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071305T4EOP

ELECTRICAL OPERATION LEVEL 5

ENG/OS/PO/CR/03/5/A

Install Electrical Machine

March/April 2025

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

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PRACTICAL ASSESSMENT

TIME: 4 HOURS

INSTRUCTIONS TO CANDIDATE

1. **DO NOT** write on the question paper.
2. A separate paper is provided for drawing.
3. Adhere to the Environmental, Health and Safety regulations.
4. **DO NOT** power the circuit without assessor's permission.

This paper consists of THREE (3) printed pages.

Candidate should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

Figure 1 shows a layout of a three-phase star-delta motor starter.

Referring to the figure, carry out the following tasks:

a) Draw a wiring diagrams of both power and control circuits.

b) Wire the circuit for star-delta operation.

c) Perform continuity and polarity test.

d) Power and test the operation.

e) Disconnect the power supply, perform insulation resistance test and compare the value obtained with IEEE standards.

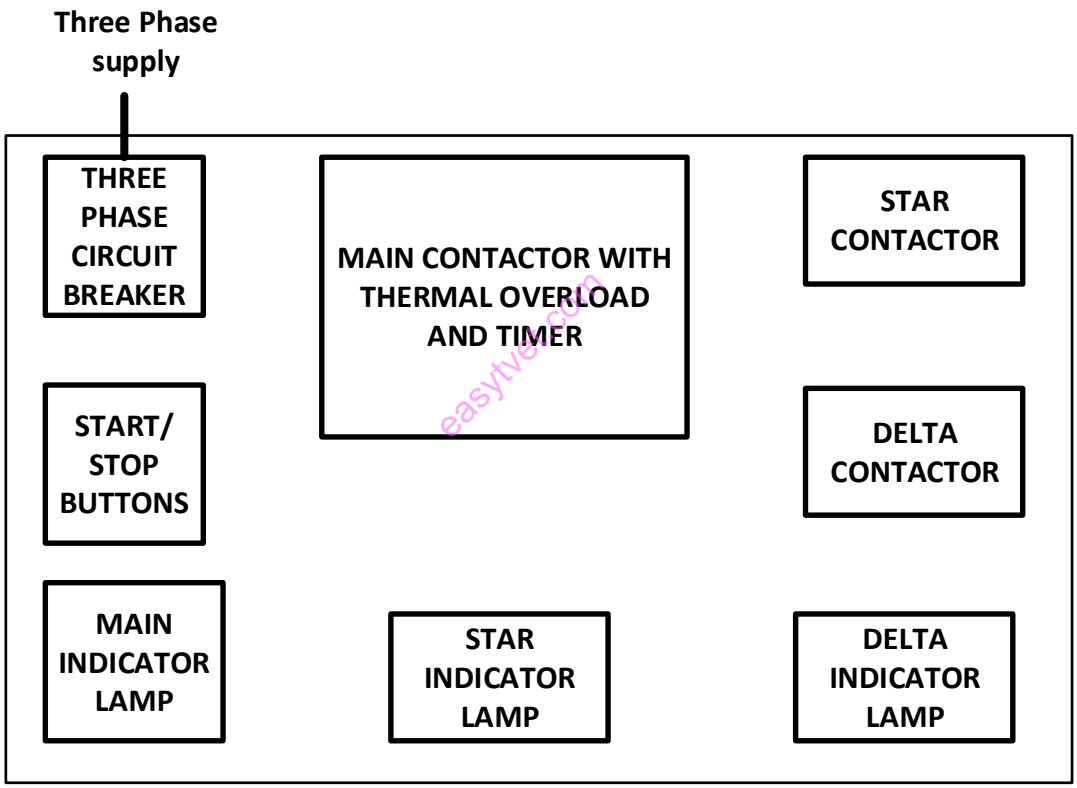


Figure 1: Three phase induction motor star-delta starter

You have been provided with the following resources to carry out the tasks:

- 1.5 mm^2 PVC single core cable (Red, Black and Yellow/Green)
- 4.0 mm^2 PVC single core cable (Red, Black and Yellow/Green)
- Complete three-phase distribution board with 60A triple pole circuit breaker
- 5A single pole circuit breaker
- 32A terminal block connector

- Normally open push button with box
- Normally closed push button with box
- 3 contactors
- A thermos-overload
- A timer
- Indicator lamps (red and green)
- Din rail (200mm)
- Three phase induction motor
- Wooden surface (4ft by 4ft)
- Tuck nails
- Wooden screws
- Cable clips (9” and 12”)
- Hacksaw
- Digital Multimeter
- Mega meter
- Electrician tool box

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