



# VEHICLE DETECTOR

## Model DLD-10B

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The automatic, self-tuning Model DLD-10B Vehicle Detector offers a compact, inductive loop vehicle detector for most traffic and parking applications.

### Typical Installation:

The Model DLD-10B Vehicle Detector may be used to vend ticket dispensers, activate barrier gates, arm fee computers, or operate counting devices.

### Components:

- Model DLD-10B Vehicle Detector
- Detector Harness
- Embedded loop of 16 AWG wire
- Automatic parking control device

### Features:

- Automatic inductance loop detector with complete self-tuning capabilities
- Two LED indicators: green for power, red for detect (and loop diagnostic monitor)
- Continuous loop diagnostic monitor indicates intermittent and failed loops
- Three selectable loop frequencies
- Inductance range of 20-2500 microhenries
- Manual reset toggle switch
- Two outputs
  - Output A, presence
  - Output B, pulse or presence (selectable)
- User-selectable internal controls:
  - Automatic Sensitivity Boost
  - Sensitivity Level (10 levels)
  - Presence Mode (normal/infinite)
  - Call Delay (delay both outputs 2 Seconds)

### Programmable Outputs:

The unit offers two output signals: Output A is a presence and Output B is user-selectable for presence, pulse on entry, or pulse on exit. The Model DLD-10B features a continuous loop diagnostic monitor, three selectable frequency settings, internal sensitivity boost, LED indicators, and user-selectable internal controls.

### Diagnostics Monitor:

The Model DLD-10B features a continuous loop diagnostic monitor that remembers and indicates intermittent and/or failed loops. In the event of a loop fault (caused by a shorted or open loop, or excessive leakage to ground), the detect LED will flash in groups of three short flashes every second. This visual indicator helps identify intermittent loop problems not present during trouble shooting.

### Selectable Sensitivity:

To avoid crosstalk, the Model DLD-10B offers three selectable frequency settings (high, medium, low). The unit also features ten additional sensitivity levels by a user-selectable internal rotary switch. This sensitivity boost allows the user to select the minimum sensitivity necessary to eliminate nuisance detection of small vehicles, such as bicycles and had trucks.

### Compact Design:

The Model DLD-10B Vehicle Detector is offered as a compact shelf mount unit using an embedded wire loop to sense vehicle presence and generate an output to trigger external control equipment. The output signal can be used to vend ticket dispensers, activate barrier gates, arm fee computers, or operate counting devices.



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### 1. Purpose:

The Federal APD Model DLD-10B Vehicle Detector is a vehicle detector device for use in a parking facility. The single channel detector will detect the presence or transit of a vehicle over an embedded loop of wire. This loop of wire will produce a magnetic field which is charged by the presence of a vehicle. The vehicle detector will detect the change in the inductance and generate an electrical signal to operate other control equipment.

The Model DLD-10B Vehicle Detector is able to make adjustments for environmental changes, such as loop aging, moisture, mechanical deterioration, and foreign particles in the loop.

The Model DLD-10B shall be self-tuning and shall provide a continuous loop diagnostic monitor which remembers and indicates intermittent and failed loops. If an intermittent or failed loop self-heals, the detector will resume normal operation without manual reset.

### 2. Dimensions:

The Model DLD-10B is:  
2-1/5 inches W x 3-1/2 inches H x 4-7/10 inches D (61 mm W x 89 mm H x 119 mm D), excluding switches and connector.

### 3. Electrical:

The Federal APD Model DLD-10B Vehicle Detector will have a loop inductance range of 20-2500 microhenries. The device will provide three selectable frequencies of high, medium and low, which will be selected by a front panel toggle switch.

The Model DLD-10B will provide two high intensity LED (light emitting diode) indicators on the unit's front panel: green for power and red for detect and loop diagnostic monitor.

The Model DLD-10B will be powered with 120 VAC at 50/60 Hz, with option for 220 VAC. The device will provide an internal fuse at 1/4 Amp Slow Blow (2 AG).

The Model DLD-10B will be available with an MS front connector (MS 3102A-18-1P Connector).

The Model DLD-10B will provide a Fail Safe presence relay output (Output A). Output B may be set for either presence or pulse mode, the pulse can be set to occur on entry or exit by another internal switch. The pulse time shall be 250 milliseconds.

### 4. Construction:

The Model DLD-10B Vehicle Detector will be enclosed in an aluminum housing with a durable fused polyester coating. Printed circuit boards will be made with double sided 2 oz./square foot copper and plated through holes. Circuit boards will be coated for environmental protection.

### 5. Mechanical:

The Model DLD-10B will be fully operational within one second after application of power or a manual reset command. Thirty seconds will be required before full presence time is possible.

The Model DLD-10B will have a 10 level sensitivity switch, an automatic sensitivity boost switch, a pulse on entry or pulse on exit switch, an Output B Pulse/Presence switch, a two second call delay switch, and an infinite presence time switch located on the circuit board, unless otherwise noted.

The device will provide ten detection sensitivity levels, which will be user-selectable by an internal rotary switch, from 0.0025% inductance shift (high) to 1.28% inductance shift (low). The default level will be 0.08% inductance shift (medium).

An internal switch in the Model DLD-10B may be used to increase sensitivity only during the detect period, but it will not affect the sensitivity level of a vacant loop. When a vehicle enters the loop, the detector sensitivity will be boosted to a higher level. The boosted sensitivity will remain throughout the detect period. When the vehicle leaves the loop, the sensitivity will return to the vacant loop level. This feature helps prevent dropouts during the passage of high bed vehicles and is particularly useful in sliding gate situations.

The Model DLD-10B will have a presence mode with a hold time of from a minimum of four minutes for any vehicle detected and is nominally 30 to 60 minutes for cars. Hold time will depend on loop geometry and number of turns, vehicle size, and position of vehicle relative to the loop. Selection of normal presence mode or infinite presence mode will be made by an internal switch.

### 6. Faulty/Intermittent Loop Monitor:

If the total inductance of the Model DLD-10B Vehicle Detector input network goes out of the range specified for the detector, or suddenly changes more than 25%, both detector outputs A and B will immediately maintain a continuous detect state in the Fail Safe detector, and the red detect LED will begin displaying periodic burst of three blinks. This condition will continue until the inductance returns to its previous value at which time the detector outputs will automatically resume normal operation. However, the red detect LED will continue in this mode until the detector is manually reset or a power interruption occurs. This feature will help identify intermittent loop problems not present during trouble shooting.



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