



# PT-102 PT-102HF Tie-Wrap Tags

TECHNOLOGIES ROI, LLC



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## 1 PRODUCT DESCRIPTION

The patent-pending **TROI PT-102** and **PT-102HF Tie-Wrap** RFID tags provide automatic identification and tracking capabilities never-before available in such a unique package designed for rugged or hazardous use-areas.

The plastic-covered tag is molded onto either a metal or plastic tie-wrap and is designed to be mounted to any metallic surface by just securing the tie-wrap around it. The tag can withstand unprecedented high temperature (consistent temperatures of 150 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 (-63) <b>HF:</b> ISO/IEC 18000-6B (-62)
<b>Operational frequency</b>	<b>UHF:</b> 865 - 928 MHz <b>HF :</b> 13.56 MHz
<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: 1 – 2 meters
<b>Read range - HF</b>	Real-world: up to 1.5 meters
<b>Size</b>	<b>Standard</b> tie length: 14+ inches Tie material can be nylon or metal, and many lengths – contact us!
<b>Tag material</b>	Plastic covered tag mounted to either a metal or plastic tie-wrap
<b>Applicable surfaces</b>	Any material
<b>Product RoHS compliant?</b>	Yes
<b>Standards compliancy</b>	ATEX-compliant



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## 1.2 DIMENSIONS

### Metal Tie Wrap:

Tie wrap: L: 362 mm (14.25 inches) x W: 4 mm x H: 0.2 mm

Tag body: L: 10 mm (0.4 inches) x W: 10 mm (0.4 inches) x H: 5 mm

### Plastic Tie Wrap:

Tie wrap: L: 368 mm (14.50 inches) x W: 4 mm x H: 0.2 mm

Tag body: L: 10 mm (0.4 inches) x W: 10 mm (0.4 inches) x H: 5 mm

### TOP VIEW

PT-102 – with metal tie wrap



PT-102HF – with plastic tie wrap



### SIDE VIEW

PT-102



PT-102HF





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## 1.3 READ RANGE

	UHF max read-range on metal with 4W ERP
<b>PT-102</b> (915 MHz)	660.4 cm / 260 inches (6.63 m / 21.75 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 +150°C* (-58°F to 302°F)
<b>Temperature Cycling Test</b>	150 deg C, continuous for 30-days
<b>IP classification</b>	IP69K
<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 marking

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

## 1.6 POSSIBLE APPLICATIONS

**Any surface**

Returnable containers, canisters, pallets, pipes, high value items, aerospace applications, military applications, etc.

## 2 INSTALLATION INSTRUCTIONS

Wrap the tie-wrap around the surface, insert the tail of the tie-wrap into the head of the tie-wrap and firmly pull the tie-wrap to secure the tag to the object – done!

## 3 CONTACTING TROI LLC

For additional information and technical support contact:

### **TROI LLC**

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### **ADVISORY**

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