ESCORT MEMORY SYSTEMS
A DATALOGIC GROUP COMPANY

HS200LR-Series Long-Range Read/Write Tags

Features

- Reading/Writing Range Up to 29 inches
- Up to 32KB of Memory
- 3000 Bytes/Second Data Transfer Speed — 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

- HS500-Series Antennas
- HS814 / HS816 Portable Reader/Writers

Escort Memory Systems® (EMS) offers a complete family of field-proven Read/Write 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 stationary.

Technical Description

The HS200LR-Series Tags incorporate from 64 bytes up to 32,768 bytes 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 3,000 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 long-range of the HS200LR-Series Tags makes them ideal for use in automated systems involving larger pallets or product carriers. Once the Tag is mounted, the product carrier becomes "intelligent," and can carry with it all information regarding the product or material on the pallet. The very long life of the Tag means that it doesn't have to be removed. Other than replacing batteries, the Tag does not require maintenance.

The HS200LR-Series Tags contain a replaceable lithium battery power source. The battery will power the Tag for 200 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 200,000,000 divided by 96,000, or 2,083 days (5.7 years).

READING/ WRITING UP TO 29 INCHES

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. For the HS200LR-Series Tags, the battery should be replaced when the timer value reaches twenty. The Tag battery can be easily changed by unscrewing the removable battery cap from the Tag.

Unlike competitive RFID systems, the HS200LR-Series Tags are virtually insensitive to the direction of travel or to the orientation of the Tag face to the Antenna.

Publication #17-5002

HS200LR-Series Long-Range Read/Write Tags

Electrical	Battery Type	Replaceable Long-Life Lithium Batteries
	Battery Life	10 Years or 200 Million Bytes Transferred to/from Tag
Memory	Memory Type	CMOS Static RAM
	Memory Capacity	
	HS200LR	64Bytes
	HS208LR	8KB
	HS232LR	32KB
RF Interface	Data Transfer Rate	3000 Bytes/Second
Mechanical Specifications	Dimensions (W x H x D)	4.0 x 2.1 x 1.36in. (102 x 53 x 35mm)
	Weight	13.75oz. (390g)
	Enclosure	ABS Shell, Epoxy-Encapsulated
Environment	Operating Temperature	14° to 120°F (-10° to 49°C)
	Storage Temperature	-40° to 185°F (-40° to 85°C)
	Humidity	Water-Resistant
	Protection Class	NEMA 4X (IP67)

Read/Write Ranges

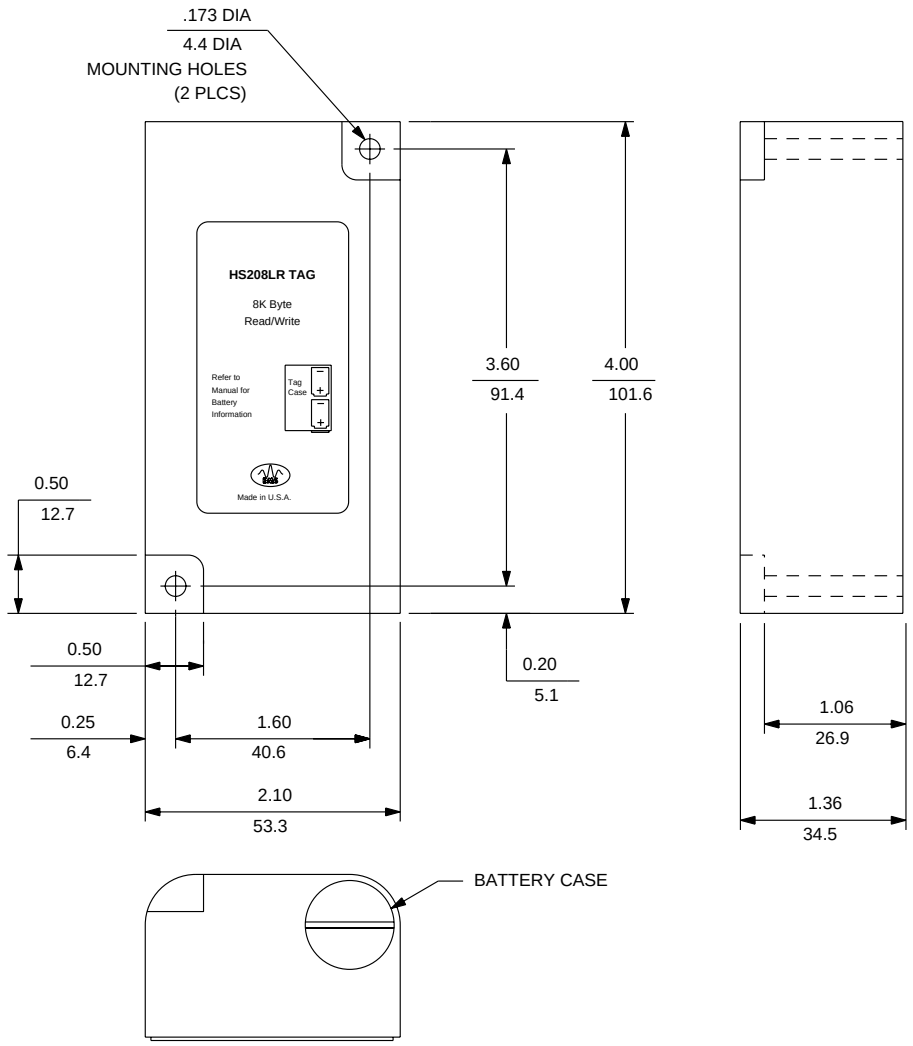
HS200LR-Series Long-Range Read/Write Tags

Reading & Writing Ranges with HS500-Series Read/Write Antennas

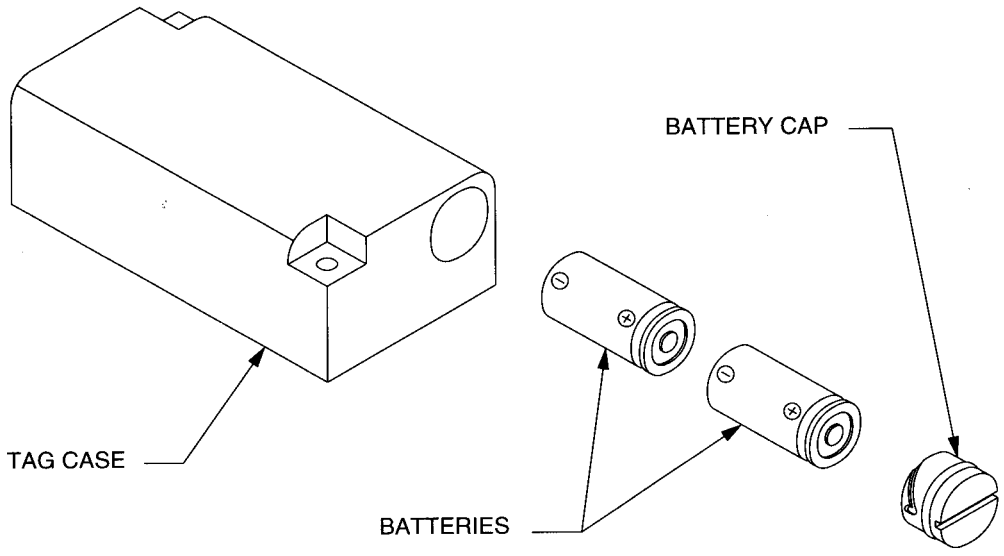
	HS500(A)	HS501(A)	HS510	HS550A	HS814	HS816
Typical Range (Y) (inches/mm)*	18.70/475	13.00/330	29.00/737	16.50/420	1.77/45	1.77/45
Guaranteed Operating Range (X)	15.00/380	10.40/264	23.23/590	13.20/335	1.42/36	1.42/36

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

Mechanical Dimensions



Battery Replacement



HS200LR-Series Long-Range Read/Write Tags

Available Models

Model	Description
HS200LR	64Bytes Long-Range Read/Write Tag
HS208LR	8KB Long-Range Read/Write Tag
HS232LR	32KB Long-Range Read/Write Tag

Tag-to-Antenna Orientation