APPLICATION NOTE

Sensata Technologies

USING FUNCTIONAL SAFETY TO IMPROVE PRODUCTIVITY IN FOOD PROCESSING

Background

It has always been a time consuming effort to clean up food processing equipment before switching to different products. In fact the process can sometimes take a whole shift. Part of the reason is that the equipment cannot be run at full operating speed during clean-up due to the safety hazard of having people work so near to equipment. This means that the normal process is to clean the accessible part of the machinery, step back, jog the equipment forward and then clean up the newly exposed surfaces. This process is repeated until all areas of the equipment have been cleaned. The equipment is now ready to be put back into service.

Solution

Using Functional Safety components, it is possible to operate the equipment in a slow, but safe pace during the cleaning operation. Some of the control functions that are available within the Functional Safety system include Safely-Limited Speed (SLS) and Safe Direction (SDI). Referring to our example application in the food industry, under Functional safety it is possible to have the equipment running continuously and slowly in a controlled fashion using these limitations. This allows workers to continuously clean the equipment as it moves, thereby ensuring they can access all parts of the equipment easily and efficiently. Where such systems have been used, the changeover time has been reduced to as little as two hours. The improved uptime and availability of equipment more than pays for the upgrade to a Functional Safety system.

"This allows workers to continuously clean the equipment as it moves, thereby ensuring they can access all parts of the equipment easily and efficiently."

Food product gets a thorough cleaning at the start of processing.

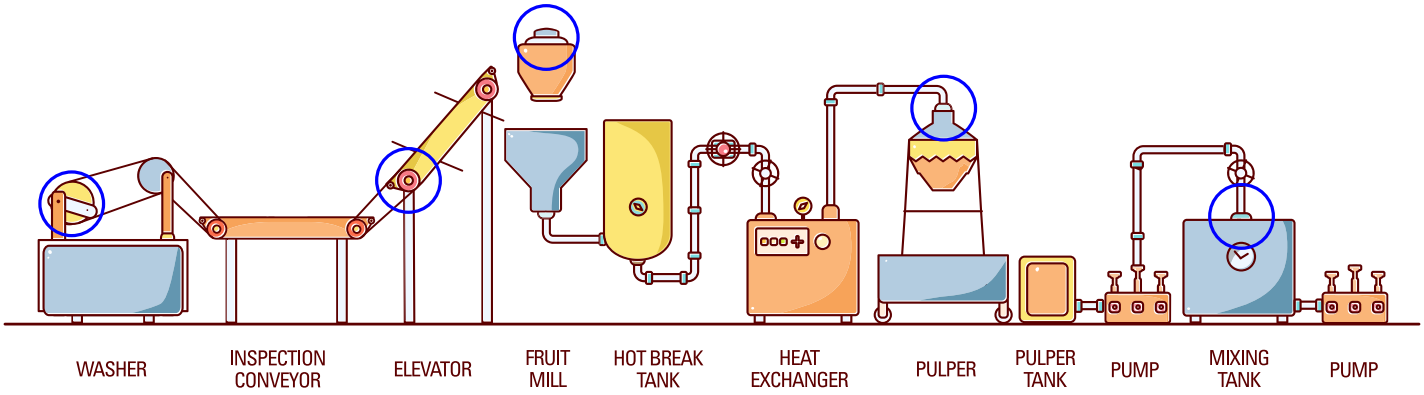
This cleaning process goes smoother when the operator has access to all parts of the equipment.

RELATED PRODUCTS

Product	Type	Features	Part Number	Function	Brand
 DSMX	Safety Encoder	• Stainless Steel • IP69K	DSMX5 Series	Rotary seed and position	BEI Sensors

GENERAL DIAGRAM

Examples of safety-critical control areas that would benefit from functional safety upgrades for maintenance operations.



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