AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

Digital Transformer Turns Ratiometer

Model 8510

VS

Digital Transformer Turns Ratiometer

Model 8511

	DTR® 8510	DTR® 8511
Catalog Number	2136.50	2136.55
Instrument Function	A precision instrument designed to measure transformer ratios for voltage transformers (VTs), potential transformers (PTs), and current transformers (CTs)	
Display	LCD 16 x 2 line display	LCD 20 characters x 4 line display
Buttons	4 total buttons *(One to start testing and three for navigation)*	6 total buttons *(One to start testing and five for navigation)*
Back light	Yes *(light blue)*	Yes *(luminescent blue)*
Contrast	User adjustable	Automatic
Power Supply	Custom smart charger with custom connector	USB Type-C and 12 VDC charger
Batteries	Two custom 12 V NiMH battery packs 10 cell each	Six rechargeable AA NiMH Batteries
Battery Life *(Continuous Use)*	Up to 10 h	500 VT / PT tests
Measurement Range VT/PT	Auto-Ranging: 0.8000:1 to 8000.0:1	Auto-Ranging: 0.8000:1 to 8000.0:1
VT/PT Accuracy	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%	
Measurement Range CT	Auto-Ranging: 0.8000 to 1000.0	
Continuity Testing	Yes	
CT Accuracy	±0.5% of Reading	
H & X Connection Leads	XLR 3 and 5 pin *(15 ft leads included)*	
Faceplate	Metal	ABS *(Enhanced Safety)*
Power Switch	Rocker style switch	Momentary push button with power indicator light
Dust-Proof Covers	USB	USB-C and power jack
USB Connection Type	TYPE B	TYPE C
USB Communication	USB 2.0	USB 2.1
Output Voltage H (VT)	32 V @ 70 Hz	30 V @ 64 Hz
Output Voltage (CT)	(0.1 to 4.5) V @ 70 Hz	5 V @ 64 Hz
Excitation Current	Up to 1 A	Up to 2 A
Detection of Lead Reversal	Yes	
Data Storage	9801 Measurements	
Weight	8.1 lb (3.7 kg)	7.1 lb (3.2 kg) *(estimated)*
Supported Languages	English, Spanish, French, Italian, German, and Portuguese	
Safety Compliance	IEC 61010-1 (1995-A2) 50 V CAT IV Pollution 2	IEC 61010-2-030, IEC 61326-1, IEC 60529, IEC 60068-2-6, IEC 60068-2-27, IEC 60068-2-31, Pollution 2
Isolated USB	Yes, 4.170 kV	Yes, 3.000 kV
Certifications	CE, IP53 *(Lid Closed)*, IP40 *(Lid Open)*	CE, RoHS 3 (EU 2015/863), Reach, IP53 *(Lid Closed)*, IP40 *(Lid Open)*
Double Insulated	Yes	
Prop 65 Compliant	Unknown	Yes
Operating Temperature	(14 to 122) °F (-10 to 50) °C	
Storage Temperature	(-4 to 140) °F (-20 to 60) °C	
TEST Filters	3 *(fast, normal, slow)*	

Key Differences & Advantages

Primary Function and Use Case

DTR® 8510: Provides fully automatic operation for VT/PT and CT testing. It is ideal for technicians who need reliable ratio and excitation current measurements on-site with simple data storage and manual entry capabilities.

DTR® 8511: Built with the same core functionality as the DTR® 8510, the DTR® 8511 offers a lighter design, enhanced safety features, and a brighter, larger display for improved visibility in the field. It includes an enlarged test button for easier operation while wearing gloves, making it ideal for demanding environments. These refinements enhance usability without compromising the reliable VT/PT and CT testing performance test operators expect.

Display and Interface

DTR® 8510: Features a 2-line, 16-character alphanumeric LCD. Basic navigation through a limited keypad with function and contrast buttons.

DTR® 8511: Upgraded to a 4-line, 20-character alphanumeric LCD for clearer visibility. Equipped with a 6-button rubber keypad (Up, Down, Left, Right, Enter, Test) for intuitive navigation and improved on-screen prompts. Includes audible tones for test start and completion.

Power Supply and Charging

DTR® 8510: Powered by two 12 V NiMH battery packs and charged using a dedicated external charger.

DTR® 8511: Powered by six AA NiMH batteries and can be charged via USB-C from any USB power port or through the 12 VDC charger.

Data Storage and Memory

DTR® 8510: Stores up to 99 objects with 99 tests each. Nameplate values must be edited via DataView® only.

DTR® 8511: Stores up to 99 objects with 99 tests each. Supports 10 fixed nameplate ratios and one editable custom ratio directly from the instrument UI or software. Allows for manual, automatic, or no-save modes.

Measurement Capabilities

DTR® 8510: Measures transformer ratios from 0.8000 to 8000:1 (VT/PT) and up to 1000.0:1 (CT) with high accuracy (±0.1- 0.25 % for VT/PT, ±0.5 % for CT). Excitation current is measured from (0 to 1000) mA with ±2 % accuracy. It uses a variable test signal (up to 32 VRMS) at 70 Hz.

DTR® 8511: Matches the same ratio and accuracy ranges as the DTR® 8510, but with improved test power. It delivers fixed test voltages (30 VAC for VT/PT, 5 VAC for CT), and uses a 64 Hz test frequency for a more accurate field simulation. Additional enhancements include advanced continuity checks and improved diagnostics.

Connectivity and Firmware

DTR® 8510: Connects via USB 2.0 for DataView® integration.

DTR® 8511: Uses USB-C for both charging and communication. Supports firmware updates via USB flash upload. Also includes isolated USB port to ensure safer connections.

The DTR® 8511 is a modernized enhancement of the DTR® 8510, offering advanced connectivity, expanded power options, and a more intuitive user interface. It is ideally suited for users who require higher test current, real-time diagnostics, and USB-C compatibility.

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