

Other Instruments / adapters / accessories

CS 2890 Power Calibrator / Simulator

NEW
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The CS 2890 Power Calibrator/Simulator is a handheld multifunctional four-phase instrument designed for calibrating and adjusting Metrel power quality Class A and Class S analysers as well as simulation of typical voltage and current power quality phenomena and situations on electrical networks.

GENERAL

- Simple and powerful waveform generator with various settings.
- 4 voltage channels with wide simulation range: up to 350 Vrms.
- 4 current channels with current clamps simulation up to 2000 A.
- Simultaneous voltage and current (8 channels) simulation, 16-bit digital to analogue conversion for accurate signal generation.
- Saving current system settings on power off.
- 4.3" TFT colour display.
- Calibration of Metrel Class A and Class S power quality devices.
- Adjustment of Metrel Class A and Class S power quality devices.
- Training purposes.
- Demonstration of PQA testing equipment by sales personnel.
- Education about power quality phenomena.

POWER SIMULATOR

- Dip, swell, interrupt, signalling, transient and inrush events simulation.
- Voltage and current harmonics waveform simulation.
- Unbalanced voltage and current waveform simulation.
- Square flicker simulation.
- Various character load/character type (inductive/capacitive) combination simulation.
- Comprehensive signal parameters settings.
- Programming event occurrence (key, manual, periodically, random).
- Voltage, current, frequency.
- Harmonics, phase angle, phase sequence, Unbalance (U, I).

CALIBRATOR

- Calibration of Metrel power quality analysers Class A (MI 2892 Power Master) and Class S (MI 2885 Master Q4, MI 2883 Energy Master) - predefined calibration points, related to the tested instruments.

ADJUSTMENT

- Adjustment of Metrel power quality analysers Class A (MI 2892 Power Master) and Class S (MI 2885 Master Q4, MI 2883 Energy Master).

KEY FEATURES CALIBRATOR/ADJUSTMENT

- Voltage/current stability between the predefined calibration/adjustment points better than $\pm 0.06\%$ under prescribed environmental conditions.
- Fine adjustment of calibration points with a highly precise voltmeter.

STANDARDS

Safety:

- EN61010-1: 2010

Electromagnetic compatibility (EMC):

- EN61326-2-2: 2013

TECHNICAL SPECIFICATION - CALIBRATOR

Warmup time	Minimum 30 minutes, connection to external power supply required		
Settling time	Less than 10 seconds		
Reference temperature	23 °C ± 2 °C		
Voltage/current stability	±0.06 % (90 days)		
Calibration currents	0.05 - 0.1 - 0.2 - 1 - 2 V	±0.1 %	
Calibration voltages	5-11-14-23-50-75-110-150-165-206-230-250-345-400-500 V	±0.1 %	
Voltage selection	Frequency	Uncertainty / 90 days	Setup resolution (under Adjustment menu)
5-11-14-23-50-75-110-150-165-206-230-250-345-400-500 V	50 Hz	±0.06 %	0.0001 V

TECHNICAL SPECIFICATION - SIMULATOR

Fundamental RMS voltage output			
Output voltage AC	Resolution	Accuracy	
50 ... 350 V	10 V	±0.1 %	
Event RMS voltage output			
Output voltage AC	Resolution	Accuracy	
0 ... 350 V	0.01 V	±2 %	
Fundamental RMS current			
Range	Output voltage	Overall current accuracy	
A 1033 (1 A ... 2000 A)	1 mV ... 1 V	±0.1 %	
Inrush RMS current output			
Inrush current	Accuracy	Crest factor	
Range 1: 2.0 mVRMS ... 200.0 mVRMS	±0.5 % · URMS	1.5	
Range 2: 20.0 mVRMS ... 2.0000 VRMS	±0.5 % · URMS	1.5	
Frequency			
Output range	Resolution	Accuracy	
45 Hz ... 70 Hz	1 Hz	±10 mHz	
Flickers			
Flicker type	Measuring range	Resolution	Accuracy
Pst	0.5 ... 5.0	0.1	±1 %
Voltage harmonics			
Measuring range	Resolution	Accuracy	
U _{hn} 1 % ... 100 % of fundamental output voltage	1 %	±5 % of U _{hn}	
U _{hn} :	Generated harmonic voltage		
n:	Harmonic component 2nd ... 50th		
Current harmonics and THD			
Measuring range	Resolution	Accuracy	
I _{hn} 1 % ... 100 % of fundamental current	1 %	±5 % of I _{hn}	
I _{hn} :	Measured harmonic current		
n:	Harmonic component 2th ... 50th		
Unbalance			
Unbalance range	Resolution	Accuracy	
u-	0.5 % ... 5.0 %	0.1 %	±0.15 %
u0			
i-	0.0 % ... 20 %	0.1 %	± 1 %
i0			
Overdeviation and underdeviation			
Measuring range	Resolution	Accuracy	
U Over	0 ... 50 % UNom	0.001 %	±0.15 %
U Under	0 ... 90 % UNom	0.001 %	±0.15 %
Event duration and recorder time-stamp and uncertainty			
Measuring range	Resolution	Error	
Event duration	10 ms ... 7 days	1 ms	±1 cycle
Event duration (signaling)	1 s ... 100 s	100 ms	
Record and event time stamp	N/A	1 ms	±1 cycle
General			
Measuring category	CAT I / 300 V		
Dimensions	230 x 140 x 80 mm		
Weight (with batteries)	1.36 kg		
Display	Colour 4.3 TFT liquid crystal display (LCD) with backlight, 480 x 272 dots.		
Batteries	6 x 1.2 V NiMH rechargeable batteries type HR 6 (AA)		
Working temperature range	0 °C ... +40 °C		

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ORDERING INFORMATION



CS 2890 Standard set

- Instrument Power Calibrator/Simulator
- Voltage measurement lead, (brown, black, grey, green, blue), 5 pcs
- Special power supply cable for voltage offset measurement
- Current measurement leads, 4pcs
- Labels for colour coding
- Power supply adapter
- 1.2 V NiMH rechargeable battery, 6 pcs
- Soft carrying bag
- USB cable
- Instruction manual
- Calibration certificate