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# SENSOR TADPOLE

## Water Leakage Tag

SMARTRAC has complemented its passive sensor inlay & tag offering with a new, state-of-the-art sensor inlay for a broad range of industry applications. It is designed to measure moisture condition changes within parts and components, to detect any water ingress into the objects during final quality control checks.

The SMARTRAC SENSOR TADPOLE is a passive UHF inlay equipped with RFMicron's Magnus®S2 Integrated Circuit (IC). This RFID sensor inlay offers excellent, stable performance on any difficult surface material, and is able to accurately pinpoint the location of water leakage inside an object. The customized antenna design acts as a resistor/inductor/capacitor (RLC) tuned circuit to enable an antenna to sense its environment. The tag's 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.

Optionally, the antenna can be extended with a paper tail to recognize small water quantities from a wider area where RF signals cannot easily penetrate. The paper tail absorbs water and transfers moisture level information via capillary action to the tag.

This advanced SENSOR TADPOLE is a small and thin UHF tag that offers cost efficiency, is easy to implement, and works on difficult surfaces, like metal parts in different industries. Delivery format is as a singulated wet inlay with the option of two different tail lengths. It can be delivered with TID list and sensor code values for increased accuracy and complementary data analysis, in conjunction with the SMART COSMOS Cloud Services platform.

### Overview

**Operating Frequency**
865 - 868 MHz (ETSI)

**Integrated Circuit (IC)**
RFMicron Magnus®S2

**Product Size: (L x W x H)**
21.5 × 84.0 × 2.4 mm /
0.8 × 3.3 x 0.1 in

### International Standards

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

### Application Areas

- Industrial applications
- Construction
- Liquid packaging
- ... and many more.

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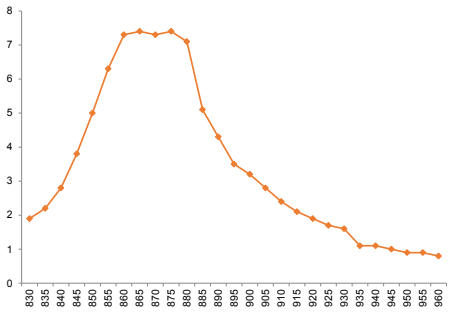
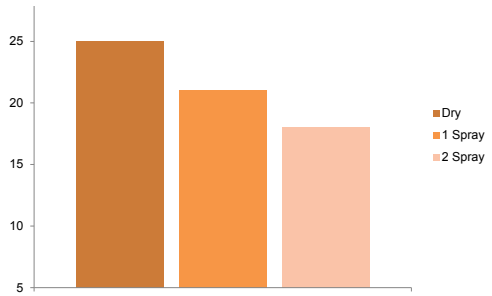
## Water Leakage Tag

| Technical Features | |
|---|---|
| IC | RFMicron Magnus®S2 |
| Memory | 128 bit EPC + 144 bit user memory |
| Frequency | 865-868 MHz (ETSI band) |
| Product Size: (L x W x H) | 21.5 × 84.0 × 2.4 mm / 0.8 × 3.3 x 0.1 in |
| Product Options | Tail Option — Sales Code<br>Without tail — 3005547<br>With standard tail 1-side — 3005549<br>Tail on both sides — 3005550 |
| Operating Temperature | -40 °C to +85 °C / -40 °F to +185 °F |
| Delivery Format | White wet singulated, optional with tail |
| Adhesive | RA-2 - Solvent-free permanent adhesive |
| Shelf Life | +20 °C, 50 % RH / 68 °F, 50 % RH - minimum 2 years from the date of manufacturing |

Theoretical Read Range on Metal (m)




Sensor Code Value on Metal (ETSI band)




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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### Overview

**Operating Frequency**
900-930 MHz (FCC)

**Integrated Circuit (IC)**
RFMicron Magnus®S2

**Product Size: (L x W x H)**
21.5 × 84.0 × 2.4 mm /
0.8 × 3.3 x 0.1 in

### International Standards

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

### Application Areas

- Industrial applications
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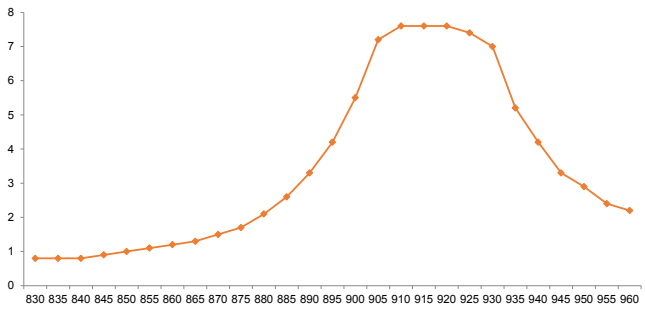
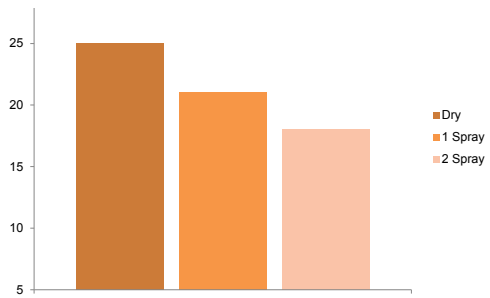
## Water Leakage Tag

| Technical Features | |
|---|---|
| IC | RFMicron Magnus®S2 |
| Memory | 128 bit EPC + 144 bit user memory |
| Frequency | 900-930 MHz (FCC band) |
| Product Size: (L x W x H) | 21.5 × 84.0 × 2.4 mm / 0.8 × 3.3 x 0.1 in |
| Product Options | Tail Option — Sales Code<br>Without tail — 3005515<br>With standard tail 1-side — 3005552<br>Tail on both sides — 3005553 |
| Operating Temperature | -40 °C to +85 °C / -40 °F to +185 °F |
| Delivery Format | White wet singulated, optional with tail |
| Adhesive | RA-2 - Solvent-free permanent adhesive |
| Shelf Life | +20 °C, 50 % RH / 68 °F, 50 % RH - minimum 2 years from the date of manufacturing |

Theoretical Read Range on Metal (m)




Sensor Code Value on Metal (FCC band)

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