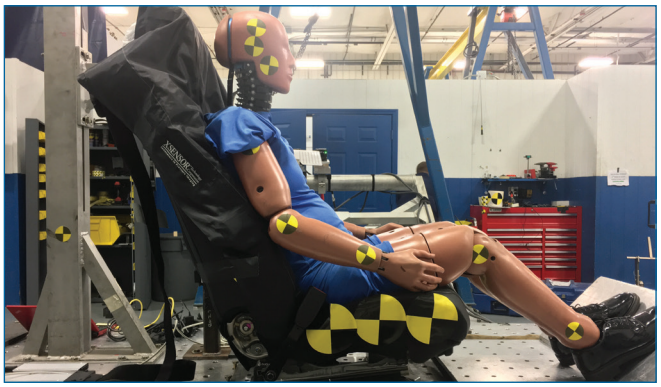
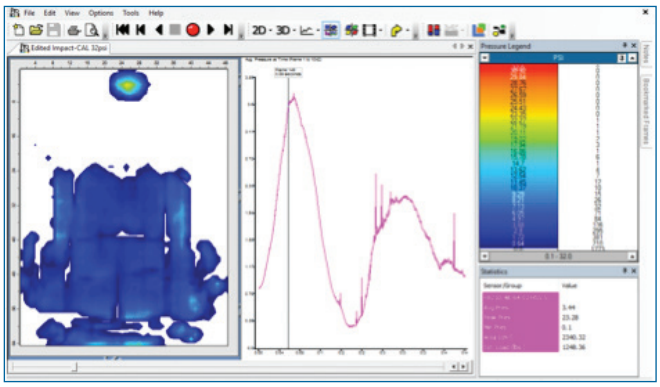
A Whole New Way to Measure Safety

How can designers minimize the elevated body surface pressures and verify performance of head restraints and seat backs during rear impacts? How much pressure is being exerted on a driver from airbags and seatbelts during front impacts? Questions like these are impossible to answer without the ability to measure the body surface pressures caused by such impacts. Until now, that information has been unattainable. That's why XSENSOR developed HS Impact.

Acquiring accurate pressure information during sudden impacts requires fast and responsive pressure imaging sensors combined with powerful software tools. HS Impact provides detail on surface pressures before, at, and after impact, allowing engineers to isolate issues and implement effective changes that can then be measured and repeated. Never before has the automotive industry had the ability to measure pressure profiles at such high speeds.





High Speed Data Capture

HS Impact's HX sensors contain thousands of sensing points that are sampled at over 2,000 frames per second.* Our unique data logger can be attached to crash sleds and triggered remotely for repeated testing procedures.

HX sensors are thin and conformable, with a fast response rate and high-speed calibration that provides consistent and repeatable results on a cell by cell basis so you are able to capture exactly what happens during and after an impact.

Impact Data Analysis

XSENSOR's feature-rich HS V8 software allows you to view live or post-process and then analyze the data. Recordings can be triggered remotely and synchronized with other high speed data acquisition devices allowing you to:

- View pressure throughout the impact
- See product performance throughout the impact scenario
- Compare designs and modifications

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HX Sensors

- Thousands of sensing points
- Sample rate >2,000 fps*
- Fast response rate (3dB point >100Hz)
- Less than 1mm thick
- Available in a range of sizes, pressure ranges and resolutions

HX210:48.64.02 (for back of seat & head restraint)

Sensing Area:	61cm x 81cm (24”x32”)
Resolution:	12.7mm (0.5”)
Pressure Range:	0.007-2.25kg/cm2 (0.1-32psi)
Expected Frame Rate:	2,450 fps

HX210:50.50.05 (for head restraint)

Sensing Area:	25.4cm x 25.4cm (10”x10”)
Resolution:	5.08mm (0.2”)
Pressure Range:	0.07-7.03kg/cm2 (1-100psi)
Expected Frame Rate:	2,350 fps*

HX210:40.64.02 (for back of seat)

Sensing Area:	51cm x 81cm (20”x32”)
Resolution:	12.7mm (0.5”)
Pressure Range:	0.007-2.25kg/cm2 (0.1-32psi)
Expected Frame Rate:	2,800 fps*

HX210:25.50.05 (for smaller surface areas)

Sensing Area:	12.7cm x 25.4cm (5”x10”)
Resolution:	5.08mm (0.2”)
Pressure Range:	0.07-7.03kg/cm2 (1-100psi)
Expected Frame Rate:	2,900 fps*

HS V8 Software

- Establishes recording rates and synchronization protocols to generate high speed data acquisition
- Data files recorded to the data logger are downloaded and configured for viewing and analysis
- Frame rates exceeding 1,000 fps (with an Ethernet connection from the data logger)

HS Data Logger

- Configures and controls the HS Sensor Pack
- Detects user defined trigger condition
- Records data from up to 4 sensor packs to and up to a total 256 x 256 sensing array
- Operates in either streaming to Ethernet or downloadable from high speed recording internal RAM
- Programmable triggers and pre/post-trigger information (both external signal or pressure threshold triggers are supported)
- Supports autonomous operation

HS Sensor Pack

- Scans sensor data at up to 8,000,000 sensels/second with 16 bit resolution
- Connects directly to the controller via LVDS signals

*Frames per second refers to the actual number of frames of data recorded and those can be viewed with the software. Frame rates estimated using the HS Controller in data logging mode.

About XSENSOR

XSENSOR has been a leading provider of pressure sensors for more than 20 years. The company’s X3 PRO sensors are used in variety of automotive applications including seat design, tire design, wiper design and more.