Other CruzPro Products

- Depthsounders, Fishfinder & Speed/Temperature/Log
- DC Volts/Amps/Amp-Hour Monitors
- AC Volts/Amps/Freq/kW Monitor
- LPG/Petrol Gas Detectors/Alarms
- Bilge Water Alarms & Bilge Pump Controllers
- Windlass Controller/Chain Counter
- Digital Fuel Gauges & Fuel Consumption Calculator
- Digital Gauge for 1 or 3 Tanks /w Separate Alarms
- Smart 4 step Alternator Regulator
- Marine Security System/w Reliable Intrusion Sensors
- RPM/Engine Hours/Elapsed Time Gauge/w Alarm
- Digital Oil Pressure Gauge/Alarm
- Digital Temperature Gauges for 1 or 3 Areas /w Alarms
- One and Three Bank Digital Volts Gauges
- Digital Amps Gauge
- Digital Clock/Watch/Race Timers/w 8 Alarms
- 8 and 16 Amp Light Dimmers / Motor Speed Controller
- Solar Panel Charge Controllers 6/8/9 & 20 Amps
- 4 & 8 Channel NMEA Combiners/RS-232 Convertors
- Engine/Exhaust Temp. Monitor & Digital Pyrometer
- NMEA 0183 Remote Data Repeater/w 4 Input Channels

CruzPro® CE

T60

Engine Water
Temperature Gauge/w Alarms

Notes and Warnings

a) When setting calibration functions that require you to hold down a key while applying power to the T60 - be sure to turn OFF the power first, then hold the key(s) down during and for at least 3 seconds AFTER the power has been applied to insure the computer has read the keys.

b) If the sender temperature is below the minimum temperature where manufacturer's calibration data is available, the T60 displays "LO".

c) If the sender temperature is above the maximum temperature where manufacturer's calibration data is available, the T60 displays "HI".

Introduction

The T60 Temperature Gauge displays water or engine oil temperature in degrees F or C. It has built-in calibration curves for most popular senders manufactured by VDO, Teleflex, Stewart-Warner and others (senders available separately). Sender type is selected with the front panel keys. Low and High temperature alarms can be set over the entire range of the instrument/sender. When activated, the built-in alarm will sound and the display will flash. The alarms can be enabled or disabled with a single key press. Five levels of backlighting can be selected and all setup, calibration constants, alarm values, and sender type is saved to nonvolatile memory. NMEA 0183 compatible serial data is output on screw terminal C. If NMEA 0183 is not required, screw terminal C can be programmed as an external alarm output.

Table of Contents

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Specifications

Power supply: 9.5 to 33.0 VDC, .035 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: Better than +/-1 %, front panel adjustable calibration

Senders: Built-in calibration curves for most 15 to 250 ohm oil/water temperature senders such as VDO, Teleflex, Stewart-Warner, etc.

Alarms: Accurate High and Low temperature alarms settable from 32 to 300 deg F (0 to 149 degC)

Display: 3 digits, deg. Fahrenheit or Celsius, 5 levels of backlight.

Data output: NMEA 0183 output of Temperature, Alarm values, Calibration constants, Sender Type on screw terminal (C). Pin (C) can be programmed as an external alarm output.

Selecting NMEA 0183 or External Alarm Output

The T60 comes factory preset to use screw terminal pin (C) as an External Alarm output. If you would rather have NMEA 0183 serial data output on screw terminal (C), you can do so as follows:

While viewing Temperature, press and hold down both the DOWN and UP keys for 10 seconds (until you hear a long beep). This operation switches the output mode between NMEA 0183 and External Alarm. The new output mode is automatically saved to memory.

When the external alarm output is activated, a 5V signal (10 mA Max.) is output on screw terminal (C).
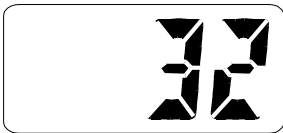
Press the UP and DOWN keys to set the desired low temperature alarm limit. Press the "+" key to save your entry.

Calibrating the Instrument

Press and hold the **+** key for 10 seconds to enter the Temperature Calibration mode. Press the UP and DOWN keys to adjust the display to read the correct temperature. Press the "+" key to save the calibration information. Calibration is usually not required if the correct sender type is selected.

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.
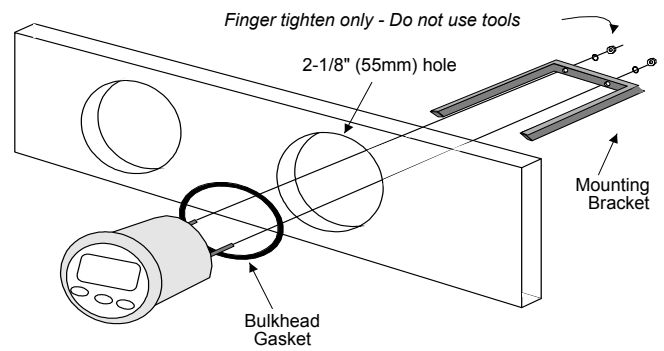

Finger tighten only - Do not use tools
2-1/8" (55mm) hole
Mounting Bracket
Bulkhead Gasket

Figure 1

U-1 : VDO Ver 1
U-2 : VDO Ver 2
U-3 : VDO Ver 5 or VDO #320.720
U-4 : Teleflex/Stewart-Warner
U-5 : Cyberdyne

Selecting Degrees F or Degrees C Display

Press and hold the **▼** key for three seconds while applying power to the instrument. This toggles between degrees F and degrees C display.
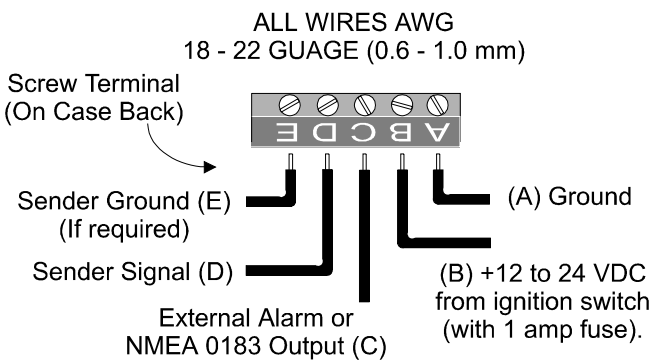
driver to make the connections to the screw terminal on the instrument case back as shown in figure 2.

● Carefully check all your wiring against those shown in figure 2. If everything is wired correctly you can mount the T60 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.*

Mounting and Wiring

- Drill a 2-1/8" (54mm) mounting hole where you desire to mount the instrument (Figure 1).

- Bring the sender wires, ground, and power lines out of the mounting hole and use a small flat screw

ALL WIRES AWG
18 - 22 GUAGE (0.6 - 1.0 mm)

Screw Terminal
(On Case Back)

A B C D E

Sender Ground (E)
(If required)

Sender Signal (D)

External Alarm or
NMEA 0183 Output (C)

(A) Ground

(B) +12 to 24 VDC
from ignition switch
(with 1 amp fuse).

Figure 2

Setting High Temperature Alarm

While viewing the temperature, press and hold the ▲ key for ten (10) seconds. You will hear a long beep and see the display as shown. Press the UP

300

and DOWN keys to set the desired high temperature alarm limit . Press the "+" key to save your entry.
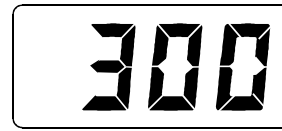
Setting Low Temperature Alarm

While viewing the temperature, press and hold the ▼ key for ten (10) seconds. You will hear a long beep and see the display as shown.

Operation

Key Functions

The ▼ + ▲ keys are used to select backlight levels, units of measure (deg F or deg C), temperature sender type, calibrate the instrument, set low and high temperature alarms and activate/deactivate the alarms. After changes are made, the new information is automatically saved to memory.

Backlight Intensity

Press the + key for 1/2 second to adjust the backlight level for nighttime viewing. Each time you press the "+" key for 1/2 second, the level will get brighter 1, 2, 3, 4, OFF, 1, 2, ... etc.

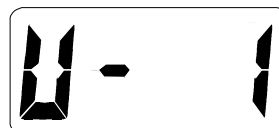## Alarms ON/Off

Press the ▲ or ▼ keys for 1/2 second to "arm" and "disarm" the alarms. When the alarms are armed a flag is displayed in the lower left corner as shown:

Alarm ON

204

Alarm OFF

204

Selecting Sender Type

Press and hold the ▲ key and apply power to the instrument. You will see this display:
Press any key to change to U-2, U-3 etc. Select the

U - 1

sender type from the table below. Press the "+" key to save your selection.