number of hours the event lasts. The Event End Time, the time the event shuts OFF, is 16:00h.  
Event Start Time + Hold Time = Event End Time  
1. Press 0-9 to modify the value above the cursor.  
2. Press UP or DOWN to move the cursor to a different value.  
3. Press ENTER to return to the Set Event screen.  
The event configuration is for Legal Time is complete. Skip Steps 7 through 9.

**Step 7** Event Start Time (Solar Time) configuration screen  
Options: Sunrise or Sunset  
1. Press UP or DOWN to select Sunrise or Sunset.  
2. Press ENTER to view the Offset configuration screen (Step 8).

**Step 8** Offset configuration screen  
Program a positive or negative offset to the solar time.  
1. Press UP or DOWN to select + or -.  
2. Press ENTER to view the Offset configuration screen (Step 9).

**Step 9** Offset Value configuration screen. This value is added or subtracted from the Solar Time.  
For example: A +00:30 Offset will add 30 minutes to the Solar Time  
1. Press 0-9 to modify the value above the cursor.  
2. Press UP or DOWN to move the cursor to a different value.  
3. Press ENTER to return to the Set Event screen.
## Program "Daily" Events

**NOTE:** Before you begin, enter Program mode (see Start Program Mode on page 11), select Set Event, then select Add from the Event configuration screen.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Event type selection: (Daily) Event priority selection: (1-4) NOTE: An identification number is automatically assigned to each event and it is located in the top right corner as #(id).</td>
<td>1. Press UP or DOWN to move the cursor to the Daily event type. 2. Press 1-4 to select the priority level for the event (1 lowest, 4 highest). 3. Press ENTER, then go to the Step indicated by the priority selected:  • Priority 1: Go to Step 8  • Priority 2: Go to Step 6  • Priority 3 or 4: Go to Step 2</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Event Start Date Type (Priority 3 or 4) Options:  • Unlimited: No start date  • Limited: Defined start date</td>
<td>1. Press UP or DOWN to select Unlimited or Limited. 2. Press ENTER then go to the Step indicated by the start date type selected:  • Unlimited: Go to Step 4  • Limited: Go to Step 3</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>Event Start Date Entry (Priority 3 or 4)</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press UP or DOWN to move the cursor to a different value. 3. Press ENTER and go to Step 4.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>Event End Date Type (Priority 3 or 4) Options:  • Unlimited: No end date  • Limited: Defined end date</td>
<td>1. Press UP or DOWN to select Unlimited or Limited. 2. Press ENTER then go to the Step indicated by the end date type selected:  • Unlimited: Go to Step 8  • Limited: Go to Step 5</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>Event End Date Entry (Priority 3 or 4)</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press UP or DOWN to move the cursor to a different value. 3. Press ENTER and go to Step 8.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td>Event Start Date Entry (Priority 2) NOTE: The year cannot be modified because priority 2 events are repeated every year.</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press UP or DOWN to move the cursor to a different value. 3. Press ENTER and go to Step 7.</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td>Event End Date Entry (Priority 2) NOTE: The year cannot be modified because priority 2 events are repeated every year.</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press UP or DOWN to move the cursor to a different value. 3. Press ENTER and go to Step 8.</td>
</tr>
</tbody>
</table>
Step 8 Groups and Relays/Outputs configuration screen
G = Group
O = Relay/Output
Options based on relay capacity:

- 8-Relay Panel:
  - G: Group 1 to 2
  - O: Relay 1 to 8
  - UP or DOWN: Turn Group or Relay/Output ON or OFF.

- 16-Relay Panel:
  - G: Group 1 to 2
  - O: Group 3 to 6
  - UP or DOWN: Turn Group or Relay/Output ON or OFF.

NOTE: Be aware that Groups 3, 4, 5, and 6 are assigned to O:1, O:2, O:3, and O:4 on the keypad LCD.

8-Relay Panel
1. Use the following key press combinations to select Groups 1 or 2 and Relays 1 or 2:
   - Press 1 or 2 on the keypad one time to select Group 1 or Group 2.
   - Press 1 or 2 on the keypad two times to select Relay 1 or Relay 2.
   - Press 1 or 2 on the keypad three times to select Group 1 or Group 2 and Relay 1 or Relay 2.
   - Press 1 or 2 on the keypad four times to deselect Groups 1 and 2 and Relays 1 and 2.
   2. Press UP or DOWN to turn ON or OFF the selected Groups or Relays.
   3. Press 3-8 on the keypad to select Relays 3 to 8.
   4. Press UP or DOWN to turn ON or OFF the selected Group or Relay.
   5. Press ENTER when you have configured all of your Groups and Relays to go to the Event Date configuration screen.

16-Relay Panel
1. Use the following key press combinations to select Groups 1, 2, 3, and 4:
   - Press 1 or 2 on the keypad one time to select Group 1 or Group 2.
   - Press 1 or 2 on the keypad two times to select Group 3 or Group 4.
   - Press 1 or 2 on the keypad three times to select Group 1 or Group 2 and Group 3 or Group 4.
   - Press 1 or 2 on the keypad four times to deselect Groups 1, 2, 3, and 4.
   2. Press UP or DOWN to turn ON or OFF the selected Groups.
   3. Press 5 or 6 on the keypad to select Group 5 or 6.
   4. Press UP or DOWN to turn ON or OFF the selected Group.
   5. Press ENTER when you have configured all of your Groups to go to the Event Date configuration screen.

Step 9 Event Time Type Selection – Solar Time or Legal Time
1. Press UP or DOWN to select Solar or Legal Time.
2. Press ENTER then go to the Step indicated by the time type selected:
   - Legal Time: Go to Step 10
   - Solar: Go to Step 12

Step 10 Event Start Time (Legal Time)
Format: 00:00h to 23:59h
1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to view the Hold Time configuration screen.

Step 11 Hold Time (duration of the event in hours) configuration screen
Example configuration:
The Event Start Time is set to 8:00h in Step 5. The event will end in 8 hours so the Hold time is set to 8:00h, which are the number of hours the event lasts. The Event End Time, the time the event shuts OFF, is 16:00h.
Event Start Time + Hold Time = Event End Time
1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to return to the Set Event screen.
The event configuration for Legal Time is complete. Skip Steps 12 through 14.
**Step 12** Event Start Time (Solar Time)
Options: Sunrise or Sunset

1. Press **UP** or **DOWN** to select **Sunrise** or **Sunset**.
2. Press **ENTER** to view the Offset configuration screen (Step 13).

**Step 13** Offset
Program a positive or negative offset to the solar time.

1. Press **UP** or **DOWN** to select + or –.
2. Press **ENTER** to view the Offset configuration screen (Step 14).

**Step 14** Offset Value
This value is added or subtracted from the Solar Time based on the offset selected in Step 13.

1. Press **0-9** to modify the value above the cursor.
2. Press **UP** or **DOWN** to move the cursor to a different value.
3. Press **ENTER** to return to the Set Event screen.

---

**Program “Weekly” Events**

**NOTE:** Before you begin, enter Program mode (see Start Program Mode on page 11), select Set Event, then select Add from the Event configuration screen.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Event type selection: (Weekly) Event priority selection: (1-4) NOTE: An identification number is automatically assigned to each event and it is located in the top right corner as #(id).</td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to the Weekly event type. 2. Press 1-4 to select the priority level for the event (1 lowest, 4 highest). 3. Press <strong>ENTER</strong>, then go to the Step indicated by the priority selected: • Priority 1: Go to Step 8 • Priority 2: Go to Step 6 • Priority 3 or 4: Go to Step 2</td>
</tr>
<tr>
<td>Step 2</td>
<td>Event Start Date Type (Priority 3 or 4) Options: • Unlimited: No start date • Limited: Defined start date</td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to select Unlimited or Limited. 2. Press <strong>ENTER</strong> then go to the Step indicated by the start date type selected: • Unlimited: Go to Step 4 • Limited: Go to Step 3</td>
</tr>
<tr>
<td>Step 3</td>
<td>Event Start Date Entry (Priority 3 or 4)</td>
<td>1. Press <strong>0-9</strong> to modify the value above the cursor. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to a different value. 3. Press <strong>ENTER</strong> and go to Step 4.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Event End Date Type (Priority 3 or 4) Options: • Unlimited: No end date • Limited: Defined end date</td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to select Unlimited or Limited. 2. Press <strong>ENTER</strong> then go to the Step indicated by the end date type selected: • Unlimited: Go to Step 8 • Limited: Go to Step 5</td>
</tr>
<tr>
<td>Step 5</td>
<td>Event End Date Entry (Priority 3 or 4)</td>
<td>1. Press <strong>0-9</strong> to modify the value above the cursor. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to a different value. 3. Press <strong>ENTER</strong> and go to Step 8.</td>
</tr>
</tbody>
</table>
### Step 6: Event Start Date Entry (Priority 2)

**NOTE:** The year cannot be modified because priority 2 events are repeated every year.

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER and go to Step 7.

### Step 7: Event End Date Entry (Priority 2)

**NOTE:** The year cannot be modified because priority 2 events are repeated every year.

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER and go to Step 8.

### Step 8: Groups and Relays/Outputs configuration screen

<table>
<thead>
<tr>
<th>Options based on relay capacity:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8-Relay Panel:</strong></td>
</tr>
<tr>
<td>— G: Group 1 to 2</td>
</tr>
<tr>
<td>— O: Relay 1 to 8</td>
</tr>
<tr>
<td>— UP or DOWN: Turn Group or Relay/Output ON or OFF.</td>
</tr>
<tr>
<td><strong>16-Relay Panel:</strong></td>
</tr>
<tr>
<td>— G: Group 1 to 2</td>
</tr>
<tr>
<td>— O: Group 3 to 6</td>
</tr>
<tr>
<td>— UP or DOWN: Turn Group or Relay/Output ON or OFF.</td>
</tr>
</tbody>
</table>

**NOTE:** Be aware that Groups 3, 4, 5, and 6 are assigned to O:1, O:2, O:3, and O:4 on the keypad LCD.

#### 8-Relay Panel

1. Use the following key press combinations to select Groups 1 or 2 and Relays 1 or 2:
   - Press 1 or 2 on the keypad **one time** to select Group 1 or Group 2.
   - Press 1 or 2 on the keypad **two times** to select Relay 1 or Relay 2.
   - Press 1 or 2 on the keypad **three times** to select Group 1 or Group 2 and Relay 1 or Relay 2.
   - Press 1 or 2 on the keypad **four times** to deselect Groups 1 and 2 and Relays 1 and 2.
2. Press UP or DOWN to turn ON or OFF the selected Groups or Relays.
3. Press 3-8 on the keypad to turn ON or OFF the selected Groups or Relays.
4. Press ENTER when you have configured all of your Groups and Relays then go to the Event Date configuration screen.

#### 16-Relay Panel

1. Use the following key press combinations to select Groups 1, 2, 3, and 4:
   - Press 1 or 2 on the keypad **one time** to select Group 1 or Group 2.
   - Press 1 or 2 on the keypad **two times** to select Group 3 or Group 4.
   - Press 1 or 2 on the keypad **three times** to select Group 1 or Group 2 and Group 3 or Group 4.
   - Press 1 or 2 on the keypad **four times** to deselect Groups 1, 2, 3, and 4.
2. Press UP or DOWN to turn ON or OFF the selected Groups.
3. Press 5 or 6 on the keypad to select Group 5 or 6.
4. Press UP or DOWN to turn ON or OFF the selected Group.
5. Press ENTER when you have configured all of your Groups then go to Step 9.

### Step 9: Event Days of the Week Options:

1. Press 1 to 7 to select the days of the week the event is ON (1 = Sunday, 2 = Monday, etc.)
2. Press ENTER, then go to Step 10.

### Step 10: Event Time Type Selection – Solar Time or Legal Time

1. Press UP or DOWN to select Solar or Legal Time.
2. Press ENTER then go to the Step indicated by the time type selected:
   - Legal Time: Go to Step 11
   - Solar: Go to Step 13

### Step 11: Event Start Time (Legal Time)

**Format:** 00:00h to 23:59h

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to view the Hold Time configuration screen.
Step 12 Hold Time (duration of the event in hours) configuration screen
Example configuration:
The Event Start Time is set to 8:00h in Step 5. The event will end in 8 hours so the Hold time is set to 8:00h, which are the number of hours the event lasts. The Event End Time, the time the event shuts OFF, is 16:00h.
Event Start Time + Hold Time = Event End Time

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to return to the Set Event screen.

The event configuration for Legal Time is complete. Skip Steps 13 through 15.

Step 13 Event Start Time (Solar Time)
Options: Sunrise or Sunset

1. Press UP or DOWN to select Sunrise or Sunset.
2. Press ENTER to view the Offset configuration screen (Step 14).

Step 14 Offset
Program a positive or negative offset to the solar time.

1. Press UP or DOWN to select + or –.
2. Press ENTER to view the Offset configuration screen (Step 15).

Step 15 Offset Value
This value is added or subtracted from the Solar Time based on the offset selected in Step 14.
For example: +00:30 Offset adds 30 minutes to the Solar Time

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to return to the Set Event screen.
Program "Monthly" Events

**NOTE:** Before you begin, enter Program mode (see Start Program Mode on page 11), select Set Event, then select Add from the Event configuration screen.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Event type selection: (Monthly) Event priority selection: (1-4) <strong>NOTE:</strong> An identification number is automatically assigned to each event and it is located in the top right corner as #(id).</td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to the Monthly event type. 2. Press 1-4 to select the priority level for the event (1 lowest, 4 highest). 3. Press <strong>ENTER</strong>, then go to the Step indicated by the priority selected:  • Priority 1: Go to Step 8  • Priority 2: Go to Step 6  • Priority 3 or 4: Go to Step 2</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Event Start Date Type (Priority 3 or 4) Options:  • Unlimited: No start date  • Limited: Defined start date</td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to select Unlimited or Limited. 2. Press <strong>ENTER</strong> then go to the Step indicated by the start date type selected:  • Unlimited: Go to Step 4  • Limited: Go to Step 3</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>Event Start Date Entry (Priority 3 or 4)</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to a different value. 3. Press <strong>ENTER</strong> and go to Step 4.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>Event End Date Type (Priority 3 or 4) Options:  • Unlimited: No end date  • Limited: Defined end date</td>
<td>1. Press <strong>UP</strong> or <strong>DOWN</strong> to select Unlimited or Limited. 2. Press <strong>ENTER</strong> then go to the Step indicated by the end date type selected:  • Unlimited: Go to Step 8  • Limited: Go to Step 5</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>Event End Date Entry (Priority 3 or 4)</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to a different value. 3. Press <strong>ENTER</strong> and go to Step 8.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td>Event Start Date Entry (Priority 2) <strong>NOTE:</strong> The year cannot be modified because priority 2 events are repeated every year.</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to a different value. 3. Press <strong>ENTER</strong> and go to Step 7.</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td>Event End Date Entry (Priority 2) <strong>NOTE:</strong> The year cannot be modified because priority 2 events are repeated every year.</td>
<td>1. Press 0-9 to modify the value above the cursor. 2. Press <strong>UP</strong> or <strong>DOWN</strong> to move the cursor to a different value. 3. Press <strong>ENTER</strong> and go to Step 8.</td>
</tr>
</tbody>
</table>
Step 8
Groups and Relays/Outputs configuration screen
G = Group
O = Relay/Output
Options based on relay capacity:
- 8-Relay Panel:
  — G: Group 1 to 2
  — O: Relay 1 to 8
  — UP or DOWN: Turn Group or Relay/Output ON or OFF.
- 16-Relay Panel:
  — G: Group 1 to 2
  — O: Group 3 to 6
  — UP or DOWN: Turn Group or Relay/Output ON or OFF.

NOTE: Be aware that Groups 3, 4, 5, and 6 are assigned to O:1, O:2, O:3, and O:4 on the keypad LCD.

8-Relay Panel
1. Use the following key press combinations to select Groups 1 or 2 and Relays 1 or 2:
   • Press 1 or 2 on the keypad one time to select Group 1 or Group 2.
   • Press 1 or 2 on the keypad two times to select Relay 1 or Relay 2.
   • Press 1 or 2 on the keypad three times to select Group 1 or Group 2 and Relay 1 or Relay 2.
   • Press 1 or 2 on the keypad four times to deselect Groups 1 and 2 and Relays 1 and 2.
2. Press UP or DOWN to turn ON or OFF the selected Groups or Relays.
3. Press 3-8 on the keypad to select Relays 3 to 8.
4. Press UP or DOWN to turn ON or OFF the selected Group or Relay.
5. Press ENTER when you have configured all of your Groups and Relays to go to the Event Date configuration screen.

16-Relay Panel
1. Use the following key press combinations to select Groups 1, 2, 3, and 4:
   • Press 1 or 2 on the keypad one time to select Group 1 or Group 2.
   • Press 1 or 2 on the keypad two times to select Group 3 or Group 4.
   • Press 1 or 2 on the keypad three times to select Group 1 or Group 2 and Group 3 or Group 4.
   • Press 1 or 2 on the keypad four times to deselect Groups 1, 2, 3, and 4.
2. Press UP or DOWN to turn ON or OFF the selected Groups.
3. Press 5 or 6 on the keypad to select Group 5 or 6.
4. Press UP or DOWN to turn ON or OFF the selected Group.
5. Press ENTER when you have configured all of your Groups then go to Step 9.

Step 9
Months ON
Options: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
(January, February, etc.)

1. Use the following key presses to select the months an event is ON:
   • Press 0 on the keypad to select month 10 (October).
   • Press 1 or 2 on the keypad one time to select month 1 or month 2.
   • Press 1 or 2 on the keypad two times to select month 11 or month 12.
   • Press 1 or 2 on the keypad three times to select months 1 and 11 or months 2 and 12.
   • Press 1 or 2 on the keypad four times to deselect months 1, 2, 11, and 12.
   • Press 3 through 9 on the keypad to select months 3 through 9.
2. Press ENTER after all of the months are selected, then go to step 10.

Step 10
Fixed Date or Specific Day
Options:
• By Date: The event starts on a specific date during the selected months.
• By Week Day: The event starts on a specific day of the week during the selected months.

1. Press UP or DOWN to select By Date or By Week Day.
2. Press ENTER then go to the Step indicated by the time type selected:
   • Legal Time: Go to Step 11
   • Solar: Go to Step 12
### Step 11  Fixed Date Selection
**Format: Day-Month**

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.

### Step 12  Month Position of the Specific Day
**Options:**
- First (event starts on the first occurrence of the day selected in Step 13)
- Second (event starts on the second occurrence of the day selected in Step 13)
- Third (event starts on the third occurrence of the day selected in Step 13)
- Fourth (event starts on the fourth occurrence of the day selected in Step 13)
- Last (event starts on the last occurrence of the day selected in Step 13)

1. Press UP or DOWN to select First, Second, Third, Fourth, or Last.
2. Press ENTER, then go to Step 13.

### Step 13  Specific Day Selection
**Options: Sunday through Saturday**

1. Press UP or DOWN to select Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, or Saturday.
2. Press ENTER, then go to Step 14.

### Step 14  Event Time Type Selection – Solar Time or Legal Time

1. Press UP or DOWN to select Solar or Legal Time.
2. Press ENTER then go to the Step indicated by the time type selected:
   - Legal Time: Go to Step 15
   - Solar: Go to Step 17

### Step 15  Event Start Time (Legal Time)
**Format: 00:00h to 23:59h**

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to view the Hold Time configuration screen.

### Step 16  Hold Time (duration of the event in hours)
configuration screen

Example configuration:
The Event Start Time is set to 8:00h in Step 5. The event will end in 8 hours so the Hold time is set to 8:00h, which are the number of hours the event lasts. The Event End Time, the time the event shuts OFF, is 16:00h.

Event Start Time + Hold Time = Event End Time

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to return to the Set Event screen.
The event configuration for Legal Time is complete. Skip Steps 17 through 19.

### Step 17  Event Start Time (Solar Time)
**Options: Sunrise or Sunset**

1. Press UP or DOWN to select Sunrise or Sunset.
2. Press ENTER to view the Offset configuration screen (Step 18).

### Step 18  Offset
Program a positive or negative offset to the solar time.

1. Press UP or DOWN to select + or –.
2. Press ENTER to view the Offset configuration screen (Step 19).
Step 19 Offset Value
This value is added or subtracted from the Solar Time based on the offset selected in Step 14.
For example: +00:30 Offset adds 30 minutes to the Solar Time

<table>
<thead>
<tr>
<th>Step 19</th>
<th>Offset Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This value is added or subtracted from the Solar Time based on the offset selected in Step 14. For example: +00:30 Offset adds 30 minutes to the Solar Time</td>
</tr>
</tbody>
</table>

1. Press 0-9 to modify the value above the cursor.
2. Press UP or DOWN to move the cursor to a different value.
3. Press ENTER to return to the Set Event screen.

Modify Events

NOTE: Before you begin, enter Program mode (see Start Program Mode on page 11), then select Set Event.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Event Add</td>
<td>1. Press DOWN to view the Event Modify screen. 2. Press ENTER, then go to Step 2.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Event Selection</td>
<td>1. Press UP or DOWN to select an event to modify. 2. Press ENTER, go to the programming section for the event type of the event selected, then follow the instructions to make changes to the event.</td>
</tr>
</tbody>
</table>

Remove Events

NOTE: Before you begin, enter Program mode (see Start Program Mode on page 11), then select Set Event.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Event Add</td>
<td>1. Press DOWN twice to view the Event Remove screen. 2. Press ENTER, then go to Step 2.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Event Selection</td>
<td>1. Press UP or DOWN to select an event to remove. 2. Press ENTER to delete the event.</td>
</tr>
</tbody>
</table>

Program Groups

Program Group 1 and Group 2

Two different relay groups are programmable inside an 8-relay LPS relay panel and six inside a 16-relay LPS relay panel. Groups 1 and 2 are programmed from the SERPTC411 controller, and Groups 3 through 6 are programmed from the SERPRC401 controller (see Program Group 3 through Group 6 on page 26).

Group programming is used to do the following:
- Associate one or more relays to each group
- Assign actions (ON/OFF, ON Only, OFF Only) and options (Time ON Extension [TOE], Warning, TOE + Warning, No option) to all the relays in a group.

Table 5: Group 1 and Group 2 Relay Actions and Options

<table>
<thead>
<tr>
<th>Actions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON/OFF (Normal)</td>
<td>Relays are turned ON after the first command and turned OFF after the second command.</td>
</tr>
<tr>
<td>ON Only</td>
<td>Relays are turned ON only. To turn OFF these relays, they must be assigned to a second group programmed with an ON/OFF or OFF Only action.</td>
</tr>
<tr>
<td>OFF Only</td>
<td>Relays are turned OFF only. To turn ON these relays, they must be assigned to a second group programmed with an ON/OFF or ON Only action.</td>
</tr>
</tbody>
</table>
Options | Description
--- | ---
No Option (Normal) | No options are assigned to the group
Time ON Extension (TOE) | When the TOE option is assigned to a group and the group is OFF, all the relays will stay ON for a maximum period of 2 hours when activated. Occupants can manually turn OFF the relays before that delay through their wall switch and restart another TOE if they press on the switch after the delay.

Steps | Active Screen | Actions
--- | --- | ---
Step 1 | Set Event
NOTE: Inputs = Groups; Outputs = Relays. | 1. Press DOWN twice to view the Set I/O screen.
2. Press ENTER to view the Input Selection screen.
Step 2 | Input (Group) Selection Options:
- Input (Group) 1
- Input (Group) 2 | 1. Press UP or DOWN to select an input (group) to program.
2. Press ENTER to view the Event Time Type configuration screen.
Step 3 | Relay Selection
NOTE: Only perform this step for 8-relay panels. For 16-relay panels, go to Step 4. | 1. Press 1-8 to activate the relays that will be assigned to the input (group) selected in Step 2.
2. Press UP or DOWN to assign an ON or OFF operation for the relays in the group.
3. Press ENTER, then go to Step 5.
Step 4 | Relay Selection using the SERPRC401 Relay Controller
NOTE: Only perform this step for 16-relay panels. For 8-relay panels, go to Step 4. | 1. Press a relay number button on the SERPRC401 to activate the relays that will be assigned to the input (group) selected in Step 2. To activate or deactivate all relays at once, press the ON or OFF button.
2. Press ENTER to go to Step 5.
Step 5 | Relay Action Selection Options: ON/OFF, ON ONLY, OFF ONLY | 1. Press UP or DOWN to select the action performed by the relay group.
2. Press ENTER, then go to Step 6.
Step 6 | Relay Option Selection Options: No Option, Warning, TOE, Warning + TOE | 1. Press UP or DOWN to select a relay option.
2. Press ENTER to return to the Set Event screen.
Program Group 3 through Group 6

The SERPRC401 controls up to four different relay groups (Groups 3, 4, 5, and 6). Each group can include between 1 and 16 relays, and a relay can be assigned to one or more groups.

Before You Begin
1. Put the SERPTC411 Time Clock/Relay Controller in RUN mode (see Exit Program Mode on page 11).
2. Put the SERPRC401 Relay Controller in PROGRAM mode (see Step 1 below).

NOTE: When the relay controller is put in PROGRAM, the time controller is put back in PROGRAM mode.

Table 6: Group 3 through Group 6 Relay Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time ON Extension (TOE)</td>
<td>When the TOE option is assigned to a group and the group is OFF, all the relays will stay ON for a maximum period of 2 hours when activated. Occupants can manually turn OFF the relays before that delay through their wall switch and restart another TOE if they press on the switch after the delay.</td>
</tr>
<tr>
<td>Flick Warn</td>
<td>This option warns occupants that lights will be turned OFF in 5 minutes. Relays are switched OFF for 500 ms to warn the occupants. Occupants can cancel the controller’s OFF command by pressing their wall switch before the end of the 5-minute delay.</td>
</tr>
<tr>
<td>Combination (TOE and Flick Warn)</td>
<td>A relay group is programmed with TOE and Flick Warn options.</td>
</tr>
<tr>
<td>No Option (Normal)</td>
<td>No options are assigned to the group</td>
</tr>
</tbody>
</table>

Table 7: Group 3 through Group 6 Relay Actions

<table>
<thead>
<tr>
<th>Actions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON/OFF (Normal)</td>
<td>This is the default action. Relays are turned ON after the first command and turned OFF after the second command.</td>
</tr>
<tr>
<td>ON Only</td>
<td>Relays are turned ON only. To turn OFF these relays, they must be assigned to a second group programmed with an ON/OFF or OFF Only action.</td>
</tr>
<tr>
<td>OFF Only</td>
<td>Relays are turned OFF only. To turn ON these relays, they must be assigned to a second group programmed with an ON/OFF or ON Only action.</td>
</tr>
</tbody>
</table>

Steps | Actions | Results |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Press the PROGRAM button on the SERPRC401.</td>
<td>The PROGRAM button LED on the SERPRC401 turns red, and the PROGRAM button LED on the SERPTC411 flashes red. NOTE: The SERPTC411 becomes the master controller, and the SERPRC401 becomes the slave controller.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Press the GROUP SELECT button on the SERPRC401 to select a group to program.</td>
<td>Selects a group and the corresponding LED turns red. NOTE: The controller shows numbers 1 through 4, but the selected groups are actually 3 through 6. Therefore Group 1 on the controller programs Group 3, Group 2 programs Group 4, Group 3 programs Group 5, and Group 4 programs Group 6.</td>
</tr>
</tbody>
</table>
Step 3 | Press a relay number button on the SERPRC401 to activate the relays that will be assigned to the input (group) selected in Step 2. To activate or deactivate all relays at once, press the ON or OFF button. | Selects the relays to assign to the selected group. To activate or deactivate all relays at once, press the ON or OFF button. NOTE: The LEDs next to the activated relays will turn ON.

Step 4 | Press the OPTIONS button:
- One time to assign the TOE option, or
- Two times to assign the Combination option, or
- Three times to assign the Flicker Warn option, or
- Four times to assign No Option. | Assigns an option to the relay group, and the OPTIONS button LED does the following depending on the option assigned:
- TOE: LED flashes (long ON, short OFF, long ON)
- Combination: LED stays ON
- Flicker Warn: LED flashes (short ON, long OFF, short ON)
- No Option: LED is OFF

Step 5 | Do one of the following:
- Press the ON ONLY button to activate the ON Only action (press the ON ONLY button again to deactivate the ON Only action and activate the ON/OFF action).
- Press the OFF ONLY button to activate the OFF Only action (press the OFF ONLY button again to deactivate the OFF Only action and activate the ON/OFF action).
- Do not press any buttons to leave the ON/OFF action activated. | The LED for the ON ONLY button or the OFF ONLY button turns ON if one of these actions is selected.

Step 6 | Repeat Step 2 through Step 5 for each of the groups. | Programs all of the groups. After all of the groups are created and programmed on the SERPRC401 controller, the controller is ready to operate.

Step 7 | Press the RUN button on the SERPRC401 controller. | The RUN button LED and the LEDs for the relays that are programmed ON turn red.

Step 8 | Follow the steps in Program Photocells on page 28. | Programs the photocells connected to the relay panel.
Program Photocells

The SERPRC401 can be connected to two separate photocells:

- Photocell 1, which is normally used to control exterior lights and
- Photocell 2, which is normally used to control interior lights.

The LPS relay panel is capable of supporting two different types of photocells:

- photoconductive photocell (2-wire) and
- linear photodiode photocell (3-wire).

### Table 8: Photocell Operation Descriptions

<table>
<thead>
<tr>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Relays are turned ON during the first command and turned OFF during the second command.</td>
</tr>
<tr>
<td>ON Only</td>
<td>Relays are turned ON. To turn relays OFF, they must be assigned to a second group with an ON/OFF or OFF Only action assigned.</td>
</tr>
<tr>
<td>OFF Only</td>
<td>Relays are turned OFF. To turn relays ON, they must be assigned to a second group with an ON/OFF or ON Only action assigned.</td>
</tr>
</tbody>
</table>

### Threshold Programming

Figure 5: Photocell Threshold Programming Diagram

**ON Threshold Value > Off Threshold Value:**
If the analog output reading is greater than the ON threshold, the relays assigned to the photocell are turned ON.
If the analog output reading is smaller than the OFF threshold, the relays assigned to the photocell are turned OFF.

**ON Threshold Value < OFF Threshold Value:**
If the analog output reading is smaller than the ON threshold, the relays assigned to the photocell are turned ON.
If the analog output reading is greater than the OFF threshold, the relays assigned to the photocell are turned OFF.
Program Photocell 1 and Photocell 2

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Screen</th>
<th>Actions</th>
</tr>
</thead>
</table>
| Step 1 | Set Event     | 1. Press **DOWN** twice to view the Set I/O screen.  
2. Press **ENTER** to view the I/O screen. |
| Step 2 | Input (Group) Selection  
Options:  
- Photocell 1  
- Photocell 2 | 1. Press **UP** or **DOWN** to select a photocell to program.  
2. Press **ENTER**, then go to Step 3 to set the threshold. |
| Step 3 | Threshold Selection | 1. Press **0-9** to modify the value above the cursor.  
2. Press **UP** or **DOWN** to move the cursor to the next value.  
3. If programming an 8-relay panel, press **ENTER** once, then go to Step 4. If the relay panel is equipped with a SERPRC401 controller, press **ENTER** twice, then go to Step 5. |
| Step 4 | Relay Selection  
**NOTE:** Only perform this step for 8-relay panels.  
For 16-relay panels, go to Step 4. | 1. Press 1-8 to activate the relays that will be assigned to the photocell selected in Step 2.  
2. Press **UP** or **DOWN** to assign an ON or OFF operation for the relays assigned to the photocell.  
3. Press **ENTER**, then go to Step 6. |
| Step 5 | Relay Selection using the SERPRC401 Relay Controller  
**NOTE:** Only perform this step for 16-relay panels.  
For 8-relay panels, go to Step 4. | 1. Press a relay number button on the SERPRC401 to activate the relays that will be assigned to the photocell selected in Step 2. To activate or deactivate all relays at once, press the ON or OFF button.  
2. Press **ENTER** to go to Step 6. |
| Step 6 | Relay Operation Selection  
Options: NORMAL, ON ONLY, OFF ONLY | 1. Press **UP** or **DOWN** to select the operation performed by the relays.  
2. Press **ENTER** to return to the Set Event screen. |
Appendix A - Typical Wiring Diagrams

Figure 6: Typical Wiring for the Time Controller

Dashed line to be used by authorized electrical personnel.

Low Voltage Switch If Used

TRANSFORMER T1
277, 120/24V

3-wire Device
2-wire Device
Contact the Customer Information Center for technical support by phone at 1-888-778-2733 or e-mail at lightingcontrol.support@us.schneider-electric.com.

Contact your local Schneider Electric service representative for repairs or service to your network.

You may also find helpful information on our web site at www.Schneider-Electric.us.