

**microframe<sup>®</sup>**

**SERIES 6300**

**INSTALLATION & SPECIFICATION GUIDE**

**ITEM NO: A6300-7010**

**REVISION DATE: 1/07**



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**A6300-7010**



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## Limited Warranty Agreement

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Your Microframe System is warranted against failure due to defects in workmanship or material for a period of one (1) year from the date of purchase. Microframe Corporation will repair or replace any defective unit. Obvious abuse or mishandling of the unit is NOT covered by this warranty.

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## Merchandise Return

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If your Unit does not work satisfactorily, please give us a call. We may be able to clear up the problem by phone. If it becomes necessary to return your Unit to the factory, please observe the following:

1. Place Unit in a sturdy box with sufficient packing material.
2. If requested, include the AC power adapter. It is not necessary to return the cable and connectors unless they are the problem.
3. Return the system insured and prepaid. Microframe is not responsible for shipping damages and losses on returned Units.

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## Warranty Service

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For warranty service, please contact Microframe toll-free at (800) 635-3811. A technician will gladly assist you.

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## Assistance

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For any product assistance or maintenance help, contact Microframe by either calling 1-800-635-3811 or e-mailing us at: [support@microframecorp.com](mailto:support@microframecorp.com).

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## Safety

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Do not install substitute parts or perform any modification to the product without first contacting Microframe.

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## Warning

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All power adapters, line cords, and electrical equipment should be kept out of the reach of children and away from water. (If you are installing cable in an air plenum area, such as a drop ceiling used for air return, you must use plenum-rated cable. The cable supplied from Microframe is rated CL2 and is approved for indoor installation everywhere except plenum areas.)

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## Life Support Policy

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**Microframe's products are not authorized for use as components in life support devices or systems without the express written approval of the president of Microframe Corporation.** As used herein:

1. Life support devices or systems are defined as systems which support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user or any one depending on the system.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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## Disclaimer

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We constantly strive to improve our products. Specifications are subject to change without notice.

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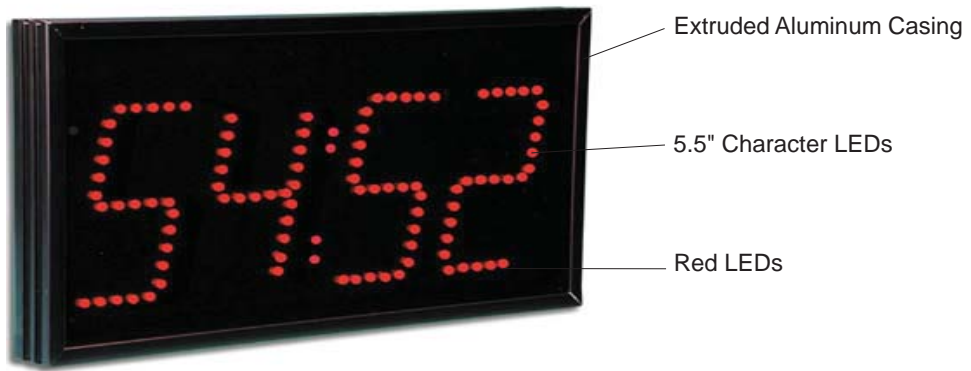
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# Parts and Features

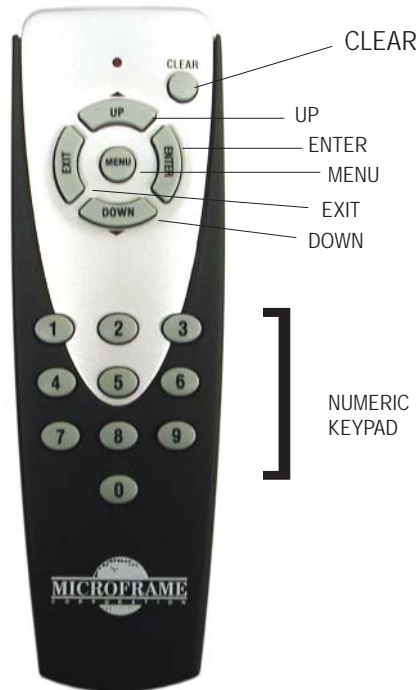
## Parts List:

- 1. Display (A)
- 2. Remote (B)
- 3. 100' Wire (not pictured)
- 4. Brass Buttons (not pictured)
- 5. Power Adapter (not pictured)
- 6. Power Adapter Wire (not pictured)
- 7. Manual (not pictured)
- 8. Screwdriver (not pictured)

(A)



(B)

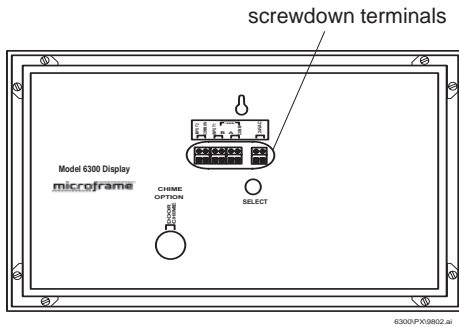


# Getting Started

## 6300 Display Installation Procedures

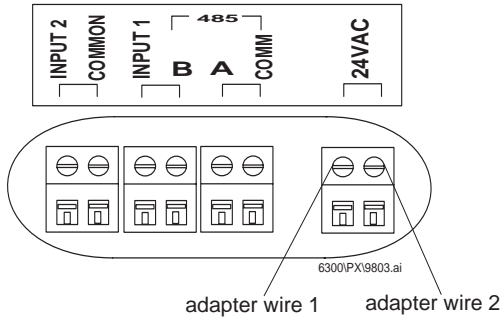
### Step 1: Screwdown Connectors

All wire connections to Microframe displays are made with screwdown terminals located on the back of the display.

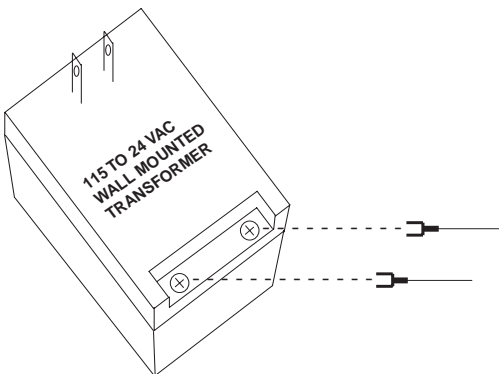


### Step 2: Connecting Power

To connect power to the "24VAC terminal," first loosen the terminal's screw. Then push the stripped end of the power adapter wire into the opening in the side of the terminal. Tighten the screw onto the wire. Check that the wire is secure in the terminal by lightly pulling on it.



To connect the power adapter wire to the wall mounted transformer, first loosen the screwdown terminals. Next, slide one spade connector under each terminal. Lastly, tighten each screw onto the spade connectors.

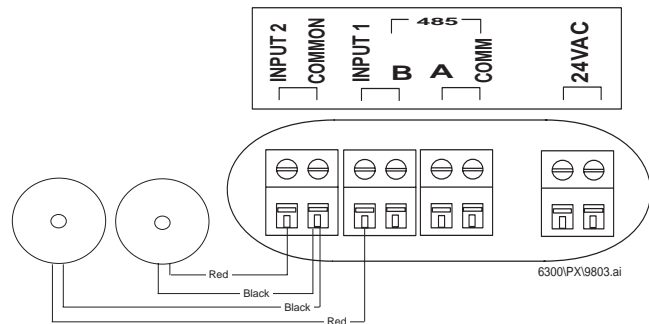


### Step 3: Push Buttons (Optional Step)

While this product can be fully controlled via the remote, there are applications where it is desirable to use push button inputs or other wired input triggers.

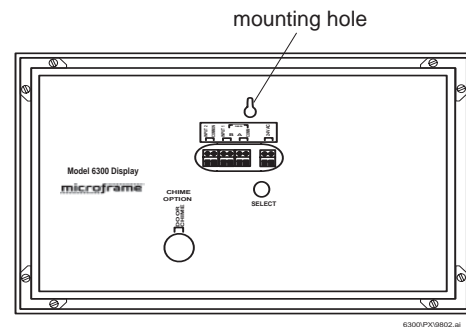
**\*\*\*Please Note\*\*\*** Only connect the push button wires to the screwdown terminals when the power to the display is "OFF."

From the provided wire, cut to length two pieces of wire, one for each button. For each wire, connect one end to a brass push button. Place the two remaining black conductors (one from each wire) under the terminal labeled "common." Put the red conductor from one wire under the "Input 1" terminal. Put the remaining red wire from the other wire under the input 2 terminal.



### Step 4: Hanging Display

The 6300 Series displays are manufactured to hang on the wall like a picture. For aesthetic purposes, you may wish to run the wiring in a wall or raceway.



### Step 5: Powering the Display

Plug the power adapter into an AC outlet. The display LEDs should now be illuminated and show numeric characters. The default factory setting for the display is clock mode. The system is now operational.

**\*\*\*Please Note\*\*\*** To avoid damaging this product, please disconnect the power before performing any service. To ensure proper disconnection, the power adapter must be unplugged from its AC outlet.

# Using Your Remote or Push Buttons

## 2.1 REMOTE CONTROL

### Clear

- resets to zero or reload time

### Up/Down

- start/stop the timer up/down
- scroll through programming options

### Enter

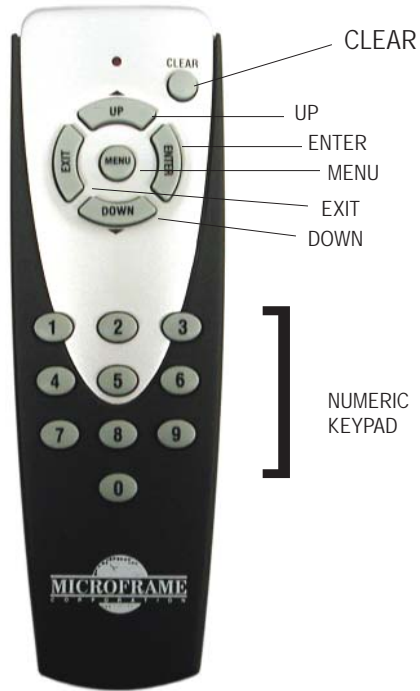
- accept/enter an entry
- set timer followed by enter

### Exit

- cancel an entry

### Menu

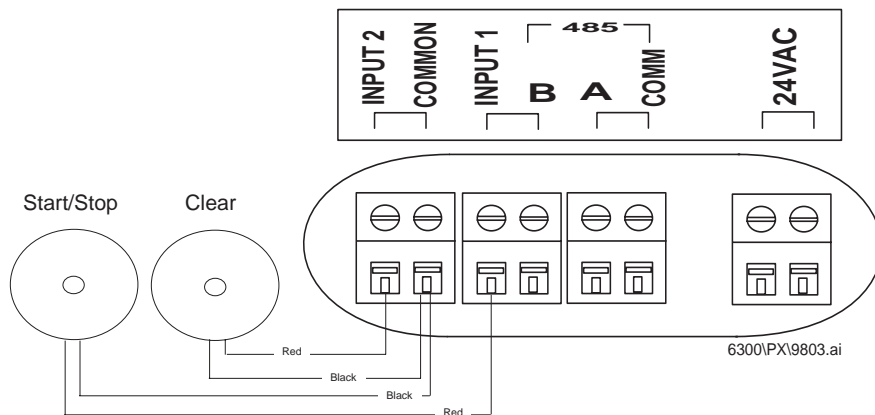
- puts the display in programming mode.



Although the system works with most Phillips (RC5) remotes, Microframe remotes are specifically designed to work with the 6300 Displays.

## 2.2 PUSH BUTTONS (Default Settings)

Press input 1 button to start/stop the display.  
 Press input 2 button to stop and reset the display to 0.  
 Count direction is determined by the programmed mode.



## Quick Start Display Settings

### Set Display to Clock Mode



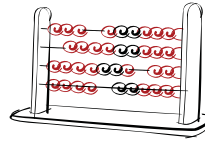
Clock Mode shows the current time of day.

#### Remote Control

Press [MENU] "160" [ENTER]. The display is now in wall clock mode.

- Type number followed by enter to set time

### Set Display to Counter Mode



Counter mode counts the number of contact closures occurring at INPUT 1.

#### Remote Control

Press [MENU] "167" [ENTER]. The display is now in unit counter mode.

- Type number followed by enter to set count
- Up to increment
- Down to decrement

### Set Display to Count Up/Down Timer Mode



Count Up/Down Timer Modes allow the unit to time an event to a resolution of 1/100th of a second.

#### Remote Control

Count Up Timer: Press [MENU] "211" [ENTER].  
Count Down Timer: Press [MENU] "212" [ENTER].

- Type number followed by enter to set time or count
- Up/down to start/stop timer

### Set Display to Takt Time Mode



Takt Time Mode increments a running unit count at a specific time interval. It is generally used on production lines to set a target pace.

#### Remote Control

Press [MENU] "168" [ENTER]. This will set up the unit with a default takt interval of 15 seconds.

- Type number followed by enter to set count
- Down to start/stop takt time

## Clock Detailed Instructions

Clock Mode shows the current time of day.

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### Set Display to Clock Mode

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#### Remote Control

Press [MENU] "160" [ENTER]. The display is now in wall clock mode.

---

### Operation

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#### Setting the Time

##### Remote Control

Type the current time and press [ENTER]. This display does not have AM/PM indicators, so time must be entered in military time (ie. 3:00 pm = 15:00)

##### Push buttons. (optional)

[Input 1] = set the hour

[Input 2] = set the minute (zeros seconds)

#### Setting the Date (optional)

##### Remote Control

- Press [MENU] 12 [Enter]. Type in the new date in the format MM/DD/YY, then press [ENTER]

---

### Options

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The following options apply to this mode.

See "Programming Definitions" for more information.

- 1.1. Current Time
- 1.2. Current Date
- 1.4. Chime Time 1
- 1.5. Chime Time 2
- 2.2. Clock Format
- 2.3. Display Format
  - 2.3.0. As time
  - 2.3.2. As date
- 3.1. Internal Chime
- 3.2. External Chime
- 3.3. Chime Volume
- 4.1. Smallest Time Unit Displayed (STU)
- 4.2. Largest Time Unit Displayed (LTU)
- 4.3. Leading Zero Suppression
- 4.4. Colon Flash Rate
- 6.7. Remote Lockout

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### Slave Display Options

---

See the "Slave Displays" section for more information about multiple-displays.

Set slave mode: [MENU] "213" [ENTER].

Set display format

As time: [MENU] "230" [ENTER].

As date: [MENU] "232" [ENTER].

(only when master also showing date)

Set time units displayed

STU seconds: [MENU] "411" [ENTER].

LTU hours: [MENU] "423" [ENTER].

# Count Up/Down Timer Detailed Instructions

Count Up/Down Timer Modes allow the unit to time an event to a resolution of 1/100th of a second.

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## Set Display to Timer Mode

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### Remote Control

Count Up Timer: Press [MENU] "211" [ENTER].  
 Count Down Timer: Press [MENU] "212" [ENTER].

---

## Operation

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### Controlling the Timer

#### Remote Control

##### Count Up Mode

[Up] = Start/stop count up  
 [Down] = Temporarily countdown  
 [Clear] = Reset to '0'

##### Countdown Mode

[Down] = Start/stop countdown  
 [Up] = Temporarily count up  
 [Clear] = Reload default time

#### Push Buttons

To change the default function of the push buttons, see options "6.1" and "6.2" in the Options Definitions.

##### Count Up Mode

[Input 1] = Start/stop count up  
 [Input 2] = Zero count

##### Countdown Mode

[Input 1] = Start/stop countdown  
 [Input 2] = Reload default time

### Setting the Time

#### Remote Control

Type in the new time and press [ENTER]. If days are not desired, press [ENTER] again. If days are desired, type in the days and press [ENTER]. If the display is running, it will continue to count up or down.

### Setting the Reload Time

#### Remote Control

Press [MENU] "13" [ENTER]. Type in the desired time and press [ENTER].

### Setting the Chime Times

The display can chime at two chime times, denoted as chime times 1 & 2. In addition, the display can chime on zero. If the display format is set to "Interval," then this number entry will be by the Interval Unit "2.4" instead of time format.

#### Remote Control

##### Chime 1

Press [MENU] 14 [ENTER]. Type in the desired chime time. You may optionally specify a specific day to chime on, or leave it blank to chime every day. Press [ENTER] to accept changes.

##### Chime 2

Press [MENU] 15 [ENTER]. Follow the same steps as for chime 1.

### Display Format

This may be changed freely without disrupting the running time (unless the displayed count rolls over).

#### As Time

Press [MENU] "230" [ENTER].

#### As Interval

Press [MENU] "231" [ENTER].

Press [MENU] "24x" [ENTER], where 'x' is the interval unit selected.

Note: In countdown mode, fractional time is rounded up to the next interval unit, i.e., 1.5 minutes shows as 2 minutes.

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## Options

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The following options apply to this mode.

See "Programming Definitions" for more information.

- 1.3. Reload Time/Interval
- 1.4. Chime 1 Time/Interval
- 1.5. Chime 2 Time/Interval
- 2.3. Display Format
  - 2.3.0. As time
  - 2.3.1. As Specified Interval
- 2.4. Interval Unit
- 3.1. Internal Chime
- 3.2. External Chime
- 3.3. Chime Volume
- 4.1. Smallest Time Unit Displayed (STU)
- 4.2. Largest Time Unit Displayed (LTU)
- 4.3. Leading Zero Suppression
- 4.4. Colon Flash Rate
- 5.1. On Rollover
- 5.2. On Zero
- 5.3. Chime on Zero
- 6.1. Input 1 Action
- 6.2. Input 2 Action
- 6.3. Pushbutton/volt
- 6.4. N.O./N.C.
- 6.5. Button Logic
- 6.6. Button Debounce
- 6.7. Remote Lockout

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## Slave Display Options

---

See the "Slave Displays" section for more information about multiple-displays.

Set slave mode: [MENU] "213" [ENTER].

Set display format

As time: [MENU] "230" [ENTER].

As interval: [MENU] "231" [ENTER].

Set interval unit displayed

Press [MENU] "24x" [ENTER], where 'x' is the interval unit selected.

Set time units displayed

STU seconds: [MENU] "411" [ENTER].

## Counter Detailed Instructions

Unit counter counts the number of units.

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### Set Display to Unit Counter Mode

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#### Remote Control

Press [MENU] "167" [ENTER]. The display is now in unit counter mode.

---

### Operation

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#### Remote Control

- [UP] = Increment count by one
- [Down] = Decrement count by one
- [Clear] = Zero count

#### Pushbuttons

To change the default function of the push buttons, see options "6.1" and "6.2" in the Options Definitions.

- [Input 1] = Increment count by one
- [Input 2] = Decrement count by one

#### Setting a new count

Remote Control

Type in the new number and press [ENTER].

#### Fast Inputs

For events faster than 10 items per second, use option "6.6.1."

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### Options

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The following options apply to this mode.

See "Programming Definitions" for more information.

- 2.3. Display Format
  - 2.3.3. As count
- 6.1. Input 1 Action
- 6.2. Input 2 Action
- 6.3. Pushbutton/volt
- 6.4. Normally open./Normally closed
- 6.5. Button Logic
- 6.6. Button Debounce
- 6.7. Remote Lockout

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### Slave Display Options

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See the "Slave Displays" section for more information about multiple-displays.

Set slave mode: [MENU] "213" [ENTER].

Set display format

As count: [MENU] "233" [ENTER].

# TAKT Time Detailed Instructions

Takt Time Mode increments a running unit count at a specific time interval. It is generally used on production lines to set a target pace.

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## Set Display to Takt Time Mode

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### Remote Control

Press [MENU] "168" [ENTER]. This will set up the unit with a default takt interval of 15 seconds.

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## Set Takt Interval

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### Remote Control

Press [MENU] "13" [ENTER]. Type in the takt time interval in "HH:MM:SS" format. For 10 seconds, type "10" [ENTER]. For 2 hours, type "20000" [ENTER].

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## Operation

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### Controlling the Timer

#### Remote Control

- [Down] = Start/stop takt time
- [UP] = N/A
- [Clear] = Reset internal timer and zero takt count

#### Pushbuttons

To change the default function of the push buttons, see options "6.1" and "6.2" in the Options Definitions.

- [Input 1] = Start/stop takt timer
- [Input 2] = Reset internal timer and zero takt count

### Setting a New Takt Count

#### Remote Control

Type in the new value and press [ENTER]. If the display is running, it will continue to increment.

### Changing the Takt Interval

The takt interval may be changed as noted previously. The last takt interval may need to complete before the new one is loaded. To apply the new takt interval immediately, reset the takt timer.

### Battery Backup

During a power outage the current Takt number will be preserved. The Takt timer will not continue running, with the exception that it will complete the current Takt interval. Thus the Takt time will only be behind if a Takt interval occurs while the unit is off.

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## Options

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The following options apply to this mode.

See "Programming Definitions" for more information.

- 1.3. Takt Interval (Reload Time)
- 2.3. Display Format
  - 2.3.3. As count
- 6.1. Input 1 Action
- 6.2. Input 2 Action
- 6.3. Pushbutton/volt
- 6.4. N.O./N.C.
- 6.5. Button Logic
- 6.6. Button Debounce
- 6.7. Remote Lockout

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## Slave Display Options

---

See the "Slave Displays" section for more information about multiple-displays.

Set slave mode: [MENU] "213" [ENTER].

Set display format

As count: [MENU] "233" [ENTER].

# Slave Display Options

## Introduction

Set slave mode: [MENU] "213" [ENTER].

## Overview

The 6300 Series displays allow multiple displays to work together. The primary display is referred to as the "master" display. Other displays controlled by the master are referred to as "slave" displays. All of the operating modes for the 6300 Series support slave displays.

Slave displays get their information from the master via 485 communications (Terminals A, B, COMM). Connect slave displays to the master with 3 or 5-conductor wire. The 5-conductor wire allows three wires for communications and two wires for power to slave displays. Five-conductor wire is suitable for short power runs. For longer runs, power the slave displays separately. Power runs to multiple displays are limited by the distance required and the number of displays powered. Communication runs can be up to 3000ft. long.

While slaves show the same information as the master, they can reformat the data to appear differently than the master. For instance, for a count-up timer, three 4-digit displays could be used to display everything from days down to hundredths of seconds: {0123} days, {21:53} hours/minutes, {47.89} seconds/hseconds.

As another example, a time of {2:00} on a master could be displayed on a slave as a count of {120} seconds.

## Setup

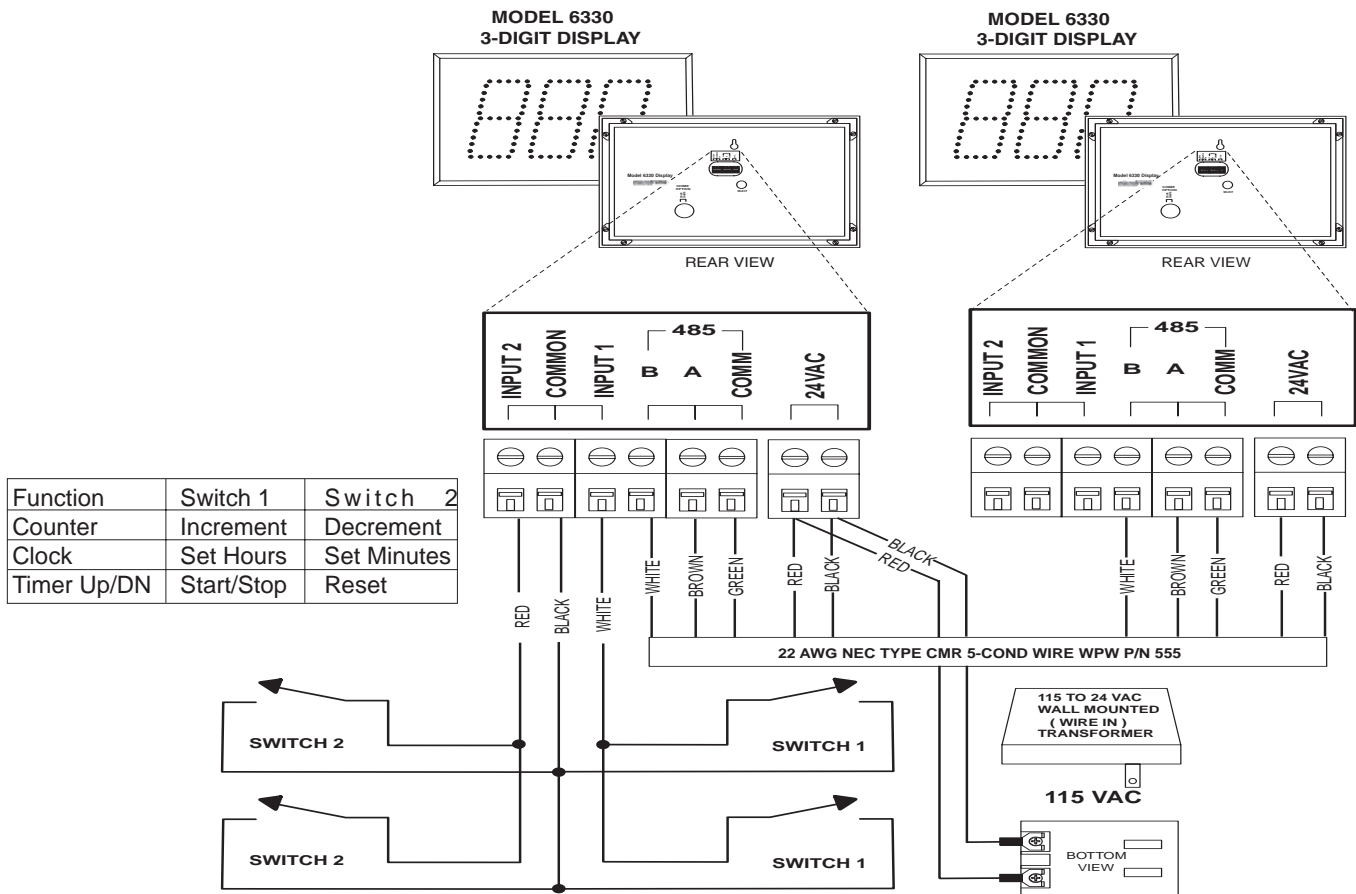
Remote Control

- Set slave mode: [MENU] "213" [ENTER].

## Options

The following options apply to this mode. See "Programming Definitions" for more information.

- 2.3. Display Format
  - 2.3.0. As time
  - 2.3.1. As specified interval
  - 2.3.2. As date
  - 2.3.3. As count (for unit counter and takt timer modes)
- 2.4. Interval Unit (if 2.3.1 set)
- 3.1. Internal Chime
- 3.2. External Chime
- 3.3. Chime Volume
- 4.1. Smallest Time Unit Displayed (STU) (for 2.3.0 or 2.3.1)
- 4.2. Largest Time Unit Displayed (LTU) (for 2.3.0 or 2.3.1)
- 4.3. Leading Zero Suppression
- 4.4. Colon Flash Rate
- 6.7. Remote Lockout



# Setting the Programmable Options

## Programmable Options Overview

The 6300 has been designed to allow the user to control almost every aspect of the displays behavior. In order to change the behavior of the display you change the value of a specific parameter in the display's non-volatile memory. Any changes made to the display's memory will be stored even when the display does not have power.

A map of the configurable memory options is shown in the options table summary on the following page. A detailed description of each value can be found in the "Options Definitions" section.

The memory map has been broken into six main sections.

### Section 1

**Sections 1.1 - 1.5** store multiple number values representing the following: current time, current date, reload time, chime time 1, and chime time 2.

To change values in these areas simply press [Menu] followed by the area number (i.e. [Menu] "12" to change the date). Then press [Enter]. Next, type in up to six digits of the value representing the time or date followed by enter (i.e., if setting time to 3:00, type "300" [Enter]).

**Section 1.6** is a special "Quick Set section." It is actually not a memory area at all but a function that sets all other memory areas to a factory "default" condition.

For instance if you want to set all memory areas to what Microframe considers normal for a wall clock, type [Menu] "160" [Enter]. This will reset all of the necessary memory locations (sections 2 through 6 ) to "default" settings for a given mode.

### Sections 2 - 6

**Sections 2-6** are straightforward single number memory locations. For instance, area 2.1 can have a value of 0 to 5, whereas area 2.2 can have a value of 0 to 1. See the options table summary for allowable values for each area. Use these areas to alter the details of how the display behaves.

### Examples of Changing Values in Areas 2 - 6

To make the internal chime louder increase the value in area 3.3. Press Menu, 3, 3, 9 (for highest volume) enter.

To make the display chime momentarily when it reaches zero in countdown mode, change area 5.3 to a value of 1. Press [Menu] "531" [Enter].

# Options Table Summary

(Options in **bold** are the default settings.)

- 1 Setup
  - 1.1 Set Current Time
  - 1.2 Set Current Date
  - 1.3 Set Reload Time/Interval
  - 1.4 Set Chime 1 Time/Interval
  - 1.5 Set Chime 2 Time/Interval
  - 1.6 Quicksets
    - 1.6.0 **Wall Clock**
    - 1.6.1 Days Accident Free
    - 1.6.2 Days Count Down
    - 1.6.3 Countdown Time to New Year's Day
    - 1.6.4 Count Up Time from zero
    - 1.6.5 Countdown Time from 1 hour
    - 1.6.6 Countdown Interval - 90 minutes
    - 1.6.7 Unit Counter
    - 1.6.8 Takt Time - 15-Second Interval
    - 1.6.9 Reset Onboard Clock
- 2 Behavior
  - 2.1 Operation
    - 2.1.0 **Wall Clock**
    - 2.1.1 Count Up
    - 2.1.2 Countdown
    - 2.1.3 Slave Display
    - 2.1.4 Unit Counter
    - 2.1.5 Takt Time
  - 2.2 Clock Format
    - 2.2.0 **12 hr**
    - 2.2.1 24 hr
  - 2.3 Display Format
    - 2.3.0 **As time**
    - 2.3.1 As interval (see 2.4)
    - 2.3.2 As date
    - 2.3.3 As count (for 2.1.4 and 2.1.5)
  - 2.4 Interval Unit
    - 2.4.0 Hundredths of a second
    - 2.4.1 **Seconds**
    - 2.4.2 Minutes
    - 2.4.3 Hours
    - 2.4.4 Days
- 3 Chime
  - 3.1 Internal Chime Duration
    - 3.1.0 **Off**
    - 3.1.1 Single Chime
    - 3.1.2 Double Chime
  - 3.2 External Chime Duration
    - 3.2.0 Chime off
    - 3.2.1 0.1 seconds
    - 3.2.2 0.2 seconds
    - 3.2.3 **0.3 seconds**
    - 3.2.4 0.5 seconds
    - 3.2.5 1.0 seconds
    - 3.2.6 3.0 seconds
    - 3.2.7 5.0 seconds
    - 3.2.8 10.0 seconds
    - 3.2.9 20.0 seconds
- 3.3 Chime Volume [Internal Chime]
  - 3.3.0 **Off**
  - 3.3.1 1
  - 3.3.2 2
  - 3.3.3 3
  - 3.3.4 4
  - 3.3.5 5
  - 3.3.6 6
  - 3.3.7 7
  - 3.3.8 8
  - 3.3.9 9
- 4 Display
  - 4.1 STU Range Lock
    - 4.1.0 Hundredths of seconds
    - 4.1.1 **Seconds**
    - 4.1.2 Minutes
    - 4.1.3 Hours
    - 4.1.4 Days (00-99)
    - 4.1.5 Days (0100-9999)
  - 4.2 LTU Range Lock
    - 4.2.0 Hundredths of seconds
    - 4.2.1 Seconds
    - 4.2.2 Minutes
    - 4.2.3 Hours
    - 4.2.4 Days (00-99)
    - 4.2.5 **Days (0100-9999)**
  - 4.3 Leading Zeroes
    - 4.3.0 Show
    - 4.3.1 **Hide**
  - 4.4 Colon Flash Rate
    - 4.4.0 Off
    - 4.4.1 Alternate every second (1s)
    - 4.4.2 **Flash every second (0.5s)**
    - 4.4.3 Flash twice per second (0.25)
    - 4.4.4 On (when running)
  - 4.5 Size (**factory set**)
    - 4.5.2 2 digit display
    - 4.5.3 3 digit display
    - 4.5.4 4 digit display
    - 4.5.6 6 digit display
- 5 Events
  - 5.1 On Rollover (Count Up)
    - 5.1.0 **Stop**
    - 5.1.1 Continue
  - 5.2 On Zero
    - 5.2.0 **Stop**
    - 5.2.1 Reload and stop
    - 5.2.2 Reload and continue
    - 5.2.3 Count up
    - 5.2.4 Flash zero
  - 5.3 Chime on zero (count down)
    - 5.3.0 **OFF**
    - 5.3.1 **Momentary**
    - 5.3.2 Continuous

## Options Table Summary (continued)

(Options in **bold** are the default settings.)

- 6 Inputs
  - 6.1 Input 1 Action
    - 6.1.1 Stop
    - 6.1.2 Start
    - 6.1.3 **Start/Stop**
    - 6.1.4 Reset
    - 6.1.5 Stop + Reset
    - 6.1.6 Reset + Start
    - 6.1.7 Start/Stop/Reset
    - 6.1.8 One-button mode
  - 6.2 Input 2 Action
    - 6.2.1 Stop
    - 6.2.2 Start
    - 6.2.3 Start/Stop
    - 6.2.4 Reset
    - 6.2.5 **Stop + Reset**
    - 6.2.6 Reset + Start
    - 6.2.7 Start/Stop/Reset
  - 6.3 Pushbutton / Voltage
    - 6.3.0 **Pushbutton, no external voltage**
    - 6.3.1 External 5V logic signal
  - 6.4 N.O./N.C.
    - 6.4.0 **Normally open or no voltage**
    - 6.4.1 Normally closed or 5V
  - 6.5 Button State
    - 6.5.0 **Momentary**
    - 6.5.1 Change of State (C.S.)
  - 6.6 Button Debounce
    - 6.6.0 None (not recommended)
    - 6.6.1 Fast
    - 6.6.2 **Normal**
  - 6.7 IR Lockout
    - 6.7.0 Ignore remote
    - 6.7.1 **Respond to remote**

# Options Definitions

This section gives additional information about each option introduced in the "Options Table."

## Setup

### 1.1 Set Current Time

Sets the internal clock's time. Since this display does not have AM/PM indicators, time must be entered in military format, i.e., 3 pm = 15:00.

Prompt

Wall Clock (2.1.0)

HH:MM [ENTER] -or-

HH:MM:SS [ENTER]

Any other (2.1.x)

HH:MM:SS [ENTER]

HH=hours, MM=minutes, SS=seconds

### 1.2 Set Current Date

Sets the internal clock's date.

Prompt

MM / DD / YY

MM=month, DD=day, YY=year

The RTC and firmware in this product will operate in the year range 2000-2099 (01/01/00-12/31/99).

### 1.3 Set Reload Time / Interval

Sets the countdown timer's reload time or interval. Any time the countdown timer is reset, it will go back to this value.

Prompt

Time format (2.3.0)

HH:MM:SS [ENTER], DDDD [ENTER]

Interval format (2.3.1)

NNNNNN [ENTER]

HH=hours, MM=minutes, SS=seconds, DDDD=days

N=quantity of the set interval unit

This option also serves as the TAKT time interval.

Prompt

TAKT time (2.1.5)

HH:MM:SS [ENTER], DDDD [ENTER]

HH=hours, MM=minutes, SS=seconds, DDDD=days

If you wish to set hundredths of seconds for the reload time, first change the display mode to interval (2.3.1) and the interval unit to hundredths of seconds (2.4.0).

### 1.4 Set Chime 1 Time / Interval

Sets a specific chime time/interval for wall clock and timer modes. When the current time/interval matches this value, the internal and external chimes will be activated (if enabled).

Prompt

Time format (2.3.0)

HH:MM:SS [ENTER], DDDD [ENTER]

Interval format (2.3.1)

NNNNNN [ENTER]

HH=hours, MM=minutes, SS=seconds, DDDD=days

N=quantity of the set interval unit

### 1.5 Set Chime 2 Time / Interval

A second chime time/interval. Entry is the same as 1.4.

### 1.6 Quicksets

These allow quick access to commonly used settings. For proper operation, options "1.6.1," "1.6.2," and "1.6.3" require the date and time to be set before selecting them.

#### 1.6.0 Wall Clock

Shows the current time of day

Sets all other options needed to make sure time is displayed as expected: HH:MM:SS or HH:MM.

#### 1.6.1 Days Accident Free - Count Up

Counts up the days that have been accident-free.

First, set the date and time. Next, select this option. You will be prompted for the current day, press [ENTER]. The day count will advance at midnight automatically.

#### 1.6.2 Days Countdown

Counts down by days.

First, set the date and time. Next, select this option. You will be prompted for the current day, press [ENTER]. The day count will decrement at midnight automatically.

#### 1.6.3 Countdown Time to New Year's Day

Counts down the time until New Year's Day.

First, set the date and time. *Important: Do not use daylight savings when setting the time, or the count will be off by 1 hour.* Next, select this option. The display will begin counting down the time remaining until the New Year in the format "DDDD.HH:MM:SS". Note that slave displays can be used to show the portion of the time that does not fit on the master display.

#### 1.6.4 Count Up Time from 0:00

Sets up a timer to start counting up from zero.

#### 1.6.5 Countdown Time 1 hour

Sets up a timer to start counting down from 1 hour.

#### 1.6.6 Countdown Interval 90 minutes

Sets up a timer to countdown 90 by minute intervals

#### 1.6.7 Unit Counter

Sets up a unit counter so that input pulses can be counted from Input 1 or Input 2.

#### 1.6.8 Takt Timer - 15-second interval

Sets up a Takt timer such that every 15 seconds the display will increment by 1 unit. Press the [DOWN] button to start the timer.

#### 1.6.9 Reset Onboard Clock

The internal RTC can be reset. Resets the date and time. Note: This will probably impact the current display's operation.

## Options Definitions (continued)

### Behavior

#### 2.1 Operation

Determines the fundamental behavior of the unit.

- 2.1.0 Wall Clock
  - Shows the current time or date
- 2.1.1 Count Up
  - Counts up by time or interval
- 2.1.2 Countdown
  - Counts down by time or interval
- 2.1.3 Slave Display
  - Shows information from a master display
- 2.1.4 Unit Counter
  - Counts parts or events
- 2.1.5 Takt Timer
  - Keeps track of Takt Time

#### 2.2 Clock Format

Allows the clock to show time in standard 12-hour format or in 24-hour military time.

#### 2.3 Display Format

Determines how the unit displays information to the user. This may be changed freely without disrupting the running time (see caution below about interval units). Display formats do not apply to all modes.

- 2.3.0 As time
  - Show in standard time format
  - DDDD.HH:MM:SS.hh
  - Max: 9999.23:59:59.99
  - Applies to: 2.1.0, 2.1.1, 2.1.2, 2.1.3
- 2.3.1 As specified interval
  - Show by the interval specified in 2.4
  - Max: 65535 days, 999999 all other units
  - Applies to: 2.1.1, 2.1.2, 2.1.3
- 2.3.2 As date
  - Show the date
  - Applies to: 2.1.0, 2.1.3
- 2.3.3 As count
  - Show the current unit count
  - Applies to: 2.1.3, 2.1.4, 2.1.5

**Note:** Slave displays will only show the date if the master is also showing the date.

#### 2.4 Interval Unit

Determines by what unit time is displayed. Option 2.3.1 must be set for this option to take effect.

**Caution:** Changing to a smaller interval unit, such that the resulting number is too large to display, will cause a display overflow. If the display is stopped or counting down, you will see bars across the top of the screen. If the display is counting up, the On Rollover event will be triggered. Triggering this event modifies your time! With this in mind, you are free to change this setting even while the display is running. For safety, set this option to days before changing the display format to interval.

### Chime

**Both the internal chime and external chime driver activate at the same time.**

#### 3.1 Internal Chime Duration

Sets whether the internal chime sounds: none, once, or twice. The display comes standard with the internal chime.

#### 3.2 External Chime Duration

Sets the duration of the external chime. This is actually an external "chime driver" circuit that may be purchased at the time of order. For AC loads (such as a doorbell), the triac option is recommended. For DC loads, the relay option is recommended.

#### 3.3 Chime Volume [Internal Chime]

Sets the volume of the internal chime.

### Display

#### 4.1 STU Range Lock

Sets the smallest time unit that will be shown by the display. i.e. To have a 4-digit display show hours and minutes (never seconds), set this value to "2."

#### 4.2 LTU Range Lock

Sets the largest time unit that will be shown by the display. i.e. To have a 4-digit display show hours and minutes (never seconds), set this value to "3."

#### 4.3 Leading Zeros

Shows or hides the leading zeros for timers. Unit Counter and Takt time modes always suppress the leading zeroes.

#### 4.4 Colon Flash Rate

Determines how fast the colons flash while the timer is running.

#### 4.5 Size

This is the display's factory set number of digits. A four-digit display is indicated by a "4". This option lets the display know how much information it can show on the screen. Note: some input prompts can only display all of the information on a 6-digit display. Smaller displays will show only the right hand portion of the prompt.

### Events

#### 5.1 On Rollover

Determines what to do when the count up time/interval (2.1.1) overflows.

Time rollover point

Occurs when the LTU (4.2) time unit overflows

Interval rollover point

Days: 65535

Hours, Minutes, Seconds, Hseconds: 999999

5.1.0 Stop - Displays the last valid time or interval before the rollover

5.1.1 Continue - Resets to zero and continues counting up

#### 5.2 On Zero

Determines what to do when the countdown time/interval (2.1.2) reaches zero.

## Options Definitions (continued)

- 5.2.0 Stop - Stays at zero
- 5.2.1 Reload & Stop - Load the default countdown time
- 5.2.2 Reload & Continue - Load the default countdown time and continue counting down
- 5.2.3 Count Up - Start counting up from zero
- 5.2.4 Flash Zero - flashes zero until a button is pressed

### 5.3 Chime on Zero

Determines if the chime should sound when the count down time/interval (2.1.2) reaches zero.

- 5.3.0 Off - does not chime
- 5.3.1 Momentary - momentarily activates the internal and external chimes
- 5.3.2 Continuous - activates internal and external chimes. Continues to sound the internal chime until a button is pressed.

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## Inputs

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### 6.1 Input 1 Action

Determines what action occurs when Input 1 is activated.

- 6.1.1 Stop - Stops Timer
- 6.1.2 Start - Starts Timer
- 6.1.3 Start/Stop - alternate starts and stops timer
- 6.1.4 Reset - Resets timer
- 6.1.5 Stop & Reset - Stops Timer and Resets it
- 6.1.6 Reset & Start - Resets Timer and Starts it
- 6.1.7 Start/Stop/Reset - alternate starts and stops timer, resetting each time
- 6.1.8 One-Button Mode - 1st press starts timer, 2nd press stops timer, 3rd press performs Input 2 Action

### 6.2 Input 2 Action

Determines what action occurs when Input 2 is activated.

- 6.2.1 Stop - Stops Timer
- 6.2.2 Start - Starts Timer
- 6.2.3 Start/Stop - alternate starts and stops timer
- 6.2.4 Reset - Resets timer
- 6.2.5 Stop & Reset - Stops Timer and Resets it
- 6.2.6 Reset & Start - Resets Timer and Starts it
- 6.2.7 Start/Stop/Reset - alternate starts and stops timer, resetting each time

### 6.3 Pushbutton/Voltage

Sets whether the display should source 5V to monitor buttons, or it should accept 5V (TTL level) from an external input.

- 6.3.0 Push buttons - buttons at input, no external voltage applied
- 6.3.1 Voltage - a 5V signal may be applied. **Caution:** Ensure the grounds between the display and the sending device are properly tied together. **Do not exceed 5.5V.**

### 6.4 N.O./N.C.

Defines the default state of the inputs: normally open or closed.

- 6.4.0 Normally open. Contact: doorbell. Voltage: 0V.

- 6.4.1 Normally closed. Contact: N.C. relay. Voltage: V.5

### 6.5 Button State

- 6.5.0 Momentary - expects a momentary contact closure at Inputs 1&2. For example, a doorbell button. Responds any time the input changes from open to closed.

- 6.5.1 Change of State - expects a toggling closure at Inputs 1&2. For example, an on/off switch. Responds any time the input changes: open to closed or closed to open.

### 6.6 Button Debounce

Ignores noise on Inputs 1 & 2. During a single press, buttons can "bounce" many times. This results in additional button presses that the user did not intend. This option ignores the additional button bouncing.

- 6.6.0 None - no debouncing. Provides an instant response to any input. Not recommended for push buttons.
- 6.6.1 Fast - triggers on the leading edge of input; has a small delay between inputs. This is useful where the input is a high speed, low noise signal (some microswitches and PLCs).
- 6.6.2 Normal - waits for input signal to stabilize before acting on it.

### 6.7 IR lockout

Sets whether the display ignores or responds to the remote. Toggle IR lockout on/off by pressing and holding [EXIT] on the remote for 5 seconds. The display will indicate the change by showing "ir0" or "ir1," where "0" = locked and "1" = normal.

# Appendix



# Model 6300 Specifications

## Stand-Alone Displays

### Features

The 6300 Series display is a 2, 3, 4, or 6-digit intelligent LED display with infrared capabilities. This display has two inputs for buttons or logic controls and a communications link for communicating with other displays. Displays are powered by a 24-Volt AC adapter (included). Displays include a built-in audio chime and remote control. Broad Time Range: 0.01 seconds to 9999 days.



6320



6360

### Backup Battery

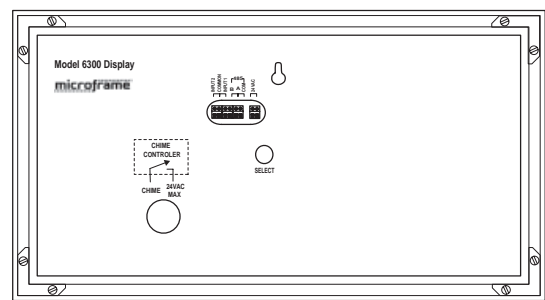
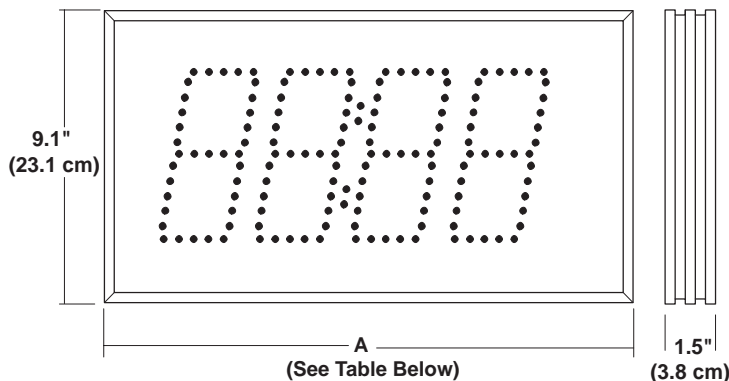
This product contains a high capacity lithium backup battery. The battery is designed to last a minimum of 10 years at temperatures up to 40°C (140°F).



6330



6340



6300px19702.ai

### Model 6300 Specifications

Voltage Input Requirements .....	24 volts AC or DC			
Character Height .....	5.5 Inches			
Character Viewing Distance .....	125 Feet			
Temp.....	0°C to 40°C (32°F to 140°F)			
Case .....	Aluminum Extrusion			
Color.....	Black Frame w/ Dark Red Plexiglas Faceplate			
Environment .....	Indoor Use			
Display Size.....	<b>2-Digit</b>	<b>3-Digit</b>	<b>4-Digit</b>	<b>6-Digit</b>
Power Requirements .....	2.9 Watts	3.5 Watts	4.6 Watts	6.8 Watts
Weight .....	2.5 lbs	3.2 lbs	3.9 lbs	5.25 lbs
Width "A" Dimension Inches.....	9.8"	13.2"	16.8"	24"
Width "A" Dimension Centimeters....	24.9 cm	33.5 cm	42.7 cm	61.4 cm

Support and Sales  
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 Broken Arrow, OK 74013

## General Troubleshooting Chart

SYMPTOM	POSSIBLE CAUSE	CURE
Display will not light up.	Display is not connected to power or power adapter is bad.	Check AC wall connection or change to another wall outlet.
Display lights up but will not respond to wired buttons.	Poor or no signal connection to buttons.  Programming set to slave mode.	Check signal cable connections to buttons and check for proper wiring on back panel. Try with a short cable to prove whether the problem is in the units or in the cable. Buttons have no function in slave mode. Change modes.
One or more segments do not light up.	One or more LEDs burned out. This typically happens only when lightning strikes.	Call Microframe to receive an RMA and then return to factory for repair.
Different displays are showing different numbers or times.	Poor signal connection to master display or displays are in different modes.	Check signal cables and routing. Make sure 'A' and 'B' wires are not reversed. Check Programmable Options to make sure correct modes are selected.
Display is not showing expected time, despite correct options.	Display size incorrect	Check area 4.5 and set to correct display size if necessary.

### Timer/Clock Troubleshooting Chart

Colons do not flash or they stay on.	Programming set to disable colons or flash rate. Display is not getting enough power.	Check the programming and change as necessary.
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### Remote Control Troubleshooting

Remote control buttons stopped responding.	Remote Locked Up  Batteries dead	Remove Batteries. Press [Menu] 3 times. Insert batteries and check for operation. Replace batteries.
--	--	---

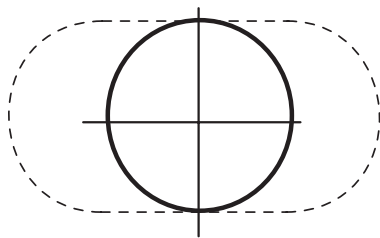
# 6300 Remote Display Mounting Template

TOP OF DISPLAY

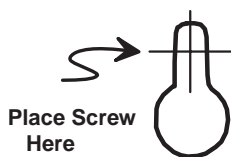


## 6320 REMOTE DISPLAY DRILL TEMPLATE

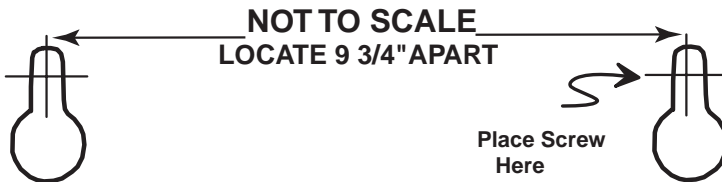
Drill 1" Diameter Hole



TOP OF DISPLAY



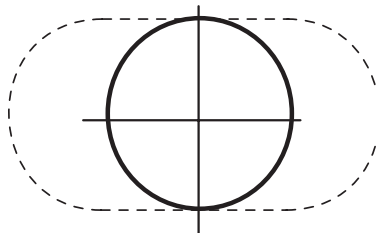
6340



6330 / 6360

2nd MOUNTING HOLE FOR  
6360 REMOTE DISPLAY

Drill 1" Diameter Hole



## 6330,40, 60 REMOTE DISPLAY DRILL TEMPLATE

A6300/PX19801.ai

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