



PQM-703

Indeks: WMGBPQM703

Power quality analyzer

Description

Power quality analyzer PQM- 703 is a technically advanced product that allows for comprehensive measurements of the quality of electricity , analysis and recording of power network parameters, for frequencies 50/60 Hz in accordance with European standard EN 50160. PQM -703 is another representative of a well, known family of analyzers line PQM- 70x . In relation to the PQM -702 has new functions like recording of transients with max. sampling frequency 10 MHz (rapid changes in voltage) and control signals. Minimal transient capturing time is 650 ns. It is intended for a very wide range of users who need to control the quality of power with a mobile device , which fulfills the requirements of a multi-sheet standard IEC 61000 for class A analyzers. This applies to measurement accuracy, measurement methods, and synchronization of time with a standard signal. The last condition is met with a built-in GPS module with an internal antenna. If the analyzer is installed inside, it is possible to use an additional antenna with a 10m-long wire. If the antenna is situated outside, GPS signal will be attainable without any problems and used for the synchronization of an internal clock.

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:

- one-phase,
- split-phase with N wire,

- three-phase Wye type, with and without N wire,
- three-phase delta type,
- DC voltage.

Thanks to these features PQM -703 can be used in power engineering and maintenance services fields for industrial plants , as well as by persons providing services in the power network analysis field.

Press article: [Very new and very fast power quality analyzer - PQM-703](#)



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, $\cos\varphi$, $\text{tg}\varphi$,

- K factor (transformer overload caused by the harmonics),
- Up to 50th 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.
- Mains signalling up to 3000 Hz.
- Transients up to ± 6000 V, minimal transient capturing time is 650 ns.
- All parameters meet Class A acc. IEC 61000-4-30 standard.

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	$\pm 0,1\%$ U_n
Crest Factor	Voltage	1,00...10,00 ($\leq 1,65$ for voltage 690 V)	0,01	$\pm 5\%$

	Current	1,00...10,00 ($\leq 3,6 I_{nom}$)	0,01	$\pm 5\%$ m.v.
AC current TRMS	-	depends on the clamp*	0,01 % of nominal range	$\pm 0,1\%$ of nominal range (add clamps accuracy)
Frequency	-	40,00...70,00 Hz	0,01Hz	$\pm 0,01$ 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
$\cos\phi$ and Power Factor (PF)	-	0,00...1,00	0,01	$\pm 0,03$
$\text{tg}\phi$	-	0,00...10,00	0,01	depends on Active and Reactive power accuracy
	Voltage	same as for AC voltage TRMS	same as for AC voltage TRMS	$\pm 5\% U_h$ for $U_h \geq 1\%$ U_n $\pm 0,05\% U_n$ for $U_h < 1\%$

Harmonics				U_n
	Current	same as for AC current TRMS	same as for AC current TRMS	$\pm 5\% I_h$ for $I_h \geq 3\% I_n$ $\pm 0,15\% I_n$ for $I_h < 3\% I_n$
Total Harmonics Distortion	Voltage	0,0..100,0%	0,1%	$\pm 5\%$
	Current			$\pm 5\%$
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°	0,1°	$\pm(h \times 1^\circ)$
K-Factor	-	1,0...50,0	0,1	$\pm 10\%$
Flicker	-	0,20...10,00	0,01	$\pm 5\%$
Unbalance	Voltage and Current	0,0...20,0%	0,1%	$\pm 0,15\%$ (absolute error)
Mains signalling	Voltage	5...3000 Hz	0,01 Hz	$\pm 0,15\% U_h$ for 1...3% U_h ,5% U_h for 3...15% U_h

Transients (max. 10 MHz)		± 8000 V	5 V	$\pm(5\% + 25$ V)
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*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})