

---

## ***Noise Reduction by Ferrite Cores***

In any current monitoring application noise may be capacitively coupled to the outer shield of the current monitor. The coupled voltage causes current to flow on the cable shield which in turn produces a voltage at the oscilloscope input ground. This voltage appears as an erroneous part of the observed signal. The effect increases with increasing voltage on the conductor being measured, or on nearby conductors.

This effect can be reduced by placing one or more ferrite cores on one or more turns of the coaxial cable between the current monitor and the oscilloscope, as illustrated in the figure below. Here, two turns of the cable are threaded through three ferrite cores. The type of ferrite and the dimensions of the cores are not critical. The cores increase the common-mode inductance on the cable, and that suppressed the current on the cable shield.

