

Specifications

All Sigma Models	
Trigger	Timebase free runs CH1, CH2, CH3, CH4 External Trigger 5 V TTL + or - with hysteresis up to 8 divs AC or DC set by the channel
Auto Mode Source	0 to 399 s to a resolution of 10 ns
Slope:	0 to 100 % with 0.2 % resolution
Coupling	100 % of input voltage range (Adjustable 8 or 12-bit digital trigger)
Post-Trigger Delay	TTL level signal via rear connector
Pre-Trigger	
Trigger Range	
Trigger Output	
Trigger Tools	
Pulse Width	> or < 2 x max. sample clock period to 399 s
Frequency/Period	0.0025 Hz to 50 MHz max limited by the bandwidth
Skew	Preset time between trigger events
Combination	Edge trigger on all channels with high, low or don't care level selection
Band Gating	Enter or leave a band A Delayed by Time Gates B to 399 s B Gates A Delayed by N to 9999 counts
Delay By N	Trigger after N events, 2 to 9999 counts
Divide By N	Trigger every N events, 2 to 9999 counts
Slew Rate	> or < time to pass through A and B levels (CH1 only)
Run	Trigger on low level pulse
Engineering Scaling	
Formula	Individual channel and horizontal axis ± Scale Factor x V/Div ± Zero Offset
Eng. Units	Four character user scaling entry

Display	10.4" SVGA with color fully adjustable. Full annotation of current settings
Liquid Crystal	Refresh, Roll, TrueTrace®, Persistence (Decay or accumulate), X-Y, Measurement Snapshot, Single shot, Multishot, Hold all or Channel holds
Modes	Front panel and menu via touch panel, mouse and keyboard
Control	Sets vertical, horizontal and trigger for repetitive signals > 40 Hz
Auto-Setup	
Data Storage	
	Recorded traces, Setups (Stored data is stamped with time and user defined labels)
Internal Hard Disk	> 20 Gbyte
Data Format	WFF, DAT, TIFF, PDF, wmf, ASCII Text, DIAdem, Window Enhanced Metafile (emf), jpg, bmp
Measurements	
	Measurements are made simultaneously and run live. The Y-T Snapshot measurement list can be assigned to any trace.
Snapshot	Level at Vertical cursor 1 or 2, Time at Vertical cursor 1 or 2, Level at Horizontal cursor 1 or 2, Top, Base, Amplitude, Peak to Peak, Max, Min, Risetime, Falltime, Overshoot, Preshoot, Pulsewidth, Frequency, Period, DCrms, ACrms Standard deviation +, -, *, ÷, Invert Filter, and FFT (FFTs can be averaged 2 to 100 times), Averaging 2 to 5000
Trace Analysis	

Enhanced Analysis	
Measurements	Level at Vertical cursor 1 or 2, Time at Vertical cursor 1 or 2, Level at Horizontal cursor 1 or 2, Top, Base, Max level, Time at Max level, Mean, Area, Amplitude, Peak to Peak, Pulse width, Period, Frequency, Duty Cycle, Rise Time, Fall Time, Rising Crossing, Falling Crossing, Overshoot, Preshoot, Top Knee, Base Knee, ACrms (Standard Deviation), DCrms, Count, Level at Trigger, Time at Trigger, FFT Harmonic
Trace Math	Constant, Log, Antilog, Sine, Cosine, Sum, Delta, Product, Ratio, Square, Square Root, Average
Trace analysis	Integrate, Time shift, Differentiate waveforms. Graph or Histogram of selected measurements
Probe Compensation	
	1 V ± 5 % pk-to-pk at 1 kHz
PC Interfacing	
Standards	VGA, Com 1, Centronic, Ethernet and 4 x USB2 for mouse and keyboard and other devices, Sound out and microphone input
SYNCHROSCOPE Option	
	Internal card enables tracking and triggering simultaneously to rotating machinery
Physical/Environmental Characteristics	
Dimensions	14.9 (w) x 10 (h) x 11.9 (d) in 37.8 (w) x 25.4 (h) x 30.2 (d) cm
Weight	18 lb, 8.2 kg (4 channel) 19 lb, 8.6 kg (8 channel)
Operating Temp	+ 5 °C to + 50 °C
Full Specs.	+ 15 °C to + 35 °C

Power requirements	
Voltage	90 - 264 VAC
Frequency	47 - 63 Hz
Power	250 W (300 V-A)





Specifications

Sigma 30

The *Sigma 30* is a four channel 12-bit high resolution, high accuracy scope.

Vertical

Bandwidth (-3 dB)	DC Coupled: DC to 5 MHz AC Coupled: 4 Hz to 5 MHz 500 kHz
Bandwidth Limits	5 mV/div to 20 V/div
Sensitivity Range	in a 1-2-5 sequence 12-bit (1 in 4096)
Resolution	0.025 % of Graticule Full Scale Deflection
Zoom	2 to 50 in a 1-2-5 sequence
Input Coupling	AC-DC-GROUND
Inputs	4 channels: 1 M Ω , 28 pF, 400 V pk Single ended, switchable to differential mode using channel pairs
Diff Mode CMRR	-55 dB
Diff Mode CMV	Equal to measurement range
Position Range	± 4 divisions
Accuracy	$\pm 0.25 \% \pm 3$ LSB

Horizontal

Timebase Range	5 μ s/div to 100 secs/div (External clock to 10 MHz)
Max. Sample Rate	10 MS/s
Glitch Detect	100 ns
Record Length	200 k standard, 1 M option
Segmentation	2 to 5000 memory segments (100word min. segment size)
Zoom	x 2 to x 4000 (x 2 to x 20,000 with 1 MS)
Time Accuracy	± 25 ppm

Sigma 75

The *Sigma 75* is a four or eight channel scope. It offers 8-bit resolution with an accuracy of 0.25%.

Vertical

Bandwidth (-3 dB)	DC Coupled: DC to 25 MHz AC Coupled: 4 Hz to 25 MHz 5 MHz /500 kHz
Bandwidth Limits	5 mV/div to 20 V/div
Sensitivity Range	in a 1-2-5 sequence 8-bit (1 in 256)
Resolution	0.42 % of Graticule Full Scale Deflection
Zoom	2 to 50 in a 1-2-5 sequence
Input Coupling	AC-DC-GROUND
Inputs	4 or 8 channels: 1 M Ω , 28 pF, 400 V pk Single- ended, switchable to differential mode using channel pairs
Diff Mode CMRR	-55 dB
Diff Mode CMV	Equal to measurement range
Position Range	± 4 divisions
Accuracy	$\pm 0.25 \% \pm 1$ LSB

Horizontal

Timebase Range	500 ns/div to 100 secs/div (External clock to 100 MHz)
Max. Sample Rate	100 MS/s
Glitch Detect	10 ns
Record Length	200 k standard, 1 MS optional
Segmentation	2 to 5000 memory segments (100word min. segment size)
Zoom	x 2 to x 20,000
Timebase Accuracy	± 25 ppm

Sigma 90

The *Sigma 90* is a 4 or 8 channel, high resolution, high accuracy scope. It offers 10 MS/s sample rate with 12-bit resolution, switchable to 100 MS/s sample rate with 8-bit resolution in channel groups of 4.

Vertical

Bandwidth (-3 dB)	DC Coupled: DC to 5 MHz AC Coupled: 4 Hz to 5 MHz DC coupled: DC to 25 MHz AC Coupled: 4 Hz to 25 MHz
8-bit Mode	500 kHz
Bandwidth Limits	5 MHz, 500 kHz
12-bit Mode	5 mV/div to 20 V/div
8-bit Mode	in a 1-2-5 sequence
Sensitivity Range	12-bit (1 in 4096), 0.025 % of Graticule FS Deflection
Resolution: 12-bit Mode	8-bit (1 in 256), 0.42 % of Graticule FS Deflection
Resolution: 8-bit Mode	2 to 50 in a 1-2-5 sequence
Zoom	AC-DC-GROUND
Input Coupling	4 or 8 channels:
Inputs	1 M Ω , 28 pF, 400 V pk Single-ended, switchable to differential mode using channel pairs
Diff Mode CMRR	-55 dB
Diff Mode CMV	Equal to measurement range
Position Range	± 4 divisions
Accuracy: 12-bit Mode	$\pm 0.25 \% \pm 3$ LSB
Accuracy: 8-bit Mode	$\pm 0.25 \% \pm 1$ LSB

Horizontal

Timebase Range:	5 μ s/div to 100 secs/div (External clock to 10 MHz)
12-bit Mode	500 ns/div to 100 secs/div (External clock to 100 MHz)
8-bit Mode	10 MS/s
Max. Sample Rate:	100 MS/s
12-bit Mode	10 ns
8-bit Mode	10 ns
Glitch Detect	1 MS per channel
Record Length	2 to 5000 memory segments (100 word min. segment size)
Segmentation	x 2 to x 20,000
Zoom	± 25 ppm
Timebase Accuracy	± 25 ppm

Sigma 100/Sigma 100 HV

The *Sigma 100* is a four or eight channel, high speed, high resolution/accuracy scope. It offers 100 MS/s sample rate with 12-bit resolution and a 14-bit resolution mode.

Vertical

Bandwidth (-3 dB)	DC Coupled: DC to 25 MHz AC Coupled: 4 Hz to 25 MHz DC coupled: DC to 435 kHz AC Coupled: 4 Hz to 435 kHz
14-bit Mode	5 MHz, 500 kHz
Bandwidth Limits	435 kHz
12-bit Mode	5 mV/div to 20 V/div
14-bit Mode	in a 1-2-5 sequence
Sensitivity Range	12-bit (1 in 4096) 0.025 % of Graticule FS Deflection
Resolution: 12-bit Mode	14-bit (1 in 16384) 0.006 % of Graticule FS Deflection
Resolution: 14-bit Mode	2 to 50 in a 1-2-5 sequence
Zoom	AC-DC-GROUND
Input Coupling	4 or 8 channels: 1 M Ω , 28 pF, 400 V pk Single ended, switchable to differential mode using channel pairs
Inputs	-55 dB
Diff Mode CMRR	Equal to measurement range
Diff Mode CMV	± 4 divisions
Position Range	$\pm 0.25 \% \pm 3$ LSB
Accuracy: 12-bit Mode	$\pm 0.25 \% \pm 6$ LSB
Accuracy: 14-bit Mode	

Horizontal

Timebase Range:	100 ns/div to 100 secs/div (External clock to 100 MHz)
12-bit Mode	50 μ s/div to 100 secs/div (External clock to 1 MHz)
14-bit Mode	100 MS/s
Max. Sample Rate:	1 MS/s
12-bit Mode	10 ns
14-bit Mode	1 MS per channel
Glitch Detect	2 to 5000 memory segments (100 word min. segment size)
Record Length	x 2 to x 20,000
Segmentation	± 25 ppm
Zoom	
Timebase Accuracy	



LDS Test and Measurement Ltd.
Heath Works, Baldock Road
Royston, Herts, SG8 5BQ

Phone: +44 (0) 1763 255 255
E-Mail: info-uk@lds.spx.com

www.lds-group.com



LDS Test and Measurement
8551 Research Way, M/S 140
Middleton, WI 53562 USA

Phone: +1 (608)821-6600
E-Mail: info-us@lds.spx.com



LDS Test and Measurement GmbH
Carl-Zeiss-Ring 11-13
D-85737 Ismaning

Telephone: +49 (0)89 92 33 33 0
E-Mail: info-de@lds.spx.com



LDS Test and Measurement SARL
9 Avenue du Canada - BP 221
F-91942 Courtaboeuf

Telephone: +33 (0)1648 64 54 5
E-Mail: info-fr@lds.spx.com



LDS Test and Measurement
Room 2912, Jing Guang Centre
Beijing, China 100020

Phone: +86 10 6597 4006
E-Mail: info-cn@lds.spx.com



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