TimeKeeper™ F-Series User manual

This software package is installed on many of the Alzatex **TimeKeeper™,** products including timers and displays with displays with 0.56" high digits to 36" high digits. The displays may have 1 to 16 digits and may have zero to 24 buttons. All models have remote inputs and/or a serial communication port. Optional remote button modules may be used to control the timer/display.

TimeKeeper™ reference guide.

Count Up/Down timer with Clock and Presets

Applications

- Public Speaking events.
- Sporting Events of all kinds.
- Count down clocks.
- Master Clock Systems.
- Take-a-number Systems.
- Days since last accident display.
- Production Monitoring and Production Control.
- And many others.

TMR223B8 TimeKeeper™ with 8 buttons, knob and LED display.

Features

This software supports the following features. Not all models will have all the features. See the list below describing each of the individual models and the features supported.

- Count Up/Down Timer.

The timer counts from 00.00 to 99.59 minutes, or from 00:00:00 to 99:59:59 hours. This timer can count seconds and tenths or hundredths of seconds 00.00.00 to 99.99.99.

The timer can be changed on-the-fly from time remaining to time elapsed, while the timer is running. The timer has built in Green-Yellow-Red programmable warning times. A beeper may be sounded at each of the warning times, at red only or be turned off.

- Programmable Presets.

The timer can have up to 16 programmable presets. The values stored include the timer preset time, green and yellow warning times, beeper mode, count up/down and run/stop status. The presets are stored in non-volatile memory, so they are remembered even if the power is off and the battery is removed. One of the presets can be used as the power up preset.

- Time of Day Clock.

The time of day clock displays hours, minutes and seconds in either military time or 12 hour AM/PM format. Also, minutes and seconds only can be displayed.

- Remote Display.

This unit can operate as a remote display slave to another Alzatex TimeKeeper™, or may be remotely controlled by a computer, Crestron, AMX system or PLC.

- Counter.

Wigits, machine operations, game scores or anything you may want to count may be counted. The unit can be configured with NEXT, PREV and RESET buttons. The unit also has remote inputs for external buttons or for connecting to a machine for automatic operation. Range 0 to 999,999.

- Serial data port.

Most models have RJ45 modular phone jacks on the rear of the unit. One jack is marked TX422 to transmit serial data and another jack marked RX422 to receive serial data. Standard network cable is used. The Blue pair sends data in RS422 format. The Green pair can be used for either power or bi-directional data in RS422 format. The Orange and Brown pairs are used to send DC power from one device to another.

The timer to be connected to other timers and /or displays, remote displays or to a Crestron, AMX system, PC serial port or any other device having a RS232C serial port. The baud rate is user-programmable from 1200 to 115,200.

- Display Dimming.

The brightness of Remote displays may be controlled from the IR remote. The display dimming feature is available on specific models only.

- Wireless.

Most devices can be wired, wireless 2.4GHz or wireless 900MHz ISM bands.

Standard Momentary Controls

- **RESET** – Timer Reset
- **START** – Timer Start/Stop
- **SELECT** – Select between setting hours / minutes / seconds.
- **MODE** – Change to Count Up, Count down.
- **CLOCK** – Change to time of day clock mode.
- **PRESET** – Recall stored settings.

Standard Press-and-Hold Controls

- **RESET** – Store power up settings.
- **START** – Setup mode.
- **SELECT** – Set warning times or counter scale factor.
- **MODE** – Change the beeper mode.
- **CLOCK** – Set the time of day clock.
- **PRESET** – Store settings.

Timer Variations

Any combination of timers and displays can be connected together using CAT5/CAT6 cable.

- **TMR223B3** Count down timer with Clock has **Start/Stop, Reset** and **Clock** buttons.
- **TMR017B4** Count Up/Down timer has **Start/Stop, Reset**, **Mode** and **Select** buttons.
- **TMR223B5** Count Up/Down timer with Clock has **Start/Stop, Reset**, **Mode, Select,** and **Clock** buttons.
- **TMR223B8, TMR225B8** Count Up/Down timer with Clock and Presets has **Start/Stop, Reset**, **Mode, Select, Clock** and three **Preset** buttons.
- **TMR216B** Count Up/Down timer with Clock and Presets has **Start/Stop, Reset**, **Mode, Select, Clock,** six **Preset** buttons and a 10-key keypad for direct entry.

IR27A Infrared remote and **DSP254B** display.

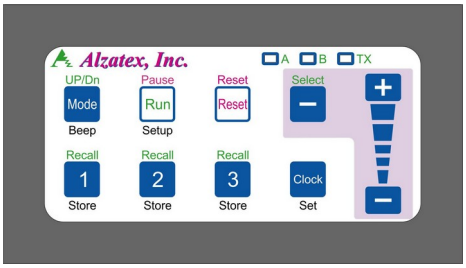
Wired Remote keypads

- **KP215A** Keypad has **Start/Stop, Reset**, **Mode, Select, Clock** and three **Preset** buttons.
- **KP219A** Keypad has **Start/Stop, Reset**, **Mode, Select, Clock,** six **Preset** buttons and a 10-key keypad for direct entry.
- **KP20A-TMR** Keypad has **Start/Stop, Reset**, **Mode, Select, Clock** and twelve **Preset** buttons.

Wireless Remote keypads

- **KP219A_RF2** RF Wireless keypad has **Start/Stop, Reset**, **Mode, Select, Clock,** six **Preset** buttons and a 10-key keypad for direct entry.
- **RFTX15B** RF 433MHz wireless keypad has fifteen buttons for various functions.
- **IR27A** Infrared remote control. Range up to 35ft.

KP215A Keypad, **DSP254B** display and **RYG11A**



Water resistant touch pad for large LED clocks.

RFTX15B Wireless 15 button keyfob.

RF Wireless options

These wireless units can operate from internal AA batteries or plugged into external power.

- **TMR216B_RF2** Timekeeper™ can be wired and wireless.
- **KP219A_RF2** Keypad can be wired and wireless.
- **TMR225B8_RF2** Timekeeper™ can be wired and wireless.
- **RYG14A_RF2** Wireless lamp indicator.

Wireless **TMR225B8_RF2** and **RYG14A_RF2**.

Wireless **KP219A** and **DSP254B_RF2**. The **DSP254B_RF2** requires external power.

Timer Mode (hh:mm:ss)

- Press the **Reset** button to select timer mode.
- Turn the **Knob** to set desired time. The **Select** button selects between setting hours, minutes and seconds.
- Press the **Start/Stop** button to start the timer.

*The **Mode** button selects between count-up and count-down modes. You may change between count-up and count-down modes while the timer is running. In count-down mode, the timer stops when it reaches zero. In count-up mode, the timer keeps running when the preset time is reached. Press and hold the **Mode** button to select the desired beeper mode.*

User Programmable Presets

- Setup the timer preset time to the desired time.
- Set the Green and Yellow Warning times the way you want them.
- Also, select the desired count up/down mode and beeper mode.
- If you want the preset to start the timer automatically, start the timer running.
- Press and hold the desired **Preset** button to save the timer preset time, Yellow Warning and Yellow Blink times, timer count up/down mode, special timer modes, timer run status, tallye counter preset value, and tallye counter scale factor. When the display changes, the settings are stored.
- To activate the **Preset**, a single button press will set the timer to the exact conditions that were saved.

Power Up Preset

- Setup the timer preset time to the desired time.
- Set the green and yellow warning times the way you want them.
- Also, select the desired count up/down mode and beeper mode.
- Press and hold the **START** button until the display changes. The display will show "**FF** ".
- Press and hold the **RESET** button until the display blinks to save the timer preset time, green and yellow warning times, timer count up/down mode, beeper mode and special timer modes. When the display changes, the settings are stored.
- The next time the unit is powered up, these settings will be restored.
- To delete the power up presets, set the hours, minutes and seconds to 00:00:00.
- Press and hold the **START** button until the display changes. The display will show "**FF** ".
- Press and hold the **RESET** button until the display blinks. The next time the unit is powered up, the factory default settings will be loaded.

Clock Mode

- Press the clock button to enter the clock mode. The Hours:Minutes:Seconds in 24 hour mode will be selected.
- Press the clock button again to display Clock Minutes:Seconds.
- Press the clock button again to display Hours:Minutes:Seconds in 12 hour mode.

NOTE: On a timer with only 4 digits, only the hours and minutes will be displayed. On a timer with 6 digits, the hours, minutes and seconds will be displayed.

Setting the Clock

- Press the **Clock** button to select clock mode.
- The **Clock** or **Select** buttons select displaying 12 hour time, military time or seconds. In 12 hour mode, the PM LED will be on for PM and off for AM.

*Press and hold the **Clock** button to enter set time mode.*

- Turn the **Knob** to set the hours.
- Press the **Clock** button again.
- Turn the **Knob** to set the minutes.
- Press the **Clock** button again to return to normal display, or other available settings, like seconds.

Special Timer Modes

While in the count down mode, when the timer reaches zero, it stops. Several other special timer modes are available. Press and hold the **Start** button until the display changes. Turn the **Knob** to select the desired mode.

- Mode 0: (**default**) Stop when the timer reaches zero. In this mode, the timer stops when the elapsed time reaches zero.
- Mode 1: Red blink on timer zero. The red indicator blinks until the timer is reset.
- Mode 2: Auto-Restart mode. In this mode, the timer automatically restarts counting down from the preset value each time the timer reaches zero. The Auto-Restart mode works in both count up and count down modes. The count up mode uses the count down timer preset time to determine when to reset the count up timer back to zero and restart.
- Mode 3: Change to count up when the timer reaches zero. In this mode, the timer changes to the count up mode and starts counting up when the timer reaches zero.
- Mode 4: Change the display to the heat number when the timer reaches zero. The heat number is incremented each time the timer reaches zero. If needed, the heat number can be changed by turning the knob.

Beeper Modes

The Timekeeper™ has several beeper modes: Single beep; Beep at each of the warning times; Pulsing beep until reset; steady beep until reset, and beeper disabled. Press and hold the **Mode** button until the display changes. Turn the **Knob** to select the desired beeper mode.

- Mode 0: Beeper off.
- Mode 1: A single beep when the timer reaches zero.
- Mode 2: Continuous pulsing beep when the timer reaches zero. Pressing the **Reset** button stops the beep.
- Mode 3: Continuous steady beep when the timer reaches zero. Pressing the **Reset** button stops the beep.
- Mode 4: Beep when the timer is started.
- Mode 5: Beep when the timer is started and a single beep when the timer reaches zero.
- Mode 6: Beep when the timer is started and continuous pulsing beep when the timer reaches zero.
- Mode 7: Beep when the timer is started and continuous steady beep when the timer reaches zero.
- Mode 8: Beep at the warning times. You can add 8 to any of the other modes. Ie: Mode 9 is beep at the warning times and at zero.

*Note: See **Beeper and relay setup** options for additional beep options.*

Red-Yellow-Green Display

- The **Green** lamp comes on when the timer is started and remains on until the warning time is reached.
- When the **Yellow** blink time is reached, the **Green** lamp goes off and the **Yellow** lamp blinks on and off every second. The default **Yellow** blink time is 2 minutes (see table below) before the count down timer reaches zero.
- When the **Yellow** warning time is reached, the **Yellow** lamp remains on steadily. The default **Yellow** steady time is 1 minute (see table below) before the count down timer reaches zero. Note that the **yellow** steady and **yellow** blink times may occur in any order depending on the programmed setting. If they are set to the same time, the **yellow** steady takes precedence.
- When the timer reaches zero, the **Red** lamp comes on and the **Yellow** lamp goes off. In the count down mode, the timer stops when the **Red** lamp turns on. In the count up mode, the timer keeps running after the lamp turns **Red**.
- Press the **Reset** button on the TimeKeeper™ to turn off the **Red** lamp.

you can set any desired yellow warning time. The green warning time will always be twice the yellow warning time.

Setting minutes & seconds for the Blink Time

- *Press and hold the **Select** button until the screen reads "blnk" and then release the **Select** button. The current blink time setting will appear.*
- *Turn the **Knob** to the minute(s) setting desired.*

- *Tap the **Select** button once and turn the knob to add seconds. (Tapping the **Select** button now toggles between setting minutes and seconds.)*
- *Tap the **Reset** button to return to the count-down time.*

Setting minutes & seconds for the Warning Time

- *Press and hold the **Select** button until the screen reads "blnk." Release the **Select** button and press and hold it again until the screen reads "-lArm." The current warning time setting will appear.*
- *Turn the **Knob** to the minute(s) setting desired.*
- *Tap the **Select"** button once and turn the knob to add seconds.*
- *Tap the **Reset** button to return to the count-down time.*

NOTE: Different models present the warning times in different ways, but the basic behavior is the same, typically displaying different colors for the warnings.

Factory default warning times

Total Time	Yellow Blink	Yellow Steady	Red
0:00-0:29	0:02	0:01	0:00
0:30-0:59	0:20	0:10	0:00
1:00-1:59	0:30	0:15	0:00
2:00-3:59	1:00	0:30	0:00
4:00-99:59	2:00	1:00	0:00

NOTE: To restore the factory default warning times, set the warning time to zero and save the setting. The next time that the unit is powered up, the factory default warning times will be used.

Connecting multiple Timekeeper™s together

When multiple units are connected together, only one unit may become the controlling unit. The rest of the units become remote displays.

- The Timekeeper™ defaults to remote display mode at power up.
- Be sure to connect the units up such that the controlling unit's transmit port is connected to the receive unit's receive port.
- Once a button is pressed, the controlling unit changes to clock/timer mode.
- The controlling unit remains in timer mode until the power is turned off or a command is received that returns it to remote display mode.
- When connecting more than 2 units together, data on the transmit port of a remote display is echoed from the receive port.

When two Timekeeper™ units are connected together, in a specific configuration. Either unit can control all of the functions.

- Connect the transmit port of the first Timekeeper™ to the receive port of the second Timekeeper™.
- Connect the transmit port of the second Timekeeper™ to the receive port of the first Timekeeper™.
- Connect as many remote displays as you like to the first Timekeeper™.
- Configure the second Timekeeper™ to send key press commands. Set the "Time of day clock" setup parameter to "CA".
- Now, either Timekeeper™ will operate all timer functions.

Device control Outputs

Some devices have additional device control outputs.

- Optional Relay Control signal (BEEP). Activated whenever the timer reaches time zero. Beep relay.
- Optional Relay Control signal (RUN). Activated whenever the timer is running. Run relay.

Connection to Crestron, Extron, AMX,...

This system can be controlled from any computer or externally connected system.

KT6X422C with RS232 port connected to **DSP254B** and **TMR223B8**. The RS232 port connects to any external system. Any number of devices may be connected using additional distribution hubs.

NOTE: See programming manual for RS232 protocol.

Front panel Led definitions

TMR017, TMR221, TMR223, TMR225, TMR216, TMR104 and TMR106 models.

LED	Function
Lower Left side	ON=Beep on; OFF=Beep off
Middle Left side	ON=Count up; OFF=Count down
Upper Left Side	ON=PM; OFF=AM
Lower Right side	ON=RED indicator, Time is up
Middle Right Side	ON=YEL indicator, Yellow warning (“Wrap-it-up” time)
Upper Right Side	ON=GRN indicator, Time is running
Above Clock Button	RED=Time set mode, GRN=No sync signal, BLINKING GRN=SYNC

Counter mode

This unit contains a counter with a range of 0 to 999999

Trigger the counter remote input (RSSR-IN4) to increment the counter. Trigger the counter remote input (RSSR-IN3) to decrement the counter. Trigger the counter remote input (RSSR-IN2) to reset the counter.

Testing the unit.

The rear of most displays will have a **Test** button.

- Tap the **Test** button several times to unlock the **Test** button.
- Then tap the **Test** button successively to advance through each of several diagnostic tests.

These tests verify the operation of the unit. Each tap of the **Test** button selects on of the following displays.

- Scrolling Hello Message " Hello ".
- Segment Test Pattern " UUU ".
- All segments ON " 8.8.8.8. ".
- Input signal test " 67 ".

Beeper Modes

The Timekeeper™ has several beeper modes: Single beep; Beep at each of the warning times; Pulsing beep until reset; steady beep until reset, and beeper disabled.

- Press and hold the **Mode** button until the display changes.
- Turn the **Knob** to select the desired beeper mode.

The following table describes the various options.

Value	Description
PP00	Mode 0: Beeper off.
PP01	Mode 1: A single beep when the timer reaches zero.
PP02	Mode 2: Continuous pulsing beep when the timer reaches zero. Pressing the **Reset** button stops the beep.
PP03	Mode 3: Continuous steady beep when the timer reaches zero. Pressing the **Reset** button stops the beep.
PP04	Mode 4: Beep when the timer is started.
PP05	Mode 5: Beep when the timer is started and a single beep when the timer reaches zero.
PP06	Mode 6: Beep when the timer is started and continuous pulsing beep when the timer reaches zero.
PP07	Mode 7: Beep when the timer is started and continuous steady beep when the timer reaches zero.
PP08	Mode 8: Beep at the warning times. You can add 8 to any of the other modes. Ie: Mode 9 is beep at the warning times and at zero.

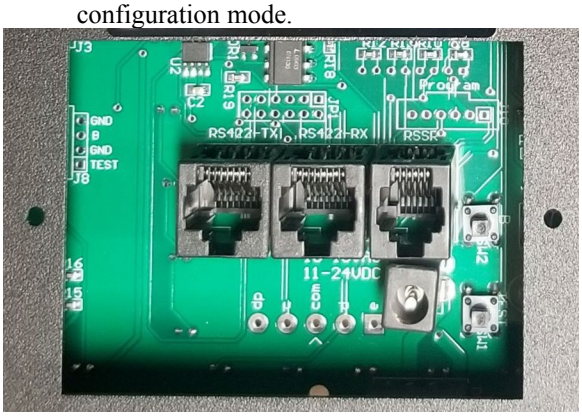
*Note: See **Beeper and relay setup** options for additional beep options.*

Configuration and Setup.

The setup procedure is normally performed at the factory when you order the product. Occasionally, you may need to make changes to the setup parameters. The setup parameters are summarized below.

If your display has one rear panel button, it will be the **Test** button.

- Tap the **Test** button to display one of several test patterns.
- Press and hold the **Test** button to enter the configuration mode.



If your display has two rear panel buttons, one button will be the **Test** button. The other button will be the **B** button.

- Tap the **Test** button at least 15 times to start displaying test patterns.
- Press and hold the **Test** button to enter the configuration mode.
- The **B** button is used to decrement a value while in setup mode.

Wireless devices.

- Tap the **B** button to enter the learn mode if a wireless **RFTX15B** keyfob receiver is installed.
- See the wireless manual for details.

If your display has a built in battery and battery charger, in addition to the normal functions, these buttons will also perform the power ON and power OFF functions of the display.

- Press and hold the **Power ON/Test** button to turn the power on.
- Press and hold the **Off/B** button to turn the power off.

Configuration settings

There are several ways to change the configuration settings
for displays that do not have a keypad.

- Use the **Test** button on the rear of the unit to enter the setup mode and advance to various settings.
- The **B** button is used to decrement a value while in setup mode.
- Press and hold the **Start/Stop** button on the timer, **KP215A** or **KP219A** keypad. Use the **Select** button to advance to the next setting. Turn the **Knob** to change the value.
- NOTE: For timers or keypads that have **Start/Stop** and **Select** buttons. This button may be labeled **Run/Pause** on some models.

Configuration and Settings

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " U..A ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button once to advance to the **timer display mode** setting.
- The display will show " UUU ".
- Wait 2-3 seconds. The display will show " U..A ".
- Turn the **knob** to change the value.

- Tap any other button to exit the setup mode.

Method 3: Most large LED displays have an infrared remote sensor. The settings can be changed using the **IR27A** infrared Remote.

- To enter the setup mode, tap the **MENU** button on the **IR27A** Remote.
- The display will show " bbbb ". If this is the setting that you want to change, then do not press the **MENU** button again.
- Tap the **MENU** button once more to advance to the next setting. The display will show " FF ". If this is the setting that you want to change, then do not press the **Right** arrow button.
- Tapping the **Right** arrow key successively will advance through the remainder of the settings.
- The display will show " UUU ".
- Wait 2-3 seconds. The display will show " U..A ".
- Press the **Plus/Minus (+/-)** button.
- Using the keypad, enter a two digit number " 0 " to " 9 " and " A " to " F ". for the desired setting.
- Tap **OK** to save the setting.
- Tap **EXIT** when done.

Select the special timer mode

This procedure selects the timer mode.

- Press and hold the **Start/Stop** button.
- Turn the **Knob** to change the selected configuration value.

The following table describes the various options.

Value	Description
F00	Mode 0: (**default**) Stop when the timer reaches zero. In this mode, the timer stops when the elapsed time reaches zero.
F01	Mode 1: Red blink on timer zero. The red indicator blinks until the timer is reset.
F02	Mode 2: Auto-Restart mode. In this mode, the timer automatically restarts counting down from the preset value each time the timer reaches zero. The Auto-Restart mode works in both count up and count down modes. The count up mode uses the count down timer preset time to determine when to reset the count up timer back to zero and restart.
F03	Mode 3: Change to count up when the timer reaches zero. In this mode, the timer changes to the count up mode and starts counting up when the timer reaches zero.
F04	Mode 4: Change the display to the heat number when the timer reaches zero. The heat number is incremented each time the timer reaches zero. If needed, the heat number can be changed by turning the knob.

Table of timer display modes

This procedure selects whether the count up timer display shows hours, minutes, seconds or fractions of a second.

Mode	Count Down	Count Up 8 Digit Display	Count Up 6 Digit Display	Count Up 4 Digit	Description
		Knob defaults to setting seconds for modes 1, 2 and 2.			
u..0	SS SS SS	SS.SS.SS.FF	SS SS.FF	SS.FF	Seconds .100ths
u..1	SS SS SS	SS SS SSS.F	SS SSS.F	SSS.F	Seconds .Tenths
u..2	SS SS SS	SS SS SS SS	SS SS SS	SS SS	Seconds
		Knob defaults to setting hours for modes E, J and K. Knob defaults to setting days for mode L. Knob defaults to setting minutes for other modes.			
u..3	MM MM:SS	MM MM:SS.FF	MM:SS.FF	SS.FF	Minutes :Seconds .100ths
u..4	MM MM:SS	MM MMM:SS.F	MMM:SS.F	M:SS.F	Minutes :Seconds .Tenths
u..5	MM MM:SS	MM MM MM:SS	MM MM:SS	MM:SS	Minutes :Seconds
u..6	MM MM:SS	MM MM MMM:S	MM MMM:S	MMM:S	Minutes :Tens of Seconds
u..7	MM MM MM	MM MM MM MM	MM MM MM	MM MM	Minutes
u..8	HH:MM:SS	HH:MM:SS.FF	MM:SS.FF	MM:SS.FF	Hours :Minutes :Seconds .100ths
u..9	HH:MM:SS	HHH:MM:SS.F	H:MM:SS.F	M:SS.F	Minutes :Tens of Seconds
u..A	HH:MM:SS	HH HH:MM:SS	HH:MM:SS	MM:SS	Hours :Minutes :Seconds
u..b	HH:MM:SS	HH HHH:MM:S	HHH:MM:S	H:MM:S	Hours :Minutes :Tens of Seconds
u..C	HH HH:MM	HH HH HH:MM	HH HH:MM	HH:MM	Hours :Minutes
u..d	HH HH:MM	HH HH HHH:M	HH HHH:M	HHH:M	Hours :Tens of Minutes
u..E	HH HH HH	HH HH HH HH	HH HH HH	HH HH	Hours
u..F	HH:MM:SS	DD:HH:MM:SS	HH:MM:SS	MM:SS	Days :Hours :Minutes :Seconds
u.10	HH:MM:SS	DDD:HH:MM:S	D:HH:MM:S	H:MM:S	Days :Hours :Minutes :tenths
u.11	DD:HH:MM	DD DD:HH:MM	DD:HH:MM	HH:MM	Days :Hours :Minutes
u.12	DD:HH:MM	DD DDD:HH:M	DDD:HH:M	D:HH:M	Days :Hours :Tens of Minutes
u.13	DD:HH:MM	DD DD DD:HH	DD DD:HH	DD:HH	Days :Hours
u.14	DD:HH:MM	DD DD DDD: H	DD DDD: H	DDD: H	Days: Tens of Hours
u.15	DD DD DD	DD DD DD DD	DD DD DD	DD DD	Days
u.16	SS SS SS	SS SS S.TTT	S SS.TTT	S.TTT	Seconds. Thousandths of a second
NOTE: When mode 15 is selected, the days timer rolls over at midnight.					

Select the MSETUP mode

This procedure selects the operation of the remote inputs and the operation of the "**B**" button on the rear of the unit.

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button once to advance to the **MSETUP mode** setting.
- The display will show " LLL ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " L01 ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button twice to advance to the **MSETUP mode** setting.
- The display will show " LLL ".
- Wait 2-3 seconds. The display will show " L01 ".
- Turn the **knob** to change the value.
- Tap any other button to exit the setup mode.

The following table describes the various options. Multiple options can be selected by adding the respective numbers together. The numbers are represented in ASCII HEX notation. Range 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F. For example, 8 plus 2 = 10 or "A" in ASCII HEX notation.

L-Value	Description
L00	Default to timer to count down mode.
L01	Default to timer to count up mode.
L00	Remote input 1 is default configuration. See documentation on remote inputs for details. Button B is timer start.
L02	Remote input 1 is START-LAP Up Timer. Both the split time and the lap time is stored into the history memory. Button B is timer start.
L04	Remote input 1 is START-SPLIT Up Timer. Both the split time and the lap time is stored into the history memory. Button B is timer start.
L06	Remote input 1 is RUN-PAUSE Up Timer. Button B is timer start.
L08	Remote input 1 is RESET-START Timer. Button B is timer start.
L0A	Remote input 1 is RESET-START-STOP Timer. Button B is timer start.
L0C	Remote input 1 increments hours. Remote input 2 increments minutes. Remote input 3 increments seconds. Used on DSP106B.
L0E	Remote input 1 is RESET-START if the timer is not already running. If the timer is already running, nothing happens.
L00	Remote input 3 is RESET timer.
L10	Remote input 3 is RECALL stored setting 1.
L20	Remote input 3 is STOP and RESET.
L30	Remote input 3 is COUNTER23
L00	The Green indicator is on when the timer is started; The Red indicator is on when the timer reaches zero.
L40	The Red indicator is on when the timer is started; The Green indicator is on when the timer reaches zero.
L80	The beeper sounds when the remote stop button is pressed.

Beeper and Relay setup

Beeper and relay setup options.

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button several times to advance to the **beeper and relay** setting.
- The display will show " RRR ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " R01 ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button several times to advance to the **beeper and relay** setting.
- The display will show " RRR ".
- Wait 2-3 seconds. The display will show " R01 ".
- Turn the **knob** to change the value.
- Tap any other button to exit the setup mode.

NOTE: The beeper must be enabled for the beep relay functions to take effect. The RUN relay always operates as setup below. See the **Beep Enable** *setup mode elsewhere in this manual.*

Options **r00** to **r03**. Select the desired beep tone sequence types. The relay output is modulated with a beep tone while beeping. Select this option if you have a beeper or speaker with an audio amplifier.

Options **r04** to **r08**. Select the desired relay ON/OFF activation. The relay/beep output is ON or OFF activation. Select this option if you have an actual relay or desire an ON/OFF relay or ground closure output.

Options **r10** to **r30**. Relay output and is activated when the timer is running. The RUN Relay may be a ground closure output or an actual relay depending on hardware configuration.
NOTE: Not all hardware has a RUN relay.

You can add values to obtain a combination of functions.

R-Value	Description
Programmable beep tone options. Requires beeper or speaker installed.	
r00	The relay/beep output is a Morse code character sequence while beeping.
r01	The relay/beep output is a pre-programmed register beep sequence while beeping.
r02	The relay/beep output is a short single tone or two-tone sound while beeping.
r03	The relay/beep output is always a single beep while beeping. (Typical 1 second beep)
Relay ON/OFF options.	
r04	The relay/beep output is a Morse code character sequence while activated.
r05	The relay/beep output is a pre-programmed register activation sequence while beeping.
r06	The relay/beep output is a short single activation or two-pulse sequence.
r07	The relay/beep output is always a single pulse while on. (Typical 1 second activation)
r08	The relay/beep output is connected to the Run Relay output and is activated when the timer is running.
Select the RUN relay function. You may add this with the above option except **r08**.	
r00	Run Relay operates when the timer is running. (Default)
r10	Run Relay operates when the **green** indicator lamp is lit.
r20	Run Relay operates when the **yellow** indicator lamp is lit.
r30	Run Relay operates when the **red** indicator lamp is lit.

NOTE: Not all hardware has Beep relays and/or Run Relays. Some hardware has a beeper or beeper speaker. If you have a relay mode selected, you may hear only a click sound on the beeper or speaker.

Unit Address setup

The display can be set up to respond to an address-specific command. The address-specific commands provide the same functionality as the general commands, but allow control of which display unit will respond when several displays are connected together. A unit can be set to one address within the range 0 through 9, and A through O. The address range is 0 to 5F in ASCII HEX notation. See the programming manual for more details on using this address command.

Example corresponding commands are "L0*xxxx* through "L9*xxxx* and "LA*xxxx* through "LO*xxxx*. The address range is 0 to 5F in ASCII HEX notation where 0= "L0xxxx; 11="LAxxxx and 1F="LOxxxx.

Example:
Two units are connected to the same serial port. One unit is configured for address '**A00**', and the other is configured as address '**A01**'. The first unit ('**A00**)' responds to a "L0Hello command, but not the second unit

('**A01**'). The second unit ('**A01**') responds to a "L1World command, but the first unit does not.

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button 4 times to advance to the **unit address setup** setting.
- The display will show " AAA ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " A00 ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button 5 times to advance to the **unit address setup** setting.
- The display will show " AAA ".
- Wait 2-3 seconds. The display will show " A00 ".
- Turn the **knob** to change the value.
- Tap any other button to exit the setup mode.

Address	Description
A00	Default unit address. This is used when there is only one wired or wireless system. All devices in close proximity receive the same data.
Operating multiple wireless systems in close proximity to each other. Each system operates independently.	
A01	Set all device addresses for system 1 to this address.
A02	Set all device addresses for system 2 to this address.
A03	Set all device addresses for system 3 to this address.
Up to 64 systems may be in close proximity and operate independently.	

Serial Data Output setup

Serial data output number of digits displayed.

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button several times to advance to the **serial data output** setting.
- The display will show " EE ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " E4 ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button 7 times to advance to the **serial data output** setting.
- The display will show " EE ".
- Wait 2-3 seconds. The display will show " E4 ".
- Turn the **knob** to change the value.
- Tap any other button to exit the setup mode.

Time of Day Clock and serial data output setup

Time of day clock and Serial data output setup.

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button several times to advance to the **time of day clock** setting.
- The display will show " CCC ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " C00 ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button several times to advance to the **time of day clock** setting.
- The display will show " CCC ".
- Wait 2-3 seconds. The display will show " C00 ".
- Turn the **knob** to change the value.
- Tap any other button to exit the setup mode.

The following table describes the various options. Multiple options can be selected by adding the respective numbers together.

Value	Description
C00	Default to the 24 hour mode when the clock button is pressed.
C01	Default to the 12 hour mode when the clock button is pressed.
C02	Default display is a time of day clock in 12 hour mode. Disables sending DSP, "L0, "TY, or TME commands on the serial port.
C03	Default display is a time of day clock in 24 hour mode. Disables sending DSP, "L0, "TY, or TME commands on the serial port.
C00	While in the time of day clock mode, with 4-digit displays, send HH:MM or MM:SS (4 digit) DSP or "L0 commands on the serial port.
C04	While in the time of day clock mode, always send HH:MM:SS (6 digit) DSP or "L0 commands on the serial port.
C08	Default to remote mode.
C0A	Remote Control Mode. This mode is used to remotely control another timekeeper connected to this unit. Pressing a button on this unit generates "KPn commands that are sent to a remotely connected timekeeper. The remote timekeeper sends RLY, DSP or "L0 responses to this unit.
C00	Send "Lnxxxx commands on the serial port. Where n is the unit address.
C10	Send DSPxxxx commands on the serial port.
C02	Process "KPn commands locally.
C12	Do not Process "KPn commands locally. Echo "Kpn commands back out on the serial port.
C20	90 second power off delay. When powered by DC, the display goes dark when the timer is not running or no data is being received. When powered by AC or receiving a 50/50Hz sync signal, this option has no effect.
C40	All received serial data characters are echoed out on the transmit serial port. This unit does not transmit RLY, DSP or "L0 commands.
C00	Send the RLY, DSP and "L0 commands to only the wired port.
C80	Send RLY, DSP and "L0 commands to both the wired and the wireless port.

Baud rate setup

Serial data baud rate.

Method 1: Using the **IR Remote**.

- Tap the **Menu** button twice.
- Tap the Right Arrow button several times until the display shows " BB ".
- Tap the +/- button, then enter " 01 " to set the baud rate to 2,400.
- Tap **OK** to save.

Method 2: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button several times to advance to the **baud rate** setting.
- The display will show " BB ".

- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " B1 ".
- Power off the unit to exit the setup mode.

*NOTE: The baud rate cannot be changed when using the **KP215A** or **KP219A** keypad method.*

Baud rates:

- 0=1,200 baud.
- 1=2,400 baud. Default.
- 2=4,800 baud.
- 3=9,600 baud.
- 4=19,200 baud.
- 5=38,400 baud.
- 6=56,800 baud.
- 7=115,200 baud.

NOTE: Most Alzatex products default to 2,400 baud. The baud rate should be set to " B1 ". in most situations.

Default brightness setup

The dimmer value in the range 0 to 9 provides several distinct brightnesses, where 0 is the lowest brightness, and 9 is the highest brightness.

Method 1: Use the **Test** button on the rear of the unit.

- Tap the **Test** button on the rear of the unit at least 15 times to unlock the setup mode.
- To enter the setup mode, press and hold the **Test** button until the display changes.
- The display will show " uuu ".
- Within one second, tap the **Test** button several times to advance to the **default brightness** setting.
- The display will show " YYY ".
- Wait 2-3 seconds and tap the **Test** button successively to change the value.
- The display will show " Y09 ".
- Power off the unit to exit the setup mode.

Method 2: Units with Timer **Start/Stop** button. Use the timer **Start/Stop** button on the front panel or remote keypad.

- To enter the setup mode, press and hold the **Start** button until the display changes.
- The display will show " FF ".
- Tap the **Select** button several times to advance to the **default brightness** setting.
- The display will show " YYY ".
- Wait 2-3 seconds. The display will show " Y09 ".
- Turn the **knob** to change the value.
- The setting " Y09 " is max brightness and " Y00 " is minimum brightness.
- Tap any other button to exit the setup mode.

NOTE: Not all display hardware supports the dimming feature even though it may appear in the setup menus.

Displaying the firmware version number

- Tap the **Test** button several times until the Hello message appears, a 2 digit number will appear after the word Hello...67. This is the firmware version number.

Resetting to Factory Default Settings

To reset the factory default settings, press and hold the test button for at least 32 seconds. (version 5C and newer)

- After 20 seconds, the display will show HHHHH.
- For the next 10 seconds, the display will show a count down HHHH9, HHHH9, – HHHH0.
- After 30 seconds, the display will show - - - - - .
- After 31 seconds, the display will show HHHHD .
- Release the test button, the reset is successful.
- Turn the display off, then ON again. The reset is complete.
- If you had some custom settings, you will need to restore any custom settings.

DC power status checking and the 50/60Hz SYNC signal

The unit will accept either 50Hz or 60Hz line frequencies. It will automatically detect which line frequency is being received. This feature only applies to models that the 50/60 Hz SYNC feature.

The AC/DC power status can be checked by observing the 60Hz SYNC signal. An oscilloscope or multi-meter will help when observing this signal. This signal will have one of the following states.

- Steady logic low indicates battery operation.
- Steady logic high indicates DC power applied.
- Pulsing at the 60 Hz rate indicates 60 Hz AC power applied.
- Pulsing at the 50 Hz rate indicates 50 Hz AC power applied.

Clock SYNC signal status monitoring system.

An indicator that visibly signifies whether or not the 50/60Hz sync is being received. In the timer mode, the PM LED is on permanently if no 50/60Hz sync is detected.

While in clock mode, the center colon reflects the same information as the clock LED. The clock LED will be used to indicate the status of the clock SYNC signal. When the clock LED is off, the unit is in the timer or tally mode.

No sync signal is being received.

- When the clock LED is on steadily, no sync signal is being received.
- In this mode the clock is the least accurate. In this mode, the clock has an accuracy of the internal crystal.

The 32KHz is generating the sync signal.

This is not available on all models.

- The clock LED flashes once every 2 seconds.
- When the clock LED is making very short flashes one per second, the internal 32KHz crystal is generating the SYNC signal.
- In this mode the clock is the much more accurate. In this mode, the clock has an accuracy of 20 parts per million.

External 50hz sync has been detected.

- The clock LED blinks on/off every 2 seconds.
- When the clock LED is on for two seconds, then off for two seconds, the timer is receiving a SYNC signal from a 50Hz AC line.
- In this mode the clock is the most accurate. The clock is as accurate as the AC line frequency. In most countries the accuracy is within five seconds per year.

External 60hz sync has been detected.

- The clock LED blinks on/off once per second.
- When the clock LED is on for one second, then off for one second, and continues to repeat this pattern, then the timer is receiving a SYNC signal from a 60Hz AC line.
- In this mode the clock is the most accurate. The clock is as accurate as the AC line frequency. In most countries the accuracy is within five seconds per year.