

Power network analyser and energy meters tester



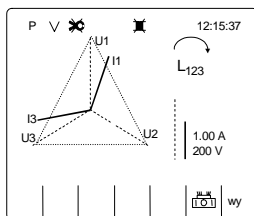
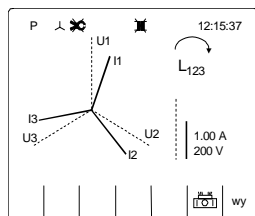
Analyser Calport 100A (version with 10A direct current range) is a portable electronic device that combines:

- multifunction - verification of power network wiring, measure of power network parameters, harmonics analysis, checking of energy meters,
- wide current range 0,001..3000A,
- high accuracy 0,1% or 0,2%,
- multi – variant data entering - digital and graphical display, internal memory, local printing, transmission by interface and analysis on PC computer).

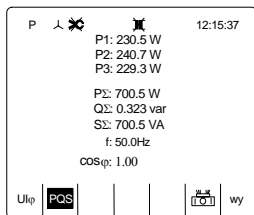
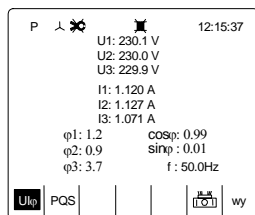
Calport 100A

Calport 100 Portable Analyser and Tester

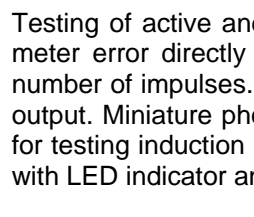
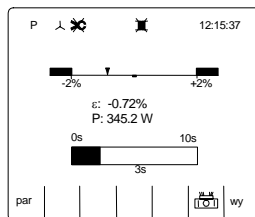
- Vector chart of three phase power network
- Measure of power network parameters (class 0,1 or 0,2)
- Range 0,001...10(100)(1000)(30/300/3000)A i 10...480V
- Testing of energy meters
- Voltage, current and power harmonics analysis
- Powering from measurement network



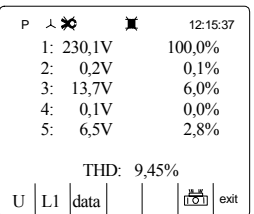
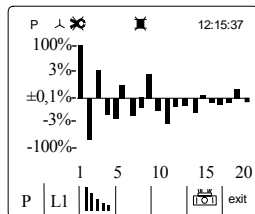
Verification of power network wiring in "star" and "delta" connection – graphical display of three phase voltage and current vector.



Measure of three phase power network parameters – digital measure of voltages, currents, active, reactive and apparent power one and three phase, phase shifts and $\cos\phi$, active and reactive energy, frequency. Programming of voltage and current transformers ratios



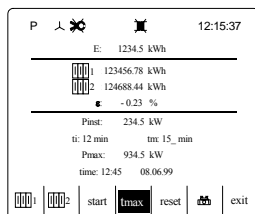
Testing of active and reactive energy meters directly on site – functions of computing meter error directly in percentages with method of setting time of measurements or number of impulses. Input in S0 standard is used to testing energy meters with impulse output. Miniature photo head CF101 is used to automatic counting of meter rotor turns for testing induction meters. Photo head CF100 is used to automating testing of meters with LED indicator and manual counting of rotor turns with using "start/stop" button.



Full harmonics analysis of phase voltages and currents as well as up to 20th harmonic analysis of active and reactive power for diagnostic of distortion sources. Graphical and numerical presentation of results.

Printout from portable printer

DATE	2008.1999
TIME	08.46.24
CLIENT	MARKS AND JOHN WOODWARD STREET 5 TEL: 44 1536 201244 FAX: 44 1536 405704 CS2 12560998
SER. NO.	1007 SA
COMMENT	3 PHASE METER TYPE CS2 CL2 BROKEN LEADEN SEAL OPENED CURRENT CIR.
U1	230.1 V
U2	230.0 V
U3	229.9 V
I1	1.120 A
I2	1.127 A
I3	1.071 A
P1	230.5 W
P2	240.7 W
P3	229.3 W
QS	0.323 var
PS	700.5 W
SS	700.5 VA
f	50.0 Hz
cosφ	0.99
φ1	1.2°
φ2	0.9°
φ3	3.7°
comp	0.96
f	50.0 Hz
L123	1.127
ERROR	0.23 %
CONST	1000 Imp/kWh



Measure of active and reactive energy with method of setting time periods for verification of energy meter counters and testing of maximum power meters as well as measure maximum powers.

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Calport100A data sheet 2007-03

TECHNICAL PARAMETERS OF CALPORT 100A

Function / parameter	Range	Error **)	
		class 0,1	class 0,2
Voltage	10,00...480,0V 40,00...480,0V 10,00...40,00V	±0,1% ±0,1%*	±0,2% ±0,2%*
Line voltage	17,00...832,0V 70,00...832,0V 17,00...70,00V	±0,1% ±0,1%*	±0,2% ±0,2%*
Direct current	0,0010...10,000A 0,0500...10,000A 0,0010...0,0500A	±0,1% ±0,1%*	±0,2% ±0,2%*
Current with clamps 100A	0,05...100,0A 5,00...100,0A 0,05...5,00A	±0,2% ±0,2%*	±0,2% ±0,2%*
Current with clamps 1000A	5,0...1000A	0,5%	0,5%
Current with flex	0...30A/300A/3000A	±1% of range	±1% of range
Power and energy direct measure	0,1...10A / 40...480V 0,001...0,1A / 10...40V	±0,1% ±0,1%*	±0,2% ±0,2%*
Power and energy measurement by clamps	5...100A / 40...480V 0,05...5A / 10...40V	±0,2% @ cos=1 ±0,3% @ cos=0,5 ±0,2%* @ cos=1 ±0,2%* @ cos=0,5	±0,2% @ cos=1 ±0,3% @ cos=0,5 ±0,2%* @ cos=1 ±0,2%* @ cos=0,5
Power and energy measurement by clamps	5...1000A / 40...480V	0,5%	0,5%
Resolution of energy meter error measurement "ε"		0,01%	0,01%
Phase shift direct connection with clamps	0,0...±360,0°	±0,4° ±0,5°	±0,4° ±0,5°
Power factor cos φ and sin φ	0,00...±1,00	±0,01	±0,01
Frequency	45,0...65,0Hz	±0,1Hz	±0,1Hz
Ambient temperature	0...+40°C operating, -25...+60°C transportation		
Power supply	85..230..265 / 45..65Hz / 8VA (12VA with printer)		
Dimensions and weight of analyser	270 / 240 / 180 mm / 4,5 kg		
Dimensions and weight of analyser set	420 / 280 / 370 mm / 8,2 kg		
*) of range,			
**) power and energy errors with respect to apparent power			

SOFTWARE CALSOFT 100

- reading actual measured values from the Calport 100 using RS232C interface and their visualisation on PC screen. The readings can be done automatically by user's defined period of time,
- reading data, earlier stored in analyser's memory (up to 40 sets of data) and their visualisation on PC screen,
- visualisation of three phase vector chart,
- export of measured data to Microsoft Excel, which enables later their processing according to user's requirements,
- printing data and charts on the printer,
- saving and reading data to and from files for making archives of measurements.



CALPORT 100A ANALYSER'S EQUIPMENT

The Calport 100A set is put in the plastic case for carrying in close state and for working in open state with analyser in hard conditions on the site. Calport 100A set consists of:

- analyser Calport100A class 0,1 or 0,2,
- power cord,
- extension for powering from measurement network,
- photo head CF100 for counting LED flashing of meters and with "start/stop" button,
- safety measurement cables (10pcs),
- S0 cable,
- RS232 cable,
- calibration report.

Optionally Calport 100A set may be equipped in:

- CT100A miniature electronic compensated clamps up to 100A (3pcs),
- CT1000A electronic compensated clamps up to 1000A (3pcs),
- Calprobe 100 electronic compensated flexible clamps in ranges 30/300/3000A (3pcs),
- DR100 miniature thermal printer,
- CF101 miniature photo head for counting rotation of inductive meters Wheel disc,
- AKD100 additional accessories (handlers and terminals 42pcs) of safe cables,
- Calsoft 100 PC software,
- KAS100 transport plastic case for carrying and working with analyser.



View of the open and closed Calport 100A set