

PASSIVE RFID SENSING

WHAT IS PASSIVE SENSING?



Sensors measure critical parameters and deliver needed data about objects and environments. Passive sensing devices are wireless, battery-free sensors that eliminate maintenance and can be placed in almost any environment. Passive tags transmit data when a reader energizes the tag, sending sensor information back to the reader every time the sensor is read.

Passive sensing:

- Radically lowers costs
- Allows for greater data collection
- Retains the advantages of more expensive active sensor tags



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The core of the technology is the integrated circuit that detects environmental changes and transmits information to the reader using RF energy.

Passive Vs. Active

	Passive Sensors	Semi-Passive Sensors	Active Sensors
Power Source	Radio Frequency	Battery	Battery
Read Range	15-22 Feet	15-22 Feet	15-22 Feet
Lifespan	Life of the Application	Until the Battery Dies	Until the Battery Dies
Maintenance	Set-and-forget	Continual Maintenance & Replacement	Continual Maintenance & Replacement
Size	Small, Thin, Flexible	Bulkier, More Rigid	Bulkier, More Rigid
Durability	High	High: Battery Must Be Encapsulated	High: Battery Must Be Encapsulated
Surface	Metal, Wood, Cardboard, Embedded	Metal, Wood, Cardboard	Metal, Wood, Cardboard
Cost	\$	\$\$	\$\$\$

USING PASSIVE SENSORS

Because these sensor tags are simple and inexpensive, they open up a broad range of new uses beyond existing sensor applications. With the ability to access quality-related data using large numbers of wireless, maintenance-free sensors, important decisions that protect people and equipment can be made proactively and with confidence.



COMMON INDUSTRIES:

- Manufacturing
- Agricultural
- Healthcare
- Construction
- Retail



MEASURES:

- Temperature
- Moisture
- Pressure



COMMON APPLICATIONS:

- Cold Chain & Perishable Item Temperature Monitoring
- Moisture Exposure or Moisture Penetration
- Predictive Maintenance



For more information about passive sensors and how they could work for you, contact one of our Metalcraft ID specialists.

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