

ABB XIO Modularization

A Case Study



This Case Study discusses the benefits and implementation of ABB XIO modularization for customers using ABB RTUs, specifically the XRC and RMC models, for oil and gas well sites.

Measurement made easy

Introduction

This Case Study discusses the benefits and implementation of ABB XIO modularization for customers using ABB RTUs, specifically the XRC and RMC models, for oil and gas well sites. The focus is on reducing automation and electrical costs, improving functionality, and expediting installation processes.

Customer Background

The customer is an existing ABB RTU user, employing a combination of XRC and RMC controllers, based on the number of wells at each site. The current system utilizes automated chokes controlled by the XRC/RMC, with all input/output hardwired directly to the controllers.

Challenge

The customer faces several challenges:

1. High Automation and Electrical Costs: The existing setup requires extensive wiring, contributing significantly to overall costs.
2. Lengthy Installation Times: Completing all electrical and automation work on large well pads can take up to two weeks, causing delays in meeting deadlines.
3. Troubleshooting Difficulties: The centralized IO configuration complicates troubleshooting, increasing the time and effort required to resolve issues.

Solution

The customer has decided to integrate ABB XIO modules with their existing XRC/RMC controllers. This modular approach decentralizes the IO, placing each separator skid with its own XIO. This strategic move relocates the IO from the main controller to each individual skid.

Benefits

Cost Reduction

- **Minimized Wiring Needs:** By decentralizing the IO to individual separator skids, the amount of wiring required is significantly reduced. This leads to lower electrical and installation costs.
- **Reduced Automation Costs:** Pre-wiring and calibration of the separator skids lower the costs associated with on-site automation work.

Enhanced Functionality and Expansion

- **Scalability:** The modular approach allows for easy expansion of the system. New skids can be added with minimal disruption to the existing setup.
- **Optimization Capabilities:** The decentralized IO configuration enhances the system's ability to adapt and optimize as needed, ensuring better performance and reliability.

Improved Installation Efficiency

- **Reduced Installation Time:** Pre-wired and pre-calibrated skids significantly cut down the time required for on-site installation, enabling quicker project completion.

- **Ease of Deployment:** The modular nature of the solution simplifies the deployment process, making it easier to manage and execute.

Simplified Troubleshooting

- **Proximity of IO to End Devices:** With IO modules located closer to the end devices on each skid, troubleshooting becomes more straightforward and efficient. This proximity reduces the complexity and time required to identify and resolve issues.
- **Modular Replacement:** Faulty modules can be replaced individually without affecting the entire system, reducing downtime and maintenance costs.

Conclusion

The adoption of ABB XIO modularization offers significant advantages for customers using ABB RTUs like the XRC and RMC. By decentralizing the IO configuration and leveraging pre-wired, pre-calibrated separator skids, the customer can achieve notable reductions in automation and electrical costs, enhanced functionality and scalability, expedited installation processes, and simplified troubleshooting. This solution aligns with the customer's goals of maintaining optimal functionality while accommodating future expansion and optimization needs.

ABB Measurement & Analytics

For your local ABB contact, visit:
www.abb.com/contacts

For more product information, visit:
www.abb.com/measurement

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.
©ABB 2024