Linear®
Building On Innovation.

Model 2500-2346

Operating Instructions

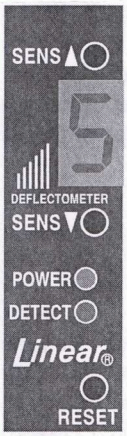
Plug-in Vehicle Loop Detector

Single Channel – Dual Solid State Outputs

General/Overview:

The Linear Model 2500-2346 operates on 12 VDC, 24 VDC, and 24 VAC. The detector is designed to handle gate, parking, drive-through, and all access control applications where ***solid-state*** outputs are required for both the "detect and "fail" outputs. From a diagnostic standpoint, the Model 2500-2346 automatically and continuously senses three (3) types of possible loop fault conditions: Open Loop(s), Shorted Loop(s), sudden changes in inductance exceeding 25% of the nominal inductance. The Model 2500-2346 also displays the frequency of the loop upon power up. Immediately after applying power, the unit will display 2 or 3 numbers quickly flashing (values between 13 and 150 kilohertz) before the DEFLECTOMETER resets to zero. This allows you to measure and separate the frequency of each detector loop. The detector frequency should be adjusted so that there is a minimum of 5 kilohertz of separation between all adjacent loops.

Setting Sensitivity:



The **DEFLECTOMETER** (front panel 7-segment LED) aids in setting the detector to the most optimum sensitivity level to help ensure the detection of all vehicles, including motorcycles and high bed vehicles.

For typical vehicles (mid-size vehicle / small pick up) utilizing properly installed roadway loops, when the number 4, 5, or 6 **(5 being optimum)** is displayed on the DEFLECTOMETER during the DETECT output period then the sensitivity is set correctly. For high profile vehicles (commercial trucks, 4x4's, etc...), DEFLECTOMETER reading 3 or 4 will be best. For low profile vehicles (sports cars, etc...), DEFLECTOMETER reading 6 or 7 will be best.

Adjusting sensitivity utilizing the DEFLECTOMETER:

The DEFLECTOMETER should read zero (0) with no vehicle over the roadway loop.

If a mid-size vehicle, located over the roadway loop causes the number "7" to be displayed on the DEFLECTOMETER, you need to lower the sensitivity two levels (7 – 2 = DEFLECTOMETER reading 5). This can be done by pressing the front panel SENS▼ (down) push button twice.

If a mid-size vehicle, located over the roadway loop causes the number "2" to be displayed on the DEFLECTOMETER, you need to add three sensitivity levels (2 + 3 = DEFLECTOMETER reading "5". This can be done by pressing the front panel SENS▲ (up) push button 3 times.

Another great feature to note is that the sensitivity dynamically updates after each push button position change, allowing you to change sensitivity settings while a vehicle is over the loop zone.

Adjusting sensitivity without using the DEFLECTOMETER (Manually set Sensitivity):

The Model 2500-2346 offers 10 levels of sensitivity (0 to 9). This can be manually set to any desired level by pressing the SENS▲ or SENS▼ front panel push buttons when a vehicle is NOT over the roadway loop. The sensitivity level will be displayed on the 7-segment LED. The factory default is level 4. Pressing the SENS▲ or SENS▼ switch once will display the sensitivity without changing the setting. After pressing the SENS▲ or SENS▼ switches to display the sensitivity, the sensitivity can be changed by pressing the SENS▲ or SENS▼ switches again. The display will automatically return to the normal display after several seconds.

Dip Switch Functions:

Dip Switch 1 & 2 – Frequency: The operating frequency is controlled by the setting of switches 1 & 2 of the 8 position DIP Switch. Occasionally when loops are in close proximity to each other, it may be necessary to select different frequencies for each loop detector to avoid loop interference (crosstalk). The actual loop frequency is a function of the size of the loop, number of turns of loop wire in the loop, length of the lead-in cable, and the setting of the frequency switches. When power is applied to the detector, the operating frequency (between 13 and 150 kilohertz) is displayed on the front panel 7-segment LED (2 or 3 numbers will quickly flash before the DEFLECTOMETER goes to zero) allowing you to measure the frequency of each detector/loop. The detector frequency should be adjusted so that there is a minimum of 5 kilohertz of separation between all adjacent loops.

Dip Switch 3 – Fail-Safe / Fail-Secure Operation: Either Fail-Safe or Fail-Secure Operation is controlled by the setting of switch 3 of the 8 position DIP Switch. The default position is Fail-Safe (switch 3 in the OFF position). If a loop fault occurs while in the Fail-Safe mode, Output A activates. If a loop fault occurs in the Fail-Secure mode (switch 3 is in the ON position) Output A will not activate.

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