

# M171 Durable Tag

With its highly durable, sonically welded case, the M171 durable tag is perfectly suited for use in rugged or environmentally exposed locations.

## Features & Benefits

- ◆ Encoded Radio Transmissions at 433 MHz
- ◆ Water-resistant Sonic-Welded Enclosure
- ◆ Customizable Beacon Rates
- ◆ Low Power Consumption for Long Battery Life
- ◆ Superior Anti-Collision Technology for High Tag Densities

The 433 MHz M171 Durable Tag is a battery-powered RF transmitter designed with a sealed, water-resistant, crush-proof enclosure for general-purpose asset tracking. Every tag broadcasts its unique ID and a status message at a periodic rate. These tags provide an economical solution for a variety of asset tracking environments. RF Code's patented communication protocols support high tag densities that allow large populations of tags to be deployed in confined spaces.

M171 Tags are programmed to operate at a 2-second beacon interval for security applications. This provides a method for rapidly locating and identifying tagged assets as they move through controlled areas. With typical read ranges of 300 feet, a single reader can provide coverage for a large area, such as an industrial laboratory or commercial warehouse.

The Durable M171-series tags are impact-resistant, splash-resistant and temperature stable. Labels are sealed on the inside of the clear polycarbonate enclosure via sonic-welding at the point of manufacture. This protects both the label and the electronics from moisture

and fluids. The durable enclosure provides a degree of protection in harsh environments; it can withstand salt water splashes, cleaning solutions, germicides, disinfectants, etc. This enclosure design has been evaluated for compliance with Ingress Protection Rating 54 (IP54).

Powered by a coin cell battery, the M171 tag will perform reliably in extreme temperature environments (from -40 to +70 degrees Celsius). In addition, the tag performs well after exposure to humidity and hot/ cold cycles. The tag operates with a very low duty cycle that translates to long battery life. Based on the ratings and specifications from the battery manufacturers, RF Code develops usage models to calculate the life of the active RFID Tags. Like all models, there are assumptions and approximations involved. The values are to be taken as engineering estimates - not guaranteed performance. In most deployment scenarios, tags with a 10-second beacon rate have a useful life of 5-to-7 years. Exposure to extreme temperatures will shorten the battery life. RF Code warrants all tags to be free from defects in materials and workmanship for a period of 1 year.

*M171 Durable Tags feature a wear-and-tear resistant, sonically welded enclosure that is especially suitable for use in rugged, environmentally exposed deployments.*



# RF Code M171 Durable Tag Specifications

## OPERATION

Operating Frequency	433.92 MHz
Group Code & Tag ID Codes	> 540,000 unique IDs per Group Code
Typical Transmission Range	up to 300 ft
Radiated Emissions	71.8 dBuV/m at 3 meters (maximum)
Modulation	ASK
Stability	Saw stabilized
Sensor Options	Motion, Tamper

## ENCLOSURE

Case Length	1.770 in (44.95 mm)
Case Width	1.330 in (33.78 mm)
Case Height	0.441 in (11.20 mm)
Case Weight (with tag)	.52 oz (14.7 g)
Material	Polycarbonate
Durability	Tough, impact resistant and temperature stable
Mounting Options	Adhesive pad (included)

## ENVIRONMENTAL

Operating Temperature	-20° C to +70° C
Storage Temperature	-20° C to +80° C
Operating Humidity	< 95% RH non-condensing; not recommended for outdoor applications
Sealing	Sonically welded: Resistant to moisture, fluids and rigorous cleaning procedures

## POWER

Battery Type	Lithium CR2032 coin cell
Smart Tag Feature	Low battery indication
Battery Life	> 4 years (nominal)*

\* Battery life estimate for 2-second simple beacon-only tag deployed in climate-controlled setting, 25° Celsius nominal operating temperature. Battery life is de-rated 40%-to approximately 2.8 years-when tags are deployed in extreme environments.



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