

### Warranty

Each unit is carefully tested and adjusted 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.

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# Handbook

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V1.0 ETMMAN-C

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### Adjusting and Testing

Use a small screwdriver to adjust the set point where the alarm sounds. *Do not force the potentiometer past the end stops!* There are several ways to do this.

The easiest way is to operate your engine until it gets up to normal operating temperature and adjust the potentiometer (See Figure 1 in the "Installation" section) with a small screwdriver till the alarm just starts, then back off a small amount.

A more accurate way is to attach the sensor to a piece of metal and heat the metal to the desired temperature. Measure the temperature of the metal with a thermometer (near or at the sensor) and when it gets to the correct point, adjust the potentiometer till the alarm just sounds. Do not exceed 125 deg C (257 deg F) or you may damage the sensor.

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### Specifications

**Operating Voltage:** 9.5 to 18 VDC, 0.012 ampere nominal.

**Temperature Alarm Range:** 50 to 125 deg C (122 to 257 deg F).

**Case Operating temperature:** 0 to 50 deg Celsius (32 to 122 deg Fahrenheit)

**Size:** 100 x 60 x 30 mm (4 x 2.4 x 1.2 inch).

**Alarms:** Built-in 85 dB audible alarm. Can be connected to optional External 105 dB Loud Alarm (LA-20).

**Sensor:** Solid state sensor solid potted with polyester or epoxy resin in tin plated copper lug. Four meters (13 feet) of cable provided.

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## Introduction

The ETM-20 Exhaust Temperature Monitor/Alarm uses modern electronics and a reliable solid state temperature sensor to accurately monitor the temperature at any point it is attached. The alarm is factory pre-set at 90 degrees C (194 deg F) but can be easily adjusted with a small screwdriver over a range of 50 deg C to 125 deg C (122 to 257 deg F). When the ETM-20 detects an over-temperature condition it sounds a built-in 85 dB audible alarm.

The alarm will continue to sound for the duration of the out-of-limit condition, or until the reset button is pressed. If the alarm is silenced by the use of the reset button, the ETM-20 will automatically arm itself again as soon as the temperature falls below the alarm set point.

The ETM-20 draws only 0.012 amps at 12 VDC and can be connected to an external alarm (LA-20) to provide 105 dB of volume, if desired.

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## Other CruzPro Products

- Depthsounders & Speed/Temperature/Log
- DC Volts/Amps/Amp-Hour Monitor
- AC Volts/Amps/Freq/kW Monitor
- LPG/Petrol Gas Detectors/Alarms
- Bilge Water Alarms & Bilge Pump Controllers
- Windlass Controller/Chain Counter
- Digital Fuel Gauge & Fuel Consumption Calculator
- Digital Gauge for Three Tanks /w Separate Alarms
- 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
- Digital Clock/Watch/Race Timers/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

See full details at <http://www.cruzpro.com>  
Email to: [info@cruzpro.com](mailto:info@cruzpro.com)

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## Installation

**Sensor:** Mount the sensor using a bolt to attach the it to the point whose temperature you wish to monitor. Route the cable so as to avoid high temperatures that would damage it.

**Control unit/alarm:** Remove the case front and align the case back onto any suitable surface. The case is not waterproof and should be mounted in a dry place. Using the case back as a drill guide, mark the location of the two holes with a soft pencil lead. Remove the case back and drill two 2mm (3/32 inch) holes where indicated. Mount the case back using the two stainless screws provided.

Thread the sensor cable through the rubber grommet on the case front and connect to the terminals marked "SENSE" and "GND". The polarity is not important (See Figure 1). Thread two 22 gauge (or larger) wires through the grommet and connect to the terminals marked "+12V" and "GND". Connect the "+12V" wire to the switched ignition line and the "GND" to a common ground point.

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Change the temperature set point before closing the case, if so desired (See the section entitled "Adjusting and Testing").

Re-install the cover of the control unit on the case back. *Do not overtighten the case front screws too tight.*

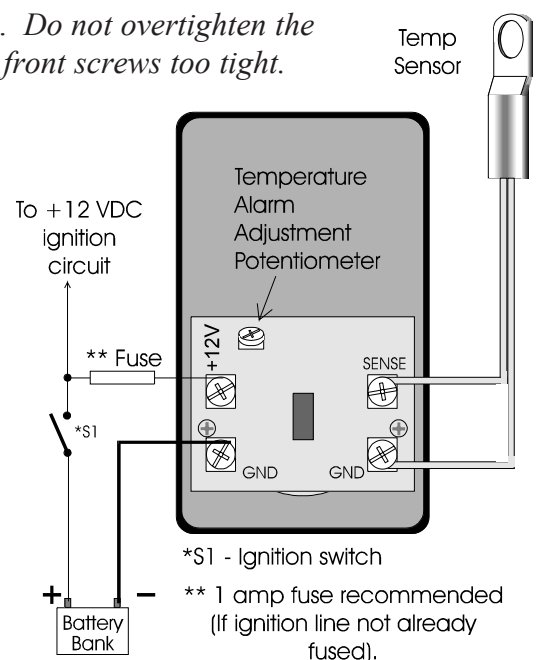


Figure 1 - Connection Diagram

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