



# Wrist Sensor

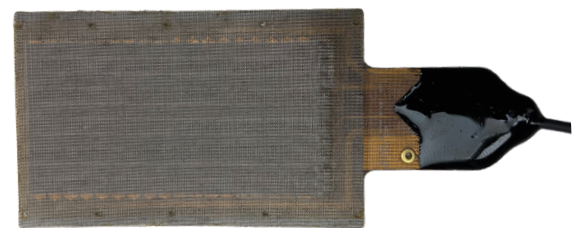
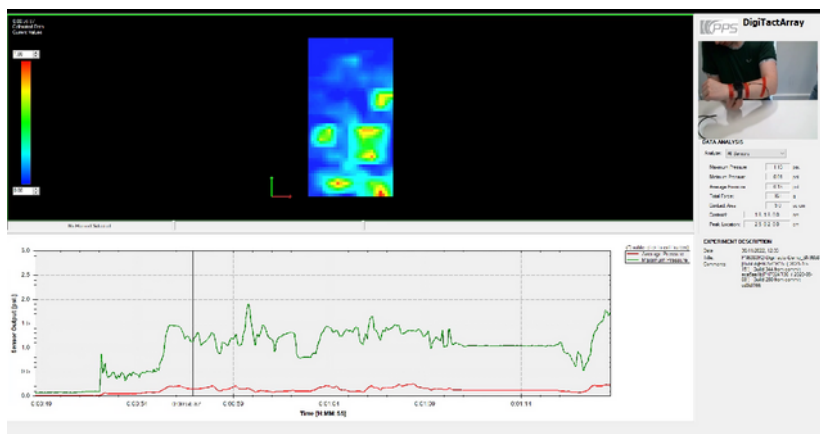
**A Thin Flexible Sensor in a Stretchable Band for Measuring Comfort of Wrist Wearable Products**

## INTRODUCTION AND PRODUCT OVERVIEW

The PPS Wrist Sensor is a customizable pressure measurement and mapping system for quantifying pressures exerted on the wrist from wearable products. For watch designers or smart band manufacturers who need to balance the most effective product with the most comfortable fit, the Wrist Sensor can accurately capture and visualize the interaction between the wearable item and the curved shape of the wrist by imaging the applied pressures.

The system features a stretchable fabric wristband that is secured onto the wrist with an adjustable Velcro fastening. A high resolution thin conformable TactArray-based sensor is inserted into a pocket of the band. Depending on the customer specification, the location of the pocket can be positioned anywhere on the band.

Real time visualization and acquisition software is then used to display pressures and to perform real time analysis for evaluating the fit and comfort.



### KEY BENEFITS

- + Thin sensor and stretchable band enables minimally-intrusive pressure measurements
- + Sensitive and repeatable tactile sensors capture precise and accurate data
- + Instant visualization of collected pressure mapping data that correlates to the level of product comfort and feel

## KEY FEATURES

- + High spatial resolution
- + High dynamic pressure range
- + Cloth-based construction
- + Low-profile and lightweight
- + USB or wireless connection available
- + Large area of Velcro enables various wrist size application
- + Up to 3 sensors can be integrated into one wrist band

## APPLICATIONS

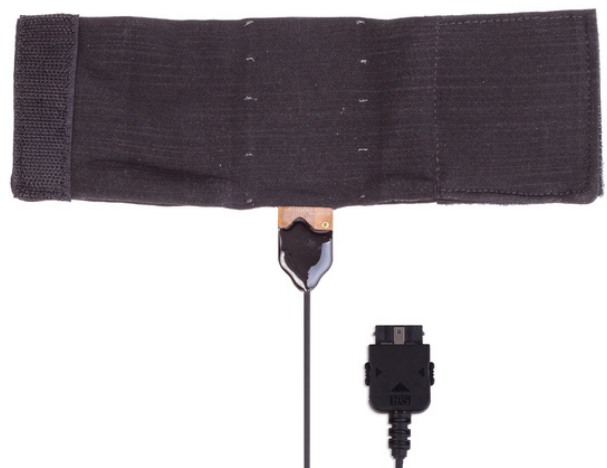
The Wrist Sensor empowers designers, engineers and medical professionals to improve wrist wearable products and their fit while using human cadavers with various wrist sizes. The comfortable band enables collecting data while the wearable item is in use ie. performing a sport activity.

### Example Applications:

- + Measuring contact pressures between various watches, watch bands, wrist bands, activity trackers, bracelets and others.
- + Very low pressure applications, even the slightest discomfort created by the device on the wrist will be visualized
- + Up to 3 sensors can be inserted into the band to analyze comfort and fitment over the circumference of the wrist.

## SOFTWARE

The Chameleon Tactile Visualization and Recording (TVR) software captures and records live data to provide both numeric and visual representation of contact pressures.



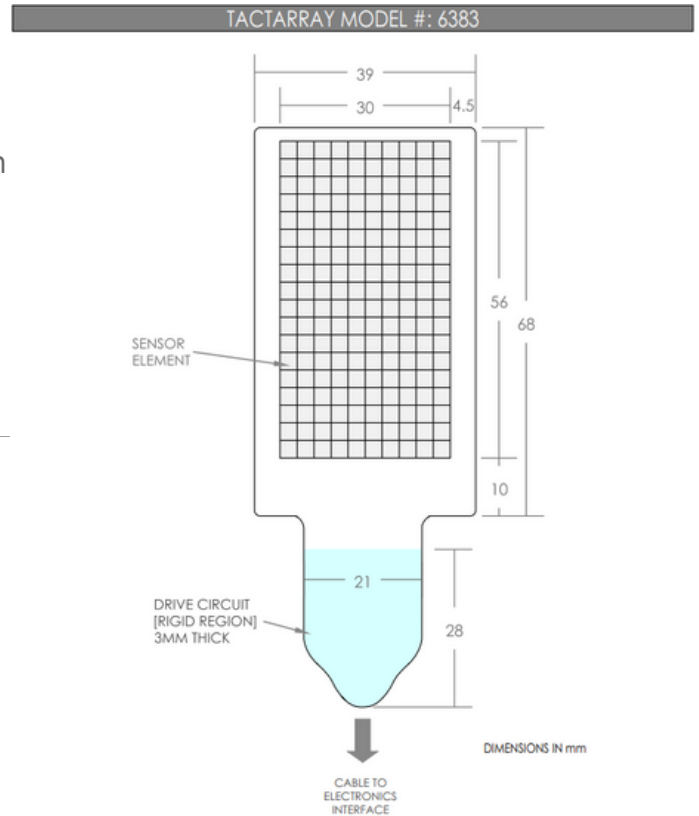
## SYSTEM COMPONENTS

- 1 Wrist Band Tactile Sensor
- 2 Rechargeable electronics interface module with Bluetooth connectivity.
- 3 Chameleon Visualization and Data Acquisition Software

## SENSOR MODELS & METRICS

### Sensor Model

|                       |               |
|-----------------------|---------------|
| Model Number          | 6383          |
| Total Sensor Area     | 68 mm x 39 mm |
| Active Sensing Area   | 30mm x 56mm   |
| Element Count         | 180 (18x10)   |
| Element Size          | 3.1 mm x 3 mm |
| Operating Temperature | 10°C – 50°C   |



## Sensor Characteristics & Performance\*

|                       |                |
|-----------------------|----------------|
| Pressure Range        | 3, 5 or 15 psi |
| Pressure Sensitivity  | 0.2%           |
| Signal-to-Noise (SNR) | 300:1          |
| Repeatability Error   | 0.3%           |
| Linearity             | 99.8%          |
| Accuracy Error        | <=2%           |
| Sensor Thickness      | 0.85 mm        |

## Electronic Specifications

|                |                               |
|----------------|-------------------------------|
| Sampling Rate  | < 100Hz                       |
| Interconnect   | Bluetooth or USB              |
| Input Voltage  | 5V USB for charging           |
| Input Power    | 2.5W                          |
| Enclosure Size | 3x1.5x0.5 in. (75x40x12.8 cm) |
| Weight         | 0.12 lbs. (55g)               |

\*Performance numbers are for typical system response.

## CONTACT US

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