



The Industrial RFID Tag Buying Guide

Find the right RFID tag for your application



<https://www.rfidtag.com>

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Overview

Selecting the right industrial RFID tag is critical for reliable asset tracking. Unlike standard RFID tags, industrial RFID tags must withstand harsh environments such as metal surfaces, high temperatures, chemicals, and outdoor exposure. This guide explains the key factors to consider and recommends suitable RFID tags for common industrial applications.

RFID Tags for Different Industrial Applications

2.1 Metal Equipment

Typical Challenge

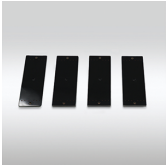
Attaching an RFID tag directly to metal can interfere with RFID communication and significantly reduce reading performance when conventional RFID tags are used. Industrial equipment, machinery, tools, containers, and other metal assets therefore require RFID tags specifically designed for on-metal applications.

Why Our Tags?

Our industrial on-metal RFID tags are designed to maintain reliable RFID performance when mounted directly on metal surfaces. Different tag constructions and form factors are available for applications with different space, durability, and read-range requirements.

Choose Your Tag

	Requirement	Recommended Tag	Reference
	Long read range	AZT-M4QT-OMPLS-13643	Read range: Up to 30 m
	Compact size	AZT-U8-OMFR4-0606	Ultra-compact 6×6 mm size

	Requirement	Recommended Tag	Reference
	High Impact	AZT-MX8K-OMPCB3M-8030	PCB construction
	Temporary / easy installation	AZT-SLIX-OMPET3M-D30	Cost-effective; adhesive-backed design for easy installation

2.2 Outdoor Assets

Typical Challenge

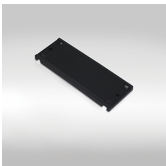
Outdoor RFID tags may be exposed to rain, moisture, dust, sunlight, temperature changes, and physical impact over long periods of time. The tag must remain readable and securely attached while withstanding the conditions of the asset's operating environment.

Why Our Tags?

Our industrial RFID tags include durable constructions for demanding outdoor asset-tracking applications. Depending on the model, selected tags are available for applications requiring enhanced environmental protection, mechanical durability, or longer read ranges.

Choose Your Tag

	Requirement	Recommended Tag	Reference
	Cost sensitive	AZT-U9XM-OMPLS-8521	General outdoor applications

	Requirement	Recommended Tag	Reference
	Water/Dust Exposure	AZP-H3-OMPPS-2626	IP rating: IP 68
	Long read range	AZT-U8-OMPLS-12830	Read range: Up to 30 m
	High value assets	AZT-R6P-OMABS3M-TE-9535	Tamper proof
	Long term asset tracking	AZT-R6P-OMMIX-3813	Durable ceramic construction
	Curved surfaces	AZ-R6-OMTPU-9018	TPU material

2.3 High Temperature environments

Typical Challenge	RFID tags used in high-temperature environments must maintain reliable identification performance while withstanding elevated temperatures and, in some applications, repeated heating and cooling cycles. Conventional RFID labels may not be suitable for these conditions.
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Why Our Tags?	Our high-temperature RFID tags are available in different constructions for demanding industrial applications. Selected models are designed for different temperature ranges, allowing you to choose a tag based on the maximum temperature your application requires.
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Choose Your Temperature Range

	Max. Temperature	Recommended Tag	Best For
	≤+220°C	AZT-N213-PPS-D30	Harsh manufacturing environments
	≤+150°C	AZ-H4-OMHTM-D20	General high-temperature applications; the most economical
	≤+150°C	AZ-H4-OMHTM-4215	Performs well on both on-metal & non-metal surfaces
	≤+150°C	AZ-H3-BXG	Flexible installation

2.4 Chemical Environments

Typical Challenge

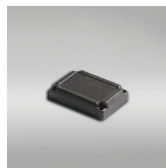
RFID tags used in chemical and industrial environments may be exposed to aggressive chemicals, liquids, cleaning processes, and high temperatures. These conditions can damage conventional tag materials and affect long-term durability and identification performance.

Why Our Tags?

Our PEEK On-Metal RFID Tag is designed for harsh industrial environments where both chemical resistance and reliable identification on metal surfaces are required. PEEK provides strong resistance to a broad range of chemicals and liquids, while the rugged on-metal construction is designed for demanding industrial use.

Choose Your Tag

PEEK On-Metal RFID Tag



- Chemical resistance: pH 0–14*
- High-temperature testing: 250°C for 4 hours
- Water immersion testing: 2 m depth for 8 hours
- Ultrasonic cleaning: 70°C for 90 minutes
- Pressure testing: 200 kPa for 2 hours under high temperature and high humidity
- Compression strength: 150 MPa

2.5 Concrete Traceability

Typical Challenge

RFID tags embedded in concrete or other materials must remain protected during installation and throughout the asset's service life, while still providing reliable RFID identification after being surrounded by the embedding material. Tag construction, placement, and embedding depth can all affect long-term performance.

Why Our Tags?

Our concrete and embedded RFID tags are designed for applications where the tag needs to be integrated into construction materials or other components rather than simply attached to the surface. Selected models offer rugged constructions for demanding installation and long-term identification applications.

Choose Your Tag

	Key Requirement	Recommended Tag	Reference
	Long read range	AZT-R6P-OMPLS-5147	Read range: 10 m on metal; 4 m in concrete at 5 cm depth
	Large user memory	AZP-H9-OMPPS-4732	EPC memory: 96-480 bits User memory: 688 bits
	Cost-effective	AZT-R6P-OMPLS-5147	The most economical option

Why Choose Us?

With over 10 years of RFID manufacturing experience, we provide reliable industrial RFID tags for demanding applications. Our ISO 9001, ISO 14001, and ISO 27001 certifications demonstrate our commitment to quality, environmental management, and information security.

We also offer customized tag designs and technical support from product selection and sampling to production.



What Else Should You Consider When Choosing an RFID Tag?

Choosing the right tag is only the first step. If your project also requires RFID readers, software, inventory management, or asset tracking workflows, explore our complete RFID solutions.

Need Help Choosing?

Our RFID engineers can recommend the best industrial tag based on your

- Asset material
- Operating temperature
- Mounting method
- Read distance
- Environmental conditions

[Find the Right Industrial Tag](#)



 <https://rfidtag.com>

 sales@rfidtag.com

Singapore Office: 51 Goldhill Plaza #07-07 Singapore 308900

Shenzhen Office: 33-408, Qianhai SZ-HK Fund Town, Nanshan, Shenzhen, China 518052

Shenzhen Factory: Q5, XingDao Industrial Park, LongGang, Bantian, Shenzhen, China 518129