

Robotic Manufacturing Disassembly

Interface Mini™

Industry: Manufacturing

Summary

Customer Challenge

Traditional methods of disassembly can damage components during product disassembly for remanufacturing, reducing their reusability. This necessitates using clean materials for replacements, hindering the circular economy loop. Sensors can precisely measure the forces applied during disassembly by implementing Interface's miniature load cells into robotic disassembly lines.

Interface Solution

By monitoring the force applied, Interface's ConvexBT Load Button Load Cells can be used in the grips of the robotic arm to measure the amount of pressure being applied to the object it is lifting and moving. The DMA2 DIN Rail Mount Signal Conditioner converts the signal received from the ConvexBT Load Button Load Cells from mV/V to volts to the PLC Controller, which tells the robotic arm to stop clamping pressure when a specified amount of pressure is applied to the object.

Results

Interface's ConvexBT Load Button Load Cells assist in precisely measuring forces and loads during product disassembly, refurbishment, and remanufacturing. Integrating force sensors into ways to help reduce resource consumption helps create and promote a more sustainable environment.

Materials

- ConvexBT Load Button Load Cells
- DMA2 DIN Rail Mount Signal Conditioner
- PLC Controller

How It Works

1. The two ConvexBT Load Button Load Cells are connected underneath a rubber grip pad on both sides of the robotic arms clamping device. When the rubber grips make contact with components, the grabbing pressure is applied to both of the ConvexBT Load Button Load Cells, and a signal is sent to the PLC Controller which tells the robotic arm to stop clamping pressure based on a predetermined force of pressure.

