



# HL200XL-Series Read/Write Tags

## Features

- Up to 8KB of Memory
- 750 Bytes/Second Data Transfer — Reading and Writing
- Epoxy Encapsulated
- Unaffected by Paints, Dust, Dirt and Solvents

## Applications

- Material Handling
- Sortation Systems
- Work-in-Progress Monitoring
- Quality Control

## Use With

- HL500-Series Antennas
- HL814 / HL816 Portable Reader/Writers

**E**scort Memory Systems® (EMS) has a complete family of field-proven Read/Write and Read only Radio Frequency Identification (RFID) products and network interface modules. The system consists of Tags, Antennas and Controllers. Tags can be attached to a product or its carrier and act as an electronic identifier, job sheet, portable database, or manifest. Tags are read and updated via an EMS Antenna through any non-conductive material while moving or standing still.

### Technical Description

The HL200XL-Series Tags incorporate from 64 bytes up to 8KB of fast, random-access memory and are epoxy encapsulated to withstand the harshest industrial environments. Advanced digital signal processing techniques allow a data transmission speed of 750 bytes per second while still using reliable, safe, low-frequency RF. EMS Tags are the only low-frequency RF Tags on the market with such high speed data transfer capability.

The approximately four-inch Read/Write range of the HL200XL-Series Tags make them ideal for use in pallet based automated systems. Once the Tag is mounted, the pallet becomes "intelligent," and can carry with it all information regarding the product or material on the pallet.

The HL200XL-Series battery will power the Tag for 210 million bytes transferred or ten years, whichever comes first. The lifetime of

the battery can be easily calculated according to the number of bytes to be transferred to and from the Tag per day. For example, if the application calls for 200 bytes to be transferred to or from the Tag every minute for eight hours per day, seven days per week. Multiplying 200 bytes/operation times 480 operations/day yields 96,000 operations per day. The battery can therefore be expected to have a lifetime of 210,000,000 divided by 96,000 or 2188 days (5.9 years).

Battery life can be tracked using the Tag's internal battery counter. Byte 0 of the Tag contains the results of an internal timer, which keeps approximate track of the total time which the Tag has been active. Byte 0 reads 70 hours of actual transmitting time.

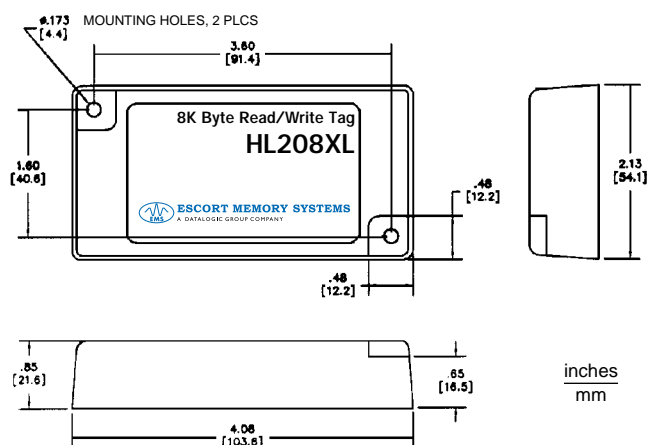
Unlike competitive RFID systems, the HL200XL-Series Tags are insensitive to the direction of travel or to the orientation of the Tag face to the Antenna. Data transfer operations are insensitive to non-conductive materials in the RF field and are unaffected by wet environments.

**BATTERIES  
WILL LAST  
10 YEARS  
OR 210  
MILLION  
BYTES. WE  
GUARANTEE IT!**

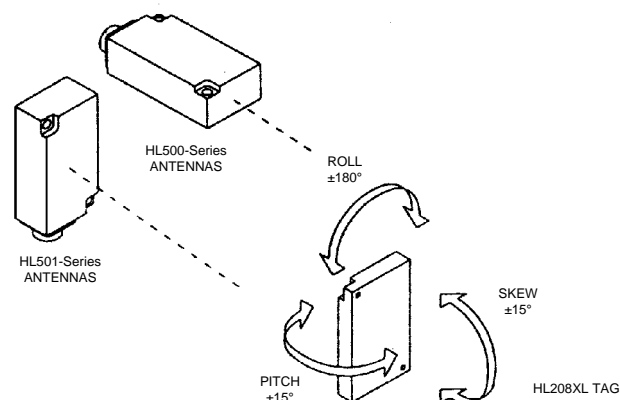
# HL200XL-Series Read/Write Tags

Electrical	Battery Type Battery Life	Long-Life Lithium Batteries 10 Years or 210 Million Bytes Transferred to/from Tags
Memory	Memory Type  Memory Capacity HL200XL HL208XL	CMOS Static RAM  64Bytes 8KB
RF Interface	Data Transfer Rate*	750 Bytes/Second  * Typical values with HL500-Series Antennas, Reading and Writing.
Mechanical Specifications	Dimensions (W x H x D) Weight Enclosure	3.60 x 2.13 x 0.85in. (91 x 54 x 22mm) 5.75oz. (163g) ABS Shell, Epoxy Encapsulated
Environment	Operating Temperature Storage Temperature Humidity Protection Class	14° to 120°F (-10° to 49°C) -40° to 185°F (-40° to 85°C) Water-Resistant NEMA 4X (IP67)

## Mechanical Dimensions



## Tag-to-Antenna Orientation



## Read/Write Ranges

### HL200XL-Series Read/Write Tags

#### Reading & Writing Ranges with HL500-Series Antennas

	HL500(A)	HL501(A)	HL814	HL816
Typical Range (Y) (inches/mm)*	3.90/100	3.70/94	0.47/12	0.47/12
Guaranteed Operating Range (X)	3.15/80	2.96/75	0.39/10	0.39/10

\* Proximity to metal, CRT devices and other sources of electromagnetic radiation may affect the range of the Antenna.

## Available Models

Model	Description
HL200XL	64Bytes Read/Write Tag
HL208XL	8KB Read/Write Tag