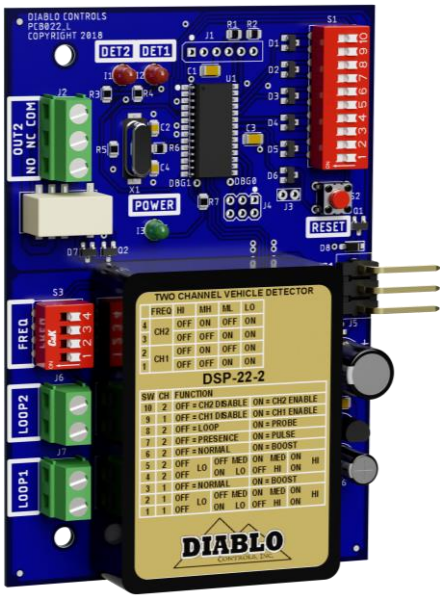
DSP-22-2

Low Power, Dual Channel Vehicle Detector for DoorKing Operators



Features

- Very low power. Typically draws less than 2 milliamps.
- Advanced technology with superior noise tolerance.
- Selectable Presence or Pulse operation for channel 2.
- 4 selectable sensitivity settings and sensitivity boost allow for a wide range of uses.
- Loop monitoring provides a fault display when a loop failure is detected.
- Fault memory gives a unique display when a fault has occurred, but the system is currently functioning properly.
- Channel 2 supports the Mini-Loop Probe and provides unique flicker display for detection during pulse operation.

The DSP-22-2 detector is designed to be a low power, direct replacement for the existing DoorKing Model 9409 & 9405 dual channel inductive loop vehicle detectors for the parking and access control industries. The DSP-22-2 loop detector plugs into the loop detector ports on the DoorKing operator control board.

The DSP-22-2 operates as two independent channels. The DSP-22-2 is a dual channel detector that uses advanced channel scanning technology to provide superior noise tolerance. The scanning technology allows for placement of loops closer together (when both loops are connected to the same detector) than ever possible with single channel detectors.

The DSP-22-2 always operates in the Fail-safe mode of operation.

The DSP-22-2 continually monitors the loop circuit looking for conditions that would signify a fault in the loop circuit and displays the type of fault identified. This helps quickly identify open or shorted loops. Fault memory alerts the user to past faults that have automatically been recovered.

The DSP-22-2 has a new unique flicker display that helps insure correct operation of channel 2 when it is operating in the pulse mode. The channel 2 detect LED will turn on while the pulse is being outputted; then the LED display will go into a unique flicker mode while the channel is still detecting the vehicle. This allows easy identification of a locked-up channel operating in the pulse mode.

Channel 2 of the DSP-22-2 can be connected to a standard inductive loop or the Diablo Controls Free exit probe. The Free exit probe is a small round device approximately 4-1/2” long by 1” in diameter utilizing a 2-wire direct burial rated cable. It is designed to be buried in the center (optimum) or side of roadway to detect vehicles. Two free exit probes can be wired in series to gain detection area. Contact Diablo Controls for more information on the Free exit probe. The Free exit probe can only operate in a pulse mode and therefore can never be used as a safety or obstruction sensor.

Either channel can be disabled for flexible operating modes.

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SELECTABLE FEATURES

DIP Switch 1 & 2 – Channel 1 Sensitivity:

1	2	Function
OFF	OFF	Channel 1 Sensitivity is 0.32% ΔL/L
ON	OFF	Channel 1 Sensitivity is 0.16% ΔL/L
OFF	ON	Channel 1 Sensitivity is 0.08% ΔL/L
ON	ON	Channel 1 Sensitivity is 0.04% ΔL/L

DIP Switch 3 – Channel 1 Sensitivity Boost: Setting this switch to ON increases the sensitivity of channel 1 after initial detection. This feature is useful in the detection of high-bed vehicles.

DIP Switch 4 & 5 – Channel 2 Sensitivity:

4	5	Function
OFF	OFF	Channel 2 Sensitivity is 0.32% ΔL/L
ON	OFF	Channel 2 Sensitivity is 0.16% ΔL/L
OFF	ON	Channel 2 Sensitivity is 0.08% ΔL/L
ON	ON	Channel 2 Sensitivity is 0.04% ΔL/L

DIP Switch 6 – Channel 2 Sensitivity Boost: Setting this switch to ON increases the sensitivity of channel 2 after initial detection. This feature is useful in the detection of high-bed vehicles.

DIP Switch 7 – Channel 2 Presence / Pulse: When this switch is OFF the presence mode of operation is selected for Channel 2. The output will remain activated as long as a vehicle is in the detection zone. When the switch is ON the pulse mode of operation is selected for Channel 2. The pulse mode used is commonly referred to as Pulse On Entry. Channel 2 will output a pulse when a vehicle is first detected and will not output again until the loop is no longer occupied.

DIP Switch 8 – Channel 2 Loop Type: When set to OFF, Channel 2 is configured to operate with a normal inductive loop. Set the switch to ON to operate with a Diablo Control Free exit probe. The probe mode will always be an entry pulse. As such, it is perfect for free exit operation. Never use the probe mode for a safety (obstruction) loop.

DIP Switch 9 – Channel 1 Enable: When set to OFF, Channel 1 is disabled. When set to ON, Channel 1 is enabled.

DIP Switch 10 – Channel 2 Enable: When set to OFF, Channel 2 is disabled. When set to ON, Channel 2 is enabled.

Frequency Settings: There are four settings per channel. The actual loop frequency is dependent on loop circuit inductance. The detector uses a channel scanning technology to minimize noise interference.

1	2	Frequency
OFF	OFF	Channel 1 Frequency is High
ON	OFF	Channel 1 Frequency is Medium High
OFF	ON	Channel 1 Frequency is Medium Low
ON	ON	Channel 1 Frequency is Low

STANDARD FEATURES

Extended Presence: The detector will use an extended presence mode of operation. This mode allows for strong detections that can be held for very long periods of time (days or even weeks) as long as power is not interrupted and very weak detections to be held for about 15 minutes.

STANDARD FEATURES - Continued

Fail Safe: The detector operates in the fail-safe mode of operation if a loop failure is detected. This means that the output will remain active as long as the loop is in failure.

INDICATORS

Green Power LED: The green power LED will be on whenever the detector is operating in the full power mode. Full power mode occurs whenever a possible vehicle has been detected, any channel is in detect, or any loop has failed. When the detector is operating normally without a loop failure and no vehicle detected, the LED will blink on once every two seconds to indicate that it is operating in the low power mode.

Red Channel Detect LEDs: The two red LEDs will indicate the status of each channel. Occupancy, Pulse outputs, Loop Failures, and Past Failures are all displayed on a per channel basis.

DET LED	Power LED	Meaning
Off	1 Flash	Operating normally with no detection
On	On	Vehicle detection
Flicker	On	Vehicle still detected after a pulse has been output
1 Flash	On	The loop circuit is currently open
2 Flashes	On	The loop circuit is currently shorted
3 Flashes	On	The loop circuit is currently measuring a very large inductance change
1 Flash	1 Flash	Operating normally with no detection but a loop failure had been detected within the last 7 days

Indicator Test: All three LEDs will turn on and then off momentarily as a lamp test each time the unit is reset.

SPECIFICATIONS

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

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

Operating Voltage: 14 volts to 27 volts DC

Operating Current:

No Channel in Detect	1.62 milliamps typical.
Channel 1 in Detect	23.94 milliamps typical.
Channel 2 in Detect	30.75 milliamps typical.
Both Channels in Detect	33.60 milliamps typical.

Response Time: 181 ms typical. 314 ms worst case.

Output Channel 1 Rating: Solid-state, open-drain output
250 milliamps at 30 volts maximum

Output Channel 2 Rating: Relay: N.O. and N.C. contacts provided
30 VDC, 2 amps (resistive)
110 VDC, 0.3 amps (resistive)
125 VAC, 0.5 amps (resistive)

Pulse Output: 250ms on period followed by a 250ms off period before the next pulse can begin

ORDERING INFORMATION

DSP-22-2 Dual Channel Detector

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

Proudly Made in USA
Veteran Owned & Operated

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