



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

EMS, a Datalogic Group Company, is the field-proven leader in the development and application of Radio Frequency Identification (RFID) Tags/Labels/PCBs, Antennas, Controllers and network interface modules for tough industrial environments. With over a dozen years of RFID successes in the automotive, electronics, material handling and food processing industries, EMS has built a global reputation in providing customers with complete supply chain solutions – from production to retail EMS has the complete solution!

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 many 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.

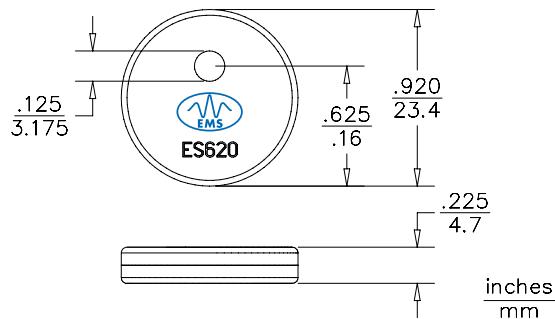
**COMPACT READ
ONLY TAGS
FOR RUGGED
ENVIRONMENTS**

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.

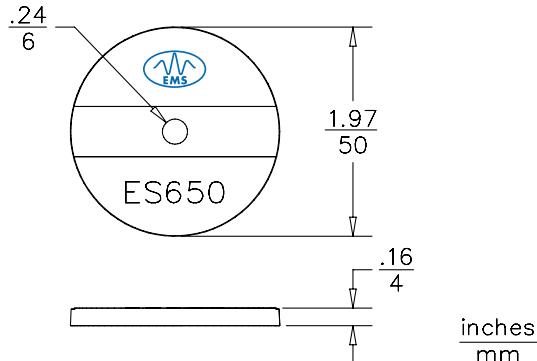
ES600-Series Read Only Tags

ES650(HT) Read Only Tags

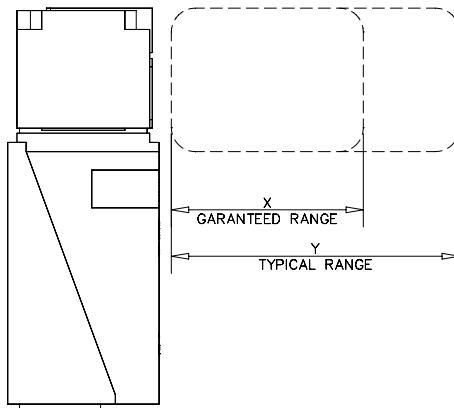
Electrical	Power Supply	Powered by Inductive Coupling No Battery Required
Memory	20 Bits (1M Possible Codes)	
RF Interface	Data Transfer Rate	20 msec Per Read
Environment	Operating Temperature ES650: -4° to 140°F (-20° to 60°C) ES650HT: -40° to 158°F (-40° to 70°C) Storage Temperature ES650: -40° to 185°F (-40° to 85°C) ES650HT: -40° to 401°F (-40° to 205°C) Humidity Protection Class Water-Resistant 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)	
RS427-01 (Vertical Read Head)	Typ. Guar.	1.57/40 1.26/32	2.59/66 2.09/53
RS427-02 (Horizontal Read Head)	Typ. Guar.	1.57/40 1.26/32	2.59/66 2.09/53
RS427-03 (Remote 18mm Tubular Antenna)	Typ. Guar.	1.77/45 1.42/36	2.76/70 2.20/56
RS427-04 (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	Button Tag, 23mm diameter, factory programmed random sequence Read Only RFID Tag, 20 bit memory. Off-center mounting hole
ES620HT	High-Temperature Button Tag, 23mm diameter, factory programmed random sequence read only RFID tag, 20 bit memory. -40° to 401°F (-40° to 205°C) storage temperature. Central mounting hole
ES650	Button Tag, 50mm diameter, factory programmed random sequence Read Only RFID Tag, 20 bit memory. Central mounting hole
ES650HT	High-Temperature Button Tag, 50mm diameter, factory programmed random sequence Read Only RFID Tag, 20 bit memory. -40° to 401°F (-40° to 205°C) storage temperature. Central mounting hole

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

Accessories

00-1091	Mounting Hardware Kit for ES620 Tag, nylon, 10 spacers, 10 screws
00-1115	Mounting Hardware Kit for ES650 Tag, nylon, 10 spacers, 10 screws
00-1120	Mounting Hardware Kit for ES620HT Tag, teflon, 10 spacers, 10 screws
00-1121	Mounting Hardware Kit for ES650HT Tag, teflon, 10 spacers, 10 screws
00-1125	Mounting Hardware Kit for ES650HT Tag, ceramic, 10 spacers, 10 screws