DMOM-200 S3

true dc micro-ohmmeter

Vanguard Instruments Company, Inc.
www.vanguard-instruments.com

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The DMOM-200 S3 is Vanguard's fourth generation, microprocessor-based, true DC micro-ohmmeter. It is designed for testing EHV circuit-breaker contact resistances, bushing contact joints, welding joints, or for any low-resistance measuring application. This high current and very lightweight (19.8 lbs/ 8.9 Kg) micro-ohmmeter is designed to meet the IEEE C57.09-1999 (5.15) requirement for testing circuit breaker contact resistance.

The DMOM-200 S3 can accurately measure resistance values from 1 micro-ohm to 5 ohms. A 0.1 micro-ohm resolution is possible with current greater than 5A. The DMOM-200 S3 applies a selectable true DC test current from 1A to 200A to the resistance load to be tested.

The DMOM-200 S3 controls the test current's rise and fall rates. The test current rise and fall rate can be selected from 5 seconds to 30 seconds. An "Auto Test" mode is also available and can be initiated simply by applying the sense cables' leads across the two points of interest in the current path. This feature is very convenient when measuring a sequence of several resistance values in a circuit breaker contact. The DMOM-200 S3 can also compare test results against preset limits and determine if a test passed or failed, and a "Pass" or "Fail" flag is displayed accordingly.

Since a true DC current (with controlled rise/ fall time) is passed through the circuit breaker contact, no magnetic transient is induced into the breaker's current transformers. This feature greatly reduces the risk of inductively tripping a breaker control (bus differential relay).

Dual Ground Option

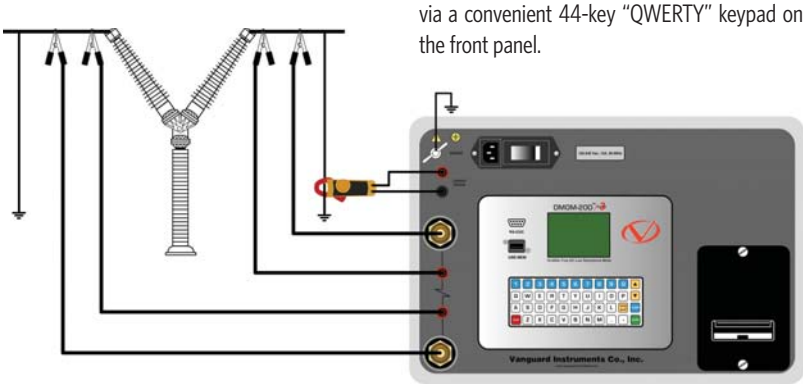
With the Dual Ground option, the DMOM-200 S3 can also measure the circuit breaker contact resistance with both sides of the breaker bushing being grounded. When a test current is applied to a circuit breaker with both sides grounded, some of the test current flows through the safety ground cables. Using an external current sensor, the DMOM-200 S3 measures and eliminates this current from the total test current. The DMOM-200 S3 then calculates the actual resistance value of the circuit breaker.

Test Record Storage

The DMOM-200 S3 can store 128 records of 64 readings internally, and up to 999 test records on an external USB Flash drive. Test header information (Company, Substation, circuit breaker ID's) can also be entered using the 44-key keypad and is stored with each test record.

User Interface

The DMOM-200 S3 features a back-lit 128 x 64 pixel LCD screen that is viewable in both direct sunlight and low light levels. The resistance readings are displayed on the LCD screen in micro-ohms or milliohms. The unit is operated via a convenient 44-key "QWERTY" keypad on the front panel.

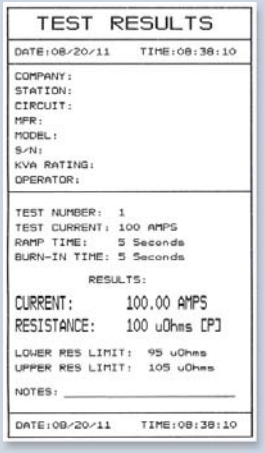


ordering information

Part number **DMOM-200 S3**	DMOM-200 S3 micro-ohmmeter with test cables
Part number **DGO**	DMOM-200 S3 dual ground option
Part number **DMOM-200 S3 CASE**	DMOM-200 S3 shipping case
Part number **DMOM-200 S3 15 FT CABLE**	DMOM-200 S3 15-foot cable set
Part number **DMOM-200 S3 30 FT CABLE**	DMOM-200 S3 30-foot cable set
Part number **DMOM-200 S3 C-CLAMP SET**	DMOM-200 S3 C-clamp set (2 clamps)
Part number **DMOM-200 S3 HAND SPIKE**	DMOM-200 S3 hand spike probe (15-foot)
Part number **TP3**	2.5" wide thermal printer paper

DMOM-200 S3 Controls & Indicators

Thermal Printer Output



Built-in Thermal Printer

The DMOM-200 S3 features a built-in 2.5" wide thermal printer that can be used to print test reports in the field.

Computer Interface

Windows®-based analysis software is provided with each unit and can be used to retrieve test records (from the unit's memory via the RS-232C port or from a USB Flash drive), analyze test results, and print test results on a desktop printer. Test records can also be exported to PDF, Excel, and XML formats for further analysis.

Included Cables

The DMOM-200 S3 is furnished with a 30-ft test cable set. A 15-ft test cable set is also available as an option. Test cables are terminated with heavy duty welding type clamps. The test current and voltage sense cables are isolated and fastened to the clamp jaws. This feature allows for a simple connection to the circuit breaker bushing. An optional voltage sense cable and probe can be used to measure resistance in small access locations. Optional heavy-duty, welding type C-clamps are also available allowing the user to connect the test leads to a wide variety of bushing sizes, bus-bars, or large conductors.

DMOM-200 S3 specifications

type	portable micro-ohmmeter
physical specifications	18"W x 7"H x 15" D (45.7 cm x 17.8 cm x 38.1 cm); Weight: 19.8 lbs (8.9 kg)
input power	100 – 240 Vac, 50/60 Hz
resistance reading range	10 milliohms at 200A to 5 ohms at 1A
accuracy	1A to 4.99A: 1% ±10 micro-ohms 5A to 9.99A: 1% ±2 micro-ohms 10A to 200A: 1% ±1 micro-ohm
test current range	1 Ampere to 200 Amperes (selectable in 1A steps); Thermally protected DC power supply
display	back-lit LCD screen (128 x 64 pixels); viewable in bright sunlight and low light conditions
keypad	rugged, 44-key "QWERTY" membrane keypad
internal test record storage	128 test records. Each record can contain up to 64 readings
external test record storage	up to 999 test records on external USB Flash drive.
computer interface	one RS-232C PC interface, one USB Flash drive interface
printer	Built-in 2.5" wide thermal printer
pc software	Windows®-based analysis software included with purchase price
safety	Designed to meet IEC 61010 (1995), UL 61010-a, and CAS-C22.2 standards
environment	Operating: -10°C to +50°C (+15°F to +122°F); Storage: -30°C to +70°C (-22°F to +158°F)
humidity	90% RH @ 40°C (104°F) non-condensing
altitude	2,000 m (6,562 ft) to full safety specifications
cables	30 ft (9.1 m), #1 AWG test cables, power cord, ground cable
options	shipping case, 15 ft test cables, C-clamp set, hand spike set, dual ground option
warranty	one year on parts and labor

NOTE : the above specifications are valid at nominal voltage and ambient temperature of +25°C (+77°F). Specifications are subject to change without notice.

Instruments designed and developed by the hearts and minds of utility electricians around the world

Vanguard Instruments Company, (VIC), was founded in 1991. Currently, our 28,000 square-foot facility houses Administration, Design & Engineering, and Manufacturing operations. From its inception, VIC's vision was, and is to develop and manufacture innovative test equipment for use in testing substation EHV circuit breakers and other electrical apparatus.

The first VIC product was a computerized circuitbreaker analyzer, which was a resounding success. It became the forerunner of an entire series of circuitbreaker test equipment. Since its beginning, VIC's product line has expanded to include microcomputer-based, precision micro-ohmmeters, single and three phase transformer winding turns-ratio testers, transformer winding-resistance meters, mega-ohm resistance meters, and a variety of other electrical utility maintenance support products.

VIC's performance-oriented products are well suited for the utility industry. They are rugged, reliable, accurate, user friendly, and most are computer controlled. Computer control, with innovative programming, provides many automated testing functions. VIC's instruments eliminate tedious and time-consuming operations, while providing fast, complex, test-result calculations. Errors are reduced and the need to memorize long sequences of procedural steps is eliminated. Every VIC instrument is competitively priced and is covered by a liberal warranty.

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April, 2012