



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

Electronic Control System Repair For Ac Multi Speed Motors Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 110384 · NQF Level 3 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the knowledge and practical skills to diagnose, repair, and maintain electronic control systems for AC multi-speed motors. Participants will gain proficiency in understanding motor control principles, fault-finding techniques, and safety procedures. The training ensures compliance with industry standards and enhances operational efficiency in industrial settings.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	110384
Accreditation	SAQA Accredited · NQF Level 3 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply safety procedures and lock-out/tag-out protocols when working on electronic control systems.
- Analyze the operational principles of AC multi-speed motors and their electronic control circuits.
- Diagnose faults in control system components such as variable frequency drives, relays, and contactors.
- Repair or replace faulty electronic components using appropriate tools and techniques.
- Test and verify the functionality of repaired control systems against manufacturer specifications.
- Document repair procedures and findings in compliance with organizational and regulatory requirements.

WHO SHOULD ATTEND

- This course is designed for electrical technicians, maintenance engineers, and automation specialists responsible for the repair and maintenance of AC multi-speed motor control systems in industrial environments.

COURSE OUTLINE

Day 1: Fundamentals of AC Multi-Speed Motors and Electronic Control Systems

- Overview of AC motor types and multi-speed configurations
- Principles of speed control: pole changing, variable voltage, and frequency
- Electronic control components: relays, contactors, timers, and variable frequency drives (VFDs)
- Reading and interpreting electrical schematics and wiring diagrams
- Safe use of multimeters, clamp meters, and insulation testers
- Lockout/tagout and electrical safety standards
- Troubleshooting methodology: symptom-to-cause approach

Day 2: Diagnostic Techniques and Component Testing

- Testing motor windings for continuity, resistance, and insulation integrity
- Diagnosing control circuit faults: open circuits, short circuits, and ground faults
- Using oscilloscopes to analyze control signals
- Testing and replacing faulty relays, contactors, and capacitors
- VFD parameter checking and fault code interpretation
- Systematic troubleshooting of multi-speed motor control panels
- Documenting diagnostic findings and repair recommendations

Day 3: Repair, Replacement, and System Integration

- Safe removal and replacement of electronic control components
- Wiring and termination techniques for control panels
- Adjusting VFD parameters for multi-speed operation
- Testing repaired systems under load and no-load conditions
- Commissioning procedures: sequence of operation checks
- Preventative maintenance practices for electronic controls
- Final assessment: practical repair scenario

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **6 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 17,900.00	R 17,900.00
1	In-House	R 23,300.00	R 23,300.00
1	On-Campus (Pretoria)	R 26,800.00	R 26,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	06 Aug 2026	On-Campus	Pretoria, South Africa
04 Aug 2026	06 Aug 2026	On-Campus	Mauritius
05 Aug 2026	07 Aug 2026	On-Campus	Cape Town, South Africa
05 Aug 2026	07 Aug 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	12 Aug 2026	On-Campus	Pretoria, South Africa
10 Aug 2026	12 Aug 2026	On-Campus	Mauritius
11 Aug 2026	13 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	13 Aug 2026	On-Campus	Cape Town, South Africa

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 110384) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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