PH: 9265561918 **JAYDIP DARBAR** **MAIL: Jrdarbar1996@gmail.com**

Diploma In Electronic & Communication (2014)

Address -: B-503, Earth Elegance, Near Swaminarayan University, Borisana, Kalol , 382721, Gandhinagar, Gujrat

CORE COMPETENCIES

- **PLC Programming & Commissioning** – Advanced proficiency in Allen-Bradley platforms (MicroLogix, CompactLogix, ControlLogix), including complex logic development and system commissioning.
- **Distributed Control Systems (DCS)** – Expertise in Rockwell PlantPAX, with successful deployment of redundant architectures for high-availability control systems.
- **SCADA & HMI Platforms** – Extensive experience in FactoryTalk Studio, LBSM, and PlantPAX object libraries for developing scalable, high-performance SCADA/HMI systems.
- **Industrial Historians & Reporting** – Skilled in configuring FT Historian, FTTM, and Kepware for time-series data acquisition, real-time analytics, and compliance reporting.
- **Data Engineering & Scripting** – Competent in SQL Server, Visual Studio, and Python for custom data handling, reporting automation, and backend tool integration.
- **Industrial Communication Protocols** – Deep understanding of Modbus (TCP/RTU), OPC DA/UA, and MQTT for seamless multi-vendor device integration.
- **Industrial Networking** – Hands-on experience with Stratix-managed switches, VLANs, ring redundancy, and scheduled communication for reliable plant-wide connectivity.
- **IIoT Systems & Middleware** – Designed and implemented robust IIoT architectures using Node-RED, Apache Kafka, and HiveMQ for real-time, event-driven data pipelines.
- **Remote Access & Internet-Based Integration** – Practical knowledge of secure connectivity solutions like ZeroTier for virtual IP networking and exposing SCADA/IIoT dashboards (e.g., Grafana) over the internet for remote visualization.
- **System Testing, Deployment & Integration** – Proven expertise in full lifecycle project delivery including simulation, FAT, SAT, remote commissioning, and end-to-end SCADA–PLC–IIoT integration across distributed systems.

CHALLENGES

- Successfully unified ControlLogix L74/L73 controllers into a single redundant rack architecture, enhancing system availability and fault tolerance. Deployed redundant server-client infrastructure and designed a distributed SCADA system with network-level redundancy to ensure seamless, high- reliability operations.

Functional Experience

Saral Controls (Rockwell Automation), Ahmedabad **July 2017 – Present**

Sr. Project Engineer

- **PLC, HMI, SCADA Development:** Designed and developed PLC, HMI, and SCADA Applications using Rockwell Automation products.
- **Project Execution:** Managed project simulations, Factory Acceptance Tests (FAT), and site commissioning to ensure successful implementation.
- **Data Communication:** Facilitated data communication between DCS and wireless devices across various industry platforms.
- **Report Development:** Created detailed reports using SQL databases and Visual Studio for data analysis and project documentation.
- **Site Surveys & Coordination:** Conducted site surveys for new projects, coordinated with vendors, and addressed customer-specific requirements to ensure satisfaction.

Ocleg Controls, Ahmedabad **Jan 2015 – Jan 2017**

Panel Testing Engineer

- **Panel Testing:** Conducted wiring and testing of single-phase and three-phase control panels tailored for agricultural motors.
- **Customer Focus:** Ensured compliance with customer specifications and satisfaction through rigorous testing and quality assurance processes.
- **Fault Identification & Troubleshooting:** Diagnosed and rectified electrical faults during panel testing, ensuring reliable performance and adherence to safety and functional standards.

SITE EXPOSURE

➢ Piramal Glass – Ratmalana (Sri Lanka), Jambusar-Kosamba(Gujrat,India)

- Configured and managed Rockwell Network Stratix Switch 5950 to optimize network performance and reliability across the plant-wide control system.
- Integrated data from furnace controllers to a Microsoft SQL database using Kepware, FTTM ensuring seamless data flow and real-time information availability.
- Implemented and maintained industrial firewall security measures to safeguard network integrity and protect against unauthorized access in a complex plant-wide network environment.
- Configured software tools such as FactoryTalk Linx, RSLinx, and Kepware for reliable OPC communication between PLCs, SCADA systems, and SQL databases, ensuring consistent and accurate data exchange.

➢ Milk & Cream Pasteurizer, Ludhiana, Punjab

- Developing and commissioning Milk Pasteurization Process logic
- Configured and managed CompactLogix systems with Point I/O modules.
- Conducted loop testing and I/O testing at site to ensure system functionality and reliability

➢ JRS Pharma (Gujarat Micro wax –Unit-4) Nandasan - Gujrat

- Configured and managed ControlLogix, FactoryTalk View SCADA, PlantPAX advanced object library, FactoryTalk Historian.
- Worked on network distribution SE applications and established communication between central PLC and various vendor PLCs using protocols such as Modbus TCP/IP and Modbus
- RTU.
- Configured and commissioned E300 Smart Overload Relays and PowerFlex 525 drives, and successfully managed IMCC feeders (approx. 100) across two IMCCs. Commissioned two PLCs and three RIO panels at different site locations, ensuring operational efficiency and integration.

➢ JRS Pharma (Gujarat Micro wax –Unit-3) Nandasan - Gujrat

- Worked with Allen-Bradley L85EP, MicroLogix 1400, and CompactLogix L306 controllers, including third-party communication.
- Developed Rockwell LBSM batch solutions and logic.
- Implemented server and client PC redundancy; configured Rockwell Stratix 5700 managed switches with ring network and redundancy for L85EP controllers.
- Developed network-distributed SCADA systems with redundant servers; involved in
- HMI and SCADA design.
- Commissioned auto plant systems, demonstrating comprehensive instrument knowledge

➢ Die Chemical Process, Khambhat, Gujrat

- Configured ControlLogix redundant controllers and FactoryTalk View SCADA with
- Plant PAX advanced object library.
- Managed Rockwell E300 overload relays and drives on Ethernet and redundant ring networks, supporting over 250 devices.
- Commissioned Condenser, Compressor, and Chilled Water Plants with full auto- operation and interlocks.
- Integrated third-party devices such as flow meters and energy meters via Modbus TCP/IP and OPC, ensuring seamless communication with the Rockwell system for complete process control.
- Configured process data logging to Microsoft SQL Server and developed customized reports using Visual Studio, enabling real-time monitoring, historical analysis, and audit-ready documentation.

➢ PURE STEAM GENRATION, MULTICOLUMN AND STERILIZER

- Designed and developed PLC & HMI logic for Pure Steam Generator, Multicolumn WFI plant, and Sterilizer systems using Allen Bradley ML1400 and FactoryTalk View ME.
- Enabled real-time process printing for validation and compliance with pharma documentation standards.
- Commissioned and validated automation systems on-site, ensuring seamless integration and handover.
- Delivered systems meeting pharma-grade sterilization and WFI generation standards (121°C sterilization cycle).

IIOT & PYTHON-BASED APPLICATION PROJECTS

❖ Collaborative Python Development Using GitHub Copilot.

- Most of these Python projects were built with **significant help from GitHub Copilot**, which enabled me to translate my industrial knowledge into working code, even as I continue learning Python concepts.

➢ Cloud-Connected PLC Data Pipeline

- Developed an end-to-end pipeline from PLCs to the cloud using **Node-RED** and **HiveMQ Cloud** via MQTT.
- Enabled **real-time monitoring**, with data logged in **SQL Server** for reporting and analytics.
- Designed for **reliability, scalability**, and **remote access** in smart manufacturing environments.

➢ Kafka-Based IIoT Streaming with Secure Access

- Built scalable streaming pipelines using **Kafka topics** and **Node-RED** for industrial data flow.
- Integrated **ZeroTier VPN** to securely expose plant data via virtual static IPs.
- Ensured **SQL-based historical logging** with remote visibility — no duplication needed.

➢ Modbus RTU/TCP Data Collection Without PLC

- Eliminated the need for intermediary MicroLogix PLCs by **directly reading Modbus data** via **USB-to-RS485** converters.
- Built a **Python application (pymodbus)** to collect and display live data through a lightweight dashboard.
- Reduced hardware costs and system complexity for low-cost IIoT setups.

➢ Python-Based User Management with 21 CFR Part 11 Compliance

- Replaced legacy **VBA-based login** with a modern **PySide6** Python application for user management.
- Implemented **RBAC**, object-based access control, and a **detailed audit trail**.
- Designed for **minimal SCADA setup** — only tag configuration needed; all logic handled in Python.
- Fully aligned with **21 CFR Part 11** standards for regulated environments.

➢ Custom Python Batch Manager (Inspired by Rockwell LBSM)

- Recreated Rockwell LBSM logic (Units → Phases → Steps) entirely in **Python**, using **server-side storage**.
- Eliminated PLC memory limits with **unlimited recipe handling**, supporting **32×32×32** recipe structure.
- Included **advanced batch tracking**, step-wise logging, and a modern PySide UI.
- Delivered cost savings and scalability compared to high-memory PLC solutions.

➢ Centralized Grafana Dashboard for Remote Monitoring

- Hosted **Grafana dashboards** on the central server to visualize real-time plant and batch data.
- Enabled **remote monitoring via browser access**, without installing Grafana on client PCs.
- Centralized all data — accessible globally by admins (e.g., offices outside India) via secure URL.
- Dashboards included **batch trends, KPIs, audit logs**, and real-time production metrics.

➢ Smart IIoT Operations Dashboard with Streamlit

- Used **Parquet file format** for efficient data storage and retrieval, enabling scalable and fast processing of large industrial datasets.
- Integrated built-in **LAN-based chat system**, **to-do task manager**, and **shift-wise operator logbook** to streamline plant communication and operations. Designed **equipment health monitoring** and **maintenance logbooks** for proactive asset management.
- Enabled **PDF export, preview, and direct print functionality** for reports, logs, and process data directly from the dashboard. Created an intuitive interface focused on usability for operators, maintenance staff, and supervisors.

Declaration: all the information stated above is true to the best of my knowledge. Jaydip Darbar