POLITEKNIK MALAYSIA
UNGKU OMAR

DET10112 ELECTRICAL WIRING

ASSESSMENT 1 : 13 AMPS SOCKET OUTLET IN RADIAL CONNECTION

A. OBJECTIVES

At the end of lab session, students should be able to:

1. Understand the function and operation of socket outlet.
2. Understand the radial and ring connection for socket outlet.
3. Understand the method to assemble the PVC pipe according to the layout diagram.
4. Perform the single-phase domestic wiring to the PVC pipe layout.
5. Perform electrical wiring testing according to Electricity Supply Act 1990, Electricity Regulation 1994 and MS IEC 60364 standard.

B. LAYOUT DIAGRAM:

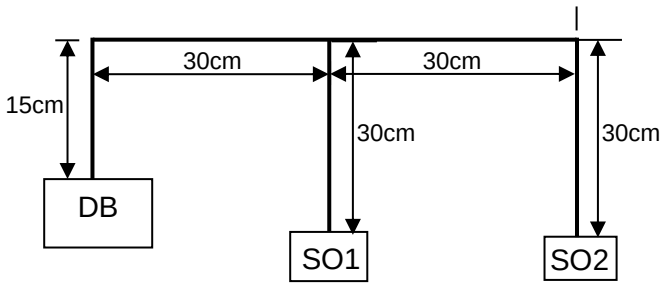


Figure 4.1: Layout diagram for 2 Socket Outlets

NOTE:

Socket Outlet 1 and Socket Outlet 2 are connected in radial connection.

C. MATERIAL / TOOL

ACCESSORIES:

1. 13Amps Socket Outlet
2. Ring Tester
3. PVC pipe as required
4. Inspection Tee
5. Elbow
6. Switch base
7. Female bush
8. U clip

ELECTRICAL TOOLS:

1. Test Pen
2. Combination plier
3. Screwdriver
4. Side Cutter
5. Wire Stripper
6. PVC Cutter
7. Spring Bender
8. Measurement Tape
9. Multimeter

D. GENERAL INSTRUCTION

1. Ensure that all accessories and electrical tools are working properly.
2. Verify that each accessory is sufficient as listed.
3. Place the accessories and electrical tools in the designated area after use.
4. Turn off the switch of each appliance after use.

E. WORK INSTRUCTION / PROCEDURE

1. Students have to draw the wiring diagram.
2. Cut the conduit pipe according to the measurements provided in the layout diagram as shown in Figure 4.1.
3. Fix the conduit pipe to match the layout diagram and secure it to the wiring bay with screws.
4. Cut the wiring cable to the length specified in the practical wiring diagram.
5. Make sure there is an extra 20 cm cable at each end of the cable connection point.
6. Insert the cable through the conduit pipe as shown in the wiring diagram.
7. Each end of the cable insulator must be removed at least 1cm for connection purposes.
8. Install the electrical accessories.
9. Use pliers to twist the end of the conductor before connecting it to the termination terminal of the accessory.
10. Identify the correct cable to connect to the accessory terminal and tighten the screw securely.
11. Perform the **visual test**, **continuity test**, **live and neutral conductor continuity test** for the completed wiring diagram without connecting it to the power supply.
12. After completing the inspection and testing, connect the wiring diagram to the power supply for the socket outlet ring circuit test and record the results.

F. RESULT

1. Draw the wiring diagram for radial connection.

CONTINUITY TEST

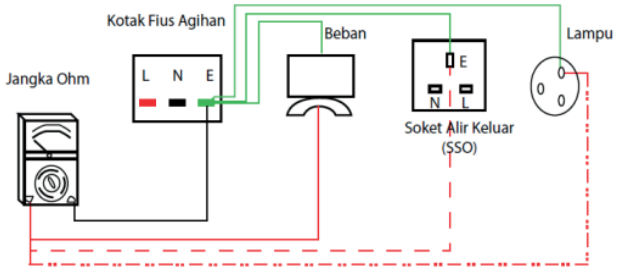
A continuity test is a quick check to see if a circuit is open or closed. Only a closed, complete circuit (one that is switched ON) has continuity. During a continuity test, a digital multimeter sends a small current through the circuit to measure resistance in the circuit.

• To ensure that each conductor in the circuit has continuity

• Test Equipment – Multimeter (Ohm range) or Ohm Meter

• Test Method:

1. Ensure that the main switch, RCD and MCB are open circuited (switched off), and all loads are disconnected.
2. Connected the test leads as in the Figure below. The meter reading must be less than 1 ohm.



Result:

Reading by Ohm meter/Multimeter:

Earth Protective cable reading: _____

LIVE AND NEUTRAL CONDUCTOR CONTINUITY TEST

• To ensure that each conductor in the circuit has continuity

• Test Equipment – Multimeter (Ohm range) or Ohm Meter

• Test Method:

1. Switch off the Main switch, RCD and MCB

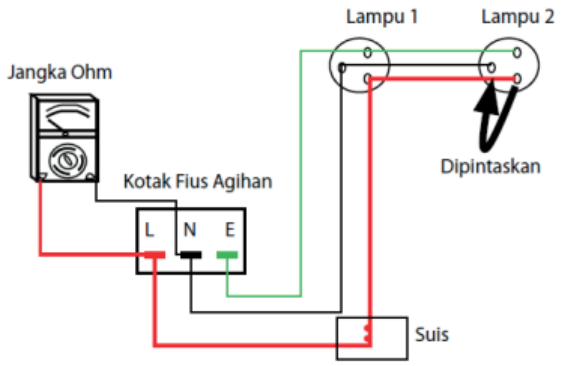
2. Disconnect all loads

3. Switch on all switches in the circuit

4. Disconnect the fuses/final circuit breakers and close the circuit

5. Carry out the test as shown in Figure

6. The meter reading shall be less than 1 ohm



Result:

Reading by Ohm meter/Multimeter:

Live and Neutral Conductor reading: _____

RESULTS

4. Tick (√) or (X) in correct column.

OPERATION	SO1	SO2
Socket Tester		

SOCKET TESTER INDICATOR

√ : LIGHTS ON X : LIGHTS OFF