

DC RAMP TEST SET

Ramped High Voltage DC Test for Winding Insulation

Model DCR 50

- *Simple, low risk, off-line test*
- *Identify onset of fault mechanisms*
- *Diagnose damage and deterioration*
- *Quick, accurate and repeatable results*
- *Computer records for analysis*
- *Tests to IEEE® Std 95-2002™*



Description

The DCR 50 is a simple off-line DC test to identify problems in the stator groundwall insulation system of large AC electric machines before an unexpected in-service failure occurs. Unlike the pass or fail of a DC or AC hi-pot test, the DC ramp test gives diagnostic information and can be stopped before a failure occurs.

Unlike a stepped voltage, the ramped voltage enables the user to separate the polarization and capacitive current components from the leakage current so that small insulation defects can be easily found.

A single-phase test usually takes less than an hour to perform and can be done by one person. The DCR 50 tests according to IEEE Std 95-2002.

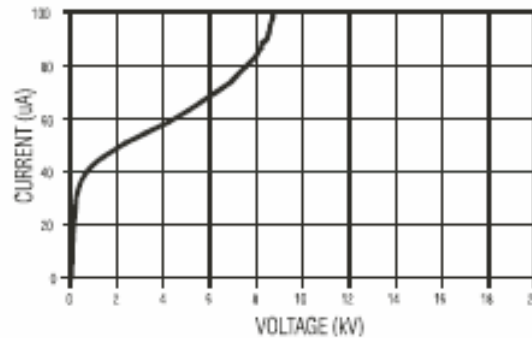
The DC Ramp Test method has been proven in use (for almost 40 years) by the US Bureau of Reclamation and others on a wide variety of machines with asphalt, polyester and epoxy-mica insulations.

Test curves are captured on a PC to allow easy comparison to similar machines or past results.

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Features

- Automatically ramps voltage from 0 to 50kV
- Ground presence detection and protection
- Optional manual voltage control (0-50 kV)
- Automatic trip protection (high/low tracking, output limit, fault detection)
- Built-in winding discharge circuit
- Analog outputs for voltage and current
- Connection to PC to: display results as test progresses, store multiple curves and test parameters for later analysis and display curves side-by-side for test comparison



Example of Ramped Voltage Test Result for Wet Asphalt-Mica Insulation

Examination of the current versus voltage curve allows test stoppage before failure assessment of insulation condition and diagnosis of damage, defects, and deterioration mechanisms.

Specifications*

Power Input	85-264 V AC, 2 A, 50/60 Hz
Output Voltage and Metering	0-50 kV DC, negative polarity
Ramp Rate	0-2.5 kV/min (continuously adjustable)
Output Current	1.0 mA max
Current Metering	0-1/2.5/5/10/25/50/100/250 uA
Pen Plotter Outputs	0-10 V DC 1sd
PC	PCMCIA A/D Interface; Windows 2000 or XP
Operating Temperature	0° to +40°C (+32° to +104°F); Storage: -25° to +60°C (-13° to +140°F)
	Humidity: 5-95% RH, non-condensing
Operating Altitude:	0-3000m
Dimensions & Weight (2 cases)	Control Unit: 20 x 37 x 49cm (8" x 15" x 19"), 10 kg (22 lb.)
	Above In case: 34 x 52 x 76cm (15" x 20" x 30"), 32 kg (70 lb.)
	HV Unit: 14.5 x 37 x 47cm (6" x 15" x 19"), 13 kg (29 lb.)
	Above In case: 34 x 52 x 76cm (15" x 20" x 30"), 34 kg (75 lb.)
Standards	Tests to IEEE Std 95-2002™
	CE Compliance
	EN61010-1 for safety
	EN61326 for EMC
	Bureau of Reclamation Report REC-ERC-78-7, "A Programmable DC High Voltage Ramped Test System for Electrical Insulation."

Developed under a Cooperative Research And Development Agreement (CRADA) with the US Department of the Interior, Bureau of Reclamation, in accordance with the Federal Technology Transfer Act of 1986.

*Specifications are subject to change without notice.

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Model DCR 50

Kit Contents

- Control Unit
- HV Module
- Control, HV and Grounding Cables
- PCMCIA Interface Card & Cable
- Notebook Computer with pre-installed Software
- Operations Manual
- Also available without PCMCIA and PC

Other ADWEL Testing Products

- EL CID, PDA Premium and COPA, STB-3, Couplers, Corona Probe and Wedge Tightness Detector