



IN02 Embeddable RFID Wire Tag

High Temperature • Waterproof • Chemical & Solvent Resistant • Color Coded • Versatile Attachment • 360 Degree Read Profile • Long Range RFID

Technical Data Sheet Part: #WF- SM- IN02

General Description

Embeddable RFID Wire Tag

- 360° read profile
- Embeddable into plastics, pallets, concrete, rubber, etc.
- Versatile attachment methods (wires, clips, hooks, etc.)
- Harsh environment RFID tags
- High temperature RFID tags



This patent- pending embeddable RFID tag is a versatile best seller because it can be combined with in a wide variety of form factors. These durable wire tags can be embedded in pallets, concrete, or plastics and still provide reliable performance. Because of their unique design, they can provide a 360° read profile to reduce orientation sensitivity. The innovative design enables these RFID tags to endure larger temperature ranges than standard inlay based RFID tags.

Embeddable RFID

The core of this RFID tag is a small rugged circuit board with a metal wire antenna. More durable than inlay tags, these wire- based tags combine strength with flexibility. A variety of encapsulations are available: high temperature Teflon or silicone, durable vulcanized rubber, and integrated cable ties. These versatile tags can be attached with a broad range of mechanical methods.

Applications

Warehouse, Asset Marking & Tracking, Harsh Environments, High Temperature, Construction, Tools Tracking

Material Description

IN02 Embeddable RFID Wire Tag

Dimensions	6" x 0.125"
Available Colors	Blue, custom colors available
Water Resistance	Excellent
Solvent Resistance	Excellent
Abrasion Resistance	Excellent

Custom colors and sizes are available upon request.



Test*	Temperatures and Duration	Results
Maximum Temperature	Long- term at 10 hr: 320°F (160°C)	No effect on tag. Tag remained the same in appearance and RFID performance/ function. There was no sign of peeling, tearing or destruction. The tag read normal after the tests. *Test is not limiting.
	Standard at 5 min: 360°F (182°C)	
	Short- term at 90 sec: 400°F (204°C)	
Minimum Temperature	-40°F (-40°C)	
Temperature Cycling	The tag was cycled to 400°F at equilibrium for five times. Between each cycle, it was air cooled to room temperature and read with an RFID reader.	

RFID Performance

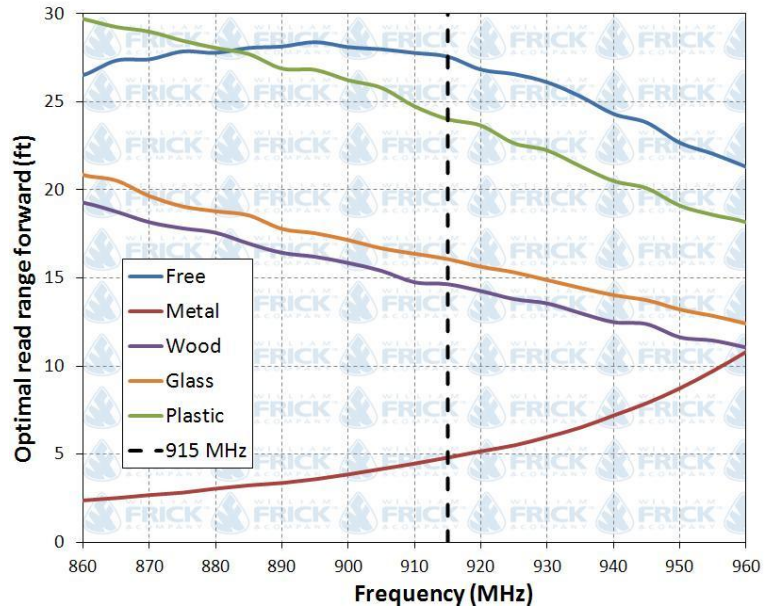
RFID Protocol	UHF EPC Class 1 Generation 2
Tag Type	Passive Read/ Write
Frequency Range	860 ~ 960 MHz (Global)
IC	Alien Higgs 3 - 480 Bits
	NXP - 512 Bits
	UPM Raflatac - 96 Bits

Tested Polarization:

Tag performance was experimentally measured in an anechoic chamber and a known set of experimental variables. The antenna used for measurements was linearly polarized and of monostatic configuration. The direction of tested applied polarization is as follows:



Optimal Read Range* on Different Material Surfaces:



*Tag performance was measured free of material influence, on a dry wood, window glass, thermoplastic, and steel slabs. Actual read ranges may differ depending on conditions such as environment, tag placements, hardware, etc.

Adhesive

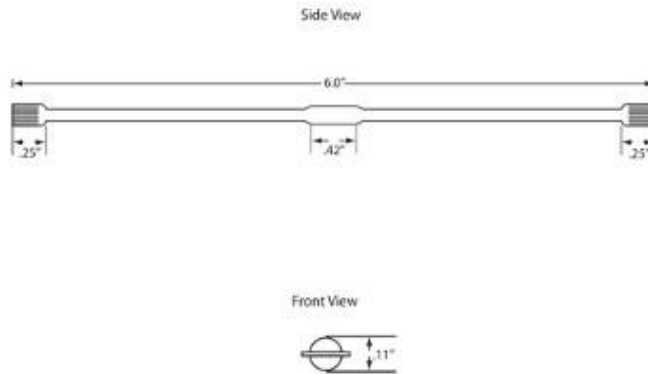
IN02 Embeddable RFID Wire Tag

Mechanical Attachment (clips, hooks, wire zip tie, etc)

Shelf life

Stored at 70F / 50% Relative Humidity

Stable at room temperature



ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED TOLERANCES 3 PLACE DECIMAL + OR-.005" 2 PLACE DECIMAL + OR-.02" 1 PLACE DECIMAL + OR-.1" MAX SURFACE ROUGHNESS ALL MACHINED SURFACES EXCEPT AS NOTIFIED BREAK SHARP EDGES AND CORNERS .010" MAX	Contact No.	William Frick & Co.			www.fricknet.com
	DWG.	IN02 Embeddable RFID Wire Tag			
	Engr.				
	Chk.				
Aprvd.	Size.	DWG No. WF- SM- IN02	Rev.		

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