





Dynamic Contact Resistance Measurement (DCRM) is a widely recognized method to determine the condition of a breaker's main and arcing contacts, without opening it. The DCRM test (KIT MO-SD) is the ideal tool to measure contact resistance as a function of time.

For circuit breakers, this resistance may be measured either at the rated speed or at slow speed, during an open operation.

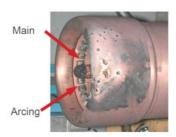
We recommend to run the test at a slow speed, if a problem is detected, before opening the breaker.

Bad contact alignment



Fixed Moving

Arc pitting on fixed contacts



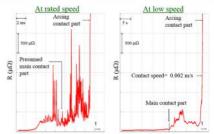
Moving

Detected problems	Static micro-ohmmeter	Dynamic micro-ohmmeter
Arcing contact wear		✓
Arcing contact lenght		✓
Main contact wear	✓	✓
Bad contact alignment		✓
Bad contact adjustment		✓
Hot spots (high joint resistance)	✓	✓
Contact fingers		✓
Contact surfaces		✓
Blasting nozzles		✓
Crossing joints		✓

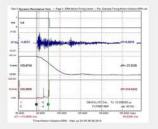


Slow open test

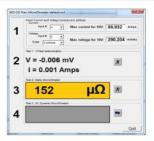
DRM test on a capacitive SF6 breaker of 120 kV rating.



Simple and unique correlation



Clear and simple display of results



Stable and continuous DC power supply

Technology	Advantages	Disadvantages
Classic DC curent source supplied with the KIT MO-SD	Very long recording time (from 10 seconds to several hours) for a perfect measurement of dynamic resistance. Simpler interpretation	
Capacitor discharge current source		60 second charging time between tests. Unstable current source. Not possible to perform slow spead tests with a short-duration current source (30-50 ma)
Battery-based current source		Risk of explosion due to short circuit when the breaker closes.

Modular design

Modules are separately usable to inject and measure high currents, as well as measure very low voltages.





TECHNICAL SPECIFICATIONS

- •Recording time: 10ms to 17min
- Measurement range: 5 micro-Ohms to 1 Ohm
- Resolution 0.1 Ohm • Accuracy ±0.5%
- Utilizable : CBA, CBV, OTM-X or CB11

ZVS-100/200 VOLTAGE MEASUREMENT MODULE:

- Input voltage 0-300mV or 0-20mV
- Output voltage: 0-10V
- · Accuracy (±0.2%)
- · Low temperature drift
- High speed transfert
- Powered by Zensol instrumentsl (CBA, CBV, CB11)
- Size: 5.5 x 3.15 x 1.77 inches (140x80x45mm)

ZCS-100/200/600 CURRENT MEASUREMENT MODULE:

- Measurement range: 0-100A
- · Galvanically isolated
- Accuracy (±0.2%)
- Linear (<0.1%)
- Low temperature drift
- · High speed transfert
- Powered by Zensol instruments (CBA, CBV, CB9)
- Size: 5.9 x 3.15 x 1.77 inches (150x80x45mm)



PS-100 Manual DC current source

- · Adjustable current output: 40-100A
- Adjustable voltage output: 2-5.5 VDC
- Universal power input: 90-264 VAC, 47-63Hz
- Operating temperature: -30/+70Deg°C
- · Accuracy: 0.5%
- · Quick and simple cable connections
- Size: 12.6x6.7x3.46 inches (320x170x88mm)
- Weight: 8.8 lb (4 Kg)

PS-100-2 Manual/programmable DC current source

- · Adjustable current ouput: 0-100 A
- Adjustable voltage output: 0-8 VDC
- Standard digital interfaces USB/RS232/485
- Power input: 110-240 VAC, 47-63 Hz
- · Operating temperature: 0-50 DegC
- · Accuracy: 0.5%
- Size: 18.9 x 8.4 x 1.7 inches (479.2x214.2x43.6mm)
- •Weight: 9.92 lb (4.5Kg)

PS-200 Manual/programmable DC current source

- Adjustable current output: 0-200A DC
- · Adjustable voltage output: 0-8 V
- Standard digital interfaces- USB/RS232/485
- · Isolated analog interface and Ethernet LXI
- Universal power input: 85-265 Vac, 47-63 Hz.
- Operating temperature: 0-50 DegC
- Accuracy: 0.5%
- Size: 16.8 x 1.7 x 19.0 inches (429 x 43.6 x 483 mm)
- Weight: 22 lbs (10 kg)

Conducting cables:

- AWG 4/0
- Carolprene® 105°C, black
- Operating temperature: -50°C à +105°C
- 600 Volt cable
- Resists water, sinlight, oil, acids, alkalis, heat, flame, moisture and chemical solutions
- Exceeds MSHA flame resistance standards

Carrying cases:

- Z-VAL-4 for PS-100
- Z-VAL-6 for PS-200