

HDS200 Series Oscilloscope Technical Specifications

Unless otherwise stated, all technical specifications are applicable to the probe with the attenuation switch set to 10X and this series of oscilloscopes. The oscilloscope must first meet the following two conditions to meet these specifications and standards:

- The instrument must be operated continuously for more than 30 minutes at the specified operating temperature.
- If the operating temperature variation range reaches or exceeds 5°C, the system function menu must be opened to execute the "automatic correction" program (see automatic correction in "**System Settings**" on P18).

All specifications are guaranteed except those marked "typical".

Oscilloscope

Characteristics		Description	
Bandwidth		HDS242(S)	40 MHz
		HDS272(S)	70 MHz
Channel		2	
Sampling	Sampling method	Sampling, peak detection	
	Real-time sampling rate	125 MSa/s (Dual channel) 250 MSa/s (Single channel)	
	Waveform refresh rate	10,000 wfms/s	
Input	Input coupling	DC, AC, ground	
	Input impedance (DC coupling)	1 MΩ±2%, in parallel with 16 pF±10 pF	
	Probe attenuation	1X 、 10X、 100X、 1000X	
	Maximu input voltage	400 V (DC + AC ,PK - PK)	
	Bandwidth limit	20 MHz ,Full bandwidth	
Horizontal	Sampling rate range	0.25 Sa/s~250 MSa/s	
	Waveform interpolation	(Sinx)/x	
	Sweep speed range (S/div)	5ns/div - 1000s/div, Stepping in the 1-2-5 way	
	Time base accuracy	±100 ppm	
	Record length	Single channel: up to 8K Dual channel: 4K	

Characteristics			Description	
Vertical	Sensitivity (Volt/div) range		10 mV/div ~ 10 V/div	
	Displacement range		±6 div	
	Analog bandwidth		HDS242(S)	40 MHz
			HDS272(S)	70 MHz
	Single bandwidth		Full bandwidth	
	Low frequency response (AC coupling, -3dB)		≥10 Hz	
	Rise time (typical on BNC)		HDS242(S)	≤ 8 ns
			HDS272(S)	≤ 5 ns
	DC gain accuracy		3%	
Measurement	Cursor		ΔV, ΔT, ΔT&ΔV between	
	Automatic		Period, Frequency, Mean, PK-PK, Max, Min, Amplitude	
Triggering	Source		CH1, CH2	
	Type		Edge	
	Coupling		DC, AC	
	Trigger type		Auto, normal, single	
	Trigger electrical level range		±4 divs from the center of the screen	
	Trigger electrical level accuracy		±0.3 div	
	Trigger displacement		According to Record length and time base	
	Edge triggering	Slope	Rising edge, falling edge	

The output of the probe compensator:

Characteristics	Description
Output voltage (typical)	3.3Vpp, High-Z
Frequency (typical)	Square wave 1 kHz (±1%)

Multimeter

Characteristics	Description
Digital display	20,000 readings
Measurement type	Voltage, current, resistance, capacitance, on/off, diode
Maximum Input voltage	AC : 750V DC : 1000V
Maximum Input current	AC : 10A DC : 10A

Basic function	Range	Minimum resolution	Accuracy
DC voltage	200.00mV	0.01mV	$\pm(0.3\%+10\text{dig})$
	2.0000V	0.1mV	$\pm(0.3\%+5\text{dig})$
	20.000V	1mV	
	200.00V	0.01V	
	1000.0V	0.1V	
AC voltage	200.00mV	0.01mV	$\pm(0.8\%+10\text{dig})$
	2.0000V	0.1mV	
	20.000V	1mV	
	200.00V	0.01V	
	750.0V	0.1V	$\pm(1\%+10\text{dig})$
	frequency range: 40Hz-1000Hz		
DC current	200.00mA	0.01mA	$\pm(0.8\%+10\text{dig})$
	10.000A	1mA	$\pm(2.5\%+10\text{dig})$
	Overload protection: Ma function: self-healing fuse 400 mA/250 V; Ampere function: 10A/600 V, D5.2*20, fast-acting fuse		
AC current	200.00mA	0.01mA	$\pm(1\%+10\text{dig})$
	10.000A	1mA	$\pm(2.8\%+10\text{dig})$
	frequency range: 40Hz-1000Hz		
	Overload protection: Ma function: self-healing fuse 400 mA/250 V; Ampere function: 10A/600 V, D5.2*20, fast-acting fuse		
Resistance	200.00 Ω	0.01 Ω	$\pm(0.8\%+10\text{dig})$
	2.0000k Ω	0.1 Ω	$\pm(0.8\%+5\text{dig})$
	20.000k Ω	1 Ω	$\pm(0.8\%+3\text{dig})$
	200.00k Ω	10 Ω	
	2.0000M Ω	0.1k Ω	

Basic function	Range	Minimum resolution	Accuracy
	20.000MΩ	1kΩ	±(1%+3dig)
	100.00MΩ	0.01MΩ	±(5%+10dig)
Capacitance	20.000nF	1pF	±(3.0%+10dig)
	200.00nF	10pF	
	2.0000μF	0.1nF	
	20.000μF	1nF	
	200.00μF	10nF	
	2.0000mF	0.1uF	
Others	On/Off test	√ (<50Ω)	
	Diode test	√(<0-2V)	
	Auto range	√	
	TRMS	√	

Arbitrary Waveform Generator （Optional）

Characteristics	Description	
Waveform Frequency	Sine	0.1Hz~25MHz
	Square	0.1Hz~5MHz
	Ramp	0.1Hz~1MHz
	Pulse	0.1Hz~5MHz
	EXP	0.1Hz~5MHz
Sampling	125MSa/s	
Amplitude(50Ω)	0.01Vpp ~ 2.5Vpp	
DC offset(High Z)	±(2.5V – Amplitude Vpp/2)	
Frequency Resolution	0.01%	
Channel	1	
Waveform Depth	8k	
Vertical Resolution	14 bit	
Output Impedance	50 Ω	

General Technical Specifications

Display:

Characteristics	Description
Display type	3.5-inch color LCD display
Display resolution	320 horizontal × 240 vertical pixels
Display color	65536 colors
Display Contrast	Adjustable

Power supply:

Characteristics	Description
Power supply	100 - 240 VACRMS, 50/60 Hz, CAT II DC INPUT: 5VDC, 2A
Power consumption	<5 W
Fuse	T,2A
Battery	2200mAh*2 (3.7V,18650)

Surroundings:

Characteristics	Description
Temperature	Working temperature: 0℃ - 40℃ Storage temperature: -20℃- +60℃
Relative humidity	≤90%
Height	Operating: 3,000 meters Non-operating: 15,000 meters
Cooling method	Natural cooling

Mechanical specifications:

Characteristics	Description
Dimensions	198 mm (length) × 96mm (height) × 38 mm (width)
Weight	About 0.6 kg (main unit, without battery)

Calibration interval: The recommended calibration interval is one year.



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V1.0.1