



022: DMM (Digital Multimeter) Safety

Why this is important

Many people are complacent about using DMMs, because we see them all the time and use them often.

Misuse of a DMM can easily create an arc blast that kills you and everyone near you.

The market has been flooded with cheap knock-off meters that may ultimately carry an extremely high price—your life and the lives of your coworkers.

General safety

Always disconnect the hot (red) test probe first. This reduces shock hazards.

Never disconnect both test probes simultaneously. Doing so can create a trail of ionized air between an energized terminal and ground—essentially, a ground fault.

Don't work alone.

Focus on the job at hand.

Replace the battery as soon as the battery indicator appears. Otherwise, you risk false readings.

Test leads

Use test lead sets that have shrouded connectors and finger guards.

Use industrial grade test leads. You can tell the difference between these and cheap leads as soon as you pick them up.

Inspect test lead sets for physical damage before making a measurement. Don't repair damaged leads—replace them. They cost very little.

Use the ohm function to check continuity of the test leads, or check voltage at a known source, before and after testing a circuit for lockout/tagout purposes.

Meter selection

Ensure your meter has recessed input jacks.

Use a meter with overload protection on the ohms function.

Use a meter made by a reputable and well-known firm. Cheap off-brand meters nearly always lack essential safety features—the “cost savings” has to come from somewhere, and these manufacturers choose to cut safety.

Use a meter with the correct IEC rating for the environment.

IEC rating

This shows you where, in relation to the source of potential voltage spikes, the manufacturer is saying their meter is safe to use at a given voltage. Look for the UL or CSA symbol, which offer some proof the IEC rating is valid. The CE symbol is self-certification, so it tells you nothing.

Use a CAT IV meter if you work in or near service entrances.

You can use a CAT III meter on three-phase, unless you are working in or near

Discussion leader duties for this session:

Read the manual for your own DMM, so you can ask and answer questions.

What this Safety Talk covers:

Safe use of a digital multimeter, commonly called a DMM.

Discussion notes :

