Installation and Operation Manual

YMP/YBP Plus

Safety Precautions

All electrical power and signal wiring connected to the YMP/YBP PLUS Master, secondary clocks, and signaling devices must be installed by qualified persons in conformance with applicable national and local electrical codes. Improper installation of this equipment can result in lethal electrical shock and fire.

Disconnect and lock out electrical power to the unit before removing the wiring compartment cover or front panel.

The YMP/YBP PLUS Master operates from 120vac electrical power.

Voltage applied to clock and signal relay contacts must not exceed 120vac.

To protect against shorts between power and signal circuits, all wires connected to the power, clock, and signal circuit terminals must be insulated to 300vac

The only serviceable parts behind the front panel are a battery, fuse, DIP Switches and screen contrast via potentiometer.

The YMP/YBP PLUS Master should be installed in a secure location protected from:

- Physical damage
- Water, including condensation
- Direct sunlight
- Operation by untrained personnel

Keep the hinged cover closed except when using the keypad.

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Introduction

The YMP/YBP PLUS Master signal programmer provides synchronized control of secondary system clocks and electrical circuits such as those for controlling signaling devices and lights.

Standard features include:

- Built in keypad and LCD for setup and operation
- Internal clock accuracy of ±2 minutes per year
- Selectable automatic Daylight Saving Time correction dates

Optional features include:

- Control of 2, 4 or 6 signal circuits
- Manual control of signal circuits
- 1440 Events per schedule (16 schedules)
- User selectable clock codes for controlling a range of clock type

Models

YMP PLUS	-	2 clock circuits
		No bell circuits
YMP02 PLUS	-	2 clock circuits
		2 bell circuits
YMP04 PLUS	-	2 clock circuits
		4 bell circuits
YMP06 PLUS	-	2 clock circuits
		6 bell circuits
YBP02 PLUS	-	2 bell circuits
YBP04 PLUS	-	4 bell circuits
YBP06 PLUS	-	6 bell circuits

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Mounting the Master Clock

The YMP/YBP PLUS Master Clock should be:

- Located indoors in a dry location
- Mounted upright on a vertical surface
- Protected from physical damage
- Protected from water, including condensation
- Out of direct sunlight
- Operated by trained personnel

An area at least 34" wide and 20" high should be reserved to allow a clearance of at least 12" below and on each side of the YMP/YBP PLUS master. Wiring for power, clock and signal circuits must enter through conduit knockouts along the bottom of the enclosure.

The YMP/YBP PLUS Master is designed to be wall-mounted. A keyhole hanger on the back of the master can be used for mounting. Appendix A shows a template for locating wall hangers to mate with these openings.

Power Switch

The ON/OFF power switch is located in the upper right corner of the circuit board (See Appendix B. The four screws on the front panel must be removed to access the power switch.

DIP Switch Settings

The YMP/YBP PLUS Master Unit is shipped with DS-1 ON, DS-2 ON, DS-3 OFF and DS-4 OFF. The power switch must be in the OFF position to change any of the DIP switch settings. To access the DIP switches, remove the four screws from the front panel and locate dip-switches on the circuit board (see Appendix B).

DS-1 – Enables (ON) or disables (OFF) the Automatic Daylight Saving Time adjustment. Daylight Saving dates may be changed.

Note: The Energy Policy Act of 2005 changed dates for Daylight Saving Time (DST) in the U.S. starting spring of 2007. The DST will begin the second Sunday of March and end the first Sunday of November starting spring 2007.

DS-2 – Sets the time format. ON is 12 hour format and OFF is 24 hour format.

DS-3 – Enables (ON) or disables (OFF) the security required to access SET, PRGM and MAN modes of operation.

DS-4 – Enables (ON) or disables (OFF) enhanced security. If enhanced security is enabled codes 1122 (SET), 1234 (PRGM) or 1234 (MAN) is required to enter. If enhanced security is disabled and DS-3 is enabled a simultaneous key press is required (RUN + desired menu key).

Screen Contrast

The potentiometer controlling the screen contrast is located to the right of the DIP Switches on the circuit board (see Appendix B). The contrast is set by the factory to a recommended setting. The four screws on the front panel must be removed to access the potentiometer controlling the screen contrast. The power switch should be OFF when making adjustments to the screen contrast.

Electrical Connections

120vac Supply Connections

WARNING: To prevent electrical shock, do not apply electrical power to the master, clock relays or signal relays before completing all wiring connections.

Connect the ungrounded (hot) wire to the screw terminal farthest left in the wiring compartment and the neutral wire the terminal immediately to the right on the same terminal block. Appendix B shows a cut away drawing of the master with terminal blocks exposed. A grounding wire is not required because the enclosure is made of a non-conducting polycarbonate material.

Fuse

A $1/4$ Amp – 250vac 11/4 inch fuse protects the power input circuit. Each clock and signal relay circuit must be current-limited to 10A or less by an external circuit breaker or fuse.

Clock Connections

Caution: To prevent damage to relays, relay contact voltage must not exceed 120vac

WARNING: To protect against shorts between power and signal circuits, all wires connected to the power, clock, and signal circuit terminals must be insulated to 300vac.

Appendix C shows wiring connections to the master clock and the secondary clocks.

Signal Circuit Connections

Caution: To prevent damage to relays, relay contact voltage must not exceed 120vac

WARNING: To protect against shorts between power and signal circuits, all wires connected to the power, clock and signal circuit terminals must be insulated to 300vac.

Terminals for connecting to normally open and common contacts of the optional signal circuit relays are located in the wiring compartment at the bottom of the enclosure. Appendix B shows a cut-away drawing of the master with terminal blocks exposed.

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The YMP/YBP PLUS master is configured and operated using the 8-button keypad and LCD display shown above. The keys in the bottom row are used to edit and enter data (FWD, ENT, STO and DEL). The keys in the top row are used to enter and navigate menus.

RUN   RUN mode is normal operating mode and may be pressed at any time to exit the other modes and return to normal operation

SET   SET key may be used to change or view time, date, daylight saving dates, and clock codes.

PRGM   PRGM (program) key may be used to program events, view currently stored events, delete events, program signal duration, and program circuit schedules.

MAN   MAN (manual) mode is used to manually activate bell signal circuits FWD (forward) advances or edits the data displayed at the cursor

FWD   FWD (forward) advances or edits the data displayed at the cursor
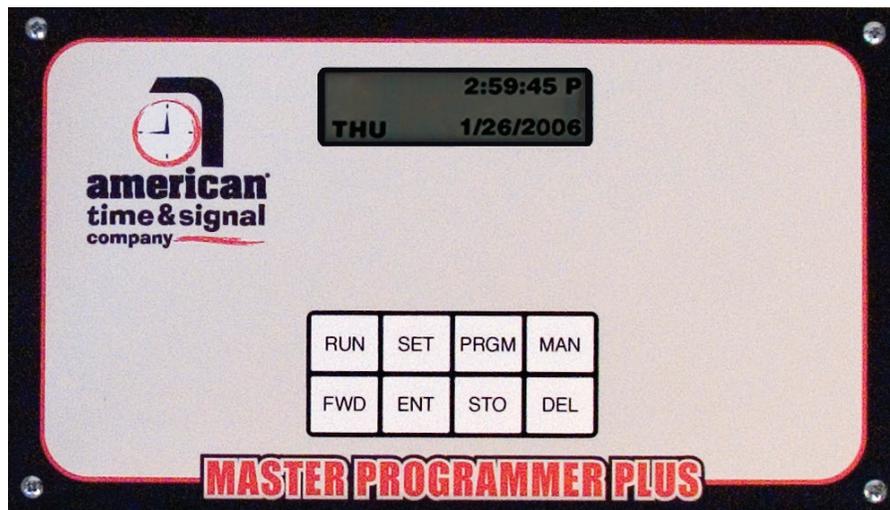
ENT   ENT (enter) advances the cursor to the next data location on the LCD display

STO   STO (store) is used to store an event into program memory or accept a security code

DEL   DEL (delete) is used to delete an event from program memory

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Configuration & Operation

Security

Security for the YMP/YBP PLUS master may be set to 3 different levels via dip switches behind front cover; no security (DS3 OFF, DS4 OFF), normal security (DS3 ON, DS4 OFF, or enhanced security (DS3 ON, DS4 ON). (See Appendix B for dip switch locations)

1. No Security (DS3 – OFF, DS4 – OFF)

    This setting is recommended for initial setup only. When the YMP/YBP PLUS master is configured for no security all menus may be accessed without requiring any access code or key combination.

2. Normal Security (DS3 – ON, DS4 – OFF)

    Normal security is recommended for installations with low risk of access to the YMP/YBP PLUS master without proper authorization. When the YMP/YBP PLUS master is configured for normal security each of the 3 top level menus (SET, PRGM and MAN) require the addition of the run key to enter. For example: If the time needs to be changed, to access the SET menu, RUN + SET must be pressed together.

3. Enhanced Security (DS3 – ON, DS4 – ON)

```
Security Code?
1234
```
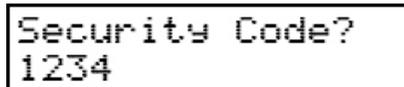
    Enhanced security is recommended for installations with high risk of access to the YMP/YBP PLUS without proper authorization. When the YMP/YBP PLUS master is configured for enhanced security an access code is required to enter each of the 3 top level menus (SET, PRGM and MAN). ***To enter the (SET) menu the access code is 1122. To enter either the (PRGM) or (MAN) menus the access code is 1234.*** When the access code screen is displayed, **FWD** increases the number above the curser, **ENT** advances the curser to the next digit and **STO** enters the code for acceptance or denial.

Run Mode [RUN]

```
           8:05:27A
SAT    9/01/2006
```
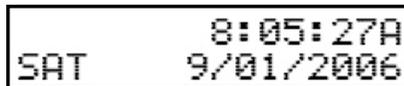
The RUN mode is the normal operating mode of the YMP/YBP PLUS. The time, day, date and active bell circuit relays are shown on the display while under run mode. When power is applied to the unit, it will display the software version on the LCD and enter run mode.

The RUN key is pressed to exit other modes of operation and return to the normal run mode.

■**Note:** When not programming, setting time or changing other settings for the YMP/YBP PLUS master, the unit should be in RUN mode. If it is not set to RUN mode, events and/or clock corrections may not occur as programmed.

The Cursor

```
Set        8:05:27A
SAT    9/01/2006
```
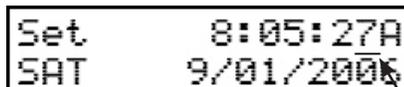
While in SET, PRGM an MAN modes, the small black (non-blinking) cursor indicates the item which can be changed. The cursor is moved forward by pressing the ENT key.

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Set Menu (SET)

Setting Time and Date `SET`

```
Set        8:05:27A
SAT     9/01/2006
```

To set the time and date information complete the following:

1. Press **SET** from Run mode.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the **SET** key or the security code 1122 must be entered for enhanced security.

- A non-flashing cursor will appear below the seconds. This cursor indicates the element that may be changed using the forward key.
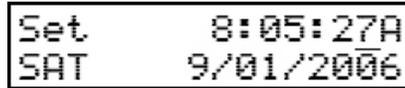
■**Note:** The time will continue to run normally when changing the date and time. For this reason the seconds should be changed last unless only changing the seconds portion of the time.

2. Press **ENT** to move to the minutes field.

3. Use the **FWD** key to adjust the minutes.

■**Note:** While setting the time it continues to run. Wait until the minutes changes before making final minute adjustments. This will allow the maximum time to enter the minute portion of the time.

4. Press **ENT** to move to the hours field.

5. Use the **FWD** key to adjust the hour.

■**Note:** The YMP/YBP PLUS Master operates on a 24 hour cycle. To change between AM and PM you must press the **FWD** key an additional 12 hours.

6. Press **ENT** to move to the Days field.

7. Use the **FWD** key to adjust to the correct day of the week.

8. Press **ENT** to move to the Month field.

9. Use the **FWD** key to adjust to the correct Month.

10. Press **ENT** to move to the Date field.

11. Use the **FWD** key to adjust to the correct Date (day of the month).

12. Press **ENT** to move to the year field.

13. Use the **FWD** key to adjust to the correct year.

14. Press **ENT** to move to the seconds field.

15. Use the **FWD** key to adjust to the correct seconds.

16. Press **RUN** to return to normal operation.

■**Note:** The "SET" in the upper left of the LCD will disappear with the date and time displayed when in normal run mode. If the master is not in run mode events and/or clocks will not operate correctly.

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Setting Daylight Saving Time Start Dates [SET]+ [SET]

■**Note:** Daylight Saving Time start dates are set by American Time and Signal at the factory. Start dates only need to be changed if the Daylight Saving Time start dates changed from the 2nd Sunday in March.

```
DST Start Mon: 3
Week: 2 Adj:   60
```

1. Press **SET** twice to enter Daylight Saving start dates.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the first **SET** key press or the security code **1122** must be entered for enhanced security.

2. Change month for Daylight Saving Time arrival by pressing **FWD** to the correct month.

■**Note:** Months are set numerically starting with January (1) and ending with December (12). For example, if March is the desired month for Daylight Saving Time to begin, 3 should be entered for the month.

3. Press **ENT** to move to the Daylight Saving Time starting week.

4. Change the week for Daylight Saving Time to begin by pressing **FWD** to the correct starting week.

■**Note:** The Daylight Saving Time starting week is listed numerically 1-4 and L for the last week of the month.

5. Press **RUN** to save Daylight Saving Time start dates and exit to the main time screen.

■**Note:** The Adj field is used to set the number of minutes to advance for Daylight Saving Time. It may be changed by moving the curser under it using **ENT** and advancing it using **FWD**. It is factory set and should only be changed if you wish to advance time other than 60 min.

Setting Daylight Saving Time End Dates [SET]+ [SET]+ [SET]

```
DST Stop Mon:  11
Week: 1
```

1. Press **SET** three times to enter Daylight Saving Time end dates.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the first **SET** key press or the security code **1122** must be entered for enhanced security.

2. Change month for Daylight Saving Time to end by pressing **FWD** to the correct month.

■**Note:** Months are set numerically starting with January (1) and ending with December (12). For example, if November is the desired month for Daylight Saving Time to end, 11 should be entered for the month.

■**Note:** Daylight Saving Time end dates are set by American Time at the factory. End dates will need to be changed if this master was received before October 29th, 2006 or Daylight Saving Time dates are changed after 2007.

3. Press **ENT** to move to the Daylight Saving Time ending week.

4. Change the week for Daylight Saving Time to end by pressing **FWD** to the correct ending week.

■**Note:** The Daylight Saving Time ending week is listed numerically 1-4 and L for the last week of the month.

5. Press **RUN** to save Daylight Saving Time end dates and exit to the main time screen.

Setting Clock Code [SET]+ [SET]+ [SET]+ [SET]

```
Clock Code:    01
```

Clock code is preset at the factory to what is ordered. If a different clock code is needed follow these steps.

1. Press **SET** four times to enter clock code selection screen.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the first **SET** key press or the security code **1122** must be entered for enhanced security.

2. To change the clock code press **FWD** to get to the correct clock code. For a listing of clock code descriptions see Appendix C.

3. Press **RUN** to save clock code selection and exit to the main time screen.

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Program Menu (PRGM)

Programming New Events `PRGM`

```
SCH 1      8:00 AM
WDY
```
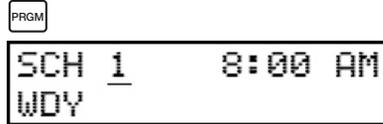
To program new events complete the following:

1. Press **PRGM** from the main time screen to enter program new events screen.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the first **PRGM** key press or the security code **1234** must be entered for enhanced security.

2. Press **FWD** until the schedule you wish to store the event to is displayed.

3. Press **ENT** to move curser to event hour.

4. Using the **FWD** key select the desired hour for this event.

■**Note:** The master is set for a 24 hour time base. To change between AM and PM you must scroll through 12 hours of each.

5. Press **ENT** to move the cursor to the event minutes.

6. Using the **FWD** key select the desired minute for this event.

7. Press **ENT** to move the cursor to the event days

■**Note:** Event days can be entered in any combination by using the **STO** or **DEL** keys to add and remove days. Days of the week may be entered as all weekdays (WDY), every day (EDY) or each individual day (MON, TUE, WED, THU, FRI, SAT, or SUN).

8. Using the **FWD** to select the days and **STO** or **DEL** to add and remove days, enter the days of the week desired.

9. Press **RUN** to exit to the main time screen and continue with normal operation.

■**Note:** If testing the YMP/YBP PLUS Master to activate relays via events, program events 5 minutes or more after current time. The master may need this additional time to process the information that it has just received.

Reviewing Previously Programmed Events `PRGM`

```
SCH 1      8:00 AM
WDY        MTWTF
```

To Review previously programmed events complete the following:

1. Press **PRGM** from the main time screen to enter the review events screen.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the **PRGM** key or the security code **1234** must be entered for enhanced security.

2. Press **FWD** until the schedule you wish to review is displayed.

3. Press **MAN** to scroll through programmed events of selected schedule.

■**Note:** Only one schedule can be reviewed at a time. To review additional schedules exit to the run mode and repeat previous review steps.

■**Note:** Watch for the letters under the time. This will show the days of the week each time is stored for.

4. Press **RUN** to exit to the main time screen and continue with normal operation.

Editing/Deleting Previously Programmed Events

To edit/delete previously programmed events complete the following:

1. Press **PRGM** from the main time screen to enter the events screen.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the **PRGM** key or the security code **1234** must be entered for enhanced security.

2. Press **FWD** until the schedule you wish to edit is displayed.

3. Press **MAN** to scroll through to the event or use **FWD** and **ENT** to select the event minute

4. Edit or delete event using **DEL** and **STO** to add and remove days of the week from selected event minute.

5. Press **RUN** to exit to the main time screen and continue with normal operation.

Selecting Circuit Schedules [PRGM] **+** [PRGM]

```
CKT   1 2 3 4 5 6
SCHD  1 1 1 1 1 1
```

To assign schedules to circuits (bell relays) complete the following:

1. Press **PRGM** two times from the main time screen to enter the circuit schedule assignment screen.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the first **PRGM** key press or the security code **1234** must be entered for enhanced security.

2. Use the **ENT** key to place the cursor under the circuit to be changed.

3. Change the schedule by using the **FWD** key to advance the schedule.

4. Repeat steps 2 and 3 until all circuits are programmed to the desired schedules.

5. Press the **RUN** key to exit to the main time screen and continue with normal operation.

Circuit Duration   [PRGM] [PRGM] **+** [PRGM]

```
CKT   1 2 3 4 5 6
DUR   3 3 3 3 3 3
```

To set circuit (bell relay) durations complete the following:

1. Press **PRGM** three times from the main time screen to enter the circuit duration assignment screen.

■**Note:** If security is enabled, the **RUN** key should be pressed simultaneously with the first **PRGM** key press or the security code **1234** must be entered for enhanced security.

2. Use the **ENT** key to place the cursor under the circuit to be changed.

3. Change the duration by pressing **FWD** until the desired circuit duration is displayed.

■**Note:**

• Durations listed as 1-9 are representing the circuit duration listed in seconds. For example, elementary school Alpha wishes zone 1 to ring for 5 seconds. In this case circuit 1 should have a 5 listed below it.

• A duration of "0" turns off the circuit listed.

• A duration of "T" sets the circuit to toggle between states on and off. For example, middle school Beta would like their cafeteria lights on circuit 2 to turn on at 7am and off at 3pm. In this case, the duration should be listed as "T" under circuit 2 and an event for both 7am and 3pm should be set for the schedule listed in circuit 2.

■**Note:** The toggle duration only toggles the relay state. Some care should be taken when planning such a duration when programming events.

4. Repeat steps 2 and 3 until all circuits are programmed to the desired durations.

5. Press the **RUN** key to exit to the main time screen and continue with normal operation.

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Manual Bell Circuits [MAN]

```
CKT   1  2  3  4  5  6
MAN   0  1  0  1  0  0
```

To activate bell circuit relays manually complete the following:

1. Press **MAN** from the main time screen to enter the manual bell circuit screen.

■**Note:** If security is enabled, the **run** key should be pressed simultaneously with the first **MAN** key press or the security code **1234** must be entered for enhanced security.

2. Use the **ENT** key to place the cursor under the circuit to be changed.

3. Toggle each circuit to 1 or 0 by pressing **FWD**.

■**Note:** When the **MAN** key is pressed in the manual bell circuit screen, all bell circuits listed as "1" will be activated. The bell circuit relays listed as "0" will not ring. The bell circuit relays listed as "T' (see circuit durations) on the bell circuit duration screen and listed as "1" in this manual bell circuit screen will either stay on if previously off or turn off if previously on.

4. Press the **MAN** key to activate all relays listed as "1".

■**Note:** Relays listed as "1" in the manual bell circuit screen will remain on as long as the **MAN** key is held in.

5. Press the **RUN** key to exit to the main time screen and continue with normal operation.

Software Version

To view the software version press **STO** and **DEL** together from the RUN mode. The software version will be displayed for 10 seconds then return to RUN mode and continue with normal operation.

■**Note:** The main intention of the software version is to aid American Time in troubleshooting problems you may have. The YMP/YBP PLUS can be used as an upgrade from an older version YMP/YBP Masters by simply installing a daughter board. In this case the enclosure would be identical to that of the older master. One way American Time can distinguish between the upgrade and the older versions is to have you supply this software version.

Troubleshooting

Master appears frozen

- Power cycle master by moving power switch located behind user interface in upper right corner of circuit board from ON to OFF and back to ON.

Master appears OFF (LCD Dark) When Power is Connected

- Disconnect power to master and remove junction box cover. Restore power and carefully check for 120vac between terminals Hot and Neutral as seen in Appendix B.
- Disconnect power and remove front panel. Check fuse and replace if necessary. See Appendix B for a drawing of the location of the fuse.

Secondary clocks Not Synchronized With Master Clock

- Make certain master is running correct clock code (see Appendix C).
- If master time was recently changed, allow up to 24 hours for secondary clocks to resynchronize to master.
- Make sure there is sufficient voltage across each secondary clock.
- If fewer than 25 secondary AllSync clocks are connected to the Master, the secondary clocks might not recognize the correction from the master. Connect all intended clocks and allow time for normal master correction. If secondary clocks still have not corrected, you may need additional hardware. Contact American Time Technical support for information on adding a Resistor Pack (Part # H001941) to your system.
- Set the time on the Master 2 minutes before the 12-hour Correction (see Appendix C for the times for your clock system). Verify the correction relay is active between the times specified for your clock code in Appendix C. Verify that the secondary clocks respond to this correction (they should advance to approx. 6:00 – exact times are listed in Appendix C).

Signal Circuits Not Responding to Programmed Events

- Confirm that signal circuits and events programmed to control them are assigned to the same schedule.
- Check for correct voltage at signal relay contacts.
- For each programmed event that is not signaling, verify the schedule and confirm this schedule is assigned to the circuit(s) you are trying to activate. To do this refer to reviewing previously programmed events, selecting circuit schedules and circuit duration sections.
- For each programmed event that is not signaling, verify the day of the week is programmed properly. Also verify the date and time of the unit is correct (check to make sure AM/PM setting or day of the week is correct, etc.).
- For the circuit that is not activating at the desired time(s), verify the duration is not set to 0. To do this, press RUN PRGM PRGM PRGM.
- For the circuit that is not activating, verify the wiring and general operation of the unit by using the MAN button. Activate each relay separately and in unison with others as needed.

Incorrect Time is displayed by Master Clock After Loss of Power

- Backup battery may be dead. Replace battery (CR2032) located on small circuit board located to the right of transformer under user interface. (see Appendix B)

Contact American Time's Technical Support Group at **800-328-8996** if you have questions.

Unable to Access SET, PRGM or MAN Features with Normal Security

■**Note:** Older upgraded masters may not function properly with this feature and new upgrade daughter boards.

- Operate master without security or with enhanced security.

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Appendix A: YMP/YBP Plus Mounting Template

$5\frac{1}{2}$

$3\frac{7}{8}$

$3\frac{7}{8}$

$8\frac{3}{8}$

$7\frac{1}{4}$

Appendix B: YMP/YBP Plus Interior

POWER SWITCH

BATTERY

SCREEN CONTRAST ADJUSTMENT

DST ENABLE
TIME FORMAT
SECURITY ENABLE
ENHANCED SECURITY

ON

DAUGHTER BOARD

TRANSFORMER

FUSE

TERMINAL BLOCKS

NEUTRAL
HOT
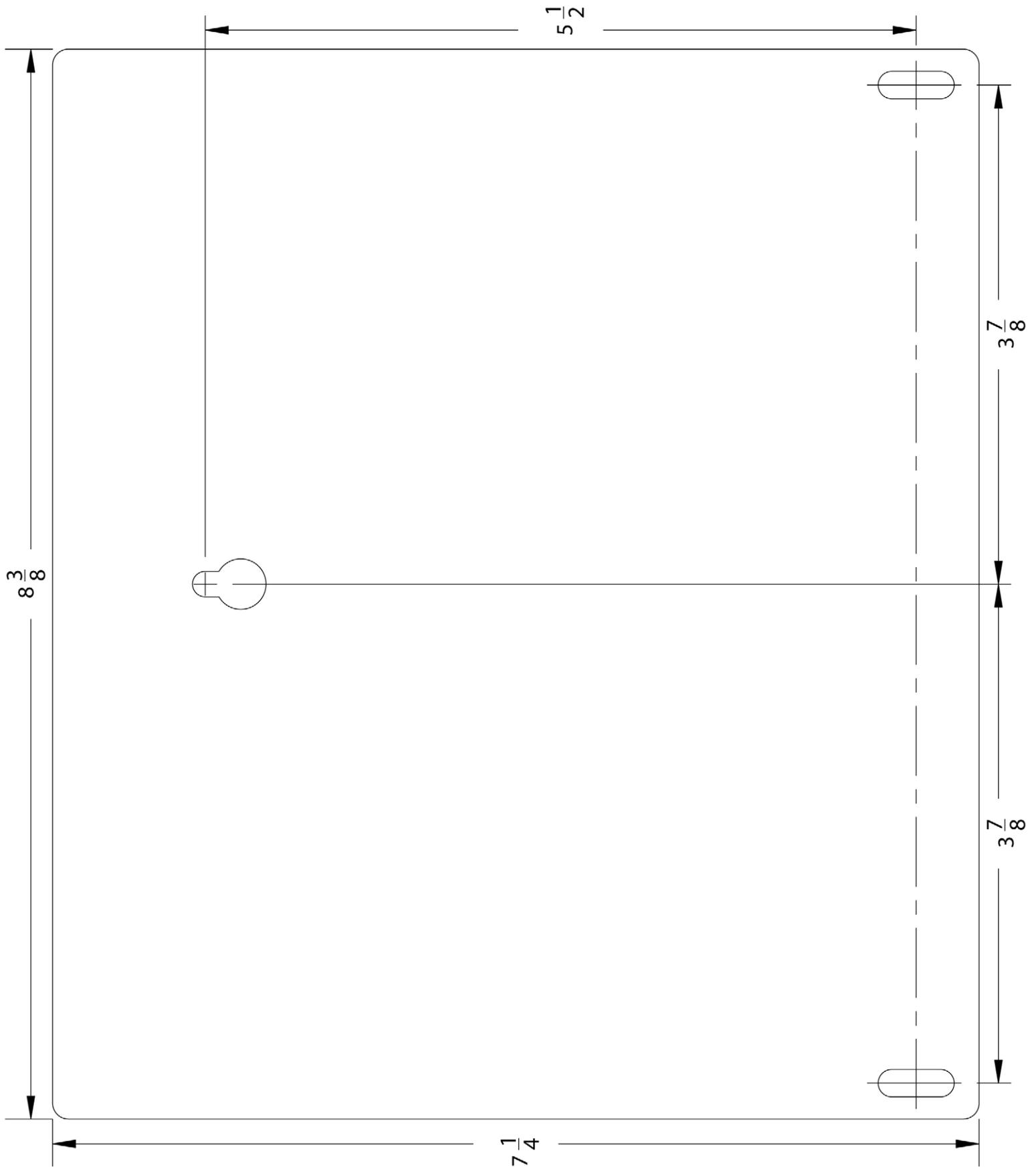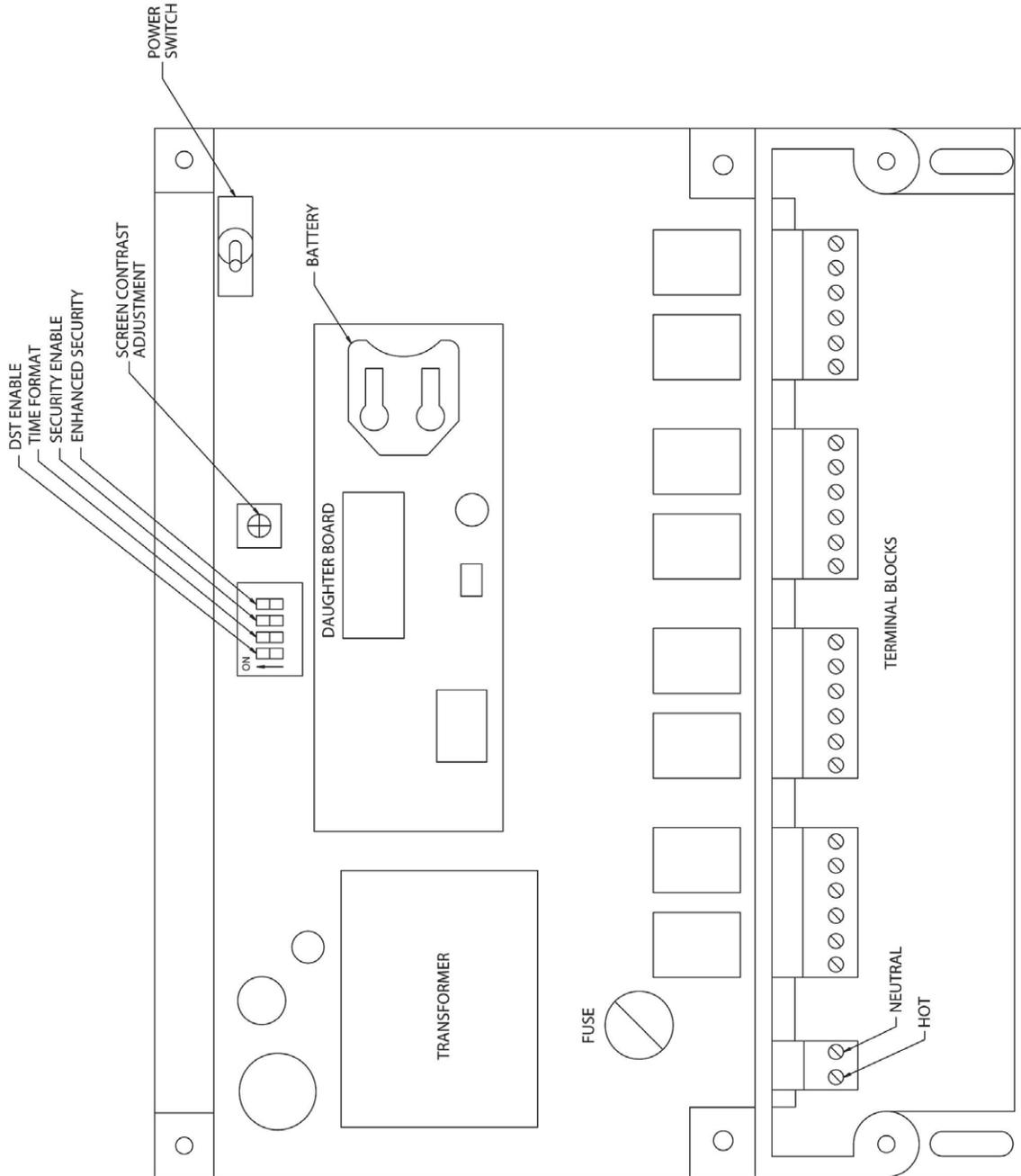
Appendix C: Clock Circuit Description/Wiring Diagram

Clock Code 01 – 3 Wire Synchronous

 Hourly correction @ HH:57:54 – HH:58:02 (8 Second)

 12 hour correction @ 5:57:54 – 5:58:08 (14 second), am & pm

Clock Code 03 – Standard Electric Time Dual Motor

 Hourly correction @ HH:59:30 – HH:59:59 (29 second)

 12-hour correction @ 5:12:00 – 5:27:00 (15 minute), am & pm

Clock Code 06 – Honeywell

 Hourly correction @ HH:58:05 – HH:59:00 (55 second)

 12-hour correction @ 5:05:00 – 5:24:35, 10 signals (95 second on, 25 second off), am & pm

Clock Code 14 – Honeywell 2

 Hourly correction @ HH:58:05 – HH:59:00 (55 Second)

 12-hour correction @ 5:05:00 – 5:22:35, 12 signals (65 Seconds on, 25 Seconds off), am & pm

Clock code 18 – National Synchronous Wired

 Hourly correction @ HH:00:00 – HH:00:28 (28 Second)

 12-hour correction @ 6:00:00 – 6:27:00 (27 Minutes), am & pm
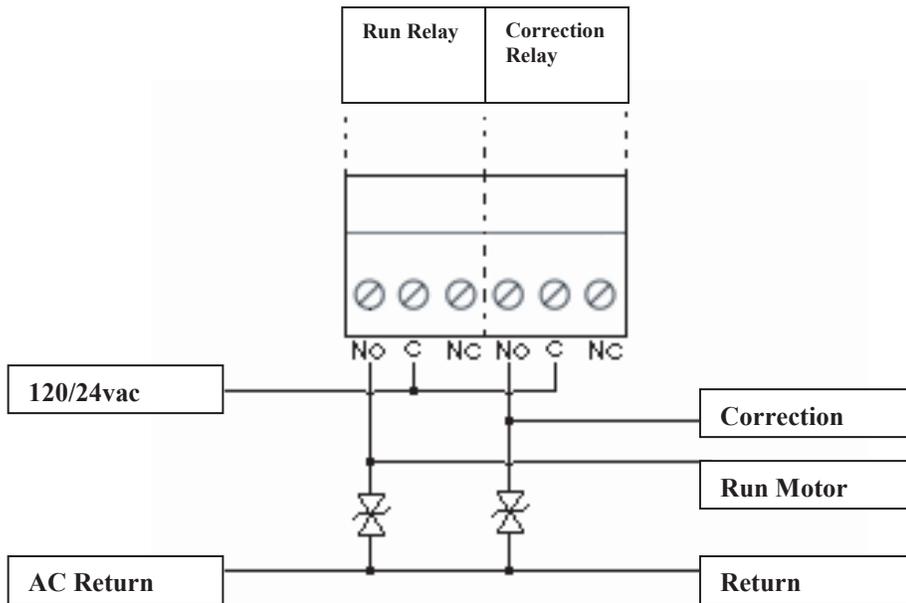
Figure 1 - Clock Circuit Wiring Diagram

Appendix D: New Master YMP06 Plus Bell Wiring Example
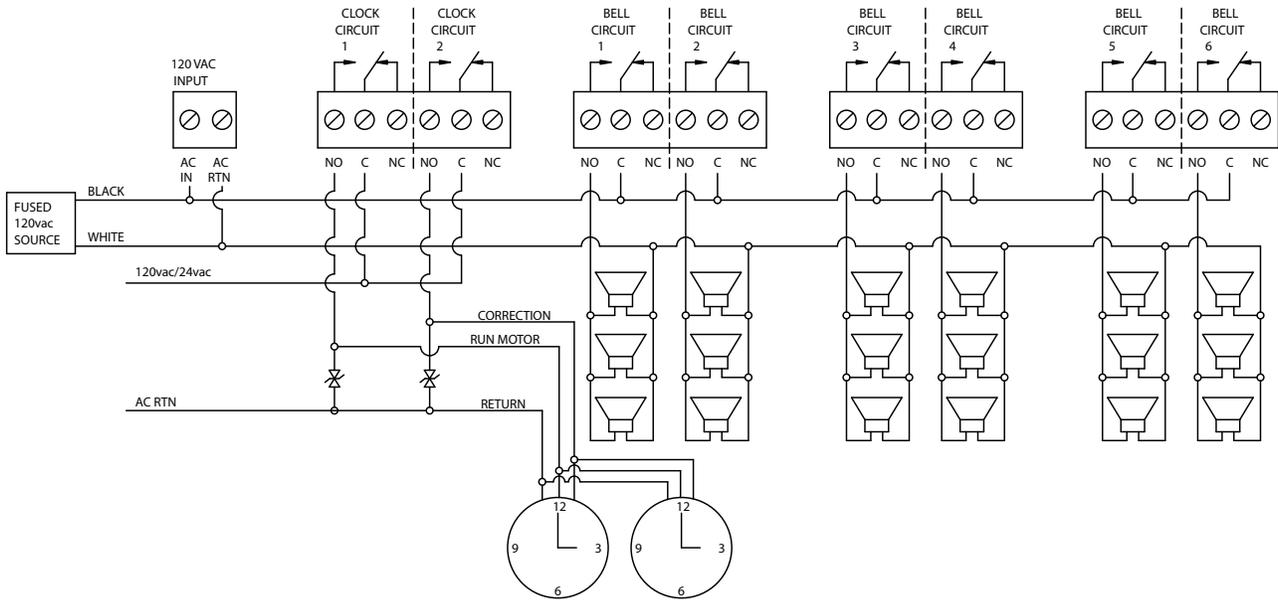
New YMP/YBP PLUS master relay configuration

	Relay 1	Relay 2	Relay 3	Relay 4	Relay 5	Relay 6	Relay 7	Relay 8
YMP	Clock 1	Clock 2	N/A	N/A	N/A	N/A	N/A	N/A
YMP02	Clock 1	Clock 2	Bell 1	Bell 2	N/A	N/A	N/A	N/A
YMP04	Clock 1	Clock 2	Bell 1	Bell 2	Bell 3	Bell 4	N/A	N/A
YMP06	Clock 1	Clock 2	Bell 1	Bell 2	Bell 3	Bell 4	Bell 5	Bell 6
YBP02	Bell 1	Bell 2	N/A	N/A	N/A	N/A	N/A	N/A
YBP04	Bell 1	Bell 2	Bell 3	Bell 4	N/A	N/A	N/A	N/A
YBP06	Bell 1	Bell 2	Bell 3	Bell 4	Bell 5	Bell 6	N/A	N/A

■**Note:** Relay number is indication of relay position numbered from left to right.

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Appendix E: Event Programming Template

Programmer _____ Date _____ Page __ of __

Circuit	Schedule	Duration	Description	Comments
1				
2				
3				
4				
5				
6				

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Appendix E: Event Programming Template

Programmer _____ Date _____ Page ___ of ___

Schedule No. _____ Schedule Description _____

Time	AM/PM	Days							Note:
		S	M	T	W	T	F	S	

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Appendix F: Upgrade of Existing YMP/YBP

WARNING

Static sensitive parts inside master and daughter board should be handled only when necessary. The following precautions should be taken to lower the risk of damaging static sensitive parts:

■**Note:** Static charge can build up on a person's body by simply walking across a carpeted floor.

- Discharge static on your body by touching metal objects near work area (a conduit would be a good choice).
- Complete installation once it has been started to prevent accumulation of static. If a delay in the installation is required after starting, discharge static on your body prior to continuing installation.
- Handle daughter board only on edges to prevent contact with integrated circuits located on the interior of the board.
- If available, use a grounding strap per instructions by strap manufacturer.

■**Note:** All programmed events will need to be re-entered after upgrade is complete.

Upgrade Procedure

To upgrade from the older YMP/YBP model master to the YMP/YBP PLUS model master the old Micro Controller needs to be removed and daughter board installed in its place. To remove old Micro Controller complete the following steps.

1. Disconnect power to master

■**Note:** LCD screen should be blank before continuing.

WARNING

To prevent electrical shock, power needs to be removed from master before continuing upgrade procedure.

2. Unlock and open clear plastic swinging door

■**Note:** Latches on the right side of master can be locked and unlocked with use of a small flat head screw driver.

3. Remove and save screws located in each of the four corners around the user interface.

4. Using a thin flat head driver pull out user interface by inserting along the lower edge and gently prying up.

■**Note:** Two ribbon cables connected to the user interface will prevent you from disconnecting it completely. Be careful not to damage ribbon cables.

5. Pull user interface over the top of the master and hold out of the way.

■**Note:** Micro-Controller should be exposed directly below larger ribbon cable connection on mother board. See figure 2.

6. Remove old battery located below power switch in upper right conrer.

7. Lightly work small flat head screw driver in between socket and Micro-Controller chip on the right hand side by wiggling up and down. Refer to figure 2, distinguish between chip and socket.

■**Note:** To prevent damage to board do not push against circuit board.

■**Note:** Chip socket cannot be removed and is required for installation of daughter board.

8. Gently pry right side of chip out of socket.

9. After the right side of chip has been lifted, insert screw driver all the way through to the other side of the socket

10. Twist screw driver to completely loosen chip

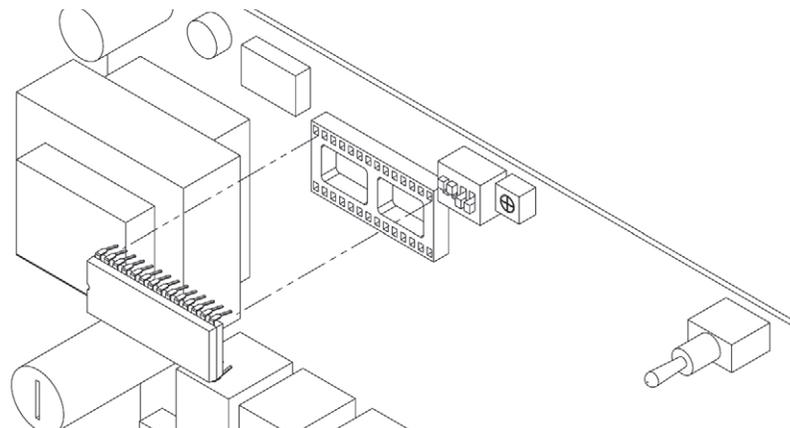11. Using finger, remove chip from interior of master clock

Figure 2 - Removal of Micro-Controller Chip

Appendix F: Upgrade of Existing YMP/YBP

Installation of Daughter Board

To install daughter board complete the following steps:

1. Carefully remove daughter board from packaging including static protective bag.

■**Note:** Daughter board should be handled on edges of the board only. Do not touch black micro chips on daughter board. Static discharge may damage such parts.

2. Align pins of daughter board to socket as seen in figure 3 and insert. Wiggle board into socket by pressing one side then the other until daughter board is securely seated into the socket.

■**Note:** Micro-controller pins are skinnier than that of the upgrade daughter board. Pins will be very tight in socket.

3. Replace user interface plate and secure using 4 screws previously removed.

4. Apply power and verify LCD screen returns.

■**Note:** If LCD screen does not return when power is applied, disconnect power and verify daughter board is seated securely and correctly (see figure 3).

5. Remove backing material from "UPGRADED MODEL" label included with daughter board and apply label to right hand side of master enclosure. If possible label should be visible for future reference.
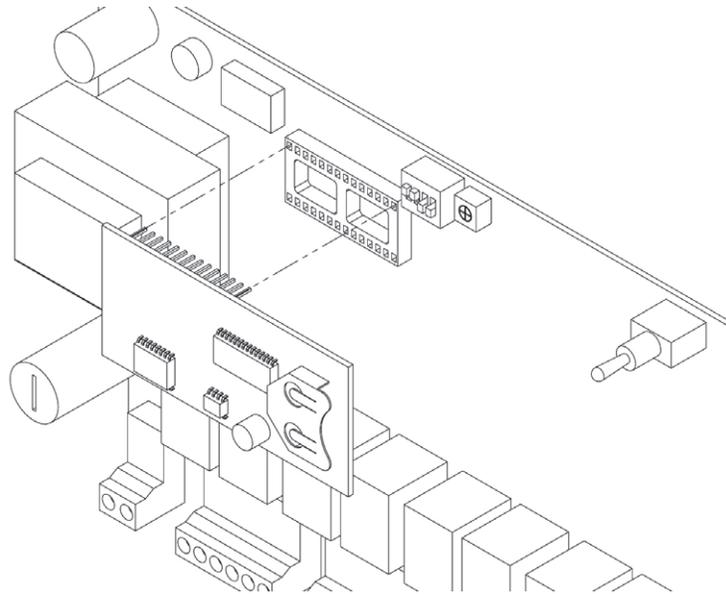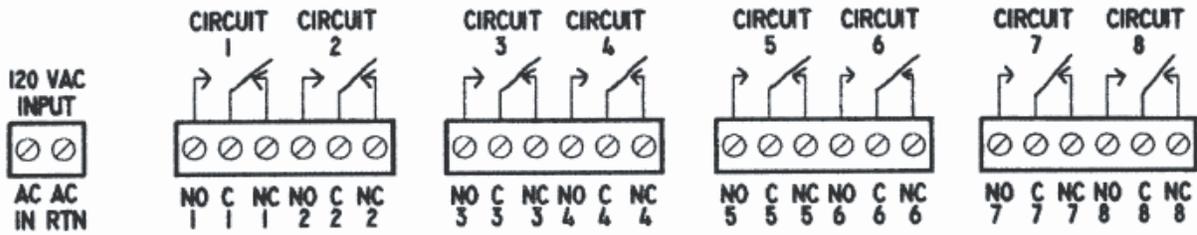
6. Re-enter programmed events.

Figure 3 - Insertion of Daughter Board

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Appendix G: Upgrade Relay Configuration only

YMP/YBP Plus Installation Manual

YMP/YBP upgrade relay configuration

	Circuit 1	Circuit 2	Circuit 3	Circuit 4	Circuit 5	Circuit 6	Circuit 7	Circuit 8
YMP	Clock 1	Clock 2	N/A	N/A	N/A	N/A	N/A	N/A
YMP02	Bell 1	Bell 2	Clock 1	Clock 2	N/A	N/A	N/A	N/A
YMP04	Bell 1	Bell 2	Bell 3	Bell 4	Clock 1	Clock 2	N/A	N/A
YMP06	Bell 1	Bell 2	Bell 3	Bell 4	Bell 5	Bell 6	Clock 1	Clock 2
YBP02(E)	Bell 1	Bell 2	N/A	N/A	N/A	N/A	N/A	N/A
YBP04	Bell 1	Bell 2	Bell 3	Bell 4	N/A	N/A	N/A	N/A
YBP06	Bell 1	Bell 2	Bell 3	Bell 4	Bell 5	Bell 6	N/A	N/A

■**Note:** Circuit number is indication of relay position numbered from left to right.

■**Note:** Clock circuits for new YMP Plus Masters are always on circuits 1 and 2 (clock 1 and clock 2**).**

Clock circuits for original YMP Masters were always to the right of the bell relays (as shown in above table). The upgrade daughter board needs to be properly configured at the factory for the appropriate model being upgraded. Once properly configured, the field wiring does not need to be modified for proper operation.
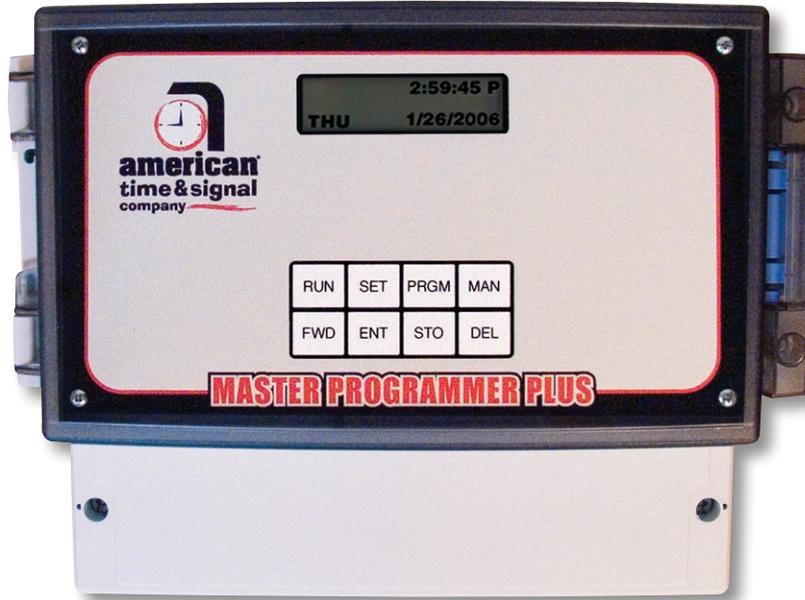
24

© American Time

Appendix H: YMP/YBP Plus Master Specifications

Input Voltage: .... 120vac (220vac optional)

Input Frequency: .... 50/60 Hz

Fuse: .... ¼ amp, ¼" X 1 ¼"

Relays: .... 10 amp SPDT

Timing Accuracy: .... ±0.001%

Signal Duration: .... 1-9 Seconds, ON/OFF

Daylight Saving Time Adjustment: .... Enabled from factory (dip switch disable)

Programmed Events: .... 1440 Events per schedule, 16 schedules

Timekeeping Backup........................ coin cell CR2032 3V battery

Outside Dimensions: .... 7.28"h x 8.38"w x 5.43"d

Temperature Range: .... 32˚-140˚F (0-60˚C)

Shipping weight: .... 4 lbs.

UL listed: .... File E157522

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Circuit – A complete or partial path followed by a flow of electric current. In the case of the YMP/YBP PLUS Master, electrical circuits are connected for the purposes of controlling devices (clocks, bells, etc). These devices can be switched on and off and/or provide signals (ON and OFF sequences) from the YMP/YBP PLUS Master.

Clock Code – A code that is assigned to a unique collection of electrical signals used to control a clock system. These signals are sent from the YMP/YBP PLUS Master Clock to each Secondary Clock for the purpose of time synchronization. Different types of clock systems require different, often proprietary signals, which are specified with a unique clock code. The YMP/YBP PLUS Master is capable of operating a variety of clock systems, with a selectable clock code feature.

Contrast – The amount of difference between the lightest and the darkest areas of the LCD screen.

Daisy Chain – A wiring method where each device (or termination) is wired in a series from the previous device (or termination). Any break in the wiring would take down every device in that series.

Daylight Saving Time (DST) – A time used during the summer months, in some localities, in which clocks are advanced 1 hour from the usual standard time. The official time is adjusted forward during the spring and summer months, so that the active hours of work and school will better match the hours of daylight. Starting in 2007 Daylight Saving Time is observed from the second Sunday in March to the first Sunday in November. The YMP/YBP PLUS Master allows user selectable DST settings.

Event – An occurrence specified with a unique time of day. For the YMP/YBP PLUS Master an event is specified to be either continuously on, continuously off, or a timed signal of 1-9 seconds. An event can also be specified with a specific day of the week, everyday, or weekday. Events are collected into groups, called Schedules and used to determine the timing of circuit switching. Example: An event is programmed to occur at 1:41pm Weekdays for a 3 second duration.

Master Clock – In a timekeeping or clock system, a device that acts as the source of time. The Master Clock transmits the time to any number of secondary (or slave) clocks.

T-tap – A wiring method where a new device is added to an existing circuit by "tapping" into an existing wire.

Schedule – A collection of programmed events that the YMP/YBP PLUS Master runs in chronological order.

Secondary Clock – Also known as a slave clock, this is a clock that synchronizes its timekeeping to that of a connected Master Clock.

User Interface – The point of communication and interaction between a device and human. In the case of the YMP/YBP PLUS, the User Interface consists of hardware (LCD screen and 8 button keypad) with associated software algorithms to accept input from the user and provide information to the user.

UTC – Universal Coordinated Time – A time-scale that forms the basis of a coordinated distribution of standard frequencies and time signals throughout the world. It is often referred to as Greenwich Mean Time (GMT) or Zulu Time (military and aviation).