RS427-04
Passive Read Only Conveyor Antenna

Features

- 14.5″ Wide Reading Field
- Easily Mounts Underneath Conveyor
- No Moving Parts
- Long-Life Passive Tags
- Passive Tag, Requires No Batteries

Applications

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

Use With

- ES600-Series Tags
- RS427-10 Read-Only Reader, RS232 Interface Block
- RS427-20 Read-Only Reader, RS485 Interface Block
- CM01 Asynchronous Serial Interface Module
- CM11 / CM12 DeviceNet Modules
- CM21 InterBus-S Module
- CM30-Series Profibus Modules
- CM40-Series Modbus Plus Modules
- CM52 Remote I/O Module
- CM80-Series ControlNet Modules
- CM900 / CM1000
- CM1746 RFID Module
- MM80MicroMux Bus Module
- Any RS232 or RS485 Host

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!

The RS427-04 Passive Read Only Conveyor Antenna is designed to provide cost effective RFID data collection to demanding material handling and automation applications.

The patent pending design of the Conveyor Antenna addresses a prominent concern which has vexed the material handling industry for years. In the past, the positioning of an Antenna relative to the passing totes was critical. Read ranges had to accommodate different sized totes or the totes had to be positioned to pass near the Antenna. Escort Memory Systems' Conveyor Antenna solves this concern since the Antenna can now be snugly mounted underneath the path of the tote. The 14.5″ wide Antenna can substitute a roller's position or may even be installed between the conveyor rollers. Antenna adjustments are a thing of the past, since the Conveyor Antenna can track any size tote/pallet on the same path without time-consuming adjustments.

Equally important, the RS427-04 Antenna is compatible with Escort Memory Systems' Read-Only Tags. These Tags are extremely durable, low-cost electronic identifiers that can be attached to any object, even in the harshest environments. The Read-Only Tags contain no moving parts, and provide practically unlimited life with no maintenance requirements. In a typical application, the Read-Only Tag is attached to a tote/pallet in a material handling process. Once attached, the Tag allows the RFID Antenna to identify the pallet at any point in the process.

> ### CONVEYOR ANTENNA ELIMINATES READING RANGE CONCERNS

Technical Description

The Passive design of the RS427-04 Conveyor Antenna uses its RF field from the Antenna to power the Tag, eliminating the need for batteries.

The Antenna radiates a low frequency, low power signal which is captured by the Tag and used to power the Tag's internal custom IC. The Tag then returns a phase modulated signal containing the I.D. stored in the Tag. This signal is captured by the Antenna and passed through to the RS427-10 or RS427-20 interface block. The interface block contains the power supply, logic, serial interface and external connections. The interface block digitizes the signal and error checks the transmitted Tag I.D. This error checking ensures the correct I.D. is read in environments of heavy RF interference.

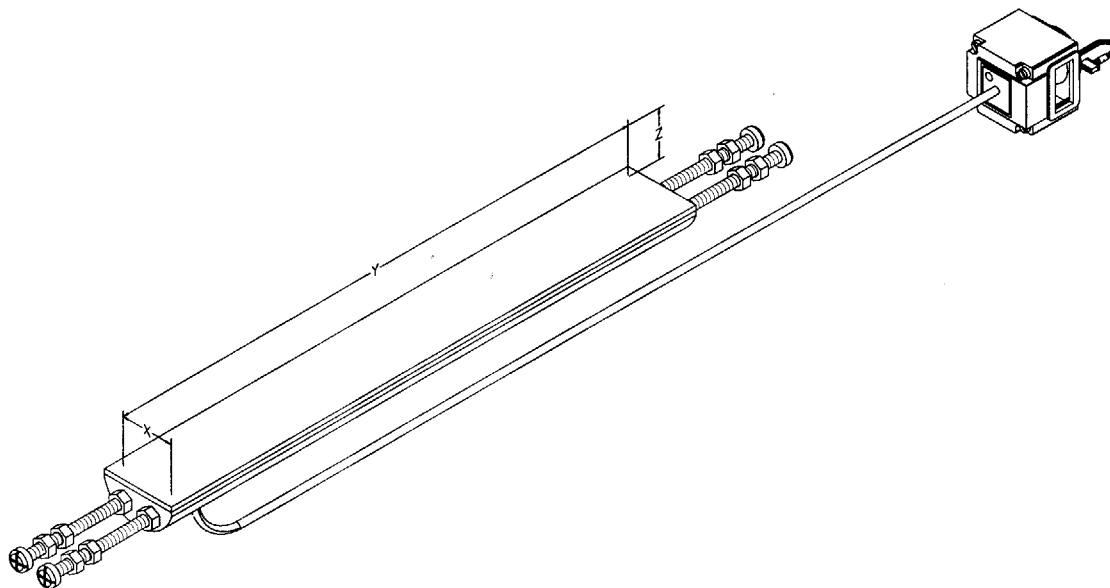# RS427-04 Passive Read Only Conveyor Antenna

Antenna Specifications

Mechanical Specifications	Dimensions (W x H x D)	14.50 x 1.85 x 0.91in. (363 x 46 x 23mm)
	Weight	16oz. (440g)
	Cable Length	3.33ft. (1m)

Environment	Operating Temperature	-4° to 120°F (-20° to 49°C)
	Survival Temperature	-40° to 185°F (-40° to 85°C)
	Humidity	95% Non-Condensing
	Protection Class	NEMA 4 (IP65)

Mechanical Dimensions – Antenna
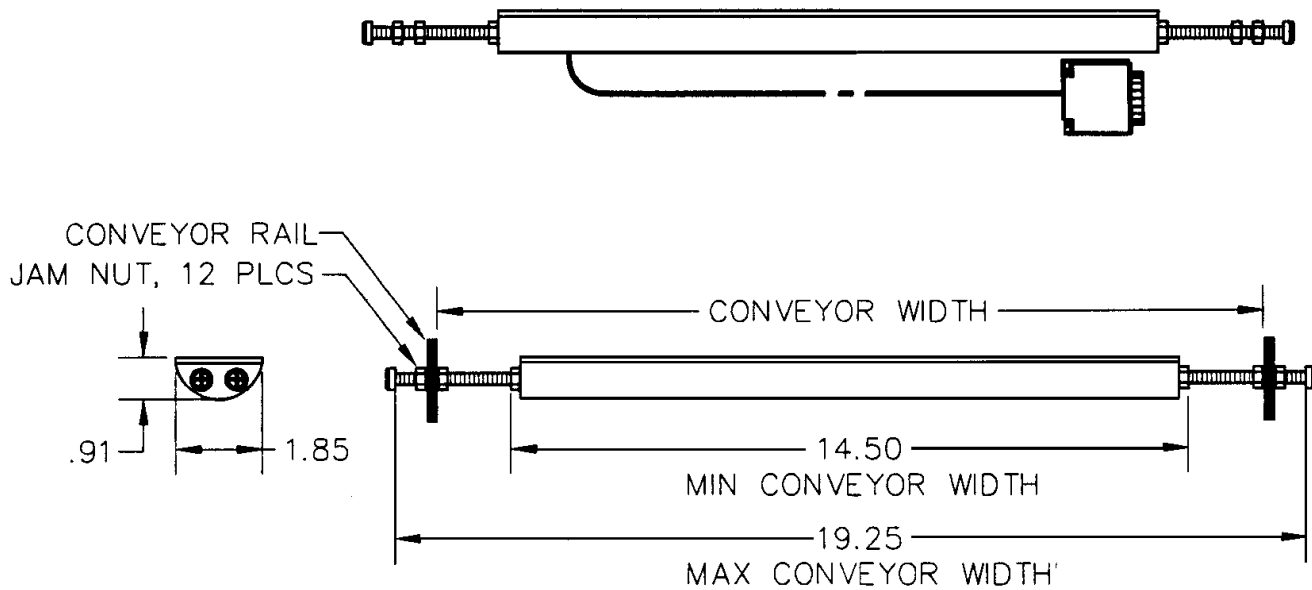
RS427-04 Passive Read Only Conveyor Antenna
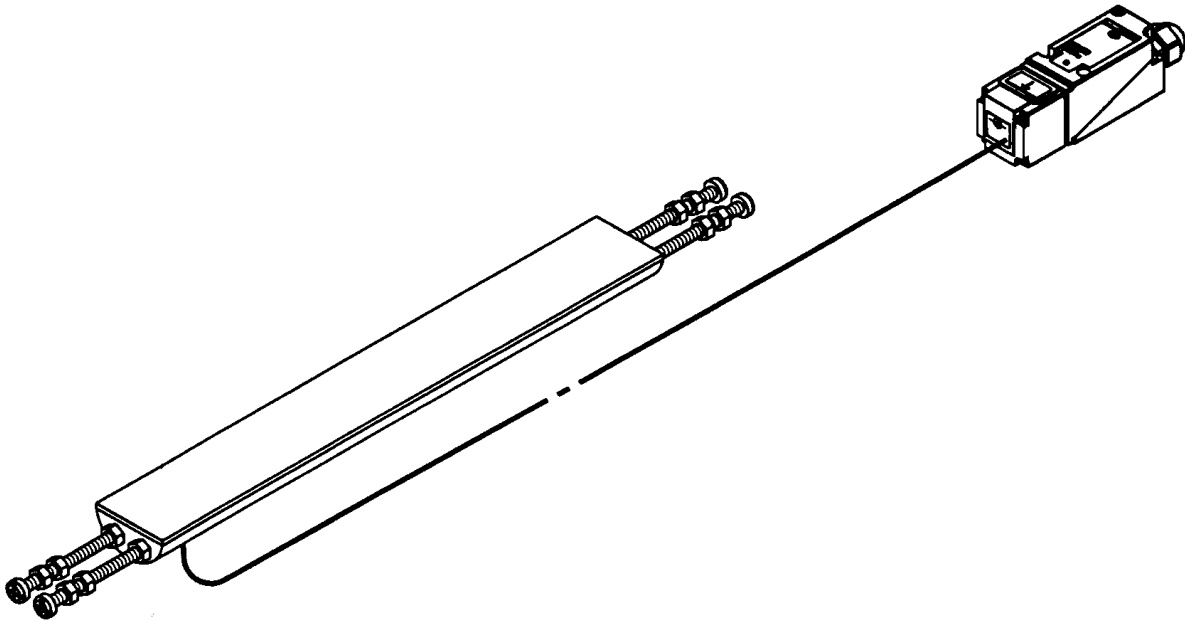
Reading Field

RF Field/Read Ranges

RS427-04 Reading Field
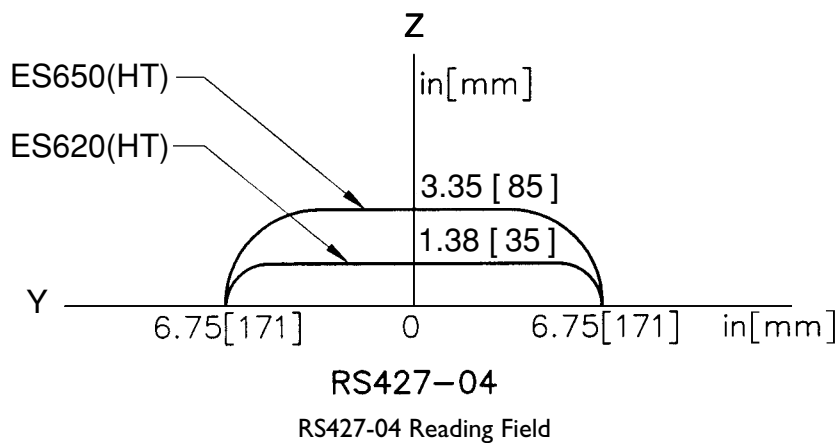
RS427-04 Passive Read Only Conveyor Antenna
Reading Ranges with ES600-Series Read Only Tags

	Tags	
	ES620(HT)	**ES650(HT)**
Typical Range (Z) (inches/mm)*	1.38/35	3.35/85
Guaranteed Operating Range	1.10/28	2.68/68
Reading Field (Y)	13.50/342	13.50/342
Reading Field (X)	1.50/38	1.50/38

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

RS427-04 Passive Read Only Conveyor Antenna

Note: RS232 and RS485 Interface Blocks Sold Separately.

Available Models

Model	Description
RS427-04	Passive Read Only Conveyor Antenna

Compatible Products

Model	Description
RS427-10	Read-Only Reader, RS232 Interface Block
RS427-20	Read-Only Reader, RS485 Interface Block

Passive Read Only Radio Frequency Identification (RFID)
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.