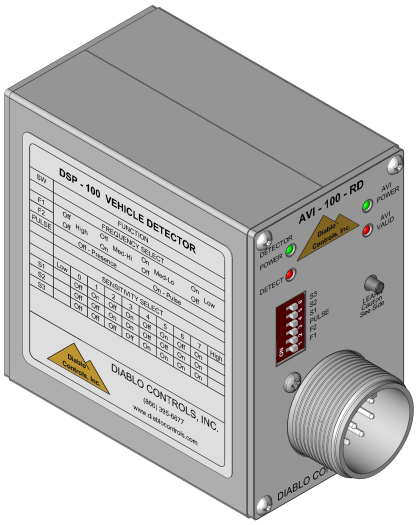
AVI-100-RD

Automatic Vehicle Identification Quad Code Receiver with Detector



Features

- Compatible with existing AVI systems used in Southern Nevada Emergency Vehicle Access Systems.
- Cost and space saving design by combining two devices.
- Same loop is used for the AVI receiver and vehicle detection.
- Compatible with transmitters manufactured by Detector Systems, IDC, US Traffic, and Reno A&E.
- Can be programmed to activate on any of up to 4 codes out of over 19,000.
- Models for Low Voltage AC or DC, 100 to 135 VAC, or 200 to 270 VAC.
- Can be field programmed to add new codes.
- AVI Power and Valid Code LEDs and separate Detector Power/Fail and Detect LEDs.

The AVI-100-RD is a combination of an AVI receiver with an inductive loop vehicle detector. This lowers the cost compared to buying the two devices separately and reduces the space needed in the cabinet for installation.

The Diablo Controls AVI system consists of an AVI transmitter and an AVI receiver.

The transmitter is mounted to the underside of a fire engine, police car, or other vehicle. The transmitter continuously transmits a coded signal.

When this vehicle approaches a gated area, the code is received by a loop buried in the ground ahead of the gate or barrier. The receiver decodes the signal from the transmitter to determine if the transmitted code matches any of the programmed codes stored in the receiver. If a match is found, a relay contact is closed and a red LED is illuminated indicating a valid code is being received. This signal is then passed on to a gate controller, which automatically opens the gate or performs some other security function.

All Diablo Controls AVI receivers are shipped pre-programmed with the requested code(s). The receiver has the capability of storing up to four codes. If the unit is asked to learn a fifth code, it will be ignored. If the red Valid LED is blinking slowly then this unit is un-programmed and has no codes stored to validate. All units are shipped from the factory with the requested code(s) already programmed within the unit.

The vehicle detector has been specifically designed to handle most traffic applications and is very tolerant of noise and cross-talk conditions. Working on virtually any size loop, the detector tunes itself automatically and provides constant tracking to deal with environmental changes. The DSP-100's inherent noise filtering algorithms allow it to work reliably in almost any electrical situation.

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USER SELECTABLE FEATURES

Sensitivity: DIP switches S1, S2, and S3 can be set for a total of 7 different sensitivity levels and OFF. Most traffic applications can be handled with the sensitivity set at NORMAL (level 4). The -ΔL/L (percent of change) and the response time at each sensitivity setting can be found in the table below.

Sensitivity	S1	S2	S3	-ΔL/L	Response Time
Lowest 0	Off	Off	Off	Off	Off
1	On	Off	Off	.64%	40ms
2	Off	On	Off	.32%	40ms
3	On	On	Off	.16%	40ms
Normal 4	Off	Off	On	.08%	40ms
5	On	Off	On	.04%	80ms
6	Off	On	On	.02%	80ms
Highest 7	On	On	On	.01%	80ms

Frequency: Automatically tunes within one of four operating ranges.

Frequency	F1	F2	Frequency Range
1	Off	Off	High
2	On	Off	Medium High
3	Off	On	Medium Low
4	On	On	Low

Pulse / Presence: With this switch turned on, the detector output will be a 125 ms pulse each time a vehicle enters the loop detection area. If the vehicle remains within the loop for two seconds, the detector will automatically retune, making it ready for the next vehicle to arrive. If this switch is turned off the detector output will be active whenever a vehicle is present.

Fail-Safe vs Fail-Secure: When configured as fail-safe, the detector will activate the detect output when the loop circuit is failed. Always use this mode if the loop is a safety loop. When configured as fail-secure, the detector will never activate the detect output when the loop circuit is failed. This will keep the gate closed. The AVI-100-RD is factory configured for fail safe operation. To change the operation to fail-secure, open the detector and remove jumper J1 on the main PC board. **Note**: Never use a fail secure detector on a safety loop.

Learn: Tapping the LEARN button will display the number of programmed AVI codes. Contact Diablo Controls for instructions on adding a new code.

SPECIFICATIONS

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

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

Operating Voltages: There are three power versions
10.5 volts to 30 VDC or 9 volts to 27 VAC
100 volts to 135 VAC
200 volts to 270 VAC

Operating Current:
10-30 volts DC/AC – 50 ma maximum
100-135 volts AC – 2.0 ma maximum
200-270 volts AC – 1.0 ma maximum

Output Relay Rating: Both output relays are rated for switching up to 6 amps at 300 VAC or 150 VDC.

Size: 3.50" H x 2.10" W x 3.50" L
89mm H x 53mm W x 89mm L

Case: Extruded Aluminum

INDICATORS

Red AVI Valid LED: The red AVI valid LED will be on when a valid AVI code is being received.

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

CONNECTORS

Connector: Standard 10-pin MS connector.

Pins	Function
A	AC Neutral / DC Common
B	Relay Common for Detector & AVI Relays
C	AC Line / DC+
D	Loop
E	Loop
F	Detector Output Relay – Normally Open
G	Detector Output Relay – Normally Closed
H	Chassis Ground
I	AVI Valid Output Relay – Normally Open
J	Unused

ORDERING INFORMATION

AVI-100-RD– vvv **vvv = Operating Voltage Selection**

LV	10 to 30 Volts DC or 9 to 27 Volts AC
117	100 to 135 Volts AC
230	200 to 270 Volts AC

Veteran Owned & Operated

(800) 878-7829
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