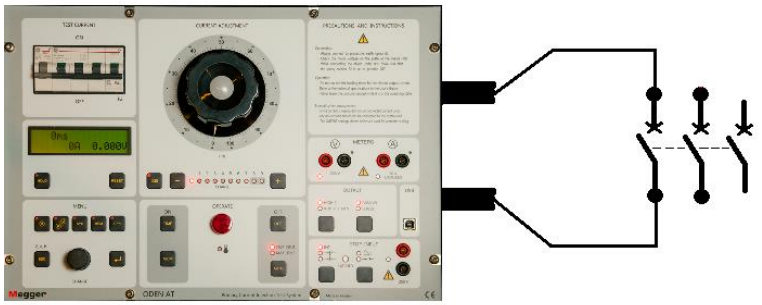
Test procedures low voltage circuit breaker testing with ODEN and INGVAR

Test procedure

Primary injection testing of low voltage (LV) circuit breakers (CB) with primary test equipment ODEN and INGVAR (hereafter only ODEN is mentioned though the text is valid for both products).

Breaker test

Connect the current bus bars on ODEN to one of the phases on the CB.



This set up will use the internal time measurement (INT) of the generated current.
The INT parameter can be set to 2 different values. 0.7 or 2.1% of range. For shorter trip times select 0.7% and for longer trip times select 2.1% See ODEN USER manual for setting of this INT parameter.

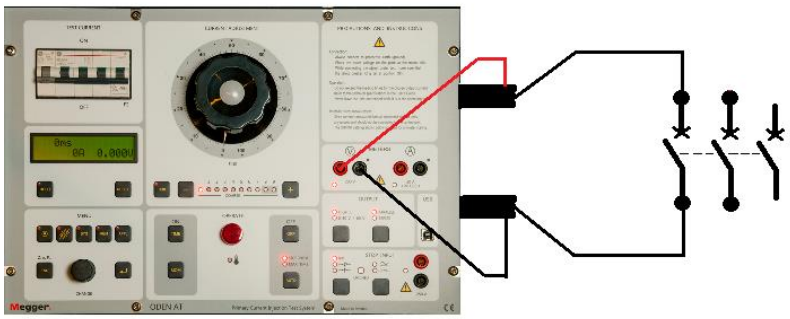
1] Select a test current to inject on the CB.

2] Preferably select the I/30 mode to fine tune the test current without heating up the test object.

3] Disable the I/30 mode. Press the 

button and inject the “real” test current. Read out test current and trip time on display.

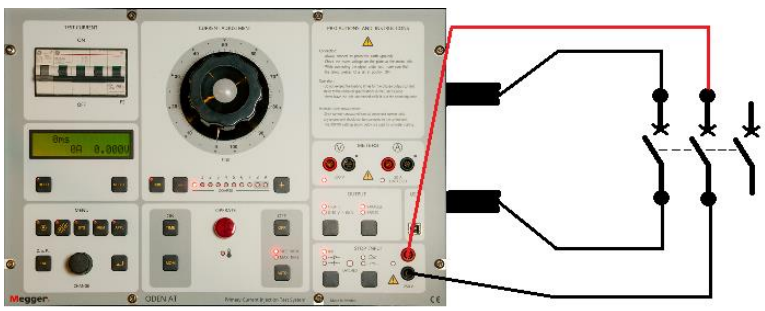
If the desired test current isn't reached for some reason (due to high load, long test cables and small area on test cables). The impedance can be measured. Connect the voltmeter on ODEN to the main current bars on ODEN. Calculate the output voltage (Z x I) and check if it's within the ODEN specification.



Set the current to a low value, not to activate the breaker.

1] Press the HOLD button.
2] Start the current injection with "ON+TIME"
3] Stop current injection.
4] Press the ESC button repeated times until the impedance value(Z) comes upp.

Optional connection (see below), the binary input is to be connected to second phase of the CB.



1] Select a test current to inject on the CB.
2] Set up the binary input to contact sense and BREAK position.
3] Preferably select the I/30 mode to fine tune the test current without heating up the test object.
4] Disable the I/30 mode. Press the HOLD button and inject the "real" test current.
Read out test current and trip time on display.