

# Relay Test and Management Software, Basic

2 Days, 1.4 CEUs

The RTMS Basics remote course will cover the use of Megger's RTMS software for controlling relay test sets, from its general capabilities & navigation to using it to perform both manual and automated testing of various relays. Students will learn not just how to test relays and how they can use these tools to improve their testing and reporting as well as automating and streamlining these processes.

This course is intended for technicians and engineers responsible for the testing and calibrating protective relays, reclosers, and other protective systems. Participants should have a basic knowledge of protection theory and relay testing principles and practices.

## Lab and Classroom Attire

AVO Training Institute is committed to the personal safety of each participant and require long pants and ANSI rated "safety-toe" work shoes for lab activities. Lecture courses may involve a tour of a work or shop area and for this reason open-toe shoes and shorts are not considered appropriate attire for the classroom.

## Pre-Requisites

Student must bring a laptop and have full administration rights and the PowerDB software installed. Please make sure you install the required software before attending the class. PowerDB is an application installed on individual Windows PCs or laptops (Microsoft Windows Vista, Windows 7, Windows 8 and Windows 10). A minimal machine configuration will have a 2 GHz processor, 2 GB RAM and at least 2GB available hard drive space. No other software applications are required to operate PowerDB. A PDF distiller is recommended. You can find the latest released RTMS software on the Megger website. Log into your account and select PowerDB Lite software.

## Learning Objectives

To receive 1.4 CEUs, participants must attend 2 days of class (14 contact hours) and attain a minimum average grade of 80% on the final exam. Upon completion of this course the participants will demonstrate that they are able to:

- Install RTMS software on the computer.
- Evaluate the basic components of the RTMS software.
- Use the RTMS software to perform functional tests for the following types of protection functions:
  - Overcurrent
  - Over/under voltage
  - Over/under frequency
  - Distance
  - Transformer Differential
- Download prebuilt RTMS protection test templates using the RTMS Template Manager.
- Test relays using RTMS protection relay test templates.
- Prepare basic protection relay test templates using RTMS.
- Create, share, and reuse reports of protection relay tests performed with RTMS.

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## SCOPE

### Day 1\* (7 contact hours)

- I. Introduction
  - A. Finding and Installing RTMS Software
- II. RTMS Set-Up and Settings
  - A. Hardware Tab
  - B. System Tab
- III. The RTMS Home Screen
  - A. Layout
  - B. Tools and Features
  - C. Calculator
  - D. Simple Prefault-Fault Tests Using the Home Screen
  - E. Reporting
  - F. Harmonic Injection

### IV. RTMS Test Modules Part 1

- A. Ramping
  - 1. Basic Ramping
  - 2. Advanced Ramping
  - 3. Building Tests with Multiple Ramps
  - 4. Binary Search

### V. RTMS test modules Part 2

- A. Timing
  - 1. Overcurrent Timing
- B. State Sequencer
- C. Impedance
- D. Differential

### Day 2\* (7 contact hours)

- VI. Template Manager
- VII. Settings Page
  - A. Creating Settings
  - B. Importing Settings From Files
  - C. Importing Settings From Relays
  - D. Using Settings To Configure Tests

### VIII. Using Prebuilt Relay Templates

- Overexcitation Protection
  - A. Pre-made Templates
  - B. Testing a Microprocessor Relay using Prebuilt Templates
  - C. Modifying Existing Templates

### IX. Building Basic Test Templates

- A. Creating Simple Custom Templates
- B. Adding/Removing Tests
- C. Importing Tests
- D. Saving Templates

### X. Reporting in RTMS

- XI. Conclusion
  - A. Review
  - B. Final Exam