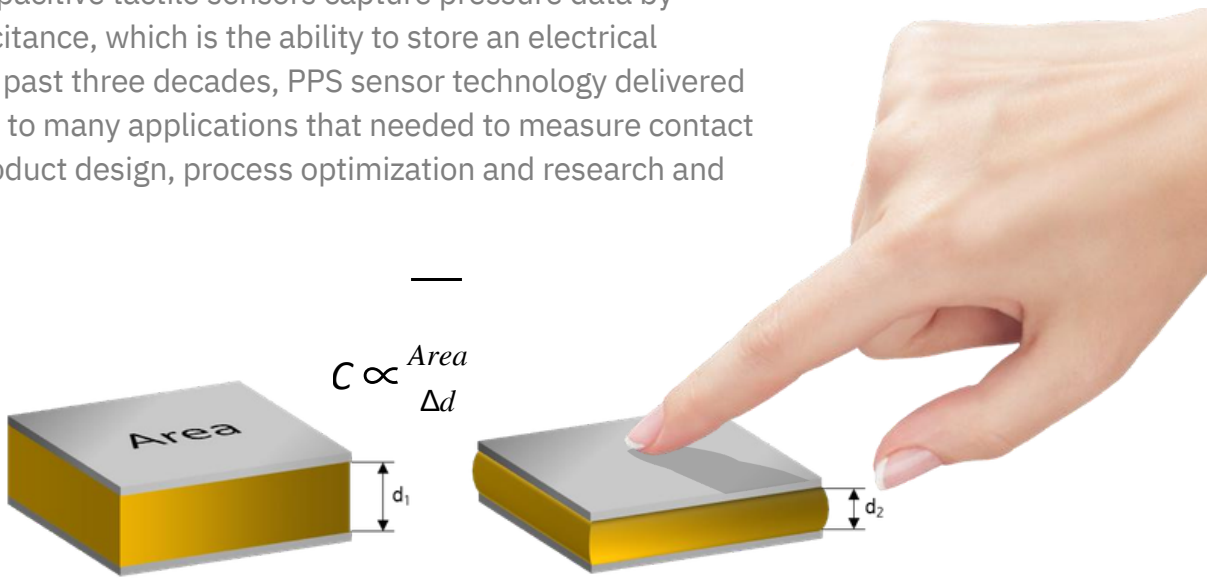


TactArray Product Line

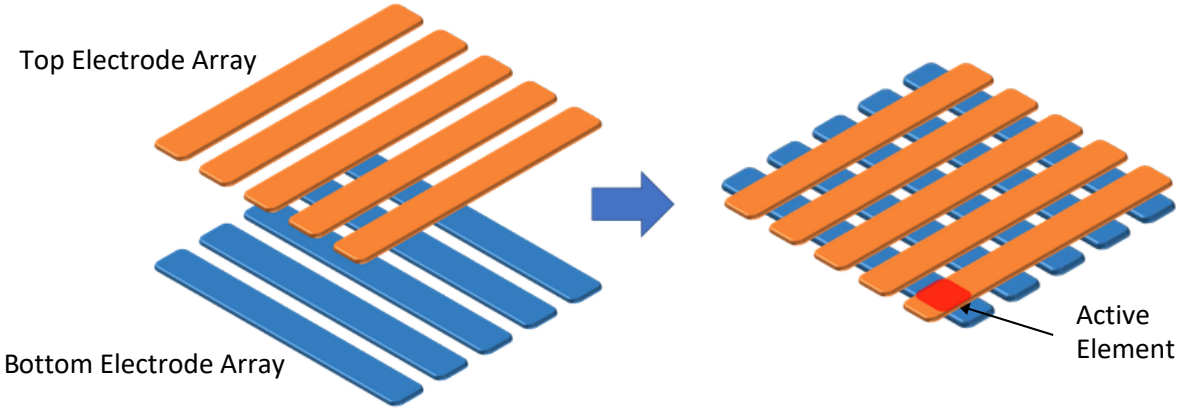
High Performance Sensors for Complex-Surface Pressure Distribution Mapping

PPS's CAPACITIVE SENSING TECHNOLOGY

PPS patented capacitive tactile sensors capture pressure data by measuring capacitance, which is the ability to store an electrical charge. Over the past three decades, PPS sensor technology delivered valuable insights to many applications that needed to measure contact pressures for product design, process optimization and research and development.



To build tactile array sensors, PPS arranges the electrodes as orthogonal, overlapping strips. A distinct capacitor is formed at each point where the electrodes overlap. By selectively scanning a single row and column, the capacitance at that location, and thus the local pressure, is measured. PPS's proprietary drive and conditioning electronics can scan through an array at high speed while optimizing settings to achieve the maximum sensor response from each sensing element.



INTRODUCTION AND PRODUCT OVERVIEW

TactArray Systems capture pressure distribution between two objects in direct physical contact. By placing TactArray sensors between objects, or applying them to a flat surface, product developers and researchers can measure and visualize pressure information in their applications.

The TactArray family spans four constructions, each suited to a different balance of flexibility and durability.



Conformable TactArray (CTA) is fully flexible in both directions, wrapping and molding onto complex, multi-curved surfaces for human-body and low-pressure applications.



Industrial TactArray (ITA) uses a rigid, all-polyimide construction built to withstand extreme temperatures and high pressures in demanding industrial settings.

Hybrid TactArray (HTA) pairs a rigid base with a flexible cloth upper electrode for stable, repeatable performance in flat or simply-curved, product-integrated designs.

Conformable Hybrid TactArray (CHTA) adds laser-cut slits to the HTA construction for noticeably better conformability on more complex, curved surfaces.

See the comparison on Pages 3 & 4 to find the right fit for your application.

Sold as a system, which comprises of **a sensor (or multiple sensors), choice of electronics and basic Chameleon software package.**



KEY FEATURES

+ High-resolution sensing across flat, simply-curved, and — with CHTA — multi-curved surfaces
+ High sensitivity and repeatability for consistent capture of accurate data
+ Improve results due to increased accuracy and reduced recalibration time
+ Real-time feedback during design, research, and industrial processes

TACTARRAY PRODUCT LINE

	CTA — Conformable	ITA — Industrial	HTA — Hybrid	CHTA — Conformable Hybrid
				
Construction	Two layers of conductive cloth.	Two layers of rigid polyimide (Kapton).	One polyimide (Kapton) layer + one conductive cloth layer on top.	Polyimide (Kapton) layer with laser-cut slits sandwiched between two conductive cloths.
Flexibility	Fully flexible on both axes — wraps/molds onto complex, multi-curved surfaces.	Rigid on both axes — flat or slightly curved surfaces only.	Full flexibility on one axis (from the cloth layer); the solid polyimide layer keeps the other axis rigid. Can be rolled, within a limit.	Full flexibility on one axis (same as HTA) plus partial flexibility on the second axis — the slits let the polyimide layer flex too, giving noticeably better conformability to curved/multi-curved surfaces than HTA.
Where it sits in the TactArray family	The most flexible option.	The most rigid option.	The more rigid end of the flexible range.	Middle ground between CTA and HTA — performance leans toward HTA.
Best suited for	Human-body contact, very low pressure, complex/multi-curved geometries (helmets, masks, wearables).	Extreme temperature/pressure industrial environments (heat presses, nip rollers, metal forming).	Flat or simply-curved, product-integrated designs; low-to-moderate pressure.	Same range as HTA, but where the design needs to wrap onto more complex, multi-curved surfaces.

TACTARRAY TECHNICAL COMPARISON

	CTA — Conformable	ITA — Industrial	HTA — Hybrid CHTA — Conformable Hybrid
Pressure range	2.5, 5, 10, 20, 40 & 80 psi	20, 40, 80, 160 & 320 psi	2.5, 5, 10, 20, 40 & 80 psi
Thickness	1.0 mm	0.3 mm	< 1.0 mm
Minimum SNR	300:1	300:1	300:1
Min. sensitivity	15 mpsi	15 mpsi	15 mpsi
Linearity	99.8%	99.8%	99.8%
Gain Non-Repeatability	<3%	<3%	<3%
Element size	2×2 mm – 10×10 mm	2×2 mm – 10×10 mm	2×2 mm – 10×10 mm
Active area	Refer to Sensor Drawing	Refer to Sensor Drawing	Refer to Sensor Drawing
Sampling rate	<100 Hz	<100 Hz	<100 Hz
Interconnect	Bluetooth or USB	Bluetooth or USB	Bluetooth or USB
Operating temp	–20°C to 100°C (static)	–40°C to 200°C (static)	5°C to 80°C (static)
Bend limit (care)	19 mm radius (1.5" diameter)	Do not bend	19 mm radius (1.5" diameter)

Catalog:

Once you've narrowed down a type of TactArray, visit **https://catalog.pressureprofile.com/**
It is PPS's interactive sensor selector, where you can dial in exact active area, resolution, thickness, pressure range, and preferred interface or eletronics

(note: the Catalog also surfaces DigiTacts results, PPS's smaller IC-embedded sensors, which have their own brochure and aren't covered here).

Step 2: Electronics

OVERVIEW

PPS's electronics turn a TactArray sensor's signal into pressure data your computer can read. Two configurations are available, built around where the processing electronics actually sit.

On **U400 and B400**, the processing chip is built directly into the sensor itself. The sensor already outputs a digital signal, which U400 carries to your PC over USB, or B400 sends wirelessly over Bluetooth 5, paired with the UB5 dongle, for applications where a cable isn't practical. This is PPS's standard, current-generation electronics configuration.

T5000 uses a different configuration. Here, the processing chip sits in the external T5000 module rather than on the sensor, so the sensor sends a raw analogue signal that T5000 converts to digital. Keeping the chip off the sensor makes T5000 the right choice for the most demanding conditions, such as the extreme temperatures ITA sensors handle or the extreme flexibility of some CTA constructions, where embedding electronics directly on the sensor isn't practical.



For Analog Sensors For Digital Sensors

KEY FEATURES

+ Small and portable
+ Drives large PPS TactArray Sensors via Chameleon software
+ U400 (wired USB) and B400 (wireless Bluetooth 5, via the UB5 dongle) have the processing chip built into the sensor itself, for a simpler system with fewer components; B400 adds up to 10 m of wireless range with no cable required
+ T5000 keeps the processing electronics external instead, well suited to extreme temperature or extreme flexibility applications
+ Every configuration is individually paired and calibrated to its sensor for reliable, repeatable data

Electronics - Technical Specs

	U400 Digital USB	B400 Digital Bluetooth	T5000 Analog USB
Connection type	Wired, USB	Wireless, Bluetooth Low Energy (BLE5), up to 10 m range, via UB5 dongle	Wired, high-speed USB-C
Chip location	On the sensor	On the sensor	In the external T5000 module
Compatible sensors	Sensors with an integrated processing chip	Sensors with an integrated processing chip	Standard analogue sensor construction
Scan rate	Sensor dependent	Sensor dependent	5–200 Hz typical
Power	USB 5V	USB 5V to charge. ~2 hours use, 2 hours to recharge	USB 5V
Operating temperature	5–55°C	5–55°C	5–40°C

FAQs

1. Do I need U400, B400, or T5000?

   It depends on your specific sensor design. Many TactArray configurations are built for one electronics type; some offer a choice of either. Our engineer will walk you through the sensor shapes and connection options that fit your application.

2. Can the electronics be swapped between sensors, or used with a different PPS product?

   No. Each electronics module is individually paired and calibrated to the sensor it ships with, and cannot be swapped to work with another sensor unless returned to PPS.

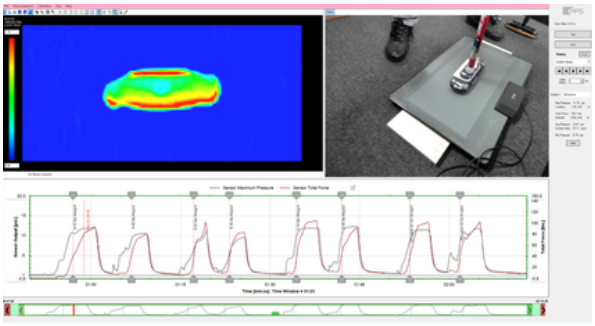
Step 3: Software

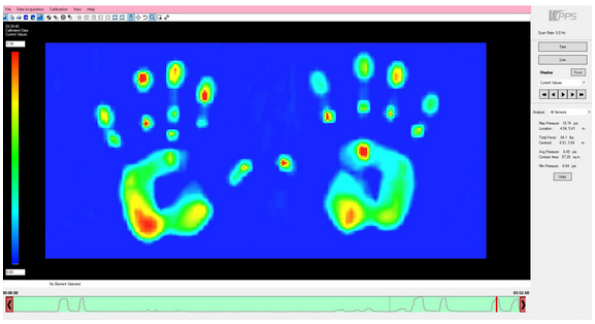
OVERVIEW

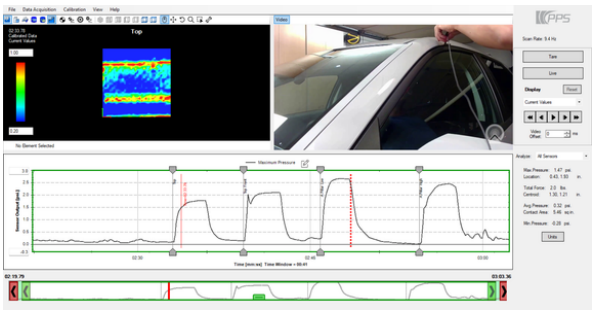
Chameleon is the software that turns your TactArray sensor data into something you can see, analyze, and act on. Supplied with every PPS sensor system, it's a full-featured, intuitive platform for managing, analyzing, and visualizing tactile sensor data in real time.

The redesigned 2026 version brings faster workflows throughout: improved heat-map rendering, refined 3D defaults, enhanced graph views, and new analysis controls.

Every system ships with **Chameleon Core**, ready to use with no license file and no time restrictions. For teams that need to record sessions, run advanced analysis, capture synchronized video, or integrate with their own software via the API, **Chameleon Premium** is available as an optional subscription upgrade. See the plan comparison on the next page.







KEY FEATURES

+ Interface with multiple PPS systems simultaneously
+ Easy recording, annotating and editing of pressure-mapping data, enhanced with buffer stability and smarter error recovery.
+ View and control synchronised video alongside your pressure data, now with improved video handling and resolution.
+ Record and analyse data from multiple sensors synchronised within a single experiment.
+ Real-time access to average, max, centroid (centre-of-pressure) and contact-area tracking, with advanced options in review mode.
+ Visualise your sensor data as 2D pseudo-colour maps, 3D bar or mesh graphs of actual shape, or line traces for low-element sensors - now with better defaults and user-saved view configurations.
+ Export data in CSV or directly for use in Excel®, MATLAB®, or Mathcad® (and other workflows), enhanced with new frame-export, photo capture and multi-file comparison tools.
+ Windows API available for custom software integration and automation.

Software - Plan Comparison

CHAMELEON CORE VS. PREMIUM

	Chameleon Core FREE, included with every system	Chameleon Premium Optional subscription
Live data streaming	Included	Included
Review mode	Included	Included
Flat colour map / strip chart display	Included	Included
Load TVR files	Included	Included
Basic analysis (average / min / max)	Included	Included
3D views	Included	Included
Dual display comparison	Included	Included
Save TVR recordings for future review	Not included	Included
Advanced analysis (area, force, centroid, peak)	Not included	Included
Advanced export (video, CSV)	Not included	Included
Synchronized video capture	Not included	Included
API access	Not included	Included
Version upgrades	Not included	Included
Training	Basic handover training	Advanced data analysis training (2 hours)
Computer limit	1 device	1 device
License	No license file, no time restrictions	Subscription (see pricing below)
Price	Free	**Monthly:** $59/month, automatic renewal **Annual (best value):** $599/year, one off or automatic renewal options (save about 20% vs. monthly)

FAQ's

Can I run multiple sensors together as one system?
Yes, with one constraint: sensors sharing the same conditioning electronics need similar element sizes to each other. Multiple sensor units can also be combined into a single measurement area, and Chameleon records and analyzes data from multiple sensors synchronized within one experiment.

Can I use TactArray sensors with my own conditioning electronics or existing DAQ hardware?
No. TactArray sensors only work with PPS's own conditioning electronics, T5000, U400, or B400, each individually paired and calibrated to the sensor it ships with. There's no option to run a sensor on third-party or generic data-acquisition hardware.

Do sensors need regular recalibration, or do they hold their calibration over time?
Sensors ship factory-calibrated, and further calibration generally isn't required.

Can sensors be custom-shaped or sized, and what's the lead time?
Yes. Approximate lead times for our standard designs are listed at **https://catalog.pressureprofile.com/**
Custom modifications can be made — discuss your specific requirements with our engineer.

Are TactArray sensors waterproof, or usable in wet or harsh environments?
Not by default, but removable waterproof sheaths or full encapsulation are available for applications where moisture is unavoidable; talk to our engineer about options for your application.

Can TactArray sensors be sterilized for medical, lab, or cleanroom use?
Not by autoclaving, that changes the sensor's characteristics and can cause permanent damage. Sterile sheaths, gamma sterilization, or (for industrial sensors) IR sterilization are the recommended methods instead.

What warranty coverage comes standard, and is extended coverage available?
Every PPS product carries a 1-year full warranty. An optional extended yearly service plan, bundling software upgrades and recalibration, is also available beyond the standard term, our engineer will explain current details.

Can PPS build a custom system for embedding into my own product, not just lab testing?
PPS's custom development team has experience across a wide range of projects, from straightforward strip-sensor integrations to complex medical and industrial systems. Whether you need a one-off solution for laboratory testing or sensor integration into an OEM product, we recommend involving our engineers early to discuss your configuration and define mounting, connector and integration requirements.

CONTACT US

For sales, please complete the form: https://pressureprofile.com/contact
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