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F A S I E

TEST SIGNAL/PHANTOM POWER SOURCE

Energoforma-61850

Control terminal with Energoforma-61850 software

Ethernet

Ethernet ports:
1. Connection to a PC for control
2. Synchronization

Ethernet port SFP for 61850-9-2 input data

4 current outputs
1 mA ÷ 10 A ÷ 120 A

8 voltage outputs used to imitate signals from electronic transformers
(4 ~ U_{out}, 4 ~ I_{out}) 0.2 mV ÷ 8 V

4 voltage outputs
1 V ÷ 264 V

Frequency inputs/outputs for synchronization with an external source or receiver

Operation modes

1. Real-time mode
Digital streams SV61850-9-2 are converted into analogue current or voltage waveforms.

2. Stand-alone mode
Analogue signals are digitally synthesized from user-specified parameters
(a modulating signal can be added).

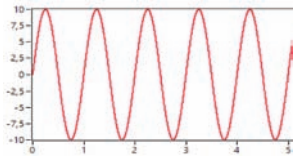
Specifications

Parameter	Value
Number of channels	8 channels (4 currents and 4 voltages)
DAC resolution	18 bit
Data buffer capacity per channel Number of points per period	10 periods of fundamental 4096
Data exchange rate	35 Mbit/s
Harmonics	1 to 100
Interharmonics	0.1 to 100.5 in increments 0.1

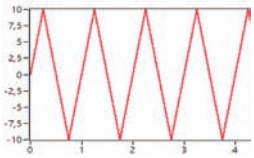
Waveforms

1. Special signals

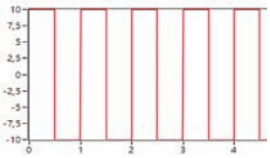
Sine



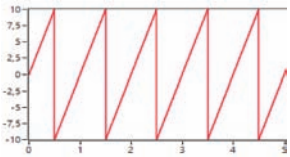
Triangle



Meander

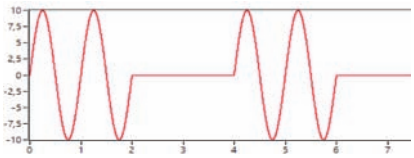


Ramp

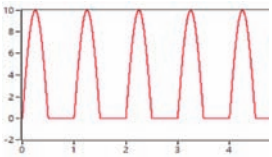


2. Test signals

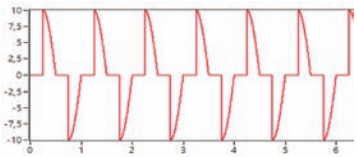
2.1 Subharmonics



2.2 Half-wave rectification



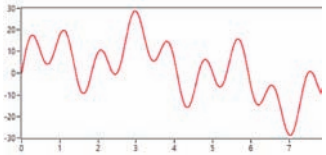
2.3 Phase control



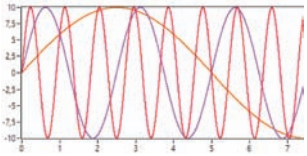
2.1 For testing meters according to IEC 62053-21:2003
2.2 For testing PQ analyzers according to IEC 62586-1 and IEC 62586-2
Flicker, harmonics, interharmonics, subharmonics, dips, swells
2.3 For testing PMU according to IEEE C37.118.1 and C37.118.1A
Types of modulation*: amplitude, phase, frequency, additive*

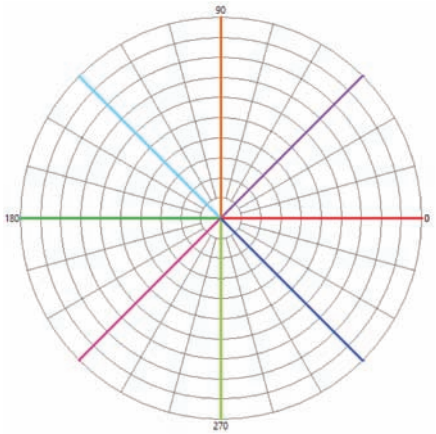
3. Waveform synthesis from harmonics and interharmonics

Oscillogram of a summary signal



Oscillogram of harmonics





4. Displaying signals in the form of graphs, spectra, or vector diagrams

Edition 08.05.2018