



# ES600-Series Read Only Tags

## Features

- Small and Easy to Mount
- Low Cost
- Long Life
- No Moving Parts
- High Temperature Capability

## Applications

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

## Use With

- RS427-01
- RS427-02
- RS427-03
- RS427-04

**E**scort Memory Systems® (EMS) offers a complete family of field-proven Read Only Radio Frequency Identification (RFID) products and network interface modules. The system consists of Tags, Readers and ancillary equipment. 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 Reader through any non-conductive material while moving or stationary.

Escort Memory Systems' Read Only Tags are extremely durable, low-cost electronic identifiers that can be attached to most any object in the harshest environments. Read Only Tags are best used in applications where fixed codes are required and bar code labeling is not appropriate. The Tags contain no moving parts, and provide practically unlimited life with absolutely no maintenance. In a typical application, the Read Only Tag is attached directly to a reusable pallet or specific part as that part is introduced into the production process. The Tag can last the lifetime of a pallet and allow the RFID Reader to identify the pallet at any point in the process.

### Technical Description

The completely encapsulated ES600-Series Tags contain a custom IC and an inductive coil. When the Tag enters the RF field of an Antenna, the Antenna's RF emission causes an inductive current in the Tag coil that, in turn, powers the IC. The Tag then transmits a

phase modulated signal containing the information stored in the Tag. Error checking routines ensure that the Tag data is correctly received by the Antenna, even in environments of heavy RF interference.

ES600-Series Tags are available in four versions, varying in range, data bits stored, and operating temperature. The effective range is determined by the Tag coil size. The ES650 has a larger coil, and so, a longer range than the ES620. The actual range in a particular application depends on the Reader or Antenna being used and the particular environmental conditions, such as surrounding metal and RF interference.

The application flexibility of ES600-Series Tags is expanded by the high temperature versions, the ES620HT and ES650HT. These Tags are designed to retain data integrity after exposure to temperatures as high as 401°F (205°C). This resistance to high temperatures make the HT models ideal for paint oven and hot chemical bath applications.

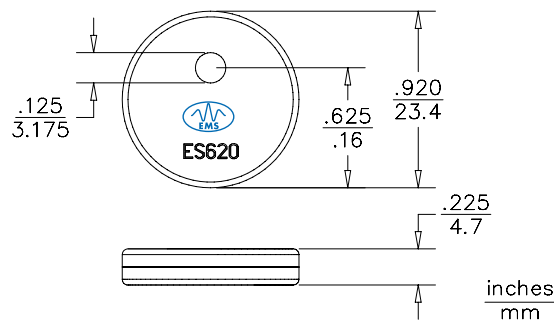
**COMPACT READ  
ONLY TAGS  
FOR RUGGED  
ENVIRONMENTS**

# ES600-Series Read Only Tags

## ES620(HT) Read Only Tags

Electrical	Power Supply	Powered by Inductive Coupling No Battery Required
Memory	20 Bits (1M Possible Codes)	
RF Interface	Data Transfer Rate	20 msec Per Read
Environment	Operating Temperature	
	ES620	-4° to 140°F (-20° to 60°C)
	ES620HT	-40° to 158°F (-40° to 70°C)
	Storage Temperature	
	ES620	-40° to 185°F (-40° to 85°C)
	ES620HT	-40° to 401°F (-40° to 205°C)
	Humidity	Water-Resistant
	Protection Class	NEMA 4 (IP66)
	Note: "Operating Temperature" is the range of temperatures at which read and fill operations can be performed	

## Mechanical Dimensions



## Read Ranges

### ES620(HT) Read Only Tag

#### Reading Ranges

#### Readers

	RS427-01	RS427-02	RS427-03	RS427-04
Typical Range (Y) (inches/mm)*	1.57/40	1.57/40	1.77/45	1.38/35
Guaranteed Operating Range (X)	1.26/32	1.26/32	1.42/36	1.10/28

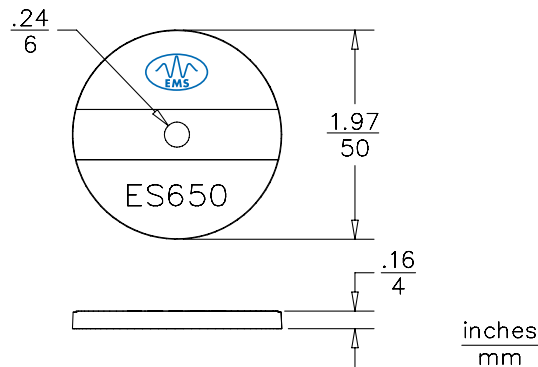
\* Proximity to metal, CRT devices and other sources of electromagnetic radiation may affect the range of the Antenna.

# ES600-Series Read Only Tags

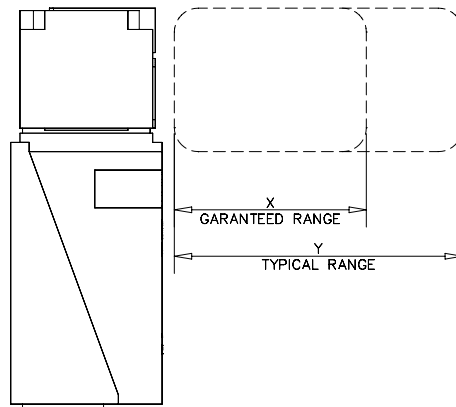
## ES650(HT) Read Only Tags

Electrical	Power Supply	Powered by Inductive Coupling No Battery Required
Memory	20 Bits (1M Possible Codes)	
RF Interface	Data Transfer Rate	20 msec Per Read
Environment	Operating Temperature	ES650 -4° to 140°F (-20° to 60°C) ES650HT -40° to 158°F (-40° to 70°C)
	Storage Temperature	ES650 -40° to 185°F (-40° to 85°C) ES650HT -40° to 401°F (-40° to 205°C)
	Humidity	Water-Resistant
	Protection Class	NEMA 4 (IP66)
Note: "Operating Temperature" is the range of temperatures at which read and fill operations can be performed		

### Mechanical Dimensions



### Read Ranges



### ES650(HT) Read Only Tag

#### Reading Ranges

#### Readers

	RS427-01	RS427-02	RS427-03	RS427-04
Typical Range (Y) (inches/mm)*	2.59/66	2.59/66	2.76/70	3.35/85
Guaranteed Operating Range (X)	2.09/53	2.09/53	2.20/56	2.68/68

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

# ES600-Series Read Only Tags

Typical & Guaranteed Read Ranges  
(inches/mm)\*

Readers	Tags		
		ES620(HT)	ES650(HT)
<b>RS427-01</b> (Vertical Read Head)	Typ. Guar.	1.57/40 1.26/32	2.59/66 2.09/53
<b>RS427-02</b> (Horizontal Read Head)	Typ. Guar.	1.57/40 1.26/32	2.59/66 2.09/53
<b>RS427-03</b> (Remote 18mm Tubular Antenna)	Typ. Guar.	1.77/45 1.42/36	2.76/70 2.20/56
<b>RS427-04</b> (Conveyor Antenna)	Typ. Guar.	1.38/35 1.10/28	3.35/85 2.68/68

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

## Available Models

Model	Description
ES620	Factory Programmed Read Only Tag, 20mm, 20 Bit Memory
ES620HT	Factory Programmed Read Only, High Temperature Tag, 20mm, 20 Bit Memory
ES650	Factory Programmed Read Only Tag, 50mm, 20 Bit Memory
ES650HT	Factory Programmed Read Only, High Temperature Tag, 50mm, 20 Bit Memory

## Compatible Products

Model	Description
RS427-01	Read Only Reader, Read Head, Top-Read (Vertical)
RS427-02	Read Only Reader, Read Head, Side-Read (Horizontal) Rotatable
RS427-03	Read Only Reader, Remote Read Head, 18mm Tubular, 1m Cable
RS427-04	Passive Read Only Conveyor Antenna
RS427-10	Read Only Reader, Interface Block, RS232
RS427-20	Read Only Reader, Interface Block, RS485/Mux32 Compatible