

Datasheet

SDS1000CFL Series Digital Oscilloscope

DS01012-E01B

Main Features

- 7" Color TFT LCD display
- 2 channels, Bandwidth: 70MHz-300 MHz
- Single real-time sampling rate are:2Gsa/s
Equivalent sampling rate is 50GSa/s.
- Trigger types: Edge, Pulse, Video, Slope and Alternative
- Unique Digital Filter function and Waveform recorder function
- Auto measure thirty two parameters and support all measurement function.
- Two/Four groups reference waveforms and twenty groups waveforms and twenty groups setups internal save/recall function and USB flash drive save/recall function.
- Cursor types: Manual mode, Track mode and Auto mode.
- Channel waveform and its FFT waveform display on split screen.
- Waveform Intensity and Grid Brightness can be adjusted.
- Menu display in the form of pop-up that in order to convenience users to use it.
- Rich Screen display styles: Classical, Modern, Tradition, Succinct.
- Multiple Language User Interface.
- Support Multilingual online help system
- Standard interface: Double USB Host; USB Device; LAN; Pass/Fail Out

Specification

Inputs

| | |
|-----------------------|--|
| Channel | 2/4 |
| Input Coupling | AC, DC, GND |
| Input Impedance | (1MΩ±2%) (18pF ±3pF) ; 50Ω: 50Ω+/-2% |
| Maximum Input voltage | 400V, CAT I, 10X, 1MΩ |
| Channel isolation | > 100:1 |
| Probe Attenuator | 1X, 10X, 50X, 100X, 500X, 1000X |
| Factors Set | |

Acquire System

| | |
|--------------------------|---|
| Mode | Real time, Equ time |
| Sample Rate of Real time | 2GSa/S |
| Memory | Single Channel 24kpts, Double Channels 12kpts |
| Acquisition mode | Normal, Average, Peak Detect |
| Averages | 4, 16, 32, 64, 128, 256 |

Vertical System

| | |
|--|---|
| Analog Bandwidth | 300MHz (SDS1304CFL/SDS1302CFL) 200MHz (SDS1204CFL/SDS1202CFL) 100MHz (SDS1104CFL/SDS1102CFL) 70MHz (SDS1074CFL/SDS1072CFL) |
| Vertical Resolution | 8 bit |
| Vertical Sensitivity | 2mV/div~ 5V/div |
| Channel Voltage Offset Range | 2mV ~ 100mV: ± 800mV ; 102mV ~ 5V: ± 40V |
| Bandwidth limited | 20MHz ±40% |
| BW Flatness | DC ~ 10% (rated BW) : ± 1dB 10% ~ 50% (rated BW) : ± 2dB 50% ~ 100% (rated BW) : + 2dB/-3dB |
| Lower frequency limit (AC -3dB) | ≤10Hz (at input BNC) |
| Noise: Pk-Pk for 3K record | ≤0.6 Div for average of 10 Pk-Pk readings, Fixed gain settings ≤0.7 Div for average of 10 Pk-Pk readings, Variable gain settings |
| SFDR including harmonics (measured with FFT) | ≥35dB |
| DC Gain Accuracy | ≤ ±3.0%: 5mV/div ~5V/div ≤ ±4.0%: 2mV/div |
| DC Measurement Accuracy | ± [3%× (Reading + offset) + 1%× offset + 0.2div+2mV] , ≤100mV/div |

$\pm [3\% \times (|\text{Reading}| + |\text{offset}|) + 1\% \times |\text{offset}| + 0.2\text{div} + 100\text{mV}]$,
 $>100\text{mV/div}$

| | |
|-------------------------|---------------------------------------|
| Rise time | 1.2ns Typical (SDS1304CFL/SDS1302CFL) |
| | 1.7ns Typical (SDS1204CFL/SDS1202CFL) |
| | 3.5ns Typical (SDS1104CFL/SDS1102CFL) |
| | 5.0ns Typical (SDS1074CFL/SDS1072CFL) |
| Overshoot (500ps pulse) | < 10% |
| Channel Skew | < 500ps |

Horizontal System

| | |
|-------------------|---|
| Timebase Range | 1.0ns/div ~ 50s/div (SDS1304CFL/SDS1302CFL) |
| | 2.5ns/div ~ 50s/div (SDS1204CFL/SDS1202CFL) |
| | 2.5ns/div ~ 50s/div (SDS1104CFL/SDS1102CFL) |
| | 5.0ns/div ~ 50s/div (SDS1074CFL/SDS1072CFL) |
| Display Modes | Y-T, X-Y, Roll |
| Timebase Accuracy | $\pm 50\text{ppm}$ |
| Roll mode | 100ms/div ~ 50s/div (1-2.5-5 sequence) |

Trigger System

| | |
|----------------------|---|
| Trigger Modes | Auto, Normal, Single |
| | CH1~CH4: ± 6 divisions from center of screen |
| Trigger Level Range | EXT: $\pm 1.2\text{V}$ |
| | EXT/5: $\pm 6\text{V}$ |
| Holdoff Range | 100ns ~ 1.5s |
| Trigger Coupling | AC, DC, LF Rej, HF Rej |
| Trigger Sensitivity | 1 division: DC ~ 10MHz(include); 1.5divisions: 10MHz ~ BW |
| Trigger Displacement | Pre-trigger: Memory depth/ (2*sampling) |
| | Delay Trigger: 260DIV |

Edge Trigger

| | |
|--------|-------------------------------------|
| Slope | Rise, Fall, Rise&Fall |
| Source | CH1/CH2/CH3/CH4/EXT/(EXT/5)/AC Line |

Slope Trigger

| | |
|-------------------|-----------------|
| Slope | Rise, Fall |
| Trigger condition | >, <, = |
| Source | CH1/CH2/CH3/CH4 |
| Time Range | 2ns ~ 10s |

Pulse Trigger

| | |
|-------------------|--|
| Polarity | Positive Pulse Width, Negative Pulse Width |
| Trigger condition | >, <, = |
| Source | CH1/CH2/CH3/CH4 |
| Pulse Range | 2ns ~ 10s |

Video Trigger

| | |
|----------|-----------------|
| Standard | NTSC, PAL/Secam |
| Source | CH1/CH2/CH3/CH4 |

Trigger condition All lines, Line Num, Odd Field, Even Field

Measure System

| | |
|----------------------------|---|
| Auto Measure (32 Types) | Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms Vrms, ROV, FOV, RPRE, FPRE, 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 |

Math

| | |
|-----------|--|
| Operation | +, -, *, / |
| FFT | Window Mode: Rectangular, Blackman, Hanning, Hamming |

Save/Recall

| | |
|-------|---|
| Types | Setups, Waveform, Picture, CSV |
| | Support 2/4 Groups reference Waveforms, 20 Groups setups, 20 Groups waveforms internal Storage/Recall function and USB flash driver storage function. |

I/O

| | |
|-----------|---|
| Standard | Double USB Host, USB Device, Pass/Fail, LAN |
| Pass/Fail | 3.3V TTL Output |

Generic Specification

| Display | |
|------------------------|--|
| Mode | Color TFT 7.0in LCD |
| Resolution | 480 horizontal by 234 vertical pixels |
| Display Color | 64K color |
| Display Contrast | 150:1 |
| Backlight Intensity | 300nit |
| Wave display range | 8 x 18 div |
| Wave Display Mode | Dots, Vector |
| Persist | Off, 1 sec, 2 sec, 5 sec, Infinite |
| Menu Display | 2 sec, 5 sec, 10 sec, 20 sec, Infinite |
| Screen-Saver | Off, 1min, 2min, 5min, 10min, 15min, 30min, 1hour, 2hour, 5hour |
| Skin | Classical, Modern, Tradition, Succinct |
| Waveform interpolation | Sin(x)/x, Linear |
| Color model | Normal , Invert |
| Language | Simplified Chinese, Traditional Chinese, English, Arabic, French, German, Russian, Portuguese Spanish, Japanese, Korean, Italian |

| Environments | |
|--------------|--------------------------------------|
| Temperature | Operating: 10°C ~ +40°C |
| | Not operating: -20°C ~ +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 |

| Power Supply | |
|---------------|----------------------|
| Input Voltage | 100 ~ 240 VAC, CAT I |
| Frequency | 45Hz ~ 400Hz |
| Power | 50W Max |

| Mechanical | |
|------------|--------------|
| Dimension | length 336mm |
| | Width 152mm |
| | Height 118mm |

Order Information

➤ **Product Name**

SDS1000CFL Series Digital Oscilloscope

➤ **Model**

| | | | | | |
|------------|--------|------------|------------|--------|------------|
| SDS1304CFL | 300MHz | 4 Channels | SDS1302CFL | 300MHz | 2 Channels |
| SDS1204CFL | 200MHz | 4 Channels | SDS1202CFL | 200MHz | 2 Channels |
| SDS1104CFL | 100MHz | 4 Channels | SDS1102CFL | 100MHz | 2 Channels |
| SDS1074CFL | 70MHz | 4 Channels | SDS1072CFL | 70MHz | 2 Channels |

➤ **Standard Accessory**

A Quick Start

A Certification

Two/Four pieces passive probe

A power cord that fits the standard of destination country

A USB cable

Contact SIGLENT

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