

SDS1000DL Specifications

File Version V1.2

Siglent technology Co., Ltd

CHARACTERISTIC:

• The highest Single real-time sampling rate can be up to 500MHz/s;
Equivalent sampling rate is up to 50GSa/s.

- Memory Depth: 32Kpts
- Trigger types: Edge, Pulse Width, Video, Slope, Alternative
- Unique Digital Filter function and Waveform recorder function
- Support Pass/Fail function.
- Thirty two parameters Auto measure function.
- Save/recall types: Setups, Waveforms, CSV file, Picture.
- Support Multilingual On-line help system
- Waveform Intensity and Grid Brightness can be adjusted.
- Support twelve types Language
- Standard Configuration Port:
 - USB Host: Support USB flash driver save/recall function and update firmware;
 - USB Device: Support PictBridge compatible printer and support PC remote control;
 - RS232;
 - Pass/Fail Output

Data Form

Input	
Input Coupling	AC,DC,GND
Input Impedance	DC: $1M\Omega \pm 2\% \parallel 16pF \pm 3pF$ AC: $1.2M\Omega \pm 2\% \parallel 16pF \pm 3pF, \leq 100mV/div$ $1.0M\Omega \pm 2\% \parallel 16pF \pm 3pF, > 100mV/div$
Maximum Input Voltage	$\pm 400V$ PK-PK CAT I ,CAT II
Probe attenuator	1X,10X
Probe attenuation coefficient setting	1X,10X,100X,1000X
Horizontal System	
Real Time Sampling Rate	1CH: 500MS/s 2CH: 250MS/s
Equivalent Sampling Rate	50GSa/s
Measure Display Modes	MAIN, WINDOW, WINDOW ZOOM, Scan, X-Y
Timebase Accuracy	$\pm 50ppm$ measured over 1ms interval
Time Window	18 Divisions
Horizontal Scan Range	SDS1202DL,SDS1102DL: 2.5ns/div – 50s/div SDS1052DL: 5ns/div – 50s/div SDS1022DL: 25ns/div – 50s/div Scan: 100ms/div ~ 50s/div (1-2.5-5 sequence)
Vertical System	
Vertical Sensitivity	2mV-10V/div at input BNC(1-2-5 order)
Channel voltage offset range	SDS1022DL/1052DL/1102DL : 2mV–200mV: $\pm 1.6V$ 206mV – 10V $\pm 40V$ SDS1202DL: 2mV–100mV: $\pm 800mV$ 102mV - 5V: $\pm 40V$ in Fixed Gain Ranges and Variable Gain Ranges
Vertical Resolution	8 bit
Channels	2
Bandwidth	200MHz (SDS1202DL) 100MHz (SDS1102DL) 50MHz (SDS1052DL) 25MHz (SDS1022DL)
Single bandwidth	200MHz (SDS1202DL) 100MHz (SDS1102DL) 50MHz (SDS1052DL) 25MHz (SDS1022DL)
Lower frequency limit (AC -3dB)	$\leq 10Hz$ (at input BNC)
DC Gain Accuracy	SDS1022DL/1052DL/1102DL: 5mv/div-10v/div: $\leq \pm 3\%$, 2mv/div: $\leq \pm 4\%$

	SDS1202DL: 10mv/div-5v/div: $\leq \pm 3\%$, 2mv/div-5mv/div: $\leq \pm 4\%$
DC Measurement Accuracy $\leq 100\text{mv/div}$	$\pm [3.0\%X(\text{actual reading} + \text{offset}) + 1\%X \text{ offset} + 0.2\text{div} + 2\text{mV}]$
DC Measurement Accuracy $> 100\text{mv/div}$	$\pm [3.0\%X(\text{actual reading} + \text{offset}) + 1\%X \text{ offset} + 0.2\text{div} + 100\text{mV}]$
Rise time (typical values of BNC)	<1.8ns (SDS1202DL) <3.5ns (SDS1102DL) <5.8ns (SDS1052DL) <14ns (SDS1022DL)
Math operation	+, -, *, /, FFT
FFT	Window mode: Hanning, Hamming, Blackman, Rectangular
	Sampling points: 1024
Bandwidth Limit	20MHz (-3dB)
Trigger System	
Trigger Types	Edge, Pulse Width, Video, Slope, Alternative
Trigger Modes	Auto, Normal, Single
Trigger Sources	Ch1-2, EXT, EXT/5, AC Line
Trigger Coupling	AC, DC, LF reject, HF reject
Trigger Level Range	CH1, CH2: ± 6 divisions from center of screen EXT: $\pm 1.2\text{V}$ EXT/5: $\pm 6\text{V}$
Trigger displacement	Pretrigger: Memory depth / (2 * sampling rate), Delay trigger: 260div
Edge Trigger	Edge type: Rising, Falling, Rising and Falling
Pulse Width Trigger	Trigger Modes: (> , < , =)Positive Pulse Width, (>, <, =)Negative Pulse Width Pulse Width Range: 20ns-10s
Video Trigger	Support signal Formats: PAL/SECAM, NTSC Trigger condition: odd field, even field, all lines, line Num
Slope Trigger	(>, <, =) Positive slope, (>, <, =)Negative slope Time: 20ns-10s
Alternative Trigger	CH1 trigger type: Edge, Pulse, Video, Slope CH2 trigger type: Edge, Pulse, Video, Slope
Control Panel Function	
Auto Set	Auto adjusting the Vertical, Horizontal system and Trigger Position
Save/Recall	Support 2 Group referenced Waveforms, 20 Group setups, 10 Group captured Waveforms internal Storage/Recall function and USB flash driver storage function
Hard Ware Frequency Counter	
Reading resolution	6 Bytes
Accuracy	$\pm 0.01\%$
Range	DC Couple, 10Hz to MAX Bandwidth
Signal Types	Satisfying all Trigger signal (Except Pulse width trigger and Video Trigger)

Acquisition System	
Sample Types	Real time, Equivalent time
Memory Depth	SDS1000DL:32Kpts
Sample Mode	Sample, Peak Measure, Average
Averages	4,16,32,64,128,256
Measure System	
Auto Measure	Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Rise time, Fall time, Freq, Period, +Wid, -Wid, +Dut, -Dut, Bwid, Phase, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF
Cursor Measure	Manual mode, Track mode and Auto mode

Generic Specification

Display System	
Display Mode	TFT 7 inches of liquid crystal display
Resolution	480 horizontal by 234 vertical pixels
Display Color	64K color
Display Contrast (Typical state)	150:1
Backlight Intensity (Typical state)	300nit
Wave display range	8 x 18div
Wave Display Mode	Point, Vector
Persist	Off, 1 sec, 2 sec, 5 sec, Infinite
Menu Display	2 sec, 5 sec, 10 sec, 20 sec, Infinite
Screen saver	1min, 2min, 5min, 10min, 15min, 30min, 1hour, 2hour, 5hour, off
waveform interpolation	Sin(x)/x, Linear
Color model	Normal, Invert
Language	Simplified Chinese, Traditional Chinese, English, French, German, Russian, Spanish, Portuguese, Japanese, Korean, Italian, Arabic
Power Supply	
Power Supply	100-240 VAC, CAT II, Auto selection
Frequency Scope	45Hz to 440Hz
Power	50VA Max
Mechanical	
Dimension	length : 323mm Width : 135mm Height : 157mm

Weight	2.5kg
Environments	
Temperature	Operating: 10°C to +40°C Not operating: -20°C to +60°C
Humidity	Operating: 85%RH, 40°C, 24 hours Not operating: 85%RH, 65°C, 24 hours
Height	Operating: 3000m Not operating: 15,266m