Complete Your Architecture

Application Technique

I/O Problems Got You Down?

How to Prevent Ground Loops in I/O Wiring with Signal Isolation

Customer Need

Panel builders and design engineers often default to non-isolated PLC/DCS I/O cards to save on overall I/O costs. This strategy is competitive in bidding against other alternatives; however, it can lead to problems at the commissioning stage or later. For example, there is a greater risk of ground loops due to common power supply connection (potential) at the I/O card and different ground potentials at the end devices/sensors in the I/O circuits.

Ground loop effects corrupt sensor data en route to the I/O card, resulting in errant readings and requiring additional time and resources for troubleshooting.

Non-Isolated PLC I/O Card

Risk of Ground Loop Interference, Up-front Cost Savings

Isolated PLC I/O Card

Eliminates Ground Loop Interference, Costly Solution
**Component Solution**

Consider using 931H Isolators (where appropriate) to add isolation to I/O circuits. Panel designers may only need to provide galvanic isolation for select circuits, because not all I/O circuits need to be isolated. This solution enables a more flexible and cost-effective panel design.

*Non-Isolated PLC I/O Card with 931H Signal Isolator*

**Eliminates Ground Loop Interference, Cost-effective Solution**

Summary

931H High-Density Signal Conditioners provide a cost-effective solution for circuits at risk of ground loop interference. They also provide the flexibility to isolate individual inputs, improve signal communication reliability, and add a layer of galvanic isolation to your devices.


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