TimeKeeper™ F-Series Programmers manual

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This software package is installed on many of the Alzatex **TimeKeeper™,** products including timers and displays with displays with 0.56" high digits to 10" high digits. The displays may have 1 to 16 digits and may have zero to 20 buttons. All models have remote inputs and a serial communication port. Optional remote button modules may be used to control the timer/display.

Remote Ground Closure Inputs

The timer can be started, stopped or reset by remote control. Grounding the respective signal activates the function. Typically the signals are grounded by pressing buttons on remote units. Notice that inputs IN2 and IN3 are dual function. They operate differently depending on whether the display is in timer mode or Tallye mode:

- IN1 – Changes the display to timer mode. Starts the timer.
- IN2 – In timer mode, stops the timer.
- IN2 – In Tallye mode, decrements the tally count by the scale factor (default 1).
- IN3 – In timer mode, resets the timer values to the initial preset values.
- IN3 – In Tallye mode, sets the tally count to zero. Reset does not stop the timer.
- IN4 – Changes the display to Tallye mode. Increments the tally count by the scale factor (default 1).

Activating one of the inputs at a time

IN1 - If the unit is not in timer mode, puts the unit into timer mode. If the unit is in timer mode and the timer is not running, starts the count up timer and increments the counter. If the unit is in timer mode and the timer is running, freeze the display for several seconds to display the lap time. The count up timer keeps running. IN1 has the ability to operate as a maintained or momentary ground closure. If IN1 is closed and held closed, the timer continues to run. When IN1 is released, the timer pauses.

IN2 - If the unit is in timer mode and the timer is running, stops the count up timer. If the timer is stopped, displays the lap time for the previous lap or displays the time from the previous run. If the unit is in counter mode, decrements the counter.

IN3 - If the unit is in timer mode, resets the count up timer to zero. If the timer is running, it continues to run from zero. If the unit is in counter mode, resets the counter to zero.

IN4 - If the unit is not in counter mode, put the unit into counter mode. If the unit is already in counter mode, increment the counter.

Activating more than one of the inputs at a time

IN1,IN2 - Run-Pause mode. If the unit is not in timer mode, puts the unit into timer mode. If the unit is in timer mode and the timer is not running, starts or continues the count up timer and increments the counter. If the unit is in timer mode and the timer is running, pauses the timer.

IN1,IN3 - Reset and Start, Stop mode. If the unit is not in timer mode, puts the unit into timer mode. If the unit is in timer mode and the timer is not running, resets, then starts the count up timer and increments the counter. If the unit is in timer mode and the timer is running, stops the timer.

IN1,IN2,IN3 - Two lap mode. Reset and Start, Lap Display, Stop mode. If the unit is not in timer mode, puts the unit into timer mode. If the unit is in timer mode and the timer is not running, resets, then starts the count up timer and increments the counter. If the unit is in timer mode and the timer is running, freezes the display for several seconds to display the lap time. The count up timer keeps running. If the unit is in timer mode and the timer is running and the lap time was displayed once, stops the timer.

IN3,IN4 - Sets the counter to the last preset value. Turn the **Knob** to set the timer preset value. The **Select** button

selects between setting the upper, middle or lower set of counter preset values. Generally this function occurs by pressing the remote Counter **Up** and Counter **Reset** buttons at the same time.

   IN1,IN4 - Beep the horn. Activates the beeper.

   Optional: This configuration may be enabled by ordering the USE_BTN23_MANUAL_RYG option.
   IN2,IN3 - Manually select the Red-Yellow-Green indicator. Each press cycles the Red or Yellow or Green indicator on or turns all three indicators off.

   Optional: This configuration may be enabled by ordering the USE_BTN4_MANUAL_RYG option.
   IN4 - Manually select the Red-Yellow-Green indicator. Each press cycles the Red or Yellow or Green indicator on or turns all three indicators off.

   Optional: This configuration may be enabled by ordering the USE_KPE_MANUAL_RYG option.
   Remote command "KPE or stored preset 3 button - Manually select the Red-Yellow-Green indicator. Each press cycles the Red or Yellow or Green indicator on or turns all three indicators off.

   Optional: This configuration may be enabled by ordering the USE_BTN3_IS_RECALL1 option.
IN3 – Recalls stored setting 1. Whatever settings that are stored into stored setting 1 are loaded.

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 1F in ASCII HEX notation.

Example corresponding commands are "L0*xxxx* through "L9*xxxx* and "LA*xxxx* through "LO*xxxx*. The address range is 0 to 1F in ASCII HEX notation where 0= "L0xxxx; 10="L@xxxx; 11="LAxxxx and 1F="LOxxxx.

Example:
Two units are connected to the same serial port. One unit is configured for address '0', and the other is configured as address '1'. The first unit ('0)' responds to a "L0Hello command, but not the second unit ('1'). The

second unit ('1') responds to a "L1World command, but the first unit does not.

To configure the address for a unit:
  • Press and hold the **Test** button.
  • Within 1 second, press the **Test** button two more times to select the unit address configuration parameter. The display will show "A00".
  • Turn the **Knob** to change the selected configuration value.
 - OR -
  • Wait 3 seconds, then press the **Test** button to select the desired unit address.
  • To exit, press any button that changes the display mode or turn the power off and then on again.

Remote time of day setting

When the time of day is being set, the TME command is generated when the time set mode is exited. This is useful when setting the time of day in the remote displays. When multiple timers and/or displays are connected together, the time of day information is automatically passed from the controlling unit to all the slave units.

It may be desirable for the remote units to display the time of day when not being used for other purposes.

To cause the remote units to remain in the time of day clock mode while the controller is disconnected from the system, perform the following steps.
  ● Make sure the time of day clock is set correctly.
  ● Press the clock button to cause the time of day to appear in the display.
  ● Disconnect the controlling unit from the system.
  ● All the remote displays will display the time of day.

To cause the remote units to go dark while the controller is disconnected from the system, perform the following steps.
  ● Press the reset button to cause the timer or counter to appear in the display.
  ● Disconnect the controlling unit from the system.
  ● All the remote displays will display go dark after a few seconds.

Technical Description

This section contains information that might be useful for system designers, system integrators and installers.

Power up

When the unit is first powered up all the LEDs come on and the scrolling message "Hello" appears in the display.

NOTE: If the "Hello" message does not scroll, the firmware is a variation not described by this manual.

Connectors

The Timerkeeper™ unit will have some or all of the following RJ-11 connectors:

- RJ-11 Receive Jack, marked "RX" or "IN". This connector transmits data out to other units on DATA 3 and receives data on DATA 1.
- RJ-11 Transmit Jack, marked "TX" or "OUT". This connector transmits data out to other units on DATA 1 and receives data on DATA 3.

RJ-11 remote control timer configuration:

- The DATA 2 pin on the and RJ11 carries the 50/60Hz sync signal.
- Using a 4 conductor modular cord, the RJ11-TX connector is typically used for transmit data. RJ11-RX connector is typically used for receive data.
- Using a 6 conductor modular cord, the RJ11-TX is typically used for transmit data on DATA 1 and receive data on DATA 3. The RJ11-RX connector is typically used for receive data on DATA 1 and transmit data on DATA 3.
- RJ-11 Ground Closure Jack, marked "RSSR", with lines described in this document as "IN1,IN2,IN3,IN4". See the connection diagram provided in the installation instructions for a particular unit. Buttons, readers, optical couplers, photo beams, hall-effect sensors, or more line outputs may be connected to these inputs. This connector also has an output to provide external power to operate external sensors.

The Timerkeeper™ unit will have some or all of the following RJ-45 connectors:

- RJ-45 Receive Jack, marked "RX-422" or "IN".
- RJ-45 Transmit Jack, marked "TX-422" or "OUT"

The RJ-45 connectors are configured as follows:

- Pair 1 (Blue/White) is used for RS422 data transmission/reception.
- Pairs 2,3,4 (Orange/White, Green/White and Brown/White) are used to carry 12VDC power.
- In some cases, Pair 2 (Green/White) are used for data in the reverse direction. These units have special configuration jumpers to change the function of pair 2.

All of the connectors described above have 12VDC power input/output so that if one Timerkeeper™ is powered, all are powered. Keep in mind that larger displays require more power. The power supplies within a display unit has specific limitations. DO NOT overload the power supply. If you are powering a larger number of displays, Alzatex provides a distribution module that permits multiple displays to be powered from a single source.

Programming

The Timekeeper™ can send and receive commands from a controller or computer via a bi-directional serial port. Each command is followed by the carriage-return/linefeed characters. Commands sent to the timer should be also followed by the <CR><LF> termination (ie the "Enter" key). Even when the timer immediately responds prior to the termination, the additional characters help prevent misinterpretation of subsequent commands.

Host-Timer mode

The Timekeeper™ can receive and process any of the following commands.

Broadcast-only commands

All devices connected to the system will respond to the following commands regardless of the unit address.

- DSPxxxx   Display command, used to put alphanumeric messages on displays.
- RLY@nsldd   RLY command, used to set character and background color on displays.
- RLY01Pn   RLY command, used to activate the beeper.
- "KPn   Key commands, used to send and receive button presses and similar timer information.
- "KP+   Knob turn up command, used to send and receive knob turns timer control information.
- "KP-   Knob turn down command, used to send and receive knob turns timer control information.
- "K+   Knob turn up command, used to send and receive knob turns timer control information.
- "K-   Knob turn down command, used to send and receive knob turns timer control information.
- TMEhhmmss   Set the time-of-day clock command.
- GMThhmmss   Set the time-of-day clock command to GMT time. Account for the time zone offset.

Addressed-only commands

Only devices with the specific unit address-specific commands will respond to the following commands.

- "Aaaa   Address a specific display. All subsequent addressable commands will be sent to the specified display.
- "Laxxxx   Display command, used to put alphanumeric messages on a display.
- "KAan   Key commands, used to send and receive button presses and similar timer information.

Addressed or broadcast commands

If the most recent command sent was DSP or RLY, the following commands are always processed. If the most recent command sent was "La, the following commands are processed only if the most recent "Laxxxxx command matched the unit address.

- "Ra@nlsdd   The RLY command, used to set character and background color on displays.
- "C@ Turn scrolling off
- "CA Turn scrolling on
- "Ca turn Scrolling off
- "S*yz* Turn on specified status LEDs.
- "TT*hhmmss* Set the time of day clock.
- "TM*hhmmss* Set the time of day clock to GMT time. Account for the time zone offset.
- "TZ*hhmm* Set the time zone offset.
- "TU*hhmmss* Set the count up timer to a preset value.
- "TD*hhmmss* Set the count down timer to a preset value. NOTE: This setting will not take effect until the timer is reset using the "KPK command.
- "TW*mmss* Set the yellow steady warning value.
- "TG*mmss* Set the yellow blink warning value.
- "TC*nnnnnn* Set the counter starting value.
- "TN*nnnn* Set the counter scale factor value.
- "TS*a* Set the timer mode.
- "TB*a* Set the beeper mode.

Key Press and Knob commands

A button press on a controller generates a command that is sent to a remote device connected to the serial port.

The command "KPn sends the button press command to the serial port. The key command is sent each time a button is pressed.

Some remotes respond to the button or key press, while others respond to the release of the button or key. Press and

hold of any button in the range A-Z will typically send the lower case version (a-z) of the character.

```
<LF>"K+<CR>           Knob turned clockwise.
<LF>"KP+<CR>          Knob turned clockwise.
<LF>"KAa+<CR>                 Knob turned
clockwise.
```
where "a" is the unit address.
Examples:
"K+   Knob turned clockwise. To all devices.
"KP+   Knob turned clockwise. To all devices.
"KAE+ Knob turned clockwise. Only unit with address "E".

```
<LF>"K-<CR>   Knob turned counter-clockwise.
<LF>"KP-<CR>  Knob turned counter-clockwise.
<LF>"KAa-<CR>          Knob turned counter-
clockwise.
```
where "a" is the unit address.
Examples:
"K-   Knob turned counter-clockwise. To all devices.
"KP-   Knob turned counter-clockwise. To all devices.
"KAB- Knob turned counter-clockwise. Only unit with address "B".

```
"KPx<CR><LF>          Key press .
```
where "x" is the key value in the range @=no button pressed, A=Button 1 to Z=Button 26

"KP@   Sent if the knob is active and the knob was turned.

Timekeeper™ key commands

The "KP commands can send commands to a timer or report timer changes to the host. Typically an upper-case key is a momentary command and a lower-case key is the same command in the form of a press-and-hold. Some remotes respond to the button or key press, while others respond to the release of the button or key.

Example:
"KPB command from the host to the timer is equivalent to momentarily pressing the Select button
The key function activates a function on key release.
"KPb command from the host to the timer is the equivalent of pressing and holding the Select button.

Sending the command "KPn is the same as sending the command "KAan except that only the addressed device receives the command.

Mode and select buttons.

- •   "KPA – Display Mode (count up/down)

- •   "KPa – Enter the beeper setup mode
- •   "KPB – Select button (in most cases, selects the knob function)
- •   "KPb – Enter the warning time setup mode.

Using buttons instead of a knob to increment or decrement values.

- •   "KPO – Same as turning the knob clockwise.
- •   "KPo – Same as turning the knob clockwise 10 steps.
- •   "KPP – Same as turning the knob counter-clockwise.
- •   "KPp – Same as turning the knob counter-clockwise 10 steps.

Recalling and Storing Settings. Models with 3 stored preset buttons.

- •   "KPE – Recall the settings from stored setting 3.
- •   "KPe – Store new settings into stored setting 3.
- •   "KPF – Recall the settings from stored setting 2.
- •   "KPf – Store new settings into stored setting 2.
- •   "KPG – Recall the settings from stored setting 1.
- •   "KPg – Store new settings into stored setting 1.

Time of day clock commands.

- •   "KPH – Time of day Clock mode
- •   "Kph – Enter the time of day clock setup mode.

Timer commands.

- •   "KPI – History button
- •   "KPi – (not defined)
- •   "KPJ – Manual RYG button. (special order)
- •   "KPj – (not defined)
- •   "KPK – Reset timer (in certain cases also yellow warning time)
- •   "KPk – Store power up default settings.
- •   "KPL – Start/Stop timer (in certain cases also yellow warning time)
- •   "KPl – Enter the setup mode.

Recalling and Storing Settings. Models with additional stored preset buttons.

- •   "KPC – Recall the settings from stored setting 4.
- •   "KPc – Store new settings into stored setting 4.
- •   "KPD – Recall the settings from stored setting 5.
- •   "KPd – Store new settings into stored setting 5.
- •   "KPM – Recall the settings from stored setting 6.
- •   "KPm – Store new settings into stored setting 6.
- •   "KPO – Recall the settings from stored setting 7.
- •   "KPo – Store new settings into stored setting 7.

Additional commands.

- "KPQ – Extend the count down timer by one minute.
- "KPR – (not defined)
- "KPS – (not defined)
- "KPT – (not defined)

Timer start, stop and reset commands.

- "KPU – Start timer (remote input IN1)
- "KPV – Stop timer (remote input IN2)
- "KPW – Reset timer (remote input IN3)

Commands to increment, decrement and reset an internal counter.

- "KPX – Tally Counter Up (remote input IN4)
- "KPY – Tally Counter Down (remote input IN2)
- "KPZ – Tally Counter Reset to zero (remote input IN3)
- "Kpz – Tally Counter Preset to preset value (remote input IN3)

Display Commands

The display commands are divided into several groups.
- DSP commands and "Laxxx commands send numeric or alpha-numeric data.
- RLY or +R commands set indicator lamps or activate relays.
- "S commands set LED status.

The DSP and "Lnxxxx commands

<LF>"La*xxx...xxx*<CR>   Send ASCII text string .

- where "*xxx...xxx*" is an ASCII text string of one or more characters.
- where "*a*" is the line number or display address where the text is to be placed. In most cases the display is only one line long, so the line number will be the unit address.

Command ranges are "L0*xxxx* through "L9*xxxx, several special characters including :;<=>?* and "LA*xxxx* through "LO*xxxx*. The typical address range is ASCII 30h to 4Fh in ASCII HEX notation. Some devices may have an extended address up to 7Fh.

DSP and "La*xxxx*

When the DSP or "Laxxxx command is received by a remote display and the number of characters in the command is greater than than the number of digits in the display, then not all the digits can be displayed. Depending on the remote display, the result is either left-justified or right- justified.
- Units that Left Justify - The first digits received are displayed.
  ie: DSP123456<CR><LF> Only 1234 are displayed on a 4 digit display.
- Units that Right Justify - The last digits received are displayed.
  ie: DSP123456<CR><LF> Only 3456 are displayed on a 4 digit display.

The Timekeeper™ sends out a serial data stream DSPxxyxx<CR>
     where xx = Digits to be displayed on the seven segment display.
         y = Colon or period between digits.

This is the address-specific form of the DSP command, used to put alphanumeric messages on displays.
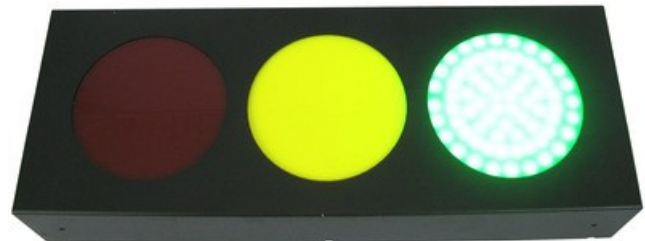An example using the display command (DSP) to show some characters on a display:
- <LF>DSPHello<CR> - will display "Hello" on the unit
- <LF>DSP0001<CR> - will display "0001" on the unit

Commands are case-sensitive.

TIP: Send an empty DSP or L command to clear displays:
- *<LF>DSP<CR>*
- *<LF>"L0<CR>*

The RLYnlsdd and "Rnlsdd commands

<LF>"R@*n*<CR>   Send beep, Indicator and Relay status.
<LF>RLY@*n*<CR>   Send beep, Indicator and Relay status.
<LF>"R@*nls*<CR>   Send beep, Indicator, Relay and LED status.

<LF>RLY@*nls*<CR>   Send beep, Indicator, Relay and LED status.
<LF>"R@*nlsdd*<CR>   Send beep, Indicator, Relay, LED and Dimmer status.
<LF>RLY@*nlsdd*<CR>   Send beep, Indicator, Relay, LED and Dimmer status.

The "R command is the address-specific form of the RLY command, used to set character and background color on displays.

The Timekeeper™ sends out a serial data stream RLY@nsldd<space> once per second.
- where the bit pattern for "*nls*" is: "01xxxxxx"
          All bit combinations will generate legal ASCII characters.
          If all bits "x" are zero, the equivalent ASCII character is "@".
          Example: If the red indicator is on, the bit code will be
          "01000001". The equivalent ASCII character is "A".

          ------> where: n = Red-yellow-green status.

          Bit 5 = Remote Display: 1=Right Justify, 0=Left Justify
          Bit 4 = Beep the speaker.
          Bit 3 = Timer Running.
          Bit 2 = Red Indicator.
          Bit 1 = Yellow Indicator.
          Bit 0 = Green Indicator.

This byte sends the status of the LEDs on either side of seven segment display
          ------> where: *y* = Status of digit_leds 0 to 5
          Bit 5   D1 Lower Left side
          Bit 4   D2 Lower Right side
          Bit 3   D3 Middle Left side
          Bit 2   D6 Middle Right Side
          Bit 1   D5 Upper Left Side
          Bit 0   D4 Upper Right Side

This byte sends the status of the clock LED.
          ------> where: *z* = Status of digit LEDs.
          Bit 1   LED above clock button. Clock LED is red. Indicates clock set mode.
          Bit 0   LED above clock button. Clock LED is green. Indicates clock mode.

The next two bytes send the display brightness.
          ------> where: *dd* = Display brightness 00 to 99.

The RLY0aPn and "R0aPn commands

<LF>"RaaPn<CR>   Trigger a relay with a momentary pulse for a specified duration.
<LF>RLYaaPn<CR>   Trigger a relay with a momentary pulse for a specified duration.

The "R command is the address-specific form of the RLY command, used to set character and background color on displays.
The "aa" represents the relay number 00 through 99.
The "n" represents the duration of the pulse where 0 is the shortest (½ second) and 9 (5 seconds) is the longest.

The "S command

"S*yz*<CR><LF>   Send the status of the LEDs.

This command sends the status of the LEDs on either side of seven segment display
          ------> where: *y* = Status of digit_LEDs 0 to 5
          Bit 5   D1 Lower Left side
          Bit 4   D2 Lower Right side
          Bit 3   D3 Middle Left side
          Bit 2   D6 Middle Right Side
          Bit 1   D5 Upper Left Side
          Bit 0   D4 Upper Right Side

This byte sends the status of the clock LED.
          ------> where: *z* = Status of digit LEDs and other LEDs
          Bit 3   Bit set if an address match was detected with the "A000 command.
          Bit 2   Bit set if an address match was detected with the "Laxxx or "KAan command.
          Bit 1   LED above clock button. Clock LED is red. Indicates clock set mode.
          Bit 0   LED above clock button. Clock LED is green. Indicates clock mode.

The TME and "T commands

TMEhhmmss or "TThhmmss
GMThhmmss or "TMhhmmss

- The local (displayed) time is always the result of the TMEhhmmss command. When the TMEhhmmss command is received, the new local time is set.
- When the GMThhmmss command is received, the time zone offset is added to the GMT time to determine the new local time. When either the time zone offset is changed or the GMT time is changed, the new local TME time is calculated from these values. The local display is set to this new time.

Using the same format as the time of day clock command ("TT*hhmmss*), the Timekeeper™ sends out a serial data stream TMEhhmmss<CR><LF>
    Abbreviated version: TMEhhmmss
where:
    TME = Header.
    hh = hours.
    mm = Minutes.
    ss = Seconds.
    <CR><LF> = Carriage return, Linefeed.

Using the same format as the time of day clock command ("TM*hhmmss*), the Timekeeper™ sends out a serial data stream GMThhmmss<CR><LF>
    Abbreviated version: GMThhmmss
where:
    GMT = Header.
    hh = hours.
    mm = Minutes.
    ss = Seconds.
    <CR><LF> = Carriage return, Linefeed.

"Tchhmmss commands
These commands include:
- "TT*hhmmss* Set the time of day clock to the local time.
- "TM*hhmmss* Set the time of day clock to GMT time. Account for the time zone offset.
- "TZ*hhmm* Set the positive time zone offset in hours and minutes. Range 0 to 12:59
- "TZ-*hhmm* Set the negative time zone offset in hours and minutes. Range 0 to -12:59
- "TU*hhmmss* Set the count up timer to a preset value.

- "TD*hhmmss* Set the count down timer to a preset value.
- "TW*mmss* Set the yellow steady warning value.
- "TG*mmss* Set the yellow blink warning value.
- "TC*nnnnnn* Set the counter starting value. Range 0 to 999999
- "TN*nnnn* Set the counter scale factor value. Range 0 to 9999
- "TS*a* Set the timer mode. Where "a" is 0 through 3.
- "TB*a* Set the beeper mode. Where "a" is 0 through 4.

Using the same format as the time of day clock command ("TT*hhmmss*), the Timekeeper™ sends out a serial data stream "TThhmmss<CR><LF>
    Abbreviated version "TThhmmss
where:
    "TT = Header.
    hh = hours.
    mm = Minutes.
    ss = Seconds.
    <CR><LF> = Carriage return, Linefeed.

TMEA - TMEM
Additional functions not covered by the standard "Kpn commands.
- TMEA or "TTA - Set the clock display to show hours, minutes and seconds in 24 hour mode. Displays hours and minutes on a 4 digit display.
- TMEB or "TTB - Set the clock display to show hours, minutes and seconds in 12 hour mode. Displays hours and minutes on a 4 digit display.
- TMEC or "TTC - Set the clock display to show hours, minutes and seconds in 24 hour mode. Displays minutes and seconds on a 4 digit display.
- TMED or "TTD – Synchronize the fractional seconds to the nearest $1/60^{th}$ of a second in 60Hz sync mode; to the nearest $1/50^{th}$ of a second in the 50Hz sync mode and to the nearest $1/100^{th}$ of a second when no sync is being received.
- TMEE or "TTE - Clear the default clock mode. The display goes dark when no commands are being received.
- TMEF or "TTF - Set the default clock mode. The displays shows the time of day clock when no commands are being received.
- TMEG or "TTG - Set the count up/down timer to the count up mode.
- TMEH or "TTH - Set the count up/down timer to the count down mode.
- TMEI or "TTI - Beep the beeper.
- TMEJ or "TTJ - Set the beeper mode to off.
- TMEK or "TTK - Set the beeper mode to on, beep at red warning time.

- • TMEL or "TTL - Set the beeper mode to on, beep at green, yellow, red warning times.
- • TMEM or "TTM - Set the clock display to show the day of the week.
- • TMEN or "TTN - Set the clock display to show the month and day.
- • TMEO or "TTO - Set the clock display to show the year, month and day on a scrolling display. If the numeric display has 8 digits or more, it does not scroll. If the alpha-numeric display has 12 digits or more, it does not scroll.
- •

The TMY and "TY commands

TMY20yymmddThhmmss
"TY20yymmddThhmmss

This command sends the time and date to the remote device. Except for the command header, this command is similar to the ISO 8601:1988 Date/Time standard used by many computer systems. The complete standard is not supported, only enough to communicate time and date throughout Alzatex equipment and any associated equipment.

- • The local (displayed) time is always the result of the TMY20yymmddThhmmss command. When the TMY20yymmddThhmmss command is received, the new local date and time is set.
- • A partial command is also accepted containing only the date portion of the command. For example, TMY2008 sets the year to 2008.

Using the same format as the time of day clock command ("TT*hhmmss*), the Timekeeper™ sends out a serial data stream TMY20yymmddThhmmss<CR><LF>

- • Full version TMY20yymmddThhmmss with date and time.
- • Full version TMY20yy-mm-ddThh:mm:ss with date and time and inserted dashes for the date and colons for the time.
- • But since dashes and colons are ignored, the version TMY20yy-m-m-ddTh:h:m:m:ss with date and time and dashes for the date and colons for the time inserted in strange places has the same meaning as if there were no dashes or colons at all.
- • Abbreviated version TMY20yymmdd with date only.
- • Abbreviated version TMY20yymm with year and month only.
- • Abbreviated version TMY20yy with year only.

- • Abbreviated version TMY20yymmddThh with date and hour only.
- • Abbreviated version TMY20yymmddThhmm with date, hour and minute only.

where:

TMY or "TY = Header.
20yy = Year 2000 through 2099
mm = Month 1 to 12
dd = Day of the month 1-31
T = Separator between date and time.
hh = hours.
mm = Minutes.
ss = Seconds.
<CR><LF> = Carriage return, Linefeed.

NOTE: Will only accept dates in the range 2000 to 2099. The century is required as in "2009". The year "09" will not be accepted.

As of this time, the date is stored, but not displayed on some models. The date and time will be echoed on the transmit port each time it is received.

Future:
The display alternates between displaying the time of day in HH:MM:SS (hours, minutes and seconds) with one of the following displays.

- • Displays the day of the week on the alpha-numeric displays in the form "MON" or as a scrolling "MONDAY".
- • Displays the day of the week on the numeric displays in the form "-2-".
- • Displays the month and the day of the month on the alpha-numeric displays in the form "JAN 29".
- • Displays the month and the day of the month on the numeric displays in the form "01 29".
- • Displays the year, month and the day of the month on the alpha-numeric displays as a scrolling message in the form "2008-JAN-29".
- • Displays the year, month and the day of the month on the numeric displays as a scrolling message in the form "2008-01-29".

Extended addressable commands

Specific commands may be addressed with an extended address for larger display systems involving many displays and/or timers. The following commands can be addressed using the extended address commands.

- The "C commands.
- The "K commands.
- The "R commands.
- The "S commands.
- The "T commands.

- Configure each of the timers/displays to the desired address 000 to FFF
- Send the command "A000 to "AFFF that matches the desired display.
- Only the addressed display/timer will respond to the above commands.

NOTE: All displays/timers will always respond to the broadcast commands. A good way to test to see whether the communication channel is functional is to send a broadcast command and observe the response.

Revision Notes

This manual attempts to cover all of the programmable features of the Alzatex **TimeKeeper™** timers and displays. Features are added regularly. This manual may not describe all features completely. If you need a function that is not described in this manual, call the Alzatex support line for assistance.