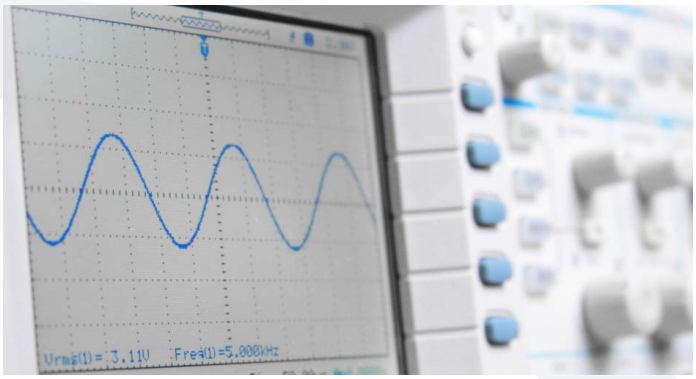
Power quality (IEC 61000-4-30 Edition 3)

Power quality meters fully examined conform IEC 61000-4-30

The power quality of the grid has grown in importance in recent times. New forms of local energy generation like wind power plants or solar panels may cause rapid changes in the stability of the grid. Different types of electronic equipment, like photovoltaic inverters, frequency controlled electrical engines or switched-mode power supplies, may cause a number of distortions; consider voltage dips or interruptions, overvoltages, fluctuations or voltage unbalance. Phenomena like transients, flicker, voltage harmonics and interharmonics may also occur.

Bad power quality may cause serious problems. Interruptions in the provision of energy may especially have huge consequences. Therefore monitoring of the power quality is extremely important. This is done by installing power quality meters at crucial positions in the grid. However, it is essential that the meters also measure the power quality phenomena in the same way and that their outcome is comparable. That's why IEC 61000-4-30 has been developed.



IEC 61000-4-30

IEC 61000-4-30 is a harmonization document for the measurement of power quality. It defines measurement methods, like specific measurement algorithms, and states the appropriate performance requirements for different power quality phenomena for several meter classes.

If power quality meters are operating in exact conformity with IEC 61000-4-30, identical results can be expected. That's very important when the quality of the grid is monitored. Therefore this IEC standard plays a very important role in harmonization of power quality measurements.

Recently, Edition 3 of this standard has been published. In this edition some important new features are implemented, such as current measurements (from informative to normative) and rapid voltage changes (from informative to normative).

TESTING POWER QUALITY METERS AT NMi

At NMi, power quality meters can be examined in accordance with IEC 61000-4-30 Edition 3 while applying the functional tests and uncertainty requirements as stated in IEC 62586-2. The examination is performed in strong cooperation with sister organization VSL, the Dutch Metrology Institute, power quality meters are tested. Using a specific test setup ,the meters are exposed to all power quality phenomena listed in the IEC standard. By comparison between the meter under test and the reference meter, an analysis is made as to whether the meter fulfills the requirements of IEC 61000-4-30. The reference system is fully traceable to the national standard for voltage and current. The results of the examination are then presented in a report listing the data for each individual test.

The NMi-VSL consortium is the only fully independent entity for IEC 61000-4-30 compliance testing world-wide. NMi and VSL are ISO 17025 accredited for testing and calibration. Both IEC 61000-4-30 and IEC 62586-2 are covered by the ISO 17025 accreditation.

INTERESTED?

If you're interested in the examination of power quality meters, we are happy to answer all your questions. Please feel free to contact us at nmi@nmi.nl. On our website, you can find more information about our services.