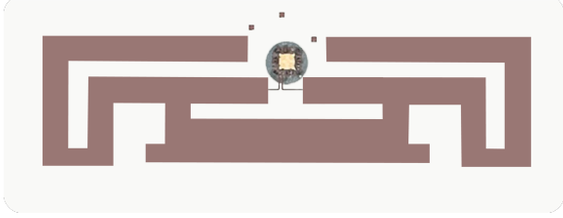
TECHNICAL DATA SHEET

ISRA Tag RHE-UHF



Temperature and Relative Humidity Sensor Communicating via RAIN RFID

ISRA Tag RHE-UHF is a passive RFID tag equipped with temperature and relative humidity sensors. Based on RAIN RFID technology, it can be easily integrated into any existing RFID installation. With a read range of up to 6 meters, data can be collected instantly, even in locations that are difficult to access.



Key Features

- Screen-printed antenna *(copper ink on PET substrate; other substrates available upon request)*
- Sensors: Humidity and temperature sensors integrated into the chip
- Fully passive *(battery-free)*
- Based on the platform ASYGN AS3213RH
- Compliant with the EPC™ Class-1 Generation-2 standard
- Read range up to 6 m
- Unique 48-bit serial number
- 512 bits of user memory
- Multi-sensing capabilities *(light, temperature, humidity, strain,...)*

Two Standard Designs

- Measurement on the upper side of the sensor
- Measurement on the lower side of the sensor

(Other designs available upon request)

Sensor Performance

Temperature

- - 40°C to 125°C
- Accuracy: 2°C
- Precision: 0,35°C

Relative Humidity

- 0% to 100%
- Accuracy: 5%
- Precision: 0,3%

Main Technical Specifications

	ISRA Tag RHE-UHF-1	ISRA Tag RHE-UHF-2
Sensing Area	Upper Side of the Sensor	Lower Side of the Sensor
Antenna Dimensions	23,5 mm x 87,5 mm	31 mm x 90 mm
Sensor Dimensions (dimensions can be reduced or increased)	120 mm x 32,5 mm	60 mm x 120 mm
Antenna Material	Copper nanoparticle-based ink	Copper nanoparticle-based ink
Substrate (standard version)	125 µm heat-stabilized PET	125 µm heat-stabilized PET
Front Side	Melinex PET	Adhesive-backed vinyl
Back Adhesive (customizable upon request)	Nitto 5015T	Nitto 5015T
Back Adhesive Thickness	80 µm	80 µm
Back Liner	Silicone-coated brown paper (125 g/m)	Silicone-coated brown paper (125 g/m)
Operating Ranges	From -40°C to + 125°C From 0 to 100% relative humidity	From -40°C to + 125°C From 0 to 100% relative humidity

Advantages of Copper Ink

- Very high conductivity compared to other conductive inks.
- Manufactured by Copprint, a leading company in copper-based conductive inks.
- More environmentally friendly than competing technologies (such as chemical etching and silver-based conductive inks).

Applications

- Industry 4.0
- Predictive Maintenance
- Transportation & Logistics
- Production Monitoring

A Complete Range of Sensors

The ISRA Tag RHE-UHF can be fitted with specially selected front and back coverings to protect the sensor during use. **It is part of the ISRA Tag range of passive sensing tags,** capable of detecting various external parameters (humidity, temperature, strain, light, etc.) and transmitting data via a contactless wireless interface using NFC or RAIN RFID technology.

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