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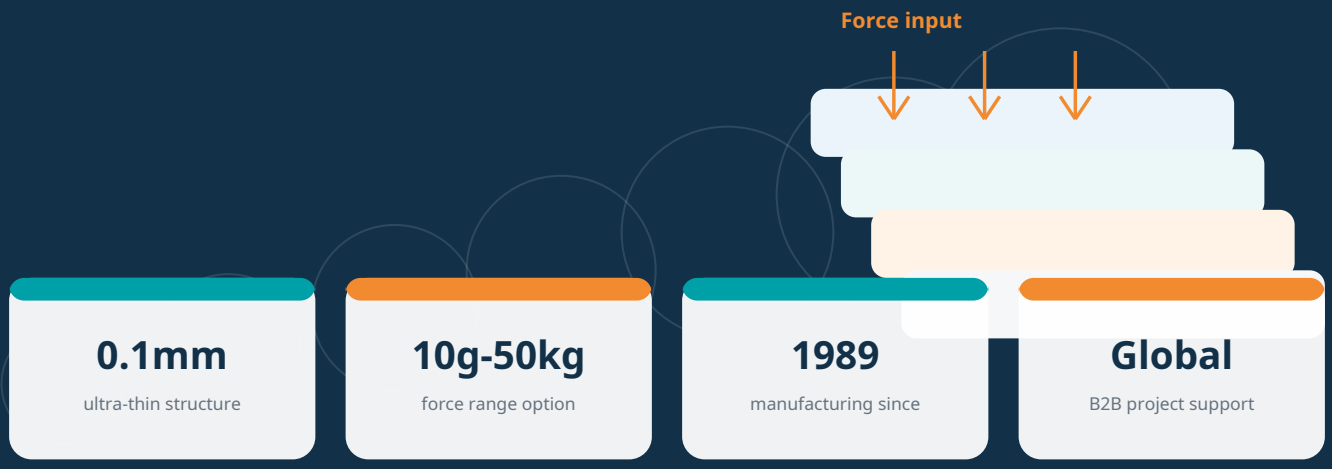
Shenzhen Baoshengda Technology Co., Ltd.

Custom FSR Pressure Sensor Brochure

Flexible Thin Film Force Sensing Resistor Solutions
for Medical, Automotive, Industrial and Smart Device Applications



Website: https://www.baoshengda-tech.com/

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2026 Edition

01 | Product Overview

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Custom FSR Pressure Sensor

Baoshengda manufactures flexible FSR pressure sensors for applications that require thin, lightweight and customizable force detection. An FSR, or Force Sensing Resistor, converts mechanical pressure into a measurable resistance change. This makes it suitable for tactile feedback, pressure mapping, occupancy detection and compact HMI sensing designs.

Our FSR sensors are designed for B2B equipment manufacturers in medical rehabilitation, smart wearables, automotive seating, industrial control, consumer electronics and smart mobility applications.

0.1mm	10g-50kg	Custom	ISO/IATF
thin film structure	force range option	shape and interface	quality system support

Key Advantages

1 **Ultra-thin and flexible**

Thin film structure allows integration into curved, compact and limited-space product designs.

2 **High sensitivity**

Force range and response curve can be developed based on application requirements.

3 **Custom structure**

Shape, sensing area, point array, tail direction and connector interface can be customized.

4 **Integration ready**

Can be combined with membrane switches, graphic overlays, FPC circuits and HMI modules.

02 | Structure Breakdown

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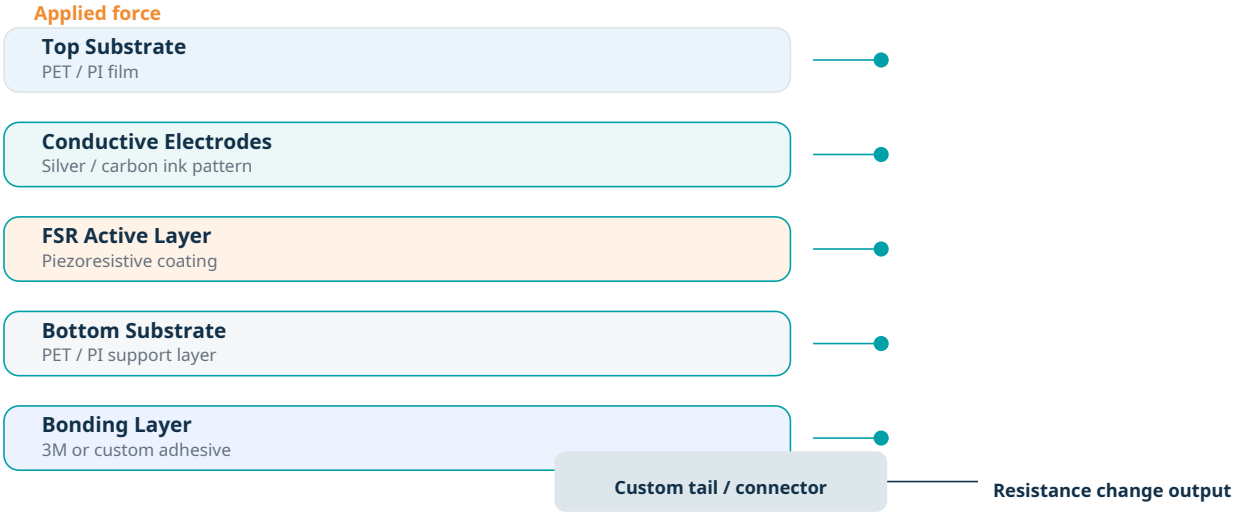
How the FSR Sensor Works

The FSR sensor uses a pressure-sensitive functional layer. When pressure is applied, the contact and conductive path inside the sensing structure change, causing a measurable resistance decrease. The final output behavior depends on the material system, electrode pattern, sensing area, adhesive structure and assembly method.



Typical Layer Description

Layer	Description
Top Substrate	PET or PI film layer selected according to flexibility, thickness and environmental requirements.
Conductive Electrodes	Silver ink or carbon ink patterns form the conductive circuit and sensing path.
FSR Active Layer	Piezoresistive coating converts force input into resistance change.
Bottom Substrate	Support layer for mechanical strength and circuit positioning.
Adhesive / Bonding Layer	3M or customized adhesive used for mounting and integration into the final product.

Technical Specifications

The following specifications are available based on project requirements. Final values depend on sensor structure, material selection, circuit layout, force range, installation method and operating environment.

Item	Options / Description
Product Type	FSR pressure sensor, thin film force sensor, flexible pressure sensor, pressure sensing array.
Sensor Thickness	Down to 0.1mm; available based on project requirements.
Force Range	10g to 50kg can be supported depending on structure and material design.
Substrate	PET, PI or customized flexible substrate.
Electrode Material	Silver ink, carbon ink or customized conductive ink system.
Sensing Layer	Piezoresistive coating for force-to-resistance conversion.
Output Behavior	Resistance decreases as pressure increases; response curve can be designed for target use.
Customization	Shape, sensing zone, point array, tail direction, connector and adhesive.
Environmental Options	Waterproof, dustproof, chemical-resistant and anti-interference options based on project requirements.
Application Areas	Medical rehabilitation, smart wearables, automotive seating, industrial control and consumer electronics.
Quality Support	ISO 9001, IATF 16949, ISO 14001, RoHS / SGS material support where applicable.

Note: Do not define critical performance targets only by a catalog value. For pressure sensing projects, we recommend confirming the force range, load area, installation stack-up, calibration method and operating environment before sampling.

04 | Custom Development Options

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Customization Options

Baoshengda supports custom FSR sensor development based on drawing, sample, product structure or application concept. The design can be adjusted from mechanical shape to sensing layout and electrical connection.

1

Shape and sensing area

Round, square, strip, ring, irregular geometry or custom shape based on the product housing.

2

Single-point or array design

Single sensing zone, multiple keys or pressure point array for mapping and feedback applications.

3

Force response tuning

Sensitivity and response curve can be adjusted by material, electrode pattern and active layer design.

4

Connector interface

Tail direction, pitch, connector type and PCB/FPC interface can be customized.

5

Adhesive and mounting

3M adhesive or custom bonding solution based on substrate material and assembly method.

6

Sealing and protection

Waterproof, dustproof and chemical-resistant structures can be developed based on use conditions.

Integration Possibilities

- FSR sensor plus membrane switch for interactive HMI control.
- FSR sensing layer plus graphic overlay for sealed control surfaces.
- FSR array plus flexible circuit for pressure mapping applications.
- FSR module plus heating film or smart surface assembly for mobility products.

05 | Application Scenarios

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Application Scenarios

FSR pressure sensors are suitable for products where force, touch pressure, load distribution or occupancy status needs to be detected in a thin and flexible structure.

1

Medical rehabilitation

Smart insoles, gait analysis, posture detection, bed pressure monitoring and rehabilitation devices.

2

Smart wearables

Pressure-sensitive controls, activity feedback, force input and compact sensing modules.

3

Automotive seating

Seat occupancy sensing, steering or control feedback and vehicle interior HMI sensing.

4

Industrial control

Operator interfaces, handheld terminals, machinery panels and safety control surfaces.

5

Consumer electronics

Smart appliances, compact keypads, force-sensitive device interfaces and electronic modules.

6

Smart mobility

Motorcycle seat sensing, handlebar modules, dashboard HMI and integrated smart surface functions.

Recommended Product Fit

Customer Need	Recommended FSR Design Direction
Detect whether force exists	Single-zone sensor with simple resistance threshold design.
Measure changing pressure	Calibrated sensing area with response curve development.
Map pressure distribution	Multi-point or array layout with custom electrode pattern.
Fit into curved surface	Ultra-thin flexible substrate and customized adhesive stack-up.

06 | Quality and Project Support BAOSHENGDA

Quality and Manufacturing Support

Baoshengda supports customers from early engineering review to prototype sampling and mass production. For pressure sensing projects, quality planning should consider both electrical performance and the final mechanical installation condition.

Stage	Support Content
Design Review	Review force range, sensing area, tail direction, adhesive, housing stack-up and calibration requirements.
Prototype	Sample structure development, material selection, circuit pattern confirmation and first article review.
Testing	Resistance response, continuity, appearance, dimension, bonding and durability checks based on project requirements.
Reliability	Temperature, humidity, salt spray or other environmental evaluation where applicable.
Mass Production	Process control, inspection records and consistent manufacturing support.

Available Inspection and Testing Support

nd dimensional inspection
- Electrical continuity and resistance testing
- Key function or point response testing
bonding assessment
- Temperature and humidity evaluation
- RoHS / SGS material support where appli

Quality system support: ISO 9001, IATF 16949 and ISO 14001 certified manufacturing management.

07 | Quote Checklist BAOSHENGDA

Information Needed for a Faster Quote

To help us evaluate your project quickly, please provide as much information as possible. If your design is still in the early stage, send your application idea and expected sensing function. Our team can help review the feasibility.

Required Information	Examples
Product drawing	2D drawing, 3D structure file, housing sketch or sample photos.
Force requirement	Minimum force, maximum force, target response curve, trigger threshold.
Sensing area	Single point, multi-zone, pressure array, active area size.
Electrical interface	Tail direction, pitch, connector type, PCB/FPC connection method.
Mechanical stack-up	Mounting surface, adhesive requirement, compression structure, enclosure condition.
Environment	Waterproof, dustproof, cleaning chemicals, temperature and outdoor exposure.
Quantity and schedule	Prototype quantity, annual volume, target delivery time.

Related Baoshengda Solutions

- Custom membrane switch and membrane keypad manufacturing.
- Graphic overlay and film panel manufacturing.
- Automotive dashboard overlay and motorcycle instrument overlay.
- Flexible carbon heating film and smart surface modules.

Ready to develop a custom FSR sensor?

Send your drawing, force range, sensing area, interface and application requirements.

Request a Quote

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