



## PQM-707

Indeks: WMGBPQM707

Power quality analyzer

### Description

Power Quality Analyzer Sonel PQM-707 is an autonomous meter allowing for versatile measurement, analysis, and registration of energy networks parameters DC and 50/60Hz, including the quality of electric energy in accordance with the **European standard EN 50160** and the Regulation of the Minister of Economy on detailed conditions of the electro-energetic system functioning. **All parameters are measured in the S class of the IEC 61000-4-30 STANDARD** guaranteeing high accuracy of measurements. The largest in this class of analyzers 7-inch colour touch screen enables intuitive and ergonomic operation. Thanks to the built-in lithium-ion battery, the analyzer allows for efficient work during the measurement without the necessity of connecting an external AC adapter.

The analyzer is directed to a very wide range of users, with particular reference to the maintenance staff. Due to its mobility and autonomy, any problems occurring in the supply networks can be diagnosed on the spot. **High measurement category (CAT IV 600V) makes the analyzer very safe**, which provides peace of mind during every day use.

The analyzer can be used in virtually **all kinds of networks with rated voltage from 54V to 760V** directly, or indirectly via transformers.

Because of that PQM-707 can be used in the field of professional power engineering, maintenance services in industrial plants, as well

as among those providing services focused on network analysis.

### **Features:**

- 7" touch screen - intuitive operating
- CAT IV 600V - high safety
- all parameters acc. to class S - high accuracy of measurements
- Li-Ion rechargeable battery - higher mobility
- removable memory card - recording data with no restrictions

### **Possible measurements:**

- Measurements according to EN 50160,
- Voltage L1, L2, L3, N-PE (five inputs),
  - average, minimum, maximum values, range to 760 V, ability to work with voltage transformers,
- Current L1, L2, L3, N (four inputs),
  - average, minimum, maximum 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 40 Hz to 70 Hz ,
- 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,  $\cos\phi$ ,  $\text{tg}\phi$ ,
- Up to 50th harmonics for voltage and current,
- Total Harmonic Distortion (THD) for voltage and current,
- Short-term (PST) and long-term (PLT) flicker,
- Unbalance of voltage and current,
- Current and voltage events registration including waveforms and RMS graphs half period,
- Inrush current
- Calculator of energy tariffs
- **ANALYZER MEASURES AND RECORDS ACCORDING TO THE IEC 61000-4-30 CLASS S STANDARD.**

## **Technical Specification**

**The device is designed to work with networks:**

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

### Supported networks:

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

### Parameters of analyzer:

Parametr		Measurement range	Max. resolution	Accuracy
Alternating voltage (TRMS)	-	0,0...760,0V	0,01 % $U_{nom}$	$\pm 0,5\% U_{nom}$
Crest Factor	Voltage	1,00...10,00 ( $\leq 1.65$ for 690 V voltage)	0,01	$\pm 5\%$
	Current	1,00...10,00 ( $\leq 3,6 I_{nom}$ )	0,01	$\pm 5\% w_m$
Alternating current TRMS	-	depending on clamp*	0,01 % $I_{nom}$	$\pm 2\%$ m.v. for m.v. $\geq 10\% I_{nom}$ $\pm 2\% I_{nom}$ for m.v. $< 10\% I_{nom}$ (error does not account for clamps error)

Frequency	-	40,00...70,00 Hz	0,01Hz	±0,05 Hz
Active, reactive, apparent and distortion power	-	depending of configuration (transformers, clamp)	up to for decimal places	depending on configuration (transformers, clamps)
Active, reactive apparent energy	-	depending of configuration (transformers, clamp)	up to for decimal places	as power error
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 error
Harmonics	Voltage	as for alternating voltage True RMS	as for alternating voltage True RMS	±5% m.v. for m.v. ≥ 3% U <sub>nom</sub> ±0,15% U <sub>nom</sub> for m.v. < 3% U <sub>nom</sub>
	Current	as for alternating voltage True RMS	as for alternating voltage True RMS	±5% m.v. for m.v. ≥ 10% I <sub>nom</sub> ±0,5% I <sub>nom</sub> for m.v. < 10% I <sub>nom</sub>
	Voltage	0.0..100.0%		±5%

THD	Current	in regards to the rms value	0,1%	±5%
Flicker severity P <sub>ST</sub> , P <sub>LT</sub>	-	0,40...10,00	0,01	±10%
Voltage asymmetry	Voltage and current	0,0...10,0%	0,1%	±0,15% (absolute error)
Inrush current	-	depending on clamp*	0,01% I <sub>nom</sub>	±4% m.v. for m.v. ≥ 10% I <sub>nom</sub> ±4% I <sub>nom</sub> for m.v. < 10% I <sub>nom</sub> (RMS <sub>1/2</sub> )

\*Clamp F-1A, F-2A, F-3A: 0..3000 A (10000 A<sub>p-p</sub>) \*Clamp C-4A: 0..1000 A (3600 A<sub>p-p</sub>) \*Clamp C-5A: 0..1000 A (3600 A<sub>p-p</sub>) \*Clamp C-6A: 0..10 A (36 A<sub>p-p</sub>) \*Clamp C-7A: 0...100 A (360 A<sub>p-p</sub>)