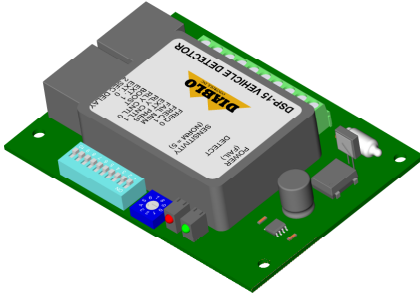


# DSP-15

## Vehicle Detector



### Features

- ❖ 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.
  - ❖ Advanced filtering technology for superior noise tolerance.
  - ❖ Plug and play, connect it up and watch it work.
  - ❖ The DSP-15 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.
  - ❖ Separate Power/Fail and Detect LEDs.
  - ❖ Compact Size with industry standard 10-pin wireable connector.
- The DSP-15 is intended to be an 'all-in-one' vehicle detector designed for the parking, drive-through, and access control industries. The DSP-15 was designed for systems that need reliable vehicle detection. This detector is designed to operate utilizing a single inductive loop typical in these industries. The small packaging comes without sacrificing performance.
- The DSP-15 Detector was designed to retrofit into existing locations that may require a detector upgrade. Sophisticated noise filtering algorithms offer stable operation in noisy or troublesome installations.
- With its compact size, front panel switch features, and built-in fail-safe or fail-secure operation for the A output, the DSP-15 is the only vehicle detector you will ever need.
- The DSP-15 provides many advanced features to provide a great value for your money.
- ✓ 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 that require this type of signal.

## DSP-15 Vehicle Detector

### SELECTABLE FEATURES

**Output A Fail Safe (J2 shunt installed):** 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. (Factory Default)

**Output A Fail Secure (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.

**Sensitivity:** 10 sensitivity settings are available. The factory default setting is 5.

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

**Frequency:** 4 selectable frequency settings. Actual frequency is dependent on the loop circuit attached to the detector.

**Loop Failure Memory:** 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 memory failure.

**Extended Presence:** 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.

**Output B Function Select:** The detector will operate in one of four selectable operating modes for the B output.

**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 250ms when the loop becomes occupied.

**Exit pulse** - The B output will be activated for 250ms 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:** The sensitivity can be automatically boosted during a call to improve detection of high-bed vehicles and truck/trailer combinations.

**Extension:** 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. *Extension timing only affects the A output.*

**Delay:** 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.*

### ORDERING INFORMATION

**DSP – 15 – x**      **x = Connector type**  
 T      10-pin terminal block  
 M      10-pin male Molex  
 F      10-pin right angle female Molex

Visit our Website at [www.diablocontrols.com](http://www.diablocontrols.com) for the most current information on all of our products. Specifications are subject to change.



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### 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 Inductance:** 20μH to 1500μH (including lead-in inductance)

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

**Operating Voltages:**  
 10 volts to 30 volts AC or DC with over voltage protection

**Operating Current:**  
 10-30 volts DC/AC - 75ma max fail-safe, 40ma max fail-secure

**Output Relay Rating:** Both output relays are rated for switching up to 3 amps at 300 VAC or 150V DC.

**Pulse Output:** 250ms ±15ms

**Size:** H - 2.90" (73.7 mm) W - 4.125" (104.8 mm)

**Case:** Bare PCB with ABS plastic cover

### Pin Out:

Wiring Diagram	
Pin	Description
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	No Connection
7	DC Power In
8	DC Power Common
9	Loop
10	Loop

