

Current Measurements at High Frequencies

1 Working with high frequency current measurements

When measuring currents at frequencies above 1MHz, the measurement setup becomes extra important for the precision of the measurement.

It is important that the current fields are as symmetrical as possible seen from the current transducer's perspective to obtain the highest precision of the measurement.

1. The busbar must be centered in the current transducer
2. The current return path must be as symmetrical as possible

Ideally one could say that the current path should look like a coaxial cable with the center busbar as the core and the return current path as the outer shield surrounding the center busbar. Such a setup is not a practical possibility at high currents using a current transducer, therefore two simpler setups are suggested instead.

For setups up to 2 MHz for best precision it is recommended to use at least two symmetrical return paths – see example Figure 1-1 using the Danisense DT-series.

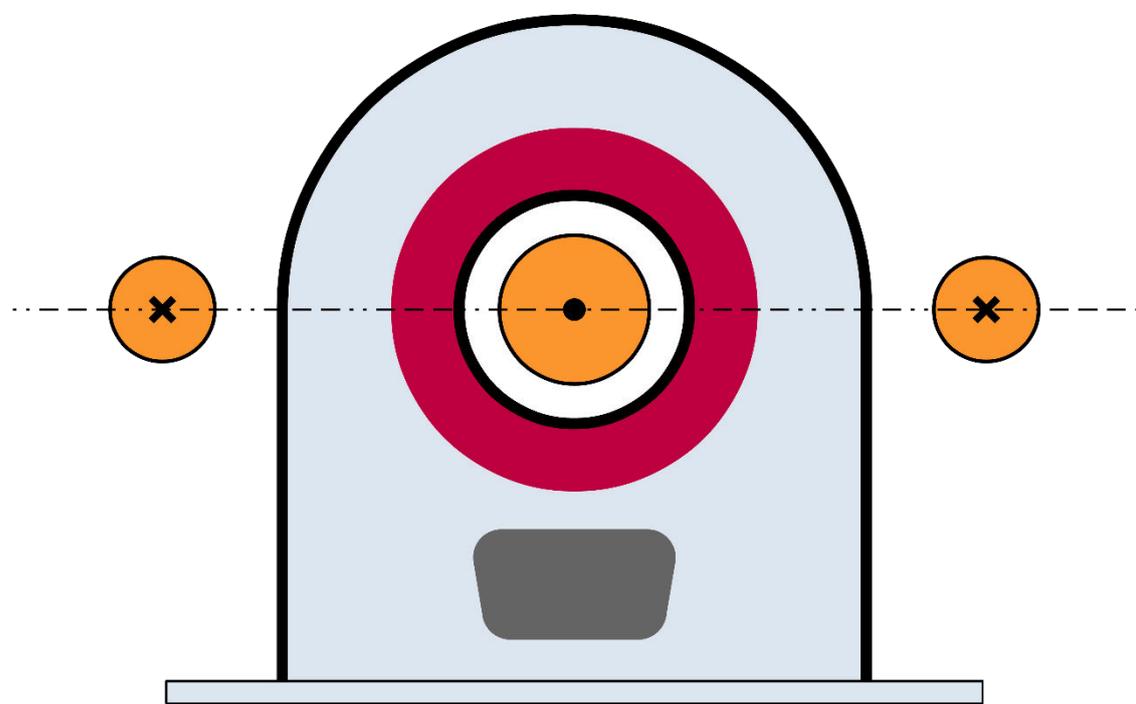


Figure 1-1 Two symmetrical return paths (• marks current direction into view and X marks away from view)

For setups up to 10 MHz for best precision it is recommended to use at least four symmetrical return paths – see example Figure 1-2 using the Danisense DW-series.

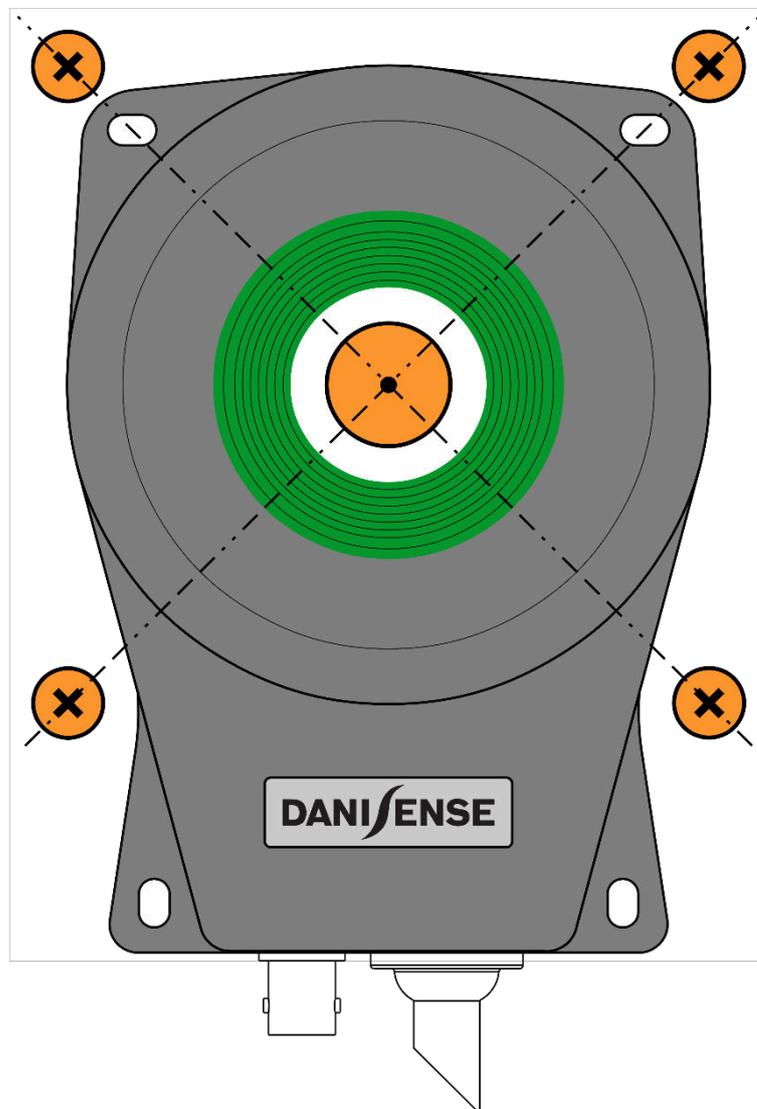


Figure 1-2 Four symmetrical return paths (• marks current direction into view and X marks away from view)