



# VOLTcraft®

**VOLTcraft® - TOP PERFORMANCE IN EVERY WAY**

“For more than 25 years, our product range has been dynamically adapting to the constant changes in the industry. We commit to offering first-class quality to our customers while delivering an excellent cost-performance ratio. This philosophy remains the cornerstone of Voltcraft’s success.”

## DSO-4152A / 150 MHz DIGITAL STORAGE OSCILLOSCOPE

CE

VERSION 06/09

Nº 12 24 35

The high-quality DSO-4000 series digital oscilloscopes from Voltcraft have a wide range of features at unbelievable prices. All models include a high-quality 14.2 cm TFT colour display with a large viewing angle. Data transfer to a PC is via standard USB ports. Applicable software is included with the delivery, while Lab-View drivers can be downloaded free of charge. An integrated multilingual help menu makes operation easier. A wide range of trigger options, automatic measurement functions incl. FFT and a frequency counter make measuring a breeze. The high quality and extensive feature set makes this oscilloscope series a genuinely cost-effective alternative for laboratories, schools and technology.

## HIGHLIGHTS

High sampling rate of 1GS/s //

Memory depth 1 Mpts per channel //

Cursor function: Delta-V, Delta-T //

Signal peak detection 10 ns //

15 memory sets for device setting //

15 memory sets for waveform //

Additional math function X //

Additional SDHC card slot //

Additional automatic measurement functions incl. FFT and FFT rms

Automatic measurement functions: Vpp, Vamp, Vavg, Vrms, Vhi, Vlo, Vmax, Vmin, frequency, period, rise /fall time, positive/negative pulse duration, pulse-pause ratio



# GENERAL SPECIFICATIONS

**Display size:** 14.2 cm (234 x 320 pixel, 8 x 10 DIV) **Display:** colour **Resolution:** 8 bits **Base period:** 1 ns/DIV - 10 s/DIV  
**Vertical deflexion:** 2 mV/DIV - 5 V/DIV **Accuracy:**  $\pm 3\%$  **Input impedance:** 1 M $\Omega$  ~16 pF **Triggering:** Auto/Normal/Single/TV/Edge  
**Input coupling:** AC/DC/GND **Input voltage:** 300 V (DC/AC peak) CAT II **Roll mode:** 250 ms - 10 s/DIV  
**Voltage supply:** 100 - 240 V/AC **Dim.: (W x H x D)** 310 x 142 x 140 mm **Can be calibrated according to:** ISO / DKD

## TECHNICAL DATA

Bandwidth (-3dB)	DC coupling: DC ~ 150MHz AC coupling: 10Hz ~ 150MHz
Bandwidth Limit	20MHz (-3dB)
Trigger Sensitivity	0.5div or 5mV (DC ~ 25MHz) 1.5div or 15mV (25MHz ~ 100MHz)
External Trigger	~ 50mV (DC ~ 25MHz)
Sensitivity	~100mV (25MHz ~ 100MHz)
Rise Time	< 2.3ns approx.

Vertical	Sensitivity	2mV/div ~ 10V/Div (1-2-5 increments)
	Accuracy	$\pm (3\% \times  \text{Readout}  + 0.1\text{div} + 1\text{mV})$
	Bandwidth	See model-specific specifications
	Rise Time	See model-specific specifications
	Input Coupling	AC, DC, Ground
	Input Impedance	1M $\Omega$ $\pm 2\%$ , ~15pF
	Polarity	Normal, Invert
	Maximum Input	300V (DC+AC peak), CAT II
	Math Operation	+, -, $\times$ , FFT, FFT rms
	Offset Range	2mV/div ~ 50mV/div: $\pm 0.4\text{V}$ 100mV/div ~ 500mV/div: $\pm 4\text{V}$ 1V/div ~ 5V/div: $\pm 40\text{V}$ 10V/div: $\pm 300\text{V}$
Trigger	Sources	CH1, CH2, Line, EXT
	Modes	Auto, Normal, Single, TV, Edge, Pulse
	Coupling	AC, DC, LF rej, HF rej, Noise rej
	Sensitivity	See model-specific specifications
	Holdoff	40ns ~ 2.5s
External trigger	Range	DC: $\pm 15\text{V}$ , AC: $\pm 2\text{V}$
	Sensitivity	See model-specific specifications
	Input Impedance	1M $\Omega$ $\pm 2\%$ , ~15pF
Horizontal	Maximum Input	300V (DC+AC peak), CATII
	Range	1ns/div ~ 50s/div, 1-2.5-5 increment Roll: 250ms/div ~ 50s/div
	Modes	Main, Window, Window Zoom, Roll, X-Y
	Accuracy	$\pm 0.01\%$
	Pre-Trigger	10 div maximum
X-Y Mode	Post-Trigger	1000 div
	X-Axis Input	Channel 1
	Y-Axis Input	Channel 2
	Phase Shift	$\pm 3^\circ$ at 100kHz
Signal Acquisition	Real-Time	1G Sa/s maximum
	Equivalent	25G Sa/s maximum
	Vertical Resolution	8 bits
	Record Length	1M (2 channel), 2M (1 channel) points maximum
	Acquisition	Normal, Peak Detect, Average
	Peak Detection	10ns (500ns/div ~ 50s/div)
	Average	2, 4, 8, 16, 32, 64, 128, 256

Cursors and Measurement	Voltage	Vpp, Vamp, Vavg, Vrms, Vhi, Vlo, Vmax, Vmin, Rise Preshoot/ Overshoot, Fall Preshoot/ Overshoot
	Time	Freq, Period, Rise Time, Fall Time, + Width, - Width, Duty Cycle
	Delay	FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF
	Cursors	Voltage difference ( $\Delta\text{V}$ ) and Time difference ( $\Delta\text{T}$ ) between cursors
	Auto Counter	Resolution: 6 digits, Accuracy: $\pm 2\%$ Signal source: All available trigger source except the Video trigger
	Control Panel Function	Autoset
Save/Recall		Up to 15 sets of measurement conditions and waveforms
Display	LCD	14.2 cm, TFT, brightness adjustable
	Resolution (dots)	234 (Vertical) x 320 (Horizontal)
	Graticule	8 x 10 divisions
Interface	Display Contrast	Adjustable
	USB Slave	USB1.1 & 2.0 full speed compatible
	Connector	(printers and flash disk not supported)
Probe Compensation	SD Card Slot	Image (BMP) and waveform data (CSV)
	Frequency range	1kHz ~ 100kHz adjustable, 1kHz step
	Duty cycle	5% ~ 95% adjustable, 5% step
Power Source	Amplitude	2Vpp $\pm 3\%$
	Line Voltage	100V~240V AC, 47Hz~63Hz
	Power Consumption	18W, 40VA maximum
Operation Environment	Fuse Rating	1A slow, 250V
	Ambient temperature	0 ~ 50°C
	Relative humidity	$\leq 80\%$ @35°C
Storage Environment	Ambient temperature	-10°C to 60°C
	Relative humidity	$\leq 80\%$ @60°C
	Dimensions	341.5(W) x 162.3 (H) x 159 (D) mm
Weight	Approx. 2.5kg	

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