

Eberle Design Inc.

Loop Monitor™ Series TS2 Inductive Loop Detector

EBERLE DESIGN INC.



WHAT IS A LOOP MONITOR™?

- ◆ The LM series Loop Monitor™ from EDI takes vehicle detection one step further...
 - » It not only indicates vehicle presence with great accuracy and reliability, but also monitors the condition of the loop for diagnostic purposes.

DETECTION FEATURES

- ◆ Automatic Tuning

- » Tunes on power up and after mode, sensitivity or frequency change.
- » Fulltime environmental tracking compensates for changes in ambient conditions.
- » Fifteen Levels of Sensitivity
 - › Allows the user to fine tune the loop monitor for a specific application.

DETECTION FEATURES

- ◆ Four Loop Frequencies
 - » Allows more choices for crosstalk avoidance.
- ◆ Three Operational Modes
 - » Short Presence, Long Presence or Pulse.
- ◆ Time Multiplexed Scanning
 - » Avoids crosstalk between adjacent loops connected to the same detector.
- ◆ Relay or Optically-Isolated Solid-State Outputs available.



DIAGNOSTIC FEATURES

- ◆ Separate Color-coded Detect and Fault LED Indicators
 - » Red for the Detect LED and Yellow for the Fault LED.
 - » The separation of the detect and fault LEDs allows easier determination of current and previous faults. The different colors differentiate the LEDs in the cabinet for improved readability.

DIAGNOSTIC FEATURES

- ◆ Loop Faults Indicated by Unique LED Flash Sequence
 - » Shorted Loop, Open Circuit Loop and Excessive Inductance Change.
 - » The flash sequences were chosen to enable the user to easily determine the type of fault just by counting the flashes.

LED OPERATION



DET 
FLT  NORMAL




DET 
FLT  FAULT

DET 
FLT  PREVIOUS
FAULT

FAULT FLASH SEQUENCE

 1 FLASH OPEN CIRCUIT OR
LOOP INDUCTANCE IS
GREATER THAN 2500 μ H

  2 FLASHES SHORT CIRCUIT OR
LOOP INDUCTANCE IS
LESS THAN 20 μ H

   3 FLASHES EXCESSIVE INDUCTANCE
CHANGE EXCEEDING 25%
OF NOMINAL INDUCTANCE

DIAGNOSTIC FEATURES

◆ Fault Memory

- » The Fault LED flash sequence indicates last loop fault that was detected.
- » This feature can indicate the failure mode of an intermittent suspect loop.

DIAGNOSTIC FEATURES

◆ OTHER FEATURES

» Delay and extension timing capability:

- › Each channel has separate delay and extension times which allow the user to program both delay and extension on a per channel basis. Also available on four channel version.

» Separate System Count/Presence Outputs:

- › Allows collection of system data from the same loops as intersection calls. This facility is available on all single and dual channel Loop Monitors™.

LM SERIES TS-2 FEATURES

- ◆ Fully compatible with TS-1 detectors.
- ◆ 12 Volt Operation
 - » Power consumption is reduced significantly.
- ◆ Call outputs are fail-safe
 - » If the detector power supply fails, the outputs provide a constant call.
 - » This feature is useful when the BIU is not being used as it offers the same benefits as relay outputs.

LM SERIES TS-2 FEATURES

- ◆ Fault Monitor status is transmitted on a per channel basis to the detector BIU.
 - » Five Status conditions are presented to the controller:
 - › Normal Operation
 - › Power failed or Watchdog failure
 - › Open Circuit Loop
 - › Short Circuit Loop
 - › Excessive Change in Inductance.

LM SERIES TS-2 FEATURES

- ◆ Remote Reset from Controller
 - » Individual Loop monitors can be reset remotely by the controller via the detector BIU.
 - » This allows an attempt to reset suspect detectors without disturbing the operation of units performing normally.

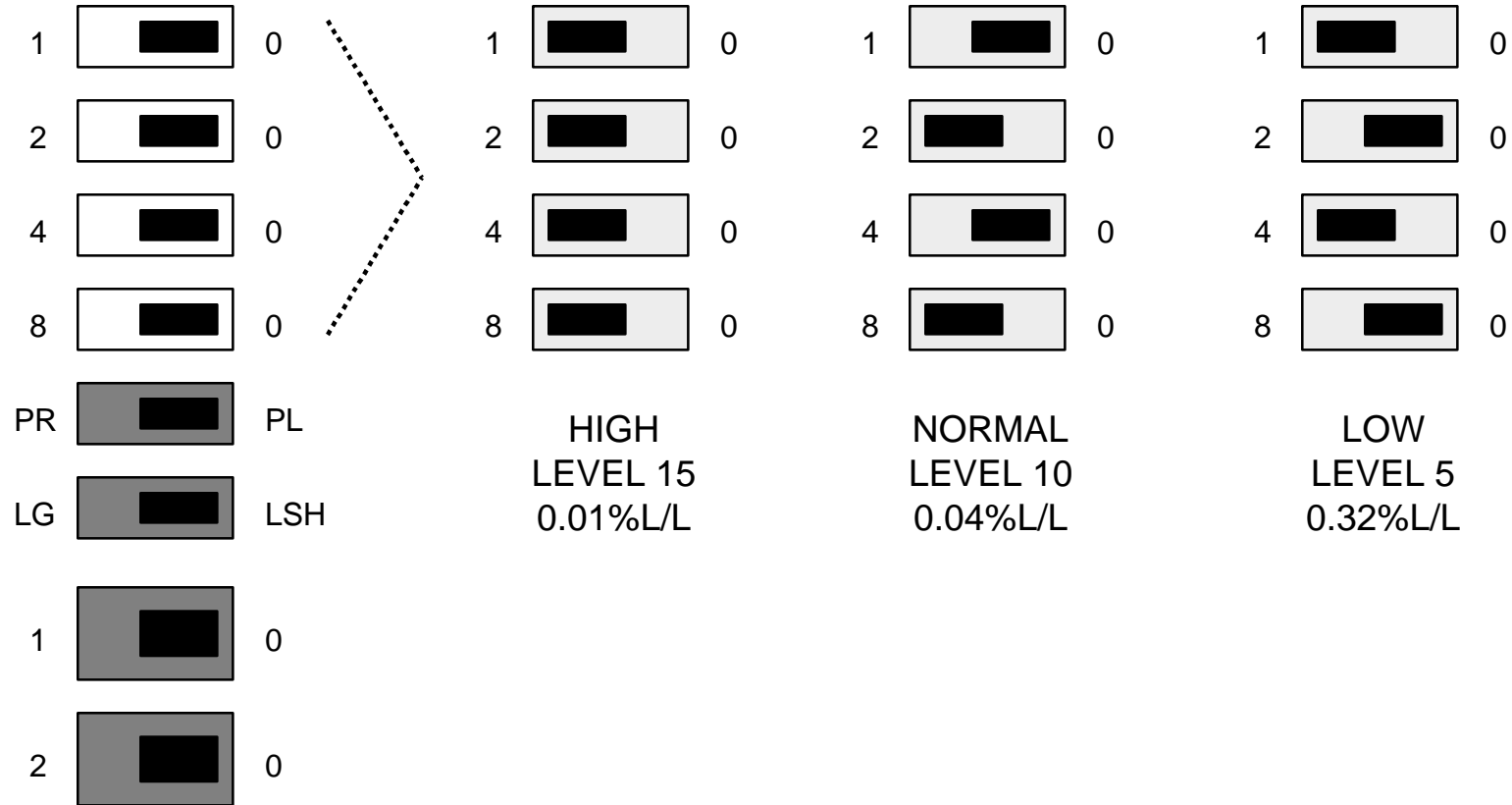
LM SERIES TS-2 FEATURES

- ◆ Time-Stamping of Detection Calls
 - » Each detection call is time-stamped with 1 millisecond resolution.
 - » This feature makes more accurate detection call information available for traffic data analysis.

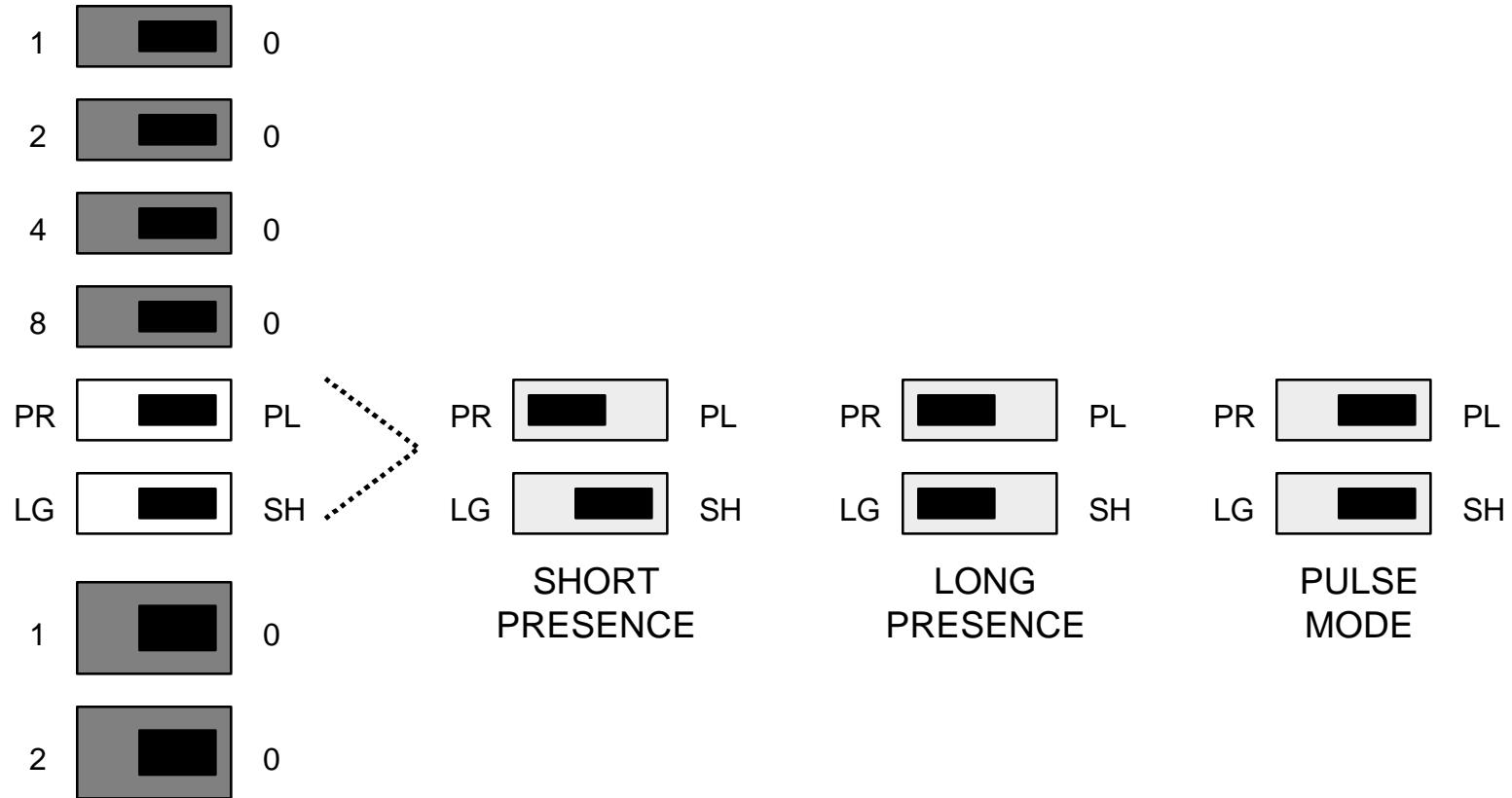
LM SERIES TS-2 FEATURES

- ◆ Delay and Extension timing and Delay override are provided for downward compatibility with TS-1 cabinets.
- ◆ Output and Channel DETECT Led give a one second call whenever a switch setting is adjusted.
 - » This enables a call to be presented to the CU for testing purposes.

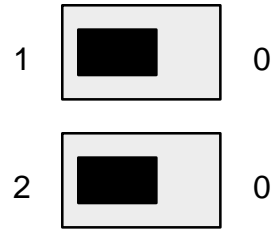
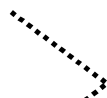
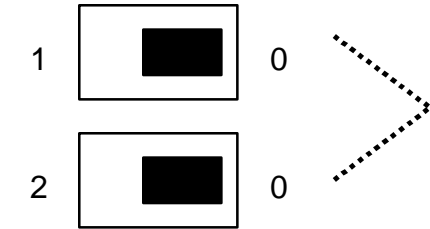
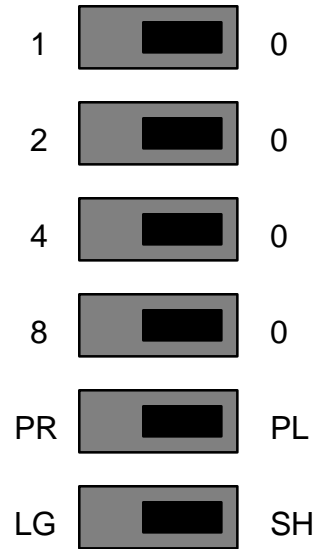
SENSITIVITY PROGRAMMING



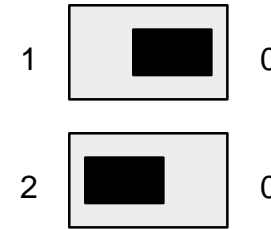
MODE PROGRAMMING



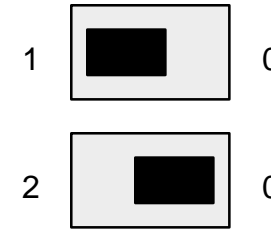
FREQUENCY PROGRAMMING



LOW
FREQUENCY



MED LOW
FREQUENCY



MED HIGH
FREQUENCY



HIGH
FREQUENCY

LM SERIES TS-2 PRODUCTS

- ◆ LM622t Two Channel
- ◆ LM622t Two Channel with Timing
- ◆ LM624 Four Channel
- ◆ LM624t Four Channel with Timing
- ◆ LM642t Two Channel with Timing and System Outputs
- ◆ LM642tm Two Channel with Timing and System Outputs via Separate Connector

EDI LOOP MONITOR™

Setting the Standard
for
Quality and Reliability

Eberle Design Inc.