

**LMA-100 Series Operating Instructions**  
**Single Channel / Single Output Inductive Loop Vehicle Detector**

**1. Connect to proper source voltage**

Verify the source voltage before applying power. The "Pin Assignment" side label on the unit indicates the input power required for each model and indicates either Fail Safe operation or Fail Secure operation.

MODELS	12-24VDC or 24 VAC	120 VAC to 240 VAC	Fail Safe	Fail Secure
LMA-100-LV	●		●	
LMA-100-HV		●	●	
LMA-100S-LV	●			●
LMA-100S-HV		●		●

	FAIL SAFE OPERATION		FAIL SECURE OPERATION	
OUTPUT RELAY	POWER FAILURE	LOOP FAILURE	POWER FAILURE	LOOP FAILURE
A	CALL Output	CALL Output	No Output	No Output

**2. LED Indications**

STATUS	POWER	OUTPUT A
Normal, No Call	ON	OFF
Normal, Call	ON	ON
Output Delay Mode	ON	2 Hz Flash
Output Extension Mode	ON	4 Hz Flash
Current Fault: Open Loop	Single Flash	Single Flash
Current Fault: Shorted Loop	Double Flash	Double Flash
Current Fault: 25% Inductance Change	Triple Flash	Triple Flash
Previous Fault: Open Loop	Single Flash	Normal
Previous Fault: Shorted Loop	Double Flash	Normal
Previous Fault: 25% Inductance Change	Triple Flash	Normal
Low Supply Voltage	Short Flash every 2 seconds	OFF

**3. Rear Panel Parameter Eight Position DIP Switch**

**Loop Frequency**

SWITCH	LOW	MEDIUM – LOW	MEDIUM – HIGH	HIGH	FACTORY DEFAULT
1	ON	OFF	ON	OFF	OFF
2	ON	ON	OFF	OFF	OFF

**Loop Frequency** is controlled by the rear panel 8-Position DIP switches marked 1 and 2. On occasion, loops are placed in close proximity and it is necessary to select a different frequency level for each loop to avoid interference (crosstalk). Four frequencies are selectable, HIGH being the factory default.

**Sensitivity**

SWITCH	LOW	MEDIUM – LOW	MEDIUM – HIGH	HIGH	FACTORY DEFAULT
3	ON	OFF	OFF	ON	OFF
4	OFF	OFF	ON	ON	OFF

**Sensitivity** is controlled by the rear panel 8-Position DIP switches marked 3 and 4. For typical vehicles (mid-size vehicle / small pick up) utilizing properly installed roadway loops, a value of Medium-Low is usually an optimum sensitivity setting. For high profile vehicles (commercial trucks, 4x4's, etc...), a value of Medium-High may be optimum.

**LMA-100 Options**

SWITCH	ON	OFF	FACTORY DEFAULT
5	Sensitivity Boost	No Sensitivity Boost	OFF
6	Limited Presence	Infinite Presence	OFF

**Sensitivity Boost (DIP 5):** When ON, sensitivity will increase only during the CALL Output period without changing the sensitivity of a vacant loop. When a vehicle enters the loop, the LMA-100 sensitivity is boosted to a higher level than the vacant loop setting. The boosted sensitivity remains throughout the CALL Output period. When the vehicle leaves the loop, the sensitivity returns to the vacant loop setting. This feature helps prevent dropouts during the passage of high bed vehicles and is exceptionally useful in sliding gate situations.

**Presence Output Mode (DIP 6):** When ON (Limited Presence Mode), the presence CALL Output A hold time is between 5 minutes minimum and 3 hours maximum. Hold time depends on loop geometry; number of wire turns in the loop, vehicle size, and position of the vehicle in the loop

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zone. When OFF (Infinite Presence Mode), the presence CALL Output A hold time will always be maintained as long as a vehicle is located over the loop zone and power is not removed from the LMA-100.

**Output A Mode (Switches 7 & 8)**

SWITCH	Presence	Presence	Pulse On Exit	Pulse On Entry	FACTORY DEFAULT
7	OFF	OFF	ON	ON	OFF
8	OFF	ON	OFF	ON	OFF

**Output A Mode (DIP 7 & 8):** Utilizing the settings shown in the “Output A Mode” DIP switch table above, or the label located on the side of the LMA-100, three output modes of operation are selectable for Output A:

In the **Presence Mode**, the Output A is On during a CALL.

In the **Pulse on Exit Mode**, the Output A provides a 250-millisecond pulse when a vehicle exits the loop zone.

In the **Pulse on Entry Mode**, the Output A provides a 250-millisecond pulse when a vehicle enters the loop zone.

**4. Additional Features & Benefits**

**Reset:** The LMA-100 can be manually cleared and returned by pressing the front panel RESET button or by interrupting power.

**Output “CALL” Memory:** A power loss of 4 seconds (typical) or less will not drop the vehicle CALL.

**Loop Fault Diagnostics:** The POWER indicator indicates if the LMA-100 is within the specified loop inductance range. The LMA-100 is able to detect Open Loops, Shorted Loops, or sudden changes in loop inductance exceeding 25% of the nominal inductance. If a Loop Fault is detected, the POWER and OUTPUT indicators continuously emit a sequence of flashes (See the “LED Indications” table in section 2).

If a fault condition self-heals, the OUTPUT indicator will return to normal operation. The POWER indicator will continue to flash with the sequence signifying the type of loop fault that was last detected. In the case of the excessive inductance change fault, the unit will return to the new inductance after a period of two seconds and continue operation. Pressing the RESET button will clear the flash sequence from the POWER indicator.

**Loop Fault Memory:** Previous loop faults are stored in non-volatile internal memory. If power is interrupted for any length of time, the LMA-100 will not lose the last loop condition status. After power is restored to the LMA-100, the POWER indicator will automatically indicate the last loop status condition (Open Loop, Shorted Loop, 25% Change In Inductance, or No Loop Problem. See the “LED Indications” table in section 2. Momentarily pressing the front panel RESET button will clear the POWER indicator and return the LMA-100. Should you want to review the last loop condition after the LMA-100 has been reset, simply PRESS and HOLD the RESET button and after 2 seconds the POWER indicator will indicate the last loop fault condition.

**Operating Temperature:** -30°F to 165°F (-34°C to +74°C).

**5. Connector Pin Assignments:**

Model LMA-100-LV	
PIN	FUNCTION
1	12 VDC to 24 VDC / 24 VAC (+)
2	DC Ground / 24 VAC (-)
3	No Connection
4	No Connection
5	Output Relay A, Common
6	Output Relay A, Normally Open (Closes for DETECT)
7	Loop Input
8	Loop Input
9	No Connection
10	Output Relay A, Normally Closed (Opens for DETECT)
11	No Connection

Model LMA-100-HV	
PIN	FUNCTION
1	AC Line (89 VAC to 270 VAC)
2	AC Neutral
3	No Connection
4	No Connection
5	Output Relay A, Common
6	Output Relay A, Normally Open (Closes for DETECT)
7	Loop Input
8	Loop Input
9	No Connection
10	Output Relay A, Normally Closed (Opens for DETECT)
11	No Connection