Texensor®

Beyond Sensing. Into Perception.

Texensor transforms everyday textiles into intelligent, adaptive sensing platforms, with proven applications across automotive, robotics, home & furniture, and healthcare.

In mobility, our technology enables seats to understand and adapt to every occupant, shaping the future of intelligent seating and in-cabin experiences.



COMPETITIVE EDGE

End-to-End Vertical Integration

Lower Risk. Faster R&D.

Texensor integrates the full stack—textile sensing materials, manufacturing, controller hardware, embedded software, system validation, and production—reducing development complexity, integration risk, and time to market.

Modular Platform Architecture

Faster Development. Easier Scaling.

A reusable sensing, hardware, and software architecture enables efficient product evolution—from Seat Belt Reminder (SBR) to advanced Occupant Classification Systems (OCS)—with configurations tailored to specific vehicle requirements.

Automotive-Grade Reliability

Validated. Durable. Automotive-Ready.

Texensor systems undergo automotive-grade durability and environmental testing: 150,000 bounce & creep cycles, 20,000 ingress/egress cycles, 15,000 kneeling cycles, and thermal shock from –40°C to 85°C for 480 hours.

Production-Ready at Scale

Proven for SOP. Ready to Scale.

With 100+ automotive projects from development to SOP and a 7,500+ sqm self-owned overseas factory, Texensor delivers scalable production, quality consistency, and reliable delivery.

From Occupant Data to Occupant Understanding

Deeper Insights. Smarter Decisions.

Texensor combines pressure, temperature, and humidity sensing with intelligent algorithms to understand occupant characteristics, posture, fatigue, and comfort needs—and respond in real time.

SIGNATURE SOLUTION

Smart Cockpit Seat System—AIO-X

As vehicles become increasingly intelligent, seats are evolving from passive structures into active human-machine interfaces.

Yet conventional seating systems still struggle to adapt to diverse body types, postures, use cases, and occupant behaviors.

AIO-X bridges this gap by enabling seats to sense, perceive, understand, and intelligently respond to every occupant—creating a truly adaptive seating experience.

Adaptive Occupant Understanding

AIO-X continuously interprets occupant characteristics and seating conditions to create a more adaptive seating experience.

Occupant Classification (OCS)

Identifies adults, children, and unoccupied seats.

Automatic Adjustment

Automatically adjusts seat fore/aft position, back-rest angle, and headrest height to fit the occupant.

Adaptive Support

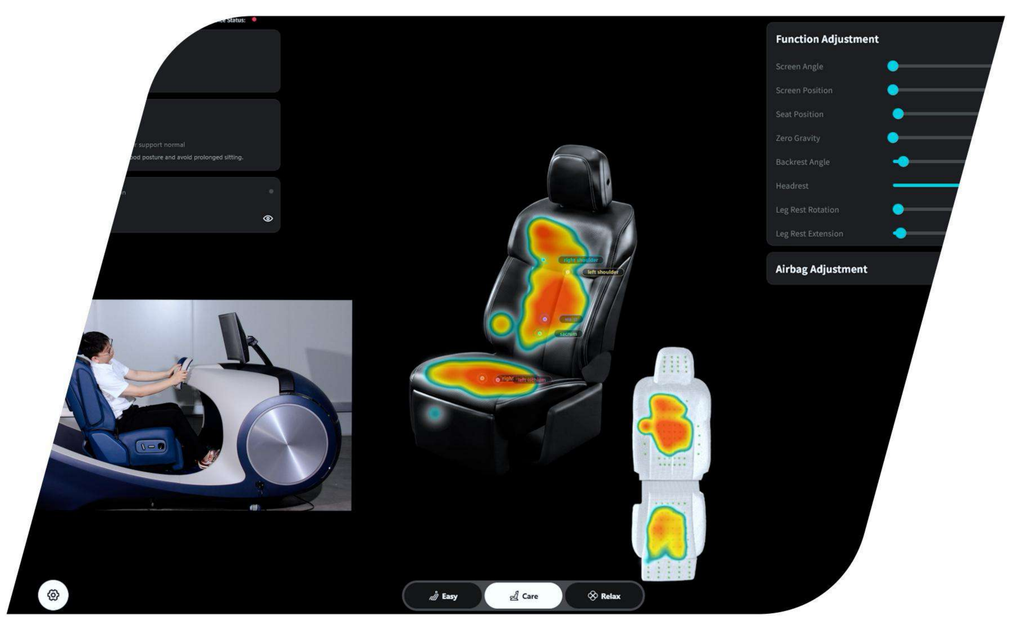
Airbags automatically adjust to provide tailored support.

One-Touch Relax

One touch activates a predetermined recline position with personalized support.

Precision Posture Care

By combining pressure sensing with anatomical and posture analysis, AIO-X enables active posture optimization.



Anatomical Detection

Detects key anatomical landmarks, including the ischial tuberosity, sacrum, L3 lumbar spine, and head position.

Posture Recognition

Detects forward, backward, and lateral leaning.

Posture Correction

Targeted airbags guide the occupant toward a more balanced posture.

Proactive Fatigue Intervention

AIO-X helps mitigate fatigue and discomfort during extended drives through adaptive support and active massage.

30-Minute Drive

Increases seat firmness to enhance support and help delay fatigue.

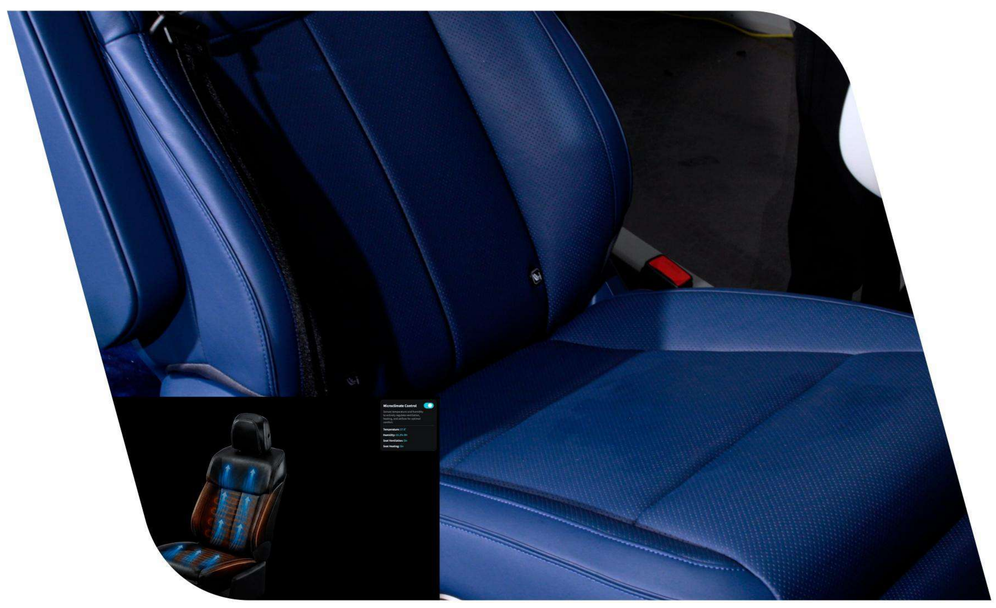
1-Hour Drive

Activates cyclic massage to relieve prolonged-sitting discomfort and support sustained driving comfort.

Seat Microclimate Control

Integrated temperature and humidity sensors monitor conditions at the occupant-seat interface in real time, enabling coordinated control of seat ventilation, heating, cabin HVAC, and fragrance systems.

By detecting localized heat and moisture, the system enables more responsive, precise comfort control.



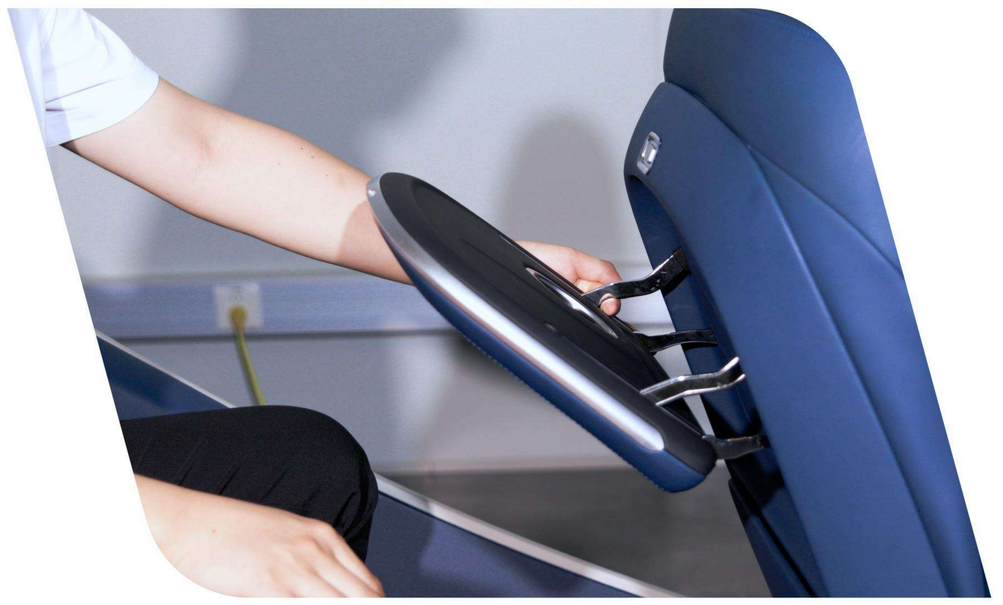
In-Cabin Interaction & Safety

Pressure-Aware Interaction

Transforms pressure-sensitive surfaces throughout the cabin into intuitive interaction interfaces, Including door panels, instrument panels, seat armrests, seat surfaces, steering wheels, and overhead control areas.

Anti-Pinch Protection

Uses pressure sensing to detect potential pinch conditions and enhance occupant safety.



Trained on Real-World Human Data

Built on real-world human data and continuously refined through iterative optimization to deliver reliable performance across diverse occupants and driving scenarios.

PHYSICAL & TECHNICAL SPECIFICATIONS

Sensing Layer

A distributed pressure-sensing array covers key occupant contact zones for comprehensive occupant understanding.

NOTE: The sensing node configuration below is for reference only and can be tailored to specific applications, including the number and placement of sensing nodes.

Sensing Zone	Sensor Nodes
Cushion	48
Backrest	68
Shoulder Area	14
Headrest	32
Leg Support	20
Total	**182**

Actuation Layer

A dual-structure pneumatic architecture enables adaptive full-torso support based on physiological and anatomical positioning.

Upper Torso Support

Four independently controlled air bladders provide localized movement and sustained support.

Lower Torso Support

A high-density five-zone air chamber system enables localized adjustment and sustained support.

Performance Parameters

Parameter	Specification
Pressure Sensing Range	0–200 mmHg
Response Time	10 ms
Accuracy	±5% FS
Sensor Thickness	1.2 mm
Operating Temperature	–30°C to 95°C

Ready to Build the Next Generation of Seating?

Connect with Texensor to explore how textile sensing technologies can power smarter, more adaptive automotive interiors.

Let's build smarter, stronger solutions—together.

https://texensor.com

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Scan to download the fact sheet

