

HEAVY DUTY RFID TAGS HEAVY STEEL TAGS



IMPACT TAG



THIN TAG

APPLICATIONS

- High Value Metal Applications
- Aerospace Applications
- Military Applications
- Chemical Areas

FEATURES

- Passive RFID UHF Tags
- Up to 2 m Reading Range
- Nickel-plated Steel Shell with high-temperature Ceramic Filler
- IP69K Protection Class
- ATEX Compliant

RFID OPTIONS

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

PRODUCT DESCRIPTION

The Heavy Steel Tags from iDTRONIC are exclusively designed for harsh environments. They are compliant to the EU directives on explosion protection with ATEX. It covers equipment and protective systems intended for use in explosion-hazard atmospheres.

The tags are available as an Impact and as a Thin Version. Both consist of Nickel-plated steel shell with high-temperature ceramic filler and are particularly resistant against most acids, solvents and bases. They are also protected against salt water, NaOH, sulfuric acid and motor oil. Both versions are designed for high temperatures from - 50 °C up to + 200 °C. Thanks to the IP69K Protection Class they have an excellent resistance against UV and continuous sea water immersion.

The RFID UHF Tags work in UHF Frequencies of EU: 865 – 869 MHz and US: 902 – 928 MHz and have a reading range of up to 2 meters. The supported Standards are EPC Global Class1 Gen2; ISO 18000-6C, ISO 17665 and ISO 11135. It is also US Patented # 9,122,967.

Both versions can be welded on metal returnable containers, metal canisters, metal pallets or high value metal items. The thinner version can be screwed by the two pre-drilled holes on the back.

TECHNICAL DATA

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

ELECTRICAL SPECIFICATIONS	
Operating Frequencies	UHF (EU: 865 – 869 MHz US: 902 – 928 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 Types	<u>Standard:</u> Alien Higgs 3™ (128 Bytes) <u>Optional:</u> NXP UCODE G2XM, Impinj Monza4QT (Up to 240 Bytes)
Memory Content	Unique 96-bit number encoded
Extended Memory	512 Bytes
TID	Factory-programmed, non-changeable, unique 64-bit ID

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature	- 50 °C to + 200 °C
Temperature Cycling Test	6 Hours at 300 °C; 18 hour cool-down; 30-day test cycle
Protection Class	IP 69K
Weather Resistance	Excellent, including UV-resistance and continuous sea water immersion
Pressure Resistance	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

MECHANICAL SPECIFICATIONS		
	IMPACT TAG	THIN TAG
Dimensions	Height: 12 mm Diameter: ø 44 mm	Height: 5 mm Diameter: ø 43 mm
Weight	85 g	50 g
Housing Material	Nickel-plated Steel Shell with high-temperature Ceramic Filler	
Housing Colour	Housing: Silver Ceramic Filler: Black	
Applicable Surfaces	Metal pipes, valves, hoist, chains, slings, metal returnable containers, metal canisters, metal pallets, high value metal items, aerospace applications, military applications, posts, markers, surface tagging	
Mounting Options	Welding	Welding or Bolting

APPLICABLE STANDARDS	
ISO 18000-6C	E.g.: Alien Higgs 2/3/4, Fujitsu Impinj Monza, NXP UCODE, EM4325 etc.
ISO 17665	Sterilization of Health Care Products • Moist Steam
ISO 11135	Sterilization of Health Care Products • Ethylene Oxide
RoHS 2	2011/65/EU
US Patent Number	9,122,967
ATEX Compliant	

PERSONALIZATION OPTIONS
<ul style="list-style-type: none"> • Tag Pre-Encoding • Laser-Engraving

APPLICATION EXAMPLES

CHEMICAL AREAS



The Heavy Steel Tags of iDTRONIC are especially suitable for harsh environments at chemical areas.

The robust housing of the Heavy Steel Tags are very resistant to chemicals like salt water, NaOH, sulfuric acid or motor oil.

They can be securely attached to containers with metal surfaces or other devices by welding on the underside or bolting by the two holes (only Thin Version).

MILITARY AREAS



The Heavy Steel Tags can be used for military purposes within harsh environments.

The RFID Tags are particularly resistant to the most common chemicals. The identification of containers with metallic surfaces can be secured with this RFID UHF tag by welding. The Thin Version can also be placed on other military equipment by bolting.

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

INSTALLATION INSTRUCTIONS

TAG PLACEMENT

IMPACT TAG

The **Impact 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 Impact 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 Impact'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.

THIN TAG

The **Thin Tag** must be mounted to the metal surface with the ceramic "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 WoW-2 Thin 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 WoW-2 Thin'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.

The WoW-2 Thin's performance depends on the shape of the metal object and the tags placement on that surface.

TAG ATTACHING METHODS

IMPACT TAG

WELDING

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

NOTE: The tag should be welded in two "spots". The tag must NOT be welded all the way around the tag.

THIN TAG

BOLTING

The **Thin Tag** can be mechanically attached using:

- Screws
- Pop rivets

WELDING

Welding achieves the most rugged mounting and retention method. The tag must be welded according to the following guidelines.

WELDING (ONLY FOR THIN TAG)

The tag should be welded in two "spots", across from each other.

The tag must NOT be welded most of the way, or all the way around the tag.

Correctly welded "spot" welds



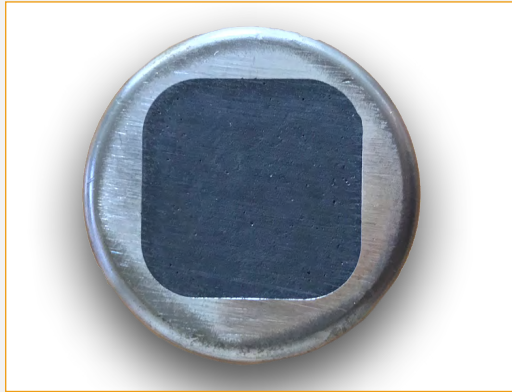
Incorrectly welded - too far around tag



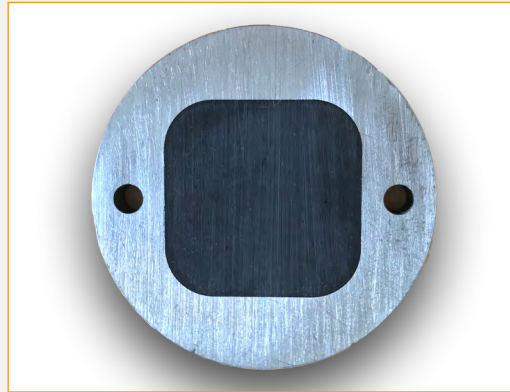
PRODUCT PICTURES

BOTTOM VIEW

IMPACT TAG



THIN TAG

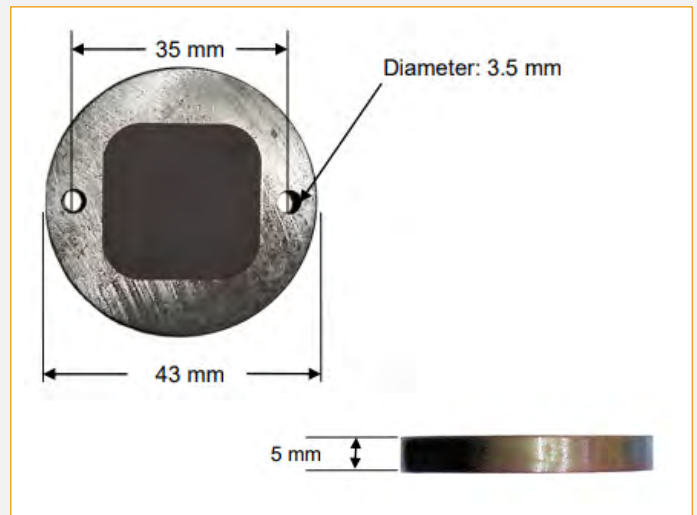


MECHANICAL VIEWS

IMPACT TAG



THIN TAG



ORDER CODES

VERSION	ORDER CODE	
	IMPACT TAG	THIN TAG
Alien Higgs 3™ (128 Bytes)	ST-UHF-TR-WOW-2-IM-ALIEN	ST-UHF-TR-WOW-2-TH-ALIEN
NXP UCODE G2XM (Up to 240 Bytes)	ST-UHF-TR-WOW-2-IM-NXP	ST-UHF-TR-WOW-2-TH-NXP
Impinj Monza4QT (Up to 240 Bytes)	ST-UHF-TR-WOW-2-IM-IM	ST-UHF-TR-WOW-2-TH-IM
Extended Memory: 512 Bytes	ST-UHF-TR-WOW-2-IM-EXM	ST-UHF-TR-WOW-2-TH-EXM

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