**CORE BALANCE CURRENT TRANSFORMER**  
**to detect Earth leakage current**  
**type : Tleak**

- **Measure or detecting leakage current**  
  single-phase or three-phase with or without neutral applications

- **Hole diameter : 32, 50, 70 and 120 mm**

- **Voltage or current output**  
  provide a proportional signal to the leakage current.  
  Can be use with a threshold relay or a measure central.

- **Surface mounting with fixing slots**  
  Slim design

The « Tleak » transformer are designed around a high quality magnetic core which detects fault currents, even in the case of very low values. The different diameters are used to adapt to a wide range of wire section and leakage current.

**Description:**  
The core balance transformer allows the direct measure of residual currents (earth leakage current). The presence of a homopolar component is significant to an earth default. This component is measured via a toroidal transformer placed around the 3 phases + neutral or phase + neutral (following the network type ), or on the connexion to the earth. The vector sum of this currents is null when there is no fault. This balance is broken when a earth leakage current exist. At this time, the vector sum of currents is no longer null and this difference is measured by the toroid.

**Associated products :**  
- Earth fault relay: DSL36LEAK (datasheet)
- Multi channels measurement: CPL165 (datasheet)
- Measure central: CPL105 (datasheet)

**Features :**  
- Encapsulated transformer in insulated plastic housing (ABS),  
- Connection by 1.5mm² screw terminal blocks,  
- Protection rating: IP40,  
- Surface mounting with 4 integrated fixing slots.

**Implementation :**  
1. Make sure that the earth wire does not pass through the toroid. If it is unavoidable, the earth wire has to be routed back through the toroid as shown in the wiring diagram at right.  
2. It is preferable to choose a transformer having an inside diameter twice the outer diameter of cable (to reduce the errors due to transients signals).  
3. Ensure a central positioning of the cable in the toroid.  
4. The toroid must be crossed in the same direction, by all active wires of the line. Including the neutral (if present). The neutral wire should not be connected to the earth after the toroid.  
5. Place the toroid on a straight section of cable. (not near a bend)  
6. Keep the cable and toroid away from strong magnetic fields  
7. Limit the output measure cable length to 30 meters.

**Version and order code:**  
- **Tleak d35-AA** : toroid with voltage output, 35mm inside diameter.  
  500mVac by default.
- **Tleak d50-AA** : toroid with voltage output, 50mm inside diameter.  
  500mVac by default.
- **Tleak d70-AA** : toroid with voltage output, 70mm inside diameter.  
  500mVac by default.
- **Tleak d120-AA** : toroid with voltage output, 120mm inside diameter.  
  500mVac by default.

( AA : nominal leakage current for 500 mV output)

**Option :**  
- **/L (meters) :** twisted output cable, available up to 30 meters length.  
- **-mA :** Toroid with current output. Transformer ratio: 1/1000
### Metrology

- Measurable current (minimal measure range)
  0…300 mA in diameter of 35mm 50mm et 70mm
  (measure threshold < 10 mA)
  0…600 mA in diameter of 120mm
  (measure threshold ~ 20 mA)

  Maximum permissible current: 1KA continuously
  5KA during 1.5 sec
  100KA during 50 msec

- Power consumption: < 0.1Watt

- Accuracy :
  +/- 1 % (for 500mV nominal output)

- Linearity :
  +/- 0.25 % (for 500mV nominal output)

- Frequency range :
  20Hz….1KHz

### Environment

- Operating temperature: -20 to 60 °C
- Storage temperature: -20 to 85 °C
- Humidity: 95 % not condensed
- Weight: 50 to 150 g
- Rate system voltage: 720Vac max
- Dielectric strength: 3000 Vac permanently
- Isolation resistance: > 100 Mohms at 500V

#### Output

<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
<th>Accuracy</th>
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<tbody>
<tr>
<td>Voltage</td>
<td>0…200…500mV</td>
<td>+/- 5 mV</td>
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</tbody>
</table>

Standard output for LOREME device.

Output impedance: from 200 ohms to 10Kohms (according to 0.1% Internal shunt output range.)

### Electromagnetic compatibility

- Immunity standard for industrial environments: EN 61000-6-2
- Emission standard for industrial environments: EN 61000-6-4

- ESD: EN 61000-4-8
- AC MF: EN 55011
- RF: EN 61000-4-3
- CWG: EN 61000-4-4

### Technical Specifications

- 90 days accuracy (20 °C +/- 2 °C)
- DATA SHEET CAN BE DOWNLOADED ON WWW.LOREME.FR
- Technical specifications can be modified without notice.

### Wiring and Outline Dimensions:

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Teak d35</th>
<th>Teak d50</th>
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<tr>
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<tr>
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<tr>
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<th>Teak d120</th>
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