Manuals+
Q & A | Deep Search | Upload

OWON HDS120

OWON HDS120 Oscilloscope Multimeter User Manual

Model: HDS120 | Brand: OWON

1. Introduction

The OWON HDS120 is a versatile 2-in-1 handheld instrument combining a 20000-count digital multimeter (DMM) and a 1MHz oscilloscope. Designed for portability and ease of use, it offers comprehensive measurement capabilities for various electrical and electronic applications. This manual provides essential information for setting up, operating, maintaining, and troubleshooting your device.

Figure 1: OWON HDS120 Oscilloscope Multimeter with included accessories.

2. Key Features

- **20000 Counts Digital Multimeter:** Measures AC/DC voltage/current, resistance, diode, capacitance, and on-off tests with high sensitivity and accuracy.
- **Excellent Oscilloscope Performance:** 1MHz analog bandwidth, supports multiple waveform measurements including Vmax, Vmin, Vp-p, Vavg, Vrms, and frequency. Safely measures high-voltage waveforms up to 1000V.
- **Great Power Management:** Powered by an 18650 lithium battery for extended use. Includes an alert system to prevent fuse blowout during prolonged current measurements or misoperation.
- **Compact Design & Powerful Function:** Handheld design with a 2.8-inch IPS screen for high-resolution, high-contrast color display, suitable for various environments.
- **User-Friendly Experience:** Full button design for easy operation. Smart probe detection automatically switches gears based on test pen insertion, preventing instrument damage.

Figure 2: Overview of HDS120's dual functionality and core specifications.

3. Setup

1. **Unpacking:** Carefully remove the OWON HDS120 and all accessories from the packaging. Verify all components listed in the packing list are present.
2. **Initial Charge:** Before first use, fully charge the device using the provided USB Type-C cable. Connect the cable to the Type-C port located on the side of the device.
3. **Probe Connection:** Insert the test probes into the appropriate input jacks on the front panel for either multimeter or oscilloscope functions. The device features smart probe detection to automatically adjust settings.
4. **Power On:** Press and hold the power button (usually located at the bottom center of the keypad) until the screen illuminates.

Charging Protection Function:

To ensure measurement safety, the instrument cannot be charged via USB when test leads are inserted into the input jacks. A physical gate mechanism prevents simultaneous charging and measurement, safeguarding both the

user and the device from potential hazards due to misoperation.

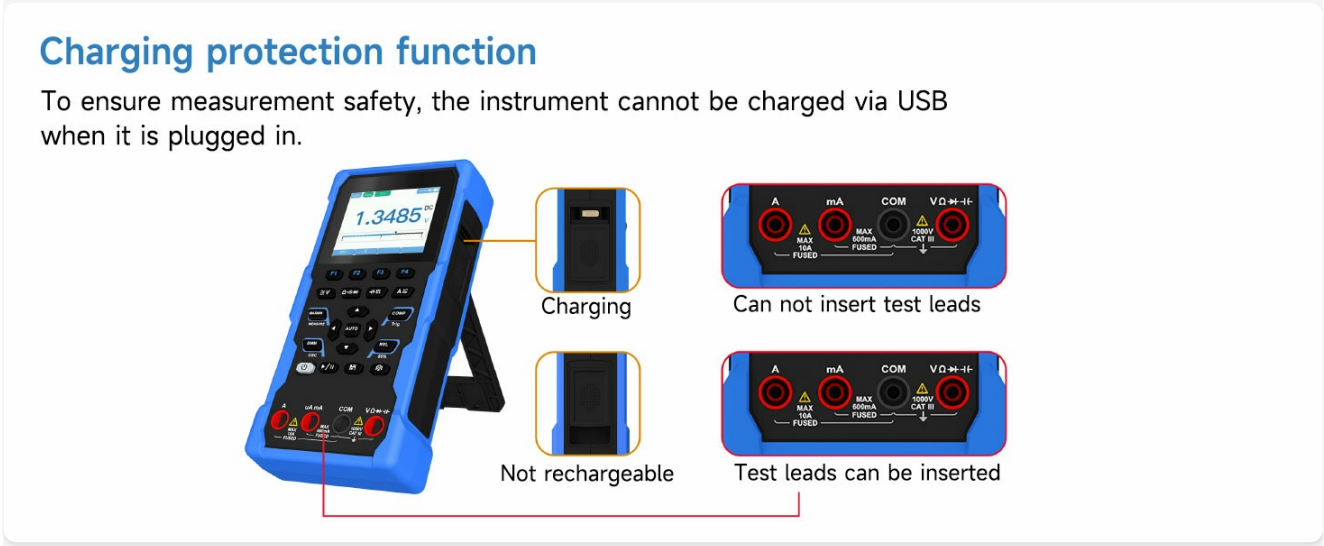


Figure 3: Charging port and safety mechanism.

4. Operation

Switching Modes:

The HDS120 allows seamless switching between Digital Multimeter (DMM) and Oscilloscope (OSC) modes using the dedicated DMM/OSC button. The light gray text underneath the black buttons indicates the oscilloscope function for each key.

Multimeter Functionality:

In DMM mode, the device automatically adjusts ranges for accurate measurements of voltage, current, resistance, capacitance, and diode tests. The large IPS screen provides clear digital readouts.

Figure 4: Handheld operation of the HDS120.

Oscilloscope Functionality:

In OSC mode, the device displays waveforms and provides automatic measurements of key parameters such as Vmax, Vmin, Vp-p, Vavg, Vrms, and frequency. Use the 'AUTO' button for quick waveform setup. The horizontal and vertical scales can be adjusted using the directional buttons.

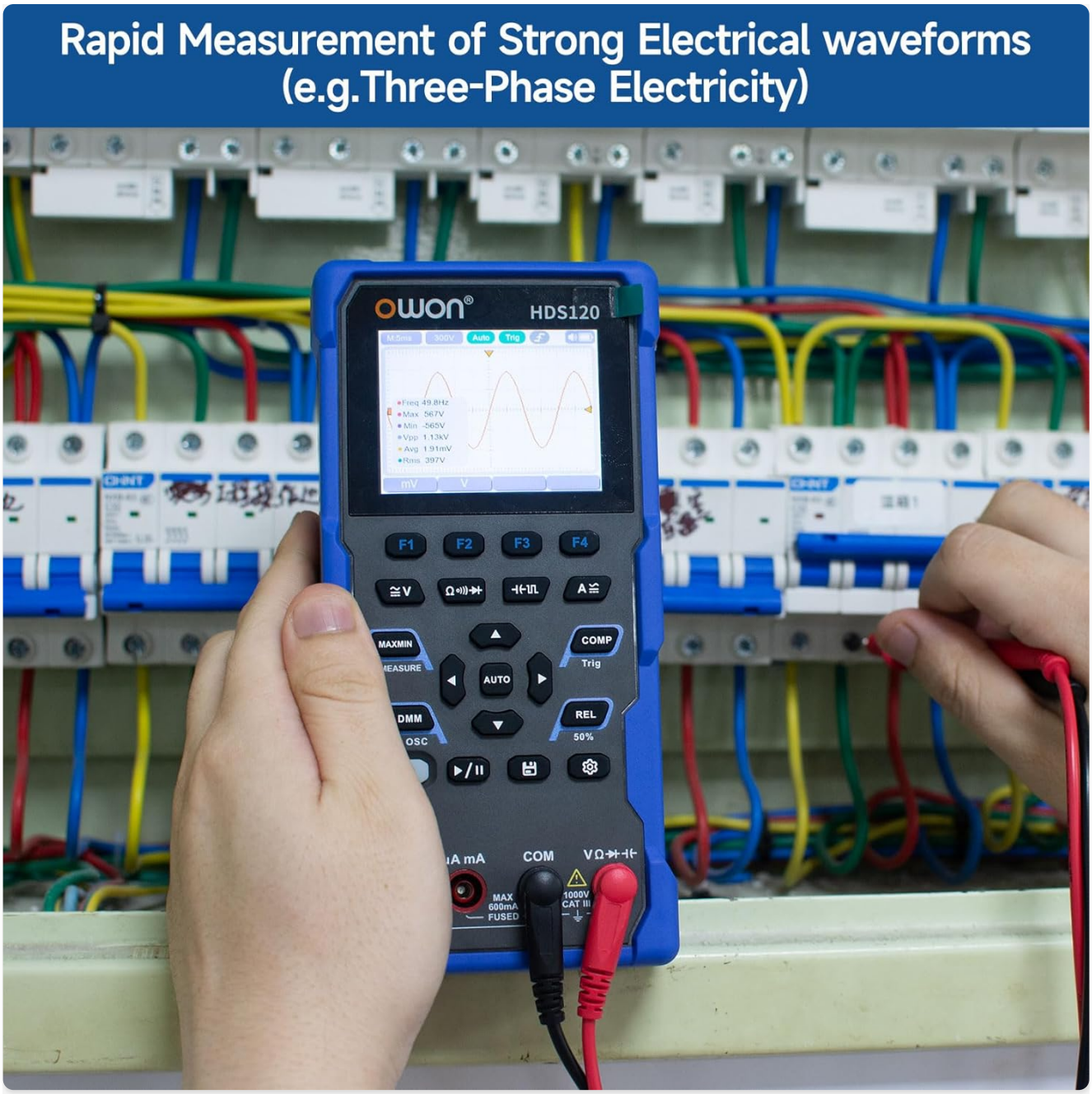


Figure 5: Rapid measurement of electrical waveforms.

Dual Theme Display:

The 2.8-inch IPS screen supports dual theme display (light and dark modes) to adapt to different lighting conditions, ensuring clear visualization of readings and waveforms.

Figure 6: Dual theme display for optimal visibility.

Official Product Demonstration:

Video 1: Official demonstration of the OWON HDS120 Oscilloscope Multimeter's features and operation.

5. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid abrasive cleaners or solvents.
- **Battery Care:** The 18650 lithium battery provides long usage. For optimal battery life, avoid fully discharging the battery frequently. Recharge when the low battery indicator appears.
- **Fuse Protection:** The instrument is designed with fuse protection. If measuring current for extended periods, the device will emit an alert to prevent fuse blowout from prolonged use or misoperation.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.

6. Troubleshooting Tips

- **Unstable Multimeter Readings:** If the multimeter readings appear to fluctuate or not settle on a stable value, ensure proper probe contact and check for any external electrical interference. The auto-ranging feature should typically stabilize readings.
- **Difficulty Navigating Menus:** The interface may require some practice. Refer to the detailed instructions for specific button functions and menu navigation. Utilize the 'AUTO' button in oscilloscope mode to quickly set up a viewable waveform.
- **Device Not Powering On:** Ensure the 18650 lithium battery is sufficiently charged. Connect the device to a power source via the Type-C port and allow it to charge for a period before attempting to power on again.
- **No Waveform Display in OSC Mode:** Verify that the test probes are correctly inserted and making good contact with the circuit. Use the 'AUTO' button to attempt automatic waveform detection and scaling. Check the trigger settings (Mode, Edge, Level) if the waveform is not stable.

7. Specifications

Category	Specification
Model Number	HDS120
Brand	OWON
Measurement Type	Multimeter, Oscilloscope
Digital Multimeter Counts	20000 Counts
Oscilloscope Bandwidth	1MHz (only ACV scale)
Display	2.8 inch IPS screen
Power Source	Battery Powered (18650 Lithium Battery)
Max Voltage Measurement	1000V
Max Current Measurement	10A (fused)
Package Dimensions	7.48 x 3.54 x 1.57 inches
Item Weight	12.35 ounces
Country of Origin	China

8. Warranty and Support

For warranty information and technical support, please contact OWON customer service or the authorized seller, SmartTek Inc., through your purchase platform. Keep your proof of purchase for any warranty claims.

© 2025 OWON. All rights reserved.

General Warranty

We warrant that the product will be free from defects in materials and workmanship for a period of 1 years from the date of purchase of the product by the original purchaser from our company. This warranty only applies to the original purchaser and is not transferable to a third party.

If the product proves defective during the warranty period, we will either repair the defective product without charge for parts and labour, or will provide a replacement in exchange for the defective product. Parts, modules, and replacement products used by our company for warranty work may be new or reconditioned like new. All replaced parts, modules and products become the property of our company.

In order to obtain service under this warranty, the customer must notify our company of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to the designated service centre, a copy of the customers proof of purchase is also required.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care.

We shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than our company representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of not our supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest Sales and Service Offices for services.

Excepting the after-sales services provided in this summary or the applicable warranty statements, we will not offer any guarantee for maintenance declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. We should not take any responsibilities for any indirect, special, or consequent damages.

※: The illustrations, interface, icons and characters in the user manual may be slightly different from the actual product. Please refer to the actual product.

[pdf] Guide Warranty

tyz коротку інструкцію з експлуатації мультиметрів осцилографів OWON серії HDS100 Цифровий мультиметр осцилограф HDS120 Masteram owon hds100 series oscilloscope meter quick guide en f00 psgsm net product 920722 |||

General Warranty We warrant that the product will be free from defects in materials and workmanship ... as follows: 19 Page options Cont SENS Comp Range Out Range Pass Description Set the on-off value **HDS120** series device can not be set . Set comparison range. Set the comparison pass condition range ...

lang:en score:31 filesize: 1.97 M page_count: 24 document date: 2024-08-14

General Warranty

We warrant that the product will be free from defects in materials and workmanship for a period of 1 years from the date of purchase of the product by the original purchaser from our company. This warranty only applies to the original purchaser and is not transferable to a third party.

If the product proves defective during the warranty period, we will either repair the defective product without charge for parts and labour, or will provide a replacement in exchange for the defective product. Parts, modules, and replacement products used by our company for warranty work may be new or reconditioned like new. All replaced parts, modules and products become the property of our company.

In order to obtain service under this warranty, the customer must notify our company of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to the designated service centre, a copy of the customers proof of purchase is also required.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care.

We shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than our company representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of not our supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest Sales and Service Offices for services.

Excepting the after-sales services provided in this summary or the applicable warranty statements, we will not offer any guarantee for maintenance declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. We should not take any responsibilities for any indirect, special, or consequent damages.

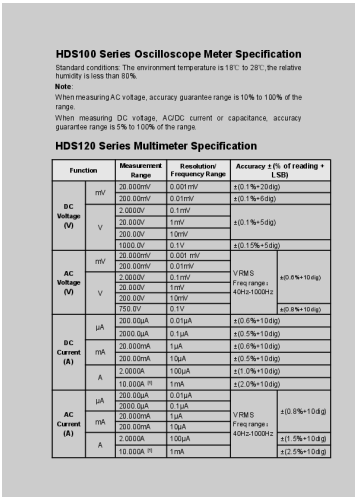
※: The illustrations, interface, icons and characters in the user manual may be slightly different from the actual product. Please refer to the actual product.

[pdf] Guide Warranty

tyz Download Center Lilliput OWON HDS100 Series Oscilloscope Meter Quick Guide files owon cn probook |||

General Warranty We warrant that the product will be free from defects in materials and workmanship ... description of the option is as follows: Page options Description Cont SENS Set the on-off value **HDS120** series device can not be set . 18 Comp Range Out Range Pass Set comparison range. Set the...

lang:en score:29 filesize: 1.99 M page_count: 23 document date: 2024-08-06



HDS100 Series Oscilloscope Meter Specification

Standard conditions: The environment temperature is 18℃ to 28℃, the relative humidity is less than 80%.

Note:

When measuring AC voltage, accuracy guarantee range is 10% to 100% of the range.

When measuring DC voltage, AC/DC current or capacitance, accuracy guarantee range is 5% to 100% of the range.

HDS120 Series Multimeter Specification

Function		Measurement Range	Resolution/ Frequency Range	Accuracy ±(% of reading + LSB)	
DC Voltage (V)	mV	20.000mV	0.001mV	±(0.1%+20dig)	
		200.00mV	0.01mV	±(0.1%+6dig)	
	V	2.0000V	0.1mV	±(0.1%+5dig)	
		20.000V	1mV		
		200.00V	10mV		
		1000.0V	0.1V	±(0.15%+5dig)	
AC Voltage (V)	mV	20.000mV	0.001 mV	V RMS Freq range：40Hz-1000Hz	±(0.6%+10dig)
		200.00mV	0.01mV		
	V	2.0000V	0.1mV		
		20.000V	1mV		
		200.00V	10mV		
		750.0V	0.1V		±(0.8%+10dig)
DC Current (A)	μA	200.00μA	0.01μA	±(0.6%+10dig)	
		2000.0μA	0.1μA	±(0.5%+10dig)	
	mA	20.000mA	1μA	±(0.6%+10dig)	
		200.00mA	10μA	±(0.5%+10dig)	
	A	2.0000A	100μA	±(1.0%+10dig)	
		10.000A [1]	1mA	±(2.0%+10dig)	
AC Current (A)	μA	200.00μA	0.01μA	V RMS Freq range：40Hz-1000Hz	±(0.8%+10dig)
		2000.0μA	0.1μA		
	mA	20.000mA	1μA		
		200.00mA	10μA		
	A	2.0000A	100μA		±(1.5%+10dig)
		10.000A [1]	1mA		±(2.5%+10dig)

[pdf] Specifications

Export OWON HDS120 Oscilloscope Multimeter HDS100 Series files owon cn specifications |||

HDS100 Series Oscilloscope Meter Specification Standard conditions: The environment temperature is 1 ... ring DC voltage, AC/DC current or capacitance, accuracy guarantee range is 5 to 100 of the range. **HDS120** Series Multimeter Specification Function mV DC Voltage V V mV AC Voltage V V ...

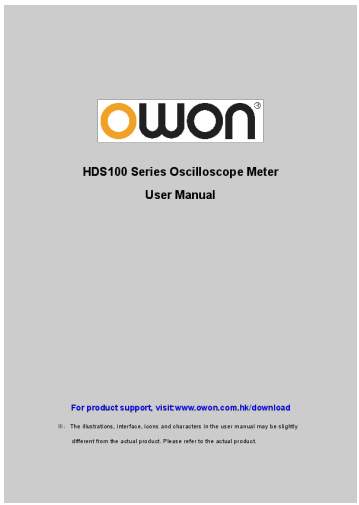
lang:en score:26 filesize: 159.07 K page_count: 6 document date: 2025-01-08

[pdf] Safety Datasheet

builder Kingsoft TAO3102 TAO3122 TAO3072A TAO3102A TAO3122A 70MHz 100MHz 120MHz OWON OWON 1740832225264327 yiqifuwu uploadfile file 20250301 |||

WWW.OWON.COM.CN CONTENTS - 01 ADS3000 05 ADS800A900A 12 09 FDS 13 NDS4000 ... 55,000 1,000 0.45kg DCUSB XDM1241 XDM1041 36 HDS100 60000HDS160, 20000 **HDS120** VmaxVmin Vp-p-Vavg VrmsHz 18650 2.8IPS 10M HDS160 V 60.000mV / 60...

lang:tl score:22 filesize: 6.89 M page_count: 88 document date: 2025-02-20

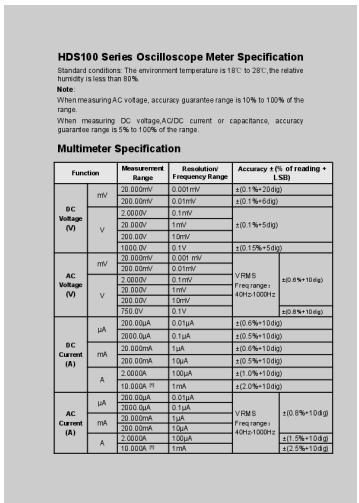


[pdf] User Manual Specifications Warranty

tyz Download Center Lilliput OWON HDS100 Series Oscilloscope Meter User Manual files owon cn probook |||

HDS100 Series Oscilloscope Meter User Manual For product support, visit:www.owon.com.hk/download The ... description of the option is as follows: Page options Description Cont SENS Set the on-off value **HDS120** series device can not be set . Comp Range Set comparison range. Out Range Pass Set the com...

lang:en score:22 filesize: 2.32 M page_count: 43 document date: 2024-08-06



HDS100 Series Oscilloscope Meter Specification

Standard conditions: The environment temperature is 18℃ to 28℃, the relative humidity is less than 80%.

Note:

When measuring AC voltage, accuracy guarantee range is 10% to 100% of the range.

When measuring DC voltage,AC/DC current or capacitance, accuracy guarantee range is 5% to 100% of the range.

Multimeter Specification

Function		Measurement Range	Resolution/ Frequency Range	Accuracy ±(% of reading + LSB)	
DC Voltage (V)	mV	20.000mV	0.001mV	±(0.1%+20dig)	
		200.00mV	0.01mV	±(0.1%+6dig)	
	V	2.0000V	0.1mV	±(0.1%+5dig)	
		20.000V	1mV		
		200.00V	10mV		
		1000.0V	0.1V	±(0.15%+5dig)	
AC Voltage (V)	mV	20.000mV	0.001 mV	VRMS Freq range：40Hz-1000Hz	±(0.6%+10dig)
		200.00mV	0.01mV		
	V	2.0000V	0.1mV		
		20.000V	1mV		
		200.00V	10mV		
		750.0V	0.1V		±(0.8%+10dig)
DC Current (A)	μA	200.00μA	0.01μA	±(0.6%+10dig)	
		2000.0μA	0.1μA	±(0.5%+10dig)	
	mA	20.000mA	1μA	±(0.6%+10dig)	
		200.00mA	10μA	±(0.5%+10dig)	
	A	2.0000A	100μA	±(1.0%+10dig)	
		10.000A 円	1mA	±(2.0%+10dig)	
AC Current (A)	μA	200.00μA	0.01μA	VRMS Freq range：40Hz-1000Hz	±(0.8%+10dig)
		2000.0μA	0.1μA		
	mA	20.000mA	1μA		
		200.00mA	10μA		
	A	2.0000A	100μA		±(1.5%+10dig)
		10.000A 円	1mA		±(2.5%+10dig)

[pdf] Specifications Datasheet

HDS100 series datasheet Owon HDS120 handheld oscilloscope multimeter Series static eleshop nl mage media |||

HDS100 Series Oscilloscope Meter Specification Standard conditions: The environment temperature is 18 to 28,the relative humidity is less than 80 . Note: When measuring AC voltage, accuracy guarantee range is 10 to 100 of the range. When measuring DC voltage,AC/DC current or capacitance, accuracy ...

lang:en score:14 filesize: 114.77 K page_count: 4 document date: 2024-08-14

[pdf]

1 Administrator OWON HDS120 Oscilloscope Multimeter 1Mhz 1000VDC 750VAC 20ADC 10AAC EMIN ASIA c5a7a98c28cd7290142c088d6b405a5d12b62630 emin asia d cdn 1886885 |||

...

lang:en score:12 filesize: 3.05 M page_count: 8 document date: 2024-11-28