



DSP-14

Magnetometer Vehicle Detection System

The DSP14 system is designed to be an accurate, reliable, and easy to install detection system. The system is comprised of two parts, a master unit (DSP-14M) and a sensor (DSP-14S). The advanced sensor's small size and high sensitivity make it ideally suited to vehicle detection applications.

Features

- ❖ Easy installation. A single saw cut and cored hole is all you need.
- ❖ Can be installed in PVC conduit installed under the driving surface. Allowing for easy repositioning or replacement.
- ❖ Indefinite vehicle detection, even through power interruptions.
- ❖ Advanced technology with superior noise tolerance.
- ❖ Selectable fail-safe or fail-secure operation for the presence output.
- ❖ Selectable Presence or Pulse operation.
- ❖ Selectable length of time for the Pulse output.
- ❖ 9 selectable sensitivity settings allow for a wide range of uses.
- ❖ Normally-Open and Normally-Closed Relay contacts allow flexibility in system connections.
- ❖ Sensor monitoring provides a fault when the sensor is no longer functioning correctly.
- ❖ Fault memory gives a unique display when a fault has occurred, but the system is currently functioning properly.
- ❖ Diagnostic mode will show a prior fault that self-corrected, if it occurred within the last seven days.

The DSP-14 sensor can be installed using a single saw cut and a single 1" core hole. The sensor is potted in epoxy to provide durability and small enough that it can be placed in the cored hole. Using a three-axis magnetometer sensor eliminates any concerns about the orientation of the sensor during installation.

The DSP-14 system can hold vehicle detection for an indefinite period of time. It can even remember vehicle detections through power outages. Even if a vehicle parks in the detection zone while power is removed, when power is restored, the detector will sense that there is now a vehicle in the detection zone. This gives you an extra level of safety not available with other detection systems.

The master has two selectable output configurations. In the presence mode, the output is active the entire time a vehicle is in the detection zone. In the pulse mode, the output will activate for a short period of time when the vehicle movement is detected in the detection zone. After two seconds the detector will internally reset and be ready to output another pulse when vehicle movement is detected.

Fail-safe or Fail-secure operation is selectable for the output operating in the presence mode. In the pulse mode the output is always fail-secure.

The master provides nine selectable sensitivity settings that allow the user to fine tune the system's detection zone to the installation.

The diagnostics mode allows the technician to view the last fault that occurred within the last seven days or since the last detector reset. Whichever is shorter.



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SELECTABLE FEATURES

DIP Switch 1 OFF: Presence Mode – When this switch is OFF the presence mode of operation is selected and the output will remain activated as long as a vehicle is in the detection zone. The technology used in the sensor is capable of indefinite presence detection, even through power failures. Even if a vehicle arrives while power is removed, the vehicle will be detected when power is restored.

DIP Switch 1 ON: Pulse Mode – When this switch is ON the pulse mode of operation is selected, and a vehicle is first detected, the output is activated for a short period (see DIP Switch 2) and then turned back off. After two seconds the detector is internally reset and any new movement in the detection zone will cause another pulse output. This mode is commonly used for free exit applications.

DIP Switch 2 OFF: Short Pulse – When this switch is OFF the activation time for a pulse output will be 250 milliseconds.

DIP Switch 2 ON: Long Pulse – When this switch is ON the activation time for a pulse output will be 1 second.

DIP Switch 3 OFF: Fail Safe – When this switch is OFF and the detector is in the presence mode of operation and a sensor failure is detected, the output will activate for the duration of the failure. In gate applications, this feature is used to automatically open the gate if a sensor fails.

DIP Switch 3 ON: Fail Secure – When this switch is ON and the detector is in the presence mode of operation and a sensor failure is detected, the output will stay deactivated for the duration of the failure. In gate applications, this feature is used to keep the gate closed if a sensor fails.

DIP Switch 4 OFF: No Power On Reset – When this switch is OFF the detector will use the values saved at power down to continue with vehicle detection sensing. This is the normal operating mode.

DIP Switch 4 ON: Power On Reset – When this switch is ON the detector will not use the saved values and will reset on power up. NOTE: If the detector is powered up with a vehicle over the sensor in this mode, it will not work correctly. This mode is only for special applications.

Sensitivity: There are nine selectable sensitivities (1 to 9) with 1 being the least sensitive and 9 being the most sensitive setting. When the sensitivity setting is changed the detector will automatically reset. A sensitivity of zero selects the diagnostic mode.

Reset: Changing any DIP switch or the sensitivity setting will clear any faults in memory and use the current state of the detection zone as the reference for the no vehicle present condition.

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 flash one of three different flash rates when various types of failures have been identified. If a failure has occurred and was automatically recovered from, the LED will flash off once every two seconds.

Red Detect LED: The red detect LED will indicate the status the output.

Indicator Test: Both LEDs will turn on for 250 milliseconds and then off for 250 milliseconds as a lamp test each time the unit is reset.

SPECIFICATIONS

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

DSP-14M (Master) Operating Voltage: 8 volts to 50 volts DC

DSP-14M (Master) Operating Current including the Sensor:

VOLTAGE APPLIED	NO DETECT	IN DETECT
8 volts DC	22 ma	46 ma
12 volts DC	15 ma	30 ma
24 volts DC	8 ma	16 ma
32 volts DC	7 ma	13 ma

Response Time: Output activation within 200 milliseconds of the vehicle entering the detection zone. Output deactivation within 200 milliseconds of the vehicle leaving the detection zone.

Relay Contact Ratings:
 1.0 amps @ 30VDC
 0.3 amps @ 60VDC
 0.5 amps @ 120VAC

CONNECTOR PINS

DSP-14M (Master)



NC	Relay Normally-Closed Contact
COM	Relay Common
NO	Relay Normally-Open Contact
-	DC Voltage Common
+	DC Voltage Positive (8 to 50 volts DC)
GRN	Sensor Communications -
RED	Sensor Communications +
WHT	Sensor Voltage Common
BLK	Sensor Voltage Positive

ORDERING INFORMATION

DSP-14-50 Kit includes: 1 ea DSP-14M and 1 ea DSP-14S with 50 feet of lead-in

DSP-14-75 Kit includes: 1 ea DSP-14M and 1 ea DSP-14S with 75 feet of lead-in

Other lead-in lengths available as a custom order. Contact Diablo Controls Sales for pricing and availability.

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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