ZoneSafe
User Manual

Tag Tester - ZS-1000-TT/ZS-1001-TT(NA)

Smart Gateway - ZS-1000-SG/ZS-1001-SG(NA)

www.brigade-electronics.com

Document Name
ZoneSafe Tag Tester Manual

Contents

1. Introduction

The Tag Tester and Smart Gateway are part of a modular ZoneSafe system and have the following uses:

Tag Tester : Detects ZoneSafe Tags and indicates to the user the battery status of a Tag, it also has network capability and relays.

Smart Gateway : 'The unit detects Antenna Units instead of tags and can either be part of our vehicle proximity system or an Independent Antenna Unit.

2. Tag Tester

2.1 How It Works

1. Present the tag within range of the Tag Tester (1-4m/3'-13' - adjustable).
2. The Tag Tester will read the battery level of the tag.
3. The Tag Tester indicates to the user whether the tag battery level is good (tick) or has low battery (cross) on the front of the unit.

The Tag Tester can also activate peripheral devices using its relays.

2.2 What's In The Box

Components					
					
Tag Tester	Power Supply Unit	M12 Cable Gland	M4 Screws (x 4)	2 Way Screw Terminal	5 Way Screw Terminal (x 2)

2.3 Specification

Tag Tester			
Electrical	Voltage Power	24V DC Input (+/-5% <10W	
Mechanical	Dimensions (incl. glands) Material Weight Relay Input	155 x 155 x 60mm/ 6" x 6" x 2.5" ABS / PC .45kg 2x Rated Current 1A @30V x1	
Communications	Ethernet	10-BaseT or 100-BaseTx	
Environment	Ingress Protection Temperature	IP67 (with no holes drilled) -10°C to +50°C/14°F to 122°F	
Radio	Transmit Frequency Recieve Frequency Range	125kHz Region Specific* Adjustable 1-4m/ 3'-13' approx. Receive: 50m typ	

*868.3MHz, 902.4MHz, 867.0MHz, 919.0MHz

2.4 LED Indicators

The Tag Tester tests the status of any ZoneSafe active tag. The unit reads a tag and displays the status of the battery, using red or green indicator LEDs and optional audible indicators. Daily use of the tag test unit ensures tag batteries ok.

- Power LED (Blue flashes 1sec on/off = normal operation)
- Battery OK LED (Green 3sec on = tag battery OK)
- Battery Low LED (Red 3sec on = tag battery Low)

3. Smart Gateway

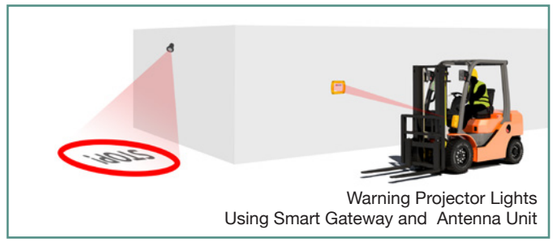
3.1 How It Works

In the example applications here it shows the wall mounted Smart Gateway unit detecting a forklift fitted with a ZoneSafe proximity warning system using Antenna Units. If proximity warning is not required for the operator then an Independent Antenna unit can be mounted to the vehicle to trigger the Smart Gateway instead of a full system.

The Smart Gateway detects the Antenna Unit and activates one or both of its relays which trigger, in these examples, a barrier or projection light.

Contact us for further information.


Vehicle Access Control Using a Smart Gateway and an Antenna Unit


Warning Projector Lights Using Smart Gateway and Antenna Unit

3.2 What's In The Box

Component					
					
Smart Gateway Unit	Power Supply Unit	M12 Cable Gland	M4 Screws (x 4)	2 Way Screw Terminal	5 Way Screw Terminal (x 2)

3.3 Specification

Smart Gateway			
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Mechanical	Dimensions (incl. glands) Material Weight Relay Input	155 x 155 x 60mm/ 6" x 6" x 2.5" ABS / PC .45kg 2x Rated Current 1A @30V x1	
Communications	Ethernet	10-BaseT or 100-BaseTx	
Environment	Ingress Protection Temperature	IP67 (with no holes drilled) -10°C to +50°C/ 14°F to 122°F	
Radio	Receive Frequency Transmit Frequency Range	125kHz Region Specific* Adjustable 3-9m/10'-30' approx.	

*868.3MHz, 902.4MHz, 867.0MHz, 919.0MHz

The Smart Gateway offers visual and audible indicators for both tag / vehicle detection & reader status:

- Power LED (Blue flashes 1sec on/off = normal operation)
- Antenna / Vehicle Detect LED (Blue flashes 50ms On = antenna unit detected)

POWER LED

READ LED

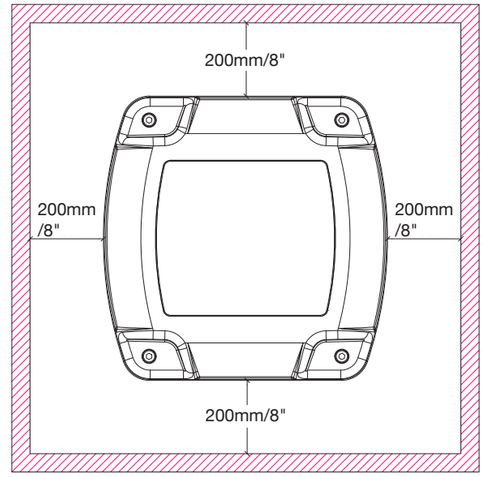
NOTE: ZoneSafe must be fitted and commissioned by an approved installer. No responsibility will be accepted for damage to systems caused by incorrect installation or misuse. Detection accuracy will depend on environmental and installation factors.

4. Installation

4.1 Installation Consideration for both Devices

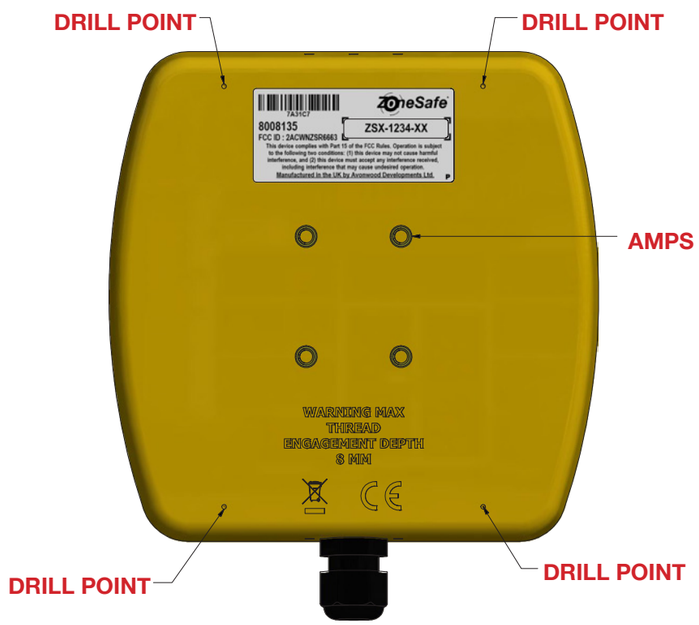
The following considerations should be made before installation:

- No metal should be within 200mm/8" of the top, bottom and sides of the reader (see image on right).
- No metal should be in front of the unit.
- Install power supply at least 1m/3' away or greater.
- Make a note of the serial number located on the back of the device. You will need this to set up and connect to the network.



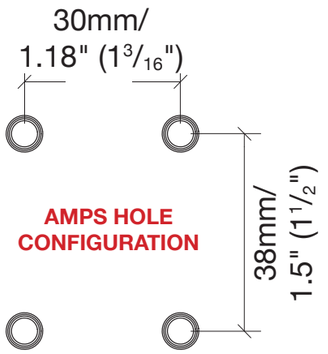
4.2 Fixings

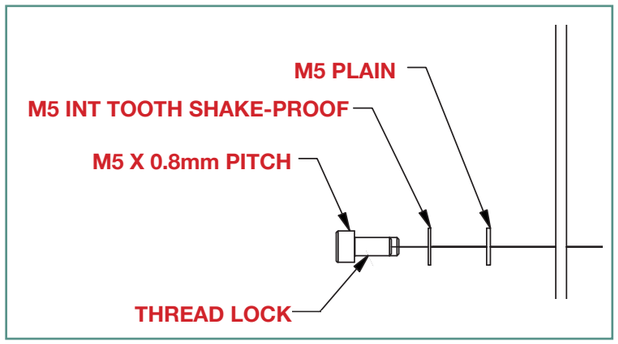
This has the option for drilling through the box and fixing using screws or bolts while retaining its IP rating. Max screw/bolt size M4.



- Alternatively use the AMPS hole configuration for RAM Mount Fixtures, use 1.5" ball fittings.
- Back fix with the four AMPS holes to suit your application.
- Shake-proof washers are recommended and thread locking liquid can also be used.

RAM Mount Ball
Base Fixing Option
(example fixing not included)



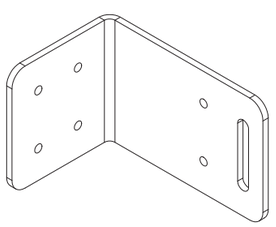


THE MAXIMUM THREAD ENGAGEMENT DEPTH OF 8MM MUST NOT BE EXCEEDED

4.3 Additional Brackets

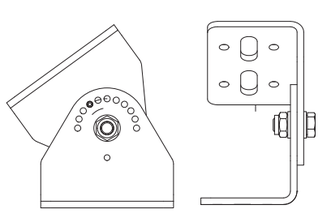
All ZoneSafe units come installed with four M5 threaded inserts in the AMPS hole pattern on the back. These can be fixed to directly, adapter plates can be fitted to the back of the units, RAM mounts can be used and we also have a range of additional brackets all of which have the AMPS hole configuration.

Right Angle Bracket Kit - ZSM7154-C



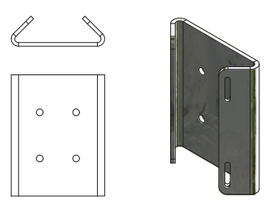
Right Angle Mounting Bracket.

PivotLoc Bracket Kit - ZSM7154-A



The PivotLoc Bracket which can be rotated and locked off in one of 11 angled positions.

Pole Mount Bracket Kit - ZSM7154-B



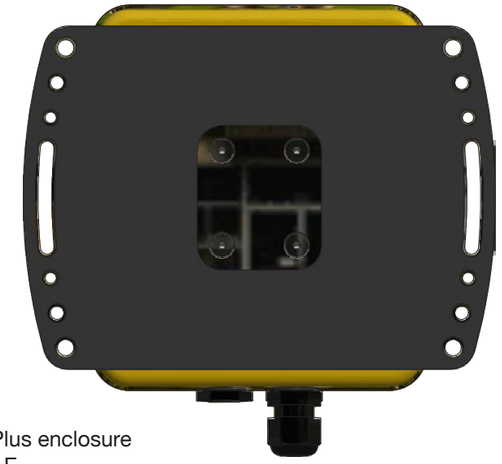
The Pole Mount Bracket can be used on poles with a diameter of between 50-100mm/2"-4" with the use of worm drive hose clamps x2 or zip / cable ties (not included).

4.4 Adaptor plates

An adaptor plate is available for all the units. These attach via four countersunk M5 nylon patched screws.

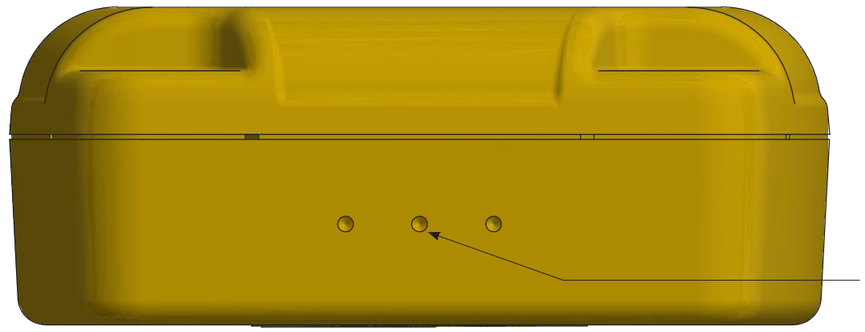
The plate provides slots and holes on the sides, it is rubber backed to prevent scratching. Two of these plates can be bolted back to back to clamp between vertical fence railing, the rubber backing helping to grip in place.

NOTE:
Please make a note of the serial number located on the back of the device. You will need this to set up and connect to the network.



Adaptor Plate fitted to the Plus enclosure
P/N ZSM6908-E

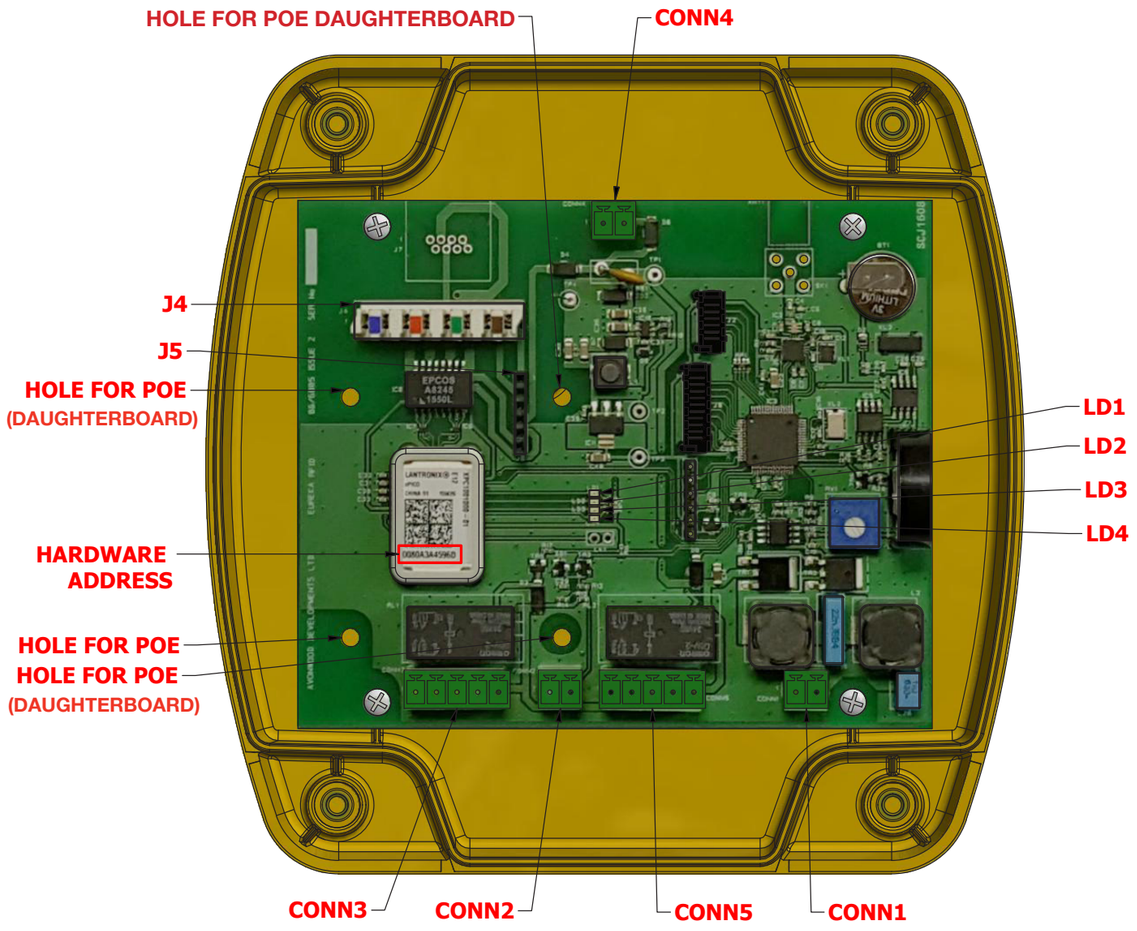
4.5 Cable Entry



NOTE : Care should be taken when drilling holes through enclosure.

- Supply 24VDC +/- 5% 10W or use the Power over Ethernet (PoE daughter board module needed - see page 12). Use a suitable Cat5e data cable to connect comms.
- Run power and data into your device using waterproof cable glands, (Max 16mm/0.63" (5/8") Diameter) or internally threaded conduit (Max 20mm/0.75" (3/4") diameter). Only use the central drill point as indicated above.
- Holes can be made by drilling through one of the marked locations on the box.
- For an IP67 application use rated glands or enter through the underside with suitably sealed conduit. Entry through the back is possible but if ingress protection is needed then the entry hole must be suitably sealed.

5.0 Wiring For Tag Tester & Smart Gateway



CONN1 : ANT (2 Way for Antenna)	
Pin No.	Description
1	Antenna -
2	Antenna +

CONN2 : INPUT (2 Way for Volt Free Contacts)	
Pin No.	Description
1	0V
2	Input +

CONN4 : POWER (2 Way for Power)	
Pin No.	Description
1	OV IN
2	+ 24V IN

CONN3 & 5 : RELAY 1 & 2 (5 Way)	
Pin No.	Description
1	0V
2	N/O
3	N/C
4	Common
5	+ 24V OUT (100mA max)

5.1 Tag Tester Range Adjustment

RV1 - Range

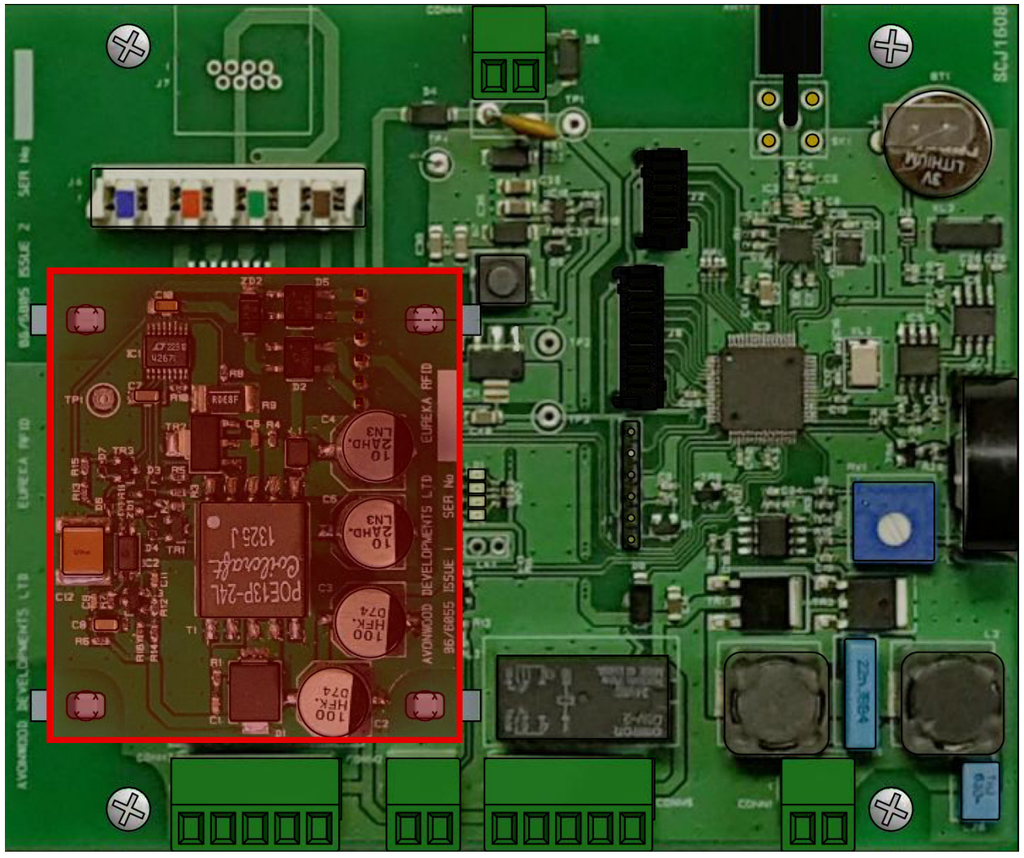
Turn clockwise to increase the detection range or anti-clockwise to reduce the range

PCB LED INDICATORS		
ID	Description	Function
LD1	Ethernet Link	LED is ON when Ethernet port has a valid link
LD2	Ethernet Speed	LED is ON when Ethernet is in 100Mbps mode
LD3	Ethernet Activity	LED blinks when there is activity on the Ethernet port
LD4	Ethernet Duplex	LED is ON when Ethernet is in half duplex mode

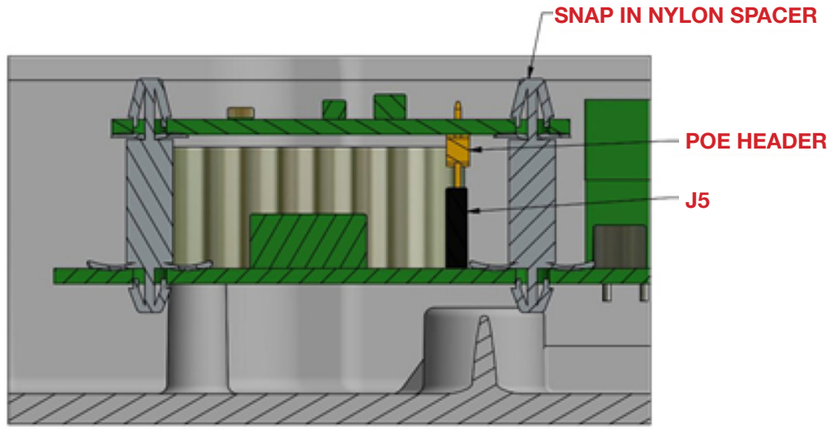
J4 ETHERNET (8 Way)	
Pin No.	Description
1	BLUE/WHITE
2	BLUE
3	ORANGE/WHITE
4	ORANGE
5	GREEN/WHITE
6	GREEN
7	BROWN/WHITE
8	BROWN

5.2 PoE Daughter Board Kit

The PoE (Power Over Ethernet) Daughter Board is fitted to the Reader PCB as shown in Figure 4 below.



Please ensure that the plastic spacers are inserted correctly as per Figure 5 below.
For further information about ethernet wiring, please see page 5.



6. Configuration & Settings

The range on the Reader can be adjusted to detect tags between 1 and 4 metres/3 and 13 feet away. The adjuster is marked as RV1 on page 11. Using a flathead screwdriver, turn the adjuster to change the size of the detection zone.

- Turn the adjuster clockwise to increase the size of the detection zone
- Turn the adjuster anti-clockwise to decrease the size of the detection zone

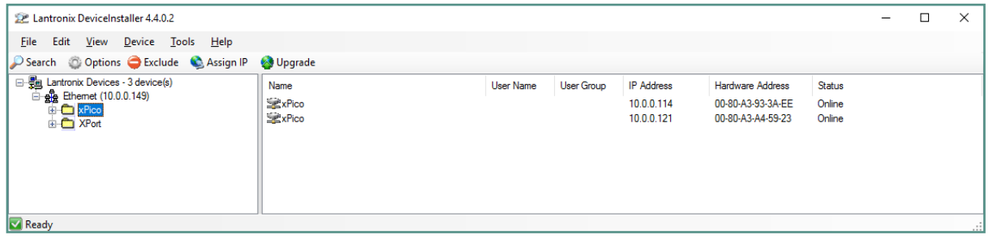
Please note - Maximum and minimum range can be affected by the mounting location of the unit and power supply ratings.

6.1 Network Connection

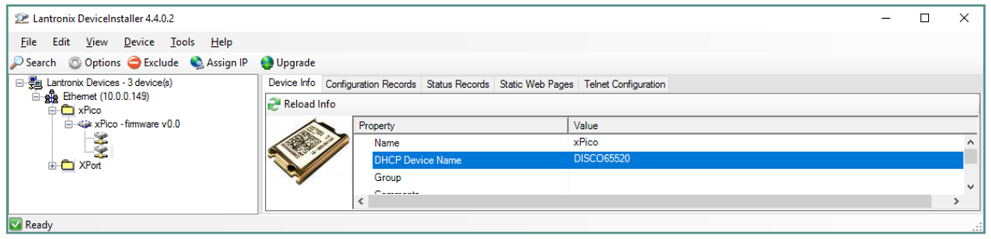
All Readers are shipped with DHCP enabled and a DHCP name using the Serial Number of the device. The Serial Number can be identified from the label on the back of the Reader and the hardware address.

When the device is connected to a network port it will be assigned an IP address from your network's DHCP server if available. To discover the IP address assigned to a particular device you will need to use the Lantronix Device Installer software, which can be downloaded from http://www.lantronix.com.

Run the "Lantronix Device Installer" software from a PC on the same network as The Reader.
It will automatically start searching for devices on the network.



Device Installer will show all devices located on your network. To identify the correct device from its Serial Number, double-click a device with the name "xPico". This will show a Device Info tab. Use the DHCP Device Name property value to determine if this is the correct device.



Having determined the correct device, note the IP Address assigned to it and open a web browser to that address, for example http://10.0.0.121. When prompted for a username and password, leave both fields blank and click OK.

6.2 Tag Tester & Smart Gateway Settings

Once connected, the user can access the following Reader settings via the internal webpage:

6.2.1 General

The General Settings page contains the primary user configurable parameters of the device.

A tooltip is displayed when hovering the cursor over each setting explaining its purpose. Click the Save button for changes to take effect.

6.2.2 Alarms

The Alarms page contains the alarm settings for the device.

A tooltip is displayed when hovering the cursor over each setting explaining its purpose. Click the Save button for changes to take effect.

6.2.3 Date & Time

The Date & Time settings allow you to check and set the current date/time on the device. This value will be used to record the time of events and tag reads. Click the Save button for changes to take effect.

6.2.4 Relays

The Relays page contains the relay settings for the device.
A tooltip is displayed when hovering the cursor over each setting explaining its purpose. Click the Save button for changes to take effect.

6.2.5 Inputs

The Inputs page contains the input settings for the device.

A tooltip is displayed when hovering the cursor over each setting explaining its purpose. Click the Save button for changes to take effect.

6.2.6 Web Server

The Web Server page allows configuration of the HTTP settings for sending event data and tag read data to the My ZoneSafe website and retrieval of Access Control settings. A tooltip is displayed when hovering the cursor over each setting explaining its purpose. Click the Save button for changes to take effect.

6.2.8 Access Control

The Access Control web page displays a list of RFID tag numbers that are permitted if the Access Control Mode is enabled in the General settings (See section 11). Tag numbers can be manually added or removed using this page. The Clear All Tags button will remove the complete list of permitted tags from the device.

If the “Get Access List Enable” option is enabled, the software will periodically request a list of permitted tag numbers for this device from the My ZoneSafe website.

7. FCC Compliance Information

Note: 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 Brigade Electronics may void the user’s authority to operate the equipment.

FCC ID: 2ACWNZSR6663

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