TELEDYNE TAPTONE
Everywhereyoulook™
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TapTone APPLICATION NOTES

News and information from Teledyne TapTone, a leader in the package inspection industry.

TWIN PROXIMITY DETECTION FOR PULL-TAB CANS

EZ Open (pull tab) can ends

Tested: Easy-Open (pull-tab) cans under vacuum

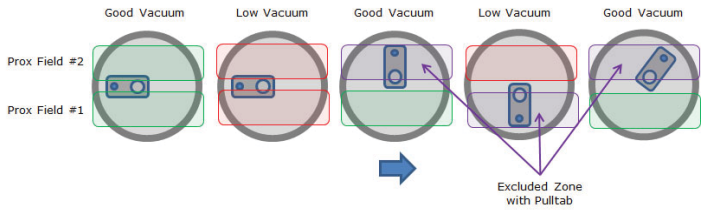
Inspection: Convenience packaging with single serve easy-open (EZ) pull tab can ends have been available for many years but a growing trend in the food and beverage industry is to use different metals on the can end and the pull tab. The challenge that Consumer Packaged Goods (CPG) companies face for seal integrity is that the magnetic measurements of dissimilar metals and the orientation of the pull-tab may affect the readings as the can passes under a standard proximity inspection head.

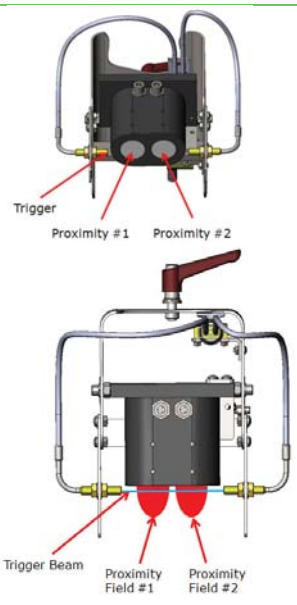
To address and meet this growing challenge TapTone engineering developed a new inspection process. The new inspection process combines the inspections of two proximity sensors with an enhanced algorithm offering improved resolution across the lid profile.

Tested with: Twin Proximity Sensor for T550 and Pro Series

TECHNOLOGY CORNER *HOW IT WORKS*

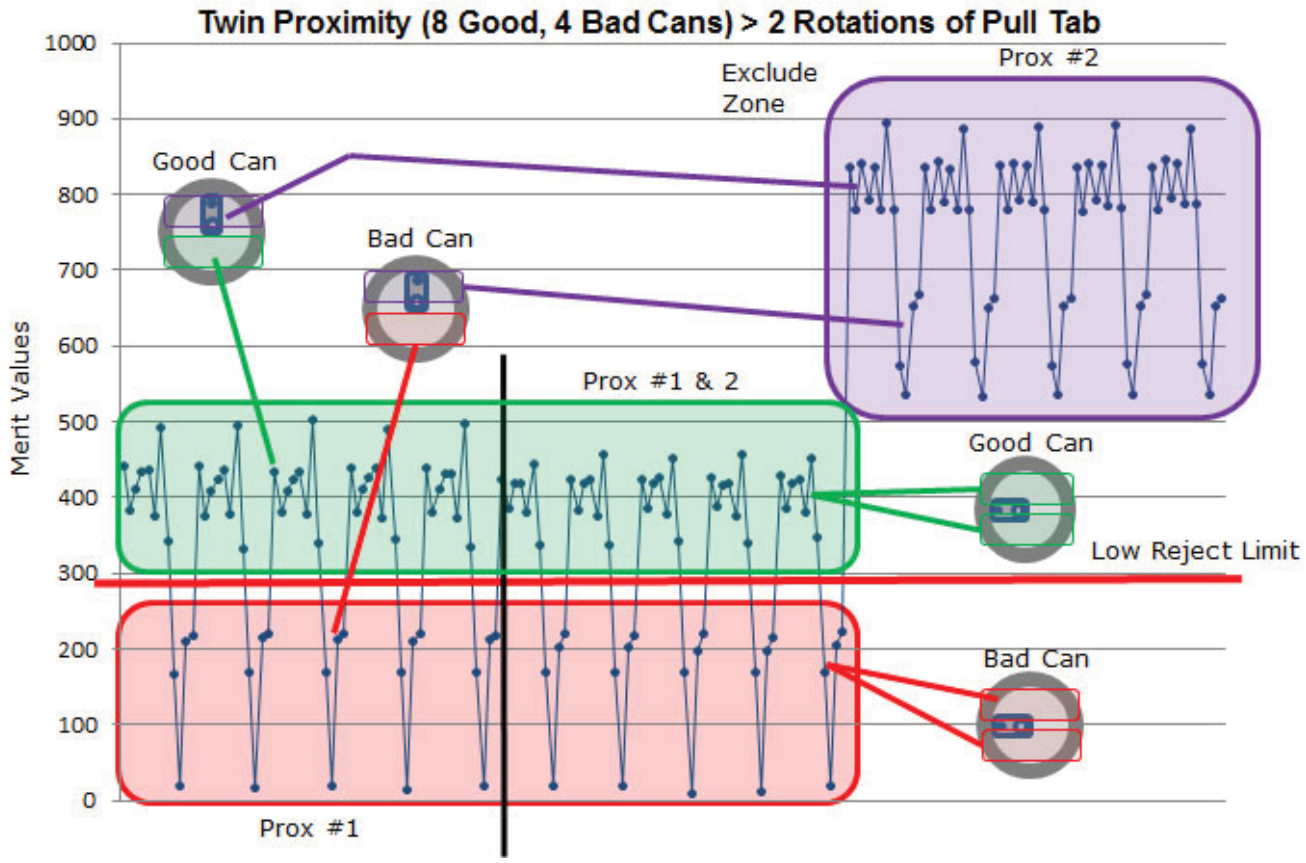
As the can passes through the twin proximity head the magnetic field from each proximity sensor scans half the lid as shown in the diagram below. Data collected from each proximity sensor is analyzed using a sophisticated algorithm to determine if the pull tab is present in the data scan. A merit value is generated for each sensor but the merit value of the sensor that detects the presence of the pull tab will be excluded (zone in purple). Only the data from the other sensor is used to determine the actual lid deflection. One or both sensors are used to determine the reject status of each can and only true low vacuums will be rejected. This approach eliminates all adverse effects for random pull tab orientations when using a single proximity sensor solution.





TESTING

The merit value graph below indicates the orientation of the pull tabs along with merit value data for each sensor. The merit values in the purple zone represent the presence of the pull tab. This zone is always above the reject limit and will be ignored. The merit values in the green zone are from the sensor opposite the pull tab zone and show good vacuum containers. Merit values in the red zone are from the sensor opposite the pull tab zone and show low vacuum containers. All containers in the red zone will be rejected; all others will be accepted or excluded.



SUMMARY

Through the use of this innovative proximity sensor system, the TapTone twin proximity sensor eliminates the negative effects of random pull tab orientations on mixed metal EZ open can ends (steel vacuum cans with aluminum pull tabs). This sensor is only available for use with the new Teledyne TapTone T550 and PRO Series user interfaces. Contact your local TapTone Agent for more details on this new and exciting technology for vacuum can inspection.

** Merit value is a calculated number determined using an algorithm to compute a resultant from a set of data values. Test results achieved in the test laboratory may be different from results seen in the production environment.*

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