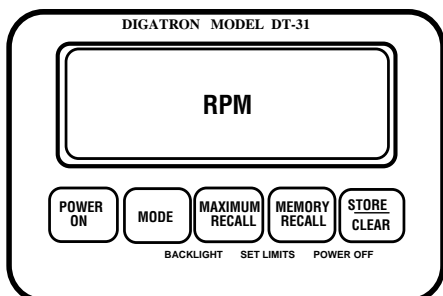


OPERATING INSTRUCTIONS MODEL DT-31SN

INSTRUMENT CONFIGURATION



POWER ON

To turn the instrument on, depress the **POWER ON** button. The instrument will turn on after a 2 second delay.

SETTING FUNCTION LIMITS

The first thing to do before putting your instrument into service is to set the RPM limit and calibration. This will allow the instrument to give the driver a visual warning when the RPM exceeds the limit you have set. *The limit should not be set to such an extreme that engine damage occurs before the driver can react to the problem.*

To set the limit, use the following procedure. Turn the instrument on by pressing the **POWER ON** button. Then, press the **MAXIMUM RECALL** and the **MEMORY RECALL** buttons simultaneously and hold for approximately 2 seconds. This will put the instrument into the **SET LIMITS** mode of operation, which is indicated by the flashing display.

To *increase* the limit by the 100 RPM quickly press and release the **MAXIMUM RECALL** button. To *decrease* the limit, quickly press and release the **MEMORY RECALL** button. To increase or decrease the limit by a *large* amount, press and hold either the **MAXIMUM RECALL** or the **MEMORY RECALL** button until the approximate limit value is reached.

The **TACH** requires the setting of *two* separate parameters. The first setting is the *maximum RPM* limit for safe engine operation. The second setting is the **TACH calibration number** required to display the correct engine RPM. Set the RPM limit exactly as previously outlined. Then press the **MODE** switch to move to Tachometer calibration.

The instrument will show a number between 1 and 21 in the Tach display. The instrument divides the tach input signal by this number in order to display RPM correctly.

Find the correct calibration number for your sled as follows:

Determine the number of poles in the lighting coil you are connecting to and *divide* this number by two. Set the tach calibration to this number.

Common settings:

2 cylinders	set at 2 or 4
3 cylinders	set at 3 or 6
4 cylinders	set at 4 or 6

If you are unsure of the exact TACH calibration number, experiment. For example, if the calibration number is set at "2" and the RPM reading is double what it should be, set the calibration number at "4". Alternately, if the RPM reading is half of the correct value, decrease the calibration number to half it's original value.

To **SAVE** the current limits and to exit the "**SET LIMITS**" mode, press the **STORE** button.

Your instrument is now set up and ready for use.

MODE BUTTON

The **MODE** button is used when *Setting Limits* and *TACH Calibration*, or in conjunction with the **MAXIMUM RECALL** button to operate the **BACKLIGHT**

STORE SWITCHES

Each time (Up to 3 times) the optional **REMOTE STORE** switch or the **STORE** button on the instrument is pressed the current tachometer reading is stored in the instruments memory. The optional **WARNING INDICATOR LIGHT** and the instruments' display will flash briefly indicating a successful store of information.

This instrument contains enough memory to store three complete sets of RPM readings. After three sets of readings are stored, additional attempts to store information will be ignored

In addition to these user stored readings, a **maximum** reading for this "power on" period is stored automatically.

MAXIMUM RECALL

The **MAXIMUM RECALL** button is used to display the **maximum** reading the tach has reached. Storage of this reading takes place automatically and requires no input from the user.

To display this reading, before turning the instrument off, hold down the **MAXIMUM RECALL** button. The maximum reading will be displayed until the button is released.

Alternating with the maximum reading will be the percentage of battery life remaining.

MEMORY RECALL

The **MEMORY RECALL** button is used to recall the readings you have stored in memory using either the **REMOTE STORE** switch or the **STORE** button on the instrument.

To recall the first reading you have stored, press and release the **MEMORY RECALL** button. The contents of the first memory will be displayed and the *left* decimal point in the display will flash, indicating memory one.

Press **MEMORY RECALL** again for the second reading which will be indicated by the *middle* decimal point.


A third press of **MEMORY RECALL** will bring up the last stored reading, indicated by the *right* decimal point.


Press **MEMORY RECALL** once more to return to normal display mode.

BACKLIGHTS

To turn the Backlighting on or off, press and hold the **MODE** and **MAXIMUM RECALL** buttons simultaneously for approximately 2 seconds.

DISPLAY of OVERLIMIT/ OVERRANGE

OVERLIMIT conditions are indicated by  alternating with the reading in the display where the **OVERLIMIT** condition occurs.

OVERRANGE conditions are indicated by  in the display where the **OVERRANGE** condition occurs.

This condition can also be caused by a bad or disconnected sensor.

WARNING INDICATOR LIGHT

The optional **WARNING LIGHT** provides the following information to the user.

1. Flashes constantly when the *limit* you have set is exceeded. Flashing will stop when the **OVERLIMIT** condition falls below the **SET LIMIT**.

2. Flashes once when either the optional **REMOTE STORE** switch or the **STORE** button on the instrument is pressed to store data. No flash when either of these buttons is pressed indicates the memory is full.

BATTERY LIFE

The batteries in your instrument provide power only when the motor is *not* running. This is to allow you to set limits and calibration without starting your motor or to check your stored readings up to ten minutes after your motor has been turned off.

A fresh set of AA alkaline batteries will last for about 120 hours of operation with the motor *off*. Heavy duty batteries will last approximately half as long. As outlined under the **MAX RECALL** heading, the instrument will display the percentage of battery life remaining. The instrument will also warn you of a low battery condition by displaying "**lo b**" in one of the displays.


When your motor is running all power for your instrument is supplied by the lighting coil.

POWER OFF

This instrument will turn itself off automatically approximately ten minutes after the engine is shut off. You may also turn the instrument off manually by pressing the **MEMORY RECALL** and **STORE** buttons at the same time.

Any stored data will be lost at the moment the power is turned off. Record or view all stored information before turning the instrument off.

ELECTRICAL INTERFERENCE

If the instrument encounters excessive electrical interference it will display three vertical decimal points  in the TACH display. This indicates that the stored data could be invalid.

A large noise spike can cause the limits and calibration to reprogram themselves. If your instrument appears to be doing strange things, put it in the "SET LIMITS" mode and check to see that the RPM limit and calibration are still where you set them.

If you have any questions about the operation of your instrument please call. One of our technicians will be happy to help you.

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