

071606T4MCT

MECHATRONIC TECHNICIAN LEVEL 6

ENG/OS/MC/CR/03/6/

Maintain Electro-Mechanical Systems

July/August 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

INSTRUCTIONS TO ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to mark the practical as the candidate perform the tasks
3. You are required to take video clips at critical points
4. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION CHECKLIST

Candidate's Name & Registration Code			
Assessors Name & Registration Code			
Venue of Assessment			
Date of Assessment			
Items to be Evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks Available	Marks Obtained	Comments
1. Observed occupational health and safety by wearing the correct PPE i. Safety boots ii. Overall (Award 1 mark each)	2		
Sub-Total 1	2		
Task 1: Studied the power circuit and draw the control circuit diagram from the provided power circuit diagram			
2. Correctly identified the following components: i. Contactor ii. Motor iii. Auxiliary relay (Award 1 mark each)	3		
3. Correctly drew the control circuit diagram (Award 4 marks)	4		
Sub-Total 2	7		
Task 2: Troubleshoot the system			
4. Correctly used the following equipment and tools: i. Phase Tester ii. Digital Multimeter iii. Set of Pliers iv. Cable stripper (Award 1 mark for each)	4		

5. Correctly: i. Tested the power supply in the distribution board ii. Checked contactor terminals for complete connections; iii. Carried out continuity test on contactors and fuse box <i>(Award 2 marks each)</i>	6		
6. Correctly identified faulty fuse box. <i>(Award 1 mark for faulty fuse identification)</i>	1		
7. Correctly troubleshot the motor connection <i>(Award 1 mark for incorrect phases identification)</i>	1		
8. Correctly troubleshot the Contactor <i>(Award 1 × 2 mark for correctly identifying unstripped and loose cable connection)</i>	2		
Sub-Total 2:	14		
Task 3: Serviced and repaired the system			
9. Correctly replaced the faulty fuse box with the correct one. <i>(Award 2 marks for correction)</i>	1		
10. Corrected the phase connection of the motor <i>(Award 2 marks)</i>	2		
11. Correctly terminated the contactor <i>(Award 2 marks)</i>	2		
Sub-Total 3:	5		
Task 4: Performed System Tests			

12. Correctly performed the following tests: i. Continuity tests ii. Polarity test tests iii. Phase voltage for the practical iv. Visual inspection <i>(Award 2 marks each)</i>	8		
Sub-Total 4:	8		
Task 5: Operated the system			
13. Powered on the system <i>(Award 2 marks for correctly following the sop in powering on the circuit)</i>	2		
14. System worked correctly i. Forward motor rotation ii. Reverse motor rotation <i>(Award 2 marks each)</i>	4		
15. Powered on the system <i>(Award 2 marks for correctly following the in powering on the circuit)</i>	2		
Sub-Total 6	8		
Task 6: Wrote a brief maintenance report			
16. Wrote a brief breakdown maintenance report written <i>(Award 5 marks)</i>	5		
17. Performed housekeeping <i>(Award 2 marks)</i>	2		
Sub-Total 6	7		
GRAND TOTAL	51		
ASSESSMENT OUTCOME			

The candidate was found to be:	
Competent ☐	Not yet Competent ☐
<i>(Please tick as appropriate)</i>	
<i>(The candidate is competent if the candidate obtains at least 50%)</i>	
Feedback from the Candidate:	
Feedback to the Candidate:	
Candidate Signature	Date:
Assessor's Signature	Date

APPENDIX:**INSTRUCTIONS TO THE ASSESSOR:**

In this assessment, the candidate will be required to perform a practical task on Maintain an Electromechanical system.

N/B Provide the Trainee with a pre-installed work station as per the power diagram.

The following errors should be deliberately introduced into the system:

- In the fuse box, remove the fuses in any two phases.
- Connect one terminal of the contactor with unstripped cable and any other two with loose connection
- Interchange any of the two phases of the motor connections such that motor rotation is reversed when forward start button is pressed and vice versa.

The Trainee should identify the faults and correct the errors i.e. identify the faulty fuse, tighten the loose cable terminals, stripped and terminate the cables correctly on contactor and finally reconnect the motor in the correct phase sequences.

The system should work as per the circuit p figure 1

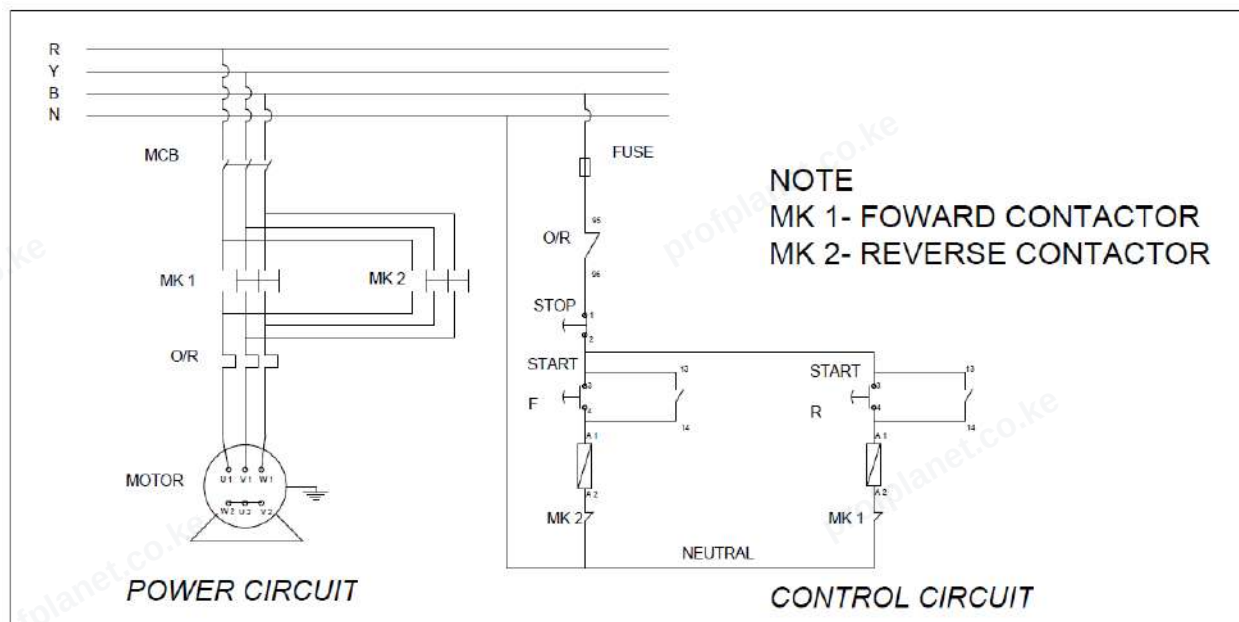


Fig. 1 power and control circuit