

ENGINE WATCHDOG TM4

Audible Warning Alarm

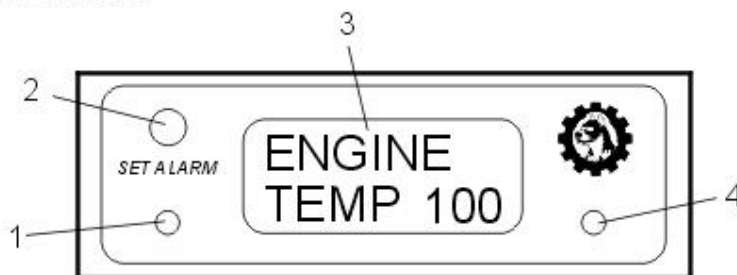
MODEL TM4c Operating Guide (Celsius, Standard version)

- DETECTS** - High Engine Temperature
- Low Oil Pressure (vehicle needs an existing oil light, or low oil sender fitted)
- RECORDS** - Highest Engine Temperature Reached
- CONTROLS** - Cooling Fan Relay (requires the optional Cooling Fan Relay Kit)

Features

- Monitors the metal temperature of the engine using the Easy Fit heat sensor
- Temperature Alarm is fully adjustable from 1 to 127 degrees Celsius
- Alarms with a Light, Buzzer and Display messages when overheating is detected
- Oil Alarm sounds if the existing dash board oil light comes on
- If the Oil Alarm is used, the buzzer will delay for 10 seconds when starting the engine
- Easy to read messages display for all Functions and Alarms
- Warns if the temperature sensor cable is severed
- TM4 suits ALL engine makes and models
- Suits 12v or 24v systems & the power cable comes fitted with a cigarette lighter plug
- Optional Cooling Fan Relay Kit available. (Both On & Off temperatures are set independently from the main alarm and are both fully adjustable from 1 to 127c)

Functions:



1. Engine Over Temperature & Low Oil alarm light
2. Push button switch sets the Engine Alarm & Cooling Fan Relay on/off temperatures
3. LCD Display with back light
4. Indicates optional Cooling Fan Relay is turned on

Specifications:

Buzzer 85db - inbuilt
Current 15mA (no alarms on)
Size (face) 82 x 30mm + mounting tabs
Standard sensor cable length 4m

Options:

Lid without mounting tabs
Longer sensor cables
Cooling Fan Relay Kit

1. MESSAGES DISPLAYED WHEN THE TM4 IS FIRST POWERED ON

ALARM
TEMP - - C

Each time the TM4 is switched on, the alarm temperature will display for 3 seconds. This allows the operator to check the setting is still correct.

If the engine reaches this alarm temperature the warning light, buzzer and

ENGINE
HOT

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TEMP - - C

This is the main display message seen most of the time..
This indicates the current temperature of the sensor.

2. LOW OIL ALARM (Fitting this feature is optional)

Note The Low Oil messages and functions only operate if the TM4's Orange wire is connected to the vehicles existing dash board oil light sender. (See Installation diagram).

This function is NOT compatible with oil gauge pressure sensors. If you only have an oil gauge and want this function, an inexpensive oil light sender needs to be fitted to the engine (closed / open on pressure).

ALARM
DELAY ON

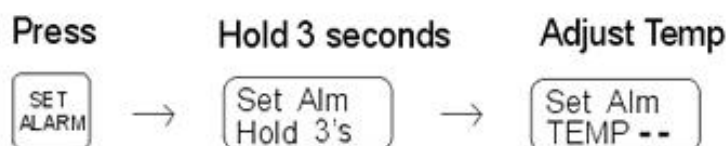
The Alarm Delay gives the operator 10 seconds to start the engine before the Low Oil alarm comes on.

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LOW OIL

After the initial 10 second Alarm Delay period, whenever the dash board oil light comes on the TM4 will alarm. The alarm Light and Buzzer will come on for 15 seconds and then the buzzer will stop. Only the LOW OIL message and Light will continue to flash on.

This silent mode is used in case the power source for the TM4 is run off the cigarette plug and you want to listen to the car radio without the engine running.

3. HOW TO SET THE ALARM TEMPERATURE



Set Alm
Hold 3's

Press the 'Set Alarm' switch down until this message appears. Hold the switch on for 3 seconds until the message below appears.

Set Alm
TEMP --

You have now accessed the main Temperature Alarm settings. Whatever number is displayed when the unit leaves this program becomes the new Alarm Temperature. To observe the Alarm Temperature without altering it, release your finger and wait.

To move the temperature forward repress the switch once more. If you continue to repress the switch, one press at a time, the alarm temperature will move forward one number at a time. If you hold the switch down at any time after the first repress, it will advance at high speed. If you lift your finger for more than 3 seconds the unit will leave this program and return to the main display message. If the optional Cooling Fan Relay kit is fitted, the TM4 will now enter the RELAY ON program.

- Note**
- The counter scrolls in a forward direction only. **It will go to 127 and then return to 1.**
 - When the counter gets to 100 it will stop, this used to speed up the production of the TM4 in the factory. Repress the switch to get it to advance forward again.

4. DISPLAYING THE HIGHEST RECORDED TEMPERATURE (max 127c)

Press &
Hold down

SET
ALARM



Switch
power
on



Continue to hold switch
down for 5 seconds



(Blank Screen)



Highest
TEMP -- c

Hold the front switch down and power the unit on, a blank screen will illuminate. Continue to hold the switch down for 5 seconds until the highest temperature the unit has reached displays. Once the switch is released the unit will resume normal starting after 5 seconds. NOTE If the switch is repressed within this 5 second period the highest recorded temperature will be reset to zero.

Cancelling the Highest Recorded Temperature

Press &
Hold down

SET
ALARM



Switch
power
on



(Blank Screen)



Highest
TEMP -- c



Release switch
& repress within
5 seconds



Highest
TEMP 00 c

NOTE- If the units sensor cable gets damaged, false readings may be recorded.

5. MINUS TEMPERATURES

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TEMP <1c

Sensor
0 or N/c

The TM4 will NOT read minus temperatures. If the sensor temperature is below zero degrees Celsius, the TM4 will display <1c. If it is at 0 degrees, it will display the second message. While these messages are displayed neither the Alarm or the optional Cooling Fan Relay will operate. Once the sensor temperature is above zero degrees all functions will be restored.

6. DISPLAYING FAULT CONDITIONS

Sensor
0 or N/c

If the sensor is obviously not at zero degrees Celsius and this message appears, then the TM4 is no longer receiving readings from the sensor and it is not connected (N/c).

While this message is displayed neither the Alarm nor the Cooling Fan Relay will operate until such time as the sensor fault is fixed. The most likely cause is either the WHITE wire or the SHIELD in the sensor cable has been crushed or is open circuit. CHECK for obvious damage to the cable or any joints. Also look for hidden damage to the cable such as under over tightened cable ties and at flex points. Alternatively replace the sensor.

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TEMP 85c

If the TM4 has obviously stopped working correctly and is just displaying the temperature 85, check the sensor cable. **While this state exists neither the Alarm or the optional Cooling Fan Relay will operate correctly.** The most likely cause is the RED wire in the sensor cable has been crushed or is open circuit. Follow the CHECKING procedure above.

COOLING FAN CONTROL RELAY (Optional)

Relay does NOT come standard and is sold as a separate part

Note The following functions and messages will only operate when the optional Cooling Fan Relay kit is plugged into the TM4.

7. Additional new messages displayed when the TM4 is first turned On

Relay →
ON --c

Each time the TM4 is switch on, the 'RELAY ON' & 'RELAY OFF' temperatures will display for 3 seconds. This allows the operator to check the settings are correct.

Relay →
OFF --c

Also whenever the relay is on, the relay light will activate and the 'Relay On' message will displays every 5 seconds.

8. HOW TO SET THE RELAY ON / OFF TEMPERATURES



Set Relay
ON --c

You have now accessed the Relay On settings. Whatever number is displayed when the unit leaves this program becomes the new RELAY ON Temperature. To bypass this program release your finger and wait. To move the temperature forward repress the switch once more. If you continue to repress the switch, one press at a time, the ON temperature will move forward two numbers at a time.

If you hold the switch down at any time after the first repress, it will advance at high speed. If you lift your finger for more than 3 seconds the unit will leave this program and advance to the RELAY OFF program.

Set Relay
OFF --c

This message comes on after the RELAY ON program. Repeat the procedure above to set the RELAY OFF temperature. If any number higher than 0 has been entered into the RELAY ON memory, the TM4 will not leave the RELAY OFF program until a number between 1 and 127 has been entered into it.

9. RELAY WARNING MESSAGE

Set Relay
WARNING

If this message appears after setting the relay on/off temperatures or, when the unit is first switched on, the unit has detected unusual setting to be used when controlling a cooling fan. Either the RELAY OFF temperature is higher that the RELAY ON temperature, or if the RELAY ON temperature is higher than the MAIN ALARM temperature. If either of these conditions exist, the TM4 will give two quick beeps and display this message each time it is started. To stop this warning correct the setting to suit a Cooling Fan

IMPORTANT WARNING

The TM4 is a versatile temperature warning and switching device. The Settings outlined in point 9 can be used safely in many applications, however there may be some applications in moving vehicles that are not safe ie. stopping the engine. If the above message is activated, ensure the TM4 is being used in a safe manner.

Manufactured by Signals Australia P/L
39 Regis St
Salisbury QLD 4107
Australia

Phone 07 32776770
International +61 7 32776770
Web enginewatchdog.com
enginewatchdog@optusnet.com.au