



# PC-300

## Tubular Rubber Pipe Tag



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### 1 PRODUCT DESCRIPTION

The patent-pending **TROI PC-300 Tubular Rubber Pipe** RFID tag provides automatic identification and tracking capabilities never-before available in such a unique package designed for rugged or hazardous use-areas.

The tubular rubber tag is designed to be mounted around any metallic pipe or round metal object. The **PC-300** can withstand unprecedented high temperature (consistent temperatures of 100 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>	14 Mpa
<b>Durometer</b>	Shore A 60
<b>Elongation</b>	310%
<b>Specific gravity</b>	1.14 g/mL
<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

Current PC-300 Tubular Rubber Pipe Tag **inner diameters:**

- 225.3 mm (8.87 inches)
- 184.15 mm (7.25 inches)
- 174.5 mm (6.87 inches)
- 110 mm (4.33 inches)

Average rubber ring tubular diameter: 12.5 mm (0.5 inches)

#### PLAN VIEW





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### 1.3 READ RANGE

	UHF max read-range on metal with 4W ERP
<b>PC-300</b> w/G2XM (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>	-40°C to +100°C* -40°F to +212 °F*
<b>Temperature Cycling Test</b> With no negative affects	-40 deg C for 5 hours 100 deg C for 70 hours in air, distilled water and 50% Methyl Alcohol 100 deg C for 70 hours in oil (ASTM #1 and IRM-903)
<b>IP classification</b>	IP68: - Complete protection against dust - Protection against continuous immersion in water (Tested for 5 hours in 1 m [3.3 ft] depth)
<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 -40 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.

## 2 INSTALLATION INSTRUCTIONS

1. Simply stretch the **PC-300 Tubular Rubber Pipe Tag** over the item and you're done!





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### 3 CONTACTING TROI LLC

For additional information and technical support contact:

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#### **ADVISORY**

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