

## UHVDC Test Set

Ultra High Voltage DC Test Systems

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■ **HIPOTRONICS** standard line of UHVDC Test Systems are designed to perform ultra high voltage DC insulation tests on electrical apparatus, bushings, transformers & cable in accordance with IEC 61378, IEC 62199, CIGRE 219 & 189, and other national test standards. The system is built with standard modules that allow for simple setup & operation while also allowing for cost-effective and easy expansion of the system if testing requirements change in the future. The state of the art mechanical design minimizes floor space requirements & enhances mobility while also reducing disassembly / assembly time for onsite testing.

HIPOTRONICS Ultra High Voltage DC test systems are available in a wide range of voltage and power ratings with exceptional reliability, durability and functionality. No matter what your requirement, HIPOTRONICS has an affordably priced, extremely durable test solution to meet your needs.



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### STANDARDS

- IEC 60060 – General HV Test Systems
- IEC 61378 – Converter Transformers
- IEC 60076 – Smoothing Reactors
- IEC 62199 – DC Bushings
- IEC 62501 – Valves
- IEC 60700 – Valves
- CIGRE 219 – Cables < 250 kV
- CIGRE 496 – Cables < 500 kV
- CIGRE 189 – Cables < 800kV
- Other standards on request (UL, CSA, MIL, ASTM...)

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### FEATURES

- Low ripple** < 3% displayed in real time
- Quick Polarity reversal** meets latest test standards (See Diagram 1)
- Remote Control** of system possible
- Mobile** system design for use in the field
- Automatic data acquisition** allows for quick and easy generation of test reports
- Rated current** available to rated voltage

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### BENEFITS

**Simple to Use** – quick setup time and intuitive control panel allows for easy testing

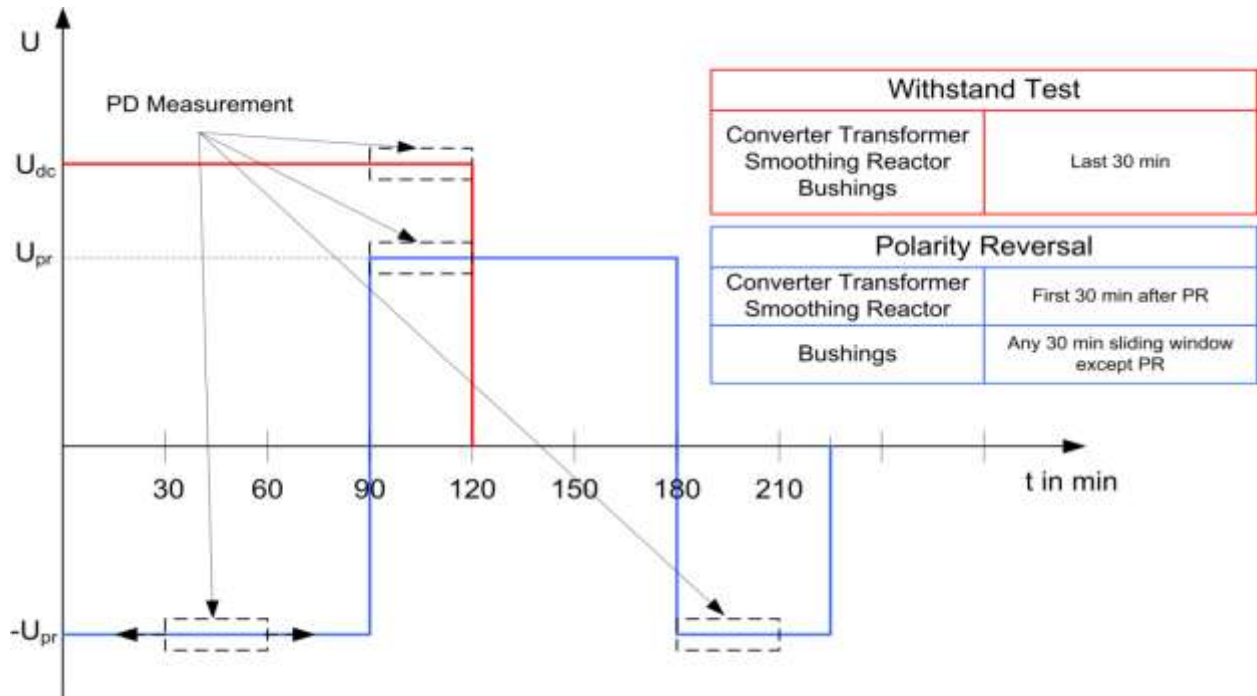
**Minimal Footprint** allows for testing of equipment in small lab spaces

**Expandable** standard modules allow for easy future expansion of the system

**User safety** - visible grounding system with external interlocks available

**Partial Discharge Testing** - low PD levels available up to full output voltage (PD level needs to be specified when ordering and may require additional components)

**Diagram 1: Typical DC Test Sequence**



Note: Polarity reversal time is dependent on capacitive load. Typical test standards require 2 minutes for large loads, bleeding resistors may be required.

## TECHNICAL SPECIFICATIONS

**Table 1: Standard Models and Ratings**

FOR CONVERTER TRANSFORMERS						
Model	Voltage (kV)	Current (mA)*	Number of Modules	Top Electrode size (mm)^	System Dimensions (m)^	Weight (kg)^
8500-30/50	500	30/50	1-500kV	610 x 1829	3.15 x 3.81H	3175
81000-30/50	1000	30/50	2-500kV	711 x 2438	5.75 x 6.85H	5785
81500-30/50	1500	30/50	3-500kV	1016 x 3048	5.75 x 10.42H	8165
FOR BUSHINGS, CABLES AND GENERAL ELECTRICAL APPARATUS						
8600-10/20	600	10/20	1-600kV	610 x 1829	3.15 x 3.81H	2995
8800-10/20	800	10/20	2-400kV	711 x 2438	3.15 x 4.6H	3855
81000-10/20	1000	10/20	1-600kV 1-400kV	711 x 2438	5.75 x 5.97H	4585
81200-10/20	1200	10/20	2-600kV	711 x 2438	5.75 x 6.81H	5310
81400-10/20	1400	10/20	2-400kV 1-600kV	711 x 2438	5.75 x 8H	5945
81800-10/20	1800	10/20	3-600kV	2794 x 3048	6.3 x 11.2H	7940

\* Continuous and charging current ratings

^Approximate Dimensions & weights

Note: Other ratings available upon request, consult factory

**Table 2:**

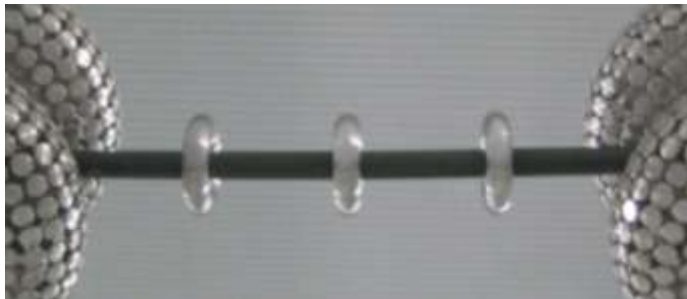
SERIES OUTPUT RESISTORS					
System	Resistor model	Resistor voltage (kV)	Total Energy (kJ)	Number of resistors in assembly*	Length (mm)^
8500-30/50	DR600-75	600	75	1-DR600-75	1232
81000-30/50	DR1200-150	600	150	2-DR600-75	2464
81500-30/50	DR1800-225	600	225	3-DR600-75	3696
8600-10/20	DR600-25	600	25	1-DR600-25	1232
8800-10/20	DR1200-50	600	50	2-DR600-25	2464
81000-10/20	DR1200-50	600	50	2-DR600-25	2464
81200-10/20	DR1200-50	600	50	2-DR600-25	2464
81400-10/20	DR1800-75	600	75	3-DR600-25	3696
81800-10/20	DR1800-75	600	75	3-DR600-25	3696

\*Total resistors needed for series output will vary based on specific application

^Approximate Dimensions

## INCLUDED ACCESSORIES

- OT257DC Windows XP Based DC System Controller
- Series Resistor set
- Stand-off Resistor Set
- Discharge resistor set/ HV Standoff assembly sized for application
- Interconnect cable
  - Available Control/Signal Cable Options
  - DC-IC-OT-20 (20m)
  - DC-IC-OT-30 (30m)
  - DC-IC-OT-50 (30m)

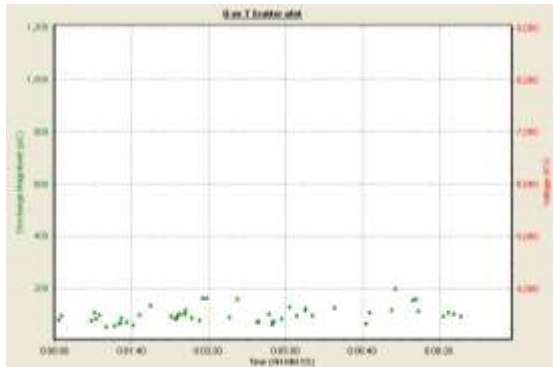


## OPTIONS

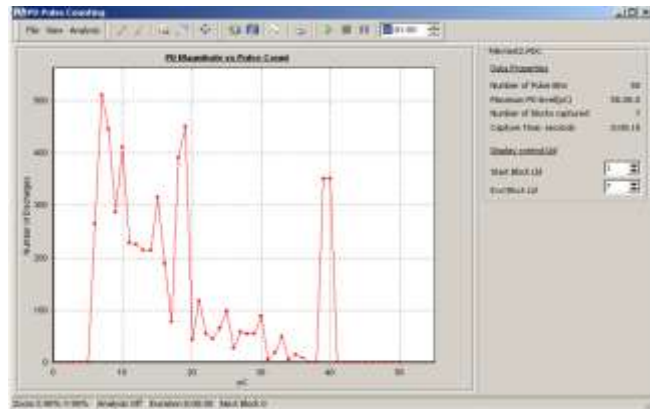
- DDX 7000 Partial Discharge
- DC Coupling Capacitor for PD measurements
- Visible ground system
- HV Cascade Mobility
  - Casters
  - Air Cushions
- Standoff Bleed Resistors (may be required)



## Q vs. T Scatter Plot

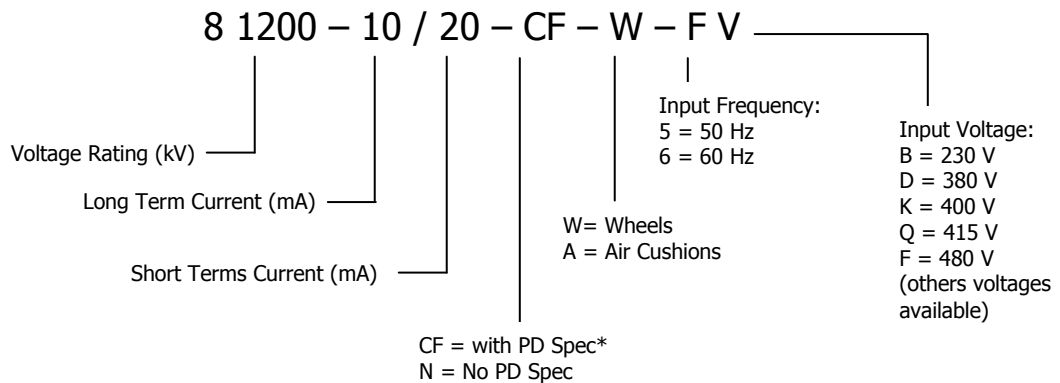


## PD Pulse Counting (Magnitude vs. Count)



## ORDERING INFORMATION

### UHVDC Catalog Number Logic



\*PD spec to be defined in technical specifications