PQA-FLEX

THE NEXT GENERATION OF POWER QUALITY MEASUREMENT



Power Quality acc. to
IEC 61000-4-30 ed.3



- Power Quality
- Phasor Measurement Unit
- Mixed/Custom Functionality
- Multifeeder Monitoring

The **PQA-FLEX** is designed with a modular architecture, allowing a combination of one CPU module and up to six selected input modules into one meter.

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THE NEXT GENERATION OF POWER QUALITY MEASUREMENT

→ Hardware Architecture

PQA-FLEX is based on modular architecture, allowing a combination of one CPU module and up to six selected input modules into one meter. The input modules provide input signal isolation, filtering and A/D conversion, sending the data using a digital backplane bus. The CPU module is equipped with an FPGA receiving all digital input data, and the real-time controller running meter firmware and provides all interfaces and data storage.

Resulting meter functionality depends on the selected input module type and count, and on the meter firmware.

→ Product Features

POWER QUALITY (PQ)

The firmware calculates power quality parameters according EN50160 fully follows requirements described in IEC 61000-4-30 ed. 3 Class A and others (61000-4-7, 61000-4-15). Using PQA-SCADA, the PQA-FLEX displays real-time and historical data in multiple visualization panels including tables, graphs, single line diagrams, voltage/ frequency profles, vectors, harmonics, digital indicators, maps, historical trends and tables, energy summarization and profles etc.

Main measurement functions:

- U, I, P, Q, S, frequency, THD U, THD I, power factor, energies – AP, AQ, AS, APin, APout, all quantities are per phase and total
- Harmonics – U and I, each harmonic up to 50th (optionally up 180th), optionally supraharmonics 2-9kHz spectra
- All quantitates are calculated on 200 ms (10/12 period basis) according to IEC 61000-4-30 ed. 3
- Voltage quality according to EN50160, IEC 61000-4-30 ed. 3 Class A (U, freq., THD U, flicker, unbalance, harmonics)
- Voltage events according EN50160, IEC 61000-4-30 ed. 3 Class A (dip, swell, interruption – time, extrema, length)
- Waveform capture – in case of trigger, the device captures the waveform
  - Trigger can be activated by selected quantities (U, I, P, Q, S, freq., PF) crosses specified limits
  - Waveform means raw voltage/current signal with sampling rate at 192 or 256 samples/period, waveform length is 50 periods (0.2 s pre-trigger, 1 s length)
  - Waveforms are stored in standard protocol and the device is able to hold at least 100 in local storage
- Data is provided in two ways:
  - Real-time – using standard protocol (MODBUS), refreshed every 200 ms.
  - Historical – the device calculate (gapless) true RMS/average of all above quantities in user predefined intervals and store the data in files in standard protocol. The device can hold these data/files for 12 months in local storage (SD card).
  - The historical data also includes voltage events details according to EN50160
- Additional Features: WAMS - Wide Area Monitoring System

PHASOR MEASUREMENT (PMU)

A PMU delivers accurate synchrophasor measurements using GPS. The firmware measures several variables including voltage and current phasors with a Total Vector Error of less than 0.5 %. Results are compared to the phase angle of the fundamental harmonics measured at different points of the transmission network using several devices in synchronized points in time.

MULTIFEEDER MONITORING (MFM)

The Multifeeder can measure up to ten 3-phase feeders in total. It also provides detailed power and energy consumption details of each feeder.

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