SIEMENS

MULTIFUNCTIONAL POWER QUALITY INSTRUMENT

Sophisticated Power Quality analysis

SICAM Q100

siemens.com/sicam-q100

SICAM Q100 is used for acquisition, visualization, evaluation and transmission of measured values such as magnitudes of voltage and current, frequency, power, flicker, harmonics, interharmonics, transient and PQ events (dip, swell and interruption). Long-term data and events can be transferred to SICAM PQS/PQ Analyzer, PQ Advisor Compact and SENTRON Powermanager via IEC 61850.

Highlights

SICAM Q100 is the ideal solution for monitoring power quality at the point of common coupling (PCC)

Power quality reports according to EN 50160 and IEEE 519 are generated automatically by the device

Parameterization without separate software directly in the web browser

Evaluation of power quality phenomena and voltage events without separate software directly in the web browser

Benefits

- Measurement methods according to IEC 61000-4-30, Ed.3, Class A, guarantee manufacturer-independent comparable measured values
- Standard interfaces and communication protocols, IEC 61850 and MODBUS TCP, as well as data exchange formats, PQDIF, COMTRADE and CSV, guarantee interoperability
- Direction detection of harmonics and voltage events
- Sophisticated cybersecurity features, such as role-based access control (RBAC), https connection for secure data transmission, signed firmware to protect against manipulation and non-volatile storage of SYSLOG events
- Measurements that can be used in court and are in conformity with the contract and relevant standards

Measured characteristics and power quality

- True RMS measurement of voltage and current with approx. 256 samples per cycle (sampling rate 12.8 kHz @ 50 Hz)
- Measurement compliant to IEC 61000-4-30, Ed. 3, class A
- IEC 61000-4-15 flicker meter for measuring Pst, Plt
- IEC 61000-4-7 harmonic and interharmonic measurements up to the 63rd order, incl. harmonic phase angle and harmonics power
- THDS (Subgroup Total Harmonic Distortion) of voltage and current and TDD (Total Demand Distortion)
- Transient detection (100 μs resolution)
- PQ events (dip, swell, interruption) and direction of voltage events
- ITI (CBEMA) and SEMI F47 curve
- ITI (CBEMA) violation alarm
- Rapid voltage changes
- Mains communicating system (MCS)
- Reporting and evaluation according to EN 50160 and IEEE 519

Energy management

- Active, reactive, apparent power and energy, power factor
- Compliant to: IEC 62053-22 accuracy class 0,2 S, ANSI C12.1 electricity meter, accuracy class 0.2
- Accuracy class voltage & current 0.1 %
- Load profile peaks and average power values; time of use (TOU) with 8 tariffs, energy profile records
- 4 quadrant powers: received and delivered / inductive and capacitive
- Calculation of CO_2 emissions

Data export

- PQDIF compliant to IEEE 1159.3 for PQ recordings
- COMTRADE compliant to IEEE C37.111 / IEC 60255-24 for waveform records
- CSV data of measurement recordings

Communication protocols

- Ethernet: IEC 61850, SNMPv3, MODBUS TCP, MODBUS TCP Gateway/Master, with integrated switch
- Serial: MODBUS RTU Gateway/Master for RS485 devices

Cybersecurity

- Role-based access control (RBAC): password protection against unauthorized usage, central user management
- FTPs secure file transfer protocol
- Secured and protected communication via IEC 61850 protocol, web browser communication via https
- Firmware signature: only firmware signed by Siemens will be loaded
- Security log: non-volatile storage of SYSLOG events

Input measuring circuits

- 4 x alternating voltage UL-N / UL-L: up to AC 400 V / 690 V
- 4 x alternating current IL: 1 A / 5 A

Binary inputs / outputs

- 2 binary inputs, 2 binary outputs
- An extension of up to 12 binary inputs and outputs is possible with additional SICAM IO Units

Memory

- 2 GB, storage of PQ data according to EN 50160 for several months

Operation and display

- Graphic display including operation via 4 function keys
- Integrated web server for interaction via web browser interface

Time synchronization

- Ethernet: NTP-Client (Network Time Protocol)

Auxiliary voltage

- AC 110 V - 230 V, DC 24 V - 250 V

Housing specification

- Dimensions: 96 mm x 96 mm x 103 mm (W x H x D)
- IP40 protection for panel flush mounting (front)

↗ Online Shop - Industry Mall

↗ SICAM Power Quality and Measurement Catalog

↗ Tutorial series: Power Quality - Essentials