

STEFFES CORPORATION

THEBEN MODEL "TR610 TOP" TIME CLOCK

REPLACEMENT AND SETTING INSTRUCTIONS

Item #1301007R (120V Clock) and Item #1301008R (240V Clock)

THIS PROCEDURE MUST BE PERFORMED BY A QUALIFIED TECHNICIAN

REPLACEMENT

1. De-energize the system.
2. Remove the old time clock from the mounting rail by prying down on the tab located at the bottom of the clock (Figure 1) and pulling outward.
3. Position the new clock on mounting bracket and connect wiring in accordance with the appropriate wiring diagram for the system (See Figures 2 thru 6).

SETTING THE TIME CLOCK

NOTE: *The Theben time clock is equipped with a lithium battery with an approximate 4-year power reserve.*

Throughout the programming of the time clock, if there is approximately 90 seconds of inactivity (no buttons are pushed), the display will automatically reset to normal operation. If the clock resets and the program information you are entering or editing is not stored, the time clock will default to the previous settings. The new information will have to be reprogrammed.

1. The time clock is delivered in a "sleep" mode. To activate without a service voltage, press and release one of the four buttons.

NOTE: *To navigate through the menus below, press the "◀" or "▶" button. Press the "OK" button to save each selection and move to the next one..*

2. Select the national language.
3. Set the current year.
4. Set the current month.
5. Set the current day of the month. This display will show the month followed by the day (i.e. 09.01 is September 1st).
6. Set the current hour. Ensure the correct am/pm hour is selected.
7. Set the current minutes.

NOTE: *The time clock should continue with setup of daylight savings time; however, it may return to the normal operating mode and skip the daylight savings section. If this occurs, press the "MENU" button until the "☀" is flashing at the top of the display. Press "OK" and repeat Steps 3-8.*

8. To set whether or not daylight savings time (DST) will be used, press the "▶" button until "SUM/WIN" is displayed. Press "OK".
 - a. **With Daylight Savings Time**
 - ◆ Press the "▶" button until "WITH S/W" is displayed. Press "OK".
 - ◆ Use the "▶" button until "USA/CAN" is displayed. Press "OK".
 - b. **Without Daylight Savings Time**
 - ◆ Press the "▶" button until "NO SU/WI" is displayed. Press "OK".
9. The clock will return to the time/status display and the day of the week should automatically be indicated by an arrow (1 = Monday...7 = Sunday) at the bottom.

NOTE: *If daylight savings time is to be recognized, a snowflake or a sun will appear in the clock display. A snowflake indicates winter months (days between last Saturday in October and first Sunday in April). A sun indicates summer months (days between first Saturday in April and last Sunday in October).*

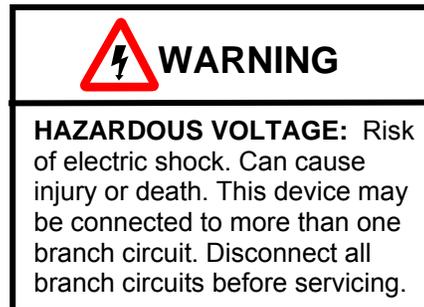
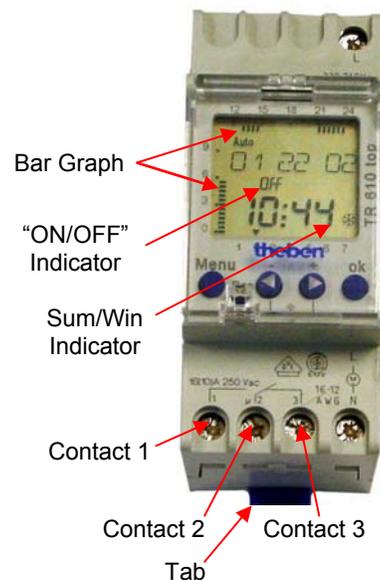


Figure 1



SETTING THE CHARGE (ON) AND CONTROL (OFF) CYCLES

NOTE: *Start times for each charge (on) and control (off) cycle MUST be set. To ensure proper operation, the first program setting should be charge (on). If the first cycle would normally be control (off), set a 12:00 a.m. charge (on) time as part of your schedule.*

1. Press the “MENU” button until "Prog" is flashing in the upper portion of the display. Press "OK".
2. Use the "◀" or "▶" button until "NEW PROG" is flashing in the display. Press "OK". "FREE" and a number will automatically appear after a few seconds to indicate how many program locations are available. There are a total of 28 program locations available if no program settings have been entered.
3. The clock will automatically display "TIME ON" or "TIME OFF" toward the top of the display. Below this, "On" or "Off" will be flashing. Use the "◀" or "▶" button until "Time ON" displays and press "OK" to set the charging period.

NOTE: *“ON” is a charging cycle and “OFF” is a control cycle.*

4. "HOUR" will be displayed across the top. Use the "◀" or "▶" button to adjust the hour. Press "OK".
5. "MINUTE" will be displayed across the top. Use the "◀" or "▶" button to adjust the minutes. Press "OK".
6. "MONDAY" will display. Select the days of the week that this particular program setting pertains to by using the "◀" or "▶" button until the first day of the cycle is flashing. Press "OK" and "COPY" will flash. Press "OK" and "ADD TU" will appear. Continue to press "OK" to select the desired days. To bypass a day, press "▶". After "ADD SU" is displayed and/or selected, "STORE" flashes on the display. Press "OK". "NEW PROG" will flash across the display.

NOTE: *Bypassing a day keeps the time clock in the last state it was in prior to the bypassed day.*

7. Press "OK" and "▶" to set "TIME OFF" (control cycle). Repeat Steps 3-6 to program "TIME OFF" (control cycle).
8. Press "OK" to enter another program cycle or press "MENU" to return to the standard display.

VIEWING THE CHARGE (ON) AND CONTROL (OFF) CYCLES

1. To view the program settings, press the "Menu" until "Prog" starts flashing. Press "OK". "NEW PROG" will flash across the top of the display. Press the "◀" or the "▶" button until "CHECK" flashes on the display.
2. Continue to press and release "OK" button to review the programs.

CLEARING A SINGLE CHARGE (ON)/CONTROL (OFF) CYCLE

1. To clear individual program settings, press the "Menu" until "Prog" is flashing. Press "OK". "NEW PROG" will flash on the display. Press the "◀" or the "▶" button until "CLEAR" flashes on the display. Press "OK".
2. "SINGLE" will flash on the display. Press "OK" and use the "◀" or the "▶" button until the day of the week desired is displayed. Press "OK".
3. Use the "◀" or the "▶" button to select "CLEAR" if clearing the current program setting. Press "OK" and the current program setting will be cleared.

NOTE: *If the setting to be cleared is not displayed, use the "◀" or the "▶" button until "NEXT" is displayed. Press "OK". The next program setting for the selected day will appear. Continue to use the "NEXT" button until the desired program setting is displayed.*

CLEARING ALL CHARGE (ON) AND CONTROL (OFF) CYCLES

1. To clear all existing program settings, press the "Menu" until "Prog" is flashing. Press "OK". "NEW PROG" will flash on the display. Press the "◀" or the "▶" button until "CLEAR" flashes on the display. Press "OK".
2. "SINGLE" will flash on the display. Use the "◀" or the "▶" button until "ALL" is flashing on the display. Press "OK" and "CONFIRM" will flash on the display.
3. Press "OK" to confirm the clearing of all program settings or press the "MENU" button to escape and not clear any program settings.

OVERRIDES

1. To temporarily override a current charge or control cycle, press and release the "◀" and the "▶" buttons at the same time. "On" will appear and the clock will reverse the current program cycle. This override status will remain until the next program cycle time, or it can be canceled by pressing and releasing the "◀" and the "▶" buttons at the same time again and "FOF" will display.
2. The time clock can also be placed in a permanent ON (Charge) or permanent OFF (Control) status. To do so, press and hold both the "◀" and the "▶" buttons until "PERM ON" (On) or "PERM OFF" (Off) is displayed. Follow the same procedure to cancel the override.

RESET TIME

NOTE: The manufacturer recommends **NOT** using the "Res" button unless absolutely necessary.

1. Press the "Res" button to reset time, day, month, and year.

NOTE: This does not reset programmed control and charge cycles.

2. If the "Res" button is pushed, refer to the "Setting the Time Clock" instructions above for programming.

FINAL CHECKOUT

1. The heater(s) should reflect the program time.
 - a. During a charge (on) period the heater will display a "C".
 - b. During a control (off) or peak period the heater will display a "P".
2. The bars on the bar graph on the left and top sides of the display indicate the charge (on) times. The numbers indicate time in 24 hour format (see Figure 1). The "ON"/"OFF" indicator will reflect the status of the contacts.
 - a. "OFF" displayed above the time indicates contacts 2 and 3 are closed (peak time).
 - b. "ON" displayed above the time indicates contacts 1 and 2 are closed (off peak or charge time).
 - c. The relay only operates with line voltage applied.

Figure 2
EXT Series

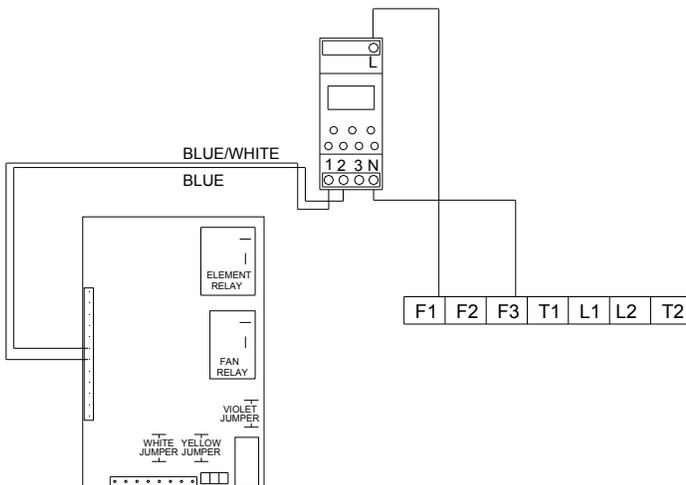


Figure 3
1000 Series and 2000 Series Cord
Connected

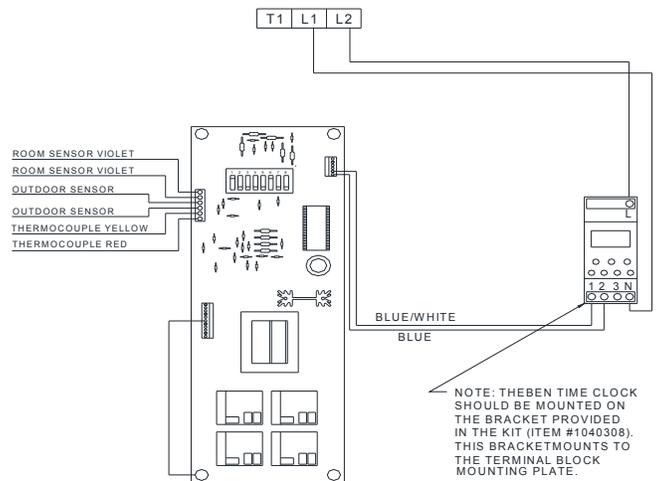
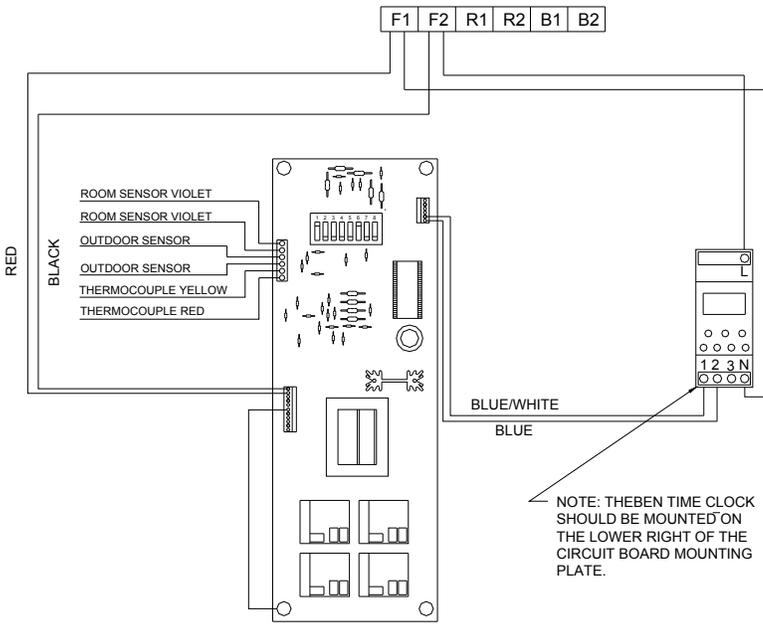


Figure 4
2000 Series Direct Connected



NOTE: THEBEN TIME CLOCK SHOULD BE MOUNTED ON THE LOWER RIGHT OF THE CIRCUIT BOARD MOUNTING PLATE.

Figure 5
CCRP

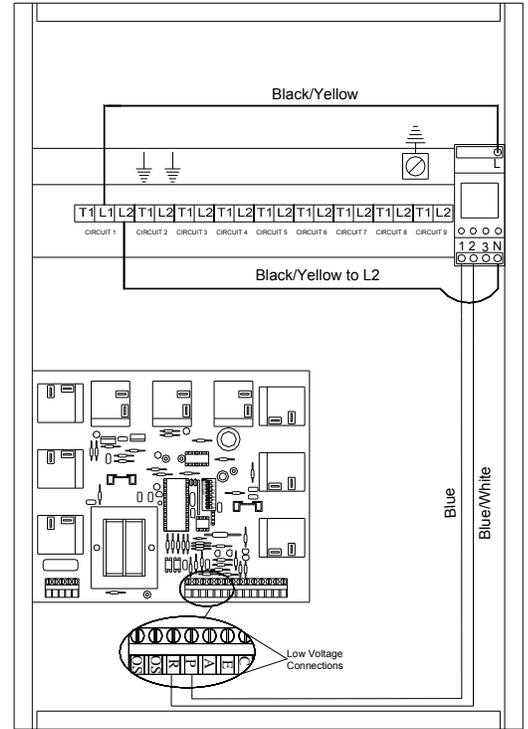


Figure 6
Transceiver

