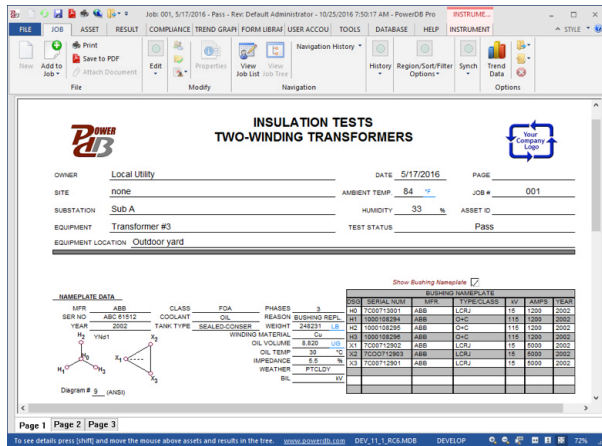# PowerDB™ Pro Software

For Asset and Test Data Management

- **NERC compliance tool**
- **Windows-based PC software**
- **Interfaces with test instruments and other software systems**
- **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 collection and management for all of your acceptance and maintenance activities. Data can be imported from various sources, acquired directly from test instruments, or entered manually. Built-in test forms support consistency in procedures and reports. Data and test results 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 insulation power factor, relay, circuit breaker, instrument transformer, power transformer ratio and winding resistance, insulation resistance, battery impedance and discharge, and many other test sets.

FULL DATABASE CAPABILITIES

- An entire organization's results can be synchronized into a single database, scalable to Microsoft SQL Server, for easy retrieval and review.
- One-step report generation maximizes timeliness and facilitates NERC compliance audits.
- Easily trend results over time and compare to similar assets.
- Track maintenance intervals and generate work orders for scheduled assets.
- 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

PowerDB utilizes test forms as the user interface for data entry and review. Test data entry screens and printed reports are identical providing for intuitive operation and interpretation. The test forms are designed with extensive information processing including equation calculations, temperature correction and charting, plus test instrument automation and data imports.

Designed mainly to collect data from inspection, maintenance and testing activities, PowerDB's test forms are not limited in the type of data that can be captured. A built-in form editor allows users to modify existing forms or create new test forms to collect any type of information.

Over 370 test forms are provided in PowerDB, and they are designed around many types of electrical apparatus:

- Batteries
- Bushings
- Cables
- Circuit Breakers
- Disconnects
- Generators

- Ground Fault
- Ground Mat / Earth
- Infrared Inspection
- Insulation Fluids
- Loadbreak Switches
- Meters

- Motor Control
- Transformers
- Relays
- Rotating Machinery
- Switchboards
- Transfer Switches

All of the test forms allow manual data entry using the keyboard or touch screen. Many of the test forms include some type of automation: either importing from a file or capturing data directly from a test instrument. As results are entered into the program, they are organized and saved in the database. A special feature of every form are comment and deficiency entry fields where notable items can be documented. These items can be summarized in custom reports and can be easily searched and updated as needed.

FORM EDITOR

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.

TEST INSTRUMENT CONTROL

One of the key features of PowerDB is the ability to connect to, and control, many different test instruments. Many of the test forms are programmed to send commands to an instrument in order to initiate a test and capture or download the resultant data at the conclusion of the test. Many popular Megger instruments are supported:

- Battery Test Sets: BITE, Torkel, BVM
- Circuit Breaker Test Sets: SPI
- Instrument Transformer Testers: MRCT
- Insulation Resistance Testers: S1 and MIT models
- Low Resistance Ohmmeters: DLRO
- Power Factor Testers: Delta models
- Transformer Test Sets: TTR, MTO, MWA
- Protective Relay Test Sets: SMRT, MPRT

A number of non-Megger instruments are also supported with automation, typically by importing data from a file created by other software. Contact PowerDB for more information.

DATA TRENDING

PowerDB allows on-the-fly trending of any data values in the test results. The trending capability provides a convenient way to compare new readings to historical values, and also to compare against similar equipment in your database. Statistical information based on the selected and retrieved data is provided to help you evaluate the test results and determine the condition of your equipment.
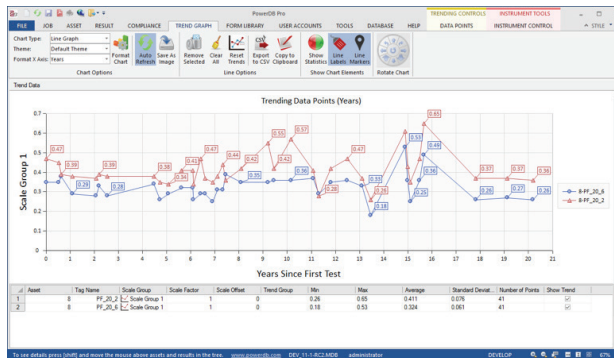

Figure 1- Trending Screen

TEST EQUIPMENT TABLE

In order to document the test instruments that are being used, a Test Equipment table is built in which can maintain identifying information on each instrument plus its calibration dates. This information is available to populate into any test form as it is being completed in the field.

CUSTOM REPORT GENERATION

Within PowerDB, test results may be printed either individually or as a group. If results are added to a job then a custom report can be created which includes a cover page, cover letter, table of contents, comment and deficiency summaries, test results and attached external documents. These report sections can be printed collectively or individually, as desired, and the report can be customized in regard to design and the order in which the various sections are printed. Once a report format has been created, it is saved and reused for all subsequent reports.

If results are printed outside of a job, then only the selected test results and their attached external documents may be printed.
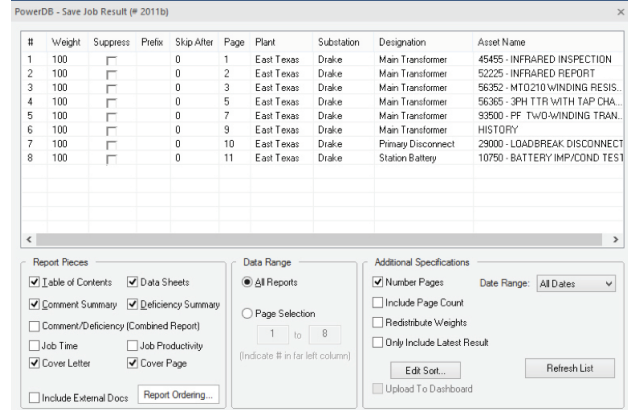

Figure 2: Report Printing

FEATURES AND BENEFITS

- **Track NERC Compliance and Maintenance Schedules**
  Quickly view compliance status and easily create work orders to track required testing by NERC, maintain mandatory schedules and track issue resolution
- **370+ Test Forms are Provided**
  Developed and used over 30 years by industry specialists
- **Consistency in Procedures and Reports**
  Built-in forms support consistent work practices
- **Data Trending for Predictive Failure Analysis**
  Chart historical results for any data value
- **Built-in Information Processing**
  Calculations, temperature corrections, charting
- **Create New Forms or Customize Our Forms**
  Powerful form editor is integrated, no database knowledge needed
- **One-Step Generation of Entire Client Documentation Package**
  Includes cover page and letter, table of contents, comment and deficiency summaries, test forms, and field service reports
- **Deliver Reports Electronically**
  Save report to PDF, deliver via email or online Dashboard
- **Work Order Generation**
  Create work orders based on asset maintenance periods
- **Job Tracking to Organize Contract Information**
  Extensive job listing with powerful filtering options for easy retrieval
- **Distributed Data Management**
  Create field databases for field testing, synchronize data with central database
- **Powerful Results Report Organizing**
  Sort by standard fields or using custom fields, easy manual page ordering
- **Test Data Entry Screens and Printed Forms Are Identical**
  What you see on the screen is printed in the reports, streamlines data entry
- **Import Data From Other Sources**
  Weidmann, TJH2B, SD Myers, TOA, Doble DTA, Megger AVTS and Proactiv, Alber Cellcorder, Vanguard and more

RECOMMENDED PC/TABLET REQUIREMENTS

Microsoft Windows Vista/7/8/8.1/10, 2 GHz PC with 2 GB RAM (Access)

Microsoft Windows Vista/7/8/8.1/10, 2 GHz PC with 4 GB RAM (SQL Express)

OPTIONAL ADD-ONS

DASHBOARD

The optional PowerDB Dashboard is a web-based portal to the assets and data in a master database. Using an internet browser program on any type of device (PC, tablet, phone), the opening screen provides a summary view of activity with various statistics on data entry and usage. Jobs, assets and results that are saved in the database are available to be searched, opened, reviewed and printed. Results are viewed on the very same test forms that are filled out in the field. User accounts authorize individual users to view all or only particular portions of the data. No editing of data is possible.

The Dashboard can be used by testing companies to provide their clients with online access directly to their equipment records. Asset owners can use the Dashboard to locate and display maintenance records as proof of activities during an audit, or to allow anyone within their organizations to browse the data and review results.
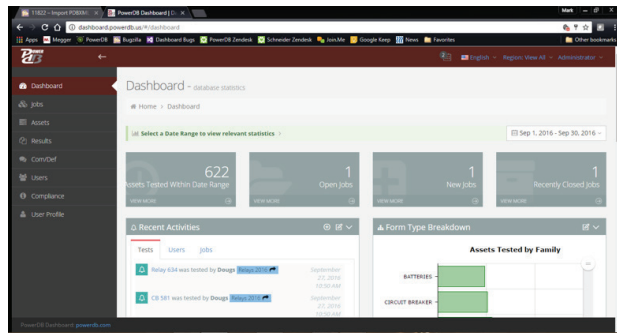

Figure 3 - Dashboard Overview

COMPLIANCE

An optional Compliance view in the PowerDB application can be used to provide valuable information on the scheduling and status of any asset or group of assets in the database. This can be useful for meeting NERC required testing schedules or simply to track regular maintenance and testing of any equipment Compliance categories and subcategories can be created and assigned to individual or groups of assets. Using the powerful filtering capability provided in PowerDB, any group of assets may be quickly reviewed to determine the compliance or maintenance status.

The compliance screen displays a listing of the selected assets, with key asset information, plus a color-coded calendar with compliance status clearly indicated using different colors. Any colors may be configured but the default shows green for compliant, yellow for a warning period, red for non-compliant. The calendar opens to the current day, but any date in the future may be selected in order to show which assets will go out of compliance if no additional maintenance is performed.
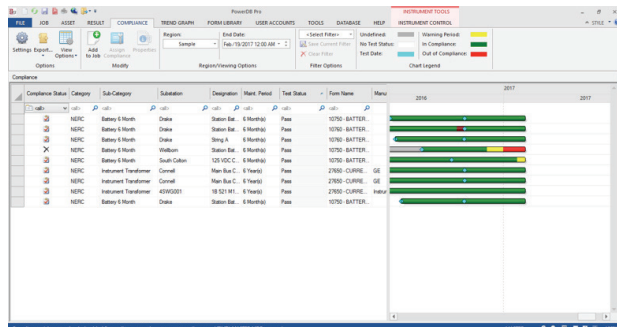

Figure 4 - Compliance Module

MICROSOFT SQL SERVER UPGRADE

This option is for converting a user's master database to SQL Server platform rather than Access. Field databases can also be updated to SQL Express. The SQL format allows for larger database size and greater stability. PowerDB can seamlessly interact with Access field databases and SQL master databases.

DATA HOSTING SERVICE

Data Hosting is a service offered by PowerDB which provides for the setup, access, and ongoing maintenance of a master database. For a one-time setup fee and a monthly subscription, PowerDB will set up a SQL master database, provide a synchronization server for world-wide connectivity, and maintain all backups and data recovery files. Your master database with all test results and data is stored in a secure Tier 2 data center with a redundant backup system located 200 miles away, providing a high level of data security and backup protection. Data Hosting benefits users by:

- Reduce computer hardware requirements for storing data
- Eliminate cost of SQL Server upgrade
- Minimize internal IT support
- Data and test results protected from loss due to equipment failure or other disaster
- Reliable high speed internet access for data synchronization

The master database can be transferred to the subscriber at any time they choose if they prefer to manage it on their own network.

EMAIL ALERT NOTIFICATION SYSTEM

An alert notification system is an optional PowerDB program that will send email or text messages when any time or activity threshold has been reached based on information in a master database. A typical use of this might be when an asset is coming due for maintenance. It can also create notifications based on entries for deficiencies or compliance status, test values out of limits, and any other situation that can be defined from data in the database.

DATA QUERY TOOL

This tool can be used to search and extract data from results in a database. It is a simple extraction program that locates specific results, collects specific data, and outputs it in a simplified format. The tool provides an interface for users to select which test form they want to query and which values they want to extract from that form. When the query starts, it locates all results saved on the selected form, creates a record for each result with the selected values from the form, and places the output into a spreadsheet file. As an example, the Query Tool can be used to quickly locate all assets of a particular type, those with specific ratings, or with test values that fall outside of an expected range.

ELECTRONIC SIGNATURE

When it is necessary to document that someone witnessed a test or other activity, an electronic signature can be captured directly into the test form. This option includes the required software and test form modifications, and a USB signature pad. When a signature is entered, the date and time is also captured and saved.

CUSTOM FIELD DATA COLLECTION TOOLS

PowerDB can create custom interfaces for handheld electronic devices, including mobile phones and tablets, for gathering inspection and other data in the field. Once the data is entered, it can automatically synchronize back into the PowerDB master database. Contact PowerDB for more information.

OPTIONAL ADD-ONS

CMMS INTEGRATION

As a custom service, PowerDB will help integrate a data exchange between your PowerDB database and any other software or database system, such as a CMMS (SAP, Maximo, etc.). This service includes initial consultation and onsite programming. Contact PowerDB for more details.

CUSTOM TEST FORMS AND INSTRUMENT INTERFACES

PowerDB can provide the expertise to create or customize the test forms you need. For a minimal per page fee, this can be a very cost-effective solution to duplicating existing forms you may be using.

If you have a requirement to capture results from a specific test instrument, PowerDB can develop a custom interface to either download data directly or import results from a file. Contact PowerDB for more details.

TRAINING

PowerDB offers several training options for users that want to learn how to take advantage of the many features of the software.

- Online live webinar sessions of four (4) hours
- Open enrollment classes of two (2) days held periodically throughout the US
- Onsite training at your location, tailored to your specific requirements

Training sessions can cover how to set up the software and databases, data entry, capturing/importing results, creating reports, data trending, synchronization, editing test forms, and many other features of the software. Contact PowerDB for more details.

ORDERING INFORMATION

Item (Qty)	Cat.No.
PowerDB Pro Software – 1st copy	DB1001-A
PowerDB Pro Software – 1st copy w/USB	DB1001S-A
PowerDB Pro Software – 2-5 each copy	DB1002-A
PowerDB Pro Software – 2-5 each copy w/USB	DB1002S-A
PowerDB Pro Software – 6+ each copy	DB1003
PowerDB Pro Software – 6+ each copy w/USB	DB1003S
PowerDB Pro Software – Extended Software Support	DB2000
License Administration Fee	DB2003

OPTIONAL ADD-ONS	
SQL Server Upgrade	DB1005
Custom Form, per page	DB2001
Custom CMMS Integration	DB2002
Database Hosting Set Up	DB2005
Database Hosting (per month)	DB2004
Training Online (4 hour)	DB3000
Training Open Enrollment (2 day)	DB3001
Training Onsite (2 day)	DB3002
Custom Instrument Driver	DB5001
Warehouse Database	DB6000
Email Alert Notification	DB7001
Email Alert – Hosted DB Set Up	DB7002
Email Alert – Hosted DB (per month)	DB7003
Compliance Module	DB7004
Dashboard	DB7005
Dashboard – Hosted DB Set Up	DB7006
Dashboard – Hosted DB (per month)	DB7007
Electronic Signature	DB7008
Data Query Tool	DB7009