NEW

- PORTABLE POWER QUALITY ANALYZER

SA200 power quality analyzer is the professional portable device to measure and analyze the power system quality. supply the harmonics analysis and power quality data analysis. also provide big memory for the data storage. which is used to make the long term logger measuring to power system. The PC software can simply upload the data to PC for full analysis.

FEATURES

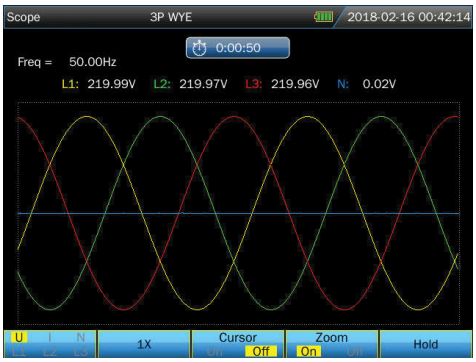
- 5.6" TFT color screen. 640 x 480 pixel.
- Waveform real-time display (4 voltages/4 currents).
- Half cycle RMS measurement (voltage and current).
- Measurement of TRMS currents up tp 6000 A (with additional probes mode).
- Measurement in 1-phase and 3-phase systems (3 - and 4-wire).
- Measurement of voltage. current. harmonics. power. energy. inrush current. flicker and other.
- Graphical presentation of data in a waveform and vector diagram.
- Record of events: dips. swells. overvoltages.
- Power quality according to EN-50160 standard or user-defined limit.
- Registration of user-defined parameters in the 32GB internal memory (frequency of registration from 1 second up to 60 minutes. registration time from 2 h up to 1 year).
- Ethernet interface for remote operation of the analyzer.
- USB Host to move archive data and screenshots to an external USB memory.
- Safety standards: EN 61010-1. CAT III 1000V / CAT IV 600V.
- The analyser set: analyzer. voltage tests leads aligator clips (5x). DC power adapter. CD with software. user's manual.

Electrical Safety 600 V CAT IV

Electrical Safety 1000 V CAT III

PORTABLE POWER QUALITY ANALYZER

MEASUREMENTS MODES



1 Scope

View the voltage/current waveform and readings. Cursor Zoom function.

2 Voltage/Current/Frequency

Measure voltage/current/frequency and crest factor.

3 Dips & Swells

Capture the abnormal event. such as swells. dips. interruption and rapid voltage change.

4 Harmonics

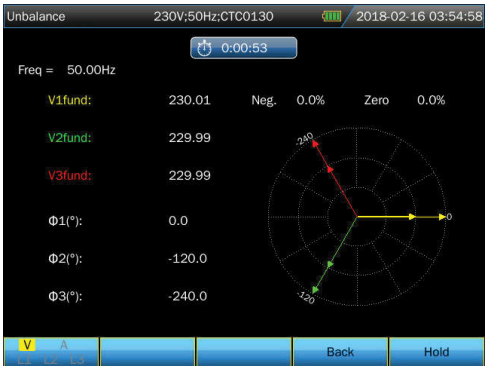
Harmonics and interharmonics measurement up to the 50th. parameter DC component. THD. K-factor.

5 Power and energy

Full power parameters measurement including Vrms/Arms/KW/KVA/KVAR/ TPF/DPF and energy data KWh/ kVAh/kVARh.

6 Flicker

Support measure the parameters Pst (<10 min). Plt (<2 hrs). also Pst (1 min) for quick feedback and instant flicker pinst in trend.

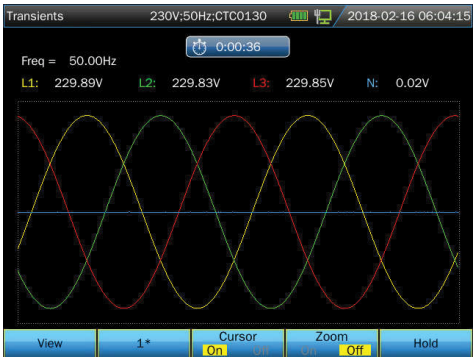


7 Unbalance

Check the unbalance in 3 phases based on EN 61000-4-30 standard.

8 Transients

Capture waveform at high-resolution during a variety of disturbances. maximum 100 events. sample rate 20Ks/s.



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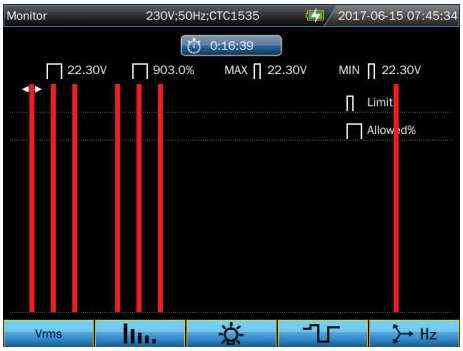
MEASUREMENTS MODES

9 Inrush current

Capture the surge currents that occur in a large or low-impendance load comes on line.

10 Logger

Record the measuring data as selectable parameters and interval. duration. The saved data in TF card. which can be downloaded to PC by USB and check by Power View software.



Monitor

Measure all the parameter Vrms. Arms. harmonics. flicker. dip. swell. rapid voltage change. interruption. unbalance. frequency at the same time. checkwhether meet the requirements limited by users or default standards EN50160. The monitoring time lasts from 2 hours to 7 days.

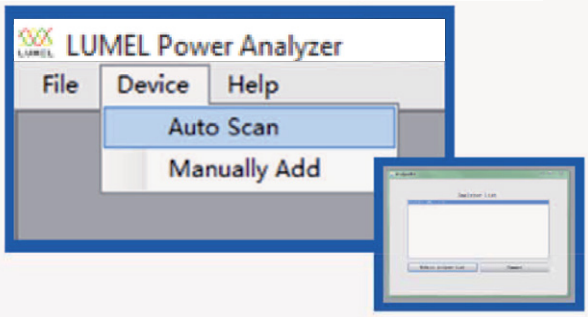
12 Wave Record

The waveform of voltage and current could be recorded through this function, the sample rate is up to 20k and the duration time is settable.

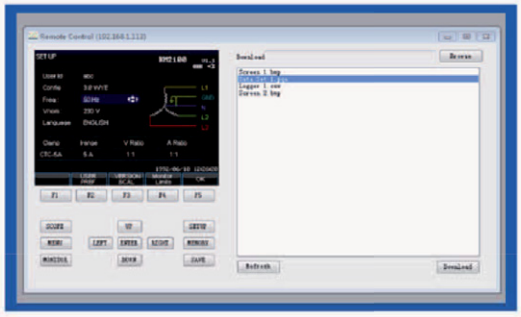
LUMEL POWER ANALYZER SOFTWARE

Power Analyser is easy operation software to make the remote control to analyzer and view the download data.

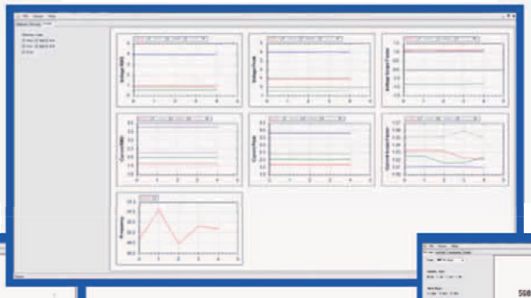
AUTO Scan the device connected to PC through LAN interface



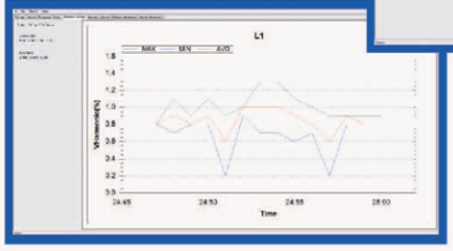
Remote control interface



Monitor the user-demanded parameters



Visual view of data trend (max. min. average)



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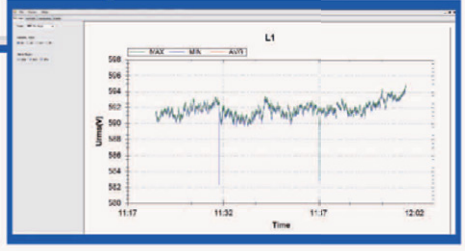

PORTABLE POWER QUALITY ANALYZER

TECHNICAL DATA

▶ INPUTS

VOLTAGE INPUTS	
Input Channels	4 (3-phase + neutral)
Max. input voltage	1000 Vrms
Range of nominal voltage	50...500V
Max pulse peak voltage	6kV
Bandwidth	>3kHz
Input impedance	4MΩ/5pF
CURRENT INPUT	
Number of input	4 (3-phase+ neutral) DC coupling
Type	clamp current sensor with mV output
Input range	depends on the CT clamps: 5A/50A/100A/1000A/1500A/3000A/5000A/6000A
Input Impedance	100 kΩ
Bandwidth	>3kHz
SAMPLING SYSTEM	
Resolution	8 channels 16 bits AD
Sampling rate	163.84kS/s for each channel. 8 channels sample synchronously
RMS sampling	5000 points for 10/12 cycles (according to EN 61000-4-30)
PLL synchronizacja	4096 points for 10/12 cycles (according to EN 61000-4-7)

▶ MEASUREMENT

		Measurement range	Resolution	Accuracy
VOLTAGE/CURRENT/FREQUENCY				
Vrms (AC+DC)		1 ~ 1000 Vrms	0.01 Vrms	± 0.1% of nominal voltage
Vpk		1 ~ 1400 Vpk	0.01 Vpk	± 0.5% of nominal voltage
V (crest factor))		1.0 ~ >2.8	0.01	± 5%
Arms (AC)	10mV/A	0~150 A	0.01A	± 0.1% ± 0.1A
	1mV/A	1~ 2000 A	0.01A	± 0.1% ± 0.1A
	65mV/1000A	10~6000A	0.01 A	±1% ±2A
A (crest factor)		1 ~ 10	0.01	± 5%
Frequency		42.5 ~ 57.5 Hz (nominal 50 Hz)	0.01Hz	± 0.01 Hz
		51 ~ 69 Hz (nominal 60 Hz)	0.01Hz	± 0.01 Hz
		320~480 (nominal 400 Hz)	0.01 Hz	± 0.01 Hz
DIPS & SWELLS				
Vrms1/2		0 ~ 200% of nominal voltage	0.01 Vrms	± 0.2 %
Arms1/2		dependent on CT clamps	0.01 A	± 1%

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▶ MEASUREMENT

	Measurement range	Resolution	Acuuracy
HARMONIC			
Harmonnic number	1 ~ 100 (50/60 Hz); 1~12 (400 Hz)		
Harmonic voltage	0.0 ~ 100.0%	0.01%	±0.1% ± nx0.1%
Harmonic current	0.0 ~ 100.0%	0.01%	±0.1% ± nx0.1%
THD	0.0 ~ 100.0%	0.01%	±2.5%
Phase	-180°~180,0°	0,1°	± nx 0,1°
POWER & ENERGY			
Active power P (kW). apparent power S (kVA). reactive power Q 9kvar)	max 6000 MW	0.1kW	± 1 ±10 characters
Kilowatt-hour	depending on the rated voltage and CT clamps		± 1 ±10 characters
Power factor (TPF)	0 ~ 1	0.01	± 0.1 %
FLICKER			
Pst (1min). Pst. Plt. PF5	0.00 ~ 20.00	0.01	±5%
UNBALANCE			
Voltage	0.0 ~ 20,0%	0.1%	± 0.1%
Current	0.0 ~ 20.0%	0.1%	± 1%
Voltage phase	-360° ~ 0°	0.1°	± 0.1°
Current phase	-360° ~ 0°	0.1°	± 0.5°
VOLTAGE TRANSIENT			
Vpk	±6000 Vpk	1V	±15%
Vrms	10 ~ 1000Vrms	1V	±2.5%
Min. Test Time	6.5 µs		
Sampling rate	163.84kS/s (50/60Hz)		
INRUSH CURRENT			
Arms (AC+DC)	depending on CT clamps	0.01	±1% ± 5 digits
Inrush duration	1s ~ 32min selectable	10 ms	±20 ms
LOGGER			
Recording	user-definded parameters for 4 phases at the same time		
Memory	data stored in TF card. 32GB		
Duration time	2 hrs to 1 year		
Interval	1s to 1 hr		

PORTABLE POWER QUALITY ANALYZER

GENERAL CHARACTERISTICS

DISPLAY	
Screen	color TFT LCD
Size	5.6 inch
Resolution	640×480
Brigthness	adjustable
HOUSING	
Protection	protection shield. strong
IP	IP51. acc. to EN 60529
INTERFACE	
USB Host	Download file to PC by U disk for analyze with PC software.
LAN	For remote control of the analyzer and measurement data transmission.
GPS (option)	Activated with an additional external receiver.
WiFi	For remote control of the analyzer and measurement data transmission.
MEMORY	
FLASH memory	128MB
Tf card	32GB
MECHANICAL	
Dimension	270× 190 × 66mm
Weight	2.0 kg
ENVIROMENT	
Working temperature	0°C~ 40°C
Storage temperature	-20°C~ 60°C
Humidity	90% relative humidity
POWER	
Adapter input	90~264V
Adapter output	9V 2.2A
Battery	rechargeable lithiumion 7.4V 5200mAh
Battery working time	> 7 hours
Battery charge time	4 hours
STANDARD	
Measurement method	EN 61000-4-30 Class-A
Measurement performance	EN 1000-4-30 Class-A
Power quality monitoring	EN 50160
Flicker	EN 61000-4-15
Harmonic	EN 61000-4-7
ELECTRICAL SAFETY	
Comply with	EN 61010-1
MAx. voltage at voltage input	600V CAT IV. 1000V CAT III
Max. voltage at current input	30V

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THE SPECIFICATION OF ADDITONAL EQUPIMENT (CURRENT CLAMPS/ ROGOWSKI COILS)

Model	Range	Turns ratio	Accuracy	Size mm
KLC8C-5A (clamps)	5A	10mV/A	0.2%	Φ8
CTC0080 (clamps)	50A	10 mV/A	0.2%	Φ8
CTC0130 (clamps)	100A	10 mV/A	0.2%	Φ13
CTC1535 (clamps)	1000A	1 mV/A	1.0%	Φ52
PY-3000A (Rogowski coils)	3000A	65 mV/1000A	1.0% (+2% position error)	Φ162
PY-5000A (Rogowski coils)	5000A	50 mV/1000A	1.0% (+2% position error)	Φ143
ETCR035AD (clamps)	1000A ac/dc	1mV/A	±3%	30x35
SY-1500A (Rogowski coils)	1500A	100mV/1000A	±0,5% (+position error)	Φ111
SY-6000A (Rogowski coils)	6000A	65mV/1000A	±1% (+position error)	Φ255

ORDERING CODE

Table 1. ordering code:

Portable power quality analyzer -	X	XX	X	X
Additional equipment:				
lack	0			
4 pcs. Rogowski coils PY 3000 A	1			
4 pcs. Rogowski coils PY 5000 A	2			
4 pcs. current clamps KLC8C 5 A	3			
4 pcs. current clamps CTC0080 50 A	4			
4 pcs. current clamps CTC0130 100 A	5			
4 pcs. current clamps CTC1535 1000 A	6			
4 pcs. current clamps ETCR035AD 1000A ac/dc	7			
4 pcs. Rogowski coils SY 1500A	8			
4 pcs. Rogowski coils SY 6000A	9			
Version:				
standard		00		
custom-made*		XX		
Language:				
Multilanguage (Polish/English)			M	
other*			X	
Acceptance tests:				
without extra requirements				0
with an extra quality inspection certificate				1
with a calibration certificate				2
acc. to customer's request*				X

* after agreeing with the manufacturer