

## Introduction:



### Outboard Racing Starting Clock – Use for Countdown to Begin Boat Race

- 3-Digit Main Display (DSP3603A) with 36” High Digits
- Controller (DS204A-BSC) Capable of Count Down Timing between 5 Minutes and 0
- Unistrut Stand (SUPERSTRUTB-1400-HS)
- Race Clock Cover
- Go online for video tutorials - <http://sports-timer.com/boat-race-clock/>

## Components:



### Controller (DS204A-BSC)

- 4-Digit Display with 2.5” High Digits
- 6 Waterproof Buttons in Water Resistant Enclosure
- One Connector for Connecting to Right Digit of Main Display: 30’ 4 -Conductor 18GA Cable



### Main Display (DSP3603A)

- Overall Display Size 48” High x 96” Wide
- 3-Digit Display showing M:SS (min & sec)
- Digits 36” High x 21” Wide
- Red LED Solid Segment Digits
- Digits Each in Separate Enclosures
  - Enclosure Each 48” High x 32” Wide
  - Enclosure Covered with 1/8” Thick Transparent Red Plexiglas (#2423)
- Left Digit
  - LED Clusters to Represent Colon between Min and Sec in Mode 0 & 1
  - Chassis Mount Connector x 1 for Power and Data from Center Digit
- Center Digit
  - LED Cluster to Represent Decimal between Sec and Tenths in Mode 1
  - Chassis Mount Connector x 2, 1 for Power and Data, 1 to Pass Power and Data to Left Digit
- Right Digit
  - Chassis Mount Connector x 4, 3 Supply Power and Data for all 3 Digits (see Wiring Diagram for Connection Details), 1 for Camera LED

#### Power Specifications

- Display Input Voltage Range: 12-14.5 Volts DC
- Display Powered by 12 Volt Car Battery
- Display Alternate Power Source: 15 AMP or Larger Power Supply may be used
- Current consumption:
  - All Segments ON: 12 AMP
  - All Segments OFF: 1/2 AMP

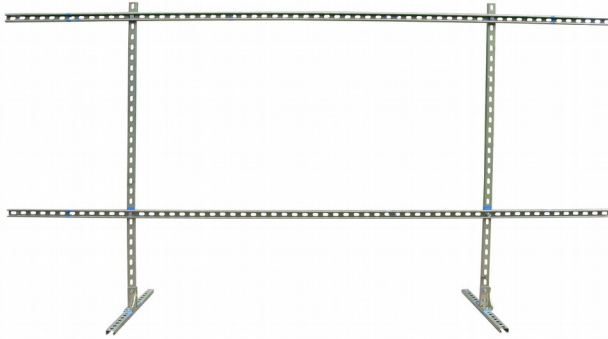
#### Cables

- Left Digit to Center Digit: 40” 7-Conductor 14GA Cable
- Center Digit to Right Digit: 40” 7-Conductor 14GA Cable
- Right Digit to Power Source: 15” 4-Conductor 14GA Cable
- If you have an optional second display, a 10’ 4-

conductor 14GA cable connects it to the main display  
Camera LED

- Standard Red Diffused LED
- Connected with 30' 2-Conductor 18GA Cord to Connector in Right Digit

See "Optional Additions" Section for Additional Optional Features



**Unistrut Stand (SUPERSTRUTB-1400-HS)**

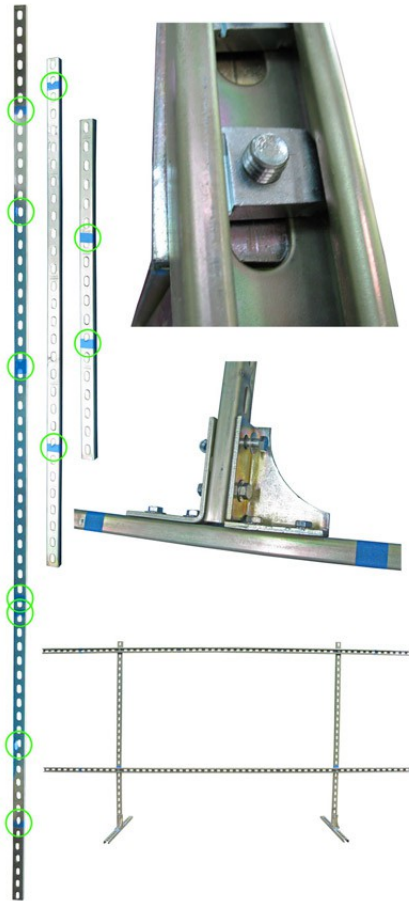
- Stand for supporting each section of the display
- Assembly Required



**Race Clock Cover**

- Blue Cordura Cloth Casing
- Waterproof

## Assembly & Installation Instructions:



### Unistrut Stand Assembly (see online video for additional instructions – <http://sports-timer.com/boat-race-clock/>):

Tools Required – 9/16 Socket Wrench, 9/16 Box Wrench  
 Hardware Included– 12 pieces 3/8"x0.75" hex bolts; 8 pieces 3/8"x1" hex bolts; 4 pieces 3/8"x1.5" hex bolts; 4 pieces 3/8"x2" hex bolts; 24 pieces 3/8" channel nuts; 32 pieces 3/8" flat washer; 2 L-brackets; 2 Reinforced L-brackets

- Mark the holes you're going to use on the struts
- 3' Foot Pieces – mark between the 7<sup>th</sup> and 8<sup>th</sup> hole from each end, the 8<sup>th</sup> hole serves as the outer hole for each bracket
- 5' Upright Pieces – bracket the 9<sup>th</sup> hole from one end with tape and the 3<sup>rd</sup> hole from the other end for one piece,
- 10' Horizontal Cross Pieces – bolt holes 7<sup>th</sup> and 15 away from that plus the one after it and another 15 away from that, then do the same from the other end of the bar
- Attach L-brackets to the 3' foot pieces using 3/8"x1" hex bolt, flat washer, 3/8" channel nut (drop nut into channel and rotate into place) – first by hand, then using the 9/16" Socket or Box Wrench – *Before tightening fully, insert an Upright piece between brackets to ensure proper spacing*
- Attach 5' Upright Piece by sliding channel between the two L-brackets then use 3/8"x2" hex bolts and flat washers to fix in place – Tighten with 9/16" Socket and Box Wrenches – *front of strut must be facing direction of the reinforced L-brackets*
- Attach 10' Horizontal Cross Pieces – Take 3/8" channel nut and put it into the Upright Piece channel then slide a flat washer over the 3/8"x1.5" and install through the Horizontal Cross Piece into the Upright Piece; repeat process for second Horizontal Cross Piece

### Display Assembly:

- Lay display face down
- Take Unistrut Stand and lay it on top of display
- Bolt Unistrut Stand to display before standing display up –  
*Note: Display must be fully disassembled to use the Race Clock Cover*

### Unistrut Stand Take Down:

- Lay display down
- Loosen and remove bolts
- Remove struts – *Note: Display must be fully disassembled to use the Race Clock Cover*

## Operation Instructions & Feature Identification:



### Display (DSP3603A):

- Turn display on by turning on the timer, display will remain blank otherwise
- Display shows M:SS in Mode 0 and switches from M:SS to SS.T in Mode 1 – See *Setup Mode* Section for how to switch
- When timer reaches 0, display will show 0 for approximately 5 sec then go blank – *NOTE: Timer must go blank before being restarted or it will turn off several seconds into the new countdown*
- Send test pattern across display by pressing Button 6 or pressing Button 5 while timer is at 0 and stopped – See *Controller Button Functions* Section for how to switch



### Controller Button Functions:

- Button 1 (labeled “5 MIN”) – Set timer for 5 min countdown, display shows **5:00**
- Button 1 (labeled “5 MIN”) – Hold for approximately 2 sec to abort a timing cycle. The display shows **—** for several seconds, then goes dark.
- Button 2 (labeled “3 MIN”) – Set timer for 3 min countdown, display shows **3:00**
- Button 3 (labeled “1 MIN”) – Set timer for 1 min countdown, display shows **1:00**
- Button 4 (labeled “V1 MIN”) – Remove 1 min from current countdown, if timer already counting down it will not interrupt (ex. Time is 3:27, Button 4 pushed, Time is 2:27)
- Button 5 (labeled “HOLD”) – Hold to pause countdown, release to resume countdown
- Button 6 (labeled “TEST/SETUP”) – Press to generates test patterns on display. The display shows **Hello...:4....**
- Button 6 (labeled “TEST/SETUP”) – Hold for approximately 2 sec to enter Setup Mode, display shows **d09**
- Button 6 (labeled “TEST/SETUP”) – In Setup Mode this changes controller display brightness, each successive press steps controller through 1 of 10 levels of brightness

### Setup Display Brightness:

The brightness of the controller display can be varied depending on the ambient light level.

- Press and hold the Test/Setup button for approximately 2 sec to enter Setup Mode, display will show **d09**.
- *Wait for at least 2 seconds.*
- Press Test/Setup button successively to change the display brightness. The display will show **d00** through **d09**
- The display brightness of the DSP204B-BSC will change.

Min Mode



Min to Sec Mode

**Setup Timer Mode:**

Display minutes: seconds or seconds.tenths of a second.

- Press and hold the **Test/Setup** button for approximately 2 sec to enter Setup Mode, display will show **d09**.
- *Within one second*, tap the **Test/Setup** button *one* time. The display will show **u..1**.
- Wait for at least 2 seconds.
- Tap **Test/Setup** button to change the display mode. The display will show **u..0** through **u..1**.
- Mode **u..1** (Min Mode) – While timer is running the display shows M:SS, when timer reaches 0 the display will show dashes for approximately 5 sec then go blank
- Mode **u..0** (Min to Sec Mode) – While timer is running with more than 1 min left the display shows M:SS, when timer reaches 59.9 sec the display switches to show SS.T, when timer reaches 0 the display will show dashes for approximately 5 sec then go blank

**Setup number of display digits:**

Enable serial data output to auxiliary devices or to a computer.

- Press and hold the **Test/Setup** button for approximately 2 sec to enter Setup Mode, display will show **d09**.
- *Within one second*, tap the **Test/Setup** button *two* times. The display will show **E4**.
- Wait for at least 2 seconds.
- Press **Test/Setup** button successively to change the number of display digits. The display will show **E2** through **E4**.
- This display should be left at 4 digits (**E4** mode).

**Setup Serial Data Output:**

Enable serial data output to auxiliary devices or to a computer.

- Press and hold the **Test/Setup** button for approximately 2 sec to enter Setup Mode, display will show **d09**.
- *Within one second*, tap the **Test/Setup** button *two* times. The display will show **F3**.
- Wait for at least 2 seconds.
- Press **Test/Setup** button successively to change the display mode. The display will show **F0** through **F3**.
- Mode **F0** (Off) – No serial data output is generated.
- Mode **F1** (Beep at timer zero) – When the timer reaches zero, a beep command is generated.
- Mode **F2** (Timer Status) – New data is output once per second or ten times per second if running in tenths mode representing the timer status.
- Mode **F3** (Timer Status, Beep at timer zero) – Combines both Beep output and timer status output.

**Optional Relay Outputs:**

Relay outputs to operate auxiliary devices. Relay output A is programmed to come on at 1 minute and remain on until the timer reaches zero. Relay output B is programmed to come on at 3 seconds before zero and remain on until 3 seconds after the timer reaches zero.

- Press and hold the **V1 Min** button for approximately 2 sec to enter Relay Set Mode, display will show **r100**.
- Tap the **3 Min** button to toggle relay B on and off manually. The display will show **rL01** for ON and **rL00** for OFF.
- Tap the **1 Min** button to exit the relay test mode.

**Setup Baud Rate:**

Setup the serial port baud rate for radar gun input or output to auxiliary devices or to a computer.

- Press and hold the Test/Setup button for approximately 2 sec to enter Setup Mode, display will show **d09**.
- *Within one second*, tap the Test/Setup button *three* more times. The display will show **b1**.
- Wait for at least 2 seconds.
- Press Test/Setup button successively to change the baud rate. The display will show **b0** through **b7**.
- Mode **b0** (Baud 1,200) – Use this baud rate when connecting a radar gun to the serial port. Most radar guns use 1,200 baud. Some use 9,600 baud. Check the manual.
- Mode **b1** (Baud 2,400) – This is the default baud rate for most Alzatex display devices.
- Mode **b2** (Baud 4,800) –
- Mode **b3** (Baud 9,600) – Used by some radar guns.
- Mode **b4** (Baud 19,200) –
- Mode **b5** (Baud 38,400) –
- Mode **b6** (Baud 56,800) –
- Mode **b7** (Baud 115,200) –

**Protective Cloth Casing:**

- Store disassembled display digits in blue cordura protective cloth covers



**Camera LED:**

- Camera connection cable plugs into back of right digit in port labeled “Camera LED”
- Turn camera LED on by turning on the timer
- Camera LED will be lit for as long as the timer is not at 0 (at 0 LED turns off)
- Camera LED remains lit if Button 5 (labeled “HOLD”) is pressed to pause the timer

**Power Sources – Choose at Least One:**



**Car Battery Adapter Cable:**

- Voltage – Standard 12 Volt Car Battery
- Inline Fuse – Install a 15 or 20 AMP Fuse
- WARNING – Do not use larger than a 20 AMP fuse or you risk permanently damaging equipment



**Power Supply:**

- Voltage – Output voltage range is 13.85 VDC Fixed
- Output Amperage – 25 AMP continuous, 30 AMP surge
- Internal Fuse – 6.3 AMP at 115 VAC
- Input Range – 100-120 VAC or 200-240VAC, 50/60Hz (Switchable)
- Weight – 3lb
- Dimensions – 6.1” x 5” x 2.5”