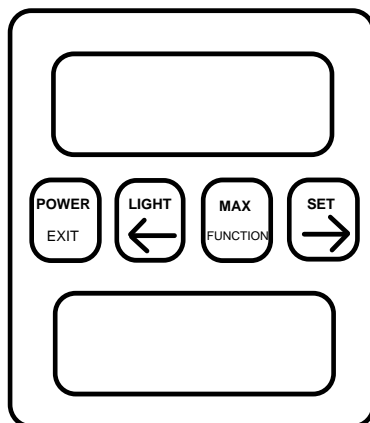
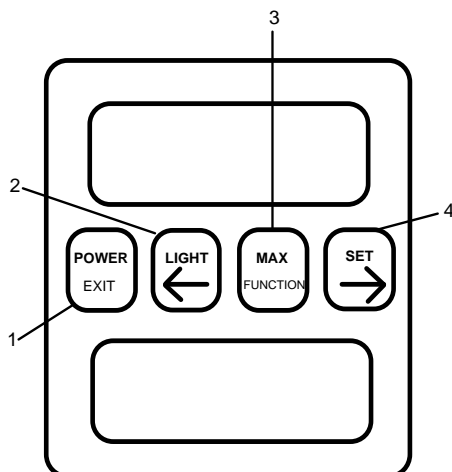


Digatron's DT-52SL Instruction Manual



Introduction

The DT-52SNL instruments are Digatron's compact, easy to use, multi-function, digital engine monitoring systems. This instrument was designed for the customer who wants to monitor their engine's two exhaust gas temperatures (EGT) while their sled is on. It also features backlight, maximum readings, limits and two LED overlimit warning lights.



Button Functions Defined for Set Limits Mode

1. **Power/Exit** Exits Set Limits mode and returns to Monitor mode.
2. **Light/←** Decreases the value of the limit being set. Hold this button down for the number to change faster.
3. **Max/Function** Toggles through the two limits and two warning lights.
4. **Set/→** Increases the value of the limit being set. Hold this button down for the number to change faster.

Button Functions Defined for Monitor Mode

1. **Power/Exit** Resets the maximum readings to zero.
2. **Light/←** Press and hold this button to toggle the backlight on and off and change the brightness of the warning lights. The warning lights will flash bright, then dim, then dim with the backlight on. Release the button at the appropriate setting.
3. **Max/Function** Displays the maximum readings since the instrument was turned on.
4. **Set/→** Enters Set Limits mode.

Installing Your Lighting Coil Harness

The DT-52SNL will only operate if the sensors are connected and your engine is on. Any unused instrument input must be terminated at the back of the instrument with a shorting plug available from Digatron. The sensor cables should always be routed as far away from the ignition system components as possible (plug wires, spark plugs, ignition coils, distributor or magneto). If the sensor cable is too close to these components it may pick up radiated electrical interference and cause erratic instrument readings and operation. A distance of at least 6" from these components is desirable in all installations. If your cable is too long to route back to your instrument fully extended, we recommend sending it back to Digatron to be cut to the appropriate length for your needs. You can also coil your sensor, but keep the coil away from the engine.

Your instrument receives its power from the lighting coil. To install the power harness, splice the red lead of the harness directly into the lighting coil wire before the regulator using the wire connector provided. Connect the other lead of the harness directly to the engine block. Route the connector end of the power harness to the instrument and plug it into the pigtail with the **black** boot.

When routing the sensor cable through any panels, be sure to use a rubber grommet to keep the cables from being cut by a sharp edge. It is also good practice to protect the sensor with a piece of fuel line, especially at any point that the cable may rub against a hard surface.

Installing Your EGT Sensor

Our standard EGT sensor is a type K thermocouple temperature sensor. Install the sensor clamp assembly, or weld on, to the exhaust header. Position the clamp so that the sensor will be in the center of the header. Using the fitting on the clamp assembly as a drill bushing, drill a 3/16" hole through the header. Reinstall the clamp assembly and align it with the hole just drilled. Due to differences in pipe manufacturing, Digatron recommends that you contact the manufacture of the pipe, or the dealer, for correct placement of your EGT sensor. Please contact Digatron technical support with questions.

Insert the sensor into the fitting so that the tip of the sensor extends 1/4" past the center of the header. Tighten the compression nut to lock it in place. When routing the sensor cable from the motor to the instrument, secure the cable with cable ties to prevent excessive movement.

About Exhaust Gas Temperature

Exhaust gas temperature (EGT) is used primarily for adjusting the air/fuel ratio. Because of its quick response, the effects of carburetor adjustments are seen immediately. Fuel system and carburetor problems can often be spotted quickly enough to prevent engine damage.

Exhaust gas temperatures typically run between 1100°F and 1350°F. The EGT on a properly tuned engine will increase rapidly as the throttle is opened and as the load on the engine is increased. At full throttle and full load the EGT will stabilize at a temperature dependent on the air/fuel ratio. Both a "too lean" or a "too rich" condition will be indicated by a lower than peak temperature. The "too lean" condition can damage your engine. An increase in coolant temperature or cylinder head temperature is usually an indication of this. The best way to determine what temperature is normal for your motor is to tune for good plug or piston color and then observe the temperature at various throttle settings.

Turning Your DT-52SNL On

Your instrument gets its power from the lighting coil harness of your sled. The instrument does not have its own batteries. When the sled is turned on, the instrument powers on. When the sled is turned off, the instrument automatically turns off.

When the instrument is first turned on it performs an initialization routine to check the LCDs. Press the **Exit** button to abort the initialization routine. When first powered on, it is always in the Monitor mode.

The Two Modes of the DT-52SNL

This instrument has two basic modes of operation. Set Limits and Monitor.

A. Set Limits mode is necessary before using your unit for the first time and if you use it on different engines. Limits help you prevent possible engine damage.

A. Setting Function Limits and Warning Lights

Before using your DT-52SNL, be sure to set the operating limits and warning light for each input. Limits and warning lights warn you of conditions that could be harmful to your engine. Limits cause the instrument to give you a visual warning (the display flashes) if either of the inputs exceed their limit. The LED can be set to flash at the same number as the display or at a different number. *Limits should be set at levels that allow you to react to the visual warning before engine damage occurs.* Limits are set in the following order: top EGT, bottom EGT, top LED, bottom LED.

Enter Set Limits mode by pressing the **SET** button. The instrument is now in Set Limits mode, which is indicated by the flashing displays.

- To change the number being displayed press the ← or the → button. Hold either of these buttons down and the number will change faster.
- When you are finished setting the first limit, press the **Function** button to set the next limit.
- Repeat the above procedure to set the remaining limit and LEDs.
- To save the current limits and return to Monitor mode, press the **Exit** button.

Note: Set limits at levels high enough for normal operation, but not so high that engine damage can occur before you can respond to a problem.

B. Monitor Mode is Used While on the Track

When your instrument is powered on, it is in Monitor mode. This is the mode the unit will be in so you can observe your EGT functions. During Monitor mode you can make quick tuning adjustments to your engine that allow you to run safe and fast. The instrument will visually warn you, by flashing the display and LED, if your engine exceeds the set limits. Limits and warning lights allow you to avoid engine damage.

Backlight and Dimming Warning Lights

The backlight is used to illuminate your LCDs for use at night. The warning lights are very bright so they are easily seen during the day. They can be dimmed if they are too bright. They are automatically dimmed when the backlight is turned on. These features can only be accessed in Monitor/Record mode.

- Press and hold the **Light** button to change the brightness of the warning lights and turn the backlight on. Holding this button will cause the lights to flash bright, then dim, then dim with the backlight on. Release the button at the appropriate setting.
- If the backlight is on, press the **Light** button to turn it off. The LEDs will change to the bright setting.

Maximum Readings

While in Monitor mode, press and hold the **Max** button to view the maximum reading for each EGT since the sled was turned on. Press the **Power** button to reset the maximum readings to zero.

Monitor mode is used while operating your snowmobile to watch your engine for excessive EGT temperatures.

Electrical Interference

If the instrument encounters excessive electrical interference it will display ERR on the left side of the display. The ERR annunciator can indicate an incorrect instrument or sensor installation. To clear the instrument, turn your sled off for at least one minute and then restart. Also be sure to check your sensor connections. Severe electrical interference can cause the limits to reprogram themselves. If your instrument is doing strange things, put it in Set Limits mode and check to see that the limits are still where you set them.

Electrical interference problems can normally be solved by installing a *resistance plug boot*. We recommend using an NGK boot, # LB05EMH.

To avoid erratic readings:

- Route the lead as far away from the ignition coil as possible.
- Running your lead through a section of fuel line will protect it from cuts and abrasions, but will not shield it from ignition generated interference.
- Be sure that all sensors are connected to the instrument, and that all connectors fit together snugly. If a sensor is not being used, the input at the back of the instrument must have a shorting plug, which is available from Digatron.

Troubleshooting

The following are explanations to some commonly asked questions.

What are those letters on the side of my LCD?

There are two annunciators that may be displayed on the left side of your LCDs.

EGT stands for Exhaust Gas Temperature

ERR stands for Error and could mean that your instrument has encountered extreme electrical interference. This can ruin the recorded information and possibly cause the instrument to reprogram its limits and calibration values.

Why is the LCD Flashing?

This signifies that you are either in Set Limits mode or that your engine exceeded a set limit.

Repairs

If you have any questions about the operation of your instrument, please call. One of our technicians will be happy to help you. Please have your instrument nearby to help while troubleshooting with the technician.

Your instrument is warranted to be free from factory defects and electronic failure for one year from the date of purchase. Physical damage during normal usage is not covered under the warranty. Be sure to fill out and return your warranty card for our records. If we do not have a card on file for your instrument, you will be charged for repairs unless you can provide us with proof of purchase date.

When returning an instrument for repair, please use the repair form found on our website or enclose a note indicating your return address, phone number and a detailed description of the problem. Send your instrument and sensors so that we can check the complete system.

Send repairs to:

Digatron LLC

120 N. Wall St. Ste 300

Spokane, WA 99201

www.digatronusa.com

Phone: (509) 467-3128 Fax: (509) 467-2952

5/7/2008