

Testing low voltage circuit breakers with High Current Probe HCP2000

Primary testing of circuit breakers

This application note is about primary injection testing low voltage (LV) circuit breakers (CB) using the High Current Probe HCP2000 probe (AA-90165). Current source can be the primary test equipment ODEN or INGVAR



Description of the HCP2000

The HCP2000 is a tool that makes it possible to test automatic circuit breakers (CB). Also known as Moulded Case Circuit Breakers (MCCB), without removing or uninstalling the circuit breaker. These types of circuit breakers can be found in many applications, such as in power plants and industry. These circuit breakers operate from 16 A up to 1500 A trip current.

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Test setup

Before setting up, you first need to know how to safely hold the probe.

The probe is designed in such way that you will get a steady grip, minimising the risk of slipping. You must hold the probe as shown below in Figure 1 and avoid contact with the hot area of the probe.



Figure 1

How to connect the probe

Connect one of the current source terminals. Then use a cable with a sufficient cross-sectional area to connect it to the common copper rail (or point) of the CB that is going to be tested. (see Figure 2).

The probe is connected to the other current source terminal

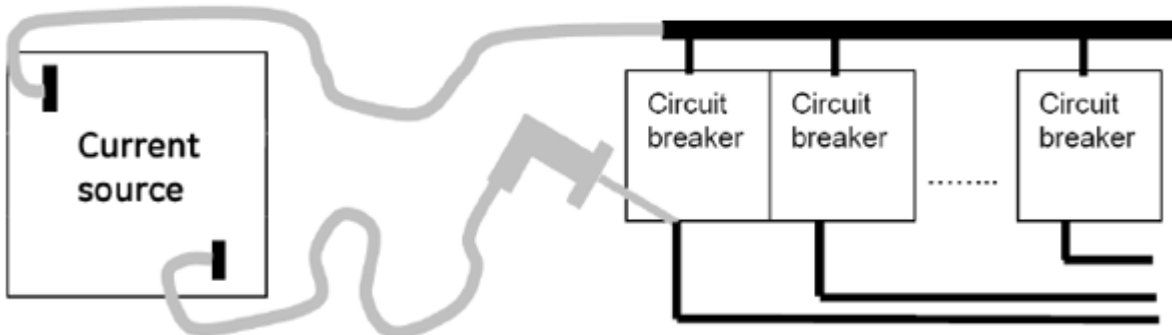


Figure 2

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Making the measurement

- Before using the probe, make sure that the power to the test object is disconnected.
- Make sure the power source operator communicates with the probe operator and tells you when the current is injected.
- The operator of the probe must push the probe firmly against the test point to ensure good contact and to avoid the probe from slipping.
- The operator of the current source starts the current injection.
- When injection is stopped, the current source operator tells the probe operator to move the probe to next test point.

Different tips for the probe

The probe is shipped with three tips (see Figure 3). Use the one that gives the largest contact surface to the test object.



Figure 3

Safety

The HCP2000 should only be used together with an isolated current source with a maximum output voltage of 33 V AC, 16 V AC in wet locations (Safety Extra Low Voltage (SELV)).