



RS-101

Large Pipe & Cylinder Rubber Tag



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1 PRODUCT DESCRIPTION

The patented (US Patent # 7,928,922) **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

Device type Passive RFID tag	UHF (Ultra High Frequency band)
Air interface protocol	EPCGlobal Class1Gen2 / ISO/IEC 18000-6C
Operational frequency	865 - 928 MHz
IC options	Standard: Alien Higgs 3 (others on request) Optional: EM, Fujitsu, Impinj, NXP (others on request)
EPC memory size	Standard: 128 bit Optional: Up to 240 bit
EPC memory content	Unique 96-bit number encoded
Extended memory	Standard: 512 bit
TID	Factory-programmed, non-changeable, unique 64-bit ID.
Read range	Real-world: 1 – 2 meters Lab environment: 7 meters
Applicable surfaces	Any metallic material
Tag material	HVP rubber
Tensile strength	2500 psi minimum
Durometer	Shore A 60-70
Elongation	400% minimum
Durometer	Shore A 60-70
Drop test to asphalt	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)
Standards compliancy	ATEX-compliant
Product RoHS compliant?	Yes
US Patent Number	7,928,922



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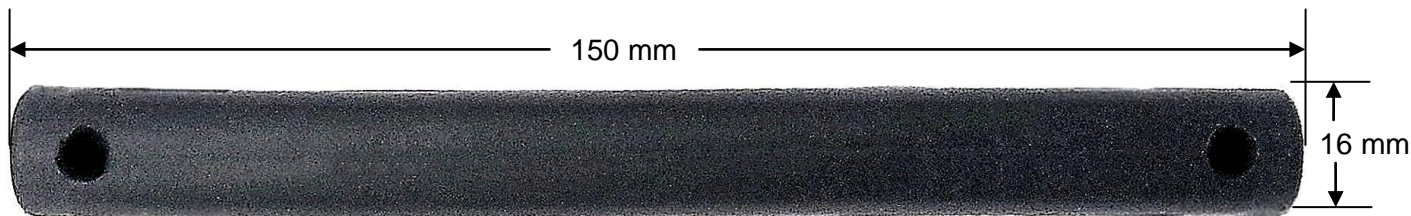


1.2 DIMENSIONS

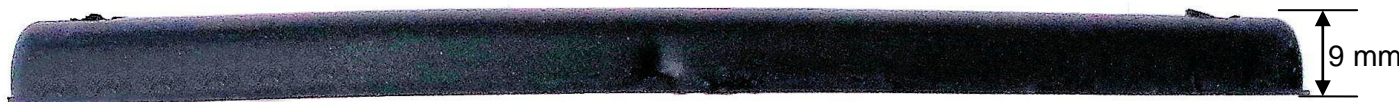
Long: 150 mm (5.9 inches) **Wide:** 16 mm (0.63 inches) **High:** 9 mm (0.35 inches)

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

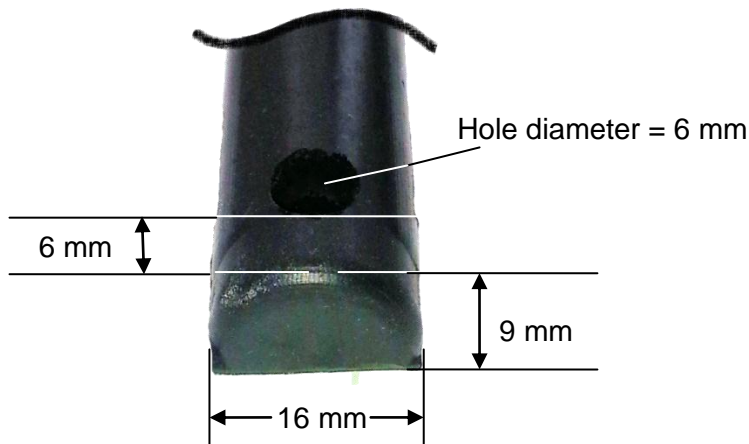
PLAN VIEW



SIDE VIEW – showing banding slots



END VIEW – showing mounting hole





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1.3 READ RANGE

	UHF max read-range on metal with 4W EIRP
RS-101 (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 +160°C* -50°F to +320 °F*
Temperature Cycling Test	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
IP classification	IP69K EN 62262 IK-25 - Complete protection against dust - Protection against continuous immersion in water
Weather resistance	Excellent, including UV-resistance and sea water immersion
Pressure resistance	RFID tag tested to 30,000 PSI for 30 days
Chemical resistance	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.
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2 CONTACTING TROI LLC

For additional information and technical support contact:

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