# HAMED ADEFUWA

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## Electrical Controls Engineer

**Portfolio:** www.hamed.engineer

## SUMMARY

I specialize in Siemens PLCs and HMI/SCADA design for hydraulic systems, focusing on projects involving Bascule Bridges, Manipulators, and Forging Presses. I handle end-to-end project management, including FDSs, FATs, and Risk Assessments. I am actively pursuing Engineering Chartership with the IET and manage a YouTube channel with 3,000+ subscribers, where I share insights on Automation, Electronics, IoT, and Sustainability.

## CORE SKILLS

**Automation & Control** – Siemens TIA Portal, PLC Programming, HMI Design, SCADA, Risk Assessments, FDS, FAT & SAT Documents, FMEAs, Hardware/Software Configurations, Remote Access Commissioning, Servo & Stepper Motors, Safety Systems, PLC System Fault Finding & Process Control.

**PLC Programming –** All IEC 61131-3 languages: Ladder, Structured Control Language (SCL), Structured Text (STL), Function Block Diagrams (FBD) & Sequential Graphs, PID Control, Motion Control, State Machines, Modbus Comms

**Electrical –** E-Plan Electric P8, Three-Phase Power Distribution, Soft Starters, Variable Speed Drives, Air Circuit Breakers, Panel Wiring, Electrical Safety, Diesel Generators

**HMI/SCADA Development –** WinCC Unified, WinCC SCADA v7.5, Ignition Vision & Perspective, WinCC Comfort, Delphi Custom HMIs

**Programming –** C, C++, JavaScript, Visual Basic Scripts, Delphi, JavaScript, Assembly, STM32 Hardware, Raspberry Pi, Arduino

**Hydraulic Systems –** Hydraulic Power Unit (HPU) Build & Testing, Basic Troubleshooting, Isolation, Variable Pumps, Cylinders, Proportional Valve Electronic Control, Motor Pump Control, LVDTs

**Instrumentation –** PLC Fault Finding, Electrical Wiring, Control Panel Builds, LabVIEW, MATLAB, Simulink, Stateflow, Flexsim

**Power Electronics –** Rectifiers, Inverters, Renewable Energy Generation, Battery Management, Three-Phase Analysis, Motors

**Electronics Circuit Design & Analysis –** AutoCAD, Multisim, KiCad, PCB Prototyping, Soldering, AC & DC Circuit Analysis

## EDUCATION

### BEng - Electrical and Electronics Engineering

**Leeds Beckett University, Leeds - First-Class Honours**

Sept 2019 - May 2022

### BTEC Level 3 - Software Development

**City and Islington College, London - Distinction**

## WORK EXPERIENCE

### *Electrical Controls Engineer* – Oilgear UK, Leeds – May 2022 - Present

I have been actively engaged in the comprehensive process of Control System Design, encompassing planning, design, procurement, development, commissioning, and documentation. My contributions have been pivotal on several noteworthy projects, including the successful execution of a dual manipulator press, a 350MN multi-axial forging press, and a £145 million rolling bascule bridge project in Suffolk.

**Responsibilities:**

- Translate hydraulic circuits into PLC code for large-scale systems, encompassing forging presses, bascule bridges, manipulators, and test stands.
- Design and develop operator HMI stations using Siemens WinCC Unified to enhance system control and monitoring.
- Oversee the maintenance and enhancement of the in-house hydraulic test bed, focusing on optimizing performance (electrical, control, and HMI upgrades.)
- Create and regularly update electrical drawings using Eplan Electric P8 software.
- Conduct troubleshooting and fault-finding tasks at customer sites, ensuring swift issue resolution to maintain system reliability.
- Lead testing of new electrical panels, encompassing both three-phase, single-phase and 24V systems.
- Commission hydraulic systems, electrical panels, motor starting mechanisms, and diesel generators, guaranteeing seamless functionality.
- Manage various projects, coordinating timelines, resources, and deliverables to achieve project objectives efficiently.
- Provide ongoing training and mentorship to electrical apprentices and site operators.
- Conduct Factory Acceptance Testing (FAT) for newly constructed Hydraulic Power Units (HPUs), ensuring quality and compliance with specifications.
- Author comprehensive OEM and operator manuals, offering valuable guidance on system operation and maintenance to customers.
- Efficiently handle customer inquiries, prepare quotations, and organize sales orders, facilitating smooth transactions.
- Leverage data logging and analytical skills, particularly in assessing system energy efficiency, contributing to cost-effective solutions.
- Create Bills of Materials (BOMs), procure essential components, and interface with the MRP system to support project execution.

### *Business Energy Broker* – Self-Employed, Bradford – 2016 - 2022

Operating a business that helped small businesses manage their energy contracts. Overseeing the renewal process and complaints handling.