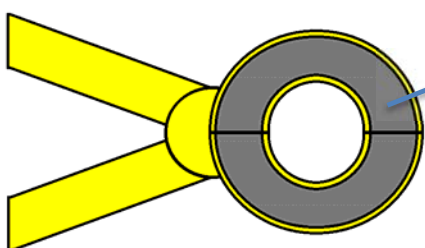


Ground fault tracing: CT magnetization

When tracing ground faults on ungrounded DC systems, one should not assume that there will be no DC current flowing through the circuit. If a current clamp (CT) is placed on a line with DC current, the DC current will cause the CT, namely its iron core, to magnetize. The higher the DC current, the stronger the magnetization will be.

This can make removing the CT quite difficult. The CT can be damaged in the process of removal. In some cases, the CT cannot be removed from the line.



The iron core will have wire wrapped around it in order to transfer an AC signal. However, a DC signal will magnetize the iron core.

When tracing low level AC signals or pulses, the larger and purer the CT core, the higher its permeability and the more sensitive the CT will be. This makes the CT better at measuring these low currents used to trace faults. However, this also makes such a core more susceptible to magnetization. The MGFL100 CT is very sensitive but will not have any significant magnetization. This is because the core is made of a mu-metal compound. This core maintains high permeability but is far less prone to magnetization. If it is placed on an energised DC line, it can still easily be removed without any damage.



The mini active CT for the MGFL100 uses a flux gate technology, allowing a gap in the core. This also greatly reduces magnetization effects.



Using these current clamps will eliminate magnetization issues due to DC current.