

	<p style="text-align: center;"><b>MINISTRY OF RESEARCH, TECHNOLOGY AND HIGHER EDUCATION</b></p> <p style="text-align: center;"><b>UNIVERSITAS NEGERI JAKARTA</b></p> <p style="text-align: center;"><b>FACULTY OF MATHEMATICS AND NATURAL SCIENCES</b>  Hasyim Asjari Building, Campus A UNJ Rawamangun  Jl. Rawamangun Muka, East Jakarta 13220  Tel/Fax 021-4894909</p>	<b>WORK INSTRUCTION (IK)</b>	
		<b>VICTOR VC980 DIGITAL MULTIMETER</b>	
		<b>No. Document</b>	<b>IK MU02/LF/2022</b>
		<b>Edition</b>	<b>01</b>
		<b>Revision</b>	<b>0</b>
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**1. Objective**

This instruction is needed as a guide in operating a digital multimeter.

**2. Scope**

This work instruction covers the operation of a digital multimeter.

**3. Reference**

Vicktor VC980 Digital Multimeter manual.

**4. Executor**

related PLP.

**5. Definition**

**A multimeter** is a measuring instrument electricity is used to measure three types of electrical quantities , namely electric current , electric voltage , and electrical resistance . Another name for a multimeter is AVO-meter which is an abbreviation for the units Ampere , Volt , and Ohm .

**6. Tool Image**



**Parts of a Digital Multimeter ;**

Knob Selector

: To transfer measurements for current , voltage or resistance

Displa y

: To display measurement results

Probe cable red (+) black (-)

: To be used to measure between 2 points inside Suite

Power

: To turn the multimeter off and on

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## 7. Work instruction

### 7.1 Multimeter Operation.

#### 7.1.1 Voltage Measurement.

- Connect the black probe cable to the COM terminal and the red probe cable to the V terminal.
- Set the switch to DCV or ACV.
- Place the red and black probes on the circuit to measure.
- For DCV measurements, place the black probe to the negative potential side of the circuit and the red probe to the black potential side.
- For ACV measurements, place the red and black probes into the circuit.
- The Voltage Reading is displayed on the screen.
- After measurement, remove the red and black probes from the circuit being measured.

#### 7.1.2 Current Measurement.

- Connect the black probe cable to the COM terminal and the red probe cable to the  $\mu\text{A}/\text{mA}/\text{A}$  terminal.
- Set the switch to  $\mu\text{A} / \text{mA} / \text{A}$  and select DC or AC by pressing the select button.
- In the circuit for measuring and put the black probe in series with the load.
- For DCA measurements, use the black probe to the negative potential side of the circuit and the red probe to the positive potential side in series with the load.
- For ACA measurements, place the red and black probes into the circuit in series with the load.
- The Current Reading is displayed on the screen.
- After measurement, remove the red and black probes from the circuit being measured.

#### 7.1.3 Resistance Measurement.

- Connect the black probe to the COM terminal of the input terminal and the red probe to the  $\Omega$  input terminal.
- Set the switch to  $\Omega$  and press the  $\Omega$  button on the select button
- Place the red and black probes on the object to be measured
- The Resistance Reading is displayed on the screen.
- After measurement, remove the red and black probes from the measured object.

## 8. Digital Multimeter Maintenance

Things that need to be done in multimeter maintenance, namely:

- Make sure to use a permitted fuse, do not short-circuit the fuse end terminals, do not replace the fuse in such a way that the multimeter can operate without considering its safety.

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- Before starting a measurement, make sure that the functions and measuring limits of the multimeter are in a suitable state, according to the measurement.
- Do not use it with wet hands and in a flooded environment.
- Do not use a probe (test cable) that is not specified.
- Check and calibrate the multimeter at least once a year.

### 9. Endorsement

	<b>Name</b>	<b>Position</b>	<b>Signature</b>	<b>Date</b>
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