EASYSpec -The Automation Specification Service for Professionals

Inductive Vehicle Loop Detectors

OVERVIEW

Inductive vehicle loop detectors (loops or loop detectors) may be installed into almost any type of road surface and are designed to detect a large metallic mass. This can be useful when you wish to detect vehicles, yet ignore animals and pedestrians. They require a stable substrate such as tarmac or concrete as a base. Commonly used as safety devices to stop barriers closing prematurely, loops are also used as control devices. Examples are to allow free exit through automatic gates or barriers, or switch on ticket machines, cameras or access control readers. The vehicle can approach, be recognised and then pulse the barrier/gate to open. Loops can also be used as safety devices. The loop consists of a number of turns of wire, and is connected to a detector unit which senses the electrical changes which result from the proximity of a metallic mass. It will therefore detect vehicles, but not people or other non metallic objects. When detection occurs, the operating power level of the loop will be increased. The increased magnetic field will ensure that the signal is not lost when articulated, or high sided vehicles are sensed. Where two loops are operated by one loop controller, the loops must be identical in shape and size. If this is not possible, loops must be specifically designed for operation in series.

EXAMPLE

This specification allows for a single loop detector controlling the free exit from an automatic gate. When a vehicle is sensed a signal is sent via the detector to the control panel of the gate.

SPECIFICATION

The Inductive Vehicle Loop Detectors shall be the Electro EALD1 and shall be supplied and installed by Electro Automation (NI) Ltd. All operating and safety accessories shall be supplied by Electro Automation as part of this contract.

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GENERAL

The loop detector shall incorporate the latest technology and design features and be manufactured with precision engineering. The loop detector shall be CE approved and comply with all relevant EN safety standards.

MODEL

Electro EALD1 Single Channel Loop Detector

FUNCTIONS AND SPECIFICATION

The site for vehicle loops must be carefully considered. There should be no large metallic objects within 1m of the loop. It is preferable that here should be no manhole, or inspection covers within the area of the loop. The vehicle loop should not be under high voltage power cables. The loop shall be installed into a slot cut 50mm deep into the roadway. The corners of the loop slot shall be mitred at 100mm by 45 degrees to avoid sharp corners pressing against the cable insulation. The loop slot shall be fully back-filled by others with bitumen. Any gaps in the back-filling may cause problems. The back-filling serves to protect the loop from vibration and subsequent abrasion, and also to protect the ingress of water. Any rainwater which surrounds the cable itself will alter the dielectric properties of the loop and affect loop operation in wet weather. The supplier shall use a sophisticated microprocessor controller which removes the problems encountered in detector loops and ensures trouble free operation in most installations.

WORKING ENVIRONMENT

The detectors shall be designed for a working temperature: -25^{o}c to +85^{o}c
Mains power input to the control panel: 220vAC ± 10% 50/60Hz at 120W
Relative humidity: equal or less than 95%

SYSTEM CONTENT

1 No. Electro EALD1 Single Channel Loop Detector
All civil works by others

All materials and specialist advice can be obtained from:

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21 Crescent Business park
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