

Application: Wafer Bonding

Zoomed view of individual sensor points

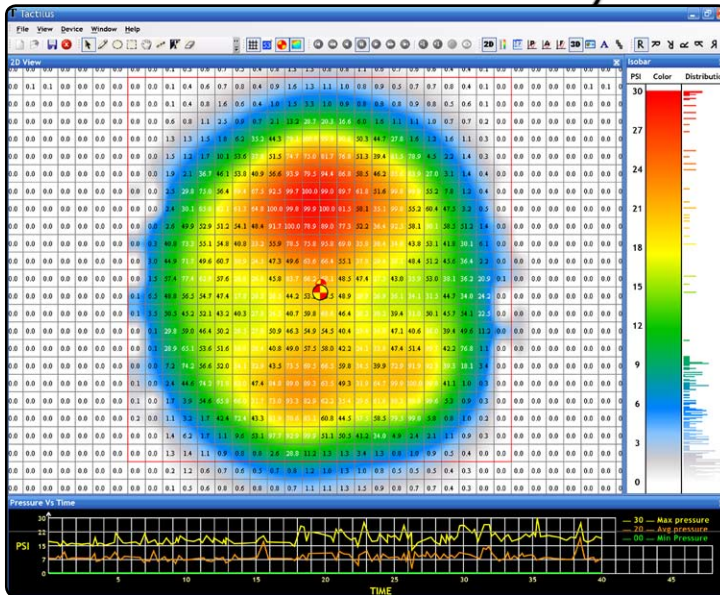


Tactilus® wafer bonding sensor & electronic controller

Tactilus® is an electronic sensor system used to measure pressure on wafer bonding machines to reveal pressure inconsistencies across the wafer surface. By monitoring both pressure magnitude and distribution within your wafer bonding device with Tactilus®, wafer defects can be sharply reduced. Unlike conventional pressure transducers and load cells, Tactilus® is designed to be placed directly upon the active pressed surface. Your wafer bond image updates instantaneously in real-time — yielding unprecedented visualization of your surface pressure profile.

BENEFITS

- ▶ Lower incidence of voids
- ▶ Minimize “spill out” into unwanted regions reducing short circuits.
- ▶ Reduce incidence of unbounded wafers
- ▶ More consistent hermetic seals with glass frit bonding
- ▶ Reduce wafer cracking



Characterization of pressure distribution and magnitude across a wafer bond

“Our primary proposition is to offer the client precisely what they require or need. Everything we design with respect to the physical sensor element as well as our GUI and DLLs can be completely tailored to your unique situation.”

~ Jeffrey G. Stark, CEO

Tactilus® Technology: Tactilus® is a matrix based tactile surface sensor. It is essentially an “electronic skin” that records and interprets pressure distribution and magnitude between any two contacting or mating surfaces and assimilates that data collected into a powerful, yet user-friendly, Windows® based tool kit. Each Tactilus® sensor is carefully assembled to exacting tolerances and individually calibrated and serialized. Tactilus® employs sophisticated mathematical algorithms that intelligently separate signal from noise, and advanced electronic shielding techniques to maximize environmental immunity to noise, temperature and humidity. Our proprietary sensor design ensures the most robust sensor in the industry - an investment that will sustain thousands of uses.

SPECIFICATIONS

Technology	Piezoresistive
Surface Pressure Range	0 - 30 PSI (0 - 2.1 kg/cm ²)
Grid Size	Up to 32 x 32
Sensing Points	Up to 1,024
Total Sensing Area	Customizable to application
Scan Speed	Up to 30 hertz
Spatial Resolution	Custom from 0.35 in (9 mm)
Thickness	23.6 mils (0.6 mm)
Accuracy	± 10%
Repeatability	± 2%
Hysteresis	± 5%
Non-linearity	± 1.5%