



# FT-1004

## Hi-Temp Embeddable Tag



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# FT-1004

**TROI™**

## Hi-Temp Embeddable Tag



### 1 PRODUCT DESCRIPTION

The patented (US Patent # 7,928,922) **TROI FT-1004 High Temperature Embeddable** RFID tag provides automatic identification and tracking capabilities never-before available in such a unique package designed for rugged or hazardous use-areas.

The high temperature tag is designed to be mounted to any metallic surface by wrapping the tag around the part, or embedding the tag into wood, concrete, fiberglass, composites, compression or injection molds, etc. It can withstand unprecedented high temperature (consistent temperatures of 200 degrees Centigrade), high pressure and severe environmental conditions.

#### 1.1 SPECIFICATIONS

<b>Device type</b>	Passive RFID tag
<b>Air interface protocol</b>	<b>UHF:</b> EPCGlobal Class1Gen2 / ISO/IEC 18000-6C
<b>Operational frequency</b>	<b>Standard:</b> UHF (865-869 MHz (EU), 902-928 MHz (US))
<b>IC options - UHF</b>	<b>Standard:</b> Alien Higgs 3 (others on request) Optional: EM, Fujitsu, Impinj, NXP (others on request)
<b>EPC memory - UHF</b>	<b>Standard:</b> 128 bit Optional: Up to 240 bit
<b>EPC memory content</b>	Unique 96-bit number encoded
<b>Extended memory - UHF</b>	<b>Standard:</b> 512 bit
<b>TID - UHF</b>	Factory-programmed, non-changeable, unique 64-bit ID.
<b>Read range - UHF</b>	Real-world: 6.7 meters
<b>Size</b>	Diameter: 5.2 mm (0.205 inches) Length: 197 mm (7.75 inches)
<b>Tag material</b>	Teflon
<b>Tensile strength</b>	2500 psi minimum
<b>Applicable surfaces</b>	Any material
<b>Product RoHS compliant?</b>	Yes
<b>Standards compliancy</b>	ATEX-compliant
<b>US Patent Number</b>	7,928,922

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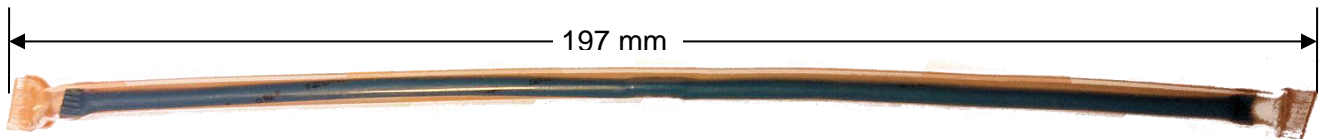
### 1.2 DIMENSIONS

**Diameter:** 5.2 mm (0.205 inches)

**Length:** 197 mm (7.75 inches)

NOTE: The tag sits within a clear Teflon sleeve that is crimped at each end.

#### PLAN VIEW



#### PLAN VIEW – Eyelet version



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### 1.3 READ RANGE

	UHF max read-range on metal with 4W EIRP
FT-1004 (915 MHz)	6.7 meters / 22 feet

The read range listed above was obtained from a lab test environment. Actual test results may be different. Testing in actual use environments is strongly recommended.

### 1.4 ENVIRONMENTAL SPECIFICATIONS

<b>Operating temperature</b>	-50°C to +200°C*
<b>Temperature Cycling Test</b>	200 deg C, continuous for 30-days
<b>IP classification</b>	IP68K
<b>Weather resistance</b>	Excellent, including UV-resistance and sea water immersion
<b>Chemical resistance</b>	No physical or performance changes in: <ul style="list-style-type: none"> <li>- Salt water</li> <li>- NaOH (depending on concentration)</li> <li>- Sulfuric acid (depending on concentration)</li> <li>- Motor oil (tested in 168 hour exposure)</li> </ul> Generally good against: <ul style="list-style-type: none"> <li>- Most solvents</li> <li>- Most acids and bases</li> </ul>

\* **NOTE:** The RFID tag will not be functional if it is left at the maximum indicated temperatures such that the internal soak temperature exceeds +80 deg C. The RFID tag itself will (resume) function between -50 deg C and +80 deg C.

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### 1.5 SUPPORTED SERVICES

- Tag pre-encoding
- Laser etching

For further details, please contact **TROI LLC**.

### 1.6 POSSIBLE APPLICATIONS

<b>Metal surfaces</b>	Metal returnable containers, metal canisters, metal pallets, metal pipes, high value metal items, aerospace applications, military applications, etc.
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## 2 INSTALLATION INSTRUCTIONS

The standard tag can be wrapped around an object, or embedded into wood, concrete, fiberglass, composites, compression or injection molds, etc.

The Eyelet version can be bolted to an object.

## 3 CONTACTING TROI LLC

For additional information and technical support contact:

### **TROI LLC**

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### **ADVISORY**

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