

Product Data Sheet



Eureka-111 125kHz RFID Readers

The Eureka 111

A 125kHz RFID Reader that is designed to read a variety of low frequency 125kHz passive RFID tags, which is an ideal solution for industrial tracking and quality control applications, asset tracking and identification, tote bin tracking and similar applications where accuracy of data is essential.

Communication

The communication takes place via an antenna which can be situated up to 5 metres away from the main unit. The Eureka-111 125kHz Reader supports standard serial interfaces, allowing straightforward and cost effective integration to host systems enabling speedy design of a complete solution. Other standard features, which enhance system operation include a relay output, sensor inputs and firmware protocols to enable the tag communication to be optimised for speed and read range.

Simple Tuning

The reader unit has self-tuning, ensuring that system set up time is minimised.

By analysing the environment in which the antenna is installed, the Eureka-111 125kHz Reader alters the tuning of the antenna for maximum performance. The Reader can then be set to perform a self-tune at defined intervals so that the system

is operating at maximum performance regardless of external environment.

Operation

In normal operation the antenna emits a 125kHz activation field, which will trigger any Eureka-111 125kHz tag entering the field. The reader receives the data, via the antenna, checks for information and then formats it into a message for transmission down the communications link.

The reader also has the ability to store tag data in its buffer ready for onward transmission on command.

Flexibility

Many of the reader operating modes and features are software configurable to enable customer specific requirements to be met.

Self Tuning unit

- Keeps system optimised and simplifies system set up, reducing cost and maintenance

Multiple read

- Tags can be read simultaneously

Error detection

- Only the true tag identity is reported

High speed

- Tags can be read even when moving

Low frequency RF

- Allows tags to be read through dirt, paint and when obscured by most materials

Protocols

- Simplifies software requirements

Addressable reader facility

- Enables simple networking

Fully configurable interfaces

- RS232, isolated RS422/485

110/230v AC & 24v DC versions

- Allows for application flexibility

High accuracy crystal control

- Allows readers to be located next to each other

Modes of Reader Operation

The Eureka-111 125kHz RFID Readers have four main modes of operation as standard. These exist to simplify the integration of a low frequency tagging solution to a host system and are common to all the Eureka range of tag readers.

In all four modes, the readers can be configured to report the tag identity immediately it is read or report only on command from the host equipment. This permits the reader to be used with either interrupt-driven or poll/service routine user software. The readers also feature a tag buffer which holds an historic record of the last eight events.

Timed

Allows the reader to search indefinitely for a valid tag rapidly polling the antenna until a valid tag is detected. The reader then temporarily disables that antenna for a predetermined period. This period can be individually set for each antenna from 1 second to 255 seconds. At the end of the timed period the antenna is enabled and the reader resumes its search.

Continuous

Allows the reader to continually search for tags.

Decode & Quit

Similar to the timed mode, except that the reader will only resume polling on instruction from the host equipment.

Object Sensor

When an external object sensor indicates that a tagged object is present, the reader will start its interrogation sequence and, once the tag identity is read, suspend its search. It will only resume the search when the object sensor indicates that the next object is present, although the host equipment can override the object sensor and issue an immediate "Read Tag" command if required.

Eureka-111 Reader Specification

Reader	Industrial	Commercial
RF Frequency (TX)	132kHz	125kHz
Comms Parameters	1200 - 9600 Baud, 7/8 Bit, N/O/E Parity, 1/2 Stop	
System Architecture	Point to Point	Point to Point
Range	10-40cm	10-40cm
Comms Interface		
RS232, RS485/RS422	Switchable	Switchable
Indicators		
LED	Power, Tx/Rx Data, Tx Power, T/Read, T/Decode	
Fault Detection	Available in software for Rx & Tx cables	
Input/Outputs		
Relay Contacts	1 Change over	1 Change over
Object Sensor	1 input (volt free)	1 input (volt free)
Environmental		
Operating Temp	5°C to +35°C	5°C to +35°C
Storage Temp	-20°C to +60°C	-20°C to +60°C
Protection	IP66 to EN 60 529/10.91	IP66 to EN 60 529/10.91
Physical		
Size (Cased)	300 x 240 x 80mm	293x 193 x 55mm
Size (Chassis)	258 x 157 x 40mm	N/A
Weight	3.9kg	2.7kg
Colour	RAL7032	Silver
Material	Sheet steel	ABS
Electrical		
Supply Voltage	Specified 110/230 Volts AC 50/60Hz	
Power Consumption	<15W	<15W