



# ARMORED 200



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# ARMORED 200



## 1 PRODUCT DESCRIPTION

The patent-pending **TROI Armored 200 High Temperature Metal** 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 metal, adhesive-backed tag is designed to be mounted to any metallic surface by either using the adhesive to hold it to the surface, or using **TROI's AP-1 Adhesive\_Paint**. 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: 1 – 2 meters
<b>Size</b>	Diameter: 32 mm (1.26 inches) Height: 13 mm (0.51 inches)
<b>Tag material</b>	Steel
<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



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## 1.2 DIMENSIONS

**Diameter:** 32 mm (1.26 inches)

**Height:** 13 mm (0.51 inches)

### PLAN VIEW



### SIDE VIEW



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## 1.3 READ RANGE

	UHF max read-range on metal with 4W EIRP
Armored 200 (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

Operating temperature	-50°C to +200°C*
Temperature Cycling Test	200 deg C, continuous for 30-days
IP classification	IP68K
Weather resistance	Excellent, including UV-resistance and sea water immersion
Chemical resistance	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

### 2.1 ADHESIVE

Pull the adhesive liner from the base of the tag and apply the tag to any metallic surface.

For long term adhesion, use **TROI's AP-1 Adhesive\_Paint**: see the datasheet on our website for directions.

### 2.2 WELD

Weld the tag in two (2) spots (no more than three (3)), diametrically (or equilaterally) opposed to each other. See the picture in section 3.1.

**NOTE:** Placing welds around a large percentage of the circumference of the tag may adversely affect its RF performance.

## 3 MOUNTED PICTURES

### 3.1 WELDED

The picture below shows the proper way to weld the Armored 200 – one weld on opposite sides of the tag.





# ARMORED 200



## 4 CONTACTING TROI LLC

For additional information and technical support contact:

### **TROI LLC**

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### **ADVISORY**

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