

# Network Quality Analyser

NSQ400 Analyser with NSQ Soft PC software is a three phase network and power quality analyser. The analyser is able to measure of power net parameter according to IEC61000-4-30 class A in the real time or it is able to record the parameters in the internal flash memory, in some cases even for several months (64MB memory). The results of measuring or recording can be sent to PC compatible computers via modem, RS232 or RS485 interface for visualisation of measurements results in real time mode or analysing for EN 50160 compatibility or individual requirements of user's.



The NSQ400 measure and record:

- four voltages: U1, U2, U3 up to 500V and UN up to 300V,
- five currents: I1, I2, I3, IN, IE up to 6A (direct input), and up to 10/100/1000A by using current clamps, and up to 30/300/3000A with flexible clamps,
- phase angles and angles between voltages,
- frequency,
- active, reactive and apparent power in four quadrants,
- voltage symmetry,
- harmonics for U, I, P and Q up to 63<sup>rd</sup>,
- THD up to 63<sup>rd</sup> harmonic for U and I,
- Total Interharmonic Distortion TID for U and I,
- Signal Voltage for U up to 2kHz,
- short and long term flicker measurement Pst and Plt.

The results of measuring can be:

- sent to PC via interface or modem in real time mode for visualization them in real time mode,
- stored in internal flash memory with possibility of reading them by means of PC and calculating additional parameters: voltage dips, short and long interruptions, overvoltages. The user can specify a set of profiles determining which kind of results should be stored and which can be ignored.

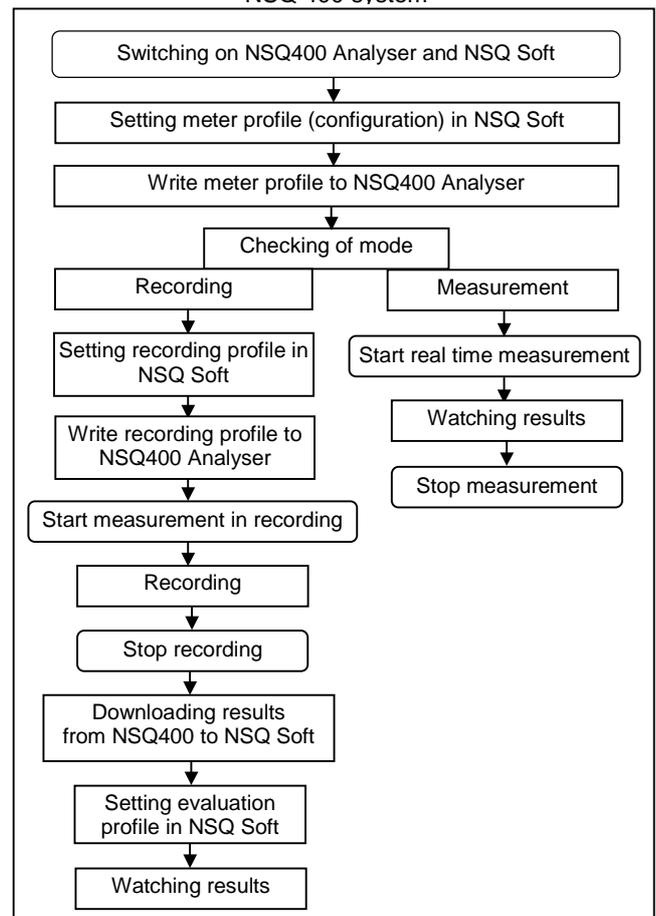
The NSQ400 analyser has been built in portable plastic case. Internal accumulator is able to record during interruptins in power network (15 pcs of 2 min interruptions).

## NSQ400

### NSQ400 Network Quality Analyser

- Three voltage inputs up to 500V and fourth up to 300V
- Five current inputs up to 6A (with clamps up to 3000A)
- Measure of parameter acc. to IEC61000-4-30 class A
- Function of real time measurement
- Function of long time recording – 64MB memory
- Configuration and reading via interface and modem
- Quality analysing for EN 50160

### Procedure of measurement, recording and analysing - NSQ 400 system



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NSQ400 data sheet 2012-01

## TECHNICAL PARAMETERS OF NSQ400 SYSTEM

Function / parameter	Range	Limits of error	Measuring canal
Voltage	0...500V	±0.1% @ 300V ±0.2% @ 57V	U1, U2, U3
Voltage	0...300V	±0.1% @ 300V ±0.2% @ 57V	UN
Direct current	0...6A	±0.1% of FS ±2mA	I1, I2, I3, IN, IE
Current with clamps 10A	0.1...10A	±0.5% ±0,1% of FS	I1, I2, I3, IN, IE
Current with clamps 100A	1...100A	±0.5% ±0,1% of FS	I1, I2, I3, IN, IE
Current with clamps 1000A	10...1000A	±0.5% ±0,1% of FS	I1, I2, I3, IN, IE
Current with flex 30/300/3000A	0.3...30A 3...300A 30...3000A	±1% ±0.1% of FS	I1, I2, I3, IN, IE
Phase angle direct connection with clamps	0...±360°	±0.7° ±1.7°	L1, L2, L3
Angle between voltages	0...±360°	±0.7°	U1, U2, U3
Frequency	45...65Hz	±0.05Hz	U1 lub U2 lub U3
Power and energy direct connection with clamps	acc. Voltage and current ranges	±0.5% ±0.1% of FS ±1% ±0.1% of FS	L1, L2, L3
Voltage symmetry	0...200%	±2%	U1, U2, U3
Harmonic content in voltages, current and P+Q powers	1 <sup>st</sup> ...63 <sup>rd</sup>	±10%	L1, L2, L3
Total harmonic distortion THD in voltages and current	1 <sup>st</sup> ...63 <sup>rd</sup>	±10%	L1, L2, L3
Total interharmonic distortion TID in voltages and current	up to 3.2kHz	±10%	L1, L2, L3
Signal voltage **)	up to 2kHz	±10%	U1, U2, U3
Flicker Pst and PIt	0.1...25Hz	±5%	U1, U2, U3
Temperature additional error	0,1 of limits error / 1°C in ambient temperature range +5...+20°C and +26...+40°C		
Power supply	85...230..265 / 45..65Hz / 15VA		
Dimensions and weight of analyser	265 / 175 / 243 mm / 3.7kg		
Dimensions and weight of analyser set	420 / 280 / 370 mm / 8.1kg		
*) power and energy error with respect to apparent power			
**) the highest non-harmonic amplitude and frequency			

## NSQ400 ANALYSER'S EQUIPMENT

The NSQ400 set is put in the plastic case for carrying in case state and for working in open state with analyser in hard conditions on the site.

The NSQ400 standard set consists of:

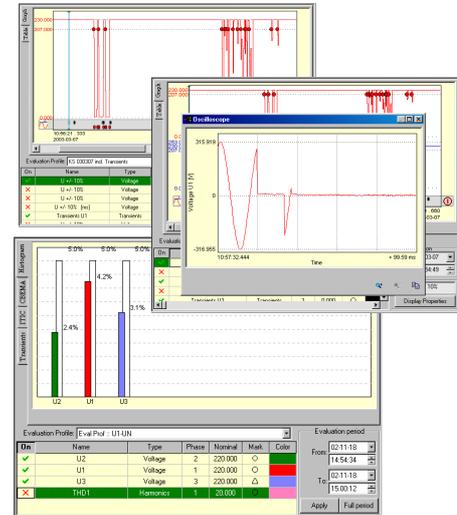
- NSQ400 analyser,
- power cord,
- RS232 cable and USB-RS232 adapter,
- set of safety voltage cables (5units),
- set of safety current cables up to 20A (10units),
- set of accessories for safety cables (15units banana plug +15units Cu),
- NSQ Soft software,
- user's manual,
- guarantee certificate,
- manufacturer's calibration certificate.

Optionally the NSQ400 set may be equipped in:

- Laptop computer,
- CT10A electronic compensated clamps up to 10A (5pcs),
- CT100A electronic compensated clamps up to 100A (5pcs),
- CT1000A electronic compensated clamps up to 1000A (5pcs),
- FCT3000A electronic compensated flexible clamps in ranges 30/300/3000A (5pcs),
- KAS100 transportation case for portable work.

## SOFTWARE NSQ SOFT

- configuration of NSQ400 analyser,
- reading of measurements results in real time measurement mode or storing in recording mode,
- visualisation of measurements results in tables and time, oscilloscope and vector charts and histograms,



- filtering of reading data by means of evaluation reading profile and statistic working for visualisation of results in histograms forms, CBEMA and ITIC charts forms,
- export of data to MS Excel with enables later their processing according to user's requirements,
- saving and reading data and from files for making archives of measurements.



View of NSQ400 set