

SENSOR PATCH

Moisture Level Sensing Inlay

Smartrac's state-of-the-art SENSOR PATCH broadens the company's inlay and tag product range for passive sensor inlays. It is specially designed to measure moisture conditions in medical care areas, e.g. geriatric care, long-term medical care and childcare.

The Smartrac SENSOR PATCH is a passive UHF inlay equipped with Axzon's Magnus®S2 IC. This RFID sensor inlay offers great performance, and accurately detects urine levels in the diaper. The specific antenna design acts as a resistor/inductor/capacitor (RLC) tuned circuit to enable an antenna to sense its environment. The antenna converts environmental data into an impedance change, and then the sensor tag IC translates this into a sensor code, as it dynamically matches antenna impedance to die impedance. The sensing information is digitized and wirelessly communicated to off-the-shelf readers using a standard UHF Gen 2 protocol READ command for further processing by caregivers.

The innovative SENSOR PATCH is a disposable, UHF, single-chip sensor inlay solution that offers cost efficiency, is easy to implement, and works on different textiles, pulps and nonwoven materials. The inlay is attached outside of the diaper to avoid skin irritation. In industrial diaper production, the inlay can be placed between the diaper's layers to remain invisible to end users.

It is deployable where active or semi-active sensors are not practical, and involves no battery maintenance, costs or problems with product lifetime or recycling. Delivery formats are dry and wet to suit all converting-industry needs, and the inlay complies with all relevant industry standards and strict quality control parameters.

Overview

Operating Frequency
860 - 960 MHz (FCC)

Integrated Circuit (IC)
Axzon Magnus®S2

Antenna Size
97 × 8.62 mm /
3.8 × 0.3 in

Die-cut Size
100 × 11.62 mm /
3.9 × 0.5 in

International Standards

▶ EPC Class 1 Gen 2
v.2.0.0 ISO 18000-6C

Application Areas

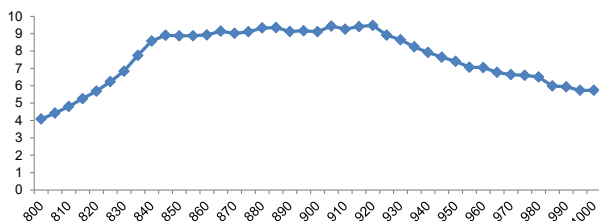
- ▶ Geriatric care
- ▶ Medical long-term care
- ▶ Childcare

SENSOR PATCH

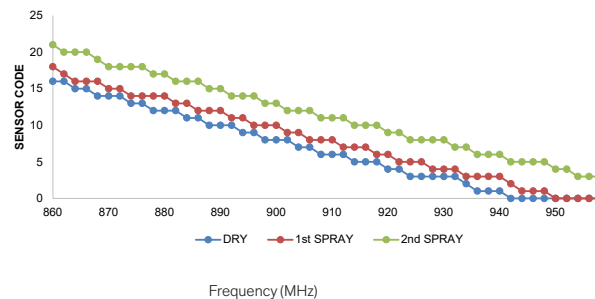
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Technical Features			
IC + Memory Axzon Magnus®S2 128bit EPC + 144bit User Memory	Size 97 × 8.62 mm / 3.8 × 0.3 in 100 × 11.62 mm / 3.9 × 0.5 in	Format* Dry Wet	Sales Code 3004236 3005045
Frequency	860-960 MHz (FCC band)		
Antenna Size	97 × 8.62 mm / 3.8 × 0.3 in		
Die-Cut Size	100 × 11.62 mm / 3.9 × 0.5 in		
Web Width	103 mm / 4.06 in		
Operating Temperature	-40 °C to +85 °C / -40 °F to +185 °F		
Adhesive	RA-2		
Qty/Reel	500 pcs		
Core Size	76 mm / 3 in		
Shelf Life	+20 °C, 50 % RH / 68 °F, 50 % RH - minimum 2 years from the date of manufacturing		

Read Range in Plastic (m)



Sensor Patch Frequency vs. Sensor Code Value



All the graphs are indicative; performance in real life applications may vary. The data has been determined based on calculations for transmitters with a 2W ERP output power level.

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03/2018 EN I&T 0033b