



Datasheet



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HIGH-PERFORMANCE RATIO METER



DIGITAL TRANSFORMER RATIO METER



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

- Measures turns ratios on power transformers, VT/PTs and current transformers (CTs)
- Direct Turns Ratio readings from 0.8000:1 to 8000.0:1
- Tests performed by exciting the primary and reading the secondary for greater operator safety
- Displays turns ratio, excitation current, winding polarity and % deviation from the nameplate values
- Internal NiMH battery packs provide up to 10 hours of continuous operation
- Display warns of incorrect lead connection, reverse polarity, open and short circuits
- Includes DataView® analysis software

POWERFUL RATIO TESTER

DTR® 8510



The DTR® 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 the primary-to-secondary turns ratio, while simultaneously displaying the polarity and excitation current.

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

The DTR® is fully automatic and uses the IEEE C57.12-90™-2006 test method:

- No user calibration
- No user range selectio
- No hand-cranking
- No tedious balancing 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.

The DTR® is designed with operator safety in mind. Tests are performed at low voltage and, unlike on 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.**

Up to 10,000 tests can be stored in the DTR® 8510's internal memory. A large, dual line alphanumeric LCD with adjustable contrast and backlighting guarantees fast, accurate display and day/night readability. Both rugged and reliable, the DTR® 8510 is equipped with an attractive, sealed structural polypropylene case designed to withstand the rigours of field use.

Power is supplied by a built-in NiMH battery charged by an external smart charger.

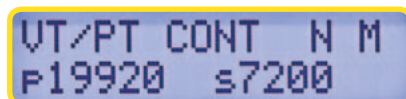
► FEATURES

- Measures power transformers, VT/PTs and current transformer turns ratios
- Displays turns 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 for greater operator safety
- 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
- Filter selection to improve test results in electrically noisy environments
- Filter selection to improve test results in electrically noisy environments
- USB port to simplify instrument configuration and downloading of test results
- Includes DataView® analysis software for programming, downloading and storing test data with possibility of report generation

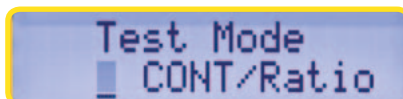
CONSTRUCTION



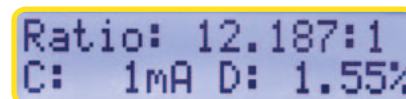
Simple, concise operation – clear informative data displays



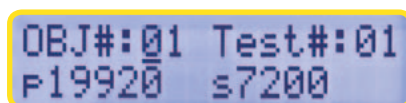
Main display



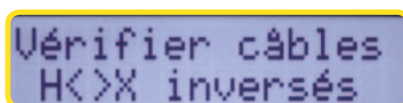
Easy selection of measurement mode



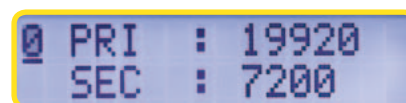
Display of measurement results



Storage of results in internal memory



Clear indication of connection errors and other problems



Programming and storage of 10 nameplate ratios

SOFTWARE

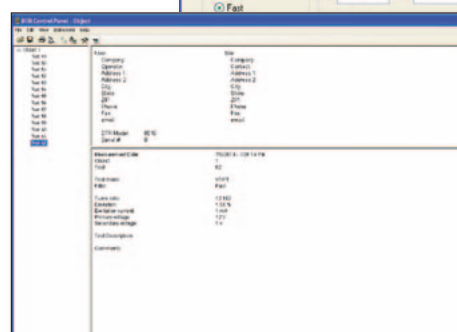
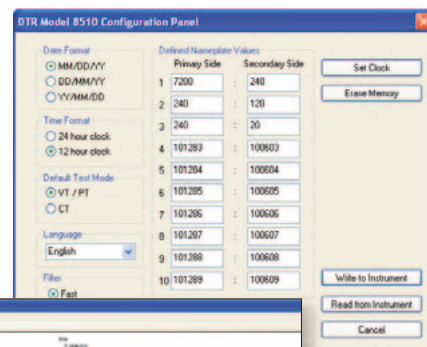
DataView® Data Analysis and Reporting Software

Configure all functions of the DTR® 8510

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



DataView® is included with the DTR® 8510





Measurement on a transformer in the workshop



Measurement of the ratio on a current transformer



Measurement on a 2,000 kVA three-phase transformer in the field

SPECIFICATIONS

Ratio Range (VT/PT)	Auto-Ranging : 0.8000 to 8000 :1	
Accuracy (VT/PT)	Ratio Range	Accuracy (% of Reading)
	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)	Ratio Range	Accuracy (% of Reading)
	0.8000 to 1000.0	± 0.5%
Excitation Signal	VT/PT Mode : 32 Vrms max; CT Mode: Auto Level 0 to 1 A, 0.1 to 4.5 Vrms	
Excitation Current Display	Range : 0 to 1000 mA; Accuracy : ± (2% of Reading + 2 mA)	
Excitation Frequency	70 Hz	
Display	Dual-line alphanumeric 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 (3.7 kg)
Connection	XLR connectors
Leads	15 ft (4.6m) H & X shielded with colour-coded crocodile clips
Enclosure	Heavy-duty Polypropylene case, UL 94 V0 rated
Vibration	IEC 68-2-6 (1.5 mm to 55 Hz)
Shock	IEC 68-2-27 (30 G)
Drop	IEC 68-2-32 (1 m)
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	Yes
Safety Ratings	EN 61010-1; 50V CAT IV; Pollution Degree 2

TO ORDER

DTR® 8510 digital transformer ratiometer.....P01157702

Replacement parts

Set of 2 spare leads, length 15 ft (4.6 m) for DTR® 8510 and DTR® 8500.....P01295143A

REFERENCES

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