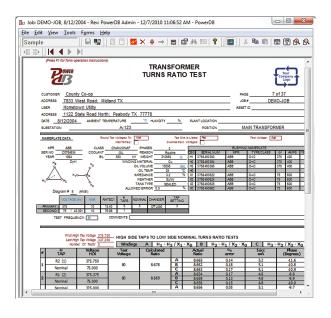# PowerDB™ Pro

Acceptance & Maintenance Test Data Management Software

- Windows-based PC software available in four versions

- Interfaces to instruments via either Serial RS232, Ethernet, or USB flash drive (depending on instrument)

- Allows user to set up test routines in advance of testing

- Allows analysis, comparison and trending of data

- Merge test results between field and office databases

- Customize reports for professional data presentation

DESCRIPTION

PowerDB is a powerful software package providing data management for each of your acceptance and maintenance testing jobs. Data can be imported from various sources, acquired directly from test instruments, or entered manually. Test results for all electrical apparatus are synchronized to your company's central database. Result and summary reports can be easily generated. PowerDB provides a simple and consistent user interface to many Megger instruments including the DELTA2000, DELTA3000 and DELTA4000 Power Factor Test Sets, 3-Phase TTR, earth testers and 5 and 10kV insulation testers.

Full Database Capabilities

- Test results are brought together into a single database file for easy retrieval and review.

- An entire organization's results can be synchronized into a single database, scalable to Microsoft SQL Server.

- One-step report generation maximizes timeliness and facilitates NERC/FERC compliance audits.

- Easily trend results over time and compare to all other similar assets.

- Track maintenance intervals and generate work orders for scheduled retests.

- Merge results from multiple test instruments with data imports from other sources to facilitate queries and sorting.

- Maintain calibration data for test instruments.

Test Forms

Designed from a ground up approach, PowerDB utilizes over 280 industry standard test forms that have been developed and used by industry specialists. Test data entry screens and printed forms are identical allowing intuitive operation. What you see on the screen is what is printed in the reports. Entire test documentation packages consisting of test reports, comment & deficiency summaries, table of contents and field service reports are created with a single step. Once created, reports can be delivered electronically via email, CD-ROM or web server using a standard PDF distiller. Test forms are designed for the majority of the electrical apparatus on the market today. PowerDB currently supports the following devices:

- Batteries
- Bushings
- Cables
- Circuit Breakers
- Coordination Data
- Disconnects
- Generators
- Ground Fault Tests

- Ground Mat/ Grid Tests
- Transformers
- Infrared Inspection
- Insulation Fluids
- Loadbreak Switches
- Motor Control
- Power Factor Tests

- Relays
- Rotating Machinery
- Switchboards
- Transfer Switches
- Voltage Regulators
- Watthour Meters
- Transducers

The software will perform extensive information processing including equation calculations, temperature correction and charting. Data trending for predictive failure analysis is accomplished by charting historical results, stored in
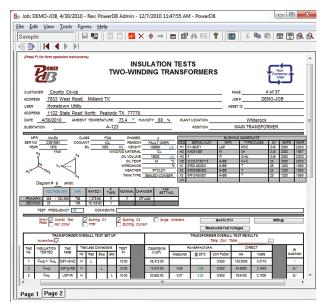
Figure 1: Data Entry & Automated Control of Megger DELTA Test Sets

PowerDB or imported from other party's proprietary database software, for any piece of equipment.

PowerDB provides a powerful editor to create or customize forms. No database knowledge is required. Simply drag-and-drop tables, text boxes, images, charts, and more into a form. VBScript® can be used to define calculations, use lookup tables, and even interface with other applications. Sections common to multiple forms, such as logos, headers and footers, can be defined once and included in many forms. Also, one change updates all forms where it is used.

PowerDB further provides test instrument control as well as data acquisition and supports many popular Megger products including:

- BITE and TORKEL Battery Test Sets
- DELTA2000/3000/4000 Power Factor Test Sets
- TTR, MTO and MCT Transformer Test Sets
- DLRO Low Resistance Ohmmeters
- PULSAR, MPRT and SMRT Protective Relay Test Sets
- 5 and 10 kV Insulation Resistance Test Sets

Test Documentation

Test Result documentation in PowerDB is accomplished in three ways:

- Manual data entry
- Importing data from other sources
- Data acquisition from test instruments

Manual data entry is done on screens identical in layout to the printed test forms (importing data can be done from files designed for PowerDB by a test equipment manufacturer or analysis laboratory). PowerDB test forms can also be designed to interact with other testing applications, such as Megger's Advanced Visual Test Software, AVTS. This interaction allows the population of test forms in PowerDB as tests are performed by the other application. Finally, data fields can also be populated by direct communication with popular Megger instruments as well as other brands of test equipment.

Trending

PowerDB allows on-the-fly trending of any test point. See Figure 2. Historical values for the particular equipment are shown in blue with connecting lines. All values for similar equipment are shown in red. A 2-sigma statistical deviation band is shown as thin horizontal lines on the
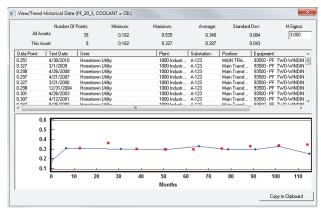

Figure 2: Trending (On-the-fly)

chart. A table above the trend chart lists all of the data values, as well as the test date and equipment location. Any record in this list may be selected to open the associated data set with the detailed test results. This can be used to identify stray test values and review the test form to see what corrective actions were taken.

PowerDB can also import historical values for a piece of equipment from other third party proprietary database software allowing a seamless transition across software packages and/or test and measurement equipment.

Report Generation

Report generation in PowerDB for a group of tested equipment is done in one simple step. Customizable sorting allows adjustment of the test form order. Forms can be suppressed and page numbering adjusted. Supporting reports, such as the comment and deficiency summaries, can also be selected for printing at the same time. All test forms and supporting reports are sent to the printer in a single print job. Figure 3 shows the results ordering and print dialog.
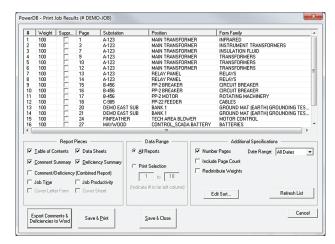

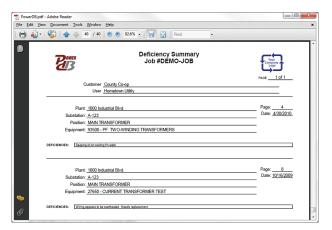**Figure 3: Results Ordering and Printing**

Figure 4: Deficiency Summary Report

Comment and deficiency summary reports provide quick access to information collected across all equipment tested on a job. It also allows managers to review significant notes without looking at hundreds of pages of test sheets. An example of a deficiency summary is shown in Figure 4.

In addition to generating reports directly through PowerDB, a web server is available which allows users to view reports on demand from anywhere. Only information pertinent to the particular web-access user is presented online.

COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM SUPPORT

Many electrical utilities have invested in CMMS systems, such as Digital Inspection's Cascade and MRO Software's MAXIMO. Due to test instrument specific software packages and hand-written test results, these firms often struggle to get test data into their systems. PowerDB allows you to link easily with the CMMS system so that the system can pre-populate the PowerDB equipment database, send PowerDB all work orders, add forms based on the job plans, and even return the measurement points, obtained from a multitude of test sets, back to the CMMS system.

Megger works directly with your CMMS personnel to integrate your data into your internal CMMS system.

Other Available Versions

PowerDB ONBOARD only runs directly on specific Megger test instruments, and the forms are the instrument's user interface. Test results are transferred with a standard USB drive and can then be read into other PowerDB versions.

PowerDB Lite is free software allowing you to use a subset of PowerDB test forms with Megger instruments.

PowerDB Advanced allows control of the STVI form and provides for results to be saved to files for all test forms provided. Also allows data trending capabilities and supports non-Megger instruments.

COMPARISON GUIDE	PowerDB Version			
	ONBOARD	**LITE**	**ADVANCED**	**PRO**
Runs in a hardened embedded environment	■			
Navigate with arrow and enter keys (no mouse)	■			
Manage data files with internal drive and USB drive	■			
Uses a subset of PowerDB Pro forms applicable to your instrument	■	■		
Files can import into PowerDB Pro	■	■	■	
Relay/Breaker/Recloser curve library	■	■	■	■
Completed forms are saved as files to your computer	■	■	■	■
Associates current test data with historical results	■	■	■	■
Control Megger instruments and download test data		■	■	■
Control non-Megger instruments			■	■
280+ industry standard test forms are provided			■	■
Advanced Relay Form			■	■
Trend historical results for asset for predictive failure analysis			■	■
Trend historical results for asset against other similar assets				■
Database functionality to manage data for all electrical equipment				■
One step report generation				■
Summarize noted comments and/or deficiencies				■
Trigger work order and maintenance schedules				■
Synchronize results from field to master database				■
Synchronize results with other testers				■
Form editor allows test sheets to be created or customized				■
Import data from other software packages				■
Maintain calibration data for test instruments				■

FEATURES AND BENEFITS

- **280+ Industry Standard Test Forms Are Provided**
  Developed and used over 20 years by industry specialists.

- **Data Trending for Predictive Failure Analysis**
  Chart historical results for any piece of equipment.

- **Built-in Information Processing**
  Equation calculations, temperature correction factors, charting.

- **Create New Forms or Customize Our Forms**
  Powerful forms editor is integrated, no database knowledge needed.

- **One-Step Generation of Entire Client Documentation Package**
  Test forms, comment & deficiency summaries, table of contents, field service reports.

- **Deliver Reports Electronically**
  Via email, via cd, via web server, using standard PDF distiller.

- **Work Order Generation**
  Trigger work orders through test schedule reports.

- **Job Tracking to Organize Contract Information**
  Job test data, reports, quickly search and sort historical data.

- **Distributed Data Management**
  Create subsets of data for field testing, merge results with another database.

- **Powerful Results Report Ordering**
  Sort by standard fields, sort by any fields you define, easy manual page ordering.

- **Test Data Entry Screens and Printed Forms Are Identical**
  What you see on the screen is what is printed in the reports, streamlines data entry.

- **Import Data From Other Sources**
  Weidmann-ACTI, Doble, Oncor, TJH2b, SD Myers, Megger AVTS, ProActiv, and more.

- **Test Instrument Control and Data Acquisition**
  Megger SMRT, PULSAR, MPRT, DLRO200, DELTA2000, 3000 and 4000 units, 3 Phase TTR, 5 and 10kV Megger Insulation Test Sets, TORKEL, ODEN, SVERKER, OTS60PB, MCT Series, Doble F2000, SMC Relay Test Set, Phenix, ETI-20, Fluke ScopeMeter, Alber Cellcorder, and more.

Optional Add-ons

PowerDB Web Server
Any user can log in by providing a user name and password. They are then able to view each of their jobs, while other jobs are hidden from view. Job equipment information is presented in a tree hierarchy similar to how it is presented in PowerDB. Test reports of recent or historical data for any piece of equipment can be viewed individually. The PowerDB Web Server also allows you to deliver any other electronic documents that you submit for a job, such as a job-documentation package.

Microsoft SQL Server Upgrade
The SQL Server upgrade option functions identically to the Access version but supports larger databases and provides a substantial performance increase. PowerDB can seamlessly interact with Access field databases and SQL master databases.

On Site Training
A two day training course can be provided at your facility. Training includes data entry, trending, report generation, data synchronization and forms design.

CMMS Integration
For a flat fee, a PowerDB programmer will aid you in integrating a data exchange service between PowerDB and your CMMS system (or any other system). This service includes up to one week of on-site integration.

RECOMMENDED PC SYSTEM REQUIREMENTS
Windows® 7/XP/Vista. 2 GHz PC with 2GB RAM

PowerDB is a trademark of PowerDB, Inc., a subsidiary of Megger

ORDERING INFORMATION

Item (Qty)	Cat. No.
PowerDB Pro Software – 1st copy	DB1001
PowerDB Pro Software – 1st copy w/USB	DB1001S
PowerDB Pro Software – 2-5 each copy	DB1002
PowerDB Pro Software – 2-5 each copy w/USB	DB1002S
PowerDB Pro Software – 6+ each copy	DB1003
PowerDB Pro Software – 6+ each copy w/USB	DB1003S
PowerDB Pro Web Server	DB1004
PowerDB Pro SQL Server Version	DB1005
PowerDB Pro Custom Forms – per page	DB2001
PowerDB Pro CMMS Integration	DB2002
PowerDB Software Training	DB3000
PowerDB Advanced Software	DB1011