

Immediate Seal Check and Seal Verification

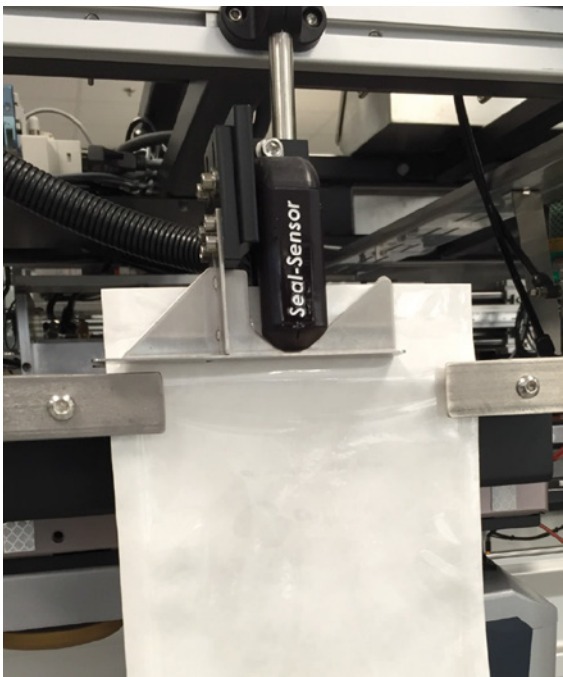
Seal-Sensor™
a PTI technology

LINEAR INLINE INSPECTION OF FINAL POUCH SEAL

Seal-Sensor™ is an Airborne Ultrasonic Technology that inspects the final pouch seal non-destructively 100% online. Seal-Sensor is a deterministic, quantitative, rapid and reliable method to inspect pouch seals for defects.

**PTI integrates the Seal-Sensor into industry leading sealing equipment
for online seal check and seal verification.**

Seal-Sensor detects incomplete seals, partial or weak areas in seals, and many common defects in seals that appear visually acceptable yet possess defects that affect product quality, value and shelf-life. A single linear scan (L-Scan) of the pouch seal takes less than one second and produces a pass/fail result as well as quantitative, traceable data.

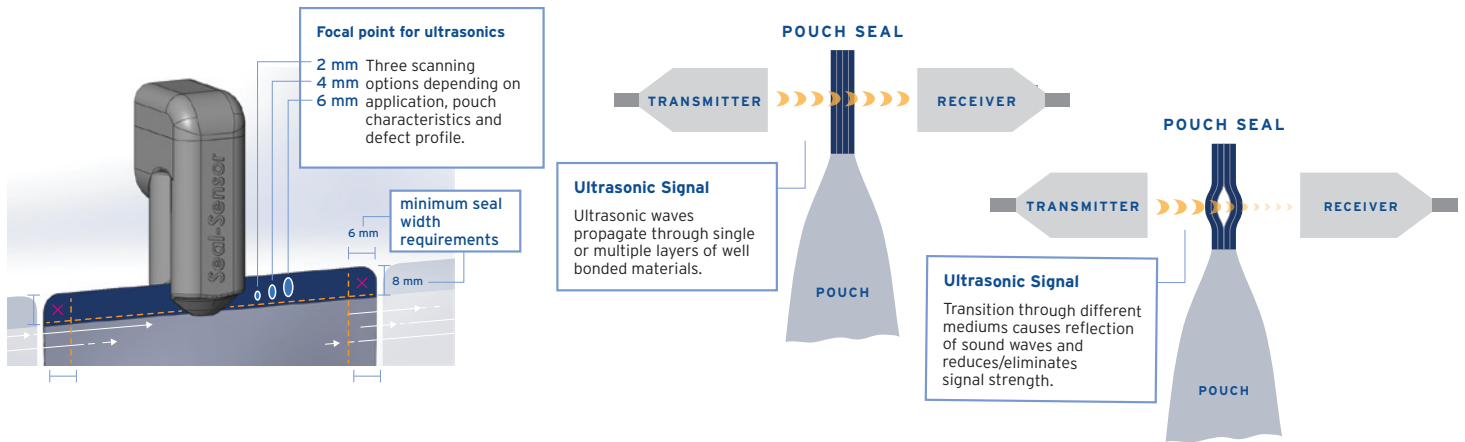


BENEFITS

- Deterministic inspection method producing quantitative results
- Non-destructive, non-invasive, no sample preparation
- Works for any material and combinations, regardless of color, transparency, print, surface finish and porosity
- Can be integrated for 100% online defect detection of the final pouch seal
- Repeatable and reliable results
- Eliminates subjective, manual vision inspection methods
- Economical, cost effective solution for seal integrity testing the final pouch seal

TECHNOLOGY

Pouch seal passes between ultrasonic transmitter and receiver.



ULTRASONIC SIGNAL

- Ultrasonic waves propagate through single or multiple layers of well bonded materials.
- Transition through different mediums causes reflection of sound waves and reduces/ eliminates signal strength.
- Scan data is collected within the side seals starting 6mm in from pouch edge.

SEAL - SENSOR™ 512 SPECIFICATIONS

Application	100% online inspection of final pouch seal
Technology	Airborne Ultrasound Technology*
Recognized Test Method	ASTM F3004-13 and referenced in USP <1207>
Package Type	Pouches, film, laminated materials
Package Material & Combinations	Any pouch material: Tyvek®, Aluminum, Paper, Poly, etc.
Inspection Line Speed**	Up to 500mm/sec
Inspection Measurement Rate	Up to 1,000 pulses/sec
Pouch Handling	Drop-In Pouch Seal Inspection System for integration into lateral handling system
HMI Operator Interface	Touch screen panel, remote wireless link
Test Results	Quantitative data with Pass or Fail result
Inspection Results	Scan statistics, Pass/Fail and defection location
Data Collection	Electronic automated data collection with data storage and data protection
Seal Defects**	Incomplete seal, inclusions, wrinkles, channel defects, misaligned seal, delamination or blister
Defect Information	Failure rates, defect location
Minimum Defect Size**	500 microns
Data Output	Data stream, reject I/O signal
Test Frame	Seal-Sensor test head with L-Scan focal window, with touch screen operator interface
Test head Dimension/Weight	H 3" x W 1" x D 1.5" Weight <0.5lb, plus control cabinet
Power	100-240 VAC 50/60 Hz
Total Seal-Sensor Shipping Weight	Test head, control panel with operator interface: 25lbs

*U.S. Patents 6,840,108 - 6,920,793 - 7,167,415

**Dependent on materials & application. A Feasibility Study is required to outline system performance for each pouch application.