

# OWON HDS Series digital oscilloscope

Product Series : **Handheld DSO**

## Main Features

- 2 in 1 (DSO + Multimeter)
- Auto-scale function
- 20 automatic measurements
- Bandwidth : 20MHz - 60MHz
- USB data transmission supported
- Rechargeable Li-ion battery (6 hours' backup)

## Application

electronic circuit debugging                      circuit testing  
design and manufacture                              education and training  
automobile maintenance and testing

| Model No. | Bandwidth | Sample Rate | Channel |
|-----------|-----------|-------------|---------|
| HDS1021M  | 20MHz     | 100MS/s     | 1       |
| HDS1022M  | 20MHz     | 100MS/s     | 2       |
| HDS2062M  | 60MHz     | 250MS/s     | 2       |

## Digital Storage Oscilloscope Performance Specifications

| Model                         | HDS1021M                                       | HDS1022M                                  | HDS2062M                                       |
|-------------------------------|--|---|--|
| Bandwidth                     | 20MHz  | 20MHz                                     | 60MHz  |
| Sample Rate (real time)       | 100MS/s  | 100MS/s                                   | 250MS/s  |
| Horizontal Scale (s/div)      | 5ns/div~100s/div, step by 1~2.5~5              |   | 5ns/div~100s/div, step by 1~2~5                |
| Rise Time (at input, typical) | ≤17.5ns  |   | ≤5.8ns   |
| Display                       | 3.5" color TFT display (320 × 240 pixels)      | 3.7" color TFT display (640 × 480 pixels) |  |
| Channel                       | single   | dual                                      |  |
| Input Impedance               | 1MΩ ± 2%, in parallel with 18pF ± 5pF          |   | 1MΩ ± 2%, in parallel with 20pF ± 5pF          |
| Record Length                 | max 6000 points on each channel                |   |  |
| Interpolation                 | sin (x) / x                                    |   |  |
| Probe Attenuation Factor      | 1X, 10X, 100X, 1000X                           |   |  |
| Input Coupling                | DC, AC, and GND                                |   |  |
| DC Accuracy (average)         | average > 16 : ± (3% reading + 0.05div) for ΔV |   | average > 16 : ± (5% reading + 0.05div) for ΔV |
| Vertical Sensitivity          | 5mV/div~5V/div (at input)                      |   |  |
| Vertical Resolution (A/D)     | 8 bits   |   |  |

|                          |   |             |                 |
|--------------------------|---|-------------|-----------------|
| Max Input Voltage        | 400V (PK - PK) (DC + AC, PK - PK, 1M $\Omega$ input impedance, probe attenuation 10 : 1), CAT II  |             |                 |
| Trigger Type             | Edge, Video   |             |                 |
| Trigger Mode             | Auto, Normal, Single  |             |                 |
| Trigger Level            | $\pm$ 6 divisions from screen center  |             |                 |
| Acquisition Mode         | Sample, Peak Detect, and Average  |             |                 |
| DC Gain Accuracy         | $\pm$ 3%  |             | $\pm$ 5%        |
| Automatic Measurement    | Vpp, Vavg, Vrms, Freq, Period, Vmax, Vmin, Vtop, Vbase, Overshoot, Preshoot, Rise Time, Fall Time, Delay A $\rightarrow$ B $\uparrow$ , Delay A $\rightarrow$ B $\downarrow$ , +Width, -Width, +Duty, -Duty |             |                 |
| Waveform Math            | unavailable   |             | +, -, x, $\div$ |
| Waveform Storage         | 4 waveforms   |             |                 |
| Lissajous Figure         | Bandwidth   | unavailable | full bandwidth  |
|                          | Phase Difference  | unavailable | $\pm$ 3 degrees |
| Communication Interface  | USB   |             |                 |
| Power Supply             | 100V-240V AC, 50 / 60Hz   |             |                 |
| Li-ion Battery           | 7.4V, 6 hours' operation  |             |                 |
| Dimension (W x H x D)    | 180 x 115 x 40 (mm)   |             |                 |
| Weight (without package) | 645 g   |             |                 |

### Multimeter Specifications

|                           |   |                             |                          |
|---------------------------|---|-----------------------------|--------------------------|
| <b>Full Scale Reading</b> | 3(3/4) digit (max 4000-count)   | <b>diode</b>                | 0V - 1.5V                |
| <b>Input Impedance</b>    | 10 M $\Omega$   | <b>On / Off measurement</b> | < 50 ( $\pm$ 30) beeping |
| <b>Voltage</b>            | VDC : 400mV, 4V, 40V, 400V, 1000V : $\pm$ (1% $\pm$ 1 digit); max input : DC 1000V<br>VAC : 4V, 40V, 400V : $\pm$ (1% $\pm$ 3 digits), 750V : $\pm$ (2% $\pm$ 3 digits); Frequency : 40Hz - 400Hz;<br>max input : AC 400V (virtual value) |                             |                          |
| <b>Current</b>            | DC : 40mA, 400mA : $\pm$ (1.5% $\pm$ 1 digit), 20A : $\pm$ (3% $\pm$ 3 digits)<br>AC : 40mA : $\pm$ (1.5% $\pm$ 3 digits), 400mA : $\pm$ (2% $\pm$ 1 digit), 20A : $\pm$ (5% $\pm$ 3 digits)  |                             |                          |
| <b>Impedance</b>          | 400 $\Omega$ : $\pm$ (1% $\pm$ 3 digits), 40K $\Omega$ - 4M $\Omega$ : $\pm$ (1% $\pm$ 1 digit), 40M $\Omega$ : $\pm$ (1.5% $\pm$ 3 digits)   |                             |                          |
| <b>Capacitance</b>        | 51.2nF~100uF : $\pm$ (3% $\pm$ 3 digit)   |                             |                          |