

## Earth Leakage Detector (ELD)

The interlocking circuits in railway signalling are often supplied from a battery in which neither of the poles are connected to earth. In the event of a single fault there is no danger, however, two or more faults occurring at the same time could create a dangerous situation. Therefore, it is vitally important to supervise the battery supply continuously to prevent this from happening.

Cables which run in parallel with AC electrified railways are subjected to induced voltages. If an earth leakage occurs in the cable, these voltages can disturb devices which are connected to both cables. When earth faults occur in both supply and return wires yet another hazardous condition is created.

These faults can be detected reliably with MRD's ELD.



## Reliable Earth Leakage Detection

Despite all of the safety built into our electrical rail systems, failures can and do occur.

By providing constant monitoring and instant notifications of threshold breaches, MRD's Earth Leakage Detector (ELD) significantly reduces the likelihood of failure or accidents due to earth leakage faults.

### Features

- Monitors AC and DC busbars
- Auto detects busbar voltage
- Fail-safe or non-fail-safe contact operation
- Operation and alarm LEDs
- Manual test and reset buttons
- Adjustable sensitivity and delay
- Displays fault level in KΩ
- Displays fault time
- DIN rail or panel mounting
- RS-485 communications

### Benefits

- Compact size
- Remote interrogation via RS-485
- Remote test and reset
- Remove faults before problems occur
- Low cost



# ELD

## Earth Leakage Detector

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### Part Numbers

|                             |                   |
|-----------------------------|-------------------|
| AC Supply Version           | ELDAC/DC-AUTO-110 |
| DC Supply Version           | ELDAC/DC-AUTO-12  |
| Q-Style Panel Mount Bracket | ELDAC/DC-AUTO-PMB |

## Technical Specifications

### General Data

|                                    |                             |
|------------------------------------|-----------------------------|
| Connection Type                    | 4mm screw terminal          |
| Mounting                           | DIN rail or screw mount     |
| Panel Mounting                     | Q-Style panel mount bracket |
| Dimensions (H x W x D)             | 75 x 100 x 110mm            |
| Weight                             | 0.4kg                       |
| BUS/GND Isolation Resistance       | >185 K $\Omega$             |
| Operating Temperature              | -20 to 60°C                 |
| Storage Temperature                | -20 to 80°C                 |
| Climate Class According to IEC 721 | 3K5 without condensation    |

### AC Supply Voltage (AC Version)

|                        |              |
|------------------------|--------------|
| Supply Voltage         | 85 – 264V AC |
| Frequency Range        | 50 – 60 Hz   |
| Max. Power Consumption | 3W           |

### DC Supply Voltage (DC Version)

|                        |            |
|------------------------|------------|
| Supply Voltage         | 9 – 36V DC |
| Max. Power Consumption | 3W         |

### Monitoring Voltage Range

|                   |             |
|-------------------|-------------|
| DC Busbar Voltage | 9 – 150V DC |
| AC Busbar Voltage | 0 – 650V AC |

### Protection Class

|                       |                                             |
|-----------------------|---------------------------------------------|
| Internal Components   | IP30                                        |
| Terminals             | IP20                                        |
| Housing               | Self extinguishing polycarbonate            |
| Fault Contact Ratings | 0.6A 125V AC<br>0.6A 110V DC<br>2.0A 30V DC |
| Trip Delay Range      | Adjustable 2 sec – 10 sec                   |
| Trip Point            | Adjustable 10 K $\Omega$ – 200 K $\Omega$   |

### Approvals & Compliances

|                                 |                                |
|---------------------------------|--------------------------------|
| Network Rail                    | Certificate Number PA05/05184  |
| ARTC                            | Approval Number 08-08-10-078   |
| MTM                             | Cert. Number 01-1201-0005_F_TA |
| V Line                          | Approval Number VLP-134        |
| QR National                     | Certificate Number C0098       |
| Rail Infrastructure Corporation | Approval Number Q03/0404       |