

# Sensing

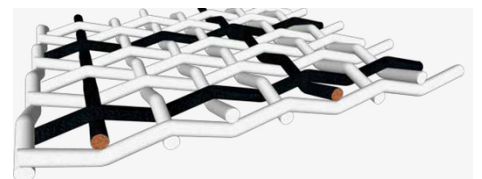
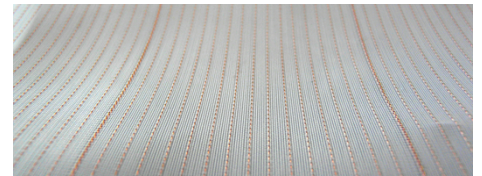
Our fabrics are used for measuring physical variables. They are lightweight, have a high air-permeability and are used in the transport, automobile and security industries.

## Product features

### Pressure-sensitive fabrics

Sefar provides a mass-producible generic fabric for sensors which allow the measurement of various activities of human bodies by capacitive, resistive and/or bio-impedance mode.

- The most interesting sensing mode represents the pressure resistive sensor.
- The sensor consists of two fabrics with an array of metallic conductive parallel stripes as electrodes and a third fabric as semi-conductive intermediate layer (see graphic).
- As the sensor area is pressed, the resistance decreases (see graphic). The resistance-pressure relationship is predictable and repeatable and resistance is insensitive to other physical variables.
- The fabric pressure sensor shows sensor function properties having by far the most sensitive structure in the response.



## DOWNLOADS

Large scale textile pressure sensor (PDF  
546 kb)

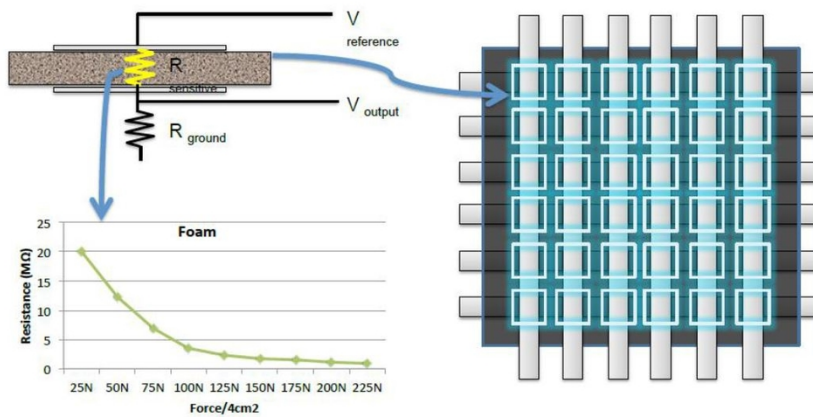
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Sefar Sensing Fabrics were developed in the frame of the European Project [SimpleSkin](#).

### Sensing with fabrics

The PowerSens fabrics are woven fabrics usually consisting of PET and electrically conductive filaments.

### PowerSens fabric properties

- Able to sense physical quantities such as conductivity, temperature and elongation
- Customer-specific designs
- Electrical insulation available
- Light weight (< 90 g/m<sup>2</sup>, filament diameters 40 – 80 μm)

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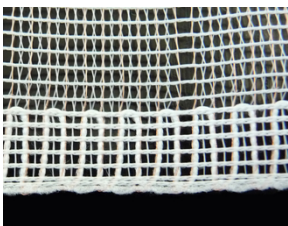
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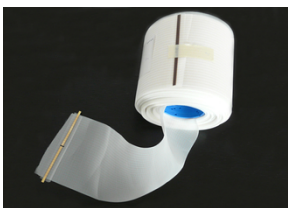
- High air permeability (> 8000 l/m<sup>2</sup>/s, depending on fabric design)
- Compatible to injection mold processes

## Examples of applications



### Intrusion detection – Security industry

- Thin metal wire is embedded in the fabric as an endless serpentine weave
- Breakage of the wire sets off the alarm



Electrically insulated wires in warp direction in combination with an intelligent contacting enable breakage detection of pipelines.

## Your benefits

SEFAR PowerSens fabrics are customer-specifically developed and manufactured. Physical quantities such as temperature, elongation, liquid levels etc. can be measured through Sefar fabrics.

- Unobtrusive measurement of physical quantities
- Fabric can be formed to fit any shape

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Sefar supports you by helping you specify the properties necessary for your product.

## Locations



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