



# INSTALLATION AND OPERATING MANUAL

iWAP107, iRFID107



Document Number 404368(12) Refer to Extronics DDM for release status  
Based on type approval document 403431

The Photograph on the front page shows the iWAP107/iRFID107 Aluminium Enclosure version; a Stainless-Steel version is also available.

For warranty information, refer to Terms and Conditions at <http://www.extronics.com>

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## 1 Introduction

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The iWAP107 and iRFID107 are ATEX and IECEx approved Zone 1 Wireless Device Enclosures with intrinsically safe RF outputs; they are designed to allow the deployment of wireless networks in hazardous areas. The concept allows installation of equipment from leading WLAN vendors such as Cisco, Aruba, Aeroscout and Motorola. Each type of Access Point or RF transmitting device is rigorously checked and tested by Extronics to ensure conformity to the latest standards. This means that the user may select the vendor of their choice when extending a WLAN to hazardous areas. However equipment not previously approved will require assessment to determine its suitability.

The intrinsically safe RF outputs of the iWAP107/iRFID107 allows users to choose any antenna for use with their wireless hardware e.g. Extronics iANT2xx range of high quality rugged outdoor antennas. Any antennas not listed in the Extronics range must be assessed to ensure they meet the requirements for installation of non-electrical equipment in hazardous areas. This assessment can be provided by Extronics or done by the user. Up to eight antennas can be utilized, allowing the MIMO functionality of the latest compatible wireless access points to be implemented, providing optimum coverage and maximum data throughput on Chemical Plants, Oil Refineries or Oil & Gas Platforms. Optional features include surge arrestors for lightning suppression in outdoor installations and single mode or multimode fibre optic inputs to allow for extended Ethernet link distance.

## 2 Safety Information and Notes

### 2.1 Storage of this Manual

Keep this user manual safe and in the vicinity of the device. All persons required to work on or with the device should be advised on where the manual is stored.

### 2.2 Special Conditions for Safe Use

#### 2.2.1 ATEX/IECEX

1. Contact Extronics for information on the dimensions of the flameproof joints.
2. The RF output is only to be connected to an antenna suitable for the hazardous location; refer to associated RF galvanic isolator iSOLATE501 equipment certificate (IECEX trc 15.0015X / TRAC15ATEX0050x) or iSOLATE500 equipment certificate (IECEX BAS 13.0064X / Baseefa13ATEX0112X), and associated instructions.
3. If the RF output connector is not intended to be connected to a cable and/or antenna, the output connector must be capped.
4. Flamepath joints are not intended to be repaired.
5. Breather/Drain valves may be fitted providing that they are suitably ATEX/IECEX Ex db equipment certified.
6. Cables connected to the optical input shall be installed according to IEC 60079-14 K.3 and be suitably mechanically protected.

### 2.3 List of Notes

The notes supplied in this chapter provide information on the following.

- Warning!
  - Possible hazard to life or health.
- Caution
  - Possible damage to property.
- Important
  - Possible damage to enclosure, device or associated equipment.
- Information
  - Notes on the optimum use of the device

**Warning!** Installation of the iWAP107/iRFID107 must be performed in accordance with IEC 60079-14 and IEC 60079-25. Maintenance and inspection must be performed in accordance with IEC 60079-17.

**Warning!** Installation of the iWAP107/iRFID107 is only to be performed by skilled electricians and instructed personnel in accordance with national legislation.

**Warning!** The iWAP107/iRFID107 contains INTRINSICALLY SAFE circuits.

**Warning!** The iWAP107/iRFID107 Intrinsically Safe RF output ports are located in the positions shown in Section 3.3. Only antennas in accordance with Section 3.11 may be connected to these ports. Refer to Section 3.12 for antenna installation requirements.

**Warning!** The iWAP107/iRFID107 **MUST** be earthed. Refer to Section [earthing] for details.

**Warning!** The iWAP107/iRFID107 must **NOT** be installed in hazardous areas requiring Category 1, M1 or M2 equipment.

**Warning!** Although antennas connected to the Intrinsically Safe RF outputs of the iWAP107/iRFID107 may be installed in hazardous areas requiring Category 1 equipment, the iWAP107/iRFID107 flameproof enclosure must **NOT** be installed in these environments.

**Warning!** The iWAP107/iRFID107 flameproof enclosure must **NOT** be opened when an explosive gas or dust atmosphere is present, or when the equipment is energized.

**Warning!** The iWAP107/iRFID107 flameproof enclosure lid must be secured only with the bolts supplied, and these must be tightened to the correct torque value. See Section 3.2.2 for details. Contact Extronics for spare bolts.

**Warning!** The iWAP107/iRFID107 flameproof enclosure must only be fitted with suitably approved cable entry devices. See Section 3.3 for details.

**Warning!** Do not exceed the RF Threshold Power for the equipment group in which the iWAP107/iRFID107 and its antennas are to be installed; it must be controlled in accordance with IEC 60079-0, and must not exceed the following levels:

- IIC – 2W (+33dBm)
- IIB – 3.5W (+35.4dBm)
- IA – 6W (+37.7dBm)
- III – 6W (+37.7dBm)

See Section 0 for an example of how to calculate the RF Threshold Power

**Warning!** The iWAP107/iRFID107 must not be modified in any way.

**Warning!** There are no user-serviceable parts below the top plate of the iWAP107/iRFID107 - see Section 3.5 for details. Always refer service enquiries to Extronics.

**Warning!** Hazardous voltages are present within the iWAP107/iRFID107 enclosure.

**Warning!** Hot surfaces may be present within the iWAP107/iRFID107 enclosure - observe the warning labels fitted.

**Warning!** Optical radiation hazards may be present within the iWAP107/iRFID107 enclosure - observe the warning labels fitted.

**Warning!** The iWAP107/iRFID107 may weigh up to 70Kg. Exercise care when handling and mounting.

**Warning!** DO NOT lift the iWAP107/iRFID107 using the threaded entries, N-type RF connectors or door bolts. Lift only using suitably approved slings, fitted by suitably qualified personnel.

**Important** Ensure that **NO TOOLS** come into contact with the flamepath of the enclosure, as this may cause irreparable damage and render the unit unsafe.

**Important** Always re-apply a thin layer of Loctite 8104 or Loxeal GS9 silicone grease to the enclosure flame paths whenever the iWAP107/iRFID107 flameproof enclosure is opened. This is required to maintain the IP rating of the enclosure.

**Important** Do not exceed the power supply parameters specified on the iWAP107/iRFID107 external rating plate.

**Important** Only replace the fuse with the same value and type indicated on the internal fuse identification label.

**Important** Ensure that only the correct fibre transceiver format/power is connected to the iWAP107/iRFID107. Damage to the iWAP107/iRFID107 fibre interface or customer equipment may occur if the wrong format/excessive optical power is used.

**Warning!** When a device is fitted with a coin cell and the coin cell is required to be replaced, it shall only be fitted with the exact same type coin cell as marked on the device.

### 3 Installation

#### 3.1 Mounting

**Warning!** The iWAP107/iRFID107 stainless steel enclosure weighs approximately 70Kg. Exercise care when handling, and use suitable mounting points and structures. Mount the enclosure **ONLY** using the mounting points shown.

**Warning!** DO NOT lift the iWAP107/iRFID107 using the threaded entries, N-type RF connectors or door bolts. Lift only using suitably approved slings, fitted by suitably qualified personnel.

Mount the iWAP107/iRFID107 enclosure to a suitable structure, using the mounting points shown.

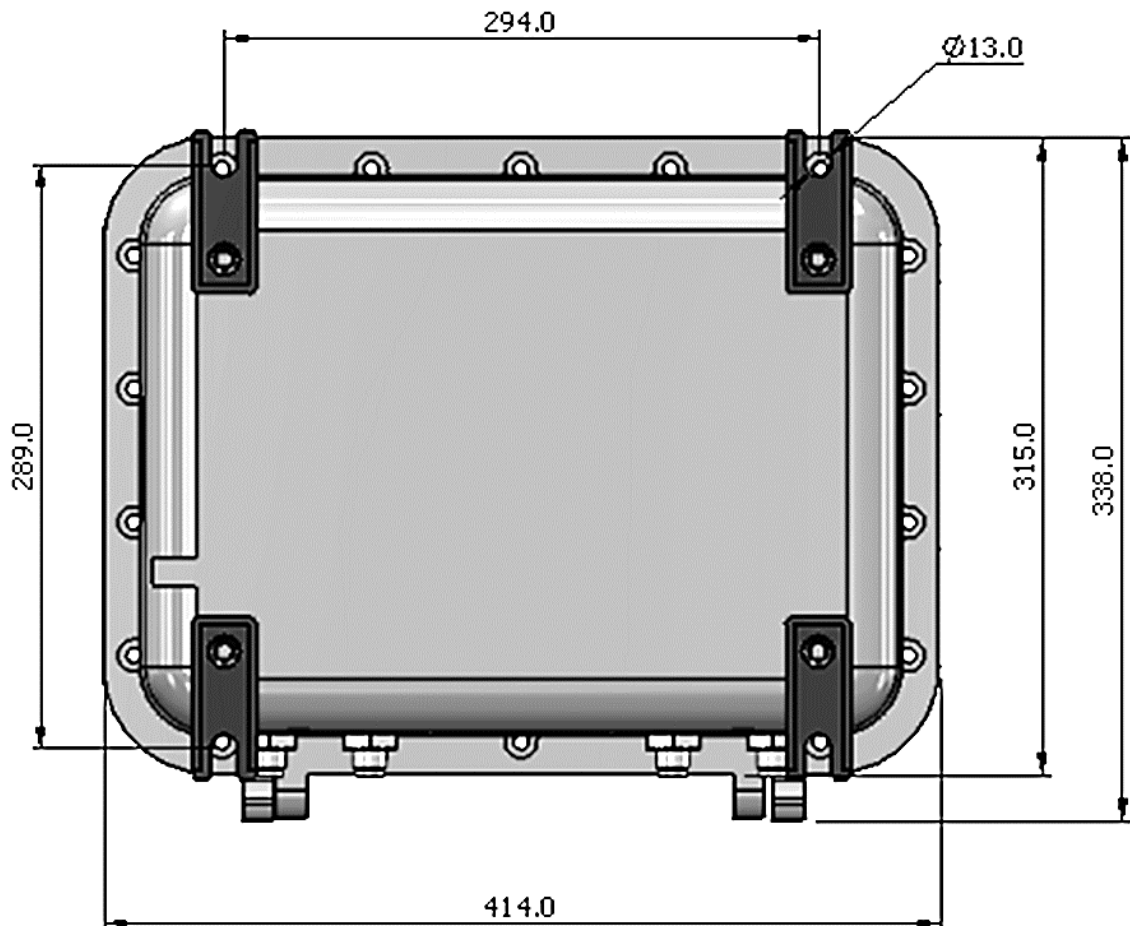


Figure 1: Aluminium Enclosure Mounting Dimensions



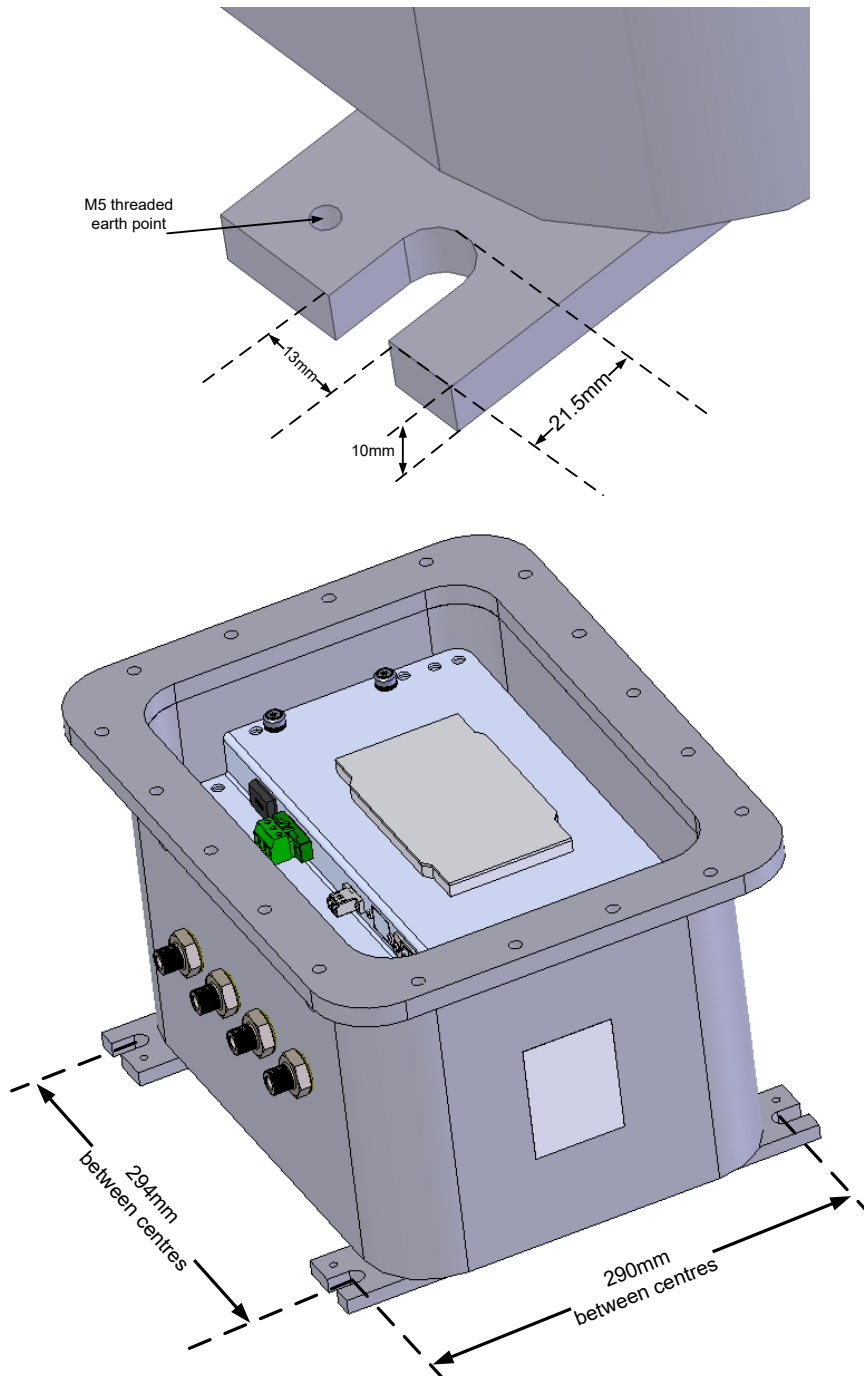


Figure 1: iWAP107/iRFID107 Stainless Steel Enclosure Mounting Points

### 3.2 Opening and Closing the Enclosure

**Important** Ensure that **NO TOOLS** come into contact with the flamepath of the enclosure, as this may cause irreparable damage and render the unit unsafe.

**Warning!** The iWAP107/iRFID107 flameproof enclosure must **NOT** be opened when an explosive gas or dust atmosphere is present, or when the equipment is energized.

**Warning!** The iWAP107/iRFID107 flameproof enclosure lid must be secured only with the bolts supplied, and these must be tightened to the correct torque value. Contact Extronics for spare bolts.

**Important** Always re-apply a thin layer of Loctite 8104 or Loxeal GS9 silicone grease to the enclosure flame paths whenever the iWAP107/iRFID107 flameproof enclosure is opened. This is required to maintain the IP rating of the enclosure.

### 3.2.1 Opening the Enclosure (Aluminium and Stainless Steel enclosures)

The flamepaths of the iWAP107/iRFID107 enclosure are supplied with grease applied to protect them. This can make the enclosure lid difficult to open as the grease can cause it to stick. Extronics recommend the use of a double suction lifter. This tool is included with iWAP107/iRFID107 deliveries and is available from Extronics or hardware and builders supply stores. Extronics recommend using a lifter that has a working load of 50kg minimum and approximate dimensions 300mm x 120mm

- Remove all bolts, using a wrench with an 8mm hex head. Store the bolts carefully to avoid damage or loss.
- Attach the suction lifter as per the instructions provided and release the door.  
Note, moving the door side to side may help in loosening the grease

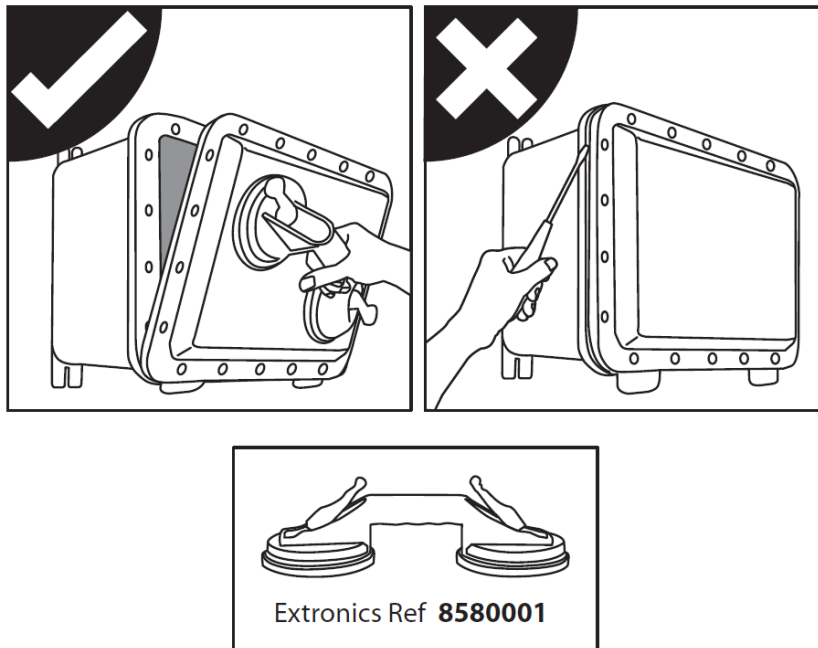


Figure 2: Opening iWAP107/iRFID107 Enclosure with Suction Lifter

### 3.2.2 Closing the Enclosure

- Check that the correct grease (Loctite 8104 or Loxeal GS9) has been applied to the flame-path, and that it is free of damage.
- Check all bolts are the correct type and free from damage.
- Re-insert the bolts and hand-tighten only.
- Using a torque wrench fitted with an 8mm hex head, tighten the bolts in opposite corners of the box, then work around the box. Use the following maximum torque.

#### 3.2.2.1 Lid Bolt Torques

Enclosure material	Maximum Bolt Torque
Aluminium	20Nm
Stainless Steel	44Nm

Table 1: Enclosure Bolt Torques

### 3.3 Cable Entries

**Warning! The iWAP107/iRFID107 flameproof enclosure must only be fitted with suitably approved cable entry devices.**

**Warning! The iWAP107/iRFID107 protective plastic transport caps fitted to all threaded cable entries MUST be replaced with suitably certified cable glands or stopping plugs before installation in a hazardous area.**

**Warning! Any iSOLATE-CT RF connector transits fitted to the iWAP107/iRFID107 must NOT be loosened or removed by the user under any circumstances, as their flameproof protection may be damaged by this.**

#### 3.3.1 Typical Cable Entries and Connections

A typical iWAP107/iRFID107 enclosure is supplied with entries and connectors as shown in Figure 3.

- Connections A-D are INTRINSICALLY SAFE outputs providing galvanically isolated RF signals (see Section 17 for details), carried on conventional 50Ω impedance N-type female connections. The N-type connections are the front part of the iSOLATE-CT devices which transit through the flameproof wall of the enclosure and are approved as part of the iWAP107/iRFID107 ATEX/IECEX certification.
- Entries E and F are M20 x 1.5 – 6H threaded Ex d entries. Entry F is for the power supply, entry E for the data connection.
- The position and configuration of cable entries and connections can vary depending on the iWAP107/iRFID107 ordered. Check with Extronics for more information if required.

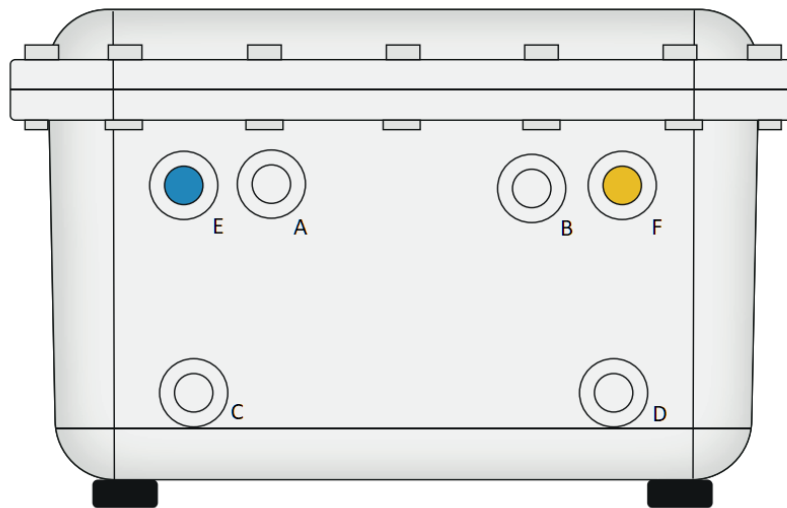


Figure 3: iWAP107/iRFID107 Aluminium Enclosure External Entries and Connections  
Antenna layout "B4" in the example shown

### 3.4 Earthing

**Warning!** The iWAP107/iRFID107 **MUST** be earthed. It must be connected to the plant earth system using at least one of the external bonding points, using a minimum 4mm<sup>2</sup> conductor. The earth cable must be installed in accordance with the requirements of IEC 60079-14.

**Warning!** The iWAP107/iRFID107 enclosure door earth bond must not be removed.

**Warning!** The iWAP107/iRFID107 internal power input connector has an earth connection, which must be terminated to the protective earth conductor of the incoming power supply.

#### 3.4.1 iWAP107/iRFID107 earth bond point (stainless steel enclosure)

There is an M5 threaded earth bond point on each of the 4 enclosure feet.

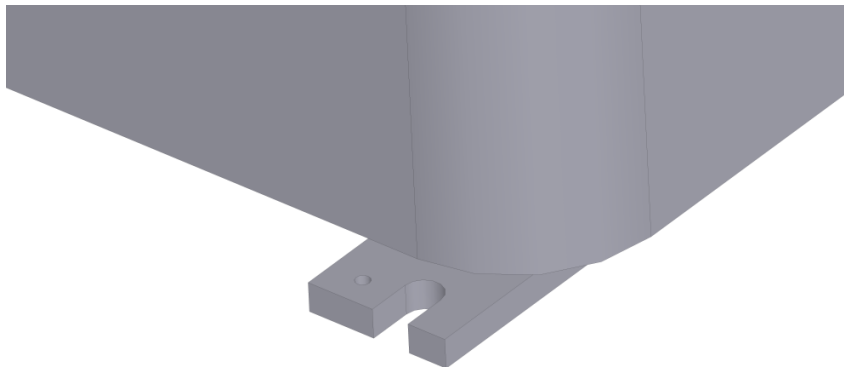


Figure 4: iWAP107/iRFID107 Stainless Steel Enclosure External Earth Bond Points

### 3.4.2 iWAP107/iRFID107 earth bond point (aluminium enclosure)

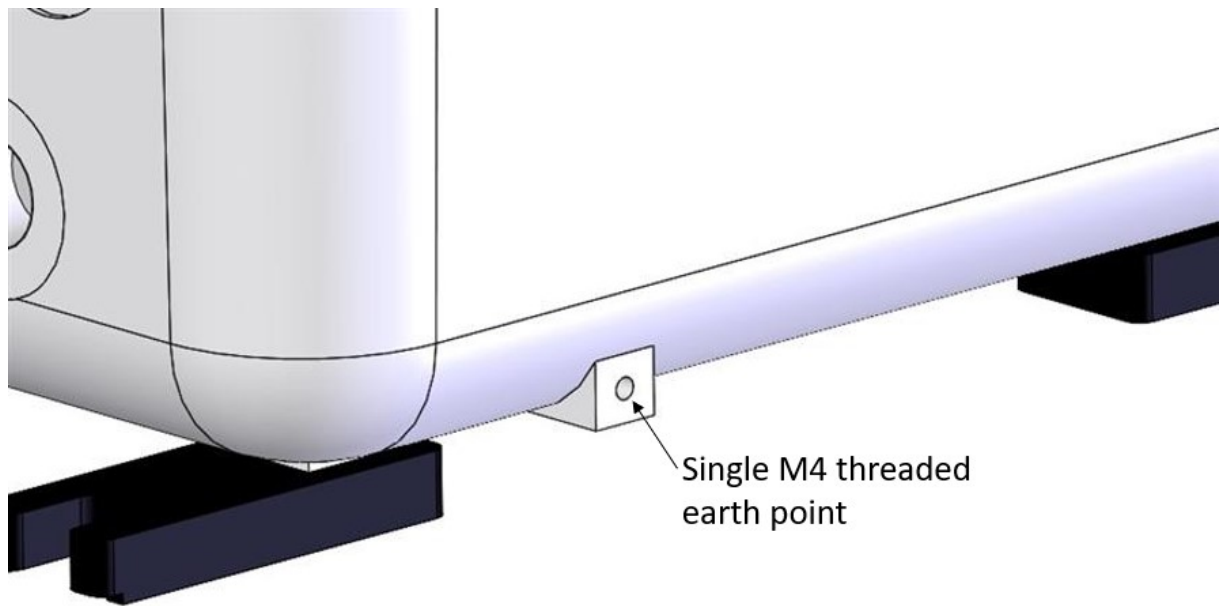


Figure 5: iWAP107/iRFID107 Aluminium Enclosure Earth Bond Point

## 3.5 Electrical Installation

**Important** Do not exceed the power supply parameters specified on the iWAP107/iRFID107 external rating plate.

**Important** Only replace the fuse with the same value and type indicated on the internal fuse identification label.

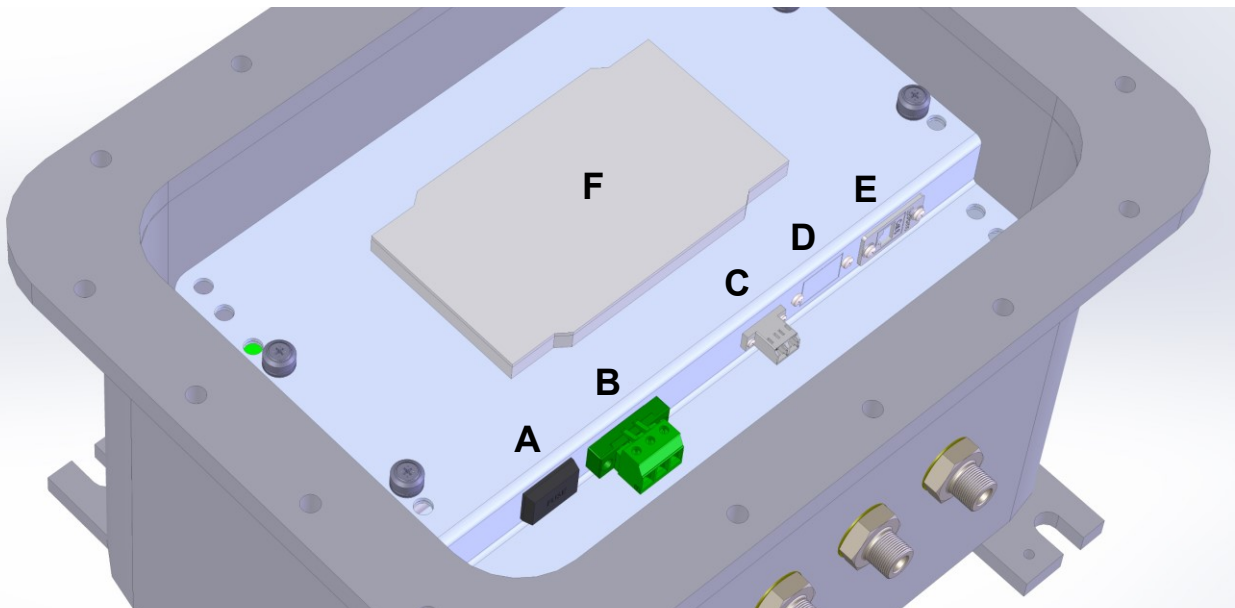


Figure 6: iWAP107/iRFID107 Internal Connections Showing All Options

Designator	Purpose	Comments
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A	Fuse Holder	Contains 1 active fuse and 1 spare. Not fitted on POE version. See Section 3.7
B	Power input	Mains (L,N,E) or DC (+,-,E) input, dependent on product configuration. Not fitted on POE version. See Section 3.6 for details.
C	Fibre input	This can be single mode or multimode fibre, or replaced by a blanking plate, depending on product options. See Section 3.9.3 for details
D	Ethernet input	100/1000 BaseT CAT6A data connection. It may also be replaced by a blanking plate, depending on product options. See Section 3.9.1 for details
E	Console port	This is a serial console port for the installed wireless device. Refer to wireless device manual for connection details
F	Fibre splice tray	This is a 12-way fibre splice tray, only fitted when the fibre option is selected.

Table 2: iWAP107/iRFID107 Internal Connection/Features

### 3.6 Power supply

**Important** The iWAP107/iRFID107 may be powered from a number of different power sources, depending on its configuration. Refer to the rating plate of the unit supplied for details.

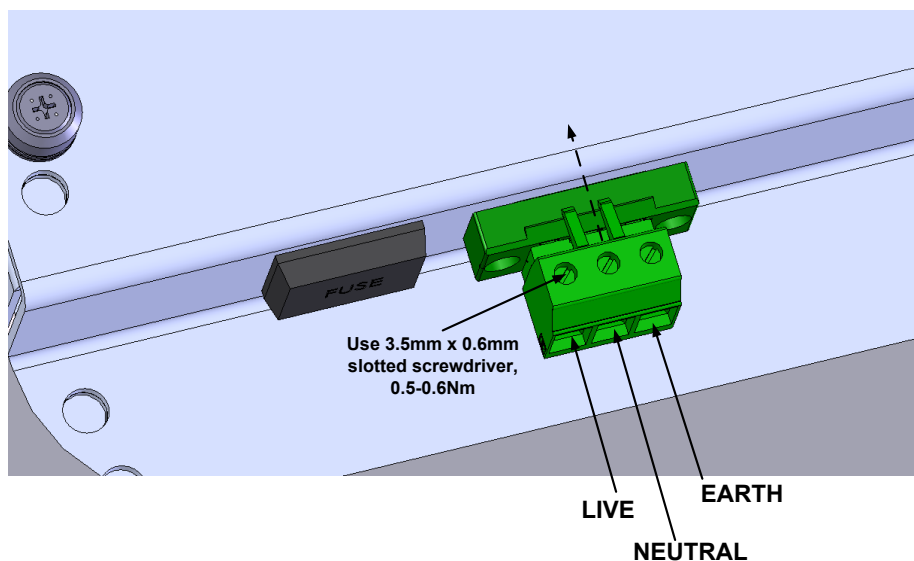


Figure 7: iWAP107/iRFID107 Mains Power Connection

The power connection is made with a 2-part screw-terminal connector (supplied), the plug part

is Phoenix Contact 1804917, and spare plugs can also be supplied by Extronics. It has a minimum tightening torque of 0.5Nm, a maximum of 0.6Nm, and requires a 3.5mm x 0.6mm slotted screwdriver.

Wire Type	Minimum Cross Sectional Area	Maximum Cross Sectional Area
Single Solid Core	0.2mm <sup>2</sup>	4mm <sup>2</sup>
Single Stranded Wire	0.2mm <sup>2</sup>	4mm <sup>2</sup>
Single Stranded Wire, With Ferrule With/Without Sleeve	0.25mm <sup>2</sup>	4mm <sup>2</sup>
2 Solid Conductors With Same Cross Section	0.2mm <sup>2</sup>	2mm <sup>2</sup>
2 Stranded Conductors With Same Cross Section	0.2mm <sup>2</sup>	1.5mm <sup>2</sup>
2 Stranded Conductors With Same Cross Section, With Ferrules Without Sleeves	0.25mm <sup>2</sup>	1.5mm <sup>2</sup>

Table 3: iWAP107/iRFID107 Power Connector Wire Gauges

### 3.7 Fusing

#### 3.7.1 Fuse Ratings

**Important Only replace the fuse with the correct type, having established the reason for the fuse blowing.**

The iWAP107/iRFID107 is fitted with a single fuse on the Live circuit, of either a 1A or 2A, depending its configuration. The fuse requirement for the specific model supplied is written on the top plate next to the fuse holder.

The iWAP107/iRFID107 contains surge suppression and filtering devices which may cause the fuse to blow if the unit is subjected to power surges or transients.

Replacement fuses should be either 1 or 2A Time-lag 20mm x 5mm HRC Fuses, rated at 250VAC, 1500A Interrupt Rating, for example Littelfuse 0215001.MXP or 0215002.MXP.

#### 3.7.2 Changing Fuse

See Figure 8 for access to Fuse. The fuse holder also carries a spare fuse for convenience.

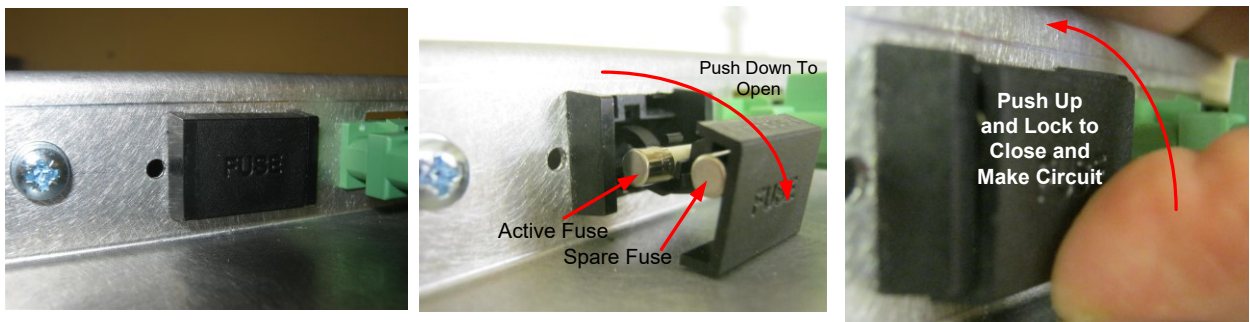


Figure 8: Fuse Access

### 3.8 External Overcurrent Protection

The iWAP107/iRFID107 should be installed on a circuit with a double-pole circuit breaker

of a maximum of 25A. This is the maximum current rating of the smallest internal chassis earth bond in accordance with EN60950-1 2.6.3.3. Refer to Extronics if it becomes necessary to exceed this rating.

### 3.9 Data Connections

#### 3.9.1 Copper Ethernet

**Information** Check that the line speed of the switch port to which the iWAP107/iRFID107 is connected matches the iWAP107/iRFID107 port configuration, otherwise communication may not be established.

If Copper Ethernet is specified, this will be terminated in a standard CAT5E RJ45 Socket on the front plate of the iWAP107/iRFID107, Position D in Figure 6. Typically the interface will be an IEEE 10/100/1000BaseT format, but this is dependent on the access point installed.

Terminate the RJ45 plug as follows (EIA 568B standard):

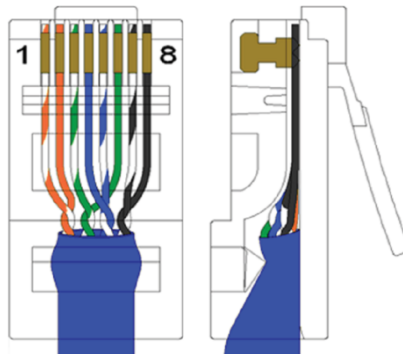


Figure 9: RJ45 CAT5E EIA 568B Plug Wiring

#### 3.9.2 Power-Over-Ethernet (POE)

If Power-Over-Ethernet (POE) is used, the format will depend on the access point installed in the iWAP107/iRFID107. Ensure that the correct Power Sourcing Equipment (PSE) is used. Connect the RJ45 cable per Section 3.9.1.

#### 3.9.3 Optical Fibre

**Warning!** Optical radiation hazards may be present within the iWAP107/iRFID107 enclosure – observe the warning labels fitted.

**Important** Ensure that only the correct fibre transceiver format/power is connected to the iWAP107/iRFID107. Damage to the iWAP107/iRFID107 fibre interface or customer equipment may occur if the wrong format/excessive optical power is used.

The iWAP107/iRFID107 optical fibre format may be any of the following, refer to product option code #5 for details. Other optical formats are available on request.

Option #5	Fibre Format	Connection	Transmitter Power	Receiver Sensitivity	Max Receiver Input Without	Wavelength	Typical Range



					<b>Damage</b>		
SX	1000Base-SX	LC Duplex Multimode 62/125µm or 50/125µm	-1 to -9dBm (50/125µm)	-19dBm	-1dBm	850nm	550m (50/125µm)
LX	1000Base-LX	LC Duplex Single Mode 9/125 µm	-3 to -9.5dBm	-20dBm	-3dBm	1310nm	20km

Table 4: Fibre Formats

### 3.10 Intrinsically Safe RF Outputs

**Warning!** The iWAP107/iRFID107 Intrinsically Safe RF output ports are located in the positions shown in Section 3.3. Only antennas in accordance with Section 3.11 may be connected to these ports. Refer to Section 3.12 for antenna installation requirements.

**Warning!** Although antennas connected to the Intrinsically Safe RF outputs of the iWAP107/iRFID107 may be installed in a hazardous areas requiring Category 1 equipment, the iWAP107/iRFID107 flameproof enclosure must **NOT** be installed in these environments.

**Warning!** Do not exceed the RF Threshold Power for the equipment group in which the iWAP107/iRFID107 and its antennas are to be installed; it must be controlled in accordance with IEC 60079-0, and must not exceed the following levels:

- IIC – 2W (+33dBm)
- IIB – 3.5W (+35.4dBm)
- IIA – 6W (+37.7dBm)
- III – 6W (+37.7dBm)

The RF outputs of the iWAP107/iRFID107 are approved as:

**Ex ia IIC Ga**  
**Ex ia IIIC Da**  
**U<sub>m</sub> = 253V<sub>r.m.s</sub>**

**Refer to Figure 3 for location of Intrinsically Safe RF outputs of iWAP107/iRFID107 with "B4" layout as example**

### 3.10.1 Example of RF threshold power calculation

The following example shows how the RF threshold power may be calculated:

Maximum transmitter output power (from transmitter datasheet) = 20dBm (100mW)

Coaxial cable loss = 2dB

Antenna gain = 5dBi

Threshold power = 20dBm - 2dB + 5dBi

Threshold power = 23dBm (200mW)

**Warning! Due to the typical maximum transmit power of UHF readers (in the case of iRFID107), customers may need to install attenuators or excess lengths of RF cable to comply with maximum RF thresholds. Contact Extronics for more information.**

### 3.11 Antenna Requirements

Antennas connected to the iWAP107/iRFID107 Intrinsically Safe RF outputs must be assessed as 'simple apparatus' in accordance with IEC 60079-11. Antennas supplied by Extronics for use with the iWAP107/iRFID107 already meet these requirements. It is possible to assess other antennas for this purpose, contact Extronics for details.

### 3.12 Antenna Installation

Antennas approved by Extronics for use with the iWAP107/iRFID107 may either be fitted directly to the RF connectors of the iWAP107/iRFID107, or via a length of coaxial cable.

If antennas are sited remotely from the iWAP107/iRFID107 flameproof enclosure, any metallic parts of the antennas must be isolated from earth by  $> 500V_{r.m.s.}$ , to prevent hazardous earth currents from flowing in the coaxial cable.

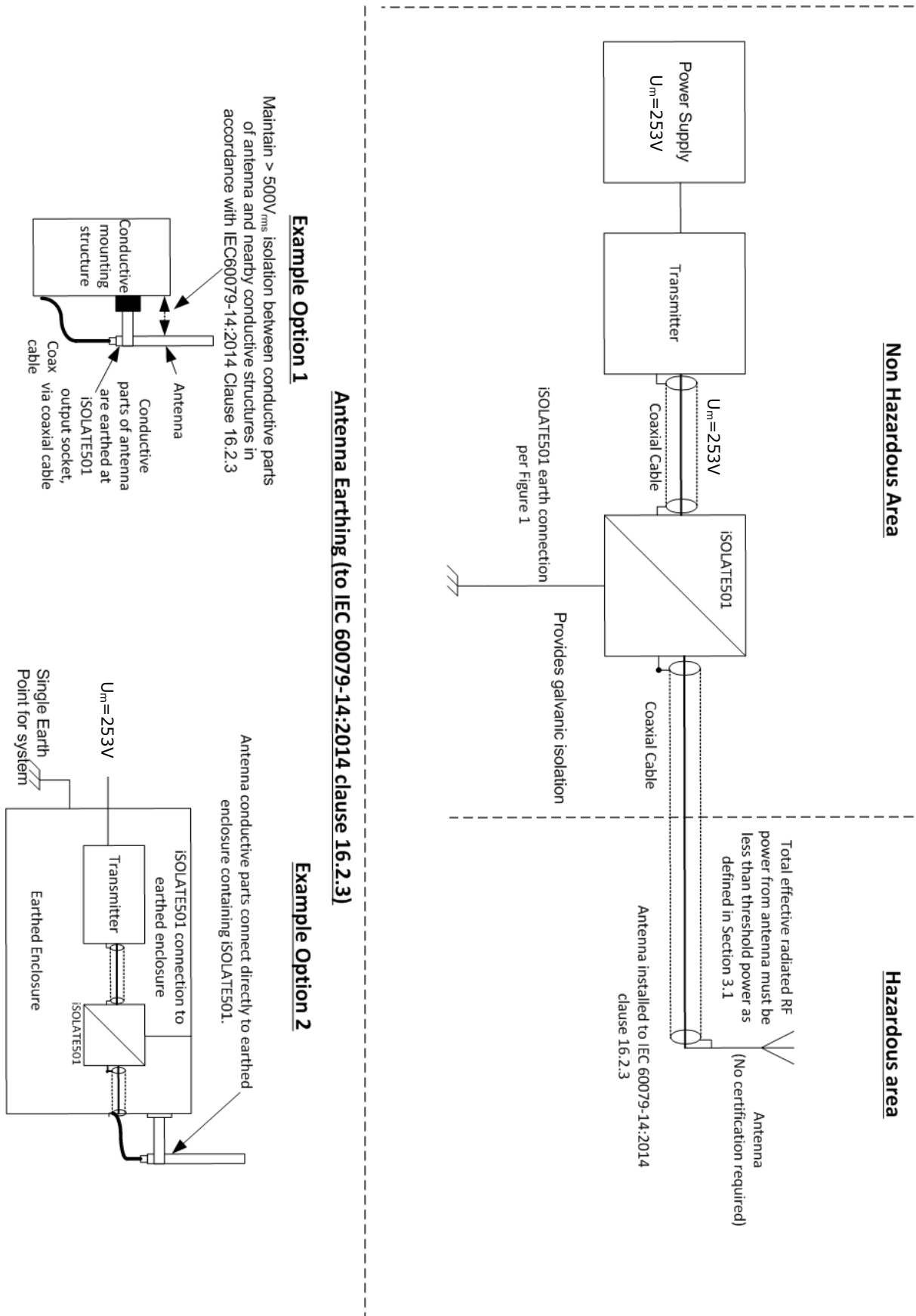


Figure 10: iWAP107/iRFID107 IS RF Installation Diagram

### **3.13 Prevention of Electrostatic Charging**

The iWAP107/iRFID107 enclosure can build up electrostatic charge on its surfaces, so the following steps are to be followed to reduce static charge build up:

Static charge build up should be reduced by:

- Connecting the enclosure to a suitable earth point
- Cleaning off surface dust using a damp cloth
- Not installing into areas where high airflow can occur

### **3.14 Additional Labels & Non-Metallic Materials**

Additional labels may be fitted to the enclosure. Label material may be stainless steel or any other non-metallic material. To prevent an electro-static risk, non-metallic materials must only be cleaned with a damp cloth.

If non-metallic materials are used, consideration should be given to the following:

- Control of environmental humidity to minimise the generation of static electricity.
- Protection from direct airflow causing a charge transfer.
- Touch with an insulation object.
- Means to continuously drain off electrostatic charges.

Refer to IEC 60079 Part 0 for further information

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## 4 Intended Purpose Usage

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**Warning! Maintenance and inspection of the iWAP107/iRFID107 must be performed in accordance with IEC 60079-17.**

**Important Before setting the units to work, read the technical documentation carefully.**

**Important The latest version of the technical documentation or the corresponding technical supplements is valid in each case.**

The iWAP107/iRFID107 is built using modern components and is extremely reliable in operation; however it must only be used for its intended purpose. Please note that the intended purpose also includes compliance with the instructions issued by the manufacturer for installation, setting up and service.

Any other use is regarded as conflicting with the intended purpose. The manufacturer is not liable for any subsequent damage resulting from such inadmissible use. The user bears the sole risk in such cases.

### 4.1 Transportation and Storage

All iWAP107/iRFID107 devices must be so transported and stored that they are not subjected to any excessive mechanical stresses.

### 4.2 Authorized Persons

Only persons trained for the purpose are authorized to handle the iWAP107/iRFID107; they must be familiar with the unit and must be aware of the regulation and provisions required for explosion protection as well as the relevant accident prevention regulations.

### 4.3 Cleaning and Maintenance

The iWAP107/iRFID107 and all its components require no maintenance. All work on the iWAP107/iRFID107 by personnel who are not expressly qualified for such activities will cause the Ex approval and the guarantee to become void.

### 4.4 Cleaning and Maintenance Intervals

The cleaning intervals depend on the environment where the system is installed.

### 4.5 Aggressive substances and environments



The iWAP107/iRFID107 is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

### 4.6 Exposure to external stresses

The iWAP107/iRFID107 is not designed to be subjected to excessive stresses e.g. vibration, heat, impact. Additional protection is required to protect against these external stresses.

The iWAP107/iRFID107 will require additional protection if it is installed in a location where it may be subjected to damage.

## 5 Technical Data

Certification	<p>  II 2 (1) GD Ex d [Ia IIC Ga] IIB+H2 T5 Gb   II 2 (1) GD Ex tb [Ia Da] IIIC T100°C Db            cMETus Class I, II, Div 1, Groups B-G            cMETus Class I, II, Zone 1/2I Groups IIB+H2, III         </p>																											
Power supply	<p>120VAC or 230VAC (+/- 10%) IEEE 802.3xx PoE</p>																											
Maximum power consumption	<p>Basic configuration: 25W With heaters: 125W</p>																											
Enclosure material	Marine grade copper-free aluminium light alloy, epoxy powder coated or 316L Stainless Steel (optional)																											
Ingress protection	IP66																											
Weight	<p>Aluminium: c. 26.5kg (POE version) 316L Stainless Steel: c. 70kg (hardware dependant)</p>																											
Dimensions	<p>Aluminium: 415 x 315 x 250mm (16.34 x 12.4 x 9.84in) 316L Stainless Steel: 415 x 315 x 253mm (16.34 x 12.4 x 9.96in)</p>																											
Temperature	Ambient temperature depends on device chosen, see wireless device list.																											
Relative humidity	0 to 95%, non-condensing																											
Input connections	<p>1 x AC power cable entry with screw terminals 1 x PoE power / data 10/100/1000BASE-T Ethernet on RJ45 socket or 1 x Single or Multi mode fibre input on LC connector &amp; Splice Tray Note: MET enclosure entries are via 1/2" NPT drilled entries, all other variants are via M20 x 1.5-6H drilled entries</p>																											
Ethernet link distance	<p>10/100/1000BASE-T Ethernet on CAT6: up to 100m 1000BASE-SX Multi mode fibre: up to 550m, wavelength 850nm 1000BASE-LX Single mode: fibre: up to 20km, wavelength 1310nm</p>																											
Output connection	<p>Up to 8 galvanically isolated N-Type RF outputs Please note it is the customer's responsibility to ensure the maximum values for RF Threshold power as per Table 4.0 of IEC 60079-0: 2018 are not exceeded. The maximum RF output of the wireless transmitter and antenna gain must be taken into account when installing equipment.</p>																											
Typical internal RF loss (between output of access point and external N-type connector)	<table border="1"> <thead> <tr> <th>Frequency band</th> <th>Insertion loss (dB)</th> <th>Loss including surge arrester (dB)</th> </tr> </thead> <tbody> <tr> <td>150MHz – 1GHz</td> <td>1.03</td> <td>1.13</td> </tr> <tr> <td>1GHz – 3.5GHz</td> <td>1.83</td> <td>1.93</td> </tr> <tr> <td>3.5GHz – 6GHz</td> <td>2.88</td> <td>3.18</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Spot frequency</th> <th>Insertion loss (dB)</th> <th>Loss including surge arrester (dB)</th> </tr> </thead> <tbody> <tr> <td>400MHz</td> <td>0.78</td> <td>0.88</td> </tr> <tr> <td>900MHz</td> <td>0.99</td> <td>1.09</td> </tr> <tr> <td>2.45GHz</td> <td>1.68</td> <td>1.78</td> </tr> <tr> <td>5.5GHz</td> <td>2.75</td> <td>3.05</td> </tr> </tbody> </table>	Frequency band	Insertion loss (dB)	Loss including surge arrester (dB)	150MHz – 1GHz	1.03	1.13	1GHz – 3.5GHz	1.83	1.93	3.5GHz – 6GHz	2.88	3.18	Spot frequency	Insertion loss (dB)	Loss including surge arrester (dB)	400MHz	0.78	0.88	900MHz	0.99	1.09	2.45GHz	1.68	1.78	5.5GHz	2.75	3.05
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## **6 Coin Cell Information**

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Single coin cells of IEC type A, B, C, E, L and S conforming to UL 1642 or IEC 60086-4 may be fitted. These shall occupy no more than 1% of the free volume of the enclosure and have a capacity of no more than 1.5 Ah. All batteries shall be arranged and operated within the allowable limits specified by the cell manufacturer.

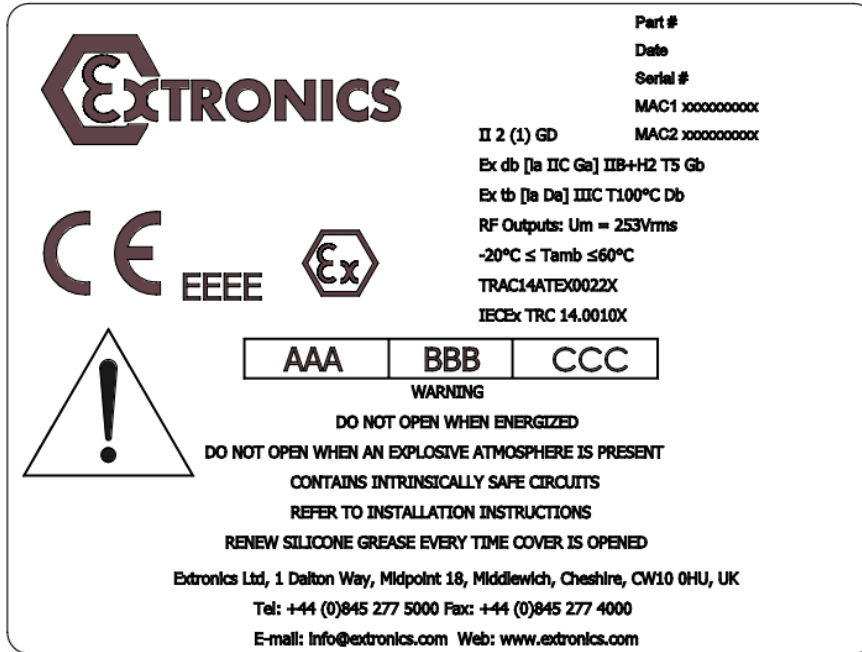
When a coin cell is required to be replaced, the enclosure should only be opened & the cell removed/refitted when an explosive atmosphere is not present.

When a coin cell is required to be replaced, the exact same type as marked on the device shall only be fitted.

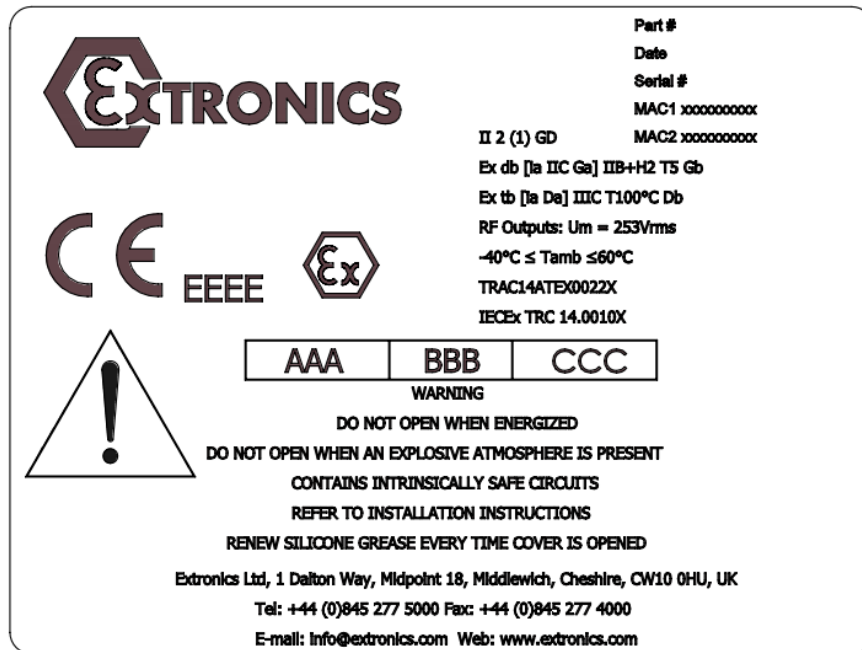
See label fitted to device for the correct coin cell orientation when replacing.

## 7 Label Drawing

iWAP107/iRFID107-DDD



iWAP107/iRFID107-T-DDD



Where AAA=Supply voltage, BBB=Supply current, CCC=Supply Frequency, DDD=Product option codes, EEE=Notified body number for production.



## 8 Type Codes

Specify option [#1]	iWAP107 -[#1]-[#2]-[#3]-[#4] -[#5]-[#6]-[#7]-[#8]	
Certification type	ATEX / IECEX MET CI / D1 MET CII / D1 MET CI/II, Zone 1/2I Ex certification for Japan	AI USG USD CA J
Specify option [#2] Wireless network hardware supply	Hardware supplied by customer Hardware supplied by Extronics  <i>Extronics can supply the wireless hardware, or you may wish to 'free issue' (supply and deliver to Extronics at your cost) one of the already assessed solutions (see option #3), which we will factory fit.</i>	C E
Specify option [#3] Wireless network hardware type	<p>Extronics iWAP range of hazardous area wireless enclosures are vendor agnostic. This means you can pick from a wide range of wireless devices, please visit the link below to see the wireless devices which have been certified. [See <a href="http://www.extronics.com/wireless-device-list/">www.extronics.com/wireless-device-list/</a> for current options]</p> <p>If your preferred device is not listed please talk to an Extronics engineer who can advise on the process of certifying a new device.</p> <p>Depending on the wireless device chosen, additional components may be added or removed such as POE injector, media convertor or secondary power supply.</p> <p>iWAP107 is subject to a certification limit of -40 to +60 degrees C. Operating temperatures will vary depending on the device chosen – if you have specific temperature limit requirements then please contact Extronics who will be able advise further.</p>	
Specify option [#4] Power Supply	POE IEE 802.3xx 20VAC 230VAC 24VDC	POE AC1 AC2 DC1
Specify option [#5] Ethernet connection	100/1000Base T-Ethernet on CAT6 Copper 100/1000Base T-Ethernet on CAT6 Copper (Surge Protected) Multi mode 1000BASE-SX fibre with LC connector Single mode 1000BASE-LX fibre with LC connector	C CS SX LX

Specify option [#6]		
Antenna mounting	Top Mounted	T
	Bottom Mounted	B
	Split	S
<p>The number of antenna outputs on the wireless device will determine the number of antenna output connections</p> <p>Popular configurations and example coding shown on page 3</p>		
Specify option [#7]		
Surge protection	Antenna surge protection	S
	No Antenna surge protection	N
Specify option [#8]		
Enclosure heating	No enclosure heating	N
	Enclosure heating	H
Specify option [#9]		
Enclosure material	Marine grade copper-free aluminium light alloy	AL
	316L Stainless steel	SS
Accessories		
	iANT2xx range of rugged simple apparatus antennas (see separate data sheets)	iANT2xx
	316L stainless steel pipe mount bracket kit for iWAP107, to fit 2¼ - 2½"(58.0 - 63.5mm) diameter pipe.	iWAPMB03
	Double suction door opening tool - used for opening Ex d enclosure doors size of iWAP107 and above. Rated 50KG. This item is available to purchase separately, but is included FOC with each shipment of iWAP107 (1 tool per 1-10 iWAPs)	8580001

## 9 EU Declaration of Conformity



### EU Declaration of Conformity

**Extronics Ltd, 1 Dalton Way, Midpoint 18, Middlewich, Cheshire CW10 0HU, UK**


Equipment Type: **iWAP107, iRFID107**

This declaration is issued under the sole responsibility of the manufacturer

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation.

**Directive 2014/34/EU** Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Provisions of the directive fulfilled by the equipment:

 **II 2 (1) GD**  
**Ex db [ia IIC Ga] IIB+H2 T5 Gb**  
**Ex tb [ia Da] IIIC T100°C Db**  
**RF Outputs:  $U_m = 253V_{r.m.s}$**   
 **$-20^{\circ}C \leq T_{amb} \leq 60^{\circ}C$**

Notified Body Element Rotterdam BV 2812 performed EU-Type Examination and issued the EU-Type certificate.

EU-Type Examination Certificates:

TRAC14ATEX0022X (incorporating variations V1 to V4)

Notified Body for Production:

Ex Veritas, 2804.

Harmonised Standards used:

<b>EN 60079-0:2012/A11:2013</b>	Explosive atmospheres – Part 0: Equipment - General requirements (A review against EN60079-0:2018, which is harmonised, shows no significant changes relevant to this equipment so EN 60079-0:2012/A11:2013 continues to represent "State of the Art")
<b>EN 60079-1:2014</b>	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>EN 60079-11:2012</b>	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>EN 60079-31:2014</b>	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"



**Directive 2014/30/EU EMC Directive**

Harmonised Standards Used:

<b>BS EN 61000-6-2:2005</b>	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
<b>BS EN 61000-6-4:2007+A1:2011</b>	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

Other Standards and Specifications used:

<b>BS EN 62368-1:2014</b>	Audio/video, information and communication technology equipment - Safety requirements
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**Directive 2011/65/EU Restriction of the use of certain hazardous substances (RoHS)** Compliant.

For and on behalf of Extronics Ltd, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

Signed

Nick Saunders

Operations Director

Date: 23<sup>rd</sup> May 2023

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