

## Product Data Sheet



### Eureka-411 Active RFID Tag Readers

#### The Eureka 411

A 132kHz active low frequency RFID tagging solution with full read/write capability, high operating speeds and robust construction. The Eureka 411 has been successfully implemented in demanding industrial, defence, road, rail and security applications from car manufacturing plants to HM Prisons.

#### Reader Operation

Tags in the interrogation field of an antenna transmit their data to the 411 reader, which immediately communicates with the host system, or stores the data in the buffer ready for onward transmission on command. The host equipment can command the reader to change all or part of the data in the tags memory while the tag is in the interrogation field, this is known as the write facility.

#### Active Technology

The active technology used in the Eureka 411 system allows the read and write distance of tag data to be the same distance with a typical range of 1.25m. Making the 411 system the perfect choice for industrial applications that benefit from the robustness of active low frequency communications.

#### Standard Serial Interfaces

The 411 readers support standard serial interfaces, fully configurable RS232 and isolated RS422/485 to allow straight forward and cost effective integration to host systems.

#### Communication

Communication takes place via an antenna which can be situated up to 50m from the main reader unit, greater distances are possible with reduced performance.

#### Flexible Operating Features

Standard features include a number of relay outputs, sensor inputs and firmware protocols to enable tag communication to be optimised for speed, read/write range and anti-collision.

Many of the readers operating modes are software configurable enabling specific requirements to be met.

#### Available Versions

- Industrial
- Commercial
- PCB only

#### 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

#### 24 Volt versions

- Allows for application flexibility

#### OEM code protection

- Exclusive market for OEM systems and products



## Modes of Reader Operation

The Eureka 411 132kHz 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 each active 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 240 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-411 Reader Specification

Reader	Commercial	Industrial	Dual Sync	Triple Sync	Portable
RF Frequency (TX)	132kHz	132kHz	132kHz	132kHz	132kHz
Comms Parameters	600 - 9600 Baud, 7/8 Bit, N/O/E Parity, 1/2 Stop				
System Architecture	Point to Point	Point to Point	Point to Dual Point	Point to Triple Point	Point to Point
Range	1.25m	1.25m	1.25m	1.25m	75cm
<b>Comms Interface</b>					
RS232, RS485/RS422	Switchable	Switchable	Switchable	Switchable	Switchable
<b>Indicators</b>					
LED	Power, Tx/Rx Data, Tx Power, Tag Read, Tag Decode				7 Segment Display
Fault Detection	Available in software for Rx & Tx cables				N/A
<b>Input/Outputs</b>					
Relay Contacts	2 Change over	2 Change over	2 Change over	2 Change over	2 Change over
Object Sensor	1 input (volt free)	1 input (volt free)	1 input (volt free)	1 input (volt free)	1 input (volt free)
<b>Environmental</b>					
Operating Temp	5°C to +35°C	5°C to +35°C	5°C to +35°C	5°C to +35°C	5°C to +35°C
Storage Temp	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C
Protection	IP66 to EN 60 529/10.91	IP66 to EN 60 529/10.91	IP66 to EN 60 529/10.91	IP66 to EN 60 529/10.91	IP66 to EN 60 529/10.91
<b>Physical</b>					
Size (Cased)	293 x 193 x 55mm	300 x 200 x 80mm	300 x 400 x 120mm	300 x 400 x 120mm	Unit + Cradle
Size (Chassis)	N/A	258 x 157 x 40mm	N/A	N/A	N/A
Weight	3kg	4kg	9kg AC, 6.6kg DC, 12kg AC Bat	12kg	4.17kg
Colour	Silver	RAL 7032	RAL 7032	RAL 7032	Black/white
Material	ABS	Dip coat primed & powder coated painted sheet steel			Aluminium
<b>Electrical</b>					
Supply Voltage	Specified 110/230 Volts AC 50/60Hz (Factory option 24 Volts DC nom. available)				Mains Rechargeable
Power Consumption	<25W	<25W	<25W	<25W	<25W