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Current Amplifier Care

The FEMTO DLPCA-200 is pretty robust because FEMTO integrated an input protection circuitry. It is protected against high voltage transients up to +/- 3 kV out of a 200 pF source (this is about what you would expect when a person charged with static electricity touches the amplifier input). The protection against static voltages is -16 V and + 12 V.

You can simply plug in and out the cables as necessary. FEMTO hardly ever has an amplifier die of static electricity since they integrated the input protection.

If you use high voltage sources close by you should be careful though because depending on the capacitance of the source a considerable charge could flow into the amplifier blowing up the input stage when an accidental short-circuit happens in your setup.

If you use very long cables (equivalent to high capacitances) which might have been charged to voltages in excess of the above mentioned figures, use precautions and discharge the cables properly before damage to the amplifier can occur.

The reason the overload turns on when you connect a 50 Ohm terminator to the input is the nature of a transimpedance amplifier (TIA). A TIA, unlike a voltage amplifier, ideally wants to see a very high impedance source. If the source becomes low impedance the TIA will show an additional voltage gain and any offset present at the amplifier input will drive the amp into saturation. This won't hurt the TIA but the overload turns on to show that the amp is not operating properly (because the source impedance is too low). At the same time you will measure a constant + or - 10 V at the output because the amplifier is saturated. After taking off the 50 Ohm terminator the TIA will be back to normal operation within milli seconds.