

# Sense Passive

Innovative range of battery-less ceramic tags and labels for monitoring temperature and presence of moisture.



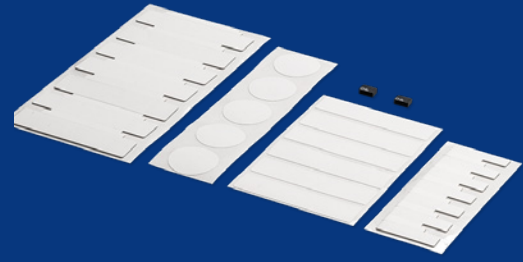
The HID Sense 'passive' tags Family sit alongside their 'active' cousins in the HID Sense IoT range that provide low-powered, long-range tracking and sensing via Bluetooth, LoRaWAN and Quuppa. This game changing range of small form factor ceramic tags and self-adhesive labels can accurately measure temperature, fill level\* and moisture content without batteries and in small form factor easy to apply formats that make condition monitoring quicker and more cost effective than ever before.

The new passive Sense range includes ceramic tags and printable (pre-printed from Service Bureau) on-metal and off-metal self-adhesive labels which can accurately read live temperatures as low as -40°C and up to 125°C, detect the presence of moisture and indicate the volume of liquids\* in containers.

The battery-less devices do not require maintenance and are ideal for monitoring the condition of assets in transit and storage in a broad range of industrial, IT and healthcare environments.

The new Sense passive devices serve a broad range of use cases including monitoring the volume of liquids in glass vials for vaccine management systems,\* monitoring the temperature of machine components to enable predictive maintenance or optimize their utilization; cold chain management of foods and pharmaceuticals and monitoring the moisture levels and temperature of servers in data centers.

The wireless devices accurately measure temperature to a tolerance down to 0.5°C and offer read ranges between 1.75m and 5m, making them ideal for use in hazardous industrial environments where thermocouples would traditionally be used to monitor the current temperature of assets. Alternative chip options to measure Strain, pressure, light, magnetic fields etc. available on request.



## KEY BENEFITS:

- **Various form factors** – from tiny embeddable ceramic tags to easy to apply peel and stick labels in a range of sizes
- **Highly cost effective** – and simple to install condition monitoring solution
- **On metal and off metal** – variants available

\*Customization option for fill level

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## KEY TECHNOLOGY HIGHLIGHTS:






- Temperature and moisture monitoring,
- Sensor options for strain, pressure and other parameters on request
- High performance from small ceramic tag or low profile labels with read range up to 5m

## RAIN® RFID (UHF)

- Enables long life, maintenance-free sensing

## TYPICAL APPLICATION AREAS:

- Temperature monitoring in data centers
- Moisture monitoring in manufacturing production lines
- Monitoring temperature of vaccine vials and drug containers in the medical industry
- Moisture monitoring in adult and infant diapers
- Engine production or optimization

	Sense Passive				
	FIT 500 HT	IQ 175	IQ 430	IQ 200P	IQ 550P
					
<b>Base Model Number</b>	CP14730 (EU) CP14731 (US)	CP15470 (EU) CP15469 (US)	CP15542 (EU) CP15545 (US)	CP15457 (EU) CP15456 (US)	CP15528
<b>ELECTRONIC</b>					
<b>Operating Frequency</b>	865-868 MHz (ETSI) / 902-928 MHz (FCC)				865-956 MHz (Worldwide)
<b>Chip Type</b>	M3D				
<b>Memory</b>	128 bit EPC + 64 bit TID + 128 bits user memory				
<b>Anti-Collision</b>	Yes				
<b>Reading Distance 2 W reader ERP, free space</b>	Up to 16.4 ft (5 m)	Up to 4.9 ft (1.5 m)	Up to 14.1 ft (4.3 m)	Up to 7.2 ft (2.2 m)	Up to 19 ft (5.8 m)
<b>PHYSICAL</b>					
<b>Dimensions</b>	0.53 x 0.35 x 0.16 in (13.5 x 9 x 4.3 mm)	1.96 x 0.49 x 0.05 in (50 x 12.5 x 1.4 mm)	EU: 4.48 x 0.94 x 0.05 in (114 x 24 x 1.3 mm) US: 4.27 x 0.94 x 0.05 in (108.5 x 24 x 1.3 mm)	Ø 1.61 in (Ø 41 mm)	4.09 x 0.94 x 0.01 in (104 x 24 x 0.3 mm)
<b>Mounting Method</b>	Adhesive sticker (rated up to 85°C)	Self-adhesive, suitable for curved surfaces to a minimum radius of 58mm			
<b>Affixes To</b>	Metal surfaces			Non-metallic surfaces	
<b>Housing Material</b>	Ceramic painted	Synthetic label			
<b>Color</b>	Black	White			
<b>Weight</b>	0.09 oz (2.76 g)	0.02 oz (0.46 g)	0.06 oz (1.66 g)	0.01 oz (0.33 g)	0.02 oz (0.65 g)
<b>SENSOR</b>					
<b>Temperature Sensor Accuracy</b>	±0.5°C at 30°C to 60°C, 2°C at -40°C to 125°C				
<b>CHEMICAL AND MECHANICAL RESISTANCE</b>					
<b>Water</b>	IP68, 68° F (20° C), 3.3 ft (1 m) x 24 h				
<b>Withstands Exposure To</b>	Mineral oil, 10% salt water, vegetable oil, motor oil, 5% Caustic Soda	Vegetable oil, Motor oil, acetone wipe (with overlamine)			
<b>Environmental Test Conditions</b>	68° F (20° C), 24 h				
<b>Vibration &amp; Shock</b>	MIL-STD-810 G				
<b>THERMAL</b>					
<b>Storage</b>	-40° to +257° F (-40° to +125° C)	-40° to +185° F (-40° to +85° C)			
<b>Operating</b>	-40° to +257° F (-40° to +125° C)	-40° to +185° F (-40° to +85° C)			
<b>Shock/Fatigue</b>	-40° to +185° F (-40° to +85° C), 100 x 5 min with 30 sec transition	-40° to +185° F (-40° to +85° C), 100 x 5 min with 30 sec transition			
<b>Peak</b>	392° F (200° C), 700 h	+185° F (+85° C), 700 h			
<b>OTHER</b>					
<b>Standards</b>	UHF EPC Class 1 Gen 2, ISO 18000-6C, RAIN				
<b>Options</b>	ATEX/IECEX, C1D1	Personalization on demand			
<b>Box Size</b>	4200 pcs.	900 pcs/roll	500 pcs/roll	2000 pcs/roll	3000 pcs/roll
<b>Warranty</b>	2 Years				



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