

HEAVY DUTY RFID TAGS HIGH TEMP TAGS



APPLICATIONS

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

FEATURES

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

RFID OPTIONS

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

PRODUCT DESCRIPTION

The High Temp Tags from iDTRONIC are exclusively designed for harsh environments. Applications with chemicals and potentially high value metal atmospheres withstand the tags without any problems. 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.

There are two versions to choose from. The BT-1HT consists of high temperature nylon material and is particularly resistant against most acids, solvents and bases. The BT-3HT has a high temperature resin with ceramic filler and is also protected against salt water, NaOH, sulfuric acid and motor oil. Both versions are designed for high temperatures from - 50 °C up to + 300 °C. Thanks to the IP68 Protection Class they have an excellent resistance against UV and 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.

Both versions can be bolted 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		
	BT-1HT	BT-3HT
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 +*	Real-world: 1 – 2 meters* Lab environment: 7 meters*
IC Types	<u>Standard:</u> Alien Higgs 3™ (128 Bytes) <u>Optional:</u> NXP UCODE G2XM, Impinj Monza4QT (Up to 240 Bytes)	<u>Standard:</u> Alien Higgs3™ (128 Bytes) <u>Optional:</u> EM4325 (352 Bytes)
Memory Content	Unique 96-bit number encoded	512 Bytes (Alien) 3.072 Bytes (EM4325)
Extended Memory	512 Bytes	–
TID	Factory-programmed, non-changeable, unique 64-bit ID	Factory-programmed, non-changeable, unique 48-bit ID (EM4325)

MECHANICAL SPECIFICATIONS		
	BT-1HT	BT-3HT
Dimensions	50 × 27 mm Height: 17 mm Hole: ø 4 mm	76 × 28 mm Height: 19 mm Hole: ø 6 mm
Weight	36 g	43 g
Housing Material	Proprietary extreme high temp resin with ceramic filler	Proprietary high temperature nylon
Housing Colour	Black	
Applicable Surfaces	Metal pipes, valves, hoist, chains, slings, metal returnable containers, metal canisters, metal pallets, high value metal items, aerospace applications, military applications	
Mounting Options	Welding or Bolting	

ENVIRONMENTAL SPECIFICATIONS		
	BT-1HT	BT-3HT
Operating Temperature	- 50 °C to + 300 °C	
Temperature Cycling Test	6 Hours at 300 °C; 18 hour cool-down; 30-day test cycle, non-limiting	300 °C continuous, for 30 days
Protection Class	IP 68	
Weather Resistance	Excellent, including UV-resistance and sea water immersion	
Pressure Resistance	30,000 psi for 30 days	
Chemical Resistance	<u>Generally good against:</u> - Most solvents - Most acids and bases	<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	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
ATEX Compliant	

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

APPLICATION EXAMPLES

CHEMICAL AREAS



The BT-3HT Tag of iDTRONIC is especially suitable for harsh environments at chemical areas.

The robust housing of the High Temp Tag is very resistant to chemicals like salt water, NaOH, sulfuric acid or motor oil.

It can be securely attached to pipes or other devices by welding on the underside or bolting by the two holes.

MILITARY AREAS



The BT-1HT Tag can be used for military purposes within harsh environments.

The RFID Tag is 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 RFID Tag 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

BT-1HT

The **BT-1HT** Tag should be mounted flush to the metal surface with the through-hole mounted closest to the metal surface.

When selecting the mounting location, ensure the following:

- Select an even metal surface so that the entire flat bottom of the BT-1HT is in contact with the metal surface.
- Place the tag in the middle of the largest metal surface available.
- NOTE: It is recommended that the tag be taped to the metal surface, before welding or bolting the tag, to check fit, orientation and performance.

The BT-1HT'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.

BT-3HT

The **BT-3HT** Tag must be mounted to the metal surface with the "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 base of the BT-3HT Boltable RFID Tag 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 bolting the tag, to check orientation and performance.

The BT-3HT Boltable RFID Tag's performance depends on the shape of the metal object and the tags placement on that surface. The above recommendat the tag, to check fit, orientation and performance.

TAG ATTACHING METHODS

BT-1HT

BOLTING

The **BT-1HT** can be mechanically attached using:

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

NOTE: The hardware used to mount the BT-1HT to metal must be able to withstand the elevated temperatures that the tag will be subjected to during its use.

BT-3HT

BOLTING

The **BT-3HT** Tag can be mechanically attached using:

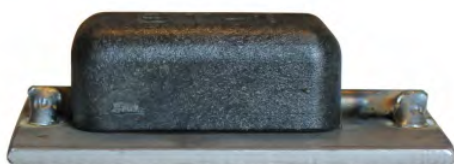
- Screws (size M6)
- Pop rivets (size 6 mm)

PRESSURE-SENSITIVE ADHESIVE

This is the quickest method of attachment; peel the liner from the adhesive and press to the cleaned mounting surface.

WELDING (ONLY FOR BT-1HT)

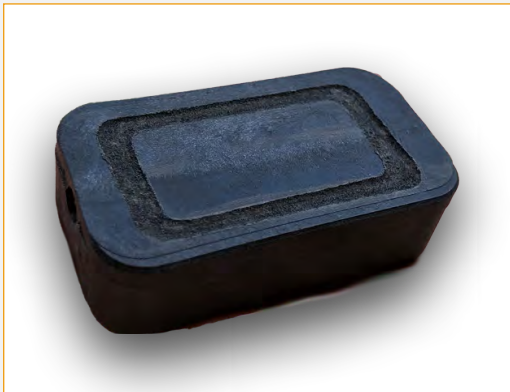
Insert a metal rod that is less than 4 mm in diameter through the hole in the tag. Weld this tag to the metal surface with the tag mounted flush to the metal surface. See the pictures, below. Side shot of correctly welded tag. Tag is mounted flush to the surface of the metal.



PRODUCT PICTURES

BOTTOM VIEW

BT1-HT



BT3-HT



MECHANICAL VIEWS

BT1-HT



BT3-HT



ORDER CODES

VERSION	ORDER CODE
BT-1HT	
Alien Higgs 3™ (128 Bytes)	ST-UHF-TR-BT-1HT-ALIEN
NXP UCODE G2XM (Up to 240 Bytes)	ST-UHF-TR-BT-1HT-NXP
Impinj Monza4QT (Up to 240 Bytes)	ST-UHF-TR-BT-1HT-IM
Extended Memory: 512 Bytes	ST-UHF-TR-BT-1HT-EXM
BT-3HT	
Alien Higgs 3™ (128 Bytes)	ST-UHF-TR-BT-3HT-ALIEN
EM4325 (352 Bytes)	ST-UHF-TR-BT-3HT-EM

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