RS-200 Bandable Rubber Tag

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1 PRODUCT DESCRIPTION

The patent-pending **TROI RS-200 Bandable 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 using one of three methods: 1) banding the tag to the object, 2) the peel-n-stick adhesive option, or 3) epoxying it on any pipe or round metal object. For best results it is recommended that the tag be over-coated using **TROI's AP-1 Adhesive_Paint.**
The **RS-200** can withstand unprecedented high temperature (consistent temperatures of 160 degrees Centigrade), high pressure and severe environmental conditions.

1.1 SPECIFICATIONS

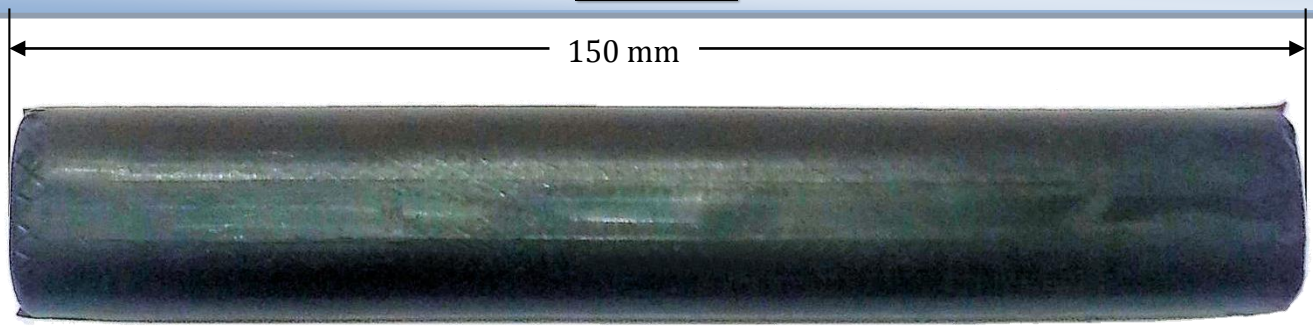
Device type Passive RFID tag	UHF (Ultra High Frequency band)
Air interface protocol	EPCGlobal Class1Gen2 / ISO/IEC 18000-6C
Operational frequency	865 - 928 MHz
IC options	**Standard**: Alien Higgs 3 (others on request) Optional: EM, Fujitsu, Impinj, NXP (others on request)
EPC memory size	**Standard**: 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

1.2 DIMENSIONS

Long: 150 mm (5.9 inches)
Wide: 25 mm (0.98 inches)
Long 150 mm
High: 9 mm (0.35 inches)

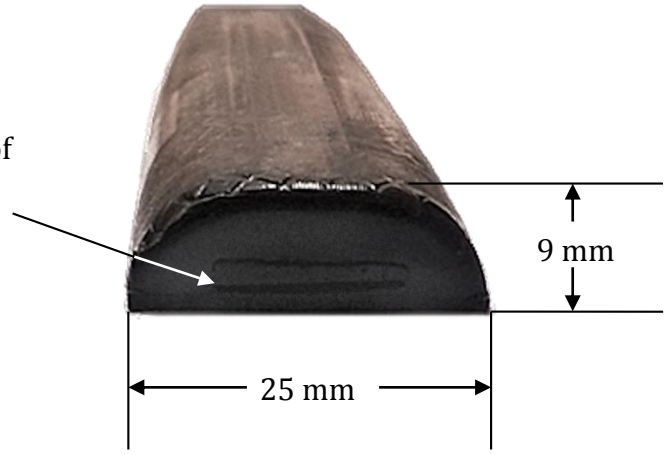
Slot Dimensions:
High1 mm x **Wide** 12 mm x

PLAN VIEW



END VIEW

Slot Dimensions:
1 mm H x 12 mm L
Offset 1 mm up from bottom of tag



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1.3 READ RANGE

	UHF max read-range on metal with 4W ERP
RS-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 **using an FCC (US) Reader, test results may be different for an ETSI (EU) reader**. Actual test results may be different. Testing in actual use environments is strongly recommended.

1.4 ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-50ºC to +160ºC* -50ºF to +320 ºF*
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.

1.5 SUPPORTED SERVICES

- Tag pre-encoding

For further details, please contact Able ID Ltd.

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

If not banding the tag to the object, it is strongly recommended that you use **TROI's AP-1 Adhesive_Paint**.

2.1 PREPARE THE SURFACE WHERE THE TAG WILL BE MOUNTED.

1. The surface should be clean with no dust, debris, moisture or oils present.
2. **NOTE**: When using adhesives, DO NOT buff or polish the metal surface as the adhesive may not adhere; a (slightly) rough surface provides a better "grip" for the adhesive.

2.2 PLACE THE TAG ON TO THE SURFACE.

1. If banding the tag to the object, wrap the band around the object and secure the band.
2. If the **RS-200** has the peel-n-stick adhesive on the back:
    a. Simply remove the liner and press the tag onto the clean metal surface.
3. If using **TROI's AP-1 Adhesive_Paint**:
    a. Apply the epoxy to the part.
    b. Place the part onto the metal, making sure that the part is flat to the metal surface.
    c. Over-coat the tag with **AP-1 Adhesive_Paint**: don't over-apply the product.
    d. Allow the epoxy to dry according to the datasheets recommendations.
        i. See the **AP-1 Adhesive_Paint** datasheet for further details.
4. If using adhesives other than those described above:
    a. Follow manufacturer's directions.

3 CONTACTING ABLEID LTD

For additional information and technical support contact:

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ADVISORY

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