



HEAVY DUTY RFID TAG ARMORED TAG

APPLICATIONS

- High Value Metal Applications
- Aerospace Applications
- Military Applications
- Health Care Areas

FEATURES

- Passive RFID UHF Tag
- Up to 2 m Reading Range
- Ceramic Filler Material
- IP68 Protection Class
- ATEX Compliant

RFID OPTIONS

- EPC Global Class1 Gen2; ISO 18000-6C
- ISO 17665
- ISO 11135

PRODUCT DESCRIPTION

The Armored RFID UHF Tag from iDTRONIC is exclusively designed for harsh environments. It is compliant to the EU directives on explosion protection with ATEX. It covers equipment and protective systems intended for use in explosion-hazard atmospheres.

Its ceramic filler material is especially designed for high temperature environments from - 50 °C up to + 400 °C. Thanks to its IP68 Protection Class it has an excellent resistance against UV and sea water immersion.

The Armored RFID UHF Tag works in UHF Frequencies from 860 to 960 MHz and has a reading range of up to 2 meters. It supports the Standards EPC Global Class1 Gen2; ISO 18000-6C, ISO 17665 and ISO 11135.

It can be bolting by the two pre-drilled holes or welded on metal returnable containers, metal canisters, metal pallets or high value metal items.

TECHNICAL DATA

* *READING DISTANCE DEPENDS ON TAG TYPE AND ORIENTATION.*

ELECTRICAL SPECIFICATIONS

Operating Frequency	UHF (860 – 960 MHz)
Interface Protocol	EPC Global Class1Gen2 ISO/IEC 18000-6C
Operating Mode	Passive
Reading Range	Real-world: 1 – 2 meters* Lab environment: 6 meters*
IC Type	Impinj Monza X-8K Dura; Quanray available
EPC Memory	128 Bytes
User Memory	Monza X-8K Dura; 8K Bytes
TID	96 Bytes

MECHANICAL SPECIFICATIONS

Dimensions	61 × 54 mm Height: Overall 17 mm Flange: 8 mm (Spacer: 2 mm) Hole spacing: 42 mm Hole diameter: 8 mm
Weight	150 g
Housing Material	<u>Steel Shell:</u> High-temperature ceramic filler <u>Spacer:</u> High-temperature fiberglass
Housing Colour	Black
Applicable Surfaces	Metal returnable containers, metal canisters, metal pallets, high value metal items, aerospace applications, military applications
Mounting Options	Welding or Bolting

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	- 50 °C to + 400 °C
Temperature Cycling Test	One Hour at 400 °C; slight cool-down; 30-day test cycle
Protection Class	IP 68
Weather Resistance	Excellent, including UV-resistance and sea water immersion
Pressure Resistance	Embedded RFID tag tested to 30,000 psi for 30 days
Chemical Resistance	<u>No physical or performance changes in:</u> - Salt water - NaOH - Sulfuric acid - Motor oil <u>Generally good against:</u> - Most solvents - Most acids and bases

APPLICABLE STANDARDS

ISO 18000-6C	Impinj Monza
ISO 17665	Sterilization of Health Care Products – Moist Steam
ISO 11135	Sterilization of Health Care Products – Ethylene Oxide
RoHS 2	2011/65/EU
ATEX Compliant	

PERSONALIZATION OPTIONS

- Tag Pre-Encoding
- Laser Engraving

APPLICATION EXAMPLES

MILITARY APPLICATIONS



The Armored RFID UHF Tag can be used for military purposes within harsh environments.

The RFID Tag is particularly resistant to chemicals. The identification of containers with metallic surfaces can be provided with the Armored RFID UHF tag. The RFID Tag can also be placed on other military equipment.

This ensures the correct allocation and use of chemicals or of military equipment.

EXPLOSIVE AREAS



The Armored RFID UHF Tag supports high temperatures of up to + 400 °C. Especially in high explosive areas with chemicals the tag has a really good resistance.

There is no physical performance change in contact with motor oils, Salt water, NaOH or Sulfuric acid.

It was developed to withstand pressures or temperature fluctuations in harsh environments.

INSTALLATION INSTRUCTIONS

TAG PLACEMENT

The Armored RFID UHF 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 (spacer material) of the Armored 400c is in contact with the mounting surface.
- Place the tag in the middle of the largest metal mounting surface available.
- Before welding or bolting the tag, it is recommended that the tag be taped to the metal surface to check orientation and performance.

The Armored RFID UHF Tag 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, especially when mounting to curved surfaces.

TAG ATTACHING METHODS

BOLTING

The Armored RFID UHF Tag can be mechanically attached using:

- Screws (size M4)
- Pop rivets (size 4 mm)

WELDING

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). 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 across the end of the tab



Note: The spacer permanently mounted under the Armored RFID UHF Tag 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.

PRODUCT PICTURES

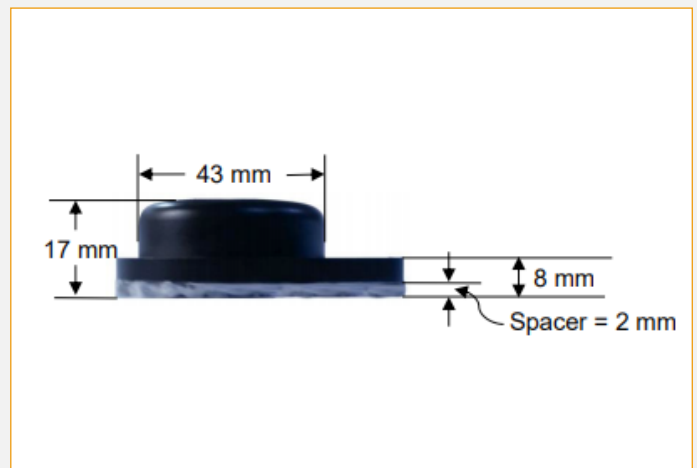
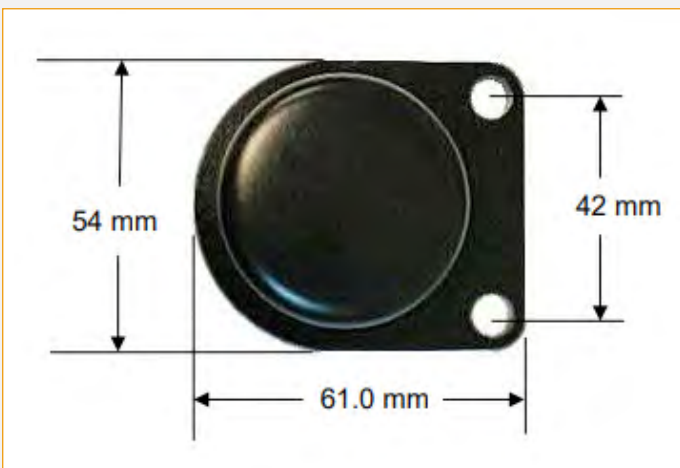
PROFILE VIEW



BOTTOM WITH MOUNTING SURFACE AND HOLES



MECHANICAL VIEW



ORDER CODES

VERSION	ORDER CODE
Armored UHF Tag	ST-UHF-TR-ARM400

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