DSP-10 Vehicle Detector

The Only Loop Detector You Will Ever Need!

FEATURES

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

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

Power Brownout Call Memory – Power interruptions of short duration are ignored. If power fails for approximately three seconds or less the DSP-10 "remembers" a vehicle.

Intelligent Power Protection – The DSP-10-LV is protected from damage if plugged into a higher voltage. No need to change a fuse or reset a circuit breaker, simply plug the detector into the proper voltage and it works.

Indicators - Separate Power/Fail and Detect LEDs.

Compact Size - Industry standard 11 pin connector in a small plastic case.



FRONT PANEL SELECTABLE SWITCHES

Sensitivity - Ten sensitivity settings.

Frequency – Automatically tunes within one of four operating ranges.

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

Output A - Main detection output. Can be modified by delay and extension. Factory set to be fail safe. Fail mode operation is easily changeable by internal jumpers.

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

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.

OPERATION

The DSP-10 vehicle detector has been specifically designed to handle all parking, drive-through and access control applications.

Working on virtually any size loop, the DSP-10 automatically tunes itself to the best operating frequency. Environmental conditions are constantly compensated with the DSP-10's *HYPERTRACK* software. The DSP-10'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.

The DSP-10 is available in three voltage ranges:

DSP-10-LV	10 to 30 Volts, AC or DC
DSP-10-117	117 Volts AC
DSP-10-230	230 Volts AC

With its compact size, front panel switch features, and built-in flexibility the DSP-10 is the most "user friendly" detector on the market today.

Diablo Controls, Inc.

Stuck in traffic for over 30 years!

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DSP10_CUT_U

Web Site: www.diablocontrols.com

DSP-10 INSTRUCTIONS AND SPECIFICATIONS

Delay - With DIPSWITCH 1 turned off there is no delay. With DIPSWITCH 1 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 2 and 3 are used to select extension timing. See chart below for extension times. Extension allows a vehicle 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 2	DIP Switch 3
0 seconds	Off	Off
2 seconds	On	Off
5 seconds	Off	On
10 seconds	On	On

Sensitivity Boost - DIPSWITCH 4 selects this feature. With switch 4 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 5 and 6 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 time, if programmed.

Loop fail - If the inductive loop fails (opens or shorts), the output B relay energizes.

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

Presence - DIPSWITCH 7 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 a long time (loading dock, etc.).

Loop Failure Memory - With DIPSWITCH 8 turned on, the DSP-10 will indicate a prior intermittent loop failure.

Frequency - One of four operating frequencies can be selected by using front panel DIPSWITCHES 9 and 10

	DIP Switch 9	DIP Switch 10
High	Off	Off
Medium High	On	Off
Medium Low	Off	On
Low	On	On

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Fa**il Safe Operation (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 pins 5 and 10 whenever a vehicle is detected.

Fail Secure Operation - 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 pins 5 and 6 whenever a vehicle is detected.

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-10 has ten sensitivity settings varying from LOW (level 0) to HIGH (level 9).

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

Indicators -

The green POWER LED shows the following status:

Normal	On
Loop open	Slow flash
Loop shorted	Fast flash

The red DETECT LED shows the following status:

Delay	Blinks slowly
Detect	On
Extension	Blinks fast
No Detect	Off

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

Power - DSP-10-LV (10 to 30 Volts AC or DC), DSP-10-117 (117 Volts AC) , DSP-10-230 (230 Volts AC)

Power consumption less than 3 Watts (all models).

Enclosure - Impact resistant, high temperature plastic.
H - 2.375" (60mm) W - 1.75" (45mm) D - 3.61" (92mm)

Connector - Amphenol 11-pin connector:

1 (Black) - AC hot / DC +
2 (White) - AC neutral / DC COM
3 (Orange) - B relay (Closes for detect)
4 (Green) - Chassis ground
5 (Yellow) - A relay COM
6 (Blue) - A relay (Closes for detect)
7 (Gray) - Loop
8 (Brown) - Loop
9 (Red) - B relay Common
10 (Pink) or (White/Black) - A relay (Opens for detect)
11 (Violet) or (White/Red) - B relay (Opens for detect)

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

Ordering Information - Standard parts numbers are as follows:

DSP-10-LV	10 to 30 Volts, AC or DC
DSP-10-117	117 Volts AC
DSP-10-230	230 Volts AC

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