AES EL00IG-RAD Inground Wireless Vehicle Detection System Instruction Manual

EL00IG-RAD
PRESENCE MODE WITH
ADDED RADAR PROTECTION.

Contents

EL00IG-RAD Inground Wireless Vehicle Detection System

Wireless Vehicle Detection System

Installation in 3 simple steps

1. Code in the e-Loop.
2. Core bore 89mm hole 70mm deep and secure using flexible mastic.
3. Calibrate the e-Loop… and you're ready to operate in less than 30 minutes. Save many hours of installation time compared to wired loop systems.

KIT CONTENTS

- 1 x e-Loop wireless inground module.
- 1 x single channel transceiver.
- 1 x magnet.

DISCLAIMER: UNITS WITH THE PRESENCE FEATURE IS NOT TO BE USED AS A SOLE SAFETY DEVICE & SHOULD BE USED IN CONJUNCTION WITH STANDARD GATE SAFETY PRACTICES.

FEATURES

- Dual sensing technology. (EL00IG-RAD).
- High security 128 bit encryption.
- Quick and easy installation.
- Recesses into the driveway.
- Not affected by ground movement.
- 14500 mA battery giving up to 6 years battery life.
- Top access for changing battery.
- Up to 50 yards range.
- IP68.

Commercial Inground e-loopPresence Mode EL00IG-RAD
The Inground Wireless Vehicle Detection System uses magnetometer sensors to detect the presence and movement of vehicles. These detections are transmitted to a nearby transceiver for gate activation. The sensors are installed in the ground of entry or exit passages using sikaflex, contain a replaceable LIthium battery, and can withstand almost any vehicle. Gate or door controller must have a dedicated open input and autoclose function enabled.

Functions / Features

Lower power consumption
3-axis magnetometer for vehicle detection

- 8 Hz sampling rate
- Auto-calibration
- Exit/Entry detection mode

Fast and simple installation

- Quick non-permanent installation

Up to 6 year battery life

- Compact design
- Compatible with various gates

Reliable radio communications with transceiver

- Reliable radio communication
- High security 128-Bit AES Encryption

Added Radar functionality
The Radar sensors can detect vehicles that are stopped above the e-loop. The added radar utilises two-way radio communication protocol for reliable operation. Once the magnetometer sensor detects an oncoming vehicle, the transceiver relay will be latched and confirmation will be sent back to the e-loop. If the magnetic field drops below the set threshold, the radar will check if a vehicle is present. If no vehicle is detected, an unlatch command is sent to the relay, and the transceiver will send a confirmation to the e-loop. If the confirmation is missed, multiple attempts will be made to ensure safe operation. Radar settings can be adjusted using the e-diagnostics remote. Settings that can be changed include; Dead zone, sensor distance, sensitivity, magnetic field release level, and confirmation mode.
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Radio Specifications

Frequency	433.39 MHz
Modulation	FSK
Bitrate	9.6 kbps
Bandwidth	250 kHz
Antenna Type	PCB
Nominal Output Power	10 dBm
Receive Sensitivity	-126.2 dBm
Security	128-Bit AES Encryption
Spurious Emissions	• 30 – 1000 MHz: < -56 dBm • 1 – 12.75 GHz: < -44 dBm • 1.8 – 1.9 GHz: < -56 dBm • 5.15 – 5.3 GHz: < -51 dBm

**Power, Physical and Environment**

| Power	1 * 3.6 V 14500ma
Dimensions	3.4*3.4*2.1 inches
Weight	300g
Environment	• designed for inground (flush) mounting • IP68 ingress Protection
Operating Temp	-40°F to 176°F
Standby Power	14µA
Activation Power	50mA

Compliance

Safety	Tested to CE Approval
EMC	Tested to: EN 301 489-1 V2.2.3 "ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility" Including a)_Emissions to EN 55032 "Electromagnetic compatibility of multimedia equipment". b)_Transmitter and receiver test to EN 300 220-1 V3.1.1 'Short Range Devices (SRD) operating in the frequency range 25MHz. to 1000MHz; Part 1: Technical Characteristics and methods of measurement." c)_Immunity Tests to EN 301 489-1

Detection Specifications

Activation Time	300ms
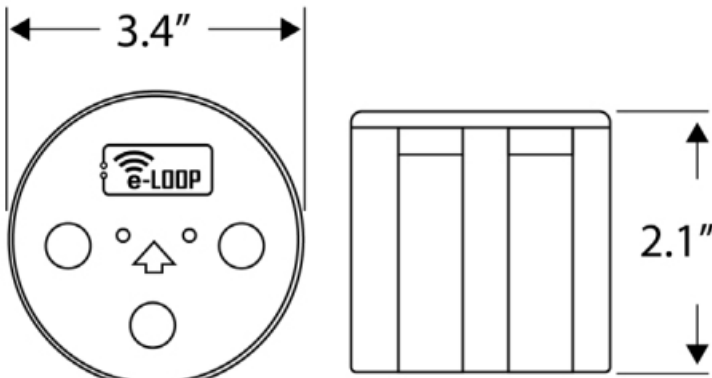
Magnetometer Detection Areas
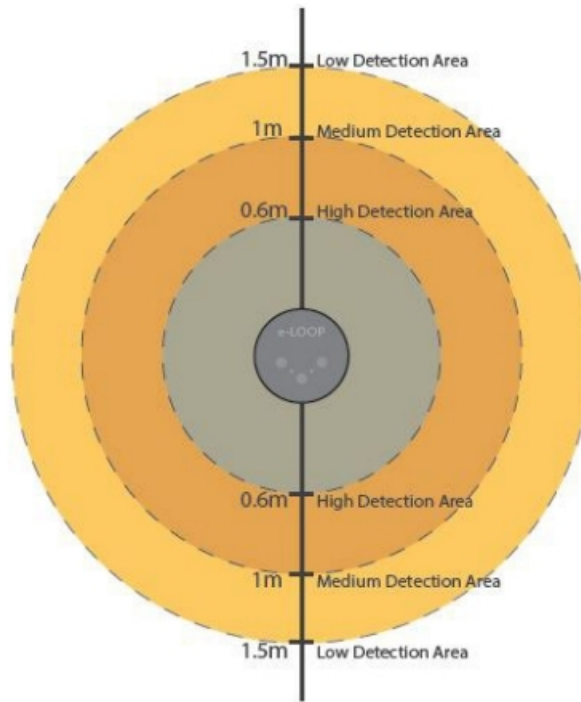
1.6 yards = Low Detection Area.
1 yard = Medium Detection Area.
0.6 yard = High Detection Area.

Varying magnetic field detection zones. The grey area depicts a 0.6 yards high sensitivitydetection area surrounding the e-loop, suitable for the majority of vehicles. The darcolour area depicts a 1-yard medium sensitivity detection area surrounding the eloop, suitable for most vehicles.

The light colour depicts a 1.6 yards low sensitivity detection area surrounding the e-loop, whicis only suitable for some vehicles.

**Radar Read Distances**
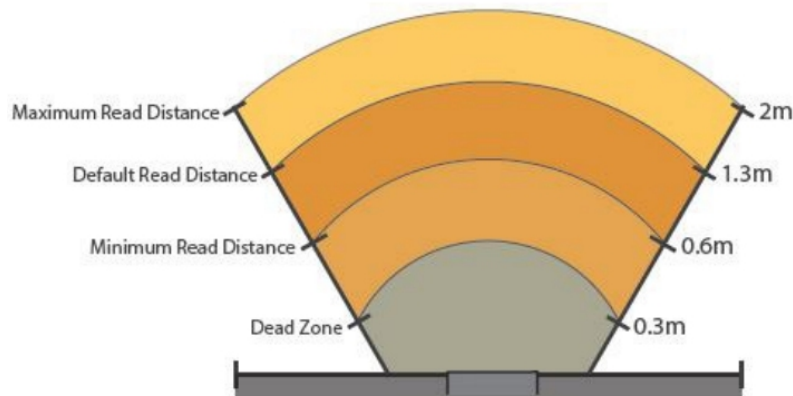
2.1 yards = Maximum Read Distance.
1.4 yards = Default Read Distance.
0.6 yards = Minimum Read Distance.
0.3 yards = Dead Zone.

Radar detection range. Spanning from a 60° FOV from the e-loop, these are the range zones. The Gray area depicts the dead zone, in which objects cannot be detected. The Minimum read distance is 0.6 yards. The default read distance is 1.4 yards, and the Maximum read distance spans up to 2.1 yards.

Battery Life vs Daily Activations
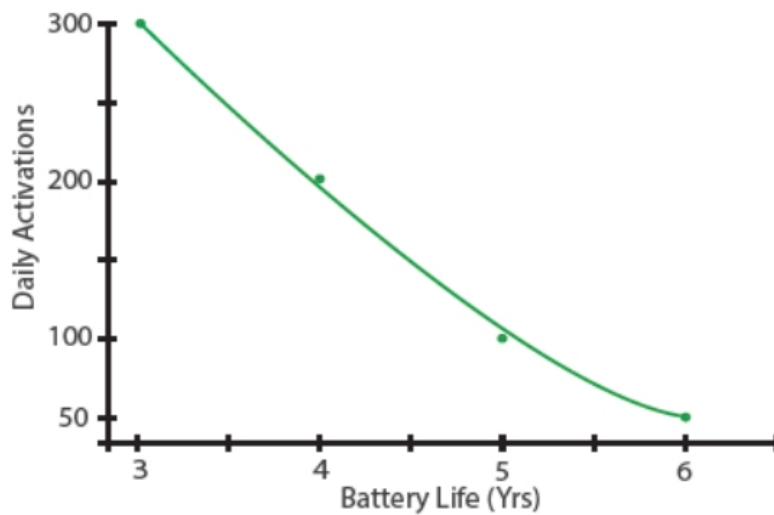
Note: Battery life is dependent on many factors, including daily activations, time used per activation, radar range and external conditions.

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Documents / Resources

AES EL00IG-RAD Inground Wireless Vehicle Detection System [pdf] Instruction Manual EL00IG-RAD Inground Wireless Vehicle Detection System, EL00IG-RAD, Inground Wireless Vehicle Detection System, Wireless Vehicle Detection System, Vehicle Detection System, Detection System, System

References

- **AES Global LLC | Gate Intercoms | Florida**
- **User Manual**