

# Digital Transformer Ratiometer

## DTR<sup>®</sup> Model 8510

**A powerful ratio tester that stores up to 10,000 test results in internal memory**

- ▶ Measures power transformers, VT/PTs and current transformer CT turns ratios
- ▶ Direct Turns Ratio readings from 0.8000:1 to 8000.0:1
- ▶ Tests performed by exciting the primary and reading the secondary; provides safer conditions for the operator
- ▶ Displays turn ratio, excitation current, winding polarity and % deviation from the nameplate values
- ▶ Internal NiMH battery packs provide up to 10 hours of continuous operation
- ▶ Smart/fast battery charger with universal input voltage (100-240V, 50-60Hz) charges batteries in less than 4 hours
- ▶ Display warns of incorrect lead connection, reverse polarity, open and short circuits
- ▶ Includes DataView<sup>®</sup> analysis software for programming, downloading, storing and report generation of test data



*Our products are backed by over 100 years of experience in test and measurement equipment, and encompass the latest international standards for quality and safety.*

 **Technical Hotline: (800) 343-1391**  
 **www.aemc.com**

 **AEMC<sup>®</sup>**  
INSTRUMENTS

# POWERFUL RATIO TESTER DTR® Model 8510



The DTR® Model 8510 is a portable digital transformer ratiometer designed for on-site testing of power, potential and current transformers. When connected to a non-energized transformer, the DTR® accurately measures primary to secondary turns ratio, while simultaneously displaying polarity and excitation current.

The Model 8510 is a second-generation instrument incorporating the latest technology, improving on its highly successful predecessor the Model 8500.

The DTR® is fully automatic and uses the IEEE C57.12-90™-2006 test method. No user calibration, range selection, hand cranking or tedious balancing is required. At each measurement, the DTR® automatically checks for open windings, connections, circuit breakers, short circuits (excess excitation current), incorrect test lead placement, and reverse polarity. Measurements are displayed quickly and accurately.

The DTR® is designed with operator safety in mind. Tests are performed at low voltage and, unlike other ratiometers, step-down excitation is employed. This method, in conjunction with an integral H/X reverse protection circuit, guards against the generation of hazardous test voltages normally associated with other transformer ratio measurement instruments.

A large, dual line alphanumeric LCD with adjustable contrast and backlight guarantees day/night readability. Power is supplied by integral NiMH battery. Batteries are charged by an external smart charger. Both rugged and reliable, the Model 8510 is built into an attractive, sealed structural polypropylene case designed to withstand the rigors of field use.

Up to 10,000 tests can be stored in the DTR's internal memory and downloaded to a PC for analysis and report generation using the included DataView® software.

Constructed using only the highest quality electrical and mechanical components, the DTR® sets the standard in advanced design, engineering and workmanship, and it will provide the user with years of accurate and reliable measurements and hassle free test report printouts.

## ▶ FEATURES

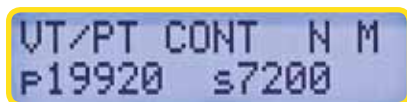
- ▶ Measures power transformers, VT/PTs and current transformer CT turns ratios
- ▶ Displays turn ratio, excitation current, winding polarity and % deviation from the nameplate values
- ▶ Smart/fast battery charger with universal input voltage (100-240V, 50-60Hz) charges batteries in less than 4 hours
- ▶ Internal NiMH battery packs provide up to 10 hours of continuous operation
- ▶ Tests performed by exciting the primary and reading the secondary; provides safer conditions for the operator
- ▶ Display warns of incorrect lead connection, reverse polarity, open and short circuits
- ▶ Easy connection and test setup; no calibration or balancing required
- ▶ Large dual display with adjustable contrast ensures clearer visibility in any lighting environment day or night
- ▶ Low battery indicator
- ▶ Includes 15 foot lead set
- ▶ Stores up to 10,000 test results in internal memory automatically or by user selection
- ▶ Filter selection to improve test results in electrically noisy environments
- ▶ USB port facilitates configuring the instrument and downloading test results
- ▶ Includes DataView® analysis software for programming, downloading, storing and report generation of test data
- ▶ EN 61010-1; 50V CAT IV



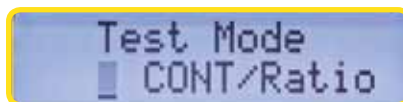
# SPECIFICATIONS

ELECTRICAL		
Ratio Range (VT/PT)	Auto-Ranging: 0.8000 to 8000:1	
Accuracy (VT/PT)	<b>Ratio Range</b>	<b>Accuracy (% of Reading)</b>
	0.8000 to 9.9999	± 0.2%
	10.000 to 999.99	± 0.1%
	1000.0 to 4999.9	± 0.2%
	5000.0 to 8000.0	± 0.25%
Ratio Range (CT)	Auto-Ranging: 0.8000 to 1000.0	
Accuracy (CT)	<b>Ratio Range</b>	<b>Accuracy (% of Reading)</b>
	0.8000 to 1000.0	± 0.5%
Excitation Signal	VT/PT Mode: 32Vrms max; CT Mode: Auto Level 0 to 1A, 0.1 to 4.5Vrms	
Excitation Current Display	Range: 0 to 1000mA; Accuracy: ± (2% of Reading + 2mA)	
Excitation Frequency	70Hz	
Display	Dual line alpha-numeric LCD, 16x2 characters with contrast adjustment and backlight control. Day/night visible.	
Languages Supported	English, Spanish, French, Italian, German, Portuguese	
Measurement Method	In accordance with IEEE Std C57.12.90™-2006	
Power Source	Two 12V, 1650mAH NiMH rechargeable battery packs	
Battery Life	Up to 10 hrs of continuous operation. Low battery indication.	
Battery Charger	Universal input (90 to 264Vrms input) smart recharger	
Charging Time	<4 Hrs to full charge	
Data Storage	10,000 tests	
Date / Time	Battery-backed, Real-time clock	
Communication	USB. 2.0 compliant, optically isolated, 115.2 KB	
Software	DataView® analysis software included	
MECHANICAL		
Dimensions	10.70 x 9.76 x 5.12" (272 x 248 x 130 mm)	
Weight	8.1 lbs (3.7kg)	
Connection	XLR connectors	
Leads	15 ft (4.6m) H & X shielded with color-coded alligator clips	
Enclosure	Heavy duty Polypropylene case, UL 94 V0 rated	
Vibration	IEC 68-2-6 (1.5mm to 55Hz)	
Shock	IEC 68-2-27 (30G)	
Drop	IEC 68-2-32 (1m)	
Index of Protection	IP 40 (Instrument lid open) per EN 60529; IP 53 (Instrument lid closed) per EN 60529	
SAFETY		
CE Marking	Yes	
Double Insulation <input type="checkbox"/>	Yes	
Safety Ratings	EN 61010-1; 50V CAT IV; Pollution Degree 2	

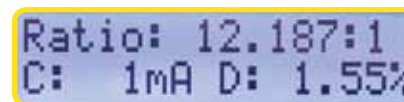
## Simple concise operation - clear informative data displays



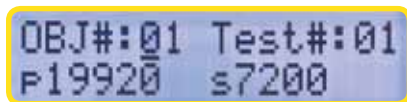
Main display



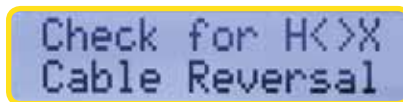
Easy selection of test mode



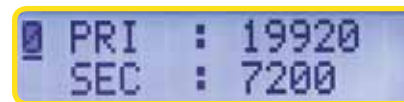
Test results displayed



Store test results into internal memory



Clear indication errors in connection and other conditions



Program and store up to 10 nameplate ratios

# SOFTWARE

## DataView® Data Analysis and Reporting Software

### Configure all functions of the DTR® Model 8510

- ▶ Display and analyze data on your PC
- ▶ Configure DTR® Model 8510 functions and parameters from your PC
- ▶ Customize views, templates and reports to your exact needs
- ▶ Create and store a complete library of configurations that can be uploaded to the DTR® Model 8510 as needed
- ▶ Run tests directly from PC
- ▶ Print reports using standard or custom templates you design



DataView® is included with the DTR® Model 8510



# CONSTRUCTION

16 character by 2 line backlit display

USB port

High-side "H" cable connector  
Function keys for programming & displaying results

Low-side "X" cable connector

Battery charge input connector

Power switch

Operation and battery low indicator

Display contrast adjustment

Backlight (⊛) control button

Test button



### DESCRIPTION

### CATALOG NO.

Digital Transformer Ratiometer DTR® Model 8510.....	Cat. #2136.50
<b>Accessories (Optional)</b>	
Lead-Set of 2, 30 ft for use with DTR® Models 8500 & 8510.....	Cat. #2136.76
Lead-Replacement set of 2, 15 ft for use with DTR® Models 8500 & 8510.....	Cat. #2136.77

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