

DSP-100 Vehicle Detector

The Only Vehicle Detector You Will Ever Need!

OVERVIEW

The DSP-100 vehicle detector has been specifically designed to handle all traffic applications.

Working on virtually any size loop, the DSP-100 tunes itself automatically to the best operating frequency within the selected range. HYPERTRACK software constantly compensates for the changing environmental conditions. The DSP-100's inherent noise filtering algorithms allow it to work reliably in any electrical situation.

With its rugged enclosure, front panel switch features, and built-in flexibility the DSP-100 is the most "user friendly" detector on the market today.

FEATURES

Loop Size - Works on in-ground inductive loops from 20 to 1500 μ H.

Fail Safe Operation - The main output relay contact is configured to output a call whenever the loop circuit has failed or power is interrupted.

Indicators - Separate Power/Fail and Detect LEDs.

Sensitivity - Ten sensitivity settings.

Frequency - Automatically tunes within one of four operating ranges.

Output A - Main detection output. Can be modified by delay and extension. Factory set to be fail safe and can be programmed to output either presence or pulse.

Loop failure - If the loop fails, the power indicator flashes. The option to "remember" an intermittent loop failure is also provided.

Delay - Can be selected to ignore fast moving or "right turn" vehicles over the loop. Delay can be set from 0 to 63 seconds in one second increments.

Extension - Extends a call for slow moving vehicles. Extension can be set from 0 to 15.75 seconds in quarter second increments.



Fail Secure - The main output can be configured to remove a call whenever the loop has failed or power is interrupted by setting internal jumper J2.

Solid State Outputs - The DSP-100 can be ordered in a dual output solid state version or a version with two relays.

Output B - Can be set to one of the following four options:

- 1) True presence (no extension or delay)
- 2) Pulse on vehicle entering loop
- 3) Pulse on vehicle exiting loop
- 4) Loop Fail output (relay energizes to indicate a loop failure condition).

Green Extend - Normal operation always honors any extension time programmed. The DSP-100 can be set to extend only during the green interval by setting jumper J1 and connecting the 117 AC green input for that phase to connector pin J.



Stuck in traffic for over 30 years!

Phone: (866) 395-6677 (Toll Free Sales)

FAX: (510) 490-4111

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Web Site: www.diablocontrols.com

DSP-100 INSTRUCTIONS AND SPECIFICATIONS

Sensitivity - Almost all traffic applications can be handled with sensitivity set at NORMAL (level 5). The sensitivity rotary switch is rarely moved from NORMAL. However, the DSP-100 is equipped with ten sensitivity settings varying from a LOW of level 0 to a HIGH of level 9.

Delay – This interval is between vehicle arrival and output activation. Delay time can be programmed from 0 to 63 seconds in one-second increments. During the delay interval, the CALL LED is flashed slowly. If the vehicle leaves before the delay interval times out, the output will not occur. *Delay only affects Output A.*

Extension - Extension is the interval after vehicle exit and output deactivation. Extension time can be programmed from 0 to 15.75 seconds in quarter second increments. During this interval, the CALL LED is flashed rapidly. If another vehicle arrives before the interval times out, the output will not be dropped. *Extension only affects Output A.*

Loop Failure Memory - Normal loop failure is indicated by a blinking Power LED for as long as the loop is in failure. If the loop recovers, then the green Power LED reverts to a steady on. With DIPSWITCH 3 turned on, the DSP-100 will indicate a prior intermittent loop failure by continuing to blink even if the loop fixes itself.

Pulse / Presence - DIPSWITCH 4 selects this feature. With switch 4 turned on, Output A will output a 125 ms pulse each time a vehicle enters the loop detection area. If the vehicle remains within the loop for two seconds, the detector will automatically retune making itself ready for the next vehicle to arrive. If switch 4 is turned off, the detector will output presence. Both modes are subject to any delay and extension times programmed.

Indicators

The green POWER LED shows the following status:

Normal	On
Loop open	1 flash/second
Loop shorted	2 flashes/second
Intermittent loop	3 flashes/second

The red DETECT LED shows the following status:

Delay	Blinks slowly
Call	On
Extension	Blinks fast
No Call	Off

Frequency - One of four operating frequencies can be selected by using front panel DIPSWITCHES 5 and 6.

NOTE - Changing the function DIPSWITCH or ROTARY SWITCH setting automatically resets the detector, which cancels the call output.

Output B Function Select – Output B is factory shipped disabled. To enable Output B to come out on pin I of the MS connector, jumper J5 must first be installed. Setting jumpers J3 and J4 appropriately will enable Output B in any one of the following ways:

True presence - The output is energized whenever a vehicle is present. The output is *not* affected by any delay or extension timing. (No jumpers)

Entry pulse - The output is energized for 125 ms when a vehicle enters the loop. (J3 only)

Exit pulse - The output is energized for 125 ms when a vehicle exits the loop. (J4 only)

Loop fail - The output is energized when the inductive loop fails (opens or shorts). (Both J3 & J4)

Fail Safe or Fail Secure Operation - The DSP-100 will be shipped in the fail safe mode from the factory. In the standard fail safe mode, output A is normally energized and will de-energize for any one of the following conditions: vehicle detection, loop failure, or power failure. A fail secure model may be ordered as an option.

Output Relay Ratings - 3A, 150 VDC or 300 VAC.

Power - 117 VAC. Contact factory for other available voltages. Power consumption is less than 3 watts.

Enclosure – Aluminum extrusion.

H – 4.75” (121 mm) W – 2.25” (57 mm) D – 4.5” (114 mm)

Connector – Standard 10-pin MS. Pin assignments are shown below:

A	AC neutral	F	Output A closes for call
B	Output Common	G	Output A opens for call (relay only)
C	AC hot	H	Chassis ground
D	Loop	I	Output B closes for call
E	Loop	J	Delay Inhibit 117 VAC

Operating Temperature - -35°F to 165°F (-37°C to 74°C)

Ordering Information - Standard part numbers are as follows:

DSP100	117 VAC, single relay output, fail safe
DSP100-SS	117 VAC, dual solid state outputs, fail safe
DSP100-RR	117 VAC, dual relay outputs, fail safe

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