



# RS-101

## Large Pipe & Cylinder Rubber Tag



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### 1 PRODUCT DESCRIPTION

The patent-pending **TROI RS-101 Large Pipe & Cylinder Rubber** RFID tag provides automatic identification and tracking capabilities never-before available in such a unique package designed for rugged or hazardous use-areas.

The rubber-covered tag is designed to be mounted to any metallic surface by either screwing or bolting the tag down, or using dual side bands or ties (steel or nylon) to secure it to the object. The **RS-101** can withstand unprecedented high temperature (consistent temperatures of 160 degrees Centigrade), high pressure and severe environmental conditions.

#### 1.1 SPECIFICATIONS

<b>Device type</b> Passive RFID tag	UHF (Ultra High Frequency band)
<b>Air interface protocol</b>	EPCGlobal Class1Gen2 / ISO/IEC 18000-6C
<b>Operational frequency</b>	865 - 928 MHz
<b>IC options</b>	<b>Standard:</b> Alien Higgs 3 (others on request) Optional: EM, Fujitsu, Impinj, NXP (others on request)
<b>EPC memory size</b>	<b>Standard:</b> 128 bit Optional: Up to 240 bit
<b>EPC memory content</b>	Unique 96-bit number encoded
<b>Extended memory</b>	<b>Standard:</b> 512 bit
<b>TID</b>	Factory-programmed, non-changeable, unique 64-bit ID.
<b>Read range</b>	Real-world: 1 – 2 meters Lab environment: 7 meters
<b>Applicable surfaces</b>	Any metallic material
<b>Tag material</b>	HVP rubber
<b>Tensile strength</b>	2500 psi minimum
<b>Durometer</b>	Shore A 60-70
<b>Elongation</b>	400% minimum
<b>Durometer</b>	Shore A 60-70
<b>Drop test to asphalt</b>	2 meters with 5 Kg's attached; 250+ times (competition fails at 20) 2 meters with 8 Kg's attached; 150+ times (competition fails immediately) 2 meters with 18Kg's attached; 25+ times (competition fails immediately)
<b>Standards compliancy</b>	ATEX-compliant
<b>Product RoHS compliant?</b>	Yes



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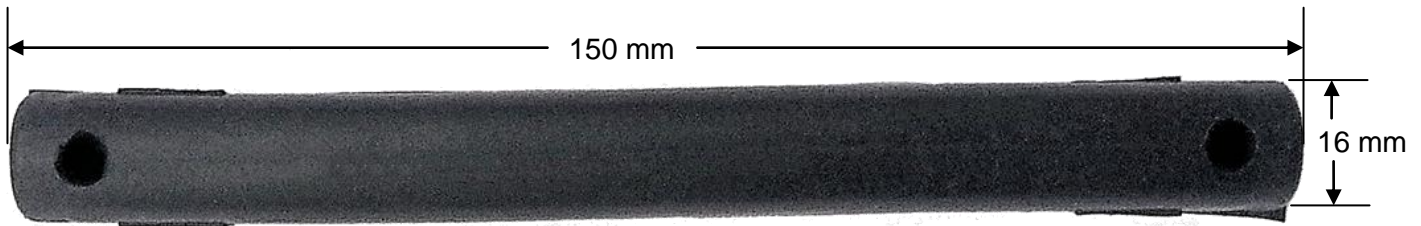


### 1.2 DIMENSIONS

**Long:** 150 mm (5.9 inches)    **Wide:** 16 mm (0.63 inches)    **High:** 9 mm (0.35 inches)

**Hole Diameter:** 6 mm (0.24 inches)    **NOTE:** Hole does not go all the way through tag from factory.

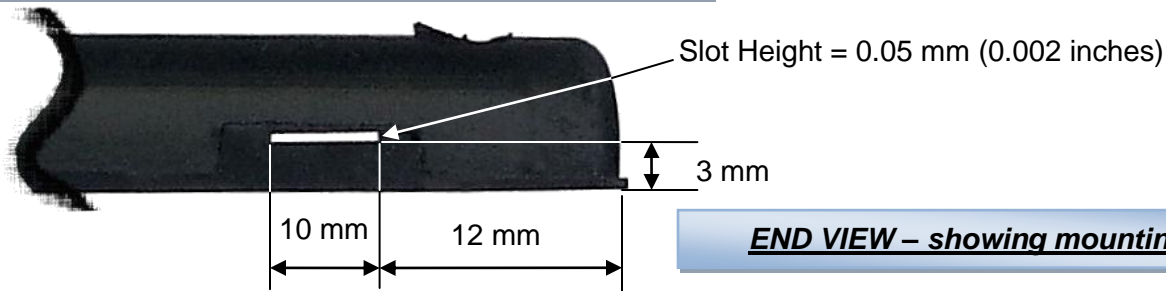
#### PLAN VIEW



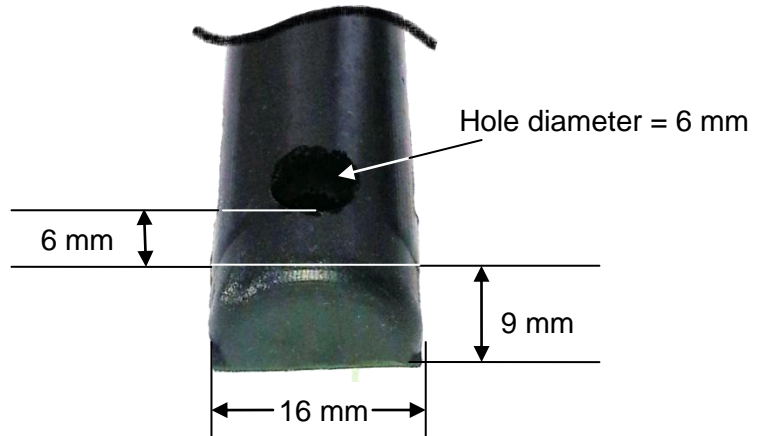
#### SIDE VIEW – showing banding slots



#### SIDE VIEW – showing banding slot



#### END VIEW – showing mounting hole





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### 1.3 READ RANGE

	UHF max read-range on metal with 4W ERP
<b>RS-101</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 +160°C* -50°F to +320 °F*
<b>Temperature Cycling Test</b>	85 deg C continuous for 30-days - with no negative affect 85 deg C / -25 deg C shock for 7 days - with no negative affect 125 deg C @ 100% RH continuous for 7 days - with no negative affect 160 deg C continuous for 7 days - tag becomes brittle, but functions OK 200 deg C @ 100% RH for 24 hours – with no negative affect
<b>IP classification</b>	IP69K EN 62262 IK-25 - Complete protection against dust - Protection against continuous immersion in water
<b>Weather resistance</b>	Excellent, including UV-resistance and sea water immersion
<b>Pressure resistance</b>	RFID tag tested to 30,000 PSI for 30 days
<b>Chemical resistance</b>	No physical or performance changes in: - Salt water - NaOH (depending on concentration) - Sulfuric acid (depending on concentration) - Motor oil (tested in 168 hour exposure) Generally good against: - Most solvents - Most acids and bases

\* **NOTE:** The RFID tag will not be functional if the tag 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

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

### 1.6 POSSIBLE APPLICATIONS

**Metal surfaces**

Metal valves, metal returnable containers, metal pallets, metal pipes, high value metal items, aerospace applications, military applications, etc.

### 1.7 PICTURES

The picture below shows stainless steel tie wraps inserted through the slots on both ends of the tag.



The picture below shows a close-up of the stainless steel tie wrap placed through the slot.





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### 2 CONTACTING TROI LLC

For additional information and technical support contact:

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