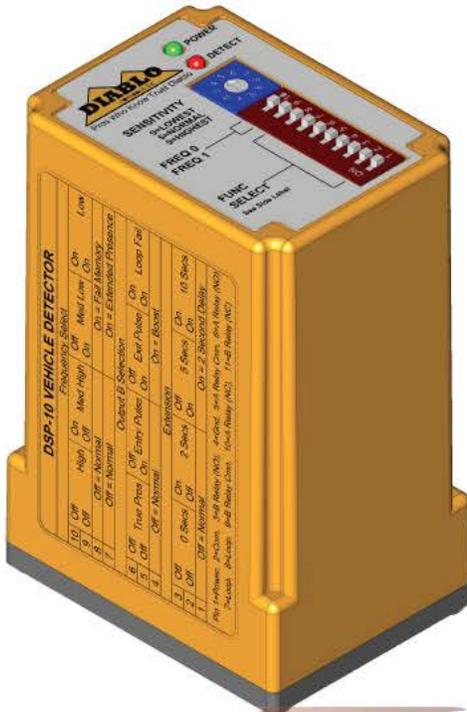


DSP-10

Full Featured Vehicle Detector with Two Outputs



The DSP-10 detector has been specifically designed to handle most parking, drive-through, and access control applications. This detector uses sophisticated filtering and processing algorithms to allow the detector to function in noisy electrical conditions and with less than ideal loops.

The DSP-10 is full-featured offering outputs for presence, pulse on entry, pulse on exit, or loop failure. Output A can have delay and/or extension applied to modify the behavior of a presence output. Sensitivity boost is available to help eliminate detection drop outs when high bed vehicles or tractor / trailer combinations need to be detected. Extended presence is available to deal with situations where vehicles may be parked over a loop for extended periods of time (several hours). Several diagnostic indications are also available: Low voltage indication, open loop circuit, shorted loop circuit, large inductance change, and prior faults that cleared by themselves. This detector can also be field configured for fail-safe or fail-secure operation (the factory default is fail-safe).

Features

- ❖ Wide low voltage operation
- ❖ Advanced filtering technology for superior noise tolerance.
- ❖ Works on any in-ground inductive loop from 20 to 1500 microhenries.
- ❖ Can be easily changed to fail-safe or fail-secure mode in the field.
- ❖ Separate Power/Fail and Detect LEDs.
- ❖ Delay and Extension timing functions are available to provide additional flexibility.
- ❖ Four frequency settings to help avoid loop cross-talk situations.
- ✓ Extended Presence provides vehicle detection times of many hours for those unique installations.
- ✓ Delay for those situations where vehicles may be detected by the loop that will not be stopping at the gate/door.
- ✓ Extension for those times when you just need a little more time for the vehicle to travel through the gate/door area.
- ✓ Loop Fail output provides a way to detect and annunciate a loop failure.
- ✓ Sensitivity Boost for those installations that require reliable detection of semi-truck trailers and high bed vehicles.
- ✓ Pulse on Entry or Pulse on Exit for those operators or situations that require this type of signal.
- ✓ Provides two relays outputs, each with a Normally Open and Normally Closed contacts.
- ✓ Loop Failure Memory to help the technician identify faulty loops.

DSP-10 Vehicle Detector

SELECTABLE FEATURES

Frequency (Switch 1 and 2): 4 selectable frequency settings. Actual frequency is dependent on the loop circuit attached to the detector.

Loop Failure Memory (Switch 3): The detector can indicate a prior loop failure even if the failure recovers. This is displayed on the green power LED. Any reset will clear the failure memory.

Extended Presence (Switch 4): This feature is used in those cases when a vehicle will be over the loop for more than 15 minutes (loading dock, etc.). A detection that would normally tune out in an hour will take about 19 hours with this feature turned on.

Output B Function Select (Switch 5 and 6): The detector will operate in one of four selectable operating modes for the B output.

SW 5	SW 6	Function
OFF	OFF	True Presence
ON	OFF	Entry Pulse
OFF	ON	Exit Pulse
ON	ON	Loop Fail

True Presence - The B output will be activated whenever a vehicle is present. The output is *not* affected by any delay or extension timing.

Entry Pulse - The B output will be activated for 250 ms when the loop becomes occupied.

Exit Pulse - The B output will be activated for 250 ms when the loop becomes vacant.

Loop Fail - If the inductive loop fails (opens, shorts, or a large change), the B output will be activated for the duration of the fault.

Sensitivity Boost (Switch 7): The sensitivity can be automatically boosted during a detection to improve detection of high-bed vehicles and truck/trailer combinations.

Extension (Switch 8 and 9): Extension allows the A output to be held in the active state for a period of time after the vehicle has left the loop detection area. While timing extension, the detect LED will flash quickly.

SW 8	SW 9	Function
OFF	OFF	No Extension
ON	OFF	2 Second Extension
OFF	ON	5 Second Extension
ON	ON	10 Second Extension

Extension timing only affects the A output.

2 Second Delay (Switch 10): Delay allows the A output to stay in the de-activated state until the loop has been occupied for 2 seconds. This 2 second delay is "flashed" on the detect LED. If the vehicle leaves before the two seconds has timed out, the output will not occur. *Delay timing only affects the A output.*

Output A Fail-Safe (Jumper J1): The A output Normally Open contact will be closed during vehicle detection, loop failure, or power failure. The jumper should be placed between the two pins next to the Fail-Safe text on the printed circuit board (Factory Default).

Output A Fail-Secure (Jumper J1): The A output Normally Open contact will be closed during vehicle detection, but open during loop failure and power failure. The jumper should be placed between the two pins next to the Fail-Secure text on the printed circuit board.

ORDERING INFORMATION

DSP10	DSP – 10 – vvv	vvv = Operating Voltage Selection
	LV	10 to 30 Volts, AC or DC
	117	117 Volts AC
	230	230 Volts AC

Visit our Website at www.diablocontrols.com for the most current information on all of our products. Specifications are subject to change.



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SELECTABLE FEATURES (Continued)

Sensitivity (Rotary Switch): 10 sensitivity settings are available. The factory default setting is 5. The higher the sensitivity setting, the more sensitive the detector.

Setting	0	1	2	3	4	5	6	7	8	9
%ΔL/L	0.48	0.32	0.24	0.16	0.12	0.08	0.06	0.04	0.03	0.02
Response	70 ms ± 10 ms							140 ms ± 20 ms		

INDICATORS

Green Power LED: The green power LED will be on whenever the input voltage is sufficient for proper operation and the detector is operating normally. It will blink on if the voltage is too low for reliable operation. It will flash for open, shorted loop, or large change loop faults.

Red Detect LED: The red detect LED will indicate the status of the A output. Timing delay, Occupancy, Timing extension, and the A output state during a loop failure are all displayed on this LED.

Indicator Test: Both LEDs will turn on and then off momentarily as a lamp test each time the unit is reset. Both LEDs will flash quickly for one second after a reset or power cycle to indicate the A output is configured as fail-secure.

SPECIFICATIONS

Loop Circuit Inductance: 20 μH to 1500 μH

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

Operating Voltages: There are three power versions
10 volts to 30 volts AC or DC with over voltage protection
100 volts to 135 volts AC
200 volts to 270 volts AC

Operating Current:
10-30 volts DC/AC - 75 milliamps maximum. 50 milliamps typical.
100-135 volts AC - 35 milliamps maximum. 25 milliamps typical.
200-270 volts AC - 18 milliamps maximum. 12 milliamps typical.

Output Relay Rating: 3 amps at 300 VAC or 150 VDC.

Pulse Output: 250 ms ±15 ms

Size: 2.36" (H) x 1.75" (W) x 4.09" (D)
59.94 mm x 4.45 mm x 10.39 mm

Pin Out:

Pins	Function
1	AC Hot / DC +
2	AC Neutral / DC COM
3	B Output Normally Open (Closes for detect)
4	Earth Ground
5	A Output Common
6	A Output Normally Open (Closes for detect)
7	Loop
8	Loop
9	B Output Common
10	A Output Normally Closed (Opens for detect)
11	B Output Normally Closed (Opens for detect)