

MANTIS – CABLE CORE IDENTIFIER

Product Code: MANTIS

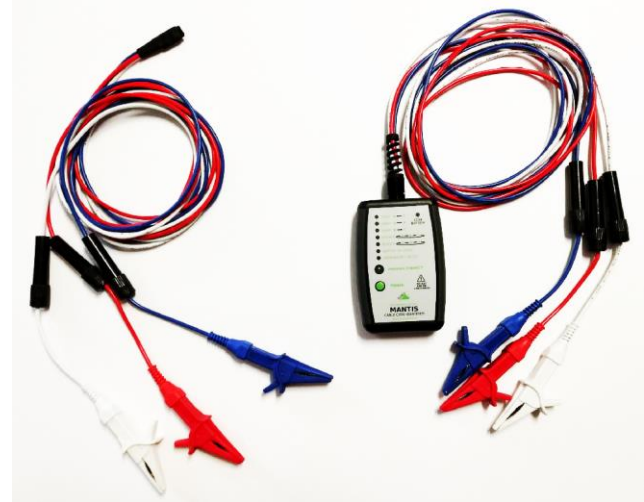
The Mantis Cable Core Identifier (CCI) is used to identify the phasing of DE-ENERGISED HV cables. Quite often underground HV cables do not have consistent phase markings. This is generally because the physical dimensions of the cable and associated jointing systems prohibit joining cables core-to-core meaning that core transpositions are common in HV cable joints. When performing jointing works on existing HV cables it is necessary to identify the cores at the new joint with respect to a point of known phasing. The Mantis CCI makes this task simple.

HOW IT WORKS

The Mantis CCI is intended to identify the phase connections of DE-ENERGISED HV underground cables with respect to a point of known phasing.

IMPORTANT: ONLY USE THIS INSTRUMENT ON EQUIPMENT THAT IS SUITABLY ISOLATED AND PROVED DE-ENERGISED.

1. Turn on the Mantis by pressing the power button. You should see the indicator lights flash in a start-up sequence for approximately 2 seconds.
2. If the low battery light is permanently lit, this means that you should replace the battery as soon as possible, but the battery still has enough charge for the Mantis to function correctly. If you do not see a start-up sequence, or the 'LOW BATTERY' light is flashing, this means that the battery is too low to reliably complete the phase identification process and you need to replace it before proceeding.
3. Perform a self-test on the Mantis by connecting the Mantis CCI unit to the diode set, matching the leads colour for colour. You should see the 'PHASING CORRECT' light illuminate. This confirms both the Mantis CCI unit and the diode set are functioning correctly.
4. Connect the diode set to a point of known phasing on the HV cable to be tested.
5. Connect the Mantis CCI unit to the cable at the location where phasing needs to be identified.



6. Depending on the reading shown on the Mantis CCI, follow the steps below until the "PHASING CORRECT" LED is illuminated:
 - Swap A & C: Swap A and C Phase (Red & Blue) clips on the Mantis CCI (NOT the diodes) and re-test.
 - Swap A & B: Swap A and B Phase (Red & White) clips on the Mantis CCI (NOT the diodes) and re-test.
 - Swap B & C: Swap B and C Phase (White & Blue) clips on the Mantis CCI (NOT the diodes) and re-test.
 - Rotate A>B>C: Move the A Phase (Red) clip to the B Phase (White) position. Move the B Phase (White) clip to the C Phase (Blue) position. Move the C Phase (Blue) clip to the A Phase (Red) position. Then re-test. (Alternatively, swap any 2 clips and re-test.)
 - Rotate C>B>A: Move the C Phase (Blue) clip to the B Phase (White) position. Move the B Phase (White) clip to the A Phase (Red) position. Move the A Phase (Red) clip to the C Phase (Blue) position. Then re-test. (Alternatively, swap any 2 clips and re-test.)
 - Earths on Cable: There are still earths or shorts on the cable you are trying to test. Also, a transformer (possibly a measurement VT) or some other 3-phase load may be connected to the cable under test. Disconnect the offending piece of equipment and re-test.
 - Open/Short Circuit: There is a short between 2 of the cores under test, or 1 or more cores are not continuous between the identifier and the diode set. Also check that the clips on the diode set and the identifier are making good contact with the cable cores.
 - Phasing Correct: The cores at the unmarked end match up to the cores at the point of known phasing.
7. Mark the cores at the end attached to the Mantis CCI with the colours of their respective clips. The test is complete.

