

PowerPad III® vs PEL® Feature Comparison

AEMC's Power and Energy Loggers Model PEL® instruments provide all the necessary functions and features for power and energy data logging for most 50Hz, 60Hz, 400Hz, and DC distribution systems worldwide. Primary uses include performing power system evaluation and monitoring.

The AEMC PowerPad® family combines data logging with sophisticated power quality analysis. These portable three-phase network analyzers enable utility company personnel to measure single and three-phase networks, and perform diagnostics.

Although PEL and PowerPad instruments share a number of the same capabilities, there are also significant differences between the two product lines. These differences are important considerations when deciding which instrument is better suited for your applications and requirements.

Common features

Both the PEL and PowerPad are designed to provide mobile, easy to use data analysis and logging, although different models emphasize different features and functionality. Both measure a variety of 50 and 60Hz distribution systems. And both are supported by AEMC's DataView software with a dedicated Control Panel for configuring the instrument, viewing real-time measurement data, and generating reports.

In addition, both the PEL and PowerPad families include a rugged model that provides IP67-level protection.

PowerPad features

At first glance, one of the more obvious characteristics of the PowerPad is its user interface. The front panel features a variety of function, mode, configuration, and selection buttons. Combined with the bright, backlit display screen and sophisticated graphics, these buttons provide an extensive suite of advanced standalone capabilities.

For example, you can view data as tables, bar charts, waveforms, or phasor diagrams. You can save a snapshot of the displayed data in the instrument's memory. The PowerPad can detect and record short-term anomalies such as transients and inrush current. You can also configure alarms to identify when a measurement falls outside defined parameters.

The PowerPad takes 256 samples per cycle, resulting in over 15 thousand samples per second on 60Hz networks. This allows the instrument to calculate highly detailed sub-cycle data. PowerPad can also measure neutral voltage and current, and supports 5-wire networks.

PEL features

The economical PEL 102 and 103 are smaller with a slimmer profile than PowerPad instruments, so they can be unobtrusively mounted in locations where space is limited.

They provide a wider range of connection options, including Bluetooth, Ethernet, Wi-Fi, and IRD server, depending on model. This allows you to set up PEL networks consisting of many instruments widely scattered throughout the world, all centrally managed from a single location. This enables an operator to configure, monitor, and download data from a global PEL network, and then generate reports that includes data from all or a select subset of these instruments.

Typical applications for the PEL include demand metering and curtailment programs that often entail protracted recording sessions.

Each instrument can store up to 32GB of trend data for recording sessions that can run for many months or even years, depending on configuration. PEL instruments work with 400Hz distribution networks.

Conclusion

In summary, a general rule of thumb is that PowerPad instruments are optimal for applications involving detailed power quality analysis, especially those that require capturing short-duration anomalies. If your primary focus is performing on-site analysis and diagnostics in real time, the PowerPad is the best choice.

The PEL, on the other hand, is ideal for recording large amounts of power and energy data while operating unattended for long durations, in environments with limited space and access. A wide range of connectivity options enable you to build global networks of centrally controlled instruments. You can perform long-term data logging and monitoring of trend data, which can then be downloaded to a computer for analysis and troubleshooting.

PowerPad vs PEL	
 <p><i>PowerPad</i></p>	<ul style="list-style-type: none"> • Advanced UI • More robust standalone features • Data snapshots • Transients and inrush • Measure neutral voltage and current • Supports 5-wire networks • Faster operation <p>PowerPad: Detailed power quality analysis and diagnostics performed on-site in real-time.</p>
 <p><i>PEL</i></p>	<ul style="list-style-type: none"> • Smaller and slimmer • More communication options, including Bluetooth, Ethernet, Wi-Fi, and IRD server (model dependent) • Can be configured in global networks and centrally managed using an identical set of settings • Larger storage capacity • Supports 400Hz distribution networks <p>PEL: Power and energy logging over extended periods, for example demand metering and curtailment programs.</p>

Bear in mind that both PowerPad and PEL are versatile and share a number of capabilities. For instance, PEL does offer limited power quality analysis capabilities, while PowerPad can perform data logging. There are many applications in which either instrument would be well-suited. However, if you need to select one instrument over the other, the functionality and feature differences discussed in this Application Note can help you decide which model is ideally matched to your specific requirements.