

071606T4MCT

MECHATRONIC TECHNOLOGY LEVEL 6

ENG/OS/MC/CR/02/6/A

Install Mechatronic Systems

March/April 2025



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

PRACT MENT

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

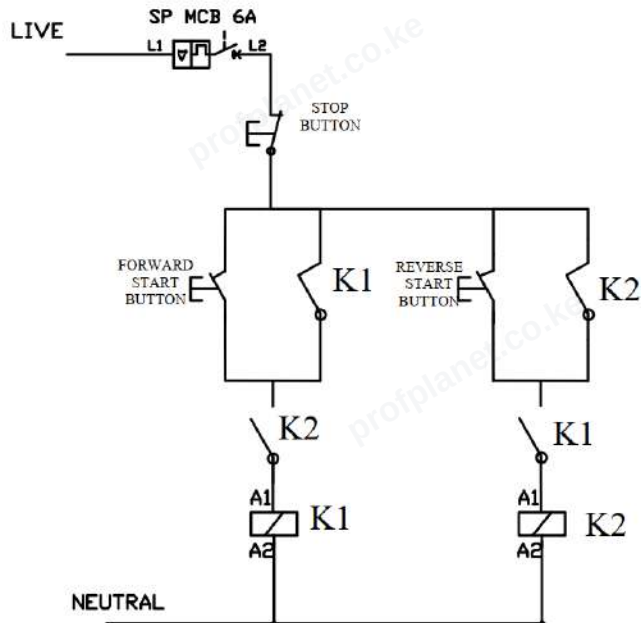
Candidate's Name & Registration Code			
Assessor Name & Registration Code			
Venue of Assessment			
Date of Assessment			
Items to be Evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks Available	Marks Obtained	Comments
1. Worn the appropriate PPEs i. Safety boots ii. Overall <i>Award 1 mark for each PPE worn 2 x 1</i>	2		
Su	2		
TASK 1: INSPECTED ALL THE RE			
2. Inspected the following resources: i. Contactors ii. Overload relay iii. Motor terminals iv. Availability of enough conductors <i>Award 1 mark for each correct operation 4 x 1</i>	4		
Sub-Total 2	4		
TASK 2: DREW THE FORWARD-REVERSE CONTROL CIRCUIT			
3. Drew the motor control circuits. i. Control circuit <i>Award 2 marks for correct wiring drawing of the forward start button and relay</i>	5		

<i>Award 2 marks for correct wiring drawing of reverse start button and relay</i> <i>Award 2 mark for correct wiring of Live and Neutral</i>			
Sub-Total 3	5		
TASK 3: INSTALLED THE MOTOR			
4. Identified the tools and equipment necessary for the installation. i. <i>Multimeter</i> ii. <i>screw driver set</i> iii. <i>Tester</i> iv. <i>Pliers</i> v. <i>Wire stripper</i> vi. <i>Side cutter</i> vii. <i>Hammer</i> <i>Award 1 mark for any SIX identified too</i>	6		
5. Identified the roles of the provided r i. <i>Rails</i> ii. <i>Contactors</i> iii. <i>Thermal overload relay</i> iv. <i>Circuit breaker</i> v. <i>Normally closed push buttons</i> vi. <i>Normally open push buttons</i> <i>Award 2 marks for correct explanation 6 x 2</i>	12		
6. Installed the circuit. i. <i>Installed the rail.</i> ii. <i>Installed circuit breaker.</i> iii. <i>Installed the overload relay.</i> iv. <i>Installed forward contactor.</i> v. <i>Installed reverse contactor.</i>	12		

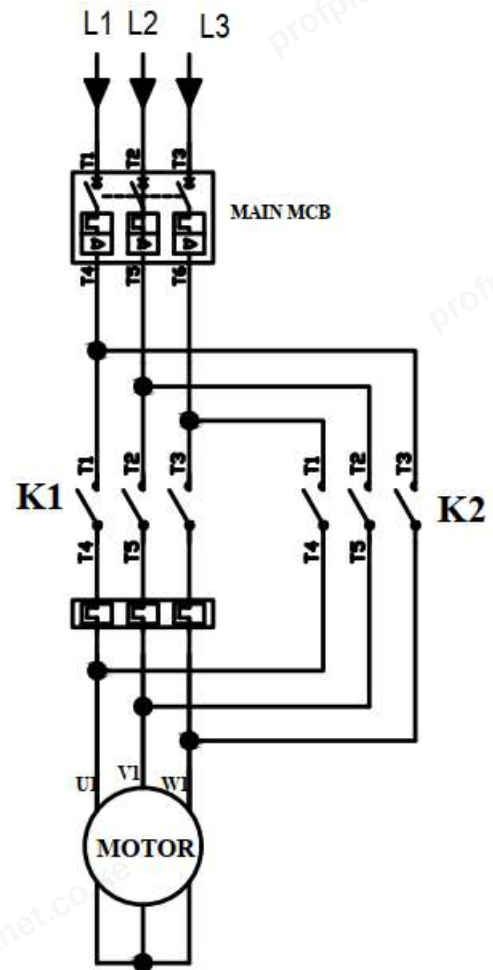
vi. <i>Installed start and stop buttons.</i> <i>Award 2 marks for each correct installation 6 x 2</i>			
7. Followed the installation standards. i. <i>Followed color coding standards.</i> ii. <i>Terminals are tightly connected.</i> iii. <i>Conductors are not exposed.</i> iv. <i>Cable management and layout.</i> <i>Award 2 marks for each correctly used standard 4 x 2</i>	8		
Sub-Total 4	38		
TASK 4: OPERATED AND MEASURED THE SPEED MOTOR			
8. Tested the circuit. i. <i>Tested continuity.</i> ii. <i>Tested mains supply to check voltage.</i> <i>Award 2 marks for each correct test 2 x</i>	4		
9. Operated the circuit. i. <i>Started the motor.</i> ii. <i>Stopped the motor.</i> <i>Award 5 marks if the motor runs</i> <i>Award 2 marks for speed measurement</i> <i>Award 5 marks if the motor stops</i>	12		
10. Measured the speed of the motor i. <i>Measured the speed of motor</i> <i>Award 2 marks for using the provided reflective film</i> <i>Award 2 marks for using the Tachometer.</i>	4		
11. Conducted housekeeping.			

i. Switched OFF from the mains supply. ii. Disconnected all resources. iii. Placed the resources in the appropriate storages. Award 2 marks for each correct operation 3 x 2	6		
Sub-Total 5	26		
GRAND TOTAL	75		
ASSESSMENT OUTCOME			
The candidate was found to be: Competent ☐ Not yet Competent ☐ (Please tick as appropriate) (The candidate is competent if the candidate is at least 50%)			
Feedback from the Candidate:			
Feedback to the Candidate:			
Candidate Signature		Date:	
_____		_____	
Assessor's Signature		Date	
_____		_____	

APPENDIX: PRINT FOR ASSESSOR ONLY



Motor Control Circuit



Power Circuit