

# DMOM-600

*true dc micro-ohmmeter*



**Vanguard Instruments Company, Inc.**  
[www.vanguard-instruments.com](http://www.vanguard-instruments.com)



# DMOM-600

## true DC micro-ohmmeter

The DMOM-600 is specifically 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 (33 lbs/ 15 Kg) micro-ohmmeter is designed to meet the IEEE C57.09-1999 (5.15) requirement for testing circuit breaker contact resistance.

The DMOM-600 can accurately measure resistance values from 1 micro-ohm to 450 milliohms. A 0.1 micro-ohm resolution is possible with current greater than 10A. The DMOM-600 applies a selectable true DC test current from 10A to 600A to the resistance load to be tested.

The DMOM-600 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-600 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

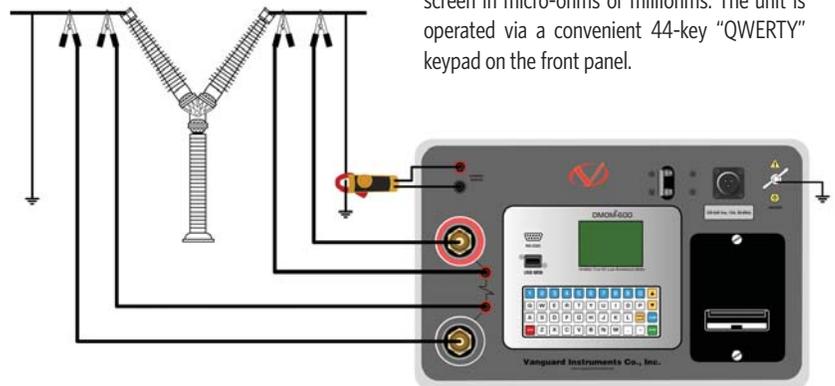
With the Dual Ground option, the DMOM-600 can also measure the circuit breaker contact resistance with both sides of the breaker bushing being grounded. When a test current is applied to a circuit breaker with both sides grounded, some of the test current flows through the safety ground cables. Using an external current sensor, the DMOM-600 measures and eliminates this current from the total test current. It then calculates the actual resistance value of the circuit breaker.

### Test Record Storage

The DMOM-600 can store 128 records of 64 readings internally, and up 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-600 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 in a large font 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-600**

Part number **DGO**

Part number **DMOM-600 CASE**

Part number **DMOM-600 15 FT CABLE**

Part number **DMOM-600 C-CLAMP SET**

Part number **DMOM-600 HAND SPIKE**

Part number **TP3**

DMOM-600 micro-ohmmeter with test cables

DMOM-600 dual ground option

DMOM-600 shipping case

DMOM-600 15-foot cable set

DMOM-600 C-clamp set (2 clamps)

DMOM-600 hand spike probe

2.5" wide thermal printer paper

# DMOM-600 Controls & Indicators



Thermal Printer Output	
REC NUMBER 12	
TEST RESULTS	
DATE: 08/15/11	TIME: 11:53:23
COMPANY:	
STATION:	
CIRCUIT:	
MFR:	
MODEL:	
S-N:	
KVA RATING:	
OPERATOR:	
TEST NUMBER: 1	
TEST CURRENT: 10 AMPS	
RAMP TIME: 5 Seconds	
BURN-IN TIME: 5 Seconds	
RESULTS:	
CURRENT:	9.98 AMPS
RESISTANCE:	1.903 mOhms CFJ
GND CURRENT:	0.00 AMPS
LOWER RES LIMIT:	12.345 mOhms
UPPER RES LIMIT:	45.678 mOhms
NOTES:	

## Computer Interface

Windows®-based analysis software is provided with each unit and can be used to remotely control the DMOM-600 via the RS-232C port. Using this software, the user can retrieve test records (from the unit's memory or 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-600 is furnished with a 15-ft (#1/0 AWG) test cable set. Custom test cable lengths are optionally available. 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.

## Built-in Thermal Printer

The DMOM-600 features a built-in 2.5" wide thermal printer that can be used to print test reports in the field.

## DMOM-600 specifications

<b>type</b>	portable micro-ohmmeter
<b>physical specifications</b>	16¾" W x 12½" H x 12" D (42.7 cm x 32 cm x 30.5 cm); Weight: 33 lbs (15 kg)
<b>input power</b>	100 – 240 Vac, 50/60 Hz
<b>resistance reading range</b>	1.5 milliohms at 600A to 450 milliohms at 10A
<b>accuracy</b>	10A to 49.9A: 1% ±2 micro-ohms 50A to 600A: 1% ±1 micro-ohm
<b>test current range</b>	10 Amperes to 600 Amperes (selectable in 1A steps); Thermally protected DC power supply
<b>display</b>	back-lit LCD screen (128 x 64 pixels); viewable in bright sunlight and low light conditions
<b>keypad</b>	rugged, 44-key "QWERTY" membrane keypad
<b>internal test record storage</b>	128 test records. Each record can contain up to 64 readings
<b>external test record storage</b>	up to 999 test records on external USB Flash drive.
<b>computer interface</b>	one RS-232C PC interface
<b>printer</b>	Built-in 2.5" wide thermal printer
<b>pc software</b>	Windows®-based analysis software included with purchase price
<b>safety</b>	Designed to meet IEC 61010 (1995), UL 61010-a, and CAS-C22.2 standards
<b>environment</b>	Operating: -10°C to +50°C (+15°F to +122°F); Storage: -30°C to +70°C (-22°F to +158°F)
<b>humidity</b>	90% RH @ 40°C (104°F) non-condensing
<b>altitude</b>	2,000 m (6,562 ft) to full safety specifications
<b>cables</b>	15 ft (4.6 m), #1/0 AWG test cables, power cord, ground cable
<b>options</b>	shipping case, 30 ft (9.1 m) test cables, C-clamp set, hand spike set, dual ground option
<b>warranty</b>	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.



**Vanguard Instruments Company, Inc.**

1520 S. Hellman Avenue • Ontario, California 91761, USA

Phone 909-923-9390 • Fax 909-923-9391

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April, 2012