

GOING FROM GOOD TO GREAT

A closer look at the newest partial discharge testing features in our MPD 800



"Since we launched our new MPD 800 universal partial discharge (PD) measurement and analysis system in March of this year, we've been interacting with customers from all over the globe via webinars and online product demonstrations. We've been talking with them about the newest MPD 800 features and comparing them with earlier MPD systems. One recent piece of feedback that stands out in my mind came from a long-time MPD user who also happens to be a new MPD 800 customer – 'With all of the new and enhanced MPD 800 features, flexibility and ease of use for PD testing are definitely going from good to great.'"

Ole Kessler,
Product Manager, OMICRON



Key hardware differences

The primary differences in the hardware include the fact that the MPD 800 data acquisition unit now has two input channels in one unit, which offers you either two-channel PD measurements or one PD measurement channel in addition to a gating channel.

Each MPD 800 acquisition unit features an electrical/optical triggering output for automatically activating auxiliary PD diagnostic equipment. This includes oscilloscopes and acoustic PD measurement solutions used for additional defect localization, such as our PDL 650 system. Many other technical specifications have also been enhanced for improved sensitivity and addressing the measurement needs of a wide variety of assets and testing environments.

New features such as simultaneous Q-IEC and RIV (Radio Influence Voltage) measurements and enhanced PD source localization save a great deal of measurement and analysis time in both testing bays and the field.



Putting the focus on usability

The biggest difference you'll notice in the new MPD 800 system compared to previous MPD systems, is the enhanced user interface in the new MPD Suite software. This new software is available in multiple languages and has been redesigned to match your specific testing needs and preferences at any given time.



Simplified PD testing with user profiles

The MPD Suite software can be completely customized depending on your needs. You can set individual testing specifications, such as frequency range, filters, and assessment levels. You can also hide functions and settings from view and easily scale windows to your desired size.

This is useful, for example, when it comes to dedicated testing applications, such as performing PD analysis on rotating machines or cables. In other words, when you don't actually need all the features that the software offers. By changing the software settings and defining dedicated user profiles, you can customize your testing experience and save a lot of time. ▶

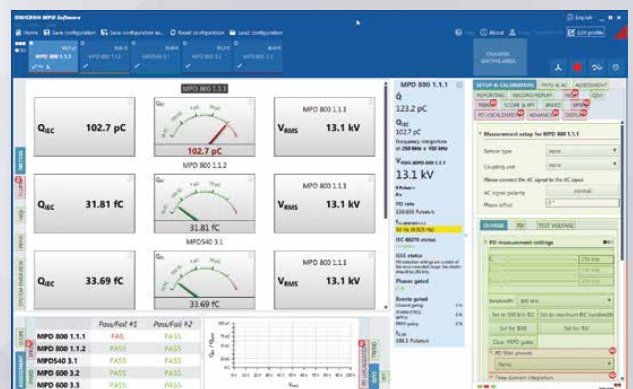
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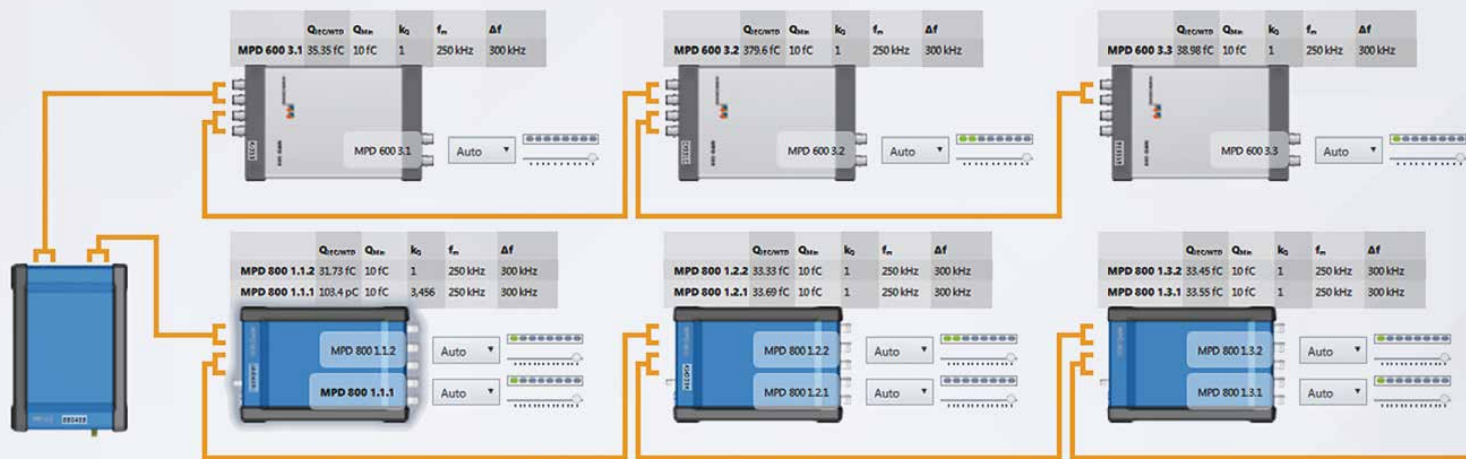
Product Manager, OMICRON



The MPD 800 data acquisition unit with two input channels and automatic triggering of auxiliary devices.



You can save testing time with individual user profiles – pre-define measurement settings and select only the software features needed for display.



The MPD Suite software provides you with a detailed overview of your measurement setup and all connected devices.

✓ A helpful start page

The software's start page presents you with a helpful overview for working more efficiently – whether you're starting a measurement or accessing previous measurement data files; activating existing user profiles or setting up new ones; performing a self-check on system components; or viewing measurement reports. You're also provided with helpful reference information, such as the software user manual, which you can simply view with the click of a mouse.

✓ Flexible application-oriented packages

The MPD Suite software offers you different software packages, software add-ons and modules for the MPD 800 system. You can choose between a set of software packages from entry level to multi-application level use as well as software packages tailored to specific testing applications and assets. The MPD Suite software enables you to easily administrate your various licensing options so that you can quickly update or add system features any time you need them. You can even use these features to just try them out on a temporary basis.

✓ MPD 600 compatibility

In order to benefit from these new features, MPD 600 users have two upgrade options. The first option allows users to keep their existing MPD 600 system and upgrade to the new MPD Suite software with a simple software license upgrade. The second option is mainly for MPD 600 users who have a lot of MPD 600 units and want to buy a new MPD 800 system.

✓ Maintaining an overview of connected devices

Thanks to the new MCU2 controller, multiple MPD 800 units or a mix of MPD 800 and MPD 600 units can be used for multi-channel measurements on transformers, generators and power cables. The "system overview" functionality of the MPD Suite software provides you with a clear overview of your measurement setup. It displays all of the connected MPD acquisition units and shows the most important PD measurement values and settings for each PD channel.

✓ Peace of mind

During high-voltage testing, flashovers and breakdowns can occur. The integrated "self-check" function in the MPD Suite software helps you ensure that all of the connected MPD 800 units are operating correctly and reliably. It verifies all of the integrated components while monitoring communication with the software.

✓ Configuring and calibrating your setup

PD events can sometimes be overlaid by disturbances in certain frequencies. The MPD Suite software allows you to change individual measurement settings by adapting the center frequency and choosing between various bandwidths. By doing so, the frequencies with noise can be excluded and the analysis will target the real PD. The new software also lets you calibrate charges according to IEC or RIV (Radio Influence Voltage), which is mandatory according to IEC 60270, IEEE/NEMA and CISPR standards.

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Long-time MPD user and new MPD 800 customer

✓ Enhanced gating capabilities

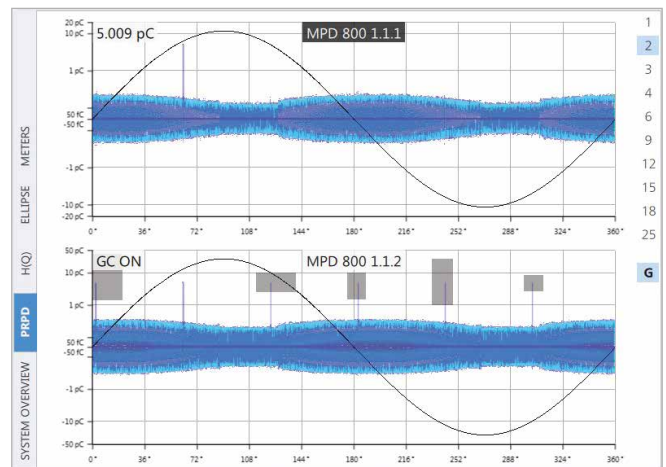
As mentioned earlier, you can use the second MPD 800 channel as a gating channel to reduce the effect of frequency-variable disturbances, such as inverter noise in the measurement results. Channel gating can easily be configured or switched off in the MPD Suite software.

By using phase/amplitude gates, you can also eliminate frequency-stable signals with a certain amplitude and fixed phase position, such as switching power supplies, lamps with phase angle control or irrelevant PD. The gating areas can be easily defined by marking them in corresponding PRPDs with your mouse. These areas will be excluded during the subsequent PD measurement.

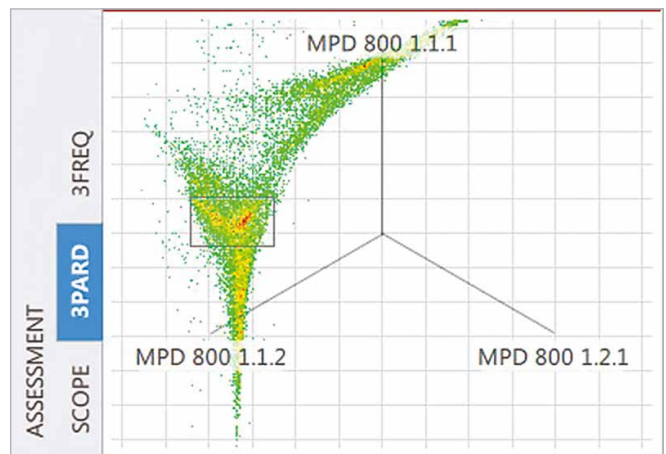
✓ Three-phase noise filtering

The 3PARD (3-Phase Amplitude Relation Diagram) filtering tool simplifies the differentiation of various PD sources and PD interference. It relies on the synchronous, three-phase measurement of a test object.

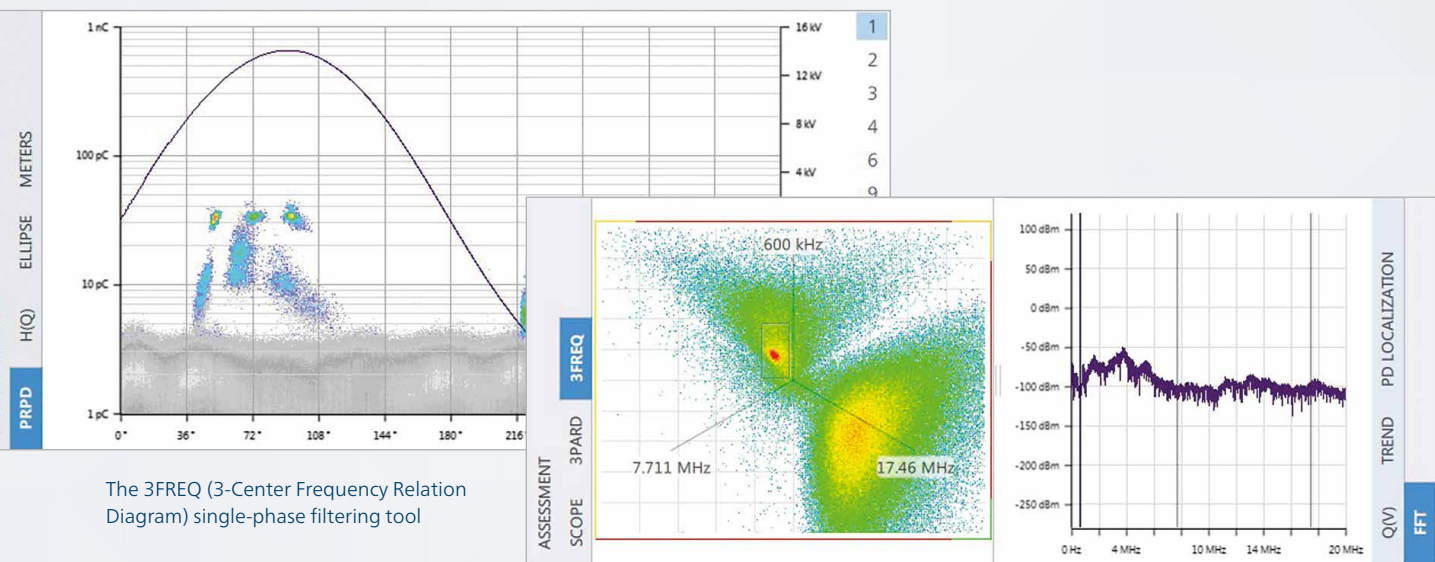
The combined results are displayed in a single diagram – the 3PARD – which facilitates result comparisons and PD selection. In order to further increase testing reliability, the corresponding PRPD (Phase-Related Partial Discharge) diagrams can be set up in the MPD Suite software to show filtered-out pulses in real time while greying out the residual pulses in the background. ▶



Measurement and gating channels visible together at a glance.



The 3PARD (3-Phase Amplitude Relation Diagram) filtering tool



✓ Single-phase noise filtering

3FREQ (3-Center Frequency Relation Diagram) is a one-channel filtering tool that characterizes PD sources by their frequency signature using three digital filter frequencies. You can separate PD events in the 3FREQ diagram, such as surface discharge, corona and internal voids from disturbances. As with the 3PARD filtering tool, the corresponding 3FREQ PRPD diagrams show filtered-out pulses while greying out the residual pulses in the background to improve testing reliability.

✓ Multiple data display options

While performing PD measurements, the MPD Suite software provides you with different windows for simultaneously viewing measurement data in different ways. These include a parallel view of PRPDs and either 3PARD or 3FREQ. You can freely choose between the System Overview, PRPD (Phase-Related PD diagram for all measurement channels), H(Q), Ellipse or Meter views for display in the main window at the top of the screen. In addition, you can select between Scope, 3PARD or 3FREQ as well as Q(V), Trend or FFT views in the two auxiliary displays below. You can easily switch between the different viewing options by clicking on the appropriate tab next to the display window. Measurement values, diagrams and settings can be easily configured or hidden at any time. Hot buttons at the top of all of the measurement screens allow you to access commonly-used functions, such as dataset recording and creating reports.

✓ Powerful recording and replay

MPD 800 records dedicated PD and RIV events into dataset files. These files contain unprocessed raw data and include all of the measured values and relevant system settings. That way, measurements become traceable and you can use all kinds of analysis, gating and reporting functions for post-analysis. As the playback speed can be freely selected, some sections can be played back more slowly in order to be analysed in greater detail.

✓ Customize your reports

You can easily customize measurement reports by selecting specific measurement data, diagrams and screenshots in addition to being able to add your company logo. Reports can be saved and stored as PDF files and shared easily via email. ■

TRY IT FOR FREE

You can try out the new MPD Suite software for a period of 90 days for free. Simply contact your local OMICRON sales manager for more information:

📞 www.omicronenergy.com/contact