SICAM Q100

Multifunctional Power Quality Recorder, Class A

Description

The SICAM Q100 multifunctional power quality recorder is used for acquisition, visualization, evaluation, and transmission of electrical measured variables such as magnitudes of voltage and current, frequency, power, harmonics, flicker. The acquisition, processing, and accuracy of measured values and events are performed acc. to the IEC 61000-4-30 Class A power quality measurement standard.

The measured values can be forwarded to a personal computer or power automation/SCADA system via communication interfaces or shown on a display. Measured values can be recorded in parameterizable time intervals with various recorders such as power quality and fault recorder. Long-term data and events are evaluated directly via the web server in the device and can be displayed as a report according to the power quality standards (e.g. EN 50160).

Recorded data can be transferred to SICAM PQS and SICAM PQ Analyzer via IEC 61850 that comfortably evaluate and generate flexible reports (as EN 50160) automatically.

Benefits

- High level of investment security through the use of standards
- Contractual compliance measurements for use in courts
- Detection of the origin of harmonics
- Improved availability
- Roll based access control and secure transmission of sensitive data
- Protection against firmware manipulation
- Open and transparent connectivity and interoperability

Application

SICAM Q100 is the ideal solution for application of power quality measurements at the point of connection and can be used for compliance measurements for use in courts.

Features

- PQ measurement according to IEC 61000-4-30 Class A
- Harmonic, interharmonics and phase angles of the harmonics acc. to IEC 61000-4-7
- Energy management and power monitoring functionality
- Cyber-security functions
- Standard communication protocols and data export formats

Multifunctional and Flexible

Device Characteristics

Measured Characteristics

- True RMS of voltage and current with 2048 sampled values/10 sampling cycles (sampling rate 10.24 kHz @50 Hz)
- Voltage, current, frequency, min-/max-/average values
- Harmonics up to the 63rd harmonic
- Power factor
- Unbalance
- THD of voltage and current
- Limit violations and indications

Power Quality Features

- Measurement compliant with IEC 61000-4-30 Class A
- IEC 61000-4-15 Flicker
- IEC 61000-4-7 Harmonics, incl. harmonic phase angles for harmonic direction
- Reporting and evaluation compliant with EN 50160

Energy Management

- Active, reactive, and apparent power and energy
- Accuracy class active power 0,2S according to IEC 62053-22
- Accuracy class voltage/current 0,1 %
- 8 tariffs, tariff change on load-profile synchronization
- 4 quadrant power: consumption and delivery/inductive and capacitive

Communication Protocols

- Ethernet: IEC 61850, Modbus TCP, Gateway/Master, SNMP
- Serial: Modbus RTU master and gateway function for RS485 devices
- OPC UA PubSub (MQTT) – connection to MindSphere

Data Export

- PQDIF according to IEEE 1159.3, measured value recorder
- CSV data for PQ recordings, measured-value recorder
- COMTRADE according IEEE/IEC, fault records

Security

- Role-based access control (RBAC): password protection against unauthorized usage, central user management
- 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, V_{L-N}/V_{L-L}: AC 400/690 V
- 4 x alternating current, I_N: 1/5 A

Binary inputs / outputs

- 2 digital inputs, 2 digital outputs

Operation and Display

- Graphic display including operation via 4 function keys
- Integrated web server to interact with PC and HTML pages

Time Synchronization

- Via Ethernet: NTP client (Network Time Protocol)

Auxiliary Voltage

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

Housing Specification

- Dimensions: 96 mm x 96 mm x 100 mm (W/H/D)
- IP40

For all products using security features of OpenSSL, the following shall apply:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (www.openssl.org), cryptographic software written by Eric Young (eay@cryptsoft.com) and software developed by Bodo Moeller.