

## Diablo Controls DML-9LP

# Diablo DML-9LP Probe Kit Vehicle Loop Detector

## Operation and Instruction Manual

### 1. INTRODUCTION

The Diablo DML-9LP vehicle sensor kit is engineered for reliable vehicle detection in solar-powered gate applications. This advanced detector is designed to operate efficiently across a wide voltage range, from 10 to 30 volts AC or DC, ensuring compatibility with various power setups. Its ultra-low power consumption, drawing approximately 3 milliamperes in standby, makes it ideal for energy-efficient systems. The integrated power LED provides continuous visual feedback, winking once per second to confirm the detector is operating in its low power mode. The DML-9LP probe is recognized for its superior reliability, straightforward operation, and minimal current draw, setting a high standard for vehicle detection solutions.

### 2. KEY FEATURES

- **Solar-Powered Application Ready:** Specifically designed for use with solar-powered gate systems, optimizing energy efficiency.
- **Wide Voltage Compatibility:** Operates on any voltage from 10 to 30 volts AC or DC.
- **Ultra-Low Power Consumption:** Draws approximately 3 milliamperes in standby, conserving power.
- **Operational Indicator:** Power LED winks continuously once per second to indicate low power mode operation.
- **High Reliability:** Engineered for consistent and dependable vehicle detection.
- **Simplicity of Use:** Designed for easy installation and minimal maintenance.

### 3. SAFETY INFORMATION

Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in property damage, serious injury, or death.

- **Electrical Safety:** Always disconnect power before installing or servicing the detector. Work with electrical components should only be performed by qualified personnel.
- **Proper Wiring:** Ensure all wiring connections are secure and comply with local electrical codes. Incorrect wiring can lead to malfunction or hazards.
- **Environmental Considerations:** Install the detector in a location protected from extreme weather conditions and physical damage.

- **Gate System Safety:** Ensure the gate system itself has appropriate safety features, such as photo-eyes or safety edges, to prevent entrapment or injury.
- **Children and Pets:** Keep children and pets away from the gate area during operation.

## 4. PACKAGE CONTENTS

Upon opening the package, please verify that all components are present and undamaged.



*Image: Diablo DML-9LP Probe Kit showing the main detector unit, the yellow probe with coiled cable, and the instruction manual.*

- 1 x Diablo DML-9LP Vehicle Loop Detector Unit
- 1 x DML-9LP Probe with Integrated Cable
- 1 x Operation and Instruction Manual (this document)

## 5. SETUP AND INSTALLATION

Proper installation is crucial for optimal performance and safety. It is recommended that installation be performed by a qualified technician.

### 5.1. Probe Placement

1. Determine the desired detection zone for vehicles. The probe should be buried or placed strategically within this zone.
2. For optimal detection, ensure the probe is positioned to detect the vehicle's metal mass effectively. Avoid placing it too close to large metal objects that are not vehicles.
3. Bury the probe at an appropriate depth (typically 6-12 inches) to protect it from damage and environmental factors.

### 5.2. Wiring Connections

Refer to the wiring diagram provided with your gate opener or control panel for specific connections. The DML-9LP detector typically requires connections for power (10-30V AC/DC) and output to the gate opener's trigger input.

1. **Power Connection:** Connect the power wires from your gate opener's power supply (10-30V AC/DC) to the designated power terminals on the DML-9LP detector. Observe polarity if connecting DC power.
2. **Output Connection:** Connect the detector's output terminals to the gate opener's vehicle detection or trigger input. This output signals the gate opener when a vehicle is detected.
3. **Probe Connection:** The probe cable is permanently attached to the probe and connects directly to the detector unit. Ensure this connection is secure.

### 5.3. Mounting the Detector Unit

Mount the DML-9LP detector unit in a secure, weather-protected enclosure or location near the gate opener control board. Ensure it is easily accessible for future servicing if needed.

## 6. OPERATING INSTRUCTIONS

Once properly installed and powered, the DML-9LP detector operates automatically.

- **Power-Up:** Upon receiving power, the detector will initialize. The power LED will begin winking continuously once per second, indicating it is in low power mode and ready for operation.
- **Vehicle Detection:** When a metallic object (vehicle) enters the detection field of the buried probe, the detector will sense the change in inductance.
- **Output Signal:** Upon detection, the detector will activate its output, sending a signal to the connected gate opener, typically triggering the gate to open or hold open.
- **Detection Release:** Once the vehicle leaves the detection field, the detector will de-activate its output, signaling the gate opener to close (if configured to do so).

The low power mode ensures minimal energy consumption, making it highly efficient for solar-powered installations.

## 7. MAINTENANCE

The Diablo DML-9LP detector is designed for minimal maintenance. However, periodic checks can help ensure long-term reliable operation.

- **Visual Inspection:** Periodically inspect the detector unit and all wiring connections for any signs of damage, corrosion, or loose connections.
- **Probe Area:** Ensure the area above the buried probe remains clear of large debris or new metallic installations that could interfere with detection.
- **Power Supply:** Verify that the power supply to the detector is stable and within the specified voltage range (10-30V AC/DC).
- **LED Indicator:** Observe the power LED to confirm it is winking continuously, indicating normal low power operation.

## 8. TROUBLESHOOTING

If you experience issues with your DML-9LP detector, refer to the following common troubleshooting steps.

Problem	Possible Cause	Solution
Detector not powering on (LED off)	No power supply; incorrect wiring; faulty power source.	Check power connections and voltage (10-30V AC/DC). Ensure power source is active. Verify wiring polarity for DC.
Detector not detecting vehicles	Probe not properly installed; faulty probe; incorrect sensitivity (if adjustable, though DML-9LP is fixed); interference.	Verify probe placement and depth. Check probe cable for damage. Ensure no large metal objects are permanently within the detection field.

Problem	Possible Cause	Solution
False detections or erratic behavior	Electrical interference; probe too close to moving metal objects (e.g., gate itself); ground loops.	Ensure proper grounding. Relocate probe if it's too close to moving gate parts. Check for strong electromagnetic interference sources.
Gate not responding to detector	Incorrect output wiring to gate opener; gate opener input issue; detector output fault.	Verify connections between detector output and gate opener input. Consult gate opener manual for its input requirements. Test detector output with a multimeter if possible.

If problems persist after following these steps, please contact Diablo Controls technical support or a qualified gate system technician.

## 9. SPECIFICATIONS

Feature	Specification
Model	DML-9LP
Operating Voltage	10 to 30 Volts AC or DC
Current Draw (Standby)	Approximately 3 milliamperes
Detection Method	Inductive Loop Probe
Output Type	(Typically relay output, consult specific wiring diagram for details)
Operating Temperature	(Not specified in source, general range for electronics) -40°F to 180°F (-40°C to 82°C)
Manufacturer	Diablo Controls

## 10. WARRANTY AND SUPPORT

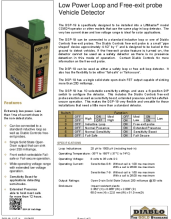


Specific warranty terms and conditions for the Diablo DML-9LP Probe Kit Vehicle Loop Detector are typically provided by the manufacturer, Diablo Controls, at the time of purchase or on their official website. Please retain your proof of purchase for warranty claims.

For technical support, detailed product information, or to inquire about warranty service, please visit the official Diablo Controls website or contact their customer service department directly.

**Diablo Controls Contact Information:**

Please refer to [www.diablocontrols.com](http://www.diablocontrols.com) for the most current contact details and support resources.



 <p><b>DSP-19</b> Low Power Loop and Free-exit probe Vehicle Detector</p> <p>Diablo Controls DSP-19 is a low power vehicle detector for gate access systems. It features selectable sensitivity, fail-safe/fail-secure modes, extended presence, and free-exit probe compatibility.</p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li>Selectable Sensitivity</li> <li>Fail-Safe/Fail-Secure Modes</li> <li>Extended Presence</li> <li>Free-Exit Probe Compatibility</li> <li>LED Indicator Light</li> <li>Adjustable Delay Time</li> <li>Adjustable Loop Size</li> <li>Adjustable Loop Depth</li> <li>Adjustable Loop Width</li> <li>Adjustable Loop Height</li> <li>Adjustable Loop Area</li> <li>Adjustable Loop Volume</li> <li>Adjustable Loop Weight</li> <li>Adjustable Loop Length</li> <li>Adjustable Loop Width</li> <li>Adjustable Loop Height</li> <li>Adjustable Loop Area</li> <li>Adjustable Loop Volume</li> <li>Adjustable Loop Weight</li> <li>Adjustable Loop Length</li> </ul> <p><b>Specifications:</b></p> <table border="1"> <tr> <th>Parameter</th> <th>Value</th> </tr> <tr> <td>Power Consumption</td> <td>10W</td> </tr> <tr> <td>Operating Voltage</td> <td>12VDC</td> </tr> <tr> <td>Operating Current</td> <td>1.0A</td> </tr> <tr> <td>Operating Temperature</td> <td>-40°C to 70°C</td> </tr> <tr> <td>Storage Temperature</td> <td>-40°C to 125°C</td> </tr> <tr> <td>Humidity</td> <td>5% to 95%</td> </tr> <tr> <td>Shock</td> <td>10g</td> </tr> <tr> <td>Vibration</td> <td>10g</td> </tr> </table> <p>Diablo Controls 11100 S. 19th Ave. Suite 100 Denver, CO 80202 Tel: 303.755.1100 Fax: 303.755.1101 Email: sales@diablocontrols.com Web: www.diablocontrols.com</p>	Parameter	Value	Power Consumption	10W	Operating Voltage	12VDC	Operating Current	1.0A	Operating Temperature	-40°C to 70°C	Storage Temperature	-40°C to 125°C	Humidity	5% to 95%	Shock	10g	Vibration	10g	<p><a href="#">DSP-19 Low Power Loop and Free-exit Probe Vehicle Detector   Diablo Controls</a></p> <p>Detailed product profile for the Diablo Controls DSP-19, a low-power vehicle detector for gate access systems. Features include selectable sensitivity, fail-safe/fail-secure modes, extended presence, and free-exit probe compatibility.</p>
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 <p><b>DSP-55</b> Vehicle Detector with Two Outputs and Supports the Mini-Loop</p> <p>This user manual provides comprehensive details on the Diablo Controls DSP-55 Vehicle Detector, covering its features, functional data, electrical and mechanical specifications, installation procedures, configuration options, and troubleshooting guide for inductive loops and mini-loops.</p> <p>Diablo Controls 11100 S. 19th Ave. Suite 100 Denver, CO 80202 Tel: 303.755.1100 Fax: 303.755.1101 Email: sales@diablocontrols.com Web: www.diablocontrols.com</p>	<p><a href="#">DSP-55 Vehicle Detector User Manual</a></p> <p>This user manual provides comprehensive details on the Diablo Controls DSP-55 Vehicle Detector, covering its features, functional data, electrical and mechanical specifications, installation procedures, configuration options, and troubleshooting guide for inductive loops and mini-loops.</p>																		
 <p><b>DSP-10 Quick Reference Guide</b></p> <p>This quick reference guide provides essential information for the Diablo DSP-10 vehicle loop detector, including wiring diagrams, DIP switch configurations, sensitivity settings, indicator light meanings, and fail-safe/fail-secure operation modes.</p> <p>Diablo Controls 11100 S. 19th Ave. Suite 100 Denver, CO 80202 Tel: 303.755.1100 Fax: 303.755.1101 Email: sales@diablocontrols.com Web: www.diablocontrols.com</p>	<p><a href="#">Diablo DSP-10 Vehicle Loop Detector Quick Reference Guide</a></p> <p>This quick reference guide provides essential information for the Diablo DSP-10 vehicle loop detector, including wiring diagrams, DIP switch configurations, sensitivity settings, indicator light meanings, and fail-safe/fail-secure operation modes.</p>																		