**PORTABLE AC / DC EARTH LEAKAGE DETECTOR**

**ELD350**

- The ISO-pathfinder for 24VDC and 110-690VAC Non-grounded systems
- Measures earth fault without breaking the loop
- Only for energised circuits
- 6mm DC clamp for app. 0.5-120mA range
- 23mm AC / DC clamp for app. 5mA-4A/30A range
- 68mm AC clamp for app. 10mA - 1000A range
- Easy operation

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**Specifications**

**SmartCase-ELD350**
- Enclosure: Pelicase 1500
- Dimensions: 470x357x176mm
- Weight: 1.8kgs
- IP67, ATA, Stanag 4280
- Defstan 81-41
- Temperature: -20+60 Degrees Celsius

**MML3500**
- System Voltage: DC 18-30VDC
- AC 110V-750VAC
- Fuse: DC 0.5A DC automatic
- AC 5A AC automatic
- Current consumption: <50mA
- Temperature: -10 to +50°C
- Front protection: IP40
- Dimensions: 245x170x100mm
- Weight: 6.8kg
- Standards: Comply with IEC60092-54, IEC60068/60092 and IEC61000/60533

**Application tip:**

The MEGA-2506 is suitable for verification of mA signals (like 4-20mA) without breaking the loop.

**Description**

The SmartCase-ELD350 is a portable tool for location of ground faults in 24VDC battery systems, 24V circuits in alarm systems and in all 110V to 690VAC non-grounded systems.

The SmartCase-ELD350 can only detect earth leakages in live circuits. All components come in a waterproof and unbreakable Pelicase 1500.

SmartCase-ELD350 contains:
- MML3500 main power unit
- MEGA2506 DC clamp meter (Ø 6mm)
- MEGA2523 AC/DC clamp meter (Ø 23mm)
- MEGA2568 AC clamp meter (Ø 68mm)
- Cables for DC (red, black & yellow/green, 2m)
- Cables for AC (red, 3 x 2m)
- Crocodile clamp

**Benefits of using ELD-350**

You may use the most advanced alarm and monitoring system to obtain total overview and control. However, unknown insulation grounds fault may give erroneous readings distorting your comfort zone.

Use the ISO-pathfinder ELD-350 to easily map the status of leakage paths to ground, verifying the accuracy of your total system.

MML3500 is a self-powered earth current reference unit giving a feedback loop for the AC/DC clamp sensors to be able to locate first failure. Measured feedback current is limited to approx. 225mA for DC systems and 1A for AC systems.

Only one circuit can be measured at the time, and default it is set to read positive pole leakage. Operator must press the sense button to check for earth leakage current on the negative pole.

MEGA2568 have a 68mm jaw for larger cable dimensions in AC systems with ranges from 200mA to 1000A. Measures leakage currents from app. 10mA and up.

MEGA2523 have a 23mm jaw for medium size cable dimensions. Use the AC or DC mA range. Measured leakage currents from app. 5-10mA and up to 30A.

MEGA2506 is a small high resolution clamp meter to detect very low leakage currents from app. 0.5-120mA. The 6mm jaw limits the measured cable dimensions to app. 1.5mm².

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**Application tip:**

The MEGA-2506 is suitable for verification of mA signals (like 4-20mA) without breaking the loop.
**Connection of MML3500 to DC system**

1. Connect MML3500 to positive and negative pole and PE (earth).
2. Use the crocodile clamp/wire for the ground (PE) connection. A solid common earth terminal is essential for correct measurement.
3. Check that GREEN LED (Power) is lit for correct connection.
4. Turn on the clamp meter MEGA2506 or MEGA2523 (depending on cable dimension) and do a zero calibration first.
5. Put the jaw to the first load feeder (both positive and negative wire must go through the clamp meter).
   - NB! If shielded cable is used, the shield must not be grounded during earth fault measuring.
6. If there is no mA reading on the clamp meter then your positive pole is healthy.
7. Press the black push button (NEG sense) on MML2500 to measure the negative pole. If there is still no mA reading both the poles on this circuit is healthy.
8. Move the clamp meter to the next feeder and do step 4, 5, 6 and 7 again.
9. Continue through all your 24VDC feeders to locate and map your DC leakages.
   - NB! Any reading on MEGA2506 below app. 0.5mA is negligible. For MEGA2523 expected leakage current to be located is about 5-10mA and up to amps.

**Operation Instruction for DC system**

1. In 3-wire systems, connect MML3500 to L1, L2, L3 and PE (earth).
2. In 2-wire systems, connect MML3500 to only L1, L2 and PE (earth).
3. Check that GREEN LED (Power) is lit for correct connection.
4. Turn on the clamp meter MEGA2523 or MEGA2568 (depending on cable dimension) and do a zero calibration first.
5. Put the jaw to the first load feeder (all phases in the circuit (L1, L2, L3 or L1, L2) must go through the clamp meter).
   - NB! If shielded cable is used, the shield must not be grounded during earth fault measuring.
6. If there is no mA reading on the clamp meter then your circuit is healthy.
7. Move the clamp meter to the next feeder and do step 4, 5 and 6 again.
8. Continue through all your AC feeders to locate and map your AC leakages.
   - NB! For the MEGA2523 expected leakage current to be located is about 5-10mA and up to amps. For the MEGA2568 expected leakage current to be located is about 10mA and up to amps.

**Connection of MML3500 to AC system**

1. Connect MML3500 to 24VDC source.
2. Load 1, Load 2, Load 3
3. PE

**Operation Instruction for AC system**

1. In 3-wire systems, connect MML3500 to L1, L2, L3 and PE (earth).
2. Use the crocodile clamp/wire for the ground (PE) connection. A solid common earth terminal is essential for correct measurement.
3. Check that GREEN LED (Power) is lit for correct connection.
4. Turn on the clamp meter MEGA2523 or MEGA2568 (depending on cable dimension) and do a zero calibration first.
5. Put the jaw to the first load feeder (all phases in the circuit (L1, L2, L3 or L1, L2) must go through the clamp meter).
   - NB! If shielded cable is used, the shield must not be grounded during earth fault measuring.
6. If there is no mA reading on the clamp meter then your circuit is healthy.
7. Move the clamp meter to the next feeder and do step 4, 5 and 6 again.
8. Continue through all your AC feeders to locate and map your AC leakages.
   - NB! For the MEGA2523 expected leakage current to be located is about 5-10mA and up to amps. For the MEGA2568 expected leakage current to be located is about 10mA and up to amps.

**Importance:**
- For your own safety, connections between MML3500 and the AC system should only be done with power switched off. If MML3500 have to be connected to a live AC system, properly PPE and training is necessary to prevent accidents.
- It is important to keep the clamp meter jaws clean to obtain correct measurement. Use a fabric cloth to wipe off dust and particles.
- Check regularly that you have zero reading. Zero calibration may be done several times during the measuring process.
### Specifications for Clamp Meters

#### ELD350

**MEGA2568**
- **AC A**: 0-200mA-2A-20A-200A-1000A AC
- **AC A resolution**: 0.1mA-1mA-0.01A,0.1A,1A
- **Conductor size**: Ø68mm max.
- **Accuracy**: +/-1.5%+2D
- **Applicable standards**: IEC 61010-1 CAT.III 300V, IEC 61010-1 CAT.II 600V
- **Operating/storage temperature & humidity**: -10 to +50 degrees <85%
- **Power source**: 2xLR6(AA) 1,5V
- **Current consumption**: Approx.10mA
- **Dimensions**: 250x130x50mm
- **Weight**: App. 570g (Incl. batteries)

#### MEGA2523
- **AC A**: 4/30A (manual range), True RMS
- **AC A resolution**: 0.1 mA
- **DC A**: 4/30A (manual range), True RMS
- **DC A resolution**: 1 mA
- **Conductor size**: Ø23mm max.
- **Accuracy**: +/-2%+3d
- **Applicable standards**: IEC 1010 Category III 300V, Category II 600V
- **Operating/storage temperature & humidity**: -10 to +50 degrees <75%
- **Power source**: 2 x LR6(AA) 1.5V
- **Current consumption**: Approx. 10mA
- **Dimensions**: 183x64x36mm
- **Weight**: App. 190g (Incl. batteries)

#### MEGA2506
- **DC A**: 20/120mA (Autoranging)
- **DC A resolution**: 0.01mA
- **Conductor size**: Ø6mm max.
- **Accuracy**: +/-0.2%rdg +/5dgt (0.00-21.00mA) +/-1% +/5dgt (21-120mA)
- **Applicable standards**: IEC 61010-1, 61010-2-030 CAT.II 300V, IEC 61010-0-032, IEC 61326-1, 61326-2-2, IEC 60529 IP40
- **Operating/storage temperature & humidity**: -10 to +50 degrees <85%
- **Power source**: 4 x LR6(AA) 1,5V, battery life is app. 60 hours (with backlight and LED on)
- **Dimensions**: 111x61x40mm (Display unit)
- **Weight**: App. 290g (Incl. batteries)