RS427-Series Read Only Readers

Features

- Compact, Versatile Reader
- Menu Configurable (RS232)
- String Configurable (RS485)
- RS485 Multidrop Interface
- RS232 Point-to-Point Interface
- Low Cost
- No Moving Parts

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 and 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-Series Read Only Readers are extremely compact units housed in a durable, two part ABS plastic enclosure, able to withstand harsh environments. The RS427 is available with a RS485 multidrop interface (Mux32 protocol), or RS232 point-to-point interface, and either a horizontal or vertical read head. The two parts of the RS427, the interface block and the Read head block, are ordered separately to meet the needs of the specific application. The RS427 supports EMS' ES600-Series Read Only Tags and 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 requirements. In a typical application, the Read Only Tag is attached to a pallet or part in a production process. Once attached, the Tag will last the lifetime of the pallet and allow the RFID Reader to identify the pallet at any point.

The small size and industry standard limit switch body of the RS427 Reader makes it ideal for use in factory automation environments where space is at a premium.

Compact Reader with Integrated Antenna

The RS427 Reader is the only interface necessary between the user's host computer and the information in the Read Only Tags. The RS232 version communicates through the serial port and features an easy to use set-up menu system. The RS485 version is string configurable through the serial port.

Technical Description

The RS427 interface block contains the power supply, logic, serial interface and the external connections. The Read head block contains the integrated Antenna and the analog transceiver. The built-in 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 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. The RS427's small size, high performance and flexibility combined with the assortment of Read Only Tags make it a powerful solution to Read Only applications.

RS427-Series Read Only Readers

Electrical	Supply Voltage	24VDC ±15%
	Current	150mA
RF Interface	Data Transfer Rate	15msec Per Read
Interface	RS232	
	Baud Rate	2400, 4800, 9600, 19200
	Parity	Odd, Even, None
	Data Bits	8
	Stop Bits	1
	Max. Cable Length	50ft. (15m)
	RS485 (Mux32)	
	Baud Rate	9600
	Data Bits	8
	Stop Bits	1
	Max. Cable Length	4000ft. (1219m)
Mechanical Specifications	Dimensions (W x H x D)	4.68 x 1.79 x 1.57in. (119 x 45 x 40mm)
	Enclosure	ABS Plastic
Environment	Operating Temperature	-4° to 122°F (-20° to 40°C)
	Storage Temperature	-40° to 185°F (-40° to 85°C)
	Humidity	5 to 95% Non-Condensing
	Protection Class	NEMA 12 (IP65)

Read Ranges

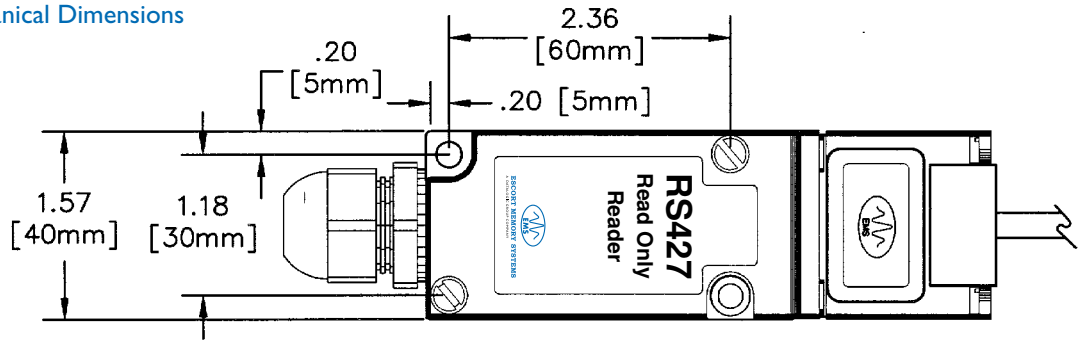
RS427-Series Read Only Readers

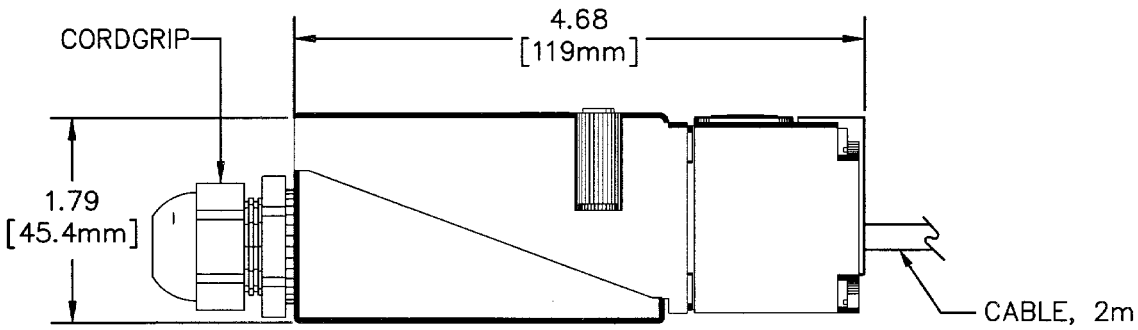
Reading Ranges with ES600-Series Read Only Tags (inches/mm)*

		Tags	
Readers		**ES620(HT)**	**ES650(HT)**
RS427-01	Typ.	1.57/40	2.59/66
	Guar.	1.26/32	2.09/53
RS427-02	Typ.	1.57/40	2.59/66
	Guar.	1.26/32	2.09/53
RS427-03	Typ.	1.77/45	2.76/70
	Guar.	1.42/36	2.20/56
RS427-04	Typ.	1.38/35	3.35/85
	Guar.	1.10/28	2.68/68

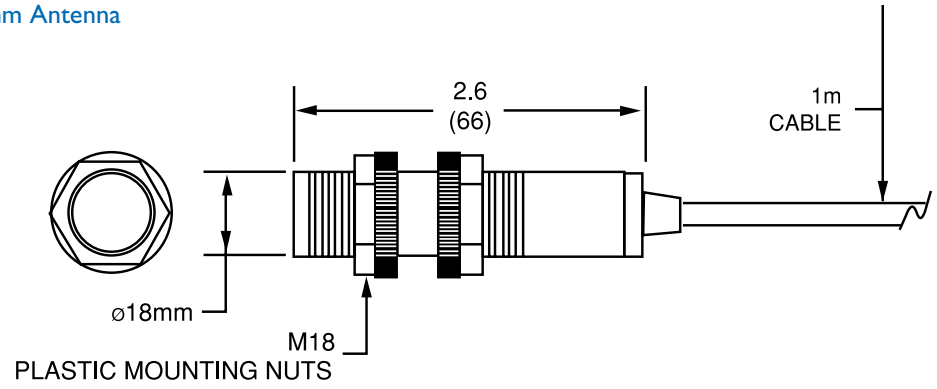
* Proximity to metal, CRT devices and other sources of electromagnetic radiation may affect the range of the Antenna.

Mechanical Dimensions

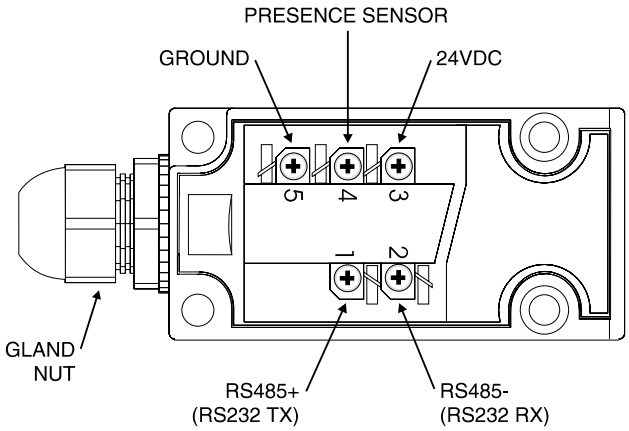




RS427-03 Tubular 18mm Antenna



Electrical Connection



Terminal	Type	RS427-10	RS427-20
1	Output	RS232TX	RS485+
2	Input	RS232RX	RS485-
3	Power	+24VDC	+24VDC
4	Input	Presence	Presence
5	Power	Ground	Ground

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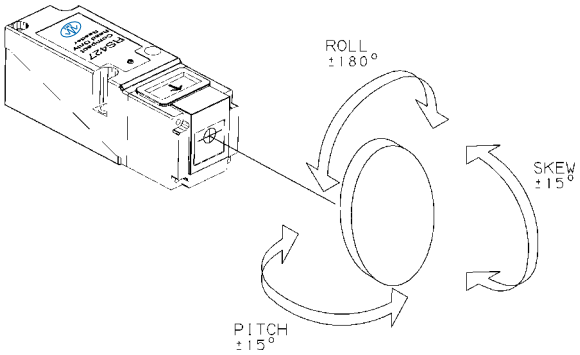
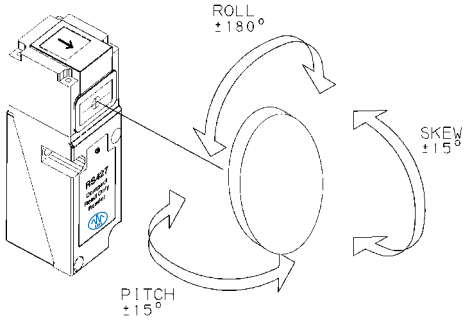
Tag-to-Antenna Orientation



Vertical Read Head



Horizontal Read Head

Available Models

Model	Description
RS427-01	Read Only Reader, Vertical Read Head
RS427-02	Read Only Reader, Horizontal Read Head
RS427-03	Read Only Reader, Remote 18mm Tubular Antenna
RS427-04	Read Only Reader Conveyor Antenna
RS427-10	Read Only Reader, RS232 Interface Controller Block
RS427-20	Read Only Reader, RS485 Interface Controller Block, Requires 00-1066 Programming Cable for Configuration

Accessories

Model	Description
00-1063	Demonstration Kit. Includes RS427-10, RS427-02, RS232 cable with DE-9 terminating connector, power supply
00-1128	Programmer, RS427-20, MM80. Includes Configuration Program, RS427-20 base, MM80, cabling and instructions. User supplied 24Vdc power source required
CBL-1230	Demonstration Cable for RS427-10. Includes RS232 cable with DE-9 terminating connectors, power supply, EC communication program