Simplex

6500 Time Control Center
Installation/Operating Instructions

Cautions and Warnings

READ AND SAVE THESE INSTRUCTIONS. Follow the instructions in this installation manual. These instructions must be followed to avoid damage to this product and associated equipment. Product operation and reliability depends upon proper installation.

DO NOT INSTALL ANY PRODUCT THAT APPEARS DAMAGED. Upon unpacking your product, inspect the contents of the carton for shipping damage. If damage is apparent, immediately file a claim with the carrier and notify your distributor.

ELECTRICAL HAZARD - Disconnect electrical field power when making any internal adjustments or repairs. Servicing should be performed by qualified personnel.

STATIC HAZARD - Static electricity can damage components. Therefore, handle as follows:
   • Ground yourself before opening or installing.
   • Prior to installation, keep components wrapped in anti-static material at all times.

RADIO FREQUENCY ENERGY - This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user, at their own expense, is required to take whatever measures to correct the interference.

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1.0   INTRODUCTION

The 6500 is a multiple output, calendar programmable solid state master clock. It is used for synchronizing most synchronous and electronic (carrier current) secondary clocks and for switching electric circuits according to a preset time and date program. The 6500's AUTO PROMPTING, alphanumeric display makes programming fast and simple.   The outputs can be used to sound signals, to control audio/visual equipment or to control lighting, heating, ventilating, air conditioning and security systems with a variety of programming capabilities, ranging from a simple 7 day schedule to a more complex schedule utilizing its powerful, alternate annual programming features.

Secondary clock correction modes are built-in, and can be selected from the keyboard. If a secondary clock correction mode is selected, the 6500 will dedicate two of its relay outputs for correction, leaving six relay circuits for control. If the 6500 is not being used for correcting secondary clocks (Mode 0), then all output relays are available for timed events. Selected outputs can be independently programmed for momentary operation.

2.0   SPECIFICATIONS

PROGRAMMING CAPABILITIES

Auto Prompting Display - Provides display information to guide the operator during programming. From a restart it will take the operator from setting time through setting the basic program entries.

Programmable Secondary Clock Modes - Simple keyboard entry allows for selection of the desired secondary clock synchronization modes.   Most secondary clock modes are included. Selecting Mode 0 disables secondary clock correction, allowing all output relays to be used for timed events.

*200 Powerful Program E*ntries - The 6500 has a default set up of 1 Basic 7 day program and 9 Alternate 7 day programs that can be scheduled on an annual basis for a total of 10 programs, each having 20 program entries.   If more than 20-program events are needed, they can be programmed using a keyboard-entered function.   Up to 100 events per program can be programmed for a total of 2 programs. Each event can be programmed for all or any combination of the output relays for the specific day of the week, or for all 5 weekdays, or for both weekend days, or for everyday of the week. In addition, the events can be programmed in customized groups such as, Monday, Wednesday, and Friday only.

20 Annual programs - Each annual program has a starting and ending date, and an associated Alternate programs. This feature can be used to schedule any 1 of the 1 to 9 alternate, 7 day program to be used by the 6500. Certain annual programs can be programmed to repeat on a yearly basis so that they don't have to be reprogrammed each year.

Programmable Daylight Savings Time Adjustment - The 6500 can be programmed to automatically adjust its time for Daylight Savings Time changes, or other seasonal changes for all locations world-wide.

Automatic Leap Year Compensation.

Manual Override - The output relays can be manually energized or de-energized from the keyboard. The word "Manual" replaces the word "Relays" in the time display until the next program event occurs.

Pulsed Output – Relays 1,3,4,5,6,7, and 8 can be programmed individually or as a group to operate as momentary contacts, programmable from 1 to 9 seconds.

Relay 2 Output – Relay 2 can be set for a different duration than the other outputs. In addition, any output triggered at the same time as relay 2 will operate for the same duration as relay

Built-In Power Supply Interface – Provides terminal blocks and fusing for optional, built-in 24 Volt DC power supply.

ELECTRICAL

Power: Terminal Block 120/240 VAC, 50/60 Hz + - 10% Jumper Selectable for
                         220 VAC.

                         The 6500 has terminal blocks for all connections.

Outputs: Eight relays (6-SPST, 2-SPDT) rated at 5A 120 VAC or 30 VDC.
.

BCD / EBCD: BCD or EBCD Serial Data Output. Keyboard selected.

RS232:   RS232 I/O Interface

Input: Opto-Isolated Input 12 – 24 V AC/DC Sync Input

POWER FAIL BACKUP

Non-Volatile Memory keeps time and programs for indefinite power outages. All outputs and the
display are disabled during a power failure. The 6500 resumes normal operation when power
returns.

If the 6500 has been without power for more than 48 hours, it is recommended that the time, date,
day, and program should be checked to insure accuracy.

ACCURACY

Time Keeping - Keyboard selected - Synchronous with the 60 Hz AC power line, 50 Hz AC power
line, or crystal time base. During a power failure, or when crystal the time base is selected,
accuracy is controlled by a temperature compensated oscillator (TXO) with an accuracy of +/- 3
seconds per month throughout its full temperature range.

Programmed Events - On/Off events are programmable with a one-minute resolution and occur at
the zero second of that minute.

Operating Temperature Range - 0 to 50 degrees C 32 to 300 degrees F

PHYSICAL

Enclosure: Painted steel enclosure that measures 12"W X 16"H X 4.5"D. For wall
                         mounting applications. Conduit knockouts are provided on all side, top,
                         bottom and back panels. Mounting weight 15 pounds.

Display: Two-Line Alphanumeric LCD with LED backlight.
                         0.3-inch high characters

FRONT PANEL DESCRIPTION

ALPHANUMERIC DISPLAY - Used for displaying time, day, date, and output status, and for displaying information during programming or reviewing stored programs. In the normal mode of operation, the display will be in the TIME DISPLAY, showing the day, time, and which relays are activated.   When programming you can enter the TIME SET, MANUAL CONTROL, and PROGRAMMING MODES from keypad and it is shown on this display.

MANUAL OVERRIDE SWITCHES – Used to select the relay operation. Each relay can be set for program control "AUTO" position, or can be set to "ON" of "OFF" to override the programmed operation.

KEYBOARD - Many keys serve multiple functions. Those keys are clearly labeled with their functions to the side and top of the key. They cannot be used incorrectly, as the display will AUTO PROMPT the user as to which key to press.

AM / ON KEY [1] - Used for setting the time to AM when in the TIME SET or PROGRAMMING MODES and for entering the MANUAL CONTROL MODE.

PM KEY [2] - Used for setting the time to PM when in the TIME SET or PROGRAMMING MODES.

TIME KEY [3] - Used for entering the TIME SETTING MODE.

ANNUAL KEY [A] - Used for entering the ANNUAL PROGRAMMING MODE and for entering the stored ANNUAL program for review. The ANNUAL program contains the schedule for the alternate BASIC programs in calendar schedule form.

BASIC KEY [B] - Used for entering the BASIC program - PROGRAMMING MODE and for entering the stored BASIC program for review. The BASIC program contains the daily timed events instructions.

CLEAR KEY [C] - Used for clearing the ANNUAL program and/or BASIC program.

DATE KEY [D] - Used for entering the SET DATE MODE for entering date or reviewing the date.

EXIT KEY [F] - Used for exiting any of the SET TIME, SET DATE or PROGRAM MODES.

OFF KEY [0] - Used for setting the pulse to OFF when in the PULSE PROGRAMMING MODE.

ENTER KEY [E] - Used for entering all commands or for SET TIME, SET DATE or PROGRAM data entry.

DST KEY [7] - Used for entering the SET DAYLIGHT SAVINGS TIME PROGRAM MODE.

DAY KEY [4] - Used for setting the day in the SET DAY and PROGRAM MODES.   Also used for entering the SET DAY MODE.

3.0   INSTALLATION

The 6500 should be securely mounted to a suitable mounting panel or surface according to any local codes using the mounting holes on the back panel. It has a mounting weight of 15 pounds. Be sure the equipment is properly grounded to the facilities ground connection.

ELECTRICAL CONNECTIONS

All wiring connections including the incoming AC power line connections are made at the clearly marked terminal blocks located on the PCB Assembly inside the 6500 enclosure.

Terminal Blocks for Power and Relay Circuits
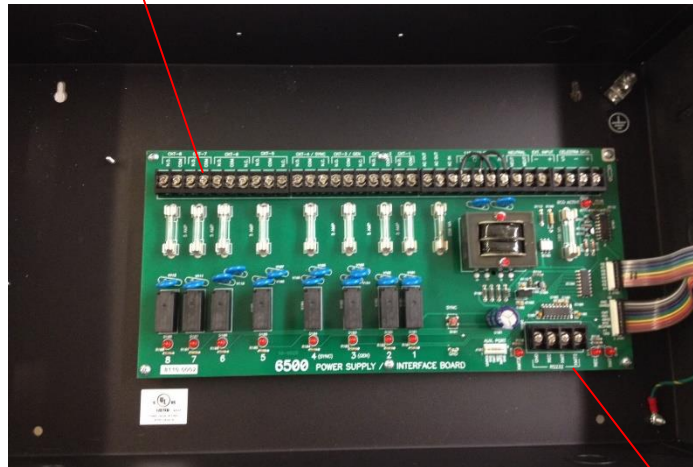
RS232 I/O

The RS232 I/O terminals provide a computer interface for connecting a PC to program the master clock. The Time Code terminals provide user specified time code outputs for Secondary Clock Wiring. See the Wiring Diagrams at the back of this manual for more detail.

4.0 GETTING STARTED

4.1 THE AUTO PROMPT DISPLAY

The master clock has a feature called Auto Prompt that guides the operator when programming the unit. For the most part the operator merely has to follow the display as the master clock advances through the Program Modes. On a restart (from a "power fail" condition) the master clock will advance through a sequence of all the necessary settings including the Basic Programs. You may exit this sequence if desired and enter the program manually from the time display, using the specific commands. Entering a program from the Auto Prompt sequence is identical to entering one manually.

To exit the Auto Prompt sequence, simply press [EXIT] at any time. Then proceed to section 5.00 to continue programming manually from the time display.

4.2 THE CURSOR, ENTERING DATA

On many of the display messages you will see a flashing square character called the cursor. The cursor indicates that you may now enter or change the data at that position of the display. As data is entered the master clock constantly checks for a valid entry. For example, you cannot enter 13 for a month when setting the date. After entering valid data to a position on the display, the cursor will advance to the next position. If you have tried to enter invalid data, the cursor will remain at the same position, indicating you must re-enter the data. Simply re-enter the data on top of the existing data and press [ENTER]. Generally, data is entered two digits at a time and shifts left with each entry.

4.3 APPLYING POWER, ENTERING THE TIME

Before power is applied, be sure all installation and wiring is completed to all local codes.

Upon first applying power the display will come up with a brief sign on message showing the model and version numbers:

```
6500 Master Clk.
Version 5.XX
```

After a few seconds the first Auto Prompt message will appear. If the following message does not appear, read Section 7.6 FORCING A RESTART.

```
UNIT POWER FAIL
Press "3" key
```

Simply press key [3]. The display will prompt with the set time display.

```
Time? 00:00 AM
Hrs. (HH), ENTER
```

It may be showing the correct time, some other time, or all "0's".

From this point forward you can exit the Auto Prompt sequence at any time, if desired, by pressing [EXIT]. However, the programming is simplified by staying in the Auto Prompt mode. **(Note: To restart refer to Section 7.6 "Forcing a Restart" which will clear all information.)** The cursor will be flashing in the hour's digits. The bottom line is a prompt to enter 2 digits (HH) for hours. Enter the hours then press the [ENTER] key. Two digits are required for the hours. Example: 01 instead of 1. The cursor will remain flashing in the hour's digits if an invalid number is entered for the hours. Enter the correct hours. Once a valid number is entered for the hours, the cursor will advance to the minute's digits. Again, the bottom line is a prompt for entering the minutes. Type two digits for the minutes and press [ENTER]. The cursor will advance to the AM position. Press the AM or PM key then press [ENTER]. Time keeping begins the instant you press [ENTER]. Time can be accurately set to the second by pressing the [ENTER] key at the desired instant.

4.4 ENTERING THE DATE

The next entry in the AUTO-PROMPT sequence is entering the date. The display will show:

```
Date? 09-01-16
Month (MM), ENTER
```

It may be showing the correct date, some other date, or all "0's".

The cursor will be flashing in the month's position. The bottom line will give you additional information on how to enter the data. Type the two digit number for the month and press [ENTER]. If the correct two digits are already there, simply press [ENTER]. The cursor will move to the day position. Type the two digits for the day and press [ENTER]. The cursor will move to the year position. Type the two digits for the year and press [ENTER].

4.5 ENTERING THE DAY

Next, we enter the day of the week. The display will show:

```
Day?  Sun
DAY key, ENTER
```

It may be showing the correct day or some other day stored previously. Press the DAY key [4] until the desired day is shown on the display and then press [ENTER].

4.6 DAYLIGHT SAVINGS TIME

The default entries for daylight savings time according to current U.S. law will display as follows:

```
S DST M=03 SUN=2
F DST M=11 SUN=1
```

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The master clock is pre-loaded with the current daylight savings time settings according to U.S. law. Unless the law changes or you live in an area that does not follow standard U.S. daylight savings time there is no need to change anything on the DST screen. The top line is for the Start of DST and the bottom line is for the End (Finish) of DST. The S indicates the Start of DST and the F indicates the Finish of DST. The cursor will be flashing in the month position. Enter the two digits for the month in which you wish the Start DST adjustment to be made (03 for current US law), then press [ENTER]. Enter 00 for the month if you do not wish to use the automatic DST feature and the master clock will advance to the next Auto Prompt display. The cursor will advance to the L in the Sunday position. Enter a 2 for the first Sunday (current US law), 2 for the second, 3 for the third, 4 for the fourth or L for the last Sunday. Use the [5] key to enter the L. The change will be made at 02:00 AM on the Sunday you choose.

After the Start DST data is entered, the cursor will advance to the Finish DST line. If you have entered a Start DST, you must enter a Finish DST as well. Failure to do so will erase the Start DST and then there will be no DST compensation.

Finish DST is entered in the same manner as the Start DST. Current US law for Finish DST is the first Sunday in November. Enter 11 for the month and 1 for the Sunday. The valid Sundays for the Finish DST are 1, 2, 3, 4 and L. Use the [5] key to enter the L. The change will be made at 02:00 AM on the Sunday you choose.

4.7 ENTERING PULSE (MOMENTARY OUTPUT) FOR RELAYS 1,3,4,5,6,7,8 (NOT RELAY 2)

The pulse is set to 5 seconds for Relays 1 and 2 by default, but can be set to 0 (OFF) if required. A pulsed output may be needed for applications requiring a momentary output. **If a relay is turned on without a PULSE SETTING. The relay will stay on until programmed to turn off. This means signals, etc. will continue to sound until programmed to turn off.**

```
Pulse = 5 Seconds
Relays: 1 - - - - - - -
```

The cursor will be flashing on the "5" in OFF. If pulsed output is not wanted, press OFF [0], then [ENTER]. The master clock will advance to the next Auto Prompt display. To program pulsed output on 1 or more output relays, enter the duration for the pulse from 1 to 9 seconds and press [ENTER]. **(If a mistake is made, to correct: exit out, enter plan #, and step 0 will take you back.)**

```
Pulse = 3 seconds
Relays: 1 - 3 4 5 6 7 8
```

Enter the number of the relay or relays to pulse. Relay 2 will not be available for this pulse. **Also, if you are using any of the built-in correction modes, relays 3 and 4 will not be available for this pulse.** The examples above show all relays except relay 2 set to pulse for 3 seconds.

4.8 ENTERING THE PULSE FOR RELAY 2

Next the display will read:

```
Pulse = 5 Seconds
   For Relay 2
```

The cursor will be flashing on the "5". If pulsed output is not wanted, press OFF [0], then [ENTER]. The master clock will advance to the next Auto Prompt display. To program pulsed output on relay 2, enter the number of seconds duration for this pulse from 1 to 9 seconds and press [ENTER].

```
Pulse = 3 seconds
   For Relay 2
```

4.9 ENTERING THE SECONDARY CLOCK MODE

Display will read:

```
MODE=0, DISABLED
```

If you are not correcting secondary clocks, you can set the mode to 0. In this mode all outputs are available for timed events. Simply press [ENTER] to select mode 0, and the master clock will advance to the next Auto Prompt display. To select a specific mode, press any key except [ENTER] or [EXIT]. This will advance the display through the secondary clock modes. Once the desired secondary clock name and model number is displayed, press [ENTER] to select that model. For the Simplex 59th minute correction, the display will be:

```
MODE = 2, Simplex
```

After pressing [ENTER] the master clock will advance to the next Auto Prompt display. Please note that relays 3 and 4 are dedicated to secondary clock correction and will no longer be available for timed events. A complete list of clock correction modes supported by the Simplex 6500 will be found in the "Clock Modes Supported" table at the end of this guide. For information on secondary clock modes not described in this guide, please contact JCI Global Fire Detection Technical Support.

4.10 BASIC Program

The next entry of the AUTO-PROMPT sequence is basic programming. Refer to Section 6.0 PROGRAMMING for details on entering your basic program.

Note: Setting Annuals is not included in the auto prompt sequence. See ENTERING, REVIEWING OR EDITING THE ANNUAL PROGRAM (Section 6.3).

5.0 OPERATION

This section will explain how to change or review the existing time, date or programs previously stored, how or to totally program the unit after exiting the AUTO-PROMPT sequence. It describes how to manually invoke each mode from the command line. You must be in the time display before you can enter a command. Press the [EXIT] key to be sure. The display should look similar to the following:

```
Mon 01:18:00 PM
Relays: - - - - - - - -
```

5.1 REVIEWING OR EDITING TIME   [3] [ENTER]

Press the TIME key [3]. The display will respond with:

```
Command? 03
Press ENTER
```

Press [ENTER]. The display will respond with:

```
Time? 12:34 AM
Hrs. (HH), ENTER
```

Now you may enter the time as you would during the AUTO-PROMPT sequence. (see Section 4.3 APPLYING POWER, ENTERING THE TIME)

5.2 REVIEWING OR EDITING THE DATE   [D] [ENTER]

You must be in the time display in order to enter the date. Press the DATE key [D]. The display will respond with:

```
Command? 0D
Press ENTER
```

Press [ENTER]. The display will respond with:

```
Date? 09-01-16
Month (MM), ENTER
```

Enter the date as described in Section 4.4 ENTERING THE DATE.

5.4 REVIEWING OR EDITING THE DAY   [4] [ENTER]

You must be in the time display. Press the DAY key [4]. The display will respond with:

```
Command? 04
Press ENTER
```

Press [ENTER]. The display will respond with:

```
Day?  Sun
DAY key, ENTER
```

The day of the week may now be entered in the same manner as in the AUTO-PROMPT sequence. (Section 4.5)

5.4 REVIEWING OR EDITING DAYLIGHT SAVINGS TIME   [7] [ENTER]

You must be in the time display. Press the DST key [7]. The display will respond with:

```
Command? 07
Press ENTER
```

Press [ENTER]. If daylight savings time not previously set, the display will respond with the default entries for the current U.S. law as follows:

```
S DST M=03 SUN=2
F DST M=11 SUN=1
```

You may now enter the new daylight savings time settings as outlined in Section 4.6.

5.5 REVIEWING OR EDITING THE RELAY PULSE (MOMENTARY OUTPUTS) FOR RELAYS 1,3,4,5,6,7,8   [5] [ENTER]

The pulse is for applications in which only a momentary contact is required (i.e. ringing bells). See Section 4.7 for more information on pulse settings. Start from the time display. Press key [5]. The display will respond with:

```
Command? 05
Press [ENTER].
```

Press [ENTER]. The display will respond with:

```
Pulse = 5 Seconds
Relays: 1 - - - - - - -
```

The pulse settings for relays 1,3,4,5,6,7 and 8 may now be set as outlined in Section 4.7.

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5.6 REVIEWING OR EDITING THE RELAY 2 PULSE (MOMENTARY OUTPUT) [5] [A] [ENTER]

To enter the pulse for relay two you must be at the time display.   Press [5] [A] [ENTER].   The display will respond with:

```
Pulse = 5 Seconds
    For Relay 2
```

Once you have entered the pulse for relay 2 (Section 4.8) the master clock will return to the time display.

5.7 REVIEWING OR EDITING THE SECONDARY CLOCK MODE   [2] [0] [ENTER]

Use mode 0 (disabled) if you are not correcting secondary clocks.

Type [2] [0] [ENTER]. Display will read:

```
MODE=0, DISABLED
```

See Section 4.9 for more details. For information on secondary clock modes not described in this guide, please contact JCI Global Fire Detection Technical Support.

5.8 REVIEWING OR EDITING THE BASIC PROGRAM

[B] [ENTER]

If the basic program was not entered during the restart Auto Prompt sequence, it can be entered by entering the basic program mode. This mode allows the operator to program the daily timed events. Before entering your program be sure to write it out on a program record sheet. Copies of the program record sheet are located at the back of this manual. You may need to change the size of your basic program if it requires more than 20 entries. **See SETTING THE MAXIMUM NUMBER OF ENTRIES PER PROGRAM (Section 7.3) for more detail.**

Press BASIC [B]. The display will respond with:

```
Command? 0B
Press ENTER
```

The master clock will now advance to the programming sequence.

6.0 PROGRAMMING

6.1 ENTERING THE BASIC PROGRAM

Before you begin programming your 6500 you should complete the MC SERIES PROGRAM RECORD SHEET included at the back of this manual. Be sure to enter pulse lengths if required for all relays (Sections 5.5, 5.6). You may need to change the size of your basic program. See Section 6.3 for more detail.

See Section 5.8 for information on starting the programming sequence. The display should be showing:

```
BASIC Plan #0
Entry #00
```

The cursor will be flashing on the zero for Plan #0.   Plan #0 is the first of up to 10 Basic Programs each of which contains a 7 day schedule. Schedule **#0 is the main 7 day** schedule **and** schedules **1 through 9 are alternate 7 day** schedule**.** Alternate schedules can be programmed on an annual basis (more on this in ENTERING, REVIEWING OR EDITING THE ANNUAL PROGRAM Section 6.3).   Press [ENTER] to select plan #0.   The cursor moves to the Entry #00 position. Entry #00 is the first entry of 20 entries in plan #0 by default (Section 7.3).   Press [ENTER] to select entry #00 and the display will read as follows:
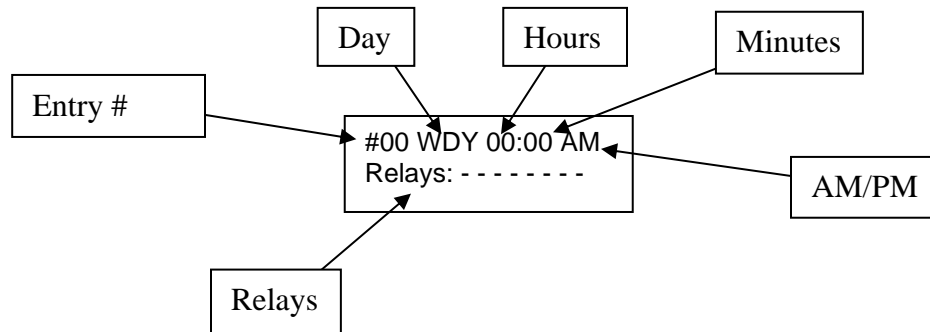
The cursor will be flashing on the W of WDY (weekday).

Entry # - The #00 indicates that this is entry 00 being displayed.

Day - Program entries may be programmed for individual days, such as Mon or Tue, or for groups of days such as WDY for weekdays. See below for the entry abbreviations, and what they mean. "Special Weeks" (Wk0 thru Wk9) can be created for your specific needs. For example, a Mon, Wed, Fri week. See ADVANCED PROGRAMMING (Section 7.1) for more details. Press the DAY [4] key to advance to the chosen day or group of days.   The display will update as you press the DAY [4] key.   Once the preferred day or group is displayed, press [ENTER].   The display will advance to the hour's position.

ENTRY DAY	MEANS…
EDY	Entry occurs everyday
WDY	Entry occurs every weekday
WND	Entry occurs every weekend day
MON	Entry occurs every Monday
TUE	Entry occurs every Tuesday
WED	Entry occurs every Wednesday
THU	Entry occurs every Thursday
FRI	Entry occurs every Friday
SAT	Entry occurs every Saturday
SUN	Entry occurs every Sunday
WK0-WK9	Entry occurs on days designated by custom week (see Section 8.1)

Hours - Enter the two digit hour at which this entry is to be activated and press [ENTER]. The display will advance to the minute's position.

Minutes - Enter two digits for the minutes and press [ENTER]. The display will advance to the AM/PM position.

AM/PM - Press the [AM] [1] or [PM] [2] key, then [ENTER]. The display will advance to the first position after the word RELAY.

Relays - Enter the number of the relays you wish to be energized by this program entry. If a entry is entered and a relay that is already energized should stay energized until the next entry, it is necessary to enter the relay number again for this entry. The relay settings show the state of the relays at the programmed time of the entry. The relay numbers will appear on the bottom line as you press the appropriate number. Pressing the same number again will remove the relay number from the bottom line. Once the relays are set, press [ENTER]. **If you have selected a secondary clock correction mode other than mode 0, relays 3 and 4 will not be available for timed event functions.** The first entry (00) is programmed. The following display shows an example of all relays being activated on Weekdays at 10:00 AM.

```
#00 WDY 10:00 AM
Relays: 1 2 3 4 5 6 7 8
```

The Auto Prompt display will advance to the next entry (01).

```
#01 WDY 00:00 AM
Relays: - - - - - - - -
```

Subsequent entries are entered the same way as the first. Continue until the last entry of Basic Plan #0 is entered. Entry 19 (the 20th entry) is the last entry if you are using the default setting of 20 entries per plan. After entering the last Entry, the master clock will advance to Basic Plan #1:

```
BASIC Plan #1
Entry # 00
```

The master clock is now prompting you to enter the first of up to 9 alternate plans, plan #1. Plans 1 through 9 are entered the same as plan 0. If you are not using alternate plans 1 through 9, or if

you have just entered your last alternate plan, press [EXIT]. The master clock will return to the time display.

6.2 CLEARING A PROGRAM ENTRY

To clear a program entry, press BASIC [B], then [ENTER].

> BASIC Plan #0
> Entry # 00

The display will prompt you for a plan # (cursor on 0). Choose the basic plan in which the entry to be cleared is located, then press [ENTER].

The display will then prompt for a entry # (cursor on 00).   Choose the # of the entry to be cleared, then press [ENTER].   The chosen entry and its program contents will be displayed.

The cursor will be on the first letter of the day of the week.   Press [ENTER].   The cursor will go to the hour's position. Enter 00 for the hours. This will clear this specific entry. Press [ENTER].   The display will advance to the next entry.   If you are finished, press [EXIT]. The display will read:

> BASIC Plan #1
> Entry # 00

Choose another plan to edit or press [EXIT] again to return to the time display.

If you wish to erase all the program entries see CLEARING THE ANNUAL AND BASIC PROGRAMS (Section 6.5).

6.3 ENTERING, REVIEWING OR EDITING THE ANNUAL PROGRAM
   [A] [ENTER]

The annual program allows the master clock to be programmed to select any 1 of up to 9 alternate plans. This feature is useful for applications that require a different 7-day plan at different times in the future.   There are 20 Annual Program Plans, each of which has a starting and ending date, and an associated, alternate plan.   The selected alternate plan will begin at 12:00 AM on the start date and will end at 11:59:59 PM on the day of the end date. Basic Plan 0 takes over at the end of any Alternate Plan. To enter the annual program mode, press the ANNUAL [A] key. The display will respond with:

> Command? 0A
> Press ENTER

Press [ENTER]. The display will respond with:

> ANNUAL #00
> Program #1

The cursor will be prompting for an Annual Plan number. #00 is the first Annual Plan. Press [ENTER]. The cursor will then prompt for the Basic Plan to select with this Annual. Enter the Basic Plan number, then press [ENTER]. The display will read:

```
Start? 00-00-00
End?  00-00-00
```

There may be a date already in the start date from a previous program. It is not necessary to erase this old date. Simply enter new data in each field. To erase an annual plan see CLEARING AN ANNUAL PLAN (Section 6.4). The cursor will be flashing in the month's position. Type the two digits for the month at which this Annual Plan will start and press [ENTER]. The display will advance to the day's position. Type the two digits for the day and press [ENTER]. The display will advance to the year position. Type the two digits for the year and press [ENTER] or enter [XX] to repeat the Annual program each year. See the ANNUAL REPEAT PROGRAMS instructions in ADVANCED PROGRAMMING (Section 8.2) for details. The cursor will advance to the end date line. Enter the end date in the same manner as the start date. If your Annual Plan is only for one day, do not enter an end date. Just press [ENTER] to put "00" in the months and the display will advance to the next Annual Plan.

```
ANNUAL #01
Program #1
```

Repeat the same procedure for Annual 01 as you did for Annual 00, or press [EXIT] to return to the time display.

6.4 CLEARING AN ANNUAL PLAN

To clear an Annual Plan, press the ANNUAL [A] key, then [ENTER]. The display will respond with:

```
ANNUAL #00
Program #1
```

Enter the Annual Plan number to be cleared and press [ENTER] twice. The display will show the contents of that Annual Plan.

```
Start? 12-19-17
End?  01-01-17
```

Enter 00 for the Start month and press [ENTER]. The plan will be cleared. There is no need to clear the end date once the start date has been cleared. If you are programming the clock from a restart, the annual and basic program entries will be cleared already.

6.5 CLEARING THE ANNUAL AND BASIC PROGRAMS   [C] [ENTER]

If you are re-programming a previously programmed clock you will need to erase any previous programs as they could conflict with your new program. To clear all program entries, press the CLEAR [C] key. The display will respond with:

```
Command? 0C
Press ENTER
```

Press [ENTER]. The display will respond with:

```
Clear buffers:
A=ANNUAL B=BASIC
```

To clear the Annual program, press [A]. The display will return to the time display. To clear the Basic program instead, press [B].

```
Press 0-9 or "A"
for all sets
```

Choose a Basic Plan number to clear or press [A] to clear all Basic Plans.

If you wish to clear both the annual and basic programs, repeat the process a second time. Only one can be cleared at a time.

7.0 SPECIAL FUNCTIONS

7.1 MANUAL OPERATION OF THE OUTPUT RELAYS   [1] [ENTER]

WARNING!! Manually controlling the relays will affect the loads connected to the Master Clock. Operating these loads at the wrong time may cause damage, injury or disruption of activities. Be aware of what is being operated by the relays and let others know that this is about to take place.

To manually control the output relays from the keyboard, press the MANUAL [1] key.   The display will respond with:

```
Command? 01
Press ENTER
```

Press [ENTER]. The display will respond with:

```
Manual Control
Relays: - - - - - - - -
```

Key in the number(s) of the relay(s) that you would like to manually control. The numbers of the relays chosen will be seen on the bottom line of the display.   To remove a relay from the bottom line, press its number again.

```
Manual Control
Relays: 12 - - 5678
```

After selecting the relays, press [ENTER]. The output relays chosen will be energized and the Master Clock will return to the time display. The relays will remain on for the duration of their respective pulse length, or until the next program entry instructs them to turn off, or until they are

manually operated again. If the Master Clock is using a secondary clock mode, relays 3 and 4 will not be controlled by the Manual command as they will be dedicated to controlling secondary clocks.

7.1A MANUAL OVERRIDE SWITCHES

MANUAL OVERRIDE SWITCHES – Each circuit (relay) can be set for program control "AUTO" position, or can be set to "ON" of "OFF" to override the programmed operation.

AUTO position allows the stored program to control the selected circuit.

ON position overrides program control of the selected circuit. Turns ON selected circuit indefinitely, or until placed in AUTO or OFF position.

OFF position overrides program control of the selected circuit. Turns OFF selected circuit indefinitely, or until placed in AUTO or ON position. **(Note: The switches override the manual control of the master clock.**

See Section 7.10 for addition override control of the output circuits.

7.1B MANUAL OVERRIDE SWITCHES FOR CIRCUITS 3 AND 4

Circuits (relays) 3 and 4 can be used as regular control circuits if system clocks are not used.

If system clocks such as Synchronous Wired clocks are connected, circuits (relays) 3 and 4 are used. See Section 4.9 Entering Secondary Clock Correction Mode.

These switches should be in the AUTO position for proper system clock corrections.

Clock corrections can be temporarily disabled such as for clock circuit troubleshooting, by placing both switches 3 and 4 to the OFF position.

Circuits 3 and 4 can temporarily be placed in the ON position as required for testing and adjusting clock correction circuits.

7.2 MANUAL SELECTION OF ALTERNATE PLANS   [2] [1] [ENTER]

Alternate Plans can be selected from the keyboard in addition to being selected by the ANNUAL PROGRAM.

To select an Alternate Plan type [2] [1] [ENTER]. The display will respond with:

```
Select
New Basic: 0
```

Enter the desired Basic Plan number, then press [ENTER]. The master clock will now run the program you have selected. The master clock will automatically go back to Basic Plan 0 after 12:00 AM. Also, if any of the following changes are made, the master clock will return to Basic Program 0:

Entering a new time.
A power failure of any duration.
Entering a new date.
Modifying the Annual programs.
Clearing the Annual programs.

Use special function 90 (See STATUS Section 7.5) to verify which plan is running.

7.3 SETTING THE MAXIMUM NUMBER OF ENTRIES PER Program [3] [1] [ENTER]

The master clock has a default setup of 10 Basic Plans with 20 Program Entries each for a total of 200 entries. These plans are numbered Plan 0 through Plan 9. Plan 0 is the main Plan that will repeat itself every 7 days. Plans 1 through 9 are Alternate Plans that can be scheduled by the Annual Program, or they can be called up manually using the MANUAL SELECTION function as described above.

The master clock can be reconfigured to allow more than 20 entries per Plan. Special function Command 31 is used to adjust the number of entries per Plan from 20 to 100. The number of Alternate Plans will automatically be adjusted to fit the maximum number of 200 entries available. **Changing the maximum number of entries per Plan should be done prior to entering your program.**

To set the number of entries type [3] [1] [ENTER]. The display will read:

```
Max. Entry No: 19
(0-99), ENTER
```

The cursor will be flashing on the maximum entry number. Since all entry numbers begin with 0, a maximum number of 19 represents 20 entries. Refer to the chart below to determine your Max. Entry No.

# Entries	# Alternate Program	Max. Entry No.
1-20	9	19 (default)
21-25	7	24
26-28	6	27
29-33	5	24
34-40	4	39
41-50	3	49
51-66	2	65
67-100	1	99

If your application requires 26 entries, enter 27 as the Max. Entry No.

Press [ENTER]. The display will respond as follows:

```
Max. Buffer No.
= 6 (Press EXIT)
```

Since the Basic Plans begin with Plan 0, this means there are a total of 7 Plans available. Each will have 28 entries. To go back to the time display, press [EXIT].

7.4 ENTER SLEEP MODE   [4] [5] [ENTER]

Sleep Mode is useful for suspending "Break Signals" during student testing, Summer school, meetings, and other special events.

Sleep Mode can be selected from the keyboard. Press [4] [5] [ENTER] . The display will show:

```
Sleep Mode
(Command 45)
```

To exit the Sleep Mode, press [4] [5] [ENTER] again. The 6500 will resume normal operation.

During "Sleep Mode" the 6500 ignores all Basic Plan programs (relay outputs are stopped). All other 6500 functions are still available such as entering programs, Changing time or date, manual relay control, etc. Sleep Mode does not affect any stored programs.

7.5 STATUS   [9] [0] [ENTER]

The master clock has a status check capability. Press [9] [0] [ENTER]. The display will show:

```
Unit Status: T=N
B=0 A=XX MD=12H
```

"T" status is for factory use only. It should always be "N". "B" status indicates which Basic Plan is in effect. "A" status indicates which Annual Plan is in effect. "XX" indicates no Annual Plan in use at this time. "MD" status indicates whether 12H or 24H Mode is set for clock data output.

7.6 FORCING A RESTART   [7] [7] [ENTER]

For training purposes or clearing all programming information from the master clock, a restart is recommended. Press [7] [7] [ENTER]. The display will show the UNIT POWER FAIL message.

```
UNIT POWER FAIL
Press "3" key
```

7.7 SOFTWARE VERSION   [9] [9] [ENTER]

To check the version of the software installed in your master clock press [9] [9] [ENTER]. The display will read:

```
6500 Master Clk.
Version 5.XX
```

After 5 seconds the display will return to the time display.

7.8 SELECTING THE TIMEBASE   [3] [0] [ENTER]

The default time base setting for the 6500 is for 60 HZ AC line synchronization. This is the preferred setting installations in North America and other countries where 60 HZ power is available.

For countries where 50 HZ AC power is available, the MC4181N can be set to synchronize with the 50 HZ AC power line.

For areas where the AC line frequency is not accurate, or in applications where an AC generator is used for power, the 6500 can be set for an internal crystal time base.

To check or change the time base setting for the 6500 master clock press [3] [0] [ENTER]. The display will read:

```
Time base=
60Hz Line
```

The cursor will be on the 6. If this is correct for your application press [EXIT].

To select a different time base, do not press [EXIT]. Instead, press any key while the cursor is on the 6 and the display will advance to the next time base selection. Other selections are:

```
Time base=
50Hz Line
```

```
Time base=
Crystal
```

Once the desired time base is shown on the display, press [ENTER].

8.0 ADVANCED PROGRAMMING

8.1 CUSTOM WEEKS (Wk0 – Wk9)   [2] [2] [ENTER]

Up to ten custom weeks can be user defined for the master clock. This is useful for applications that require the same events on various groups of days of the week. For example: custom week Wk0 could be defined for Mondays, Wednesdays, and Fridays.

To define Wk0 through Wk9 press [2] [2] [ENTER]

```
Set Days for Wk0
Days: -M-W-F-
```

The numbers 1 through 7 correspond to the days of the week. Press [1] for Sunday, [2] for Monday, etc. Press [A] to enter and advance to the next custom week. Press [EXIT] to return to the time display.

To review the custom weeks, press [2] [2] [ENTER], then [A] to cycle through Wk0 to Wk9. Press [EXIT] to return to the time display.

To create Basic Plan Entries with this feature, use the same procedure as entering standard Basic Plan Entries. (See ENTERING BASIC PLAN PROGRAM Section 6.1) When prompted for the Day or days of the week for a given entry the custom weeks will appear as choices along with the standard Days.

```
00 Wk0 08:30 AM
Relays: 1 2 - - - - - - -
```

8.2 ANNUAL REPEAT PROGRAMS

Some Annual Plan programs may have the same Start and End dates every year, such as Christmas, July 4th, and New Year's Day. Instead of creating multiple Annual Programs for each year, special Annual Programs can be created to cover every year into the future.

To create these special Annual Plan programs, use the same procedure as entering standard Annual Plans. (See ENTERING, REVIEWING OR EDITING THE ANNUAL PROGRAM Section 6.3) When prompted for the year (YY) for the Start and End dates, press the "A" key instead of entering two digits for the year. Pressing the "A" key will insert XX for the year. For example, the following Annual Plan Program will begin December 19th and end January 1st every year:

```
Start 12-19-XX
End   01-01-XX
```

8.3 RS232 I/O INTERFACE

An RS232 interface is provided for communicating with the 6500. With this interface, complete master clock programs can be uploaded or downloaded using the MC Programming Software (9800-1010). For details on the MC Programming Software refer to the MC Programming User's Manual.

The 6500 can synchronize with other 6500's.

The 6500 can receive 10-Byte messages via RS232 from a computer or other master clock time references. These 10-Byte messages can include Time in 12 or 24-Hour format, Date, and Day of the Week.

In addition the 6500 will automatically transmit 10-Byte messages for time, in 12 or 24 Hour format, for use by other Master Clocks. This information will be sent once each minute at the top of the minute (00th second).

8.4 BCD / EBCD TIME CODE OUTPUT

Built-in BCD and EBCD time code outputs are provided for Celestra and Simplex AE Series Digital Clocks. Automatically transmits BCD data in 12 or 24 Hour format.

To select Extended BCD (EBCD) output, press [2] [5] [ENTER].

Then press any key to toggle back and forth from "Standard BCD" to "Extended BCD" and vice versa. Press [Enter} when the desired time code output is shown.

8.5 ADVANCE RELAYS 3 AND 4   [2] [A] [ENTER]

Use this function to advance analog clocks manually using relays 3 and 4. This function is only available if a Secondary Clock Mode is selected.

Press [2] [A] [ENTER]. The display will show:

```
Advance Relay
Press: 3 or 4
```

Press [3] to activate Relay 3, press [4] to activate Relay 4. The respective relays will activate momentarily for about 1 second.

8.6 SELECT 12/24 HOUR CLOCK DATA OUTPUT MODE   [2] [4] [ENTER]

The 6500 can be set up to transmit 12 or 24 Hour format. Press [2] [4] [ENTER]. The display will show:

```
12 Hour Mode
```

Press any numerical key to alternate between 12 or 24 Hour mode. One the desired mode is showing, press [ENTER].

To check the mode use the Status Check [9] [0]. See Section 7.5 for details.

This function only affects the transmitted Clock Data. The 6500's time and programs are always displayed 12 Hour format.

PROGRAMMING SUMMARY

Read the sections on Programming Instructions before using the PROGRAMMING SUMMARY.

SET TIME - Press TIME [3] key then [ENTER].   Enter the hours, press [ENTER].   Enter the minutes, press [ENTER].   Press [AM] or [PM], press [ENTER].   Timing begins the instant you press [ENTER] on entering the [AM] or [PM].

SET DATE - Press DATE [D] key then [ENTER].   Enter month, press [ENTER]. Enter day, press [ENTER]. Enter year, press [ENTER].

SET DAY - Press the DAY [4] key then [ENTER].   Press the DAY [4] key until desired day is displayed, then press [ENTER].

SET DST DATES - Press DST [7] key then [ENTER]. Enter month for Spring DST, press [ENTER]. Enter the desired Sunday for Spring DST, press [ENTER].   Enter month for Fall DST, press [ENTER]. Enter the desired Sunday for Fall DST, press [ENTER].

ENTERING THE SECONDARY CLOCK MODE - Press keys [2] [0] then [ENTER].   Press any key to advance to the desired mode, then press [ENTER].

SETTING THE MAXIMUM NUMBER OF ENTRIES PER PLAN - Press [3] [1] then [ENTER]. Enter the desired number of entries per plan, up to 99 then press [ENTER]. Press [EXIT] after reviewing the display.

ENTERING THE BASIC PLAN PROGRAM - Press the BASIC [B] key then [ENTER]. Enter the desired plan number, press [ENTER]. Enter the desired entry number, press [ENTER]. Press the DAY [4] key until desired day or group of days is displayed, press [ENTER]. Enter the desired hour, press [ENTER]. Enter the desired minute, press [ENTER]. Press [AM] or [PM], press [ENTER]. Enter the desired relays to turn ON, press [ENTER].   The entry is now programmed and ready for the next entry.   Repeat this process until entire program is entered then press [EXIT].

ENTERING THE ANNUAL PLAN PROGRAM - Press the ANNUAL [A] key then [ENTER]. Enter the desired Annual Plan number, press [ENTER]. Enter the desired Alternate Plan number, press [ENTER]. Enter the start month, press [ENTER]. Enter the start day, press [ENTER]. Enter the start year, press [ENTER].   Or press [A] to enter "XX" for the year and make the plan an Annual Repeat Plan. Enter the end month, press [ENTER].   Enter the end day, press [ENTER].   Enter the end year, press [ENTER]. Or press [A] to enter "XX" for the year and make the plan an Annual Repeat Plan. The first Annual Plan is programmed. The menu will now advance to the next Annual Plan. Press [ENTER] to continue programming Annual Plans or press [EXIT] to return to the time display.

MANUAL SELECTION OF ALTERNATE PLANS - Press [2] [1] then [ENTER]. Select alternate plan (Basic Plan 1 to 9) then press [ENTER].

MANUAL OVERRIDE SWITCHES – Normal position is AUTO, which allows the program to control the selected circuit/s. ON position latches selected circuit/s ON. OFF position latches selected circuit/s OFF.

MANUAL OPERATION - Press MANUAL [1] then [ENTER]. Enter relays to manually control then press [ENTER].   The chosen relays will energize.

CLEARING THE ANNUAL AND BASIC PROGRAMS - Press CLEAR [C] then [ENTER]. Press ANNUAL [A] to clear annual program or BASIC [B] to clear the basic program. Choose the sets buffer to clear.

REVIEWING BASIC PLAN PROGRAM - Press BASIC [B] key then [ENTER]. Press BASIC [B] key again repeatedly to review each entry. Press [EXIT] when done.

REVIEWING THE ANNUAL PLAN PROGRAM - Press ANNUAL [A] key then [ENTER]. Press ANNUAL [A] key again repeatedly to review each Annual plan.

SETTING THE OUTPUT PULSE – Press [5] then [ENTER]. Enter a pulse length from 1 to 9. Press [ENTER]. Enter the number of the relay(s) the pulse is to be applied to. Exclude relay 2. Press [ENTER].

SETTING THE RELAY 2 PULSE – Press [5][A]. Press [ENTER]. Enter a pulse length from 1 to 9. Press [ENTER].

6500 SERIES PROGRAM RECORD SHEET

LOCATION _____   DATE _____

PULSE LENGTH FOR RELAYS 1,3,4,5,6,7,8 (1-9 SECS) ___   RELAYS PULSED _____

PULSE LENGTH FOR RELAY 2 (1-9 SECONDS) ___ SECONDARY MODE # _____ (SEE NOTE 1)

BASIC PLAN # _____   NUMBER OF ENTRIES PER PLAN _____

CUSTOM WEEK SETTINGS (WK0-9) _____

| | | | | R | E | L | A | Y | S | | |
ENTRY	DAYS	HH:MM	AM/PM	1	2	3	4	5	6	7	8

NOTE 1: When modes other than 0 are selected, relays 3 & 4 are dedicated to correction outputs and are unavailable for other programming.

SIMPLEX 6500 CORRECTION MODES SUPPORTED

For information on secondary clock modes not described in this guide, please contact JCI Global Fire Detection Technical Support.

Clock Model	Correction Mode	Correction Type
AMERICAN A4015D10	02	Synchronous Wired
ATS CC2000 Series Digital System Clocks	02	Synchronous Wired
CINCINNATI D10	02	Synchronous Wired
CINCINNATI D8	05	Synchronous Wired
DUKANE 240 Series	10	Synchronous Wired
DUKANE 24EF212, 24EF215	06	Synchronous Wired
DUKANE 24EF214A	01	Synchronous Wired
DUKANE 24SS	02	Synchronous Wired
EDWARDS 2400 Series	02	Synchronous Wired
FARADAY	05	Synchronous Wired
HONEYWELL ST402A	05	Synchronous Wired
IBM 77 Series	02	Synchronous Wired
LATHEM Type SS Wall Clocks	02	Synchronous Wired
NATIONAL E-SRX Series	10	Synchronous Wired
RAULAND 2460 Series	10	Synchronous Wired
SIMPLEX 77 Series, 2310/6310-91xx and 92xx	02	Synchronous Wired
STANDARD Synchronous Wired	07	Synchronous Wired
STROMBERG 3000	02	Synchronous Wired

ANNUAL PLAN PROGRAM RECORD SHEET

LOCATION _____   **DATE** _____
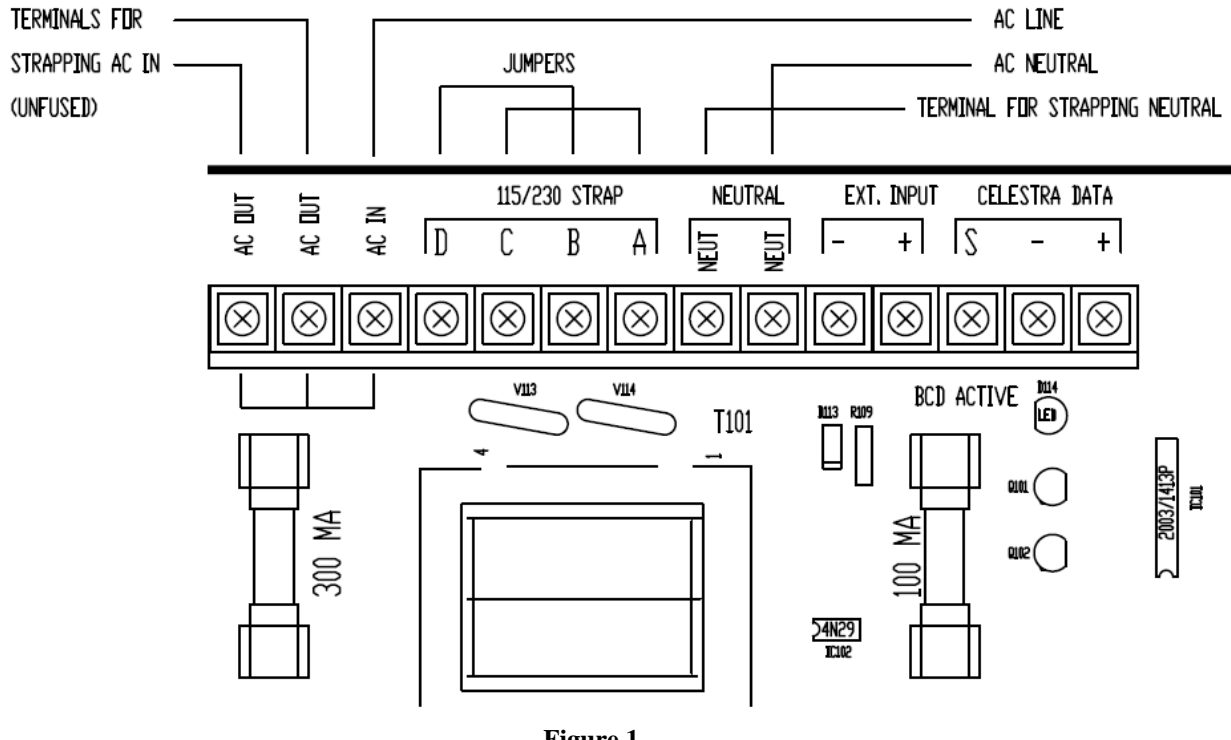
ANNUAL #	BASIC #	START DATE MM-DD-YY*	END DATE MM-DD-YY*
00			
01			
02			
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			

* NOTE: TO HAVE ANNUAL PROGRAMS REPEAT EACH YEAR AUTOMATICALLY, PRESS "A" WHEN PROMPTED FOR THE YEAR. THIS WILL INSERT "XX" FOR THE YEAR PORTION OF THE DATE.

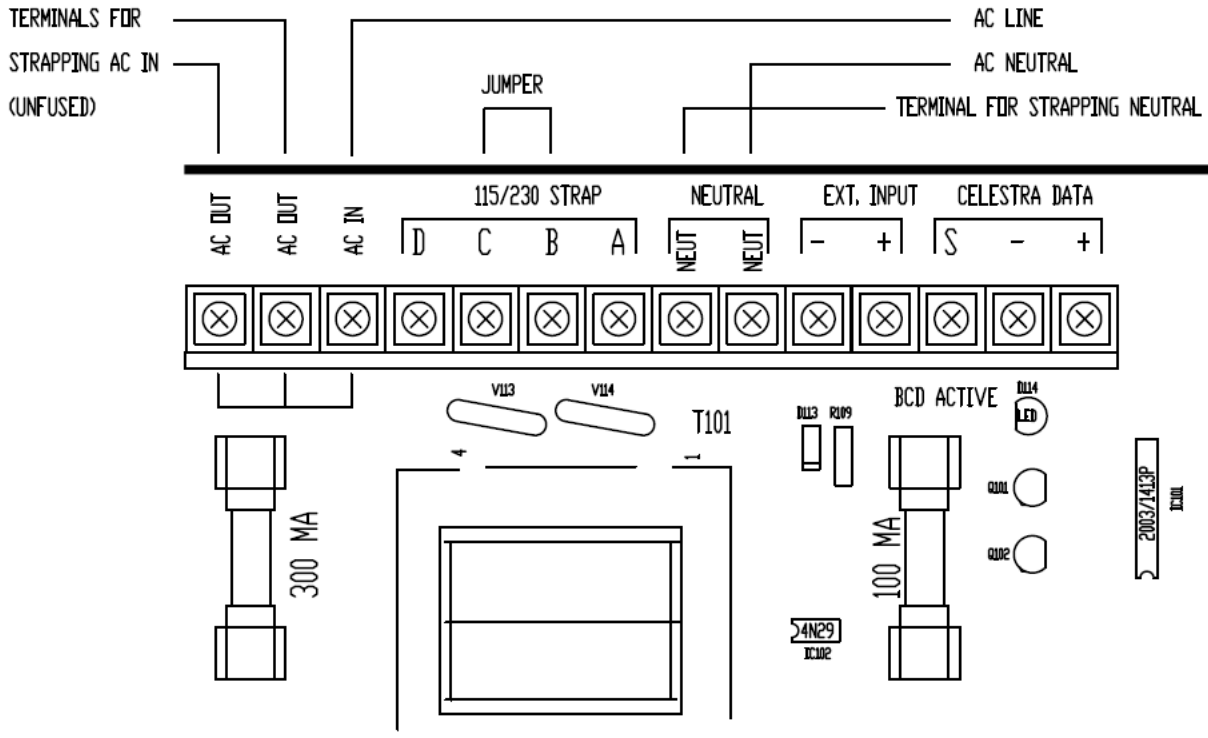## **** SPECIAL FUNCTIONS ****

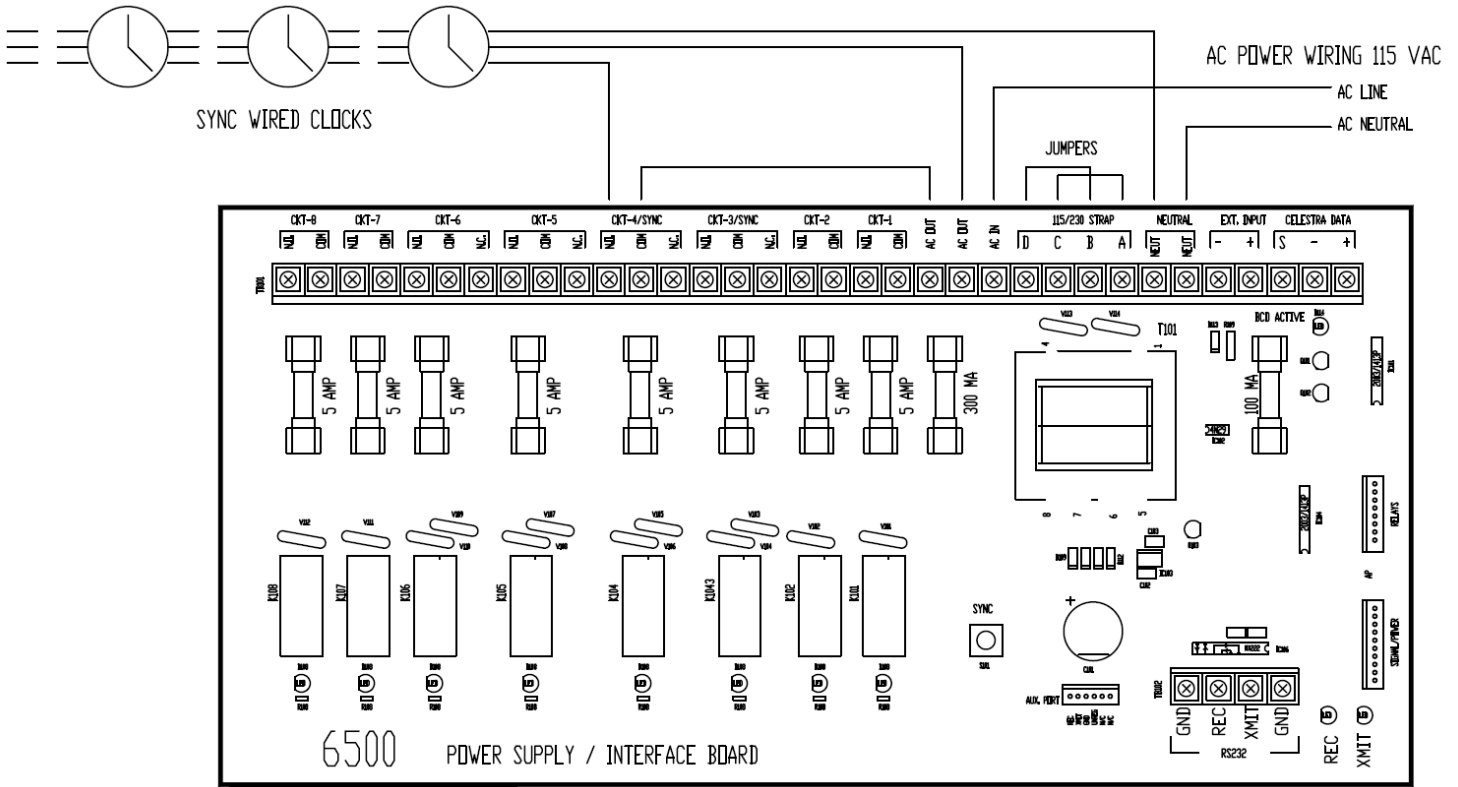|			
01	MANUAL	90	UNIT STATUS
05	PULSE	21	SELECT ALTERNATE PLAN
5A	PULSE 2	22	DEFINE CUSTOM WEEKS
20	MODE SELECT	31	SET PROGRAM SIZE
30	SELECT TIMEBASE	45	SLEEP MODE
25	SELECT BCD / EBCD OUTPUT		
2A	ADVANCE RELAYS 3 AND 4 (FOR CLOCK MODES ONLY)		

AC POWER WIRING 115 VAC

TERMINALS FOR STRAPPING AC IN (UNFUSED)

JUMPERS

AC LINE

AC NEUTRAL

TERMINAL FOR STRAPPING NEUTRAL

AC OUT   AC OUT   AC IN   115/230 STRAP   D   C   B   A   NEUTRAL   NEUT   NEUT   EXT. INPUT   −   +   CELESTRA DATA   S   −   +

V113   V114   T101   300 MA   4   1   R113   R109   BCD ACTIVE   D114 LED   100 MA   Q101   Q102   4N29   IC102   2003/1413P   IC101

Figure 1

115VAC Power Connections

AC POWER WIRING 230 VAC

TERMINALS FOR STRAPPING AC IN (UNFUSED)

JUMPER

AC LINE

AC NEUTRAL

TERMINAL FOR STRAPPING NEUTRAL

AC OUT   AC OUT   AC IN   115/230 STRAP   D   C   B   A   NEUTRAL   NEUT   NEUT   EXT. INPUT   −   +   CELESTRA DATA   S   −   +

V113   V114   T101   300 MA   4   1   R113   R109   BCD ACTIVE   D114 LED   100 MA   Q101   Q102   4N29   IC102   2003/1413P   IC101
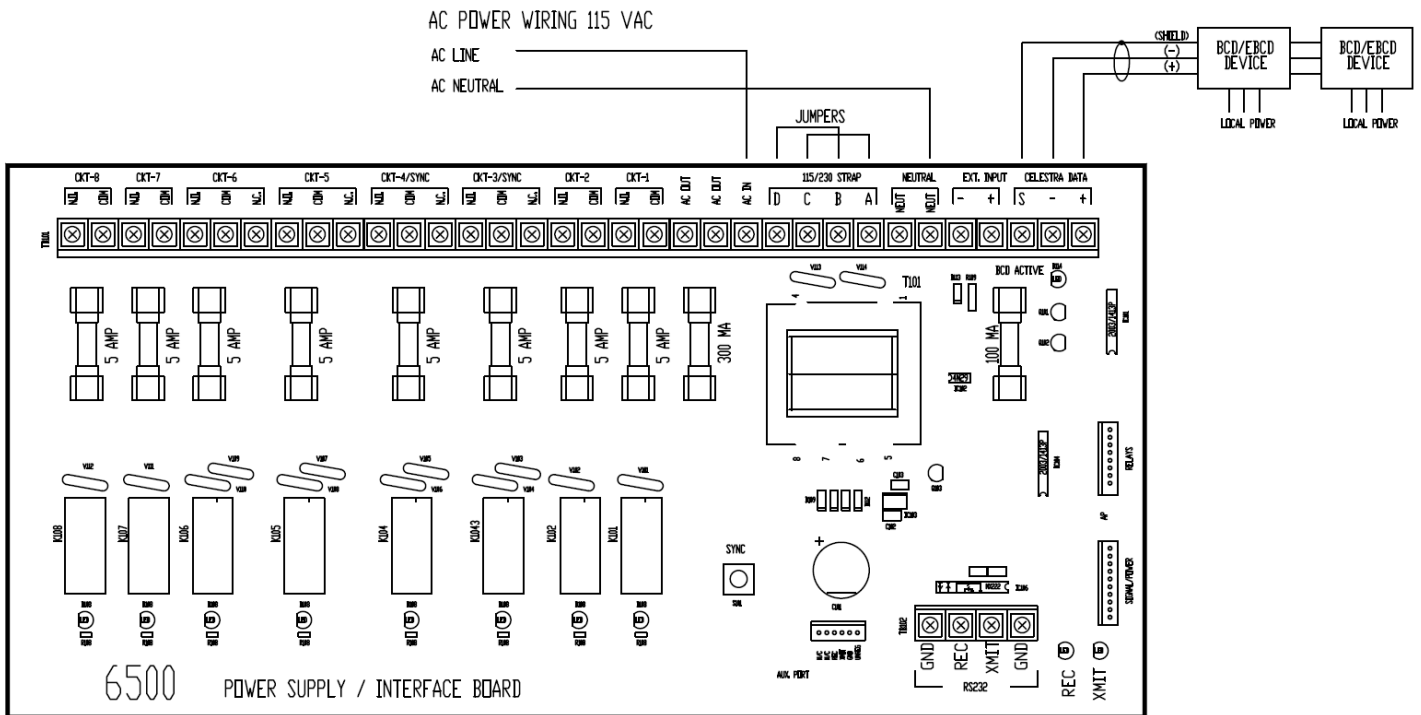
Figure 2

220VAC Power Connections

31

Figure 3
Synchronous Wired Clock Connections
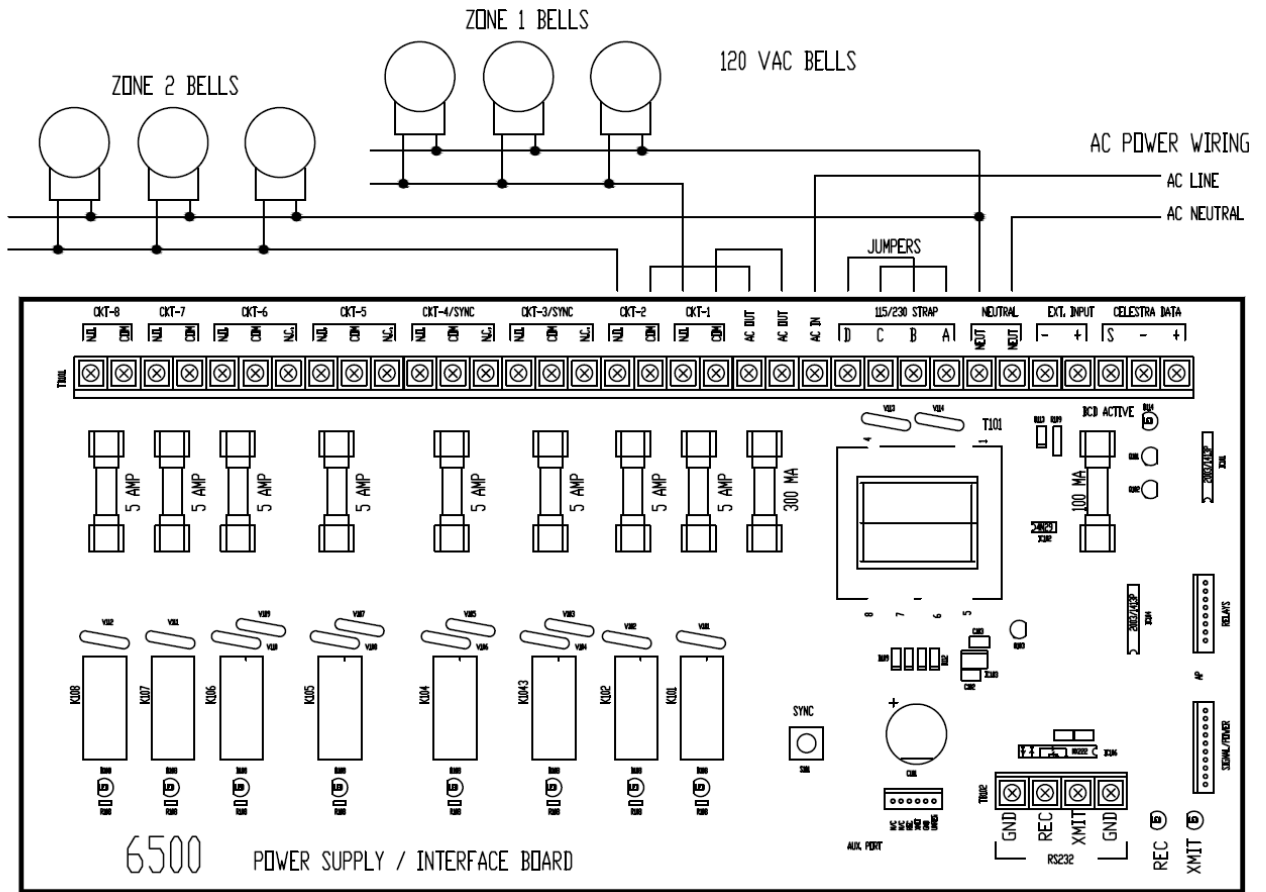

Figure 4
BCD Connections

Figure 6
Bell Wiring Connections

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