Timed Engine Shut Off (**TESO)**

The APEXS, Inc. TESO product is designed with 2 levels of fail-safe reliability, security of recorded time data and flexible set-up options.

NOTE:
It is not necessary to have the vehicle engine On/Off switch to be on or the engine running to perform <u>any</u> of these procedures.

Before starting the set-up process, the following decisions must be made in advance:

1) Length of time (minimum) in minutes engine must be On before the TESO is enabled.
Your selection choices are "r3", "r4" "r5", "r6", "r7", "r8", "r9" "10", "15", "20", "25", "30". When the minimum selected engine On time is reached, **On** will be displayed. When the Engine On/Off switch is placed in the **Off** position with **On** displayed, the **T**imed **E**ngine **S**hut **O**ff (TESO) function is entered. TESO will be alternately displayed with 1, 2, 3, 4, 5, 6, 7, 8, or 9 (depending on your choice for **F2**) until there is 30 seconds remaining. At that point, a 30 second engine Shut-Off countdown display will start.

 2) Length of time in minutes to have engine idling in TESO mode. Selection choices are in the range   of "t1" through "t9".

  3) TESO has a 4 digit PassCode for set-up and time data protection. The "default" code is **0000.** For security, it is recommended that this code **NOT** be retained and that a new code be selected. To gain initial access to the Set Up process**, PassCode 0000 MUST** be entered. <u>Changing</u> the PassCode requires that it be <u>entered 2 times</u>. If an incorrect PassCode is entered, Er (Error) is displayed and the PassCode entry is aborted.

 4) Length of delay time (d) time in **seconds** to allow the engine to continue to run after a High Temperature or Low Oil condition is detected by TESO. The choices are "d1", "d2", "d3", "d4", "d5", "d6", "d7", "d8", "d9". d1 through d9 corresponds to 10 seconds trough 90 seconds in 10 second increments. Therefore, the minimum possible delay time is 25 (15 plus 10 seconds) seconds and the maximum delay time is 105 (15 plus 90 seconds) seconds.   Note: The High Temperature or Low Oil condition must be detected for 15 seconds before the engine shut off time-out (count down) starts.

TESO Set-up Procedure

Press TT and TER simultaneously and release. You will see PO displayed. This is the prompt for the first digit of your 4 digit **PASC**ode. By default, **PASC** display will always be set to 4 Zeroes (0000). **P** will be 0, **A** will be 0, **S** will be 0 and **C** will be 0.

Initially, the PassCode is set by the manufacturer to **0000.** This is the code (default) that MUST be entered the first time the Set-up procedure is used.

This gives you the opportunity to enter your PassCode and start the set-up process. If you have retained (**Not** recommended) the default PassCode of 0000, simply press TT four (4) times, you will see **SU** (Set Up) displayed for about 2 seconds and then F0. If you have changed the PassCode, you must enter the correct code. An incorrect code entry will result in an **Er** (Error) being displayed followed by a special *Six digit PassCode recovery code. The PassCode entry will be aborted. It can be immediately attempted again by pressing TT and TER simultaneously and releasing.

If you have assigned a PassCode other than 0000, for example 6357, it is entered by pressing TT and TER together and releasing (for PassCode entry mode), TER is pressed to get a display of P6 then TT is pressed to enter that value (digit 6 for P), A0 will be displayed, TER is pressed to get A3 displayed, TT is pressed to enter that value (digit 3 for A). The same process is followed for the other 2 PassCode digits. A correct entry results in **SU** (Set Up) being displayed for 2 seconds and then **F0** is displayed. This is the first function of the main menu. An incorrect PassCode entry results in an **Er** (Error) display followed by a special *Six digit PassCode recovery code.

TESO has seven main menu Set Up functions, they are **F0** through **F6** sub-functions are accessed by pressing the TER button while in the main menu mode. The functions are:
F0 Exits the set up mode if the TT button is pressed.

F1 Sets the minimum engine runtime in minutes ("r3", "r4" "r5", "r6", "r7", "r8", "r9" "10", "15", "20", "25", "30") required before the TESO mode can be entered. To get to the F1 menu, press TER then press TT. The current "r" value will be displayed. Select the desired engine runtime choice by pressing TER and then pressing TT to enter your choice. F1 is again displayed.

F2 Length of time in minutes to have the engine idling in TESO mode. Selection choices are in the range of "t1" through "t9". To get to the F2 menu, press TER to get F2 displayed. Then press TT, the current "t" value is displayed. Display choices "t1" through "t9" by pressing TER to select your choice, then press TT to enter. F2 is again displayed.

F3 Clears (sets to zero) the accumulated **T**otal **E**ngine **R**untime (**TER**) being saved by TESO. To get to the F3 menu, press TER , with F3 displayed, press TT and "no" is displayed. You can toggle between "no" and "CL" (Clear) by pressing TER. By pressing TT with "no" displayed, F3 is again displayed. By pressing TT with "CL" displayed, the TER timer data is displayed to give the user one last chance to write the data (time) down before it is deleted. F3 is again displayed. **CAUTION**, if this setup option is selected and executed, the data is deleted and can not be retrieved!

F4 Clears (sets to zero) the accumulated **T**otal **TESO** **T**ime (**TT**). This operates exactly as **F3**.

F5** Sets the 10 seconds increments delay, ("d1", "d2", "d3", "d4", "d5", "d6", "d7", "d8", "d9") before the engine is shut off after a High Temperature or Low Oil pressure warning is detected and displayed. To get to **F5**, press TER until F5 is displayed, then press TT, the current F5 value will be displayed, press TER to select the desired F5 value and then press TT to enter it. F5 will again be displayed.

F6 Changes PassCode. To change the PassCode, follow the procedure indicated above for entering a PassCode. The only difference is that the NEW PassCode must be correctly entered two times before the change is accepted.

*The six digit PassCode recovery code is displayed to enable recovery of a forgotten PassCode. The procedure is for the authorized user to copy the recovery code and send it to the manufacturer and request PassCode recovery service. After appropriate verifications, the correct PassCode will be sent to the user.

If after entering the Set Up mode, there is no activity (TT or TER entries) for 60 seconds, the Set Up mode will be exited and the display extinguished.

A display of the Total TESO Time (TT) or the Total Engine Runtime (TER) can be obtained at anytime simply by pressing TT or TER switch. TT will be in minutes and TER will be in hours. This time data is retained even if the vehicle battery is disconnected or the TESO is removed from the vehicle.

** IMPORTANT NOTE

TESO device indicating **OIL** alarm

When the engine **off/on/start** key switch is placed in the **On** position for more than 15 seconds <u>with out</u> starting the engine, an **OIL** pressure alarm will start. If the engine is NOT started within 1 minute you will be unable to start the engine.

To start the engine, you must switch the TESO Emergency bypass switch (located on top of the TESO unit) to On, <u>start the engine</u> and then switch the Emergency bypass to Off.

You can then switch the engine to Off and the OIL alarm will not come on.

To avoid the Oil pressure alarm problem, please do not place the key switch in the On position unless you immediately start the engine.

If there are any questions about the functioning of the TESO device, please contact Jun at (032)495 2106

Thank you,

APEXS, Inc
EGI by the Sea
Suite 714
Maribago Mactan
Ph. 495 2106 and 233 0835