

Micro-ohmmeter testing with MOM2 / DLRO-H200 and inductive loads

Testing on circuit breakers having a current transformer in the loop



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Problem	Some customers have noticed problems with the MOM/DLRO when testing on some breakers. The resistance readings might be too high in some cases. This can lead to a situation where a fully functional breaker is rejected and taken out of service.
Cause	For most of the breakers the MOM/DLRO is as accurate as other types of micro-ohmmeters but if there is a current transformer (CT) in series with the breaker contact to be tested, then it is advisable to make some basic checks. Encapsulated or dead tank breakers are the most common types which have a current transformer in the loop. The technical reason is that the CT must be saturated before it is possible to get a reliable result. To get a transformer saturated it needs time and current. The time required to drive the CT in saturation depends on current level and secondary side burden. The time is usually several seconds if secondary side is shorted.
Solution	If possible make a visual check to be sure that there is no current transformer in the loop. If this is not possible like in encapsulated breakers then make the following check: 1] Make two tests, one with 0.1 seconds and one with 3 seconds setting. If the values are equal then there is no current transformer in the loop. If you get different readings it might be a need for a “workaround”. 1] If possible increase the current and / or test time. 2] Increase the burden on the current transformer by connect a 5 to 10 ohm resistor across the winding. 3] Repeat the measurement several times in the same direction until a stable value is reached. 4] Demagnetize the CT before putting the circuit breaker in service again.