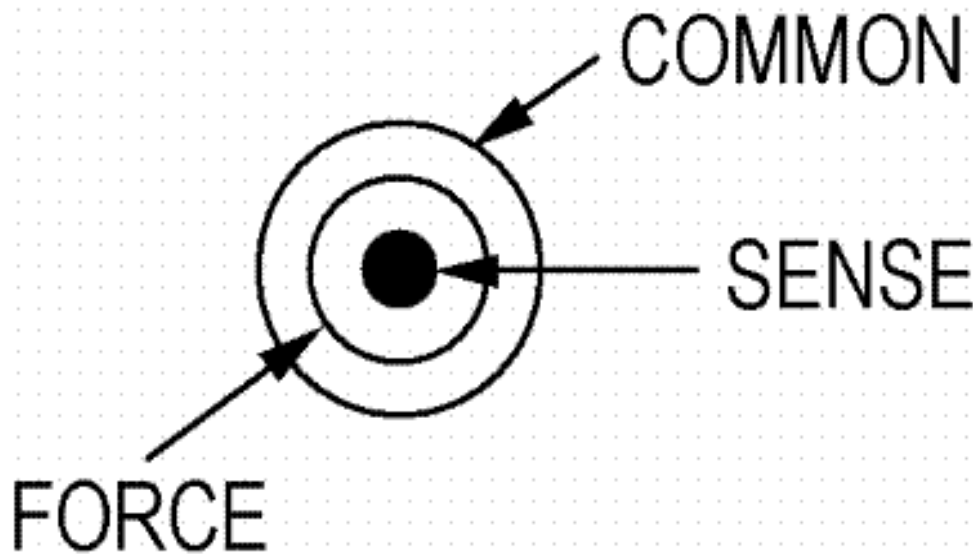




## How Do I Connect the GND unit (Agilent 41501B) with the Agilent E5250A?

**Question:** How do I connect the GND unit (Agilent 41501B) with the Agilent E5250A?

**Answer:** Making the GND unit connection to the Agilent E5250A is a little tricky, since the GND unit connector (while triaxial) is different from that of the SMUs. The SMU's terminal is composed of FORCE (SENSE), GUARD and COMMON (in order from the center conductor). However, the GND unit terminal is composed of SENSE, FORCE and COMMON (in order from the center conductor). Please refer to the illustration below for the GND unit configuration :



In the SMU case, the GUARD line is usually kept floating, since it maintains the same potential as the FORCE line in order to prevent the leakage currents. However, in the GND unit case there is no GUARD, only FORCE and SENSE. Therefore, it is impossible to connect the GND unit with the Agilent E5250A in the same manner as with a SMU.

To resolve this situation, Agilent provides the Agilent E5250-60004 Triaxial to Dual Triaxial Adapter to connect the GND unit with the Agilent E5250A. The Agilent E5250-60004 has 1 triaxial input and 2 triaxial outputs, so it requires a 2 triaxial input connector for the Agilent E5250A (such as a Kelvin cable). This allows you to connect the SENSE and FORCE lines separately. Even if you are not using separate SENSE and FORCE lines, the FORCE line should not be left floating because current flows in the FORCE line. If you are shorting the SENSE and FORCE lines, then for accurate measurements you should connect the SENSE line to FORCE line as close to the test structure as possible. The illustration below shows the adapter configuration:

