

DMOM-600

true DC micro-ohmmeter



Vanguard Instruments
A DOBLE COMPANY





DMOM-600

true DC micro-ohmmeter

The DMOM-600 is designed to test 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.

Product Overview

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.

ordering information

Part No.	Description
9053-UC	DMOM-600 unit with test cables
9053-DG	DMOM-600 dual ground option
9053-SC	DMOM-600 shipping case
TP3-CS	TP3 thermal printer paper (36 rolls)

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-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.

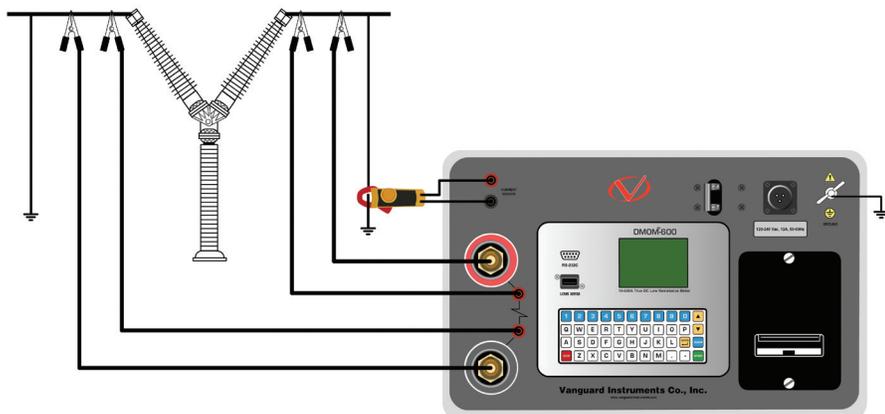
User Interface

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.

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.

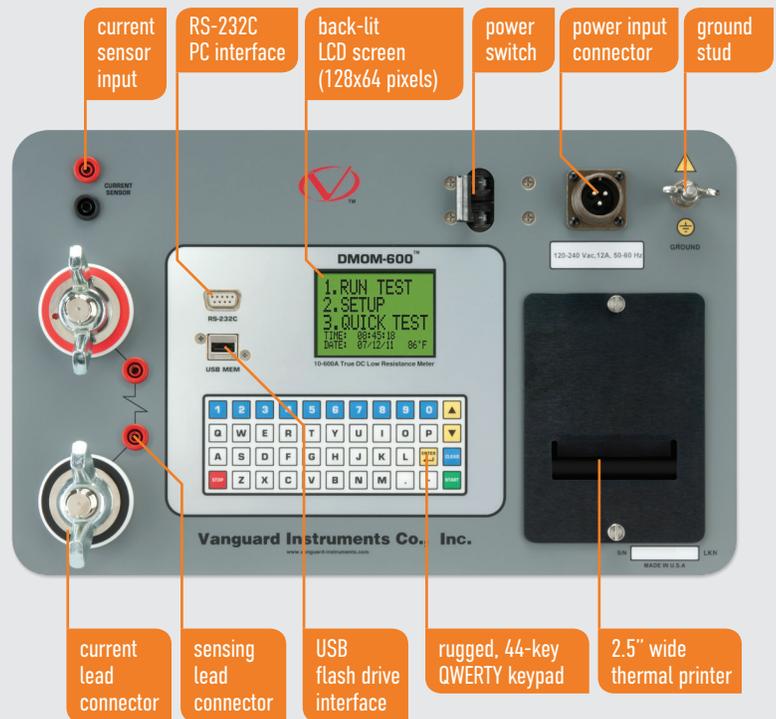
DMOM-600 connections



Thermal Printer Output

REC NUMBER 12	
TEST RESULTS	
DATE: 01/15/15	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 [CF]
GND CURRENT:	0.00 AMPS
LOWER RES LIMIT:	12.345 mOhms
UPPER RES LIMIT:	45.678 mOhms
NOTES: _____	

DMOM-600 Features



DMOM-600 technical specifications

 physical specifications	Dimensions: 16¾" W x 12½" H x 12" D (42.7 cm x 32 cm x 30.5 cm) Weight: 33 lbs (15 kg)	 input power	100 – 240 Vac, 50/60 Hz
 resistance reading range	1 micro-ohm to 450 milliohms (max 1.5 milliohms @ 600A and 450 milliohms @ 10A)	 test current range	10A – 600A (selectable in 1A steps); thermally protected DC power supply
 resolution	0.1 μΩ – 999.9 μΩ: 0.1 μΩ 10.00 mΩ – 99.99 mΩ: 10 μΩ 1.000 mΩ – 9.999 mΩ: 1 μΩ 100.0 mΩ – 999.9 mΩ: 0.1 mΩ		
 typical accuracy	±(0.15% of reading + 0.15% FS) at test current of 10–600A		
 display	back-lit LCD screen (128 x 64 pixels) viewable in bright sunlight and low-light levels	 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
 pc software	Windows®-based analysis software is included with purchase price	 computer interfaces	one RS-232C PC interface, one USB flash drive interface
 safety	designed to meet IEC 61010 (1995), UL 61010-a, and CAS-C22.2 standards		
 temperature	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
 cables	15 ft (4.6 m), #1/0 AWG test cables, power cord, ground cable	 altitude	2,000 m (6,562 ft) to full safety specifications
 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.

Founded in 1991 and located in Ontario, California, USA, Vanguard Instruments™ offers a wide range of diagnostic test equipment that accurately and efficiently measures the health of critical substation equipment, such as transformers, circuit breakers, and protective relays.

Our first product was a computerized, extra high voltage (EHV) circuit breaker analyzer, which became the forerunner of an entire line of EHV circuit breaker test equipment. Over the years, our portfolio has grown tremendously 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 application-specific products.

Our instruments are rugged, reliable, accurate, and user friendly. They eliminate tedious and time-consuming operations, while providing fast, complex test-result calculations. Using our equipment helps reduce errors and eliminates the need to memorize long sequences of procedural steps.

In 2017, Vanguard Instruments became a part of Doble Engineering Company, an energy industry leader in hardware, software, and services that diagnose and monitor the health of critical assets.



Vanguard Instruments

A DOBLE COMPANY

1520 S. Hellman Avenue
Ontario, California 91761, USA
Phone 909-923-9390 • **Fax** 909-923-9391

www.vanguard-instruments.com

Revision D. March 23, 2018

© Copyright 2018 Doble Engineering Company

