

Warranty

Each CruzPro product is carefully tested and calibrated at the factory before shipping and is warranted for one full year against original defects in materials or workmanship. This warranty does not include damage to the product resulting from accident or misuse.

If the product should become defective within the warranty period, we will repair or replace it free of charge, including free return transportation, provided it is delivered prepaid to the dealer from whom it is originally purchased.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state, or country to country.

CruzPro®
CT60



Clock
Watch/Race Timer & Alarm

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taneously quick pressing both the ▲ and ▼ keys. The last ten seconds are annunciated by beeps once every second and a long beep at zero time. After that the race timer starts showing elapsed time. To view the current status of the Race Timer without resetting it, press the + and ▲ keys.

Adjusting the Clock Speed

Should you find it necessary to change the CT60 calibration, turn off the power. Press and hold the ▼ key and while holding, re-apply power. Use the ▲ and ▼ keys to adjust the calibration number up or down. Press the + key to save the new calibration. Each change in the displayed calibration number will change the clock speed by .05 seconds per day. For example, increasing the calibration number by 40 will speed up the clock by 2.0 seconds per day.

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Introduction

The CT60 Clock, Watch/Race Timer is an accurate 12/24 hour format ships clock with a resettable down-counting watch or race timer and eight time-of-day alarms. The CT60 will set itself to the correct time if a GPS NMEA 0183 data signal is connected.

The watch/race timers can be preset to a value from 1 second to 99 minutes and counts up after reaching zero. The CT60 will quietly "tick" or "beep" away the last ten seconds. If the watch person responds by pressing the watch button, the timer restarts without waking anyone. If the watch person does not press the correct button before the watch timer reaches 0, the built-in 85 dB alarm will sound.

Five levels of backlighting can be selected and all set-up, calibration constants and alarm values are saved in a non-volatile memory.

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Other CruzPro Products

- Depthsounder/Fishfinder & Speed/Log/w Temperature
 - DC Volts/Amps/Amp-Hour Monitors
 - AC Volts/Amps/Frequency/kW Monitor
 - LPG/Petrol Gas Detectors/Alarms
 - Bilge Water Alarms & Bilge Pump Controllers
 - Windlass Controller/Chain Counter
 - Digital Fuel Gauge & Fuel Consumption Calculator
 - Smart and Manual Alternator Regulators
 - Marine Security System
 - RPM/Engine Hours/Elapsed Time Gauge
 - Digital Oil Pressure Gauge/Alarm
 - Digital Water Temperature Gauge/Alarm
 - One and Three Bank Digital Volts Gauges
 - Digital Amps Gauge
 - Precision Digital Sea Water Temperature Gauge
 - 8 and 16 Amp Light Dimmers / Motor Speed Controller
 - Solar Panel Charge Controllers
 - 4 & 8 Channel NMEA Combiners/RS-232 Convertors
 - NMEA 0183 Remote Data Repeater/w 4 Input Channels
 - Engine/Exhaust Temperature Monitor/Alarm
- See full details at www.cruzpro.com
Email to: info@cruzpro.com

Specifications

Power supply: 9.5 to 33.0 VDC, .018 amps nom.

Operating temperature: 32 to 122 F (0 to 50 C)

Size: 2.5" dia X 4.1" deep (61mm x 104 mm)

Accuracy: Factory calibrated to better than 1 second per day.

Alarms: 85 db internal alarm.

Display: 4 digits. Time of Day, Watch/Race Timer, Alarms. Five levels of backlighting.

Data output: NMEA 0183 output of Time and Time-Of-Day alarm values

To preset the watch timer, press and hold the ▼ key for 10 seconds while viewing Time-Of-Day. Press the + key to switch between minutes and seconds. Use the ▲ and ▼ keys to change the minutes and seconds. Press the + key for 1/2 second to save the value. To view/preset/start the watch timer, press the ▼ key. To view the current status of the Watch Timer without presetting it, press the ▼ and + keys.

Setting/Starting the Race Timer

The watch timer doubles as a race timer and the procedure to set it is the same (see Setting/Starting the Watch Timer (page 11)). After the race timer has been set, you view/start the race timer by simul

the ▲ and ▼ keys to change the hours or minutes. Press the + key for 1/2 second to save your entry and return to the Time-Of-Day display mode.

Setting/Starting the Watch Timer

The watch timer is a presettable count-down timer that activates the alarm when it reaches zero. It then counts up. The watch timer can be preset anywhere from 1 second to 99 minutes and 59 seconds. This value is saved to memory and the timer is automatically preset to this value each time the ▼ key is pressed. The watch timer quietly "clicks" down the last ten seconds to warn the watch person that the alarm is about to go off.

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Installation

Before starting the installation, please read this entire section first. Be sure to install the bulkhead gasket before you install the instrument. Finger tighten the screws that mount the instrument bracket - do not use tools.

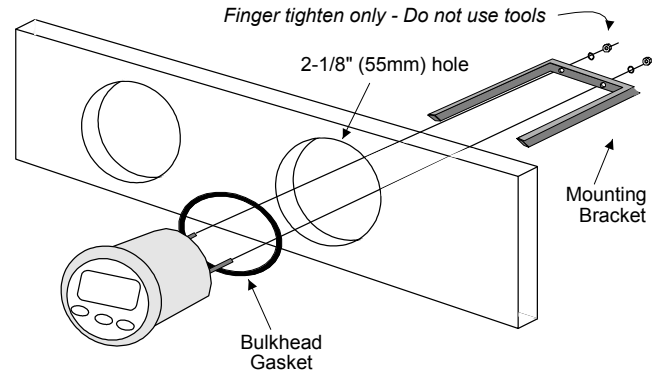


Figure 1

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Alarm ON/Off

Press the ▲ or ▼ keys for 1/2 second to "arm" or "disarm" the time-of-day and watch alarms. The colon will flash to show you when the alarms are armed. To turn off the alarm noise without disarming the alarms, press the + key for 1/2 second.

Setting The Time-Of-Day Clock

While viewing Time-Of-Day press and hold the + key for ten (10) seconds. You will hear a long beep. Press the + key to switch between hour or minute selection. Use the ▲ and ▼ keys to change the hours or minutes. Press the + key for 1/2 second to save your entry.

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- Carefully check all your wiring against those shown in figure 2. If everything is wired correctly you can mount the CT60 in the instrument hole. Be sure the bulkhead gasket is in place and use only finger tension to tighten the bracket hold-down nuts. *Do not overtighten the bracket or you may damage the case - do not use tools to tighten the nuts.*

Connecting a GPS

If a GPS NMEA 0183 serial data signal is connected to screw terminal E, the CT60 will set it's own time automatically. After setting it's time to the GPS, the CT60 will check once per hour and adjust the displayed time if any discrepancy exists.

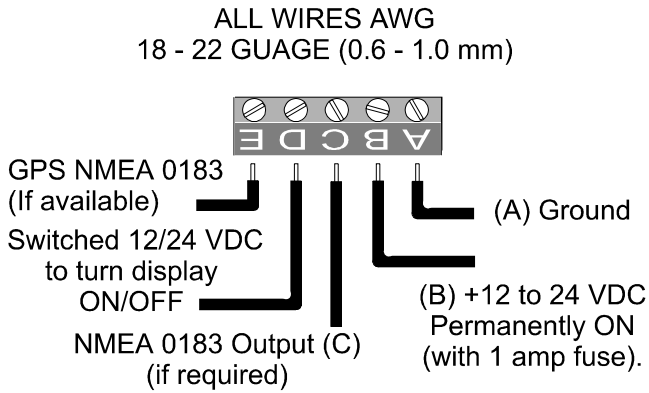
The CT60 will recognize and extract time from the following GPS NMEA 0183 sentences:

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Mounting and Wiring

Drill a 2-1/8" (55mm) hole where you want to mount the instrument (Fig. 1).

Bring the power and ground lines out of the mounting hole and use a small flat screwdriver to make the



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Figure 2

Selecting 12 or 24 Hour Format

While viewing Time-Of-Day press and hold the ▲ key for ten (10) seconds. After the long beep the clock will switch between 12 and 24 hour display.

Setting Time-Of-Day Alarms

To view the current settings for the eight (8) Time-Of-Day alarms, press the ▲ key. The display alternates between showing a "1" and the first time-of-day alarm setting. Press the + key to view time-of-day alarms 2 through 8. To clear or set an alarm value, press BOTH the ▲ and ▼ keys. Press the + key to switch between hour or minute selection. Use

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\$GPZDA, \$GPBEC, \$GPBWC, \$GPBWR, \$GPGBS,
\$GPGGA, \$GPGRS, \$GPGST, \$GPGXA, \$GPRMC

UTC Offset Time When Using a GPS.

When using a GPS to set/correct the clock you can set a UTC Time Offset to adjust for different local time zones and daylight savings. The factory default is a time offset of zero hours. To adjust the offset press and hold both the ▲ and ▼ keys for ten seconds while viewing Time-Of-Day. Use the ▲ and ▼ keys to change the offset hours and press the + key for 1/2 second to save your entry.

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Operation

Key Functions

The ▼, +, ▲ keys are used to select backlight levels, Time-Of-Day, 12 or 24 Hour format, set time-of-day alarms and watch/race timers. After changes are made, the new information is automatically saved to memory. To view time-of-day, momentarily press the + key.

Backlight Intensity

Press the + key for 1/2 second to adjust the backlight level for night-time viewing. Each time you press the "+" key the backlight level will change: 1, 2, 3, 4, OFF, 1, 2, ... etc.

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