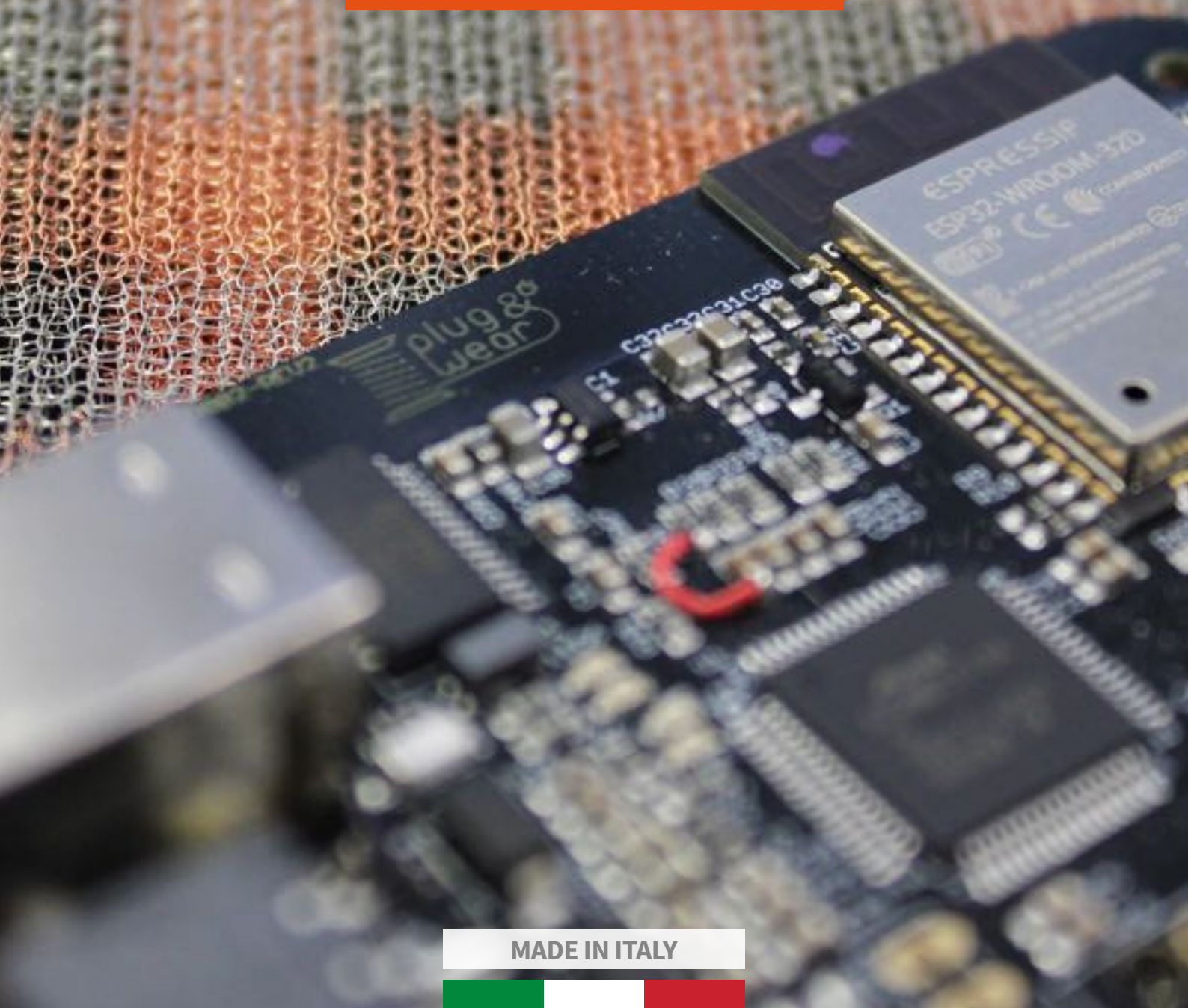


Knitronix
tough textile sensors



MADE IN ITALY





History

In 1949 two young engineers, Mario Marchesi and Antonio Scoino founded SCOMAR Srl to produce automatic flat knitting machines. Mr. Scoino soon departed, leaving Mr. Marchesi as sole proprietor.

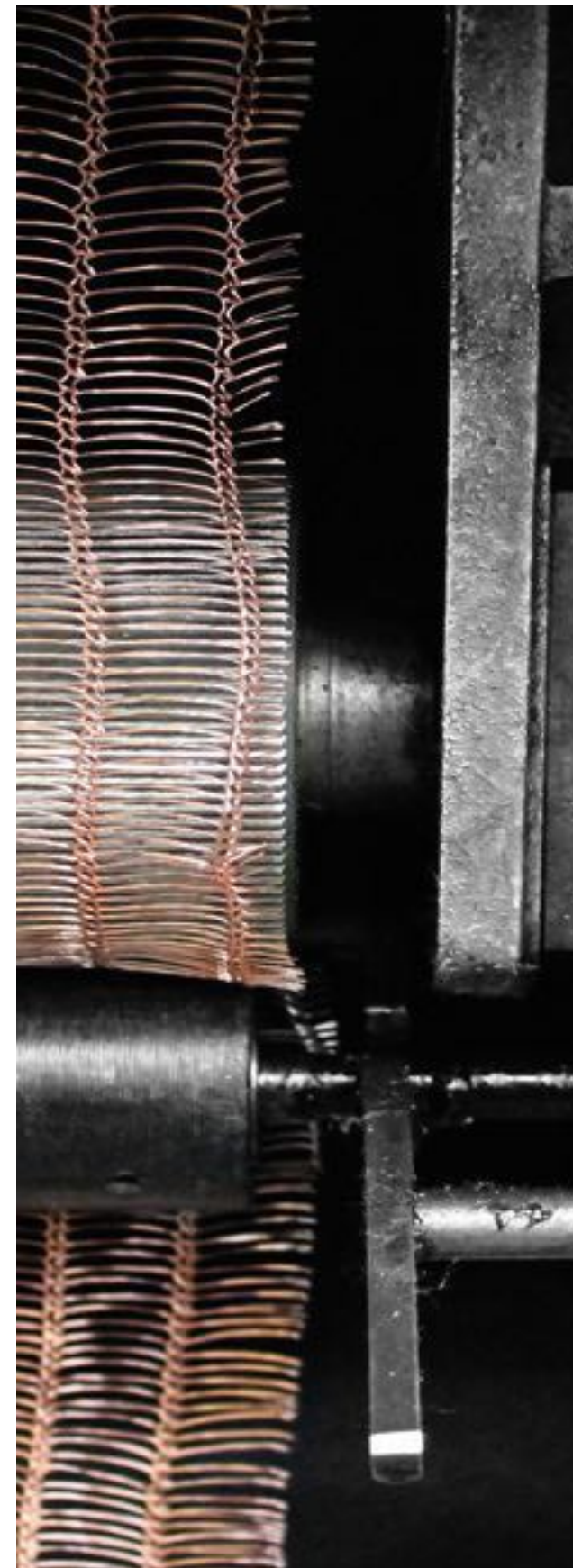
Since then SCOMAR has manufactured and exported more than 10.000 machines, with a sales network of 40 Representatives in 5 continents.

The shift in the Western textile markets and the subsequent crisis forced the company, renamed Inntex, to drastically

change its strategy. The best way to exploit the company's know-how was to start producing technical textiles, using the same knitting machines that had been assembled and sold by SCOMAR.

Today Knitronix Srl, an Inntex spinoff, produces textile sensors and measuring system based on textiles sensors.

Our enthusiasm for innovation is the same as at SCOMAR's founding over 70 years ago.



Company

We are a company with 65+ years expertise in textiles and textile machinery. Our skills merge Italian textile tradition with innovation and research on electronic textiles.

We proudly develop and build 95% of our machines. Since 2000 we have specialized in knitted electronics. Our product range includes: textiles sensors for pressure, temperature and the presence of liquids/humidity. Our products are entirely designed and manufactured in our factory in Florence, Italy - using proprietary technologies.

We work as consultants providing solutions for companies and research institutes.

We have worked with:

The Institute for Microelectronics and Microsystems, Rome, Italy.

Department of Textiles, Ghent University, Belgium.

Department of Social Science, Siena University, Italy.

ICT department, Florence University, Italy.

The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, Italy.

Mission

To exploit our knowledge of textile technology to create smart fabrics.

Vision

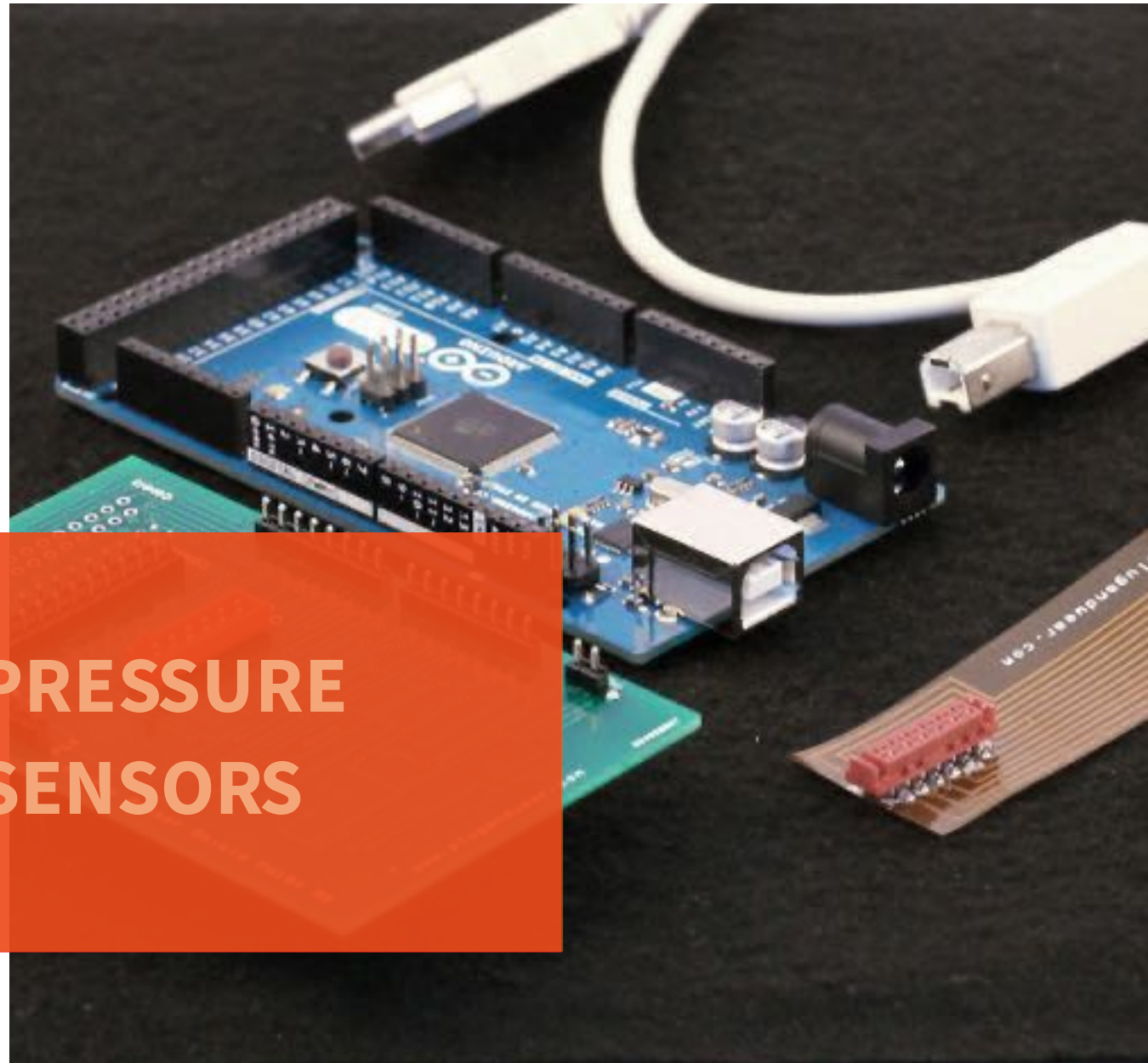
To invent, through research and development, soft e-textiles able to replace traditional sensing devices.

Values

We want to make products that help people live a better life.

We want to produce with a low impact on the environment.

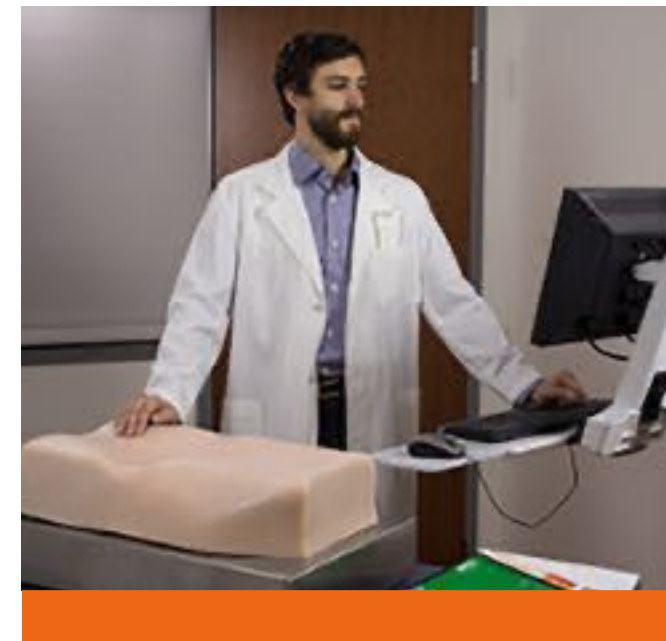
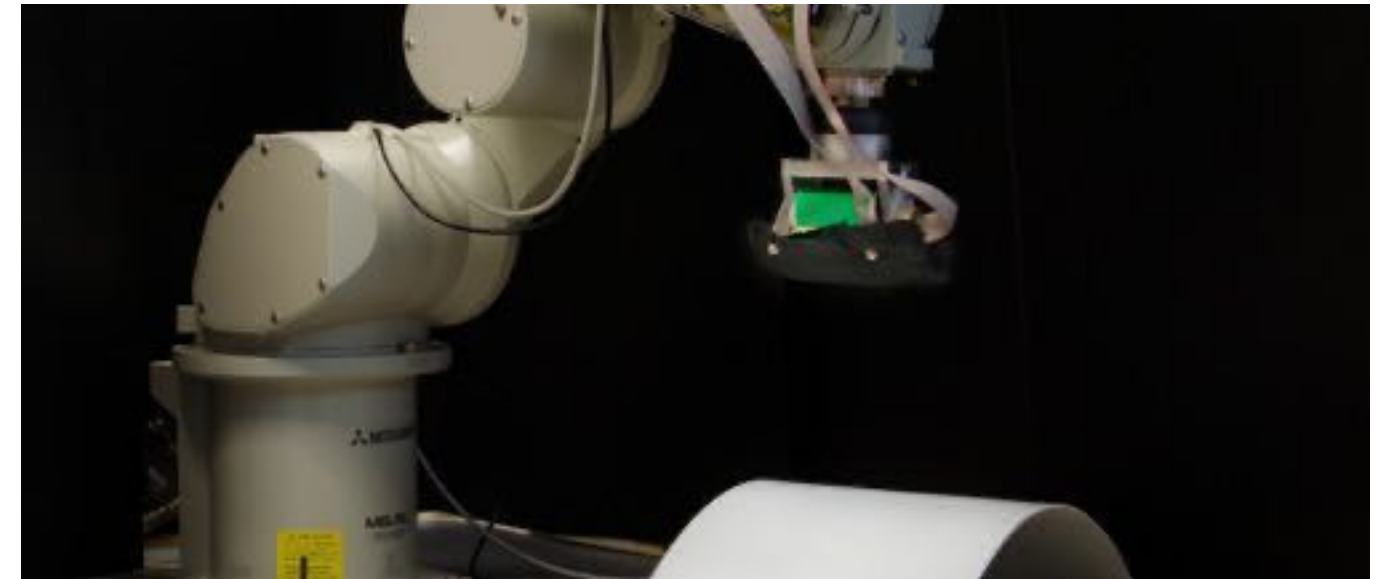
We work side by side with our customers to create innovation.



PRESSURE SENSORS

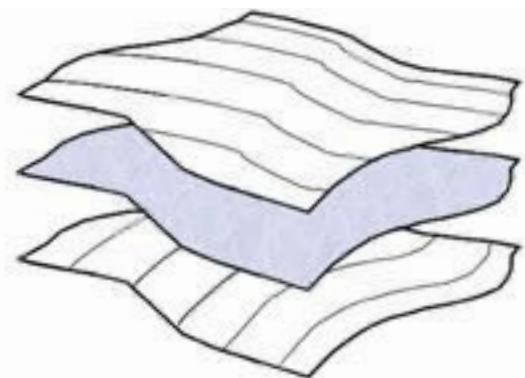
APPLICATIONS

Contact switches, presence sensing devices, push buttons



MARKETS

Medical simulators, robotics, industry, automotive



Textile Pressure Sensors

Our Textile Pressure Sensors are 100% made of textile layers. They are soft and conformable because entirely made of fabric. Available in two standard shapes: flat and cylindrical. Customized shapes are also possible.

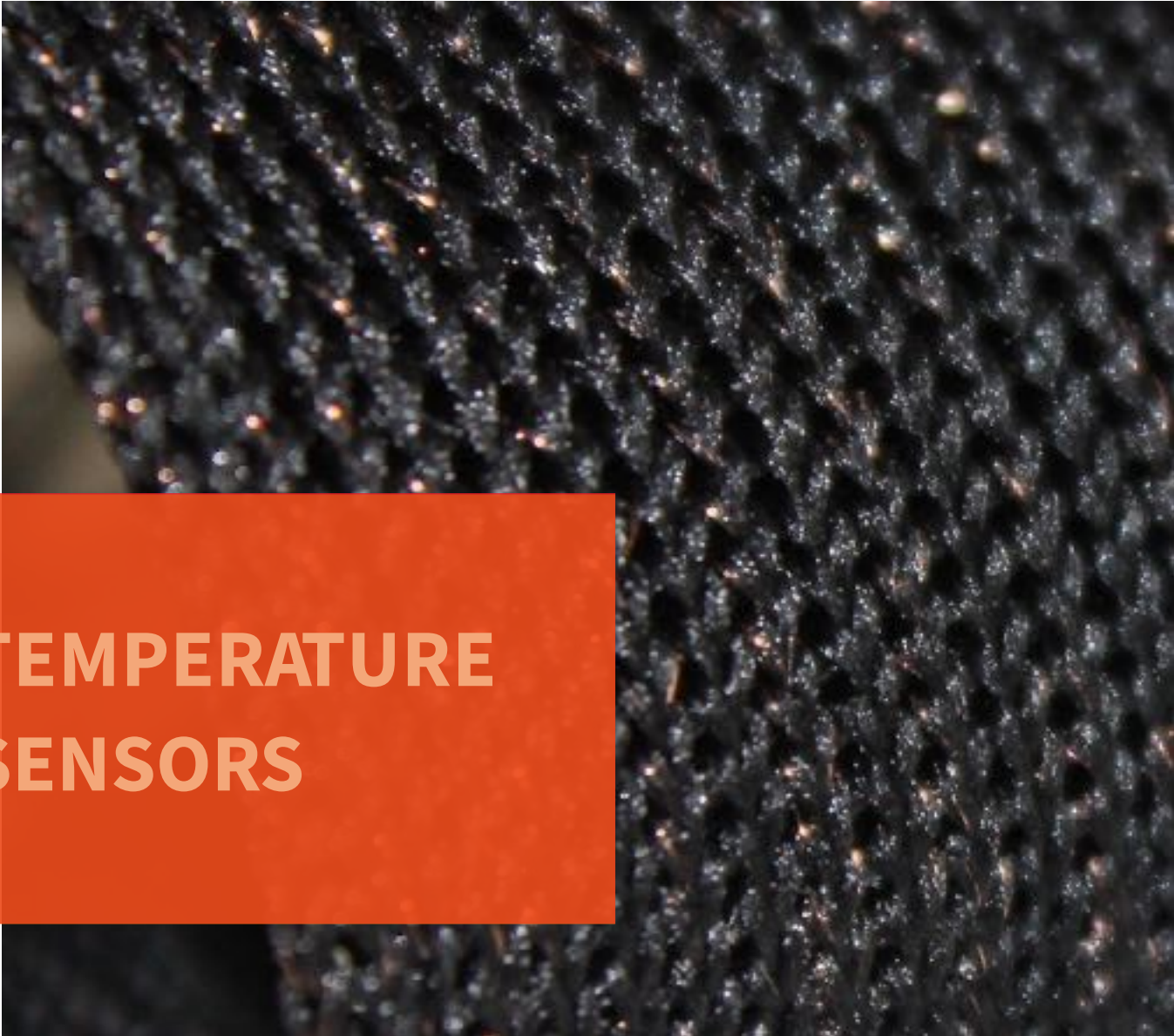
The all-fabric layers allow to bend the sensor without crackling noise typical of plastic film sensors.



Matrix Pressure Sensors

Soft sensors able to detect pressure maps even if placed on uneven surfaces. Their all-fabric layers guarantee flexibility, breathability, conformability and stretchability. High density of pressure points with a nominal resolution of 20 mm and real-time response.

Well-suited for detecting pressure across multiple points between the living bodies or objects and underlying or surrounding soft surfaces like partitions, seating, or mattresses.

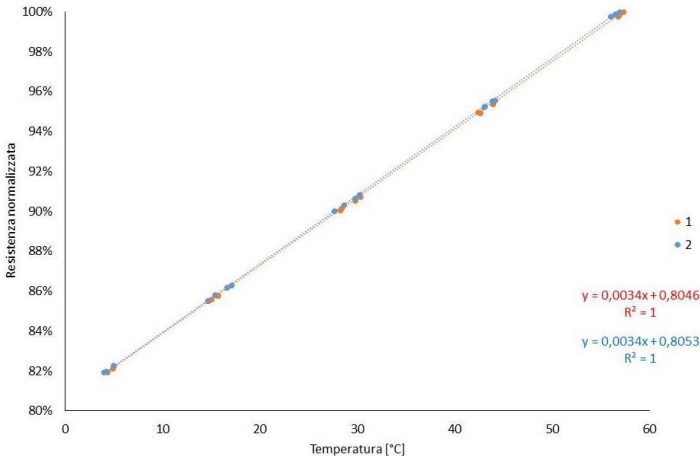


TEMPERATURE SENSORS

APPLICATIONS Pressure ulcer prevention, newborn babies monitoring, removable pipe temperature sensor

Description

Soft sensor able to measure temperature even if placed on uneven surfaces. Its all-fabric single layer guarantees flexibility, breathability, conformability and stretchability. It can be placed in direct contact with skin. RTD principle, temperature is averaged on the whole surface of the sensor. Very low thermal inertia and hysteresis. It is the perfect instrument to measure temperature between the human body and a soft surface like a mattress or a cushion. Patented. The sensor is also available in the form of a simple wire.

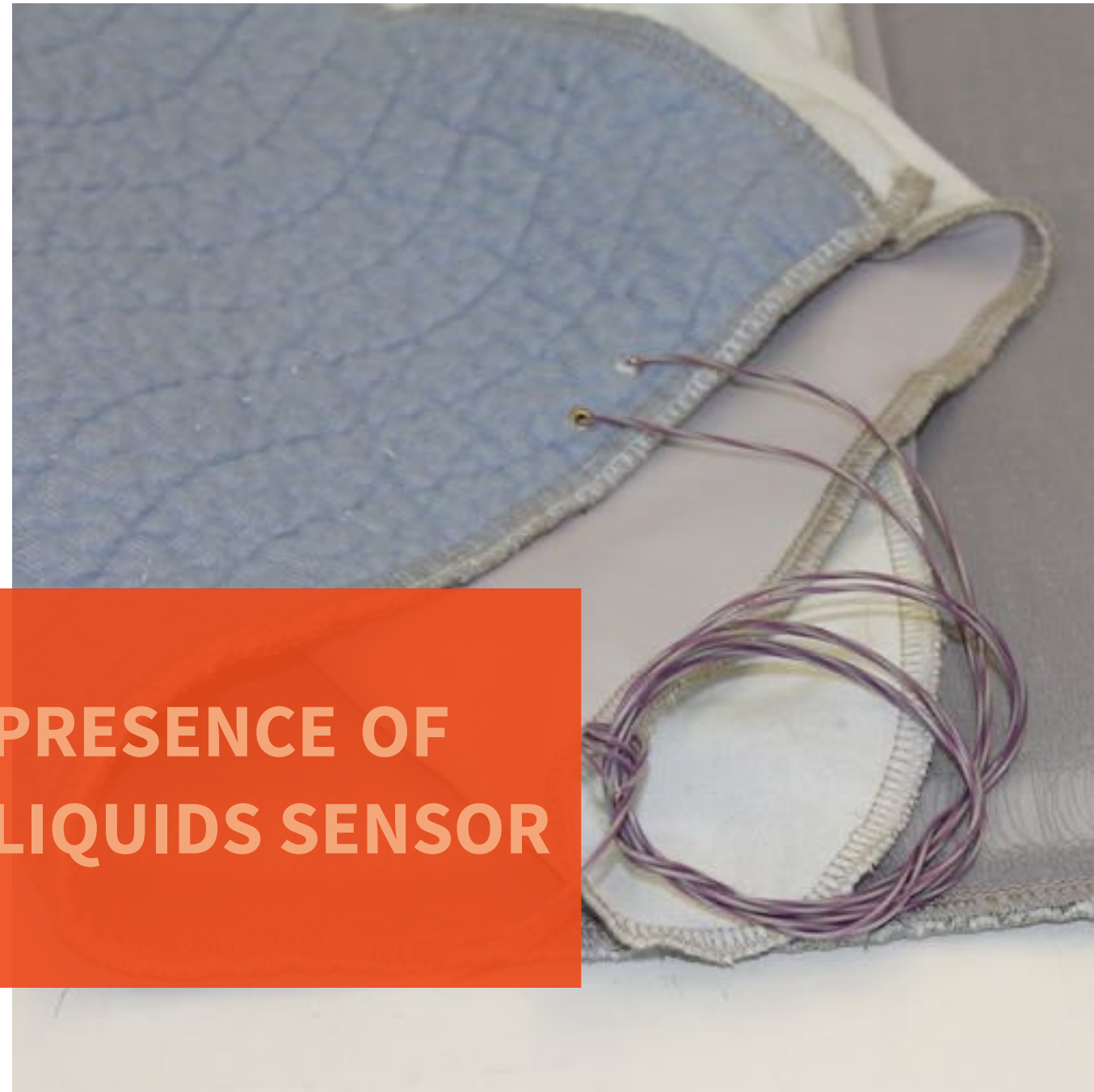


MARKETS Industry, medical, wearables

Characteristics

WEIGHT	6 g (4 x 4 cm standard sensor size)	STRETCHABILITY (warp)	15%
WORKING PRINCIPLE	Resistive (RDT)	STRETCHABILITY (weft)	15%
MAXIMUM TEMPERATURE	120°C / 248°F	WASHABLE	Optional
MINIMUM TEMPERATURE	-30°C / -22°F	MAXIMUM SENSOR SIZE WxL	50 x 50 cm / 20 x 20 in
RESISTANCE AT 77°F	570 kΩ	STANDARD SENSOR SIZE	7 x 8 cm / 2.7 x 3 in

PRESENCE OF LIQUIDS SENSOR



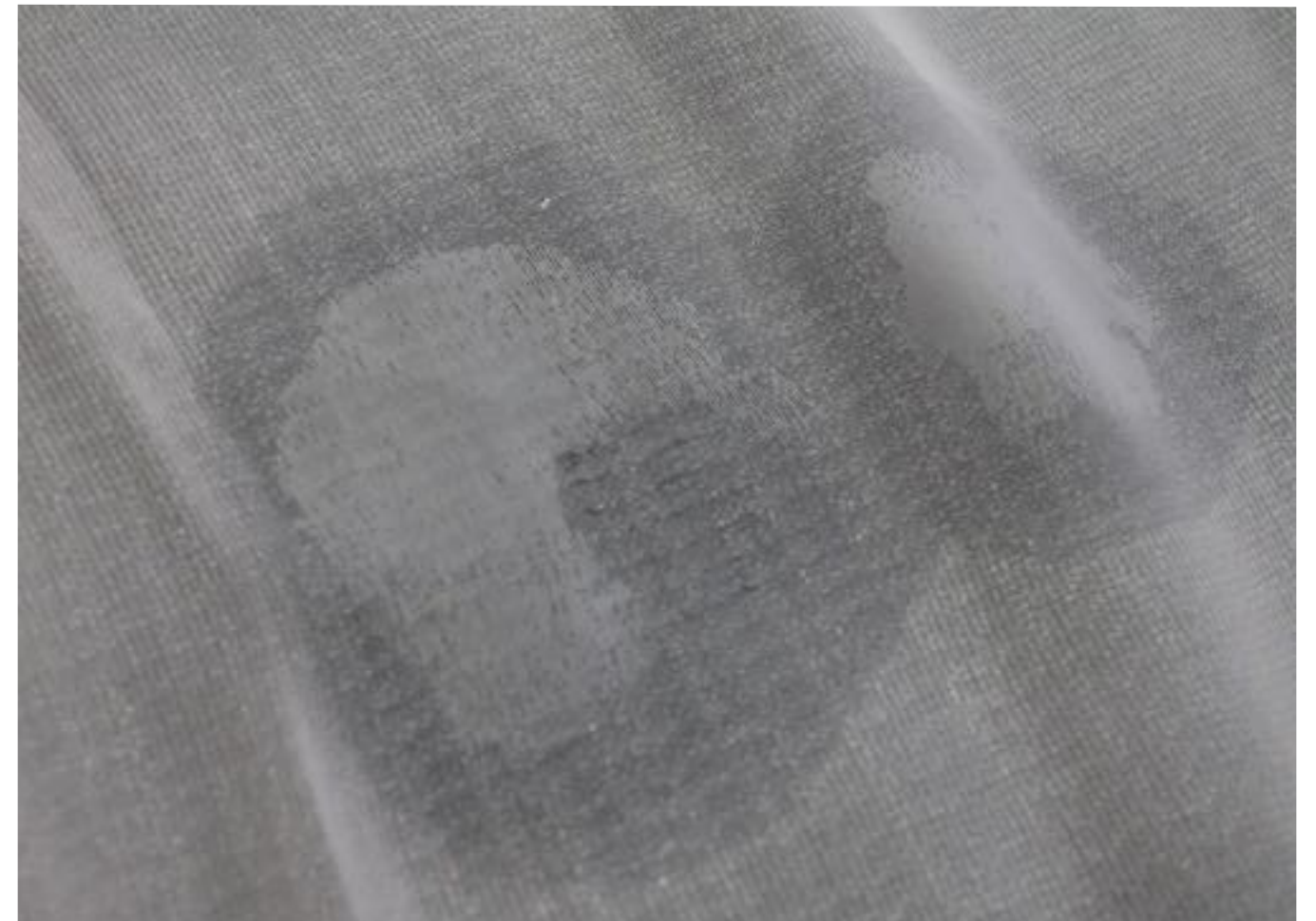
APPLICATIONS Incontinence monitoring, plumbing leak monitoring, water intrusion monitoring in buildings

Description

The Liquid Sensor is an advanced textile able to detect any type of liquid present on its surface. This sensor is stretchable, and it is possible to sew it onto other fabrics, like bed pads. The sensor is made of skin compatible materials,

and does not produce irritation when in contact with skin. It is fully washable with standard washing machines.

The sensor can detect liquid on its surface or humidity if touched by a wet fabric.



MARKETS

Medical, wearables, building monitoring



Characteristics

SENSOR SIZE

60 x 70 cm (23.6 x 27.5 in) is standard; larger sizes avail. on request



APPLICATIONS

Baby Car Seats, Safety Mats, Robotics

TRAPOL Series Textile Push Button

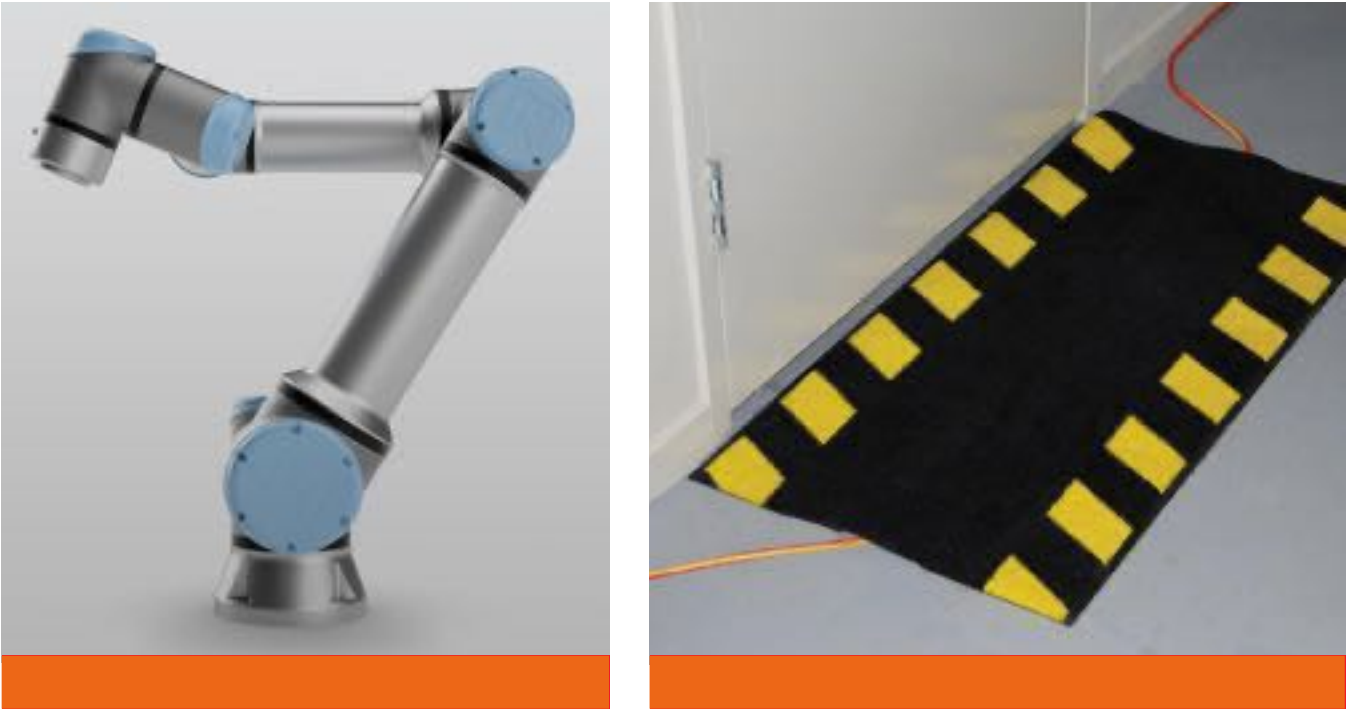
The TRAPOL series of Textile push buttons is the first line of textile smart fabric industrial grade devices; they are made of two conductive layers that can touch when sensor is pressed. They are entirely made of fabric layers and can be embedded in mattresses or car seats to monitor the presence of people.

Sturdy and reliable (tested to 1.000.000 cycles) they are produced with industrial criteria. They have an electrical behavior like a press button, circuit is OPEN when no pressure is applied, circuit is CLOSED when pressure is applied.

Available in a smaller 9 x 9 cm standard size (TRAPOL PS090090001), and a larger 21 x 21 cm size (TRAPOL PS21028001) as well as custom sizes. Both push buttons have a standard RJ11 connector with 2 or 4 wires. The TRAPOL series of push buttons is very flexible and can easily conform to complex surfaces, such as the curved bottom of a baby car seat.

These push buttons are easy to be integrated in textiles and they do not require particular skills or equipment, just standard textile machines.

Washable version available.



MARKETS

Automotive, Industry, Home appliances, Healthcare

Characteristics

WORKING PRINCIPLE	Resistive	STRETCHABLE	No
SIZE	9 x 9 cm and 21 x 28 cm	WASHABLE	On Request

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