## 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.
- Things that should not be done while the tool is operating/working.
- Things that must be done when finishing work.

## 3. Reference

Sanwa RD700 Digital Multimeter manual, page: 9-19.

## 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 move measurements for current, voltage or resistance . |
| Display | : to display measurement results . |
| Probe cable red (+) black (-) | : To be used to measure between 2 points in the circuit . |
| Power | : To turn the multimeter off and on . |

## 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 µA/mA/A terminal.
- Set the switch to µA / mA / 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 Ω input terminal.
- Set the switch to Ω and press the Ω 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. 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.
- 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

| | Name | Position | Signature | Date |
|---|---|---|---|---|
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