

# EUIRDD5695

## Discovery Reader

### User Manual

**Record of Changes**

<b>Issue No.</b>	<b>Date of Issue</b>	<b>Detail of Change</b>

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## **1 Introduction**

Eureka Discovery Reader is a proximity system that produces an invisible detection zone. The system detects transponders worn by personnel or fitted to other objects that are within its proximity and provides an output that can control electronic barriers/doors.

## **2 How the System Works**

Eureka Discovery Reader is based on proven radio frequency technology. The system produces a user configurable detection zone of an area between 2m to 5m which interacts with transponders. When a Eureka Discovery Reader System transponder is within the proximity of, or enters the detection zone there are a possible two outputs that can be linked to third party devices

Each installed system has its own unique identification code, as do each of the transponders used with the system.

The Discovery Reader has a real time clock and built in memory for storing an audit trail of up to 7000 proximity detection events as well as system configuration settings. Event logs and system settings can be viewed for each control unit using the ZoneSafe™ software. Connection to the reader is via Ethernet.

ZoneSafe™ software provides an easy to use interface for downloading, viewing, analysing and exporting event data.

## 3 System Components

### Standard Components

- 1) Eureka Discovery Reader

#### 3.1 Discovery Reader Unit

The Discovery Reader contains the main electronics of the system and requires a 24VDC supply.

The Discovery Reader is fitted with a real-time clock for time and date information, internal memory to store event data, an Ethernet module for communication with an external device. Relay outputs can be used to control third party equipment such as barriers, doors or alarms. Daylight saving is utilised via the Zonesafe software. The size of the generated detection zone from each unit is adjustable from approximately 2m to 5m. All units are supplied with IP address 10.0.0.52. To change the IP address download Lantronix Device installer and follow instructions to Re-Assign IP

<http://www.lantronix.com/device-networking/utilities-tools/device-installer.html>

#### 3.2 Transponders

The ZoneSafe™ Transponders are worn by personnel or fitted to other equipment. When a transponder enters a detection zone a visual and/or audible indication is provided and (depending on configuration) the relays will change state (NO/NC).

Each transponder is factory configured with a unique ID. Transponders within the proximity of a detection zone will be logged by the Discovery Reader. The data logged from the transponder includes its unique ID, date/time and battery status.



## 4 Hardware Installation

Before installation please read the following guide lines to ensure that the system is correctly installed and provides optimum performance.

**NOTE:** It is recommended that the installation of Discovery Reader is carried out by a fully authorised Discovery Reader installation engineer.

### 4.1 Minimum Requirements

- 24V DC supply protected by a 13 amp anti-surge fuse
- 0V Earth location
- Space required 230mm x 300mm x 90mm

### 4.2 Installation Considerations

#### 4.2.1 Discovery Reader Mounting

- The Discovery Reader should be mounted such that it has line of sight to the transponder when the transponder is in the zone. Failure to do this could cause transponders to be undetected.

### 4.3 Transponders

Transponders must be worn or attached vertically to ensure best detection range. Transponders can be worn using a lanyard, armband, fixed to machinery or integrated into PPE such as a high visibility vest.

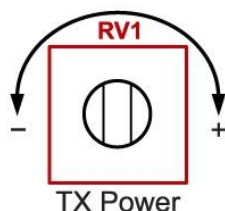
### 4.4 Settings: Control Unit

#### 4.4.1 Wakeup ID Settings:

The wakeup ID is set to give the reader a unique wakeup up field. The required ID is set using the Zonesafe Software. If two discovery readers are within range of one another and have the *same* wakeup ID, they will both decode a transponder irrespective of which field the transponder is in.

#### 4.4.2 TX Power Adjust: RV1

A single turn potentiometer is used to adjust the wakeup unit's transmit power. This controls the size of the detection zone from the wakeup antenna from approximately 2 to 5metres depending on environmental factors. Using a trim tool or a small flat bladed screw driver, turn the potentiometer (RV1) clockwise to increase power or anticlockwise to decrease power. Set the potentiometer to give the desired transponder detection range.



## **4.5 Hardware Setup & Test**

### **4.5.1 Confirm Wakeup Range**

Using an LED Test Transponder (supplied separately), walk around the detection zone that has been setup. An LED on the test transponder will illuminate when it is in the detection zone, providing a visual illustration of the zone. The LED on the test transponder may pulse but should not be off for more than 1 second. As necessary, adjust RV1 to change the detection zone.



## 5 WEEE Directive

The Waste Electrical and Electronic Equipment Directive (WEEE Directive) was introduced into UK law in January 2007 by the Waste Electronic and Electrical Equipment Regulations 2006.

This product shall not be treated as household waste. It must be treated in accordance with the Waste Electronic and Electrical Equipment Regulations 2006.

Avonwood Developments Limited is a WEEE registered producer WEE/EFO483SX.



## 6 FCC Compliance Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications to ZoneSafe™ systems not expressly approved by Avonwood Developments Limited may void the user's authority to operate the equipment.

## 7 Disclaimer

The ZoneSafe™ proximity warning systems manufactured by Avonwood Developments Limited are supplied as an audible and/or visual alert system only. The ZoneSafe™ proximity warning system is not a protective device, it does not initiate or perform safety related functions and it does not provide control to reduce risk but and audible/visual alert to the operator of the risk.

Fig 1: WEEE Symbol

ZoneSafe™ should not be used to replace proper job site organisation, safeguards, operator training and the application of relevant vision standards that addresses safety and the safety of people on job sites.

Due to the nature of radio frequency, wireless communications and possible interference, data can never be guaranteed. Data can be corrupted, have errors or be totally lost. Avonwood Developments Limited ZoneSafe™ systems should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death or loss of property. Avonwood Developments Limited accepts no responsibility for damages of any kind resulting from errors in data transmitted or received using Avonwood's ZoneSafe™ systems, or for the failure of the Avonwood's ZoneSafe™ systems to transmit or receive such data.

Avonwood Developments Limited accepts no liability for any and all direct, indirect, special, general, incidental, consequential, punitive or exemplary damages including, but not limited to, loss of profits or revenue or anticipated profits or revenue arising out of the use or inability to use any Avonwood Developments Limited products. Information in this document is subject to change without notice.

## 8 Declaration of Conformity

### DECLARATION OF CONFORMITY



Manufacturer:

**Avonwood Developments Ltd**  
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Product:

**ZoneSafe System**

Year of issue:

**2011**

Standards to which conformity is declared:

**EN 301 489-3 v1.2.1 (2000-8)**  
**EN 301 489-3 v1.4.1 (2002-8)**  
**EN 300 330-1 v1.3.1 (2001-6)**  
**Machinery Directive 2006/42/EC**

The present document declares that the specified product conforms to the reported standards and satisfies the essential requirements of:

**ETSI EN 301 489-3 v1.2.1 (2000-8)**

**ETSI EN 301 489-3 v1.4.1 (2002-8)**

Electromagnetic Compatibility and Radio spectrum Matters (ERM);  
ElectroMagnetic compatibility (EMC) standard for radio equipment and services;

**ETSI EN 300 330-1 v1.3.1 (2001-6) (NUA)**

Electromagnetic compatibility and Radio spectrum Matters (ERM);  
Short Range Devices (SRD);  
Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems  
in the frequency range 9 kHz to 30 MHz;

**Machinery Directive 2006/42/EC**

<b>Authorised Signatory</b>
Date: March 2011
Signature: 
Name: Linda Thomas Head of Quality Assurance



The safety guidelines in accompanying product documentation must be observed.

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