

Seal-Sensor

SEAL INSPECTION



Online Integration

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

Product Overview

IMMEDIATE SEAL CHECK AND SEAL VERIFICATION

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

Seal-Sensor™ detects incomplete seals, partial or weak areas, and many other 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 seal takes **less than one second** and produces a *PASS/FAIL* result as well as quantitative, traceable data.



- 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

Technology

Process

Pouch seal passes between ultrasonic transmitter and receiver.

Requirements

Minimum seal width

8mm

6mm



Focal Point for Ultrasonics

3 scanning options depending on application, pouch characteristics, and defect profile.

2mm

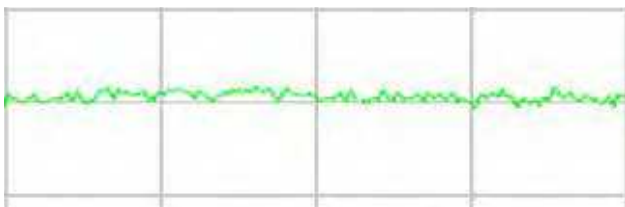
4mm

6mm

GOOD POUCH SEAL



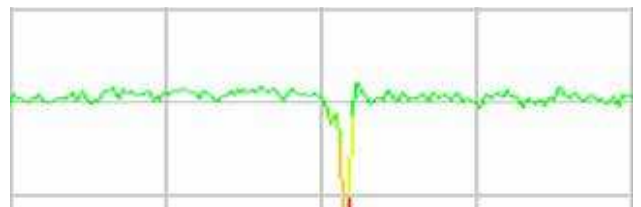
Ultrasonic waves propagate through single or multiple layers of well bonded materials.



DEFECTIVE POUCH SEAL



Transition through different mediums causes reflection of sound waves and reduces/eliminates signal strength.



Specifications

APPLICATION	Semi-automated offline seal quality inspection and analysis
TECHNOLOGY	Airborne Ultrasound Technology*
RECOGNIZED TEST METHOD	ASTM F3004-13, referenced in USP <1207>
PACKAGE TYPE	Pouches, film, and laminated materials
PACKAGE MATERIAL & COMBINATIONS	Any pouch material: Tyvek®, Paper, Foil. Film, Aluminum, Plastic, Poly, etc.
INSPECTION LINE SPEED**	Up to 500mm/sec.
INSPECTION 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 <i>PASS/FAIL</i> result
INSPECTION RESULTS	Scan statistics, <i>PASS/FAIL</i> 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, 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.