Worksheet 2-020: One-way to two-way lighting circuit conversion

NB: Students must not attempt this exercise before the correct use of all tools and materials has been demonstrated.

Technical data

- You are to make sure that your work area is clear and safe for work to proceed.
- You are to make sure that all your work conforms to the requirements of the Health and Safety at Work Act.
- All practical electrical installation exercises must comply with BS 7671:2018 (IET Wiring Regulations).
- All terminations must be mechanically and electrically sound.

Material required

1 off	Materials from Worksheet 2-010
1 off	Surface mounted moulded switch box 1-gang
2 off	Plate switch 1-gang, 2-way, single pole, 5A
2 off	3.5 x 20mm raised countersunk set pins
0.5 m	1.5mm^2 three core and cpc PVC insulated and sheathed cable
300mm	2mm green/yellow cpc sleeving
50mm	2mm brown sleeving
	Clips, screws and pins, as detailed in the exercise demonstration.

Procedure

1. Enter the start time on the assessment sheet.

2. Study the diagram and from it draw a wiring diagram.

3. **This diagram must be handed in for assessment before proceeding.**

4. Prepare the material requisition for the required materials.

5. **Have the requisition checked before proceeding.**

6. Obtain the material from the stores.

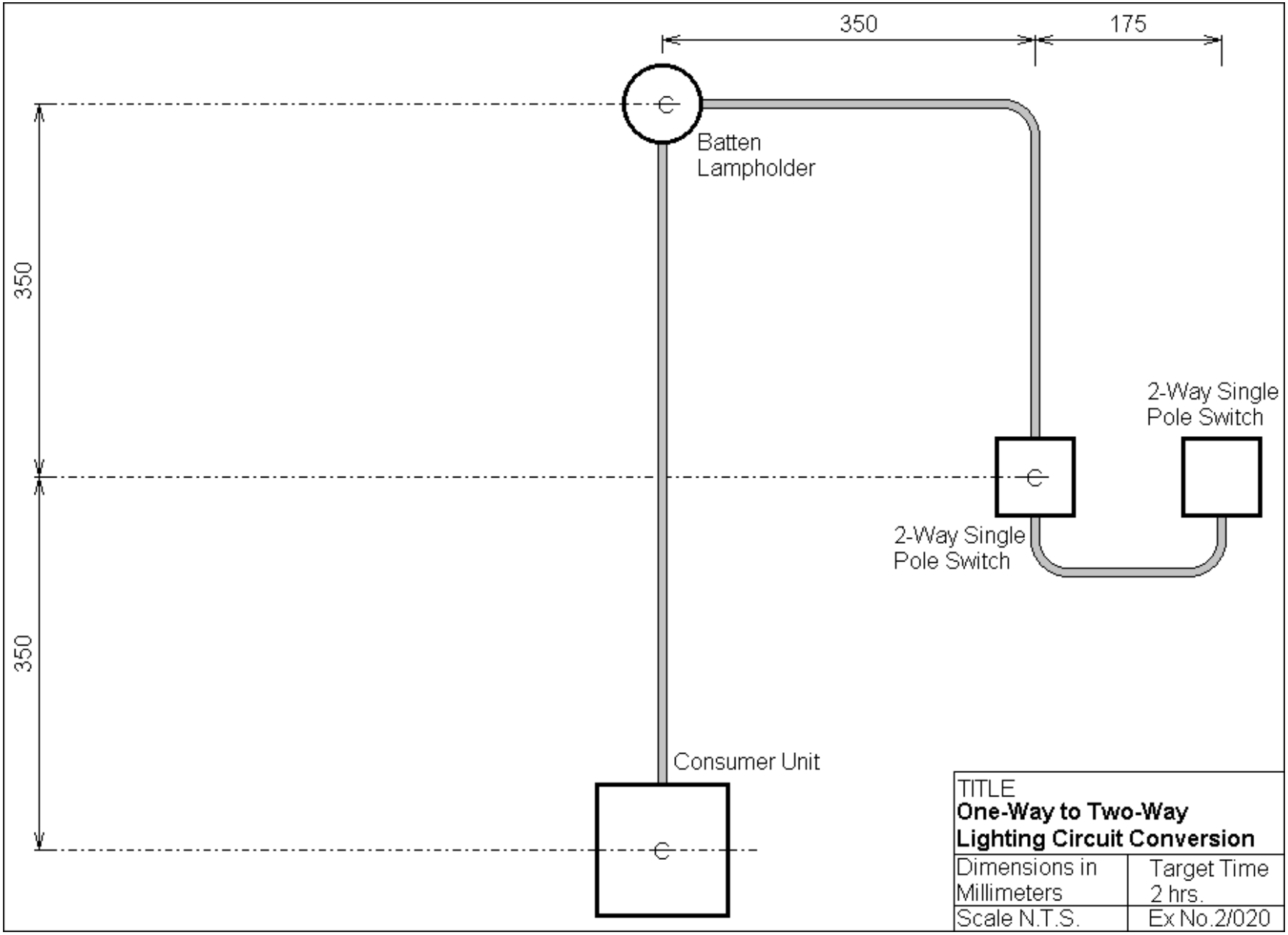
7. Carry out the installation.

8. Carry out the necessary tests on the installation and record all readings obtained on the assessment sheet.

9. **Notify the Lecturer that the work is ready for assessment.**

10. Enter the finish time on the assessment sheet.

NB: On the two-way conversion circuit it is usual practice to use the black core for the ‘common’ with the brown and grey cores connected to ‘L1’ and ‘L2’, respectively. The black and grey cores should have brown sleeving applied.


350
175
350
350
Batten
Lampholder
2-Way Single
Pole Switch
2-Way Single
Pole Switch
Consumer Unit
TITLE
One-Way to Two-Way
Lighting Circuit Conversion
Dimensions in
Millimeters
Target Time
2 hrs.
Scale N.T.S.
Ex No.2/020

Test results

cpc Continuity Test

Instrument Used:			
Instrument Serial No.:		Range Setting:	
CCU-Lampholder Reading:			
CCU-Switch Reading:			

Insulation Resistance Test

Instrument Used:			
Instrument Serial No.:		Range Setting:	
Line-Neutral Reading:			
Line/Neutral-Earth Reading:			

Polarity Test

Instrument Used:	
Protective Device Polarity:	
Switch Polarity:	

Assessments are based on **observed** safety procedures, and the **quality** and **accuracy** of the completed exercise.

		YES	NO
1.	Wiring diagram function correct	☐	☐
2.	Wiring diagram drawn neatly	☐	☐
3.	Wiring diagram drawn using correct symbols	☐	☐
4.	Wiring diagram labelled correctly	☐	☐
	Assessed by: ……...……..		
5.	Material requisition correct first time	☐	☐
6.	Method statement completed	☐	☐
	Assessed by: ……...……..		
7.	Inspection and testing completed correctly	☐	☐
8.	Test results correctly recorded	☐	☐
9.	Accessories fixed in correct positions	☐	☐
10.	Accessory covers all fixed securely	☐	☐
11.	Cable sheath taken into all accessories	☐	☐
12.	Clip position/spacings acceptable	☐	☐
13.	Bends formed correctly (minimum radii and uniform)	☐	☐
14.	Circuit functions correctly	☐	☐
15.	cpc sheathed correctly	☐	☐
16.	Conductors correctly coded at terminations	☐	☐
17.	Suitable amount of spare cable left in accessories	☐	☐
18.	Conductor insulation undamaged at terminations	☐	☐
19.	Conductors doubled as appropriate and secure	☐	☐
20.	Sheath/insulation stripped to correct position	☐	☐
21.	Conductors undamaged at terminations	☐	☐
22.	Overall appearance to a commercially acceptable standard	☐	☐
23.	Work area conformed to requirements of HASAWA	☐	☐
24.	Correct safety procedures observed at all times	☐	☐
	Assessed by: ……...……..		

Start Date & Time: ……....…….. Finish Date & Time: ……..….....……

Target Time: 2 hours Time Taken: ……....……