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Ingenuity for life



Grid Diagnostic Suite – PQ Advisor Premium

Power quality and energy management
in one package

Powered by
MindSphere

[siemens.com/iot-energy-automation](https://www.siemens.com/iot-energy-automation)

The fundamental importance of power quality

Ensuring adequate power quality is essential for utilities and industrial manufacturing companies alike. Especially in industrial processes, power quality issues can involve significant financial risks. Many electrical and electronic components and automation systems in industrial production facilities are sensitive to voltage variations. These are often caused by unexpected sources. Furthermore, they can also cause faults themselves and feed them back into the supply system. Continuously recorded and evaluated measurements relevant to power quality help to detect disturbing issues and provide an opportunity to correct failures. Some of these failures are not so obvious at first sight.

Leveraging on the advanced features of our power quality devices like the SICAM Q100/Q200, the PQ Advisor Premium processes data from an entire device fleet. It tracks energy consumption as well as power quality indicators such as the presence of harmonics or the dynamics of power factors over time. A wide range of visualization methods combined with data analytics help correlate the synchronous time-series data received from a distributed set of data sources. PQ Advisor Premium identifies possible sources of power quality degradation before they lead to defects in sensitive electronic equipment.

Example – short current peaks cause non-conformance costs (NCC)

Robots are frequently used in modern integrated production procedures, and their sensitive motors can react to voltage disturbances. For example, laser robots are used for marking the housings of IEDs.

In large and complex marking procedures, laser robots can experience failures that ultimately lead to production down-time. This downtime can last around 30 minutes or longer per occurrence, and troubleshooting can cost several man-days per event. The possible impacts in such cases include loss of time and additional NCCs caused by the production stop, coordination efforts, and burden of proof.

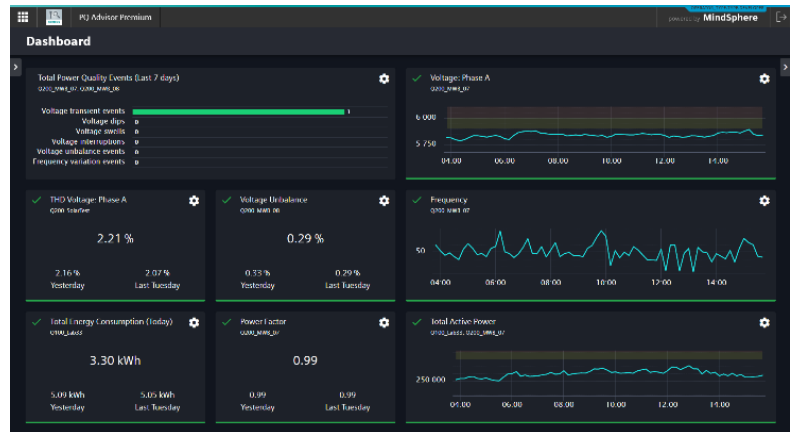
Customer benefits

- Quick overview of the main power quality indicators of the connected power system
- Connects to entire device fleet, enables data comparison
- Increased data transparency for fast root cause analysis
- Simple and secure access – no configuration required



PQ Dashboard overview screen

- PQ events
- Voltage
- Frequency
- Total harmonic distortion (THD)
- Voltage unbalance
- Total energy consumption
- Power factor
- Total active Power
- Color-coded PQ status



Measurement data view

- Display multiple signals in one chart
- Multiple device view
- Selectable time range
- Data zoom



PQ Advisor Premium

A MindSphere application which enables power grid operators to monitor energy consumption and power quality data from an entire fleet of PQ devices



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