



# VOLTCRAFT®

## VOLTCRAFT® - TOP PERFORMANCE IN EVERY WAY

“Since 1982, 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.”

# VC950 DIGITAL MULTIMETER

N° 124705

CE

VERSION 12/21

The new powerful logging multimeter of VC900 series for industrial applications, with important additional features such as low-pass filter for accurate voltage and frequency measurements at drive controls and other electronic devices, whose fundamental frequency is superimposed by harmonic waves.

The meter is particularly suitable for detecting errors in electronics, in process automation, power distribution and at electromechanical systems. The meter can record multiple measurements in portable use and can also continue functioning without supervision. Therefore, the device has an internal memory of up to 20,000 measurements. The data can be easily transferred to the PC using optical USB port. The large display with a display of up to 100000 counts and automatic backlight allows simultaneous display of multiple measurements in dark surroundings. Navigation buttons for quick selection of menu items to simplify the handling of this measuring device. The integrated TLD®-function (test lead detection) warns the user if the measurement lines are connected incorrectly. By input voltages > The warning sign appears at 30 V in the display. The VC950 also offers the option of True RMS of AC voltage and current for accurate representation of complex signals or non-linear loads. The test result is automatically reduced especially with low ohm measurements or capacitance measurements by the cable resistance with relative value mode.

The devices are for measurement in the over-voltage category CAT IV 600 V and CAT III 1000 V approved and tested as per EN-61010 standards.

## HIGHLIGHTS

**CAT IV 600V, CAT III 1000V //**

**True RMS AC+DC //**

**Basic accuracy of  $\pm 0.03\%$  //**

**Diode test //**

**Continuity checker //**

**Sensor-controlled backlight //**

**D-pad for menu navigation //**

**Optical interface for connection to a PC**

**Auto power-off //**

**Fold-out stand //**



# TECHNICAL DATA

|                       |   |
|-----------------------|---|
| Display               | Max. 100,000 counts   |
| Measuring rate        | 3 measuring operations/second                                       |
| Measuring line length | approx. 90 cm each  |
| Measuring impedance   | 10M $\Omega$ (V range), <100pF                                      |
| Operating voltage     | 4 mignon batteries (type AA)  |
| Working conditions    | 11 to 30°C (<80%rF), >30 to 40°C (<75%rF), >40 to 50°C (<45%rF)     |
| Operating altitude    | max. 2,000 m  |
| Storage temperature   | -20°C to +60°C  |
| Weight                | approx. 620 g   |
| Dimensions (LxWxH)    | 212 x 98 x 52 mm  |
| Over-voltage category | CAT III 1,000 V, CAT IV 600 V, contamination degree 2               |
| Crest factor          | max 3 (CF 1.4 to 2.0 +1%; CF 2.0 to 2.5 +2.5%; CF 2.5 to 3.0 +4.0%) |

## Direct Voltage

| Range       | Accuracy              |
|-------------|-----------------------|
| 100.000 mV  | $\pm (0.03 \% + 4)$   |
| 1000.000 mV | $\pm (0.026 \% + 20)$ |
| 10.000 mV   | $\pm (0.02 \% + 20)$  |
| 100.000 mV  |                       |
| 1000.000 mV |                       |

## Alternating Voltage

| Range       | Accuracy                                 |
|-------------|--|
| 100.000 mV  | $\pm (1 \% + 50)$ at 40 Hz ~ 65 Hz       |
| 1000.000 mV | $\pm (1.95 \% + 50)$ at 66 Hz ~ 1 kHz    |
|             | $\pm (3.9 \% + 50)$ at 1.01 kHz ~ 3 kHz  |
| 10.000 mV   | $\pm (1.3 \% + 50)$ at 40 Hz ~ 45 Hz     |
| 100.000 mV  | $\pm (0.52 \% + 50)$ at 46 Hz ~ 65 Hz    |
| 1000.000 mV | $\pm (1.3 \% + 50)$ at 66 Hz ~ 1 kHz     |
| 10.000 mV   | $\pm (2.6 \% + 50)$ at 1.01 kHz ~ 10 kHz |
| 100.000 mV  | $\pm (3.9 \% + 50)$ at 10.01kHz ~ 20kHz  |
|             | $\pm (6.5 \% + 50)$ at 20.01kHz ~ 50kHz  |
|             | $\pm (13 \% + 50)$ at 50.01kHz ~ 100kHz  |

## Direct current

| Range      | Accuracy             |
|------------|----------------------|
| 10.000 mV  | $\pm (0.13 \% + 40)$ |
| 100.000 mV |                      |
| 10.000 mV  | $\pm (0.13 \% + 80)$ |

**Alternating current**

| Range      | Accuracy                           |
|------------|------------------------------------|
| 10.0000 mA | $\pm (0.91\% + 80)$ at 40Hz ~ 65Hz |
| 100.000 mA | $\pm (2.6\% + 80)$ at 66Hz ~ 1KHz  |
| 10.0000 A  |                                    |

**Impedance**

| Range  | Accuracy             |
|--|----------------------|
| 1000.00 $\Omega$   | $\pm (0.07\% + 30)$  |
| 10.0000 k $\Omega$   | $\pm (0.033\% + 30)$ |
| 100.000 k $\Omega$   |                      |
| 1000.00 k $\Omega$   | $\pm (0.39\% + 30)$  |
| 10.0000 M $\Omega$   | $\pm (1.3\% + 30)$   |
| 40.000 M $\Omega$  | $\pm (1.95\% + 30)$  |
| Overload protection 1000 V; Measuring voltage: approx. 2.5 V |                      |

**Capacity**

| Range                      | Accuracy           |
|----------------------------|--------------------|
| 40.00 nF                   | $\pm (1.6\% + 20)$ |
| 4400.0 nF                  | $\pm (1\% + 2)$    |
| 4.000 $\mu$ F              |                    |
| 40.00 $\mu$ F              |                    |
| 400.0 $\mu$ F              |                    |
| 4.000 mF                   | $\pm (1.6\% + 20)$ |
| 40.00 mF                   | $\pm (1.6\% + 40)$ |
| Overload protection 1000 V |                    |

**Frequency**

| Range   | Accuracy             |
|---|----------------------|
| 40.000 Hz                                     | $\pm (0.003\% + 50)$ |
| 400.00 Hz                                     | $\pm (0.003\% + 10)$ |
| 4.0000 kHz                                    |                      |
| 40.000 kHz                                    |                      |
| 400.00 kHz                                    |                      |
| 4.0000 MHz                                    |                      |
| Overload protection 1000 V                    |                      |
| Sensitivity (40 Hz - 40 kHz): 1 Vpp - 10 Vpp  |                      |
| Sensitivity (400 kHz - 4 MHz): 5 Vpp - 10 Vpp |                      |

**Scanning rate (duty factor)**

| Range                                | Accuracy            |
|--------------------------------------|---------------------|
| 20.0% ~ 80.0%                        | $\pm (0.13\% + 10)$ |
| Overload protection 1000 V           |                     |
| Sensitivity: 5 Vpp - 10 Vpp          |                     |
| Signal: rectangular (5 Hz to 10 kHz) |                     |

**HFR (Low-Pass Filter)**

| Range                      | Accuracy                    |
|----------------------------|-----------------------------|
| Identical with ACV         | $(1.3\%+8)$ at 40Hz ~ 400Hz |
| Overload protection 1000 V |                             |

### Temperature

| Range                      | Accuracy            |
|----------------------------|---------------------|
| -200°C to +10°C            | $\pm (1.3 \% + 20)$ |
| 10°C to +1200°C            | $\pm (1.3 \% + 10)$ |
| -328.0°F - 50.0°F          | $\pm (1.3 \% + 40)$ |
| 50.1°F - 2192.0°F          | $\pm (1.3 \% + 20)$ |
| Overload protection 1000 V |                     |

### Acoustic continuity tester

| Test voltage   | Resolution   |
|--|--------------|
| approx. 2.5 V  | 0.1 $\Omega$ |
| Overload protection: 1000 V, <10 $\Omega$ continuous sound |              |

### Diode test

| Test voltage                | Resolution |
|-----------------------------|------------|
| approx. 2.5 V               | 0.001 V    |
| Overload protection: 1000 V |            |

## PACKAGE CONTENT

Multimeter // 1 set of leads // Optical interface cable // Software CD // USB cable // Temperature sensor // Alligator clips // Operating instructions

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