PQM-710

Indeks: WMGBPQM710

Power quality analyzer

Description

PQM-710 power quality analyzer is an advanced product for wide type of measurements, analysis and recording of network parameters 50/60 Hz and the power quality diagnostic according to European standard EN. **PQM-710 is an innovative model with a wireless communication Wi-Fi , which allows for automatic pairing with the included tablet, with a large 10" touch screen.** Tablet allows full operating of the analyzer, live data preview and the reading and analysis of data stored in the internal memory. With this solution, the PQM-710 is an unique device that combines the advantages of the analyzer with built-in display and typical portable analyzers (known as Black Boxes).With the tablet you can very fast checked the device under test. On the other hand, you can leave the analyzer module for multi-measurements as a typical logger without display. You can very fast diagnose the machine under test using the tablet. On the other hand, you can leave the analyzer module itself for many days measurement as a typical logger without display.

Analyzer is addressed to a wide range of users who need to control the power quality with a mobile device, it meets the IEC 61000 standards for the Class A. Compliance with the standard includes measurement uncertainty, measurement methods and time synchronization with a reference signal. In case of using analyzer indoor with poor GPS signal additional antenna with 10 meters cable can be used. After placing antenna outside the GPS signal will be easily traced and used for internal clock synchronization.

In practice, the analyzer may be used with all network types with rated voltage from 110 V to 760 V, directly or indirectly via transducers. It works in the following networks:

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- one-phase,
- split-phase with N wire,
- three-phase Wye type, with and without N wire,
- three-phase delta type,
- with constant voltage.

Thanks to these features PQM-710 can be used in power industry and industrial maintenance services, as well as in companies leading network analysis services.

Technical Specification

Possible measurements:

- Measurements according to EN 50160
- Voltage L1, L2, L3, N-PE
  - average, minimum, maximum and instantaneous values, range to 760V, ability to work with voltage transformers,
- Current L1, L2, L3, N (four inputs)
  - average, minimum, maximum and instantaneous values, measurement current with range to 3 kA (depends on used clamp), ability to work with current transformers,
- Crest factor for voltage and current,
- Frequency from 40Hz to 70Hz ,
- Active, reactive, distortion, apparent power, including the type of reactive power (capacitive, inductive),
- Power recording:
  - Budeanu method,
  - IEEE 1459,
- Active, reactive, apparent energy,
- Power factor, cosφ, tgφ,
- K factor (transformer overload caused by the harmonics),
- Up to 50^{th} harmonics for voltage and current,
- Total Harmonic Distortion (THD) for voltage and current,
- Short-term (P_{ST}) and long-term (P_{LT}) flicker,
- Unbalance of voltage and current,

- Current events detection including waveforms recording,
- Current and voltage waveforms recording after each averaging period.

The device is designed to work with networks:

- with nominal frequency 50/60Hz,
- with nominal voltage:
  64/110 V; 110/190 V; 115/200 V; 127/220 V; 220/380 V; 230/400 V; 240/415 V; 254/440 V; 290/500 V; 400/690 V,
- DC network

Supported networks:

- single-phase,
- two-phase with common N conductor,
- three-phase star connection with and without N conductor,
- three-phase delta.

Specification		Range	Resolution	Accuracy
AC voltage (TRMS)	-	0,0...760,0 V	0,01 % U_n	±0,1% U_n
Crest Factor	Voltage	1,00...10,00 (≤1,65 for voltage 690 V)	0,01	±5%
	Current	1,00...10,00 (≤3,6 I_{nom})	0,01	± 5% m.v.
AC current TRMS	-	depends on the clamp*	0,01 % of nominal range	±0,1% of nominal range (add clamps accuracy)

Frequency	-	40,00...70,00 Hz	0,01Hz	±0,01 Hz
Active, reactive, apparent power and distortion	-	depends of configuration (transformers, clamp)	up to 4 decimal places	depends on configuration (transformers, clamp)
Active, reactive apparent energy	-	depends of configuration (transformers, clamp)	up to 4 decimal places	the same as above
cosφ and Power Factor (PF)	-	0,00...1,00	0,01	±0,03
tgφ	-	0,00...10,00	0,01	depends on Active and Reactive power accuracy
Harmonics	Voltage	same as for AC voltage TRMS	same as for AC voltage TRMS	±5% U_h for $U_h \geq 1\%$ Un ±0,05% U_n for $U_h < 1\%$ U_n
	Current	same as for AC current TRMS	same as for AC current TRMS	± 5% I_h for $I_h \geq 3\%$ I_n ± 0,15% I_n for $I_h < 3\%$ I_n
Total Harmonics	Voltage			±5%

Distortion	Current	0,0..100,0%	0,1%	±5%
Harmonics active and reactive power	-	depends on configuration (transformers, clamp)	depends on current and voltage minimum value	-
Angle between voltage and current harmonics	-	-180,0... +180,0^{o}	0,1^{o}	±(h x 1^{o})
K-Factor	-	1,0...50,0	0,1	±10%
Flicker	-	0,20...10,00	0,01	±5%
Unbalance	Voltage and Current	0,0...20,0%	0,1%	±0,15% (absolute error)

*Clamp F-1/F-2/F-3:0..3000 A (10000 A_{p-p}) *Clamp C-4: 0..1000 A (3600 A_{p-p})*Clamp C-5: 0..1000 A (3600 A_{p-p})*Clamp C-6: 0..10 A (36 A_{p-p}) (without current transformers) *Clamp C-7: 0...100 A (360 A_{p-p})