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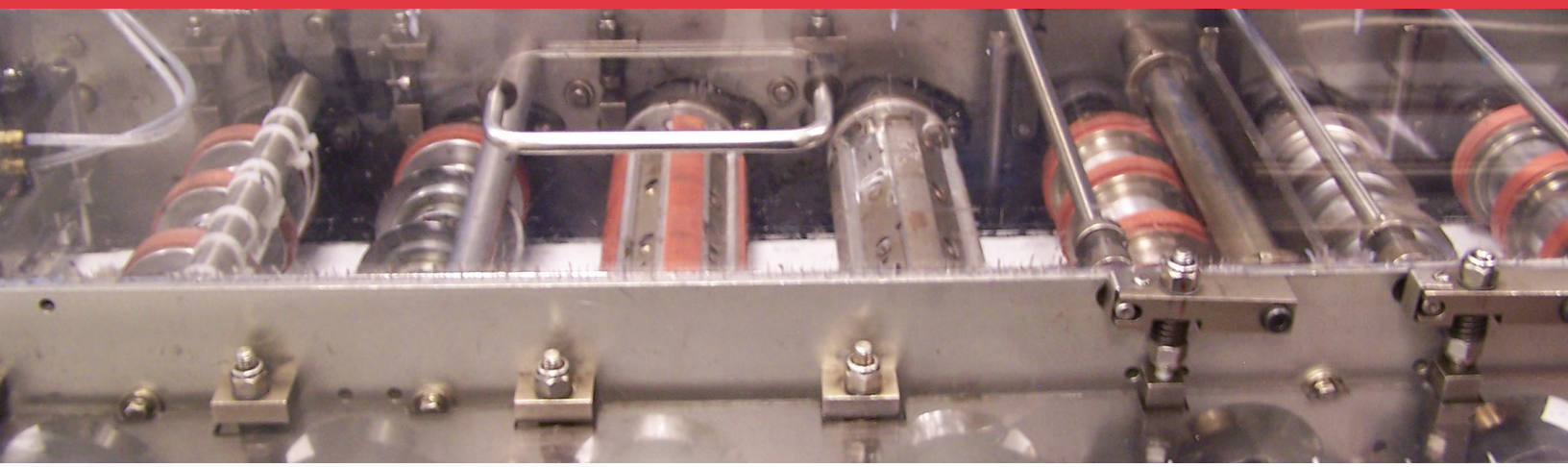
Packaging Thickness Detector System (TDS)



PROJECT DETAILS

Project Name
Packaging Thickness Detector System (TDS)

Location
Vacaville, CA

Project Type
Pouching Inspection System

Installation
Mechanical and Electrical Installation

Equipment Installed
Compact Logix PLC, Keyance High Accuracy, Digital Contact Sensor

Network
Ethernet

Total System Points
~100

PROJECT DESCRIPTION

A leading pharmaceutical company produces die-cut patches which are inserted into a pouching system that packages the product between an upper and lower layer of pouch stock (Mylar film). The pouch stock is sealed, slit longitudinally into four rows, and then cut laterally into individual pouches. Prior to the final longitudinal cut, each lane of sealed pouch material is checked for the presence of the die-cut patch previously inserted with a thickness detector. Each thickness detector is comprised of a mechanical roller coupled to a spring-loaded shaft that compresses the moving pouch web material and its contents while generating a thickness profile. The client provided a preliminary user requirements document and a rudimentary scope of work with the general premise that Core will design, develop, and install the necessary hardware/software to inspect the pouches and provide a pass/fail signal to the existing pouching control system.

Core Automation designed, developed, and installed a new stainless steel enclosure housing the appropriate components dedicated to the thickness detector system (TDS). Along with the new mechanical components, and their attachment to the existing equipment, the thickness sensors and pouch referencing devices where electrically connected to the TDS. Additional electrical/software interfaces were incorporated to allow the new control system to provide pass/fail information to the existing pouching control system. Project acceptance testing included the requirement of zero (0) false accepts and minimal (3% or less) false rejects of the product.

Core ensured that all requirements were met, including the continuous sampling of the four (4) analog thickness sensors, high-speed encoder, and timing references. Both the host and new TDS rendered a pass/fail result for each pouch seal and pouch envelope area that passes beneath the thickness sensors. TDS is capable of storing multiple sets (recipes) of threshold levels and timing values unique for multiple patches and pouching materials. Lastly, the TDS has the ability to train itself for empty pouches and good system signal levels when invoked by an operator.

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