Provides the Human Sense of Touch to Robots

XELA Robotics Co., Ltd.

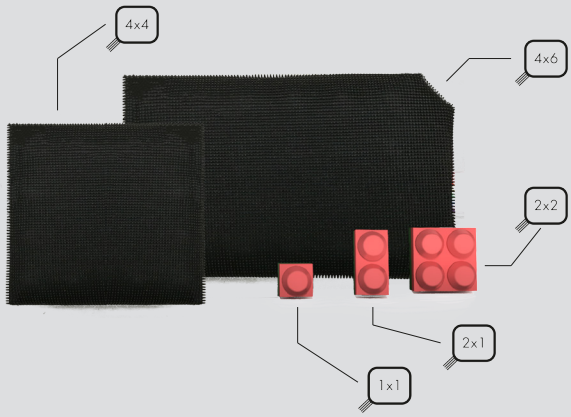
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What is uSkin?

Our company developed uSkin, a high-density 3-axis tactile sensor in a thin, soft, durable package, with minimal wiring. uSkin can be easily integrated into both new and existing robots.

This provides robots with a human-like sense of touch, which gives them the ability to grasp and manipulate objects with precision.

Our sensors are available in 5 different shapes and sizes.



1x1 XR1911

- Type: Tri-axial tactile sensor
- Measurements: 1x1 taxels
- Taxels: 1
- Dimensions: 5.5 x 6.4 x 4.5 mm
- Soft Skin
- Requires only 4 wires for connection

2x1 XR1921

- Type: Tri-axial tactile sensor
- Measurements: 2x1 taxels
- Taxels: 2
- Dimensions: 6 x 10.5 x 5.5 mm
- Soft Skin
- Requires only 4 wires for connection

2x2 XR1922

- Type: Tri-axial tactile sensor
- Measurements: 2x2 taxels
- Taxels: 4
- Dimensions: 10.5 x 10.5 x 5.5 mm
- Soft Skin
- Requires only 4 wires for connection

4x4 XR1944

- Type: Tri-axial tactile sensor
- Measurements: 4x4 taxels
- Taxels: 16
- Dimensions: 24 x 28 x 5.5 mm
- Soft Skin
- Requires only 5 wires for connection

4x6 XR1946

- Type: Tri-axial tactile sensor
- Measurements: 4x6 taxels
- Taxels: 24
- Dimensions: 31 x 51.5 x 5.5 mm
- Soft Skin
- Requires only 7 wires for connection



Model: XR1944

4x4 The XR1944 or 4x4 sensor is our most popular model. This particular sensor has 16 taxels.

SPECIFICATIONS

- Minimum detectable force:
  - 0.1 gf for shear force
  - 1 gf for normal force
- Maximum shear force: 430gf
- Maximum normal force: 1800gf
- Signal output: I2C

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XELA ROBOTICS

Why uSkin SENSORS?

DIGITAL OUTPUT

uSkin utilises digital output to provide you with faster, more accurate measurements with minimal electric noise and interference.

SOFT & DURABLE

uSkin is a soft sensor capable of handling fragile objects without damaging them. Objects of different size, shape, hardness, and weight can be grasped and manipulated reliably.

The softness of uSkin also ensures that the sensor is highly resilient to overloading, making uSkin very durable.

EASY INTEGRATION

Typical robotic sensors are cumbersome and require extensive customisation for integration.

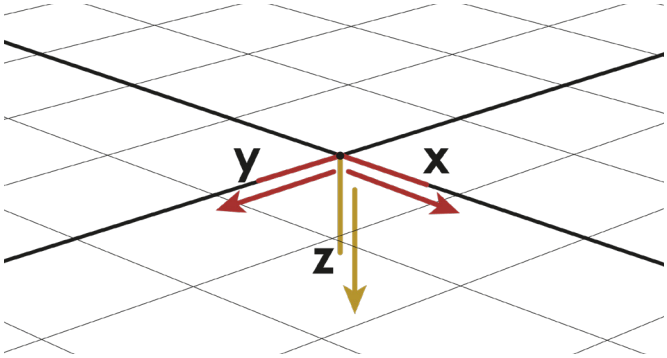
XELA Robotics provides tactile skin sensors that can easily be integrated. With a wide array of options available, our sensors can be simply glued on or attached with mounts.

HIGH DENSITY 3-AXIS MEASUREMENTS

The taxels in each uSkin sensor mimic a joystick, measuring **X, Y** and **Z** force:

- Shear forces tangential to the surface
- Normal force perpendicular to the surface

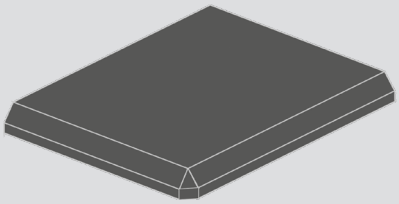
Providing you with a more detailed and accurate data collection.



AFFORDABLE

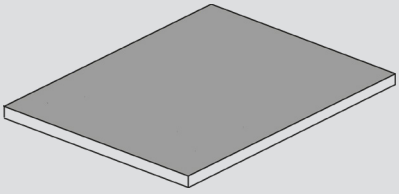
Comparing the price of uSkin with our competitors, our product is much more affordable without compromising the performance.

SENSOR CONSTRUCTION



OUTERSHELL

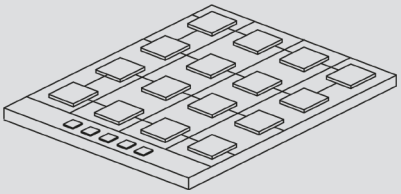
The outershell serves the purpose of protection but can be modified for different applications.



ELASTOMER

Soft elastomer ensures that the sensor is highly resilient to overloading, which makes uSkin very durable.

Another feature that the “Soft Skin” adds to the sensor is the ability to conform to the object that your robotic solution is trying to grasp.



THE CHIP

The Chip recognizes displacement in three dimensions.

Each sensor module includes a multitude of these chips, and each chip can measure 3D displacement individually.

About Us

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