Case Study:

Cost Effective and Timely Solutions for Legacy Devices

Packaging Manufacturer Struggling with Unplanned Downtime Needed Fast, Accurate Diagnostics

Objective

- Quickly determine the cause of an HMI device failure.

Solutions

- Continuity test verified cables were not the issue.
- Configuration was verified using OEM manuals and schematics.
- Investigation of the devices' circuit board revealed corrosion on resistors.
- Multimeter readings checked against expected values showed evidence of an open circuit.
- The customer explained that the spare was stored where moisture could affect the device.
- The only solution was to send both units out for repair.

Results/Benefits

- Although our team could not repair the device, we ruled out all possible factors in an expedited process.
- This saved the customer time and money in the long run by providing a precise diagnosis for a speedy repair.
- The customer now understands their equipment and spare storage best practices better and can prevent similar events in the future.

Background

The Quad Plus diagnostics experts were called to a packaging manufacturer experiencing unexpected downtime due to the failure of an HMI screen. The customer replaced their existing HMI screen with a backup after an incident rendered the original screen unusable.

The OEM phased out the HMI device the customer was using, making spares expensive and difficult to source. It was critical to identify the root of the issue as quickly as possible to prevent further inoperability.

Quad Plus Solution

It is critical to approach the troubleshooting process systematically for accurate results. It starts by identifying all factors that can lead to equipment communications issues, no matter how simple. OEM-supplied manuals for the devices, electrical schematics from the original integrator, and support from experienced on-site personnel were used to generate possible leads.

Continuity tests verified that the communication cable was not the issue. The manual and schematics verified that the hardware setup for communication was configured correctly. At this point, all leads pointed to an internal problem with the device.

A closer look at the processor circuit board revealed corrosion on a group of resistors. Multimeter readings checked against the expected values of the resistors were inconsistent, which was evidence of an open circuit. The customer explained that the spare was stored above a condenser, where moisture is a factor.

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