DSP-15 Vehicle Detector

A single unit for all low voltages – 10 to 30 Volts AC or DC

FEATURES

Loop Size - Works on any in-ground inductive loop from 20 to 1000 µH.

Fail Safe or Fail Secure Operation - Can be easily changed to either mode in the field.

Indicators - Separate Power/Fail and Detect LEDs.

Connector - Ten position terminal block or 10 pin male Molex connector

Sensitivity - Ten sensitivity settings.

Frequency - Automatically tunes within one of four operating ranges.

Outputs - Two separate relay outputs with features that are switch programmable as follows:

> **Output A -** Main detection output which can be modified by delay and extension. Fail safe or fail secure operation changeable by PCB jumper. NOTE: Units are shipped in the **Fail Safe** mode.
>
> **Output B –** Switch selectable 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

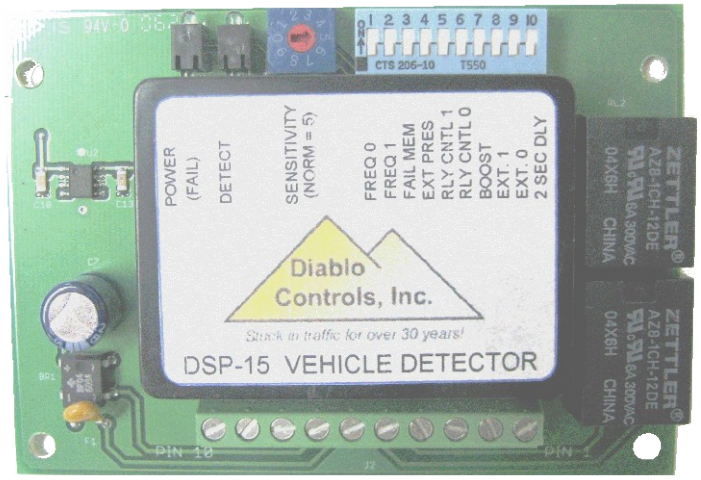
Sensitivity Boost - Can be used in special applications to insure complete detection of high-bed vehicles.

Hold Time - Normal or extended hold time is selectable.

Loop Failure - If the loop fails, opens or shorts, the power indicator flashes. Output B can also indicate this condition if desired (see above). The option to "remember" an intermittent loop failure is also provided.

Delay - Can be selected to ignore fast moving vehicles over the loop.

Extension - Extends a call for slow moving vehicles.



Sensitivity - Experience has shown that almost all parking and access control applications can be handled with sensitivity set at NORMAL (level 5). The rotary sensitivity switch is rarely moved from NORMAL. However, the DSP-15 has ten sensitivity settings varying from LOW (level 0) to HIGH (level 9).

OPERATION

The DSP-15 vehicle detector has been specifically designed to handle all parking, drive-through and access control applications.

Working on virtually any size loop, the DSP-15 automatically tunes itself to the best operating frequency within the selected range. Environmental conditions are constantly compensated with the DSP-15's *HYPERTRACK* software. The DSP-15's inherent noise filtering algorithms allow it to work reliably in any electrical situation.

It can be used as either a safety loop or free exit loop detector. With the flexibility to be either "fail safe" or "fail secure," it is the only parking detector you will ever need.

Diablo Controls, Inc.

Stuck in traffic for over 30 years!

Phone: (866) 395-6677 (Toll Free)
DSP15_CUT_D

Phone: (925) 837-1884 (Technical Help)
Web Site: www.diablocontrols.com

DSP-15 INSTRUCTIONS AND SPECIFICATIONS

Delay - With DIPSWITCH 10 turned off there is no delay. With DIPSWITCH 10 turned on there is a 2 second delay before output A occurs. This 2 second delay is flashed on the CALL LED. If the vehicle leaves before the two seconds has timed out, the output will not occur. ***Delay only affects Output A***.

Extension - DIPSWITCHES 9 and 8 are used to select extension timing. See chart below for extension times. Extension allows a vehicle call to be "remembered" for a period of time after the vehicle has left the loop. Selected extension time is flashed on the call LED. ***Extension*** *timing* ***only affects Output A.***

	DIP Switch 9	DIP Switch 8
0 seconds	Off	Off
2 seconds	On	Off
5 seconds	Off	On
10 seconds	On	On

Sensitivity Boost – DIPSWITCH 7 selects this feature. With switch 7 turned on, sensitivity is automatically boosted *during* a call to improve detection of high-bed vehicles and truck/trailer combinations. Sensitivity boost is not applicable to most situations.

Output B Function Select - DIPSWITCHES 6 and 5 determine the function of the second output relay, Output B. See chart below to select a specific function. This output can be used in any one of the following ways:

True presence - The relay is energized whenever a vehicle is present. The relay is *not* affected by any delay or extension timing.

Entry pulse - The relay is energized for 250 mS when a vehicle enters the loop or after the delay interval, if programmed.

Exit pulse - The relay is energized for 250 mS when a vehicle exits the loop or after the extension interval, if programmed.

	DIP Switch 6	DIP Switch 5
True Presence	Off	Off
Entry Pulse	On	Off
Exit Pulse	Off	On
Loop Fail	On	On

Extended Presence - DIPSWITCH 4 is normally left in the off position. If extended presence is required, this switch is turned on. This feature is only used in those rare cases when a vehicle will be over the loop for an extraordinary length of time (a truck parked at a loading dock, etc.).

Loop Failure Memory - With DIPSWITCH 3 turned on, the DSP-15 will indicate a prior intermittent loop failure.

NOTE - Changing any DIPSWITCH or ROTARY SWITCH setting automatically resets the detector.

Frequency - One of four operating frequencies can be selected by using DIPSWITCHES 1 and 2.

	DIP Switch 1	DIP Switch 2
High	Off	Off
Medium High	On	Off
Medium Low	Off	On
Low	On	On

Indicators - The green POWER LED shows the following status: flashes/

Normal	On
Loop open	Slow flash
Loop shorted	Fast flash

The red DETECT LED shows the following status:

Delay	Blinks slowly
Call	On
Extension	Blinks fast
No Detect	Off

Fail Safe Operation (J2 shunt installed - factory default) - In fail safe mode the output A relay is energized and will de-energize for any one of the following conditions: vehicle detection, loop failure, or power failure. In this mode, continuity will occur between connector/terminal block pins 1 and 3 during detection.

Fail Secure Operation (J2 shunt removed) - In fail secure mode the output A relay is de-energized and will energize for either vehicle detection or loop failure. In this mode, continuity will occur between connector/terminal block pins 1 and 2 during detection.

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

Power – 10 to 30 Volts, AC or DC Power consumption is less than 3 Watts.

Size - Height: 2.90" (73.7 mm) Width: 4.125" (104.8 mm)

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

Ordering Information:

DSP-15-T - 10 position terminal block.
DSP-15-F - 10 pin right Angle Molex 09-52-1106

Pin assignments are shown below:

1 - Output A relay COMMON
2 - Output A (N.C.)
3 - Output A (N.O.)
4 - Output B relay COMMON
5 - Output B (N.O.)
6 - /Reset
7 - DC Power In
8 - DC Power Common
9 - Loop
10 - Loop

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