Armored 300c UHF

Armored 300c tag enables items' identification and tracking in rugged or hazardous environments.

This UHF tag has been designed to resist high temperatures and high pressure conditions.

With an IP68 protection rating, its resistance to water and dust is excellent.

It can be mounted to any metal surface.

Key features

- Resistance to very high temperature
- IP68 protection grade
- Metal compatible

Applications

- Metal returnable containers
- Metal pallets
- High value metal items
- Aerospace applications
- Military applications...

Functional specifications

Type	UHF
Frequency	865-869 MHz (EU) 902-928 MHz (US)
Air interface protocol	EPC Global Class1Gen2; ISO 18000-63
IC Type	Standard: Alien Higgs 3 Optional: NXP UCODE G2XM, Impinj Monza4QT
Memory	EPC memory: 128 bits (optional: up to 240 bit) EPC memory content: unique 96-bit number encoded Extended memory: 512 bit TID: factory-programmed, non-changeable, unique 64-bit ID.
Read range	Real-world: 1 – 2 meters, depending on attachment Lab environment: 6 meters +

Physical specifications

Dimensions / Weight	Length: 54.2 mm / Width: 44.6 mm / Height: 14.6 mm/ Weight: 39g
Tag Material	Shell: cold steel Spacer: High temperature plastic
Mounting Method	Welding or bolting
Applicable surface	Any material: metal surfaces; ferrous and non-ferrous.

According to tests performed under optimal conditions, environmental resistance to be qualified in any industrial application.

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((•)) AX'Tag Fire

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Environmental and industry compliance

Certificates	RoHS compliant ATEX-compliant ISO 17665 - Sterilization of Health Care Products - Moist Steam ISO 11135 - Sterilization of Health Care Products - Ethylene Oxide
IP classification	IP68: complete protection against dust / protection against continuous immersion in water (tested for 5 hours in 1m [3.3 ft] depth in optimal conditions, immersion in water to be qualified in any industrial application)
Storage Temperature	-50°C to +300°C
Operating Temperature	-50°C to +85°C
Peak temperature	+300ºC for 1 hour*
Temperature Cycling Test	6 Hours at 300 deg C; 18 hour cool-down; 30-day test cycle*
Weather ability	Excellent, including UV-resistance and sea water immersion*
Pressure resistance	Embedded RFID tag tested to 30,000psi for 30 days*
Chemical resistance	No physical of performance changes in: - Salt water* - NaOH* - Sulfuric acid* - Motor oil (tested in 168 hour exposure)* Generally good against : - Most solvents* - Most acids and bases*

According to tests performed under optimal conditions, environmental resistance to be qualified in any industrial application

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°C. The RFID itself will function between -50°C and +80°C.
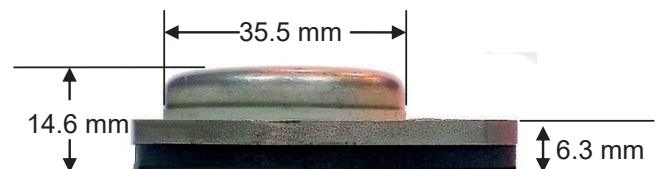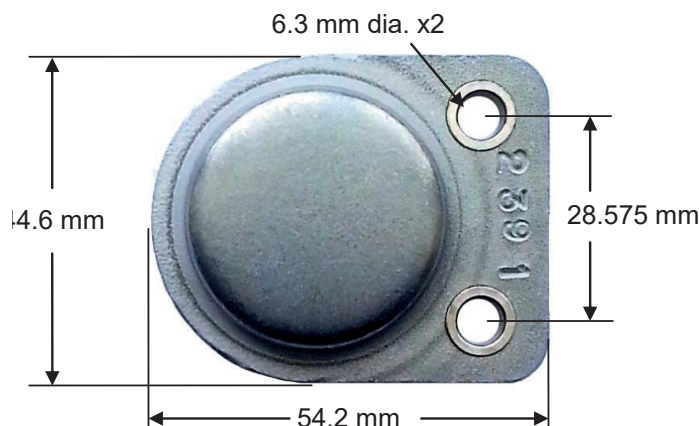
The Armored 300c casing reflects the heat and will protect the RFID tag at the elevated temperatures (until the RFID tags' internal temperature exceeds +80°C)

The Armored 300c tags coll-down time is significantly accelerate (to and below 80°C).

End result - the Armored 300c tag will FUNCTION at extreme temeratures.

Plan view

6.3 mm dia. x2

4.6 mm

28.575 mm

54.2 mm

Profil view

35.5 mm

14.6 mm

6.3 mm

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Read range

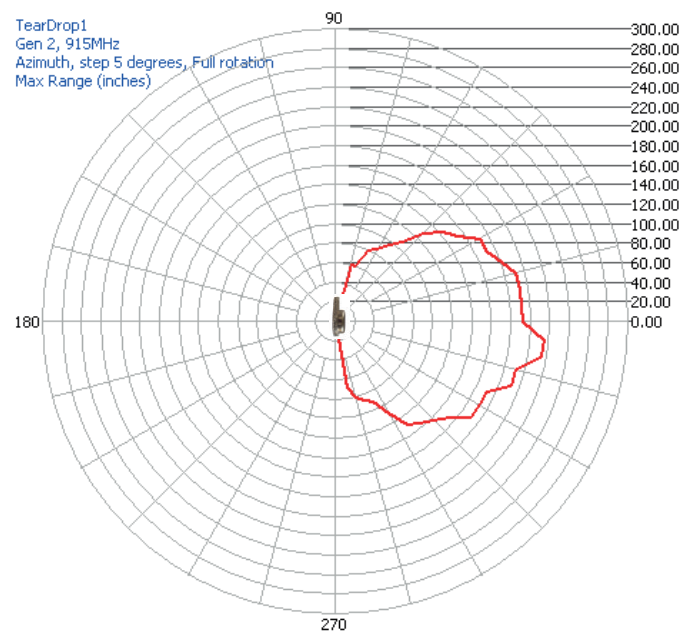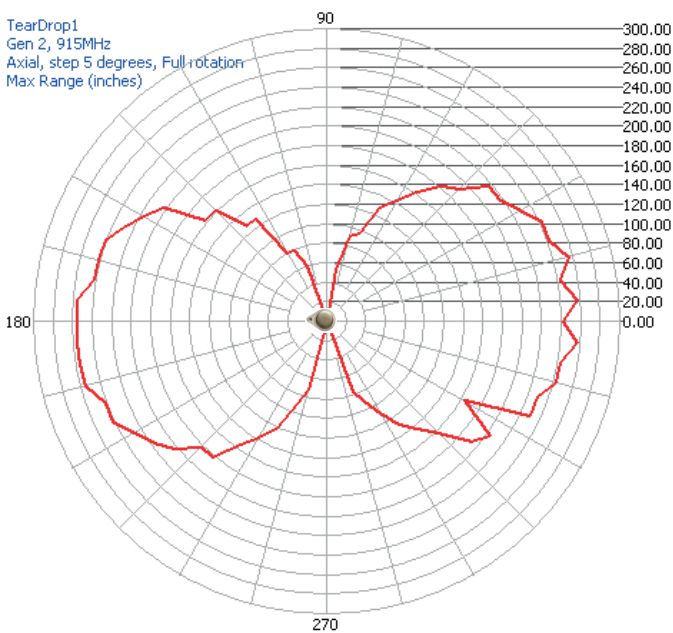|	Max read range on metal with 4W ERP
Armored 300c (915 MHz)	660.4 cm / 260 inches (6.63 m / 21.75 feet)

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.

Radiation pattern

Axial radiation pattern; obtained in anechoic test laboratory.

Actual in-use radiation pattern may vary.

Testing in actual use environments in strongly recommanded

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Supported services

Several options are available:
- Tag pre-encoding
- Laser engraving

For further details, please contact AXEM Technology

Installation instructions

TAG PLACEMENT

The Armored 300c tag must be mounted to the metal surface with the metal "cup" pointed up and with no metal covering the tag.
When selecting the mounting location, ensure the following:
- Select an even metal surface so that the entire flat plate of the Armored 300c is in contact with the mounting surface.
- Place the tag in the middle of the largest metal mounting surface available.
- It is recommended that the tag be taped to the metal surface, before welding or bolting the tag, to check orientation and performance.
The Armored 300c's performance depends on the shape of the metal object and the tags placement on that surface. The above recommendations are valid for flat surfaces. Testing is recommended to verify performance in each use-case.

TAG ATTACHING METHODS

The tag can be either bolted or welded metal surface.

1. Bolting the tag to the metal surface

Bolting achieves effective mounting and retention in various use conditions.
The Armored 300c can be mechanically attached using;
- Screws (size M4)
- Pop rivets (size 4 mm)

Critical bolting information:
The spacer mounted under the Armored 300 provides the needed functional air-gap between the tag and the mounting surface. The tag must be flush with the metal surface and not "bowed". DO NOT REMOVE THE SPACER MATERIAL from the bottom of the tag. Removing the spacer material will keep the tag from operating.

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2. Welding the tag to the metal surface

Welding achieves the most effective mounting and retention method. However, the tag must be welded according to the following guidelines, or the RFID tag may not function correctly (or at all).

Procedure
The tag should be welded in two "spots" or across the entire end of the tab. See the pictures below. The tag must NOT be welded all the way around the tag, or in any other area besides the end of the tab - as shown in the pictures below.

Correctly welded "spot" welds
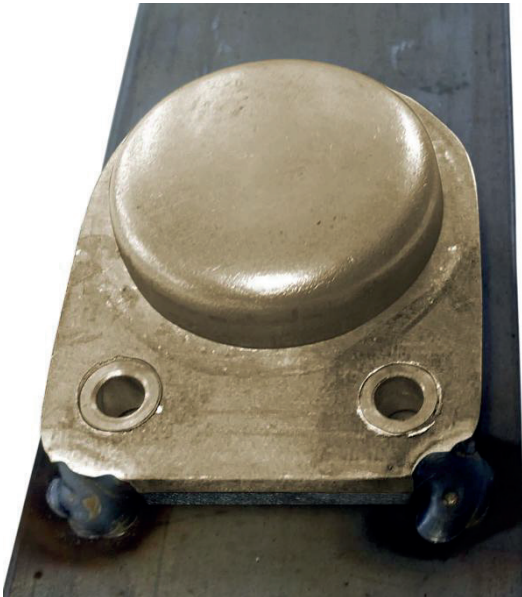
Correctly welded accross the end of the tab

Critical welding information:
The spacer mounted under the Armored 400c provides the needed functional air-gap between the tag and the mounting surface. The tag must be flush with the metal surface and not "bowed" in any other manner. DO NOT REMOVE THE SPACER MATERIAL from the bottom of the tag. Removing the spacer material will keep the tag from operating.

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