

Driver Information Center

USER'S GUIDE

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Overview

Description

Driver Information Center displays vehicle and engine parameters received from the SAE J1708/J1587 engine data bus. The parameters are displayed on a two-line by twenty character, back lit liquid crystal display (LCD) while the ignition is on. When the ignition is turned off, Driver Information Center goes to 'sleep' and blanks the LCD. When asleep, Driver Information Center keeps the clock running and monitors the alarm. When the ignition is turned on again, Driver Information Center 'wakes up', turns on the LCD and displays the same function menu and field as was displayed before the ignition was turned off. Four tactile keys allow the user to toggle and scroll through the vehicle and engine parameters, set the time and the alarm, and start, stop or reset any of the six Trips.

Note:

- Engine and vehicle parameters are only displayed by the Driver Information Center, they cannot be modified.

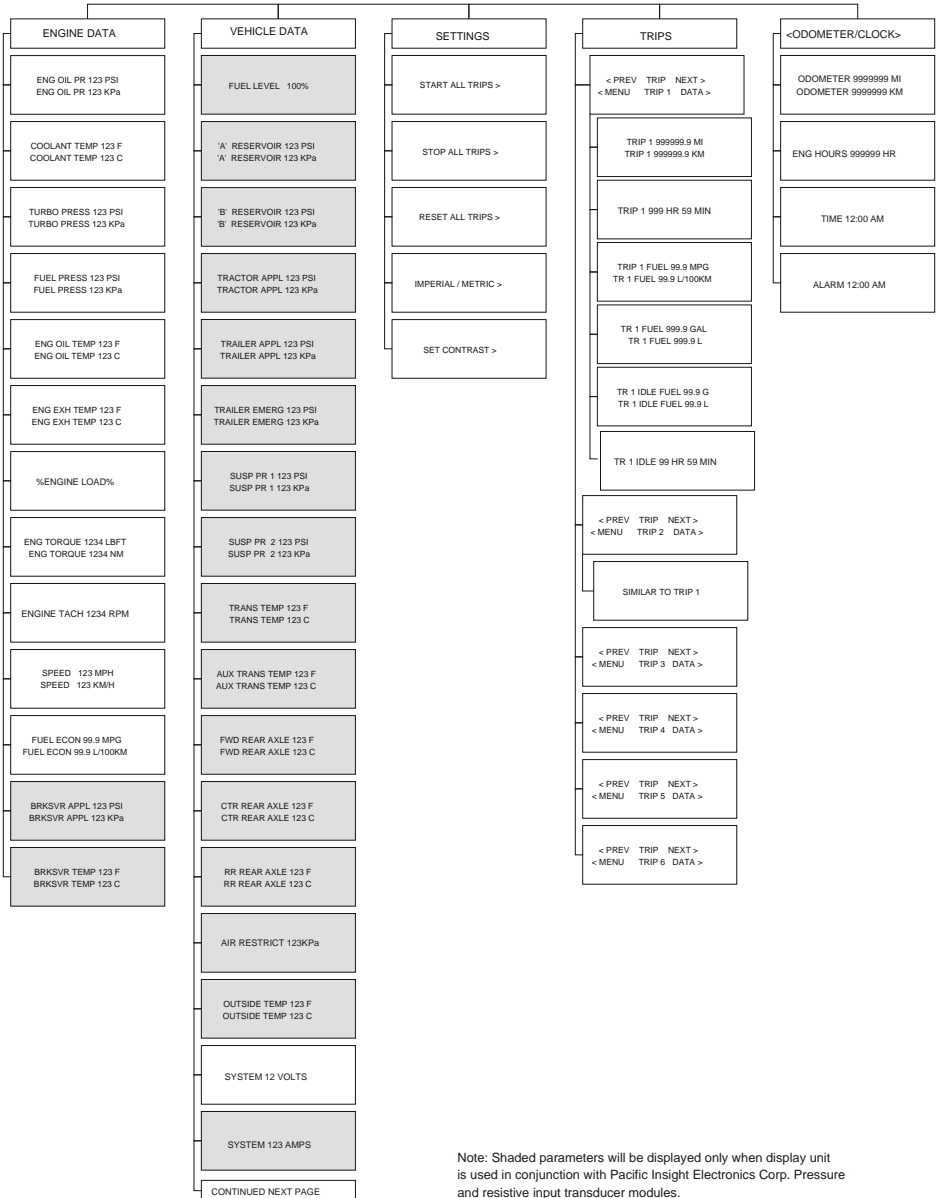
Installation

See Appendix A for the Driver Information Center installation instructions

Operating Environment

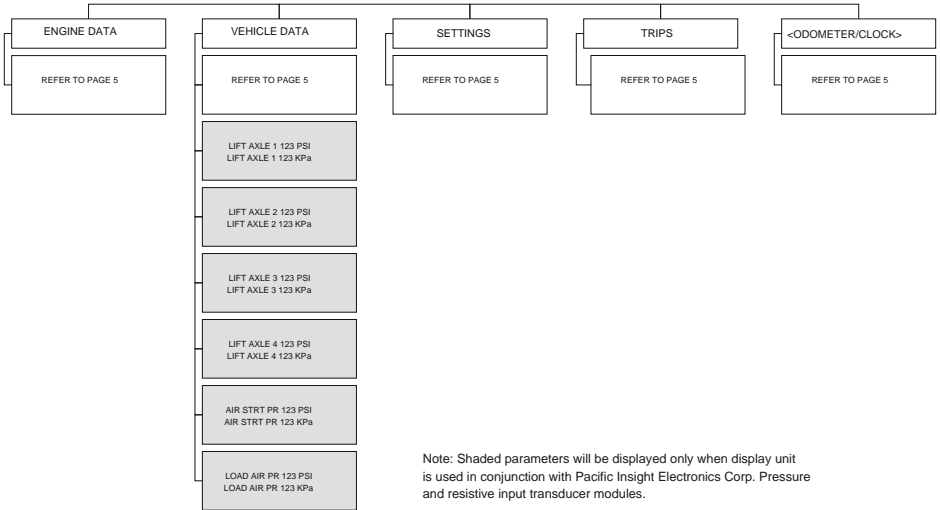
Driver Information Center operates within a temperature range of -20°C to +70°C. Temperatures outside of this range may cause difficulty in reading the display, however, the functionality of the Driver Information Center will not be affected.

Driver Information Center MENU TREE



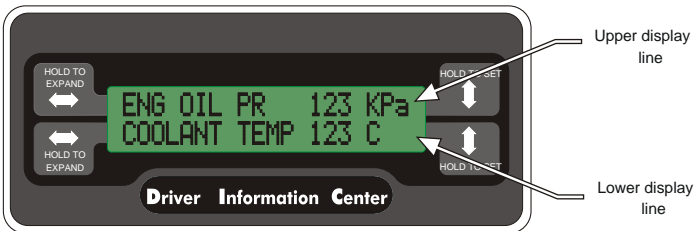
Note: Shaded parameters will be displayed only when display unit is used in conjunction with Pacific Insight Electronics Corp. Pressure and resistive input transducer modules.

Driver Information Center MENU TREE

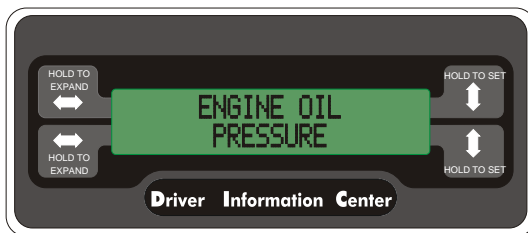


Reading the Display

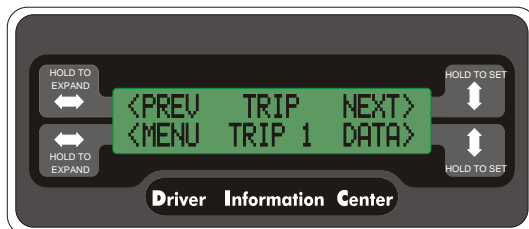
The Driver Information Center display has upper and lower lines. The lines normally function independently of each other allowing two different parameters to be displayed at once.



In the diagram above, the top line displays Engine Oil Pressure while the bottom line displays Coolant Temperature. Either line could be changed to display a different parameter without affecting the other line of the display. Some Driver Information Center functions require that both lines be used to display one screen. For example, if the Upper Expand key is pressed and held for longer than two seconds, the abbreviated text of the upper line will be expanded, resulting in the display below. This two line screen will be shown for four seconds before the previous screen returns.



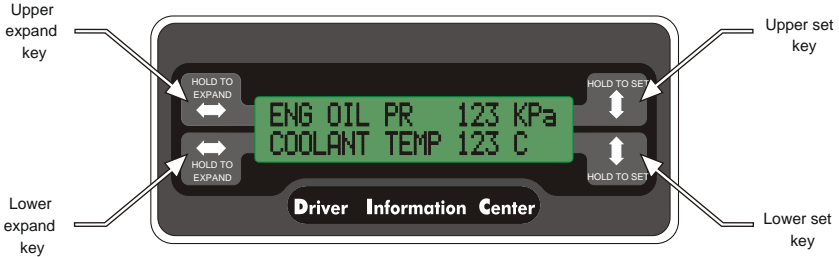
The Trips Setup menu in the diagram below is another example of a two line display.



All the instructions in this manual refer to the top display line. The bottom display line functions in exactly the same manner as the top.

Function Keys

Driver Information Center has four keys. In this guide, the keys to the left of the display are referred to as the Upper and Lower Expand keys. The keys to the right of the display are referred to as the Upper and Lower Set keys.

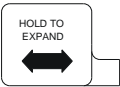
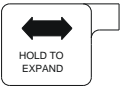
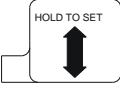
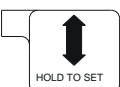


Using the Expand Keys

The Expand keys are located on the left side of the display and control the line of text next to the key. Pressing and releasing a key scrolls the line across the different function menus. (Refer to the Driver Information Center Menu Tree for the function menus provided by the unit). Pressing and holding a key for longer than two seconds when a parameter (not a menu title) is displayed will display an expanded description of that parameter. Both display lines will be used for the description and it will remain displayed for four seconds.

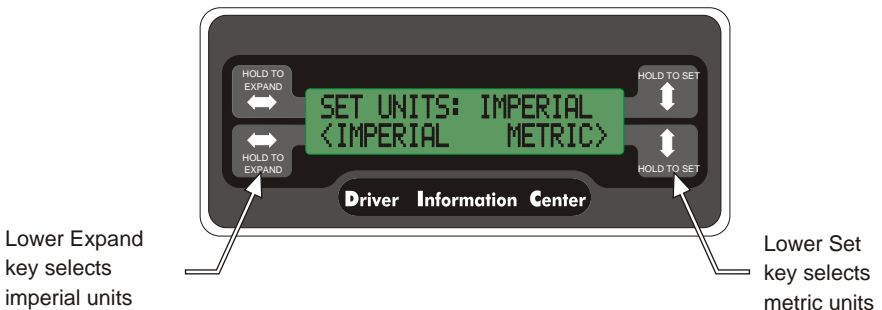
Using the Set Keys

The Set keys are located on the right side of the display and control the line of text next to the key. Pressing and releasing a key scrolls the line down through the different parameters or functions of a particular menu. (Refer to the Driver Information Center Menu Tree for the function menus provided by the unit). If the line is displaying a menu function, press and hold the Set key for more than two seconds to run the function.

Key	Picture	Normal use	
		When pressed	When held
Upper Expand Key		Scrolls across menus on the upper display line.	Expands the abbreviated text on the upper display line.
Lower Expand Key		Scrolls across menus on the lower display line.	Expands the abbreviated text on the lower display line.
Upper Set Key		Scrolls through the functions of the currently selected menu on the upper display line.	Runs the function displayed on the upper line.
Lower Set Key		Scrolls through the functions of the currently selected menu on the lower display line.	Runs the function displayed on the lower line.

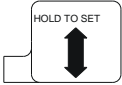
Special Key Uses:

The keys can have functions other than those described above. In these cases an arrow will appear on the line that points to the key to be pressed to perform the desired function (see the diagram below).



Key Usage

In this manual the user will be prompted to “Press Until” and “Hold Until”. “Press Until” means to press and release the key shown in the manual until the desired screen is shown. “Hold Until” means to hold the key shown in the manual down for approximately 2 seconds until the desired screen is shown.

Press  Until: Press and release the key until the desired screen is displayed.

Hold  Until: Hold the key until the desired screen is displayed.

Engine Data Menu

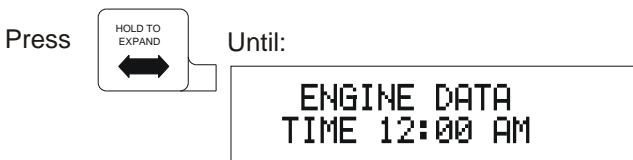
Engine Data Menu Overview

Parameters displayed in this menu relate to the operation of the engine such as oil pressure, engine temperature, engine RPM, etc., as well as vehicle speed and fuel economy. All parameters are received from the data bus and none can be changed by the user.

All references to the Upper Set key apply to the Lower Set key if the user is utilizing the Lower line of the Driver Information Center display.

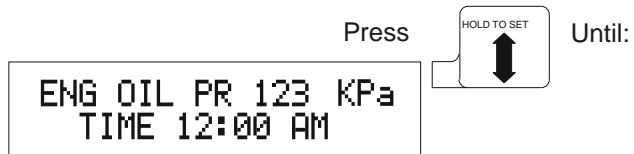
Note: Not all parameters may be visible. Only those that are broadcast on the engine's data bus will be displayed.

Selecting the Engine Data Menu:



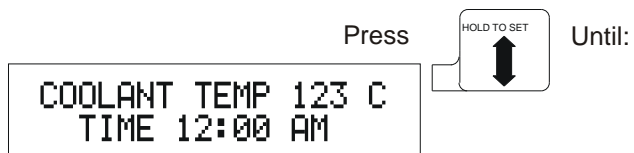
Engine Oil Pressure

This parameter is the engine oil pressure.



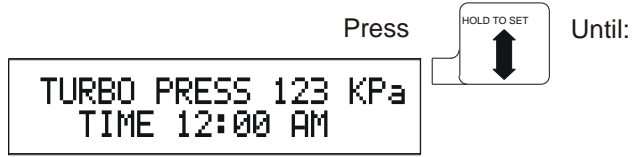
Coolant Temperature

This parameter is the engine coolant temperature.



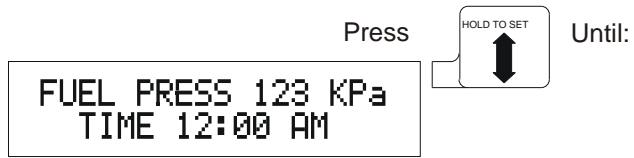
Turbocharger Pressure

This parameter is the air pressure on the output of the turbocharger.



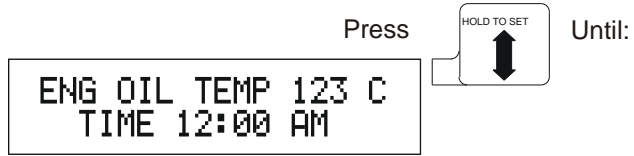
Fuel Pressure

This parameter is the engine fuel pressure.



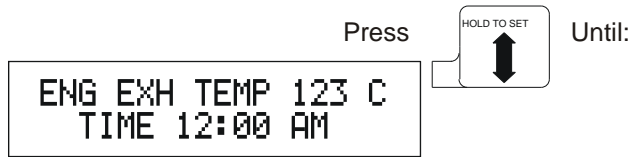
Engine Oil Temperature

This parameter is the engine oil temperature.



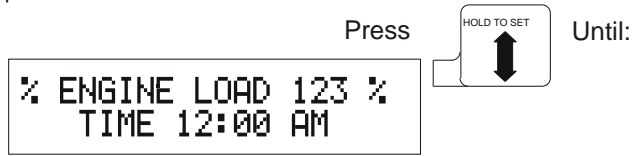
Engine Exhaust Temperature

This parameter is the engine exhaust temperature.



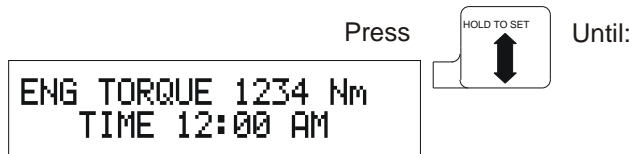
Engine Load

This parameter is the ratio of current engine torque to maximum torque.



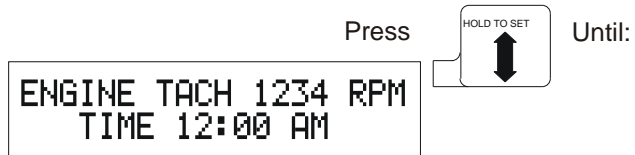
Engine Output Torque

This parameter is the engine torque.



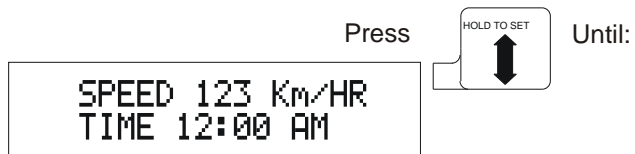
Engine Tachometer

This parameter is the engine speed.



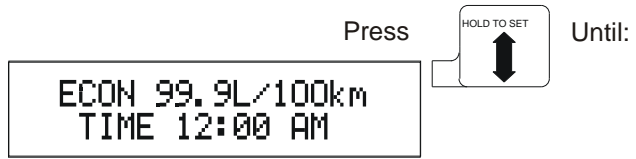
Vehicle Speed

This parameter is the vehicle speed.



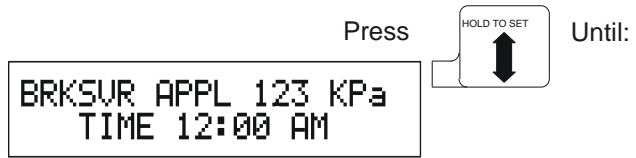
Fuel Economy

This parameter is the instantaneous fuel economy.



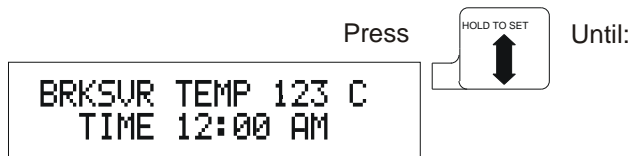
Brakesaver Application Pressure

This parameter is the Brakesaver oil pressure.



Brakesaver Temperature

This parameter is the Brakesaver oil temperature.



Vehicle Data

Vehicle Data Overview

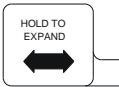
Parameters displayed in this menu relate to the operation of the vehicle such as primary reservoir air pressure, transmission temperature, battery voltage, etc. All parameters are received from the data bus and none can be changed by the user.

All references to the Upper Set key apply to the Lower Set key if the user is utilizing the Lower line of the Driver Information Center display.

Note: Not all parameters may be visible. Only those that are broadcast on the data bus will be displayed.

Selecting the Vehicle Data Menu:

Press



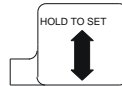
Until:

VEHICLE DATA
TIME 12:00 AM

Fuel Level

This parameter is the fuel level in the fuel tank.

Press



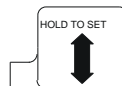
Until:

FUEL LEVEL 100 %
TIME 12:00 AM

"A" Reservoir Pressure

This parameter is the primary reservoir air pressure.

Press

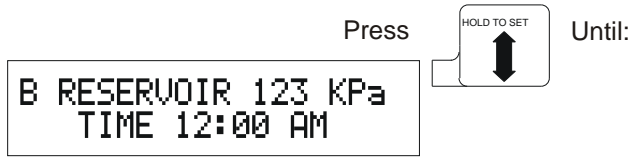


Until:

A RESERVOIR 123 KPa
TIME 12:00 AM

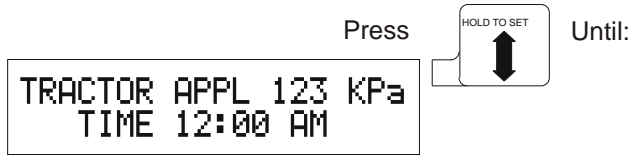
“B” Reservoir Pressure

This parameter is the secondary reservoir air pressure.



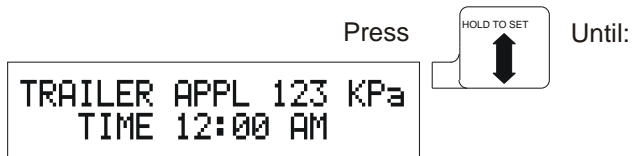
Tractor Application Pressure

This parameter is the tractor brake application pressure.



Trailer Application Pressure

This parameter is the trailer brake application air pressure.




Trailer Emergency Pressure

This parameter is the trailer emergency air pressure.

Press

TRAILER EMRG 123 KPa
TIME 12:00 AM

HOLD TO SET



Until:


Suspension 1 Pressure

This parameter is the air suspension 1 air pressure.

Press

SUSP PR 1 123 KPa
TIME 12:00 AM

HOLD TO SET



Until:


Suspension 2 Pressure

This parameter is the air suspension 2 air pressure.

Press

SUSP PR 2 123 KPa
TIME 12:00 AM

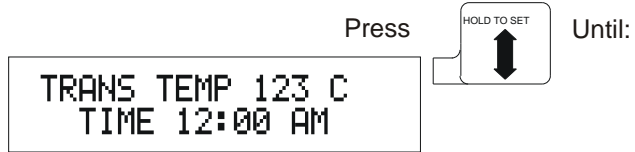
HOLD TO SET



Until:

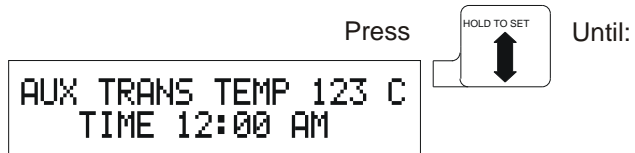
Transmission Oil Temperature

This parameter is the transmission oil temperature.



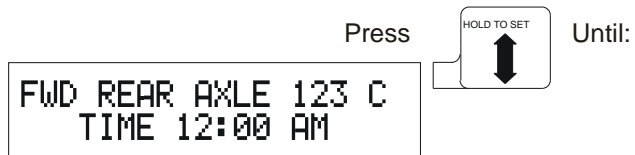
Auxiliary Transmission Oil Temperature

This parameter is the auxiliary transmission oil temperature.



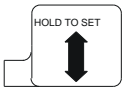
Forward, Rear Axle Temperature

This parameter is the forward, rear drive axle oil temperature.



Center, Rear Axle Temperature

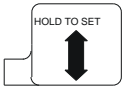
This parameter is the center, rear drive axle oil temperature.

Press  Until:

CTR REAR AXLE 123 C
TIME 12:00 AM

Rear, Rear Axle Temperature

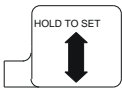
This parameter is the rear, rear drive axle oil temperature.

Press  Until:

RR REAR AXLE 123 C
TIME 12:00 AM

Air Restriction Pressure

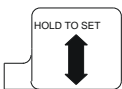
This parameter is the pressure drop across the air filter.

Press  Until:

AIR RESTRICT 123 KPa
TIME 12:00 AM

Outside Temperature

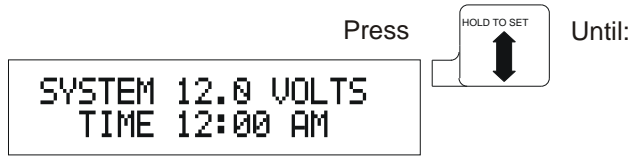
This parameter is the air temperature outside the vehicle.

Press  Until:

OUTSIDE TEMP 123 C
TIME 12:00 AM

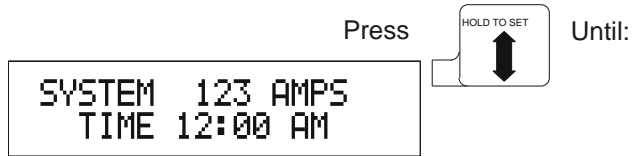
Electrical Voltage

This parameter is the battery voltage.



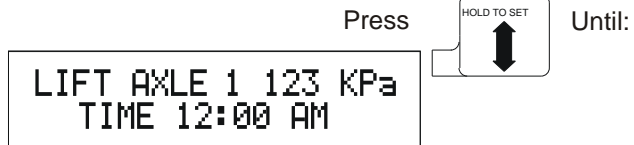
Electrical Current

This parameter is the battery charge/discharge current.



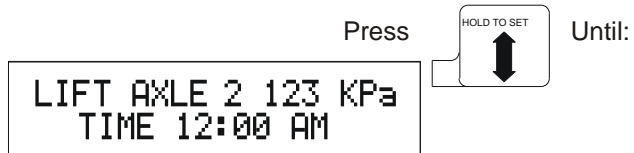
Pusher or Tag Axle Pressure

Axle type depends on vehicle configuration. This parameter is the lift axle 1 pressure.



Pusher or Tag Axle Pressure

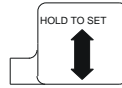
Axle type depends on vehicle configuration. This parameter is the lift axle 2 pressure.



Pusher or Tag Axle Pressure

Axle type depends on vehicle configuration. This parameter is the lift axle 3 pressure.

Press



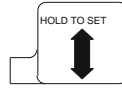
Until:

LIFT AXLE 3 123 KPa
TIME 12:00 AM

Pusher or Tag Axle Pressure

Axle type depends on vehicle configuration. This parameter is the lift axle 4 pressure.

Press



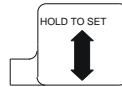
Until:

LIFT AXLE 4 123 KPa
TIME 12:00 AM

Air Start Pressure

This parameter is the air start reservoir pressure.

Press



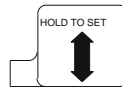
Until:

AIR STRT PR 123 KPa
TIME 12:00 AM

Load Air Pressure

This parameter is the load air suspension pressure.

Press



Until:

LOAD AIR PR 123 KPa
TIME 12:00 AM

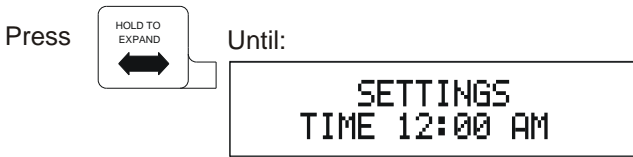
Settings Menu

Settings Menu Overview

The items in this menu allow the user to change the way Driver Information Center functions. The user can Start, Stop, and Reset all the Trips, select Imperial or Metric units, and adjust the display contrast.

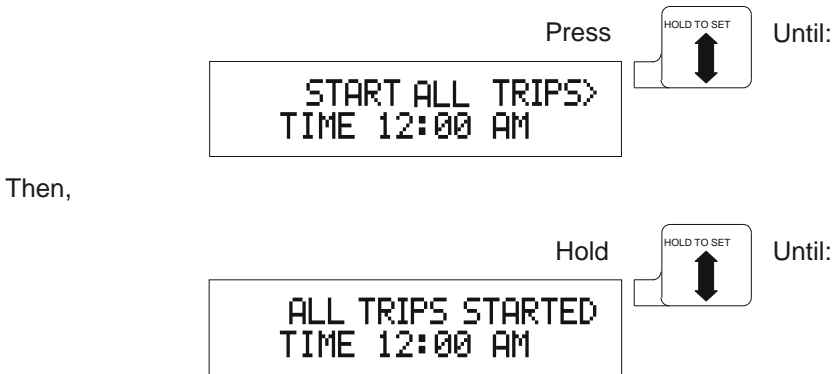
All references to the Upper Set key apply to the Lower Set key if the user is utilizing the Lower line of the Driver Information Center display.

Selecting the Settings Menu:



Start All Trips

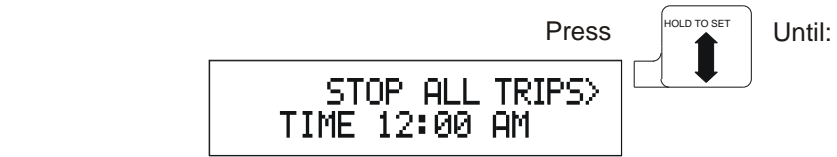
This function starts all 6 Trips simultaneously.



This confirmation message is displayed for two seconds.

Stop All Trips

This function stops all six Trips simultaneously. Data for all six Trips will no longer be accumulated.



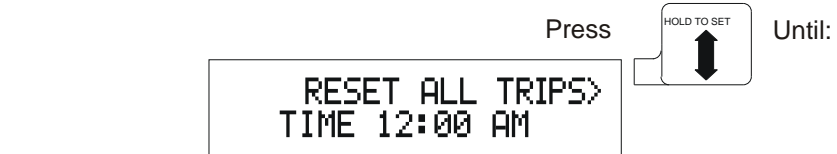
Then,



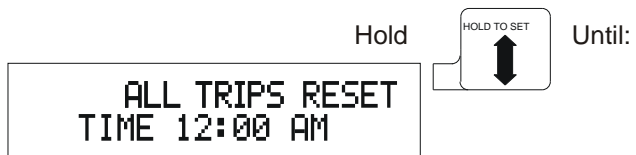
This confirmation message is displayed for two seconds.

Reset All Trips

This function resets all six Trips simultaneously. Data for all six Trips is reset to zero. If any trips are running, they will continue to run.



Then,



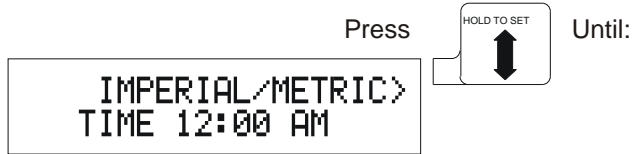
This confirmation message is displayed for two seconds.

Selecting Imperial or Metric Units:

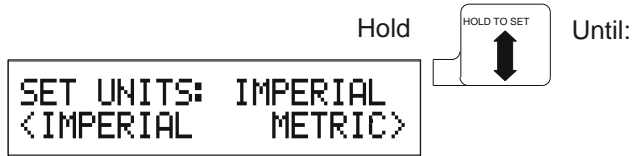
IMPERIAL/METRIC

This function allows the user to select the units of measure displayed by the Driver Information Center

IMPERIAL	METRIC
PSI	Kpa
MPH	KPH
Miles	Km
US Gallons	L



Then,



This screen allows the user to select the units that all parameter data will be displayed in. Pressing the "IMPERIAL" key selects imperial units, the "METRIC" key selects metric units.

To select the desired units:

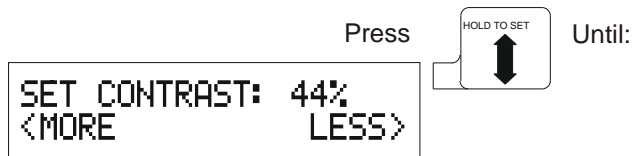


This screen will remain displayed for up to eight seconds if no keys are pressed, then the display returns to the IMPERIAL/METRIC> menu with no changes made.

Once a selection is made the word in the upper right of the screen changes to the selected units. Two seconds later the display returns to the IMPERIAL/METRIC> menu.

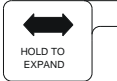
Adjusting Display Contrast :

The display contrast can be adjusted by the user for optimum viewing. Adjustment may be necessary due to varying cab temperatures, ambient cab light direction and intensities as well as user viewing angle. The new contrast will be stored in permanent memory and the module will default to this contrast setting until the user changes it again.



This screen will remain displayed for up to eight seconds if no keys are pressed, then the display will return to the SET CONTRAST> menu.

To change the contrast:

Press  To increase contrast

Or,

Press  To reduce contrast

Pressing the "MORE" key increases the contrast or darkens the characters and pressing the "LESS" key decreases the contrast or lightens the characters.

Pressing either upper key will exit this function and save the new contrast value in memory

Trips Menu

Trips Menu Overview

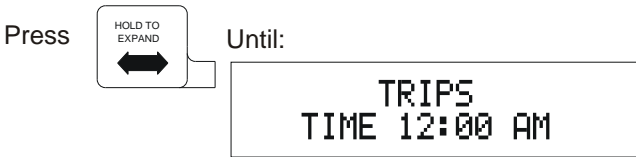
For each of the six Trips Driver Information Center calculates Distance, Time, Fuel Economy, Fuel Usage, Idle Fuel Usage and Idle Time from data received from the data bus. This menu allows the user to select a Trip, display the Trip data, and start, stop or reset a Trip. (To start, stop or reset all Trips simultaneously, refer to the SETTINGS menu section pages 19-20).

All Trip information, including the state of the Trips (whether Trips are running or not), is stored in permanent memory each time the vehicle ignition is turned off. If the vehicle battery is disconnected, this information will not be lost. All Trips will resume in the same state when the battery is re-connected.

Note: Trip information will not be accumulated while the vehicle ignition is turned off.

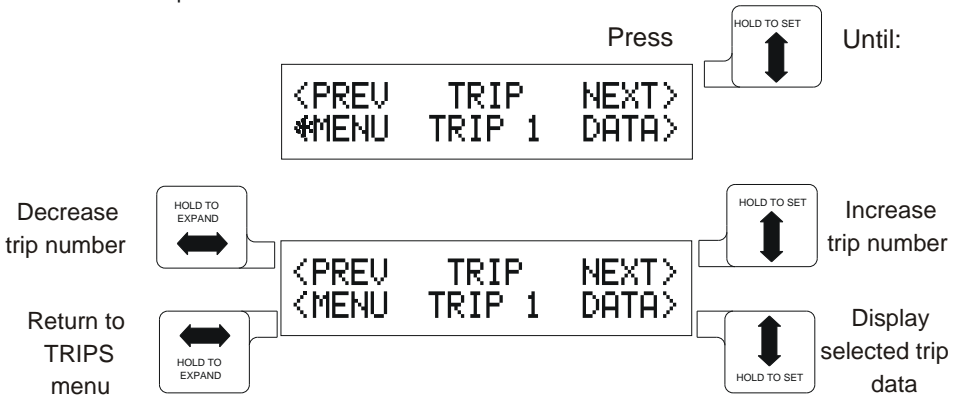
All references to the Upper Set key also apply to the Lower Set key if the user is utilizing the Lower line of the display. DATASTAR

Selecting the Trips Menu:



Choosing the Desired Trip:

This screen allows the user to select a desired trip, display the trip data or return to the Trips Menu.



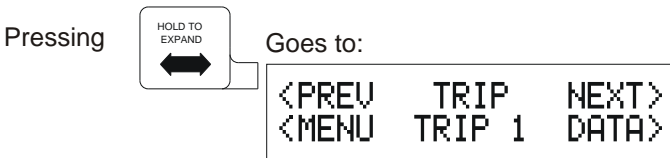
Pressing the “PREV” key decrements the Trip number, the “NEXT” key increments the Trip number, the “DATA” key clears this setup screen and places the selected Trip data onto a single line, and the “MENU” key returns the display to the TRIPS menu.

If a Trip is running, an * will appear to the right of the Trip number.

This screen remains displayed for menu up to eight seconds if no keys are pressed, then the display returns to the TRIPS menu.

Display Trip Data:

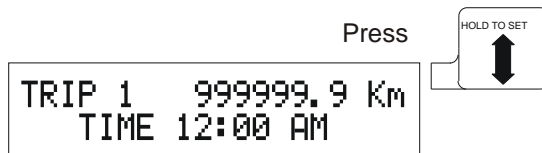
While any Trip data is being displayed, pressing the Expand key next to the line the data is on returns the display to the Trip setup screen.



Trip Distance

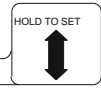
This screen displays the total distance traveled during the selected Trip.

If a Trip is running, an * will appear to the right of the Trip number.



Trip Time

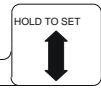
This screen displays the total time elapsed during the selected Trip.

Press  Until:

TRIP 1 999 HR 59 MIN
TIME 12:00 AM

Trip Fuel Economy

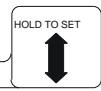
This screen displays the average fuel economy during the selected Trip

Press  Until:

TR 1 ECON 99.9L/100K
TIME 12:00 AM

Trip Fuel Used

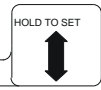
This screen displays the amount of fuel used during the selected Trip.

Press  Until:

TR 1 FUEL 999.9 L
TIME 12:00 AM

Trip Fuel Used in Idle

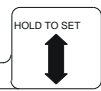
This screen displays the amount of fuel used when the engine is idling during the selected Trip.

Press  Until:

TR 1 IDLE FUEL 99.9L
TIME 12:00 AM

Trip Time at Idle

This screen displays the engine idling time during the selected Trip.

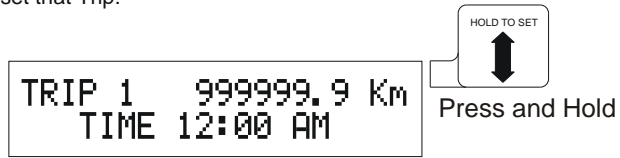
Press  Until:

TR 1 IDLE 99HR 59MIN
TIME 12:00 AM

To Start, Stop or Reset an Individual Trip:

Select the desired Trip using the Trips Setup screen described in the previous section.

Then to Start, Stop or Reset that Trip:



Until:



This screen allows the user to start, stop or reset the Trip. Pressing the “START” key starts the Trip, the “STOP” key stops the Trip or the “RESET” key resets the trip. If a Trip is running when it is reset, it will keep running with all the data set to zero. This screen remains displayed for up to eight seconds if no keys are pressed, then the display returns to the Trip data with no changes made.

An * will appear to the right of the Trip number if the Trip is running.

TRIP 1 STARTED
TIME 12:00 AM

This message is displayed for two seconds in response to a Trip being started.

TRIP 1 STOPPED
TIME 12:00 AM

This message is displayed for two seconds in response to a Trip being stopped.

TRIP 1 RESET
TIME 12:00 AM

This message is displayed for two seconds in response to a Trip being reset.

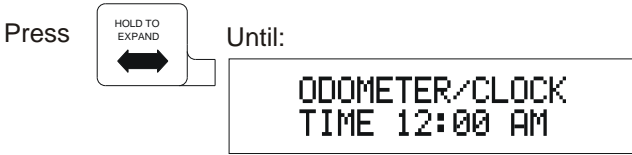
Odometer/Clock Menu

Odometer/Clock Menu Overview

This menu displays Vehicle Odometer, Engine Hours, Time and Alarm Time. Odometer and Hours are parameters read from the data bus and will be visible only if the parameter is being broadcast. Time and Alarm Time are read from a clock chip in the Driver Information Center and can be set by the user.

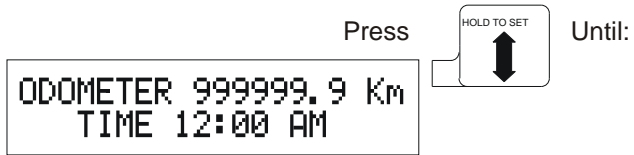
All references to the Upper Set key apply to the Lower Set key if the user is utilizing the lower line of the Driver Information Center display.

Selecting the Odometer/Clock Menu:



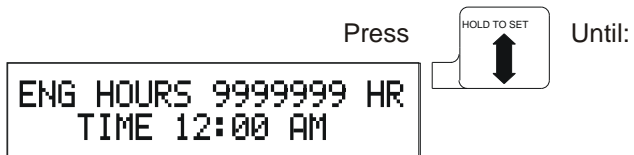
Odometer

This parameter is the accumulated distance traveled by the vehicle during its operation.



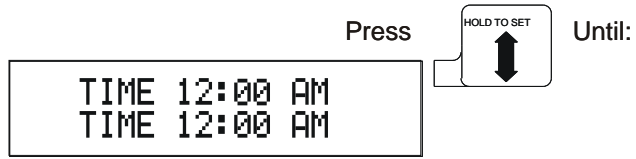
Engine Hours

This parameter is the accumulated time of operation of the engine.

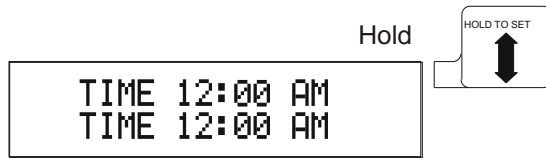


Time

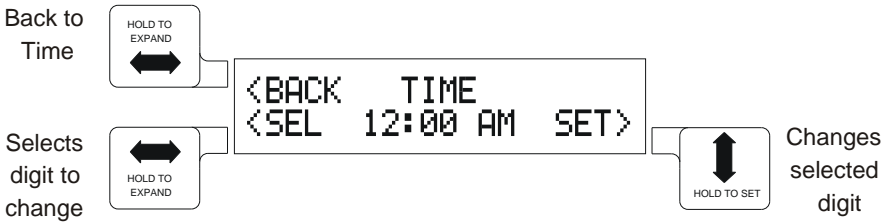
This screen displays the current time.



To Set the Time:



Until:

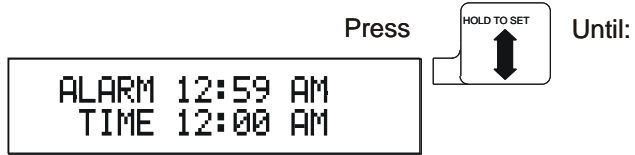


This screen allows the user to set the time. A flashing highlight will appear over a digit indicating it can be changed. Pressing the “SEL” key moves the highlight to the next digit. The highlighted digit is changed by pressing the “SET” key. Pressing the “BACK” key returns the display to the Time screen and the new time is stored in the clock.

This screen remains displayed for up to eight seconds if no keys are pressed, then the display returns to the Time screen and the new time is stored in the clock.

Alarm

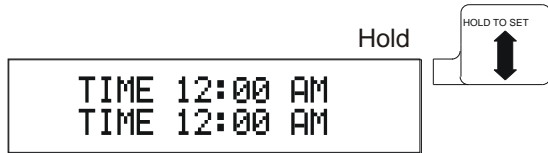
This screen displays the time the alarm is set to. When an * is visible next to the time, the Alarm is set and will go off when the Time reaches the Alarm time.



When the Alarm goes off, the display is flashed on and off with the Time on the top line and the Alarm on the bottom line and the beeper beeps. The alarm is canceled when any key is pressed and the display will go back to what was displayed before the alarm went off. If no key is pressed, the beeper will stop after 30 seconds, but the display will continue to flash. The alarm will go off at the same time every 24 hours.

If the vehicle ignition is off, the alarm will wake the Driver Information Center and the display will flash and the beeper will beep as above. When a key is pressed to cancel the alarm, the Driver Information Center will go back to sleep.

To Set the Alarm:



Until:



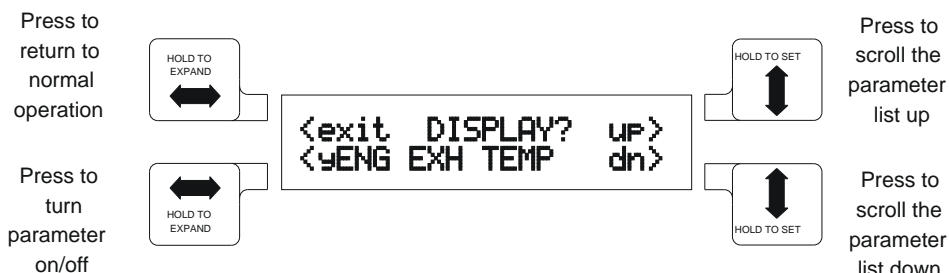
This screen allows the user to set the Alarm. A flashing highlight will appear over a digit indicating it can be changed. Pressing the "SEL" key moves the highlight to the next digit. The highlighted digit is changed by pressing the "SET" key. Pressing the "ON/OFF" key toggles the Alarm on or off. If the Alarm is on, an * will appear to the right of the time. Pressing the "BACK" key returns the display to the Alarm screen and the new Alarm time is stored in the clock.

This screen remains displayed for up to eight seconds if no keys are pressed, then the display returns to the Alarm screen and the new Alarm time is stored in the clock.

PARAMETER ON/OFF

This function allows the operator to permanently turn off the display of certain parameters in the Engine Data and Vehicle Data menus. The function is not available through any of the normal menus.

To run the function press and hold the upper Expand key while turning on the vehicle ignition. The screen below will be displayed:



A 'y' to the left of the parameter name indicates the parameter will be displayed. Otherwise, an 'n' indicates the parameter will not be displayed. Press the lower Expand key to toggle between 'y' and 'n'. Press the upper Set key to scroll the display up through the list and the lower Set key to scroll down. When finished with this function, press the upper Expand key to return to the normal Driver Information Center functions. The state of the parameters will be stored in permanent memory.

The following parameters can be turned on or off:

Engine Exhaust Temperature	Lift Axle 1 Pressure
BrakeSaver Application Pressure	Lift Axle 2 Pressure
BrakeSaver Temperature	Lift Axle 3 Pressure
Fuel Level	Lift Axle 4 Pressure
Reservoir "A" Pressure	Air Start Pressure
Reservoir "B" Pressure	Load Air Pressure
Tractor Application Pressure	
Trailer Application Pressure	
Trailer Emergency Pressure	
Suspension 1 Pressure	
Suspension 2 Pressure	
Transmission Temperature	
Auxiliary Transmission Temperature	
Forward, Rear Axle Temperature	
Center, Rear Axle Temperature	
Rear, Rear Axle Temperature	
Air Filter Restriction Pressure	
Ammeter	
Outside Temperature	

Installation Instructions

- 1) Ensure the opening in the dash is 56mm high by 132mm wide (2.2" x 5.2")
- 2) Insert the Driver Information Center into the opening.
- 3) Slide the mounting brackets onto the bolts on the rear of the DataStar. Make sure the bracket teeth are making contact with the dash panel.
- 4) Place the lock washers onto the bolts and then thread the nuts onto the bolts. Tighten the nuts using a torque driver set to 15 +/-5 in lbs.
- 5) Plug the harness connector into the back of the Driver Information Center. The connector is polarized and will only plug in one way.

Hardware Required

- 1 - Driver Information Center
- 2 - #8 Lock Washers
- 2 - 8-32 Hex Nuts
- 2 - Mounting Brackets

Tools Required

- 1 - 11/32" Torque Driver

