EXTRONICS

CE

INSTALLATION AND OPERATING MANUAL

iWAP107

Document Number 404368 (See Last Page for Revision Details)
Based on type approval document 403431-1.0

The Photograph on the front page shows the iWAP107 Aluminium Enclosure version, a Stainless Steel version is also available.

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

Extronics reserve the right to change this manual and its contents without notice, the latest version applies.

Contents

1 Introduction

The iWAP107 is an ATEX and IECEx approved Zone 1 Access Point Enclosure with intrinsically safe RF outputs; it is 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 allows users to choose any antenna for use with their wireless hardware e.g. Extronics iANT200 range of high quality rugged outdoor antennas. Any antennas not listed in the Extronics range must be assessed by the user to ensure they meet the requirements for installation of non-electrical equipment in hazardous areas. Up to eight antennas can be utilized, allowing the MIMO functionality of the latest 802.11n/ac 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 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.

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 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 is only to be performed by skilled electricians and instructed personnel in accordance with national legislation.**

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

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

Warning!	**The iWAP107 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 may be installed in hazardous areas requiring Category 1 equipment, the iWAP107 flameproof enclosure must NOT be installed in these environments.**

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

Warning! **The iWAP107 flameproof enclosure lid must be secured only with the bolts supplied, and these must be tightened to the correct torque value. See Section 0 for details. Contact Extronics for spare bolts.**

Warning! **The iWAP107 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 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)

See Section 3.10.1 for an example of how to calculate the RF Threshold Power

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

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

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

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

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

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

Warning!	**DO NOT lift the iWAP107 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 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 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. Damage to the iWAP107 fibre interface or customer equipment may occur if the wrong format/excessive optical power is used.**

3 Installation

3.1 Mounting

Warning!	**The iWAP107 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!	**<u>DO NOT</u> lift the iWAP107 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 enclosure to a suitable structure, using the mounting points shown.

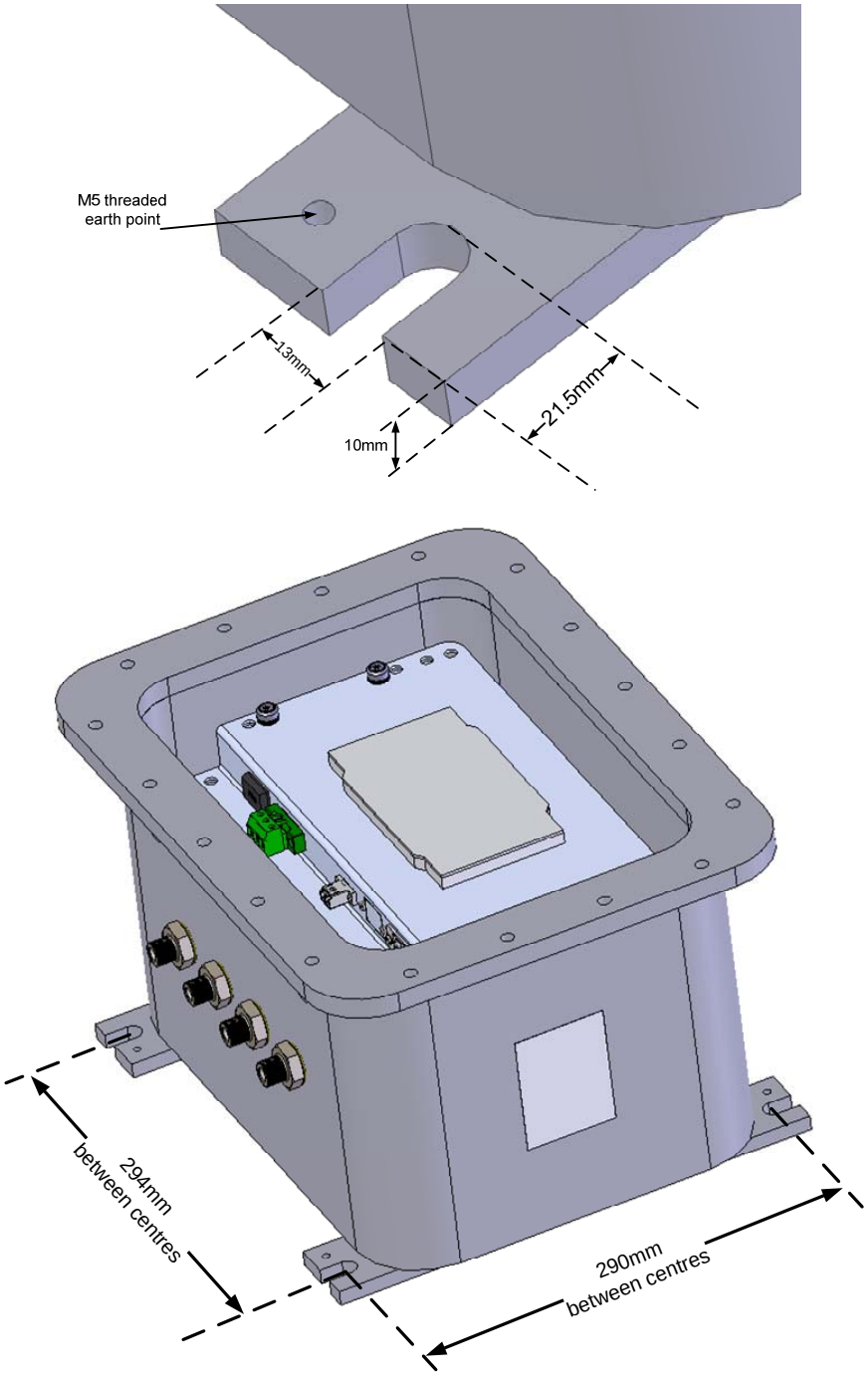


Figure 1: iWAP107 Stainless Steel Enclosure Mounting Points

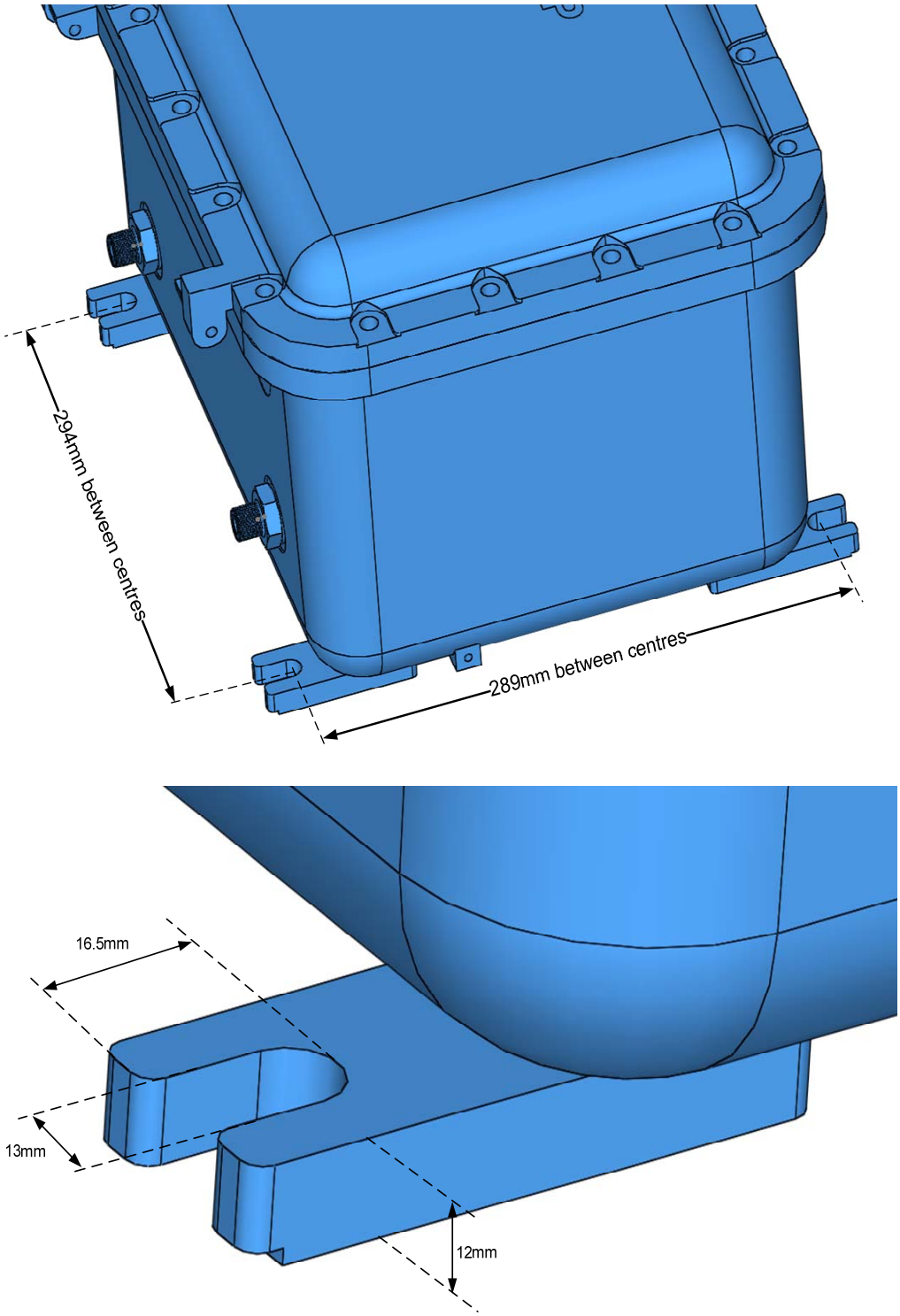


Figure 2: iWAP107 Aluminium Enclosure Mounting Points

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 flameproof enclosure must NOT be opened when an explosive gas or dust atmosphere is present, or when the equipment is energized.**

Warning!	**The iWAP107 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 flameproof enclosure is opened. This is required to maintain the IP rating of the enclosure.**

3.2.1 Opening the Enclosure

The flamepaths of the iWAP107 enclosure are supplied with silicone grease applied to protect them. This can make the enclosure lid difficult to open as the grease can cause it to stick. Therefore Extronics strongly recommend the use of the iWAP107 lid opening handle accessory, available from Extronics - order code 8230246.

- Remove all bolts, using a wrench with an 8mm hex head. Store the bolts carefully to avoid damage or loss.
- Insert the opening handle as shown, and release the door.

Figure 3: Opening iWAP107 Stainless Steel Enclosure with Handle 8230246

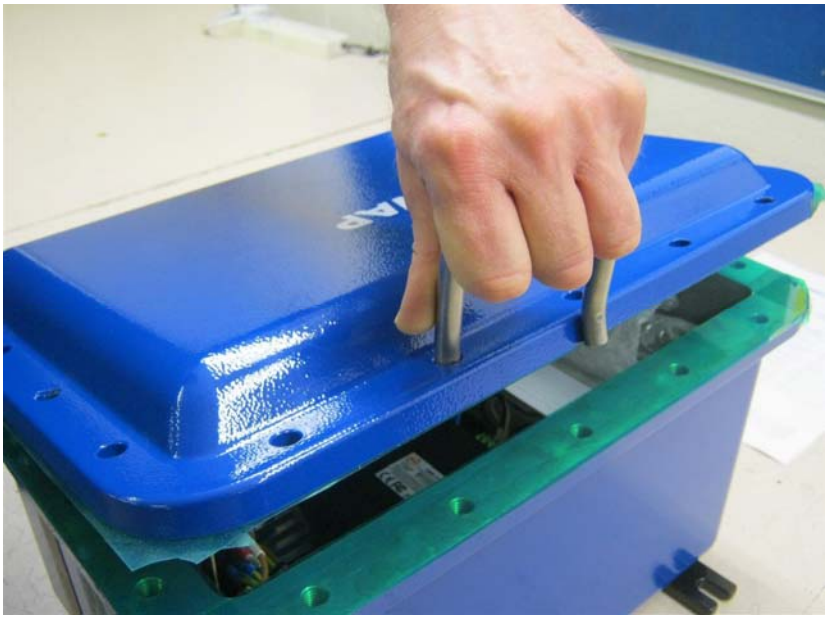


Figure 4: Opening iWAP107 Aluminium Enclosure with Handle 8230246

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 a 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 flameproof enclosure must only be fitted with suitably approved cable entry devices.**

Warning!	**The iWAP107 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 must NOT be loosened or removed by the user under any circumstances, as their flameproof protection may be damaged by this.**

3.3.1 Cable Entries and Connections for iWAP107-C-37-AC-SG-2450-4S-N-0-N Stainless Steel Enclosure

Figure 5: iWAP107-C-37-AC-SG-2450-4S-N-0-N Stainless Steel Enclosure External Entries and Connections

The iWAP107-C-37-AC-SG-2450-4S-N-0-N stainless steel enclosure is supplied with entries and connectors as shown in Figure 5.

- Connections A-D are **INTRINSICALLY SAFE outputs providing galvanically isolated RF signals** (see Section 19 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 iWAP107022 enclosure, and are approved as part of the iWAP107 ATEX/IECEx certification. The designators A-D correspond with the RF port assignments of the Cisco AIR-CAP2602E-Z-K9 access point installed in the flameproof enclosure.

- Entries E and F are M20 x 1.5 – 6H threaded Ex d entries. Entry E is for the power supply, entry F for the fibre connection.

3.3.2 Cable Entries and Connections for iWAP107-C-44-POE-C-2450-2S-N-0-N Aluminium Enclosure

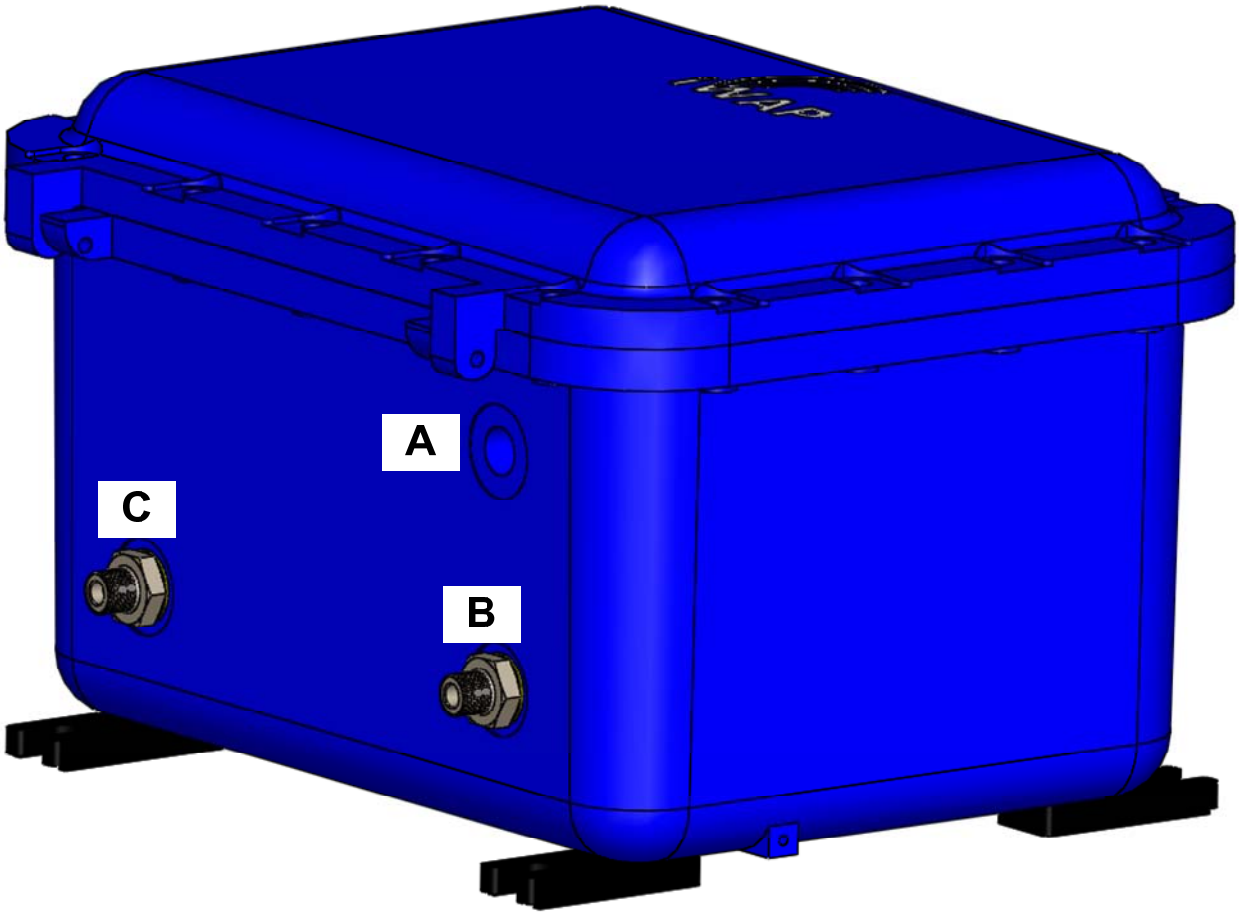


Figure 6: Cable Entries and Connections for iWAP107-C-44-POE-C-2450-2S-N-0-N Aluminium Enclosure

- Entry A is an M20 x 1.5 – 6H threaded Ex d entry for CAT5E Data/POE cable.
- Connections B and C are **INTRINSICALLY SAFE outputs providing galvanically isolated RF signals** (see Section 19 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 iWAP107022 enclosure, and are approved as part of the iWAP107 ATEX/IECEx certification. The designators A-D correspond with the RF port assignments of the Cisco AIR-CAP2602E-Z-K9 access point installed in the flameproof enclosure.

3.4 Earthing

Warning! The iWAP107 MUST be earthed. It must be connected to the plant earth system using at least one of the external bonding points, using a minimum 4mm² conductor. The earth cable must be installed in accordance with the requirements of IEC 60079-14.

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

Warning! The iWAP107 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 Location of iWAP107 Stainless Steel Enclosure External Earth Bond Points

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

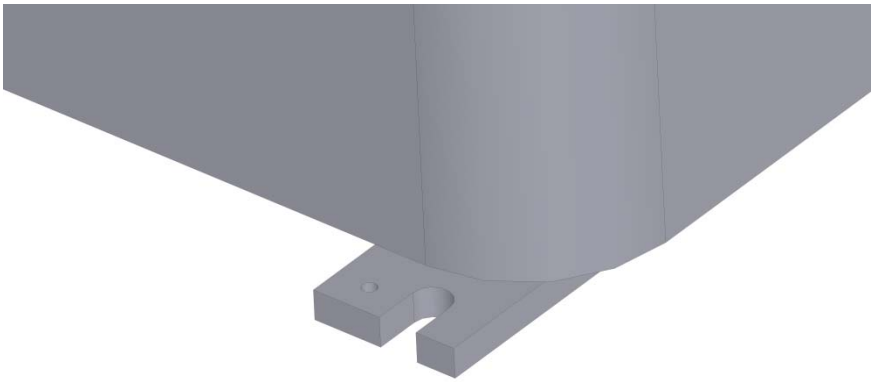


Figure 7: iWAP107 Stainless Steel Enclosure External Earth Bond Points

3.4.2 Location of iWAP107 Aluminium Enclosure External Earth Bond Points

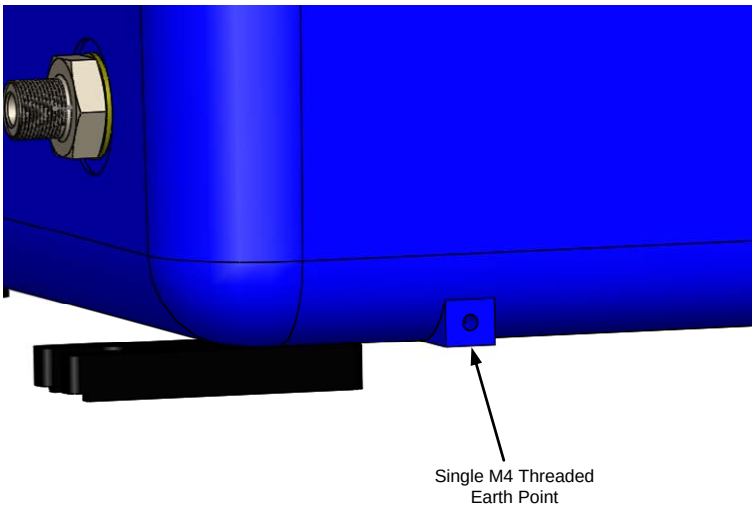


Figure 8: iWAP107 Aluminium Enclosure Earth Bond Point

3.5 Electrical Installation

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

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

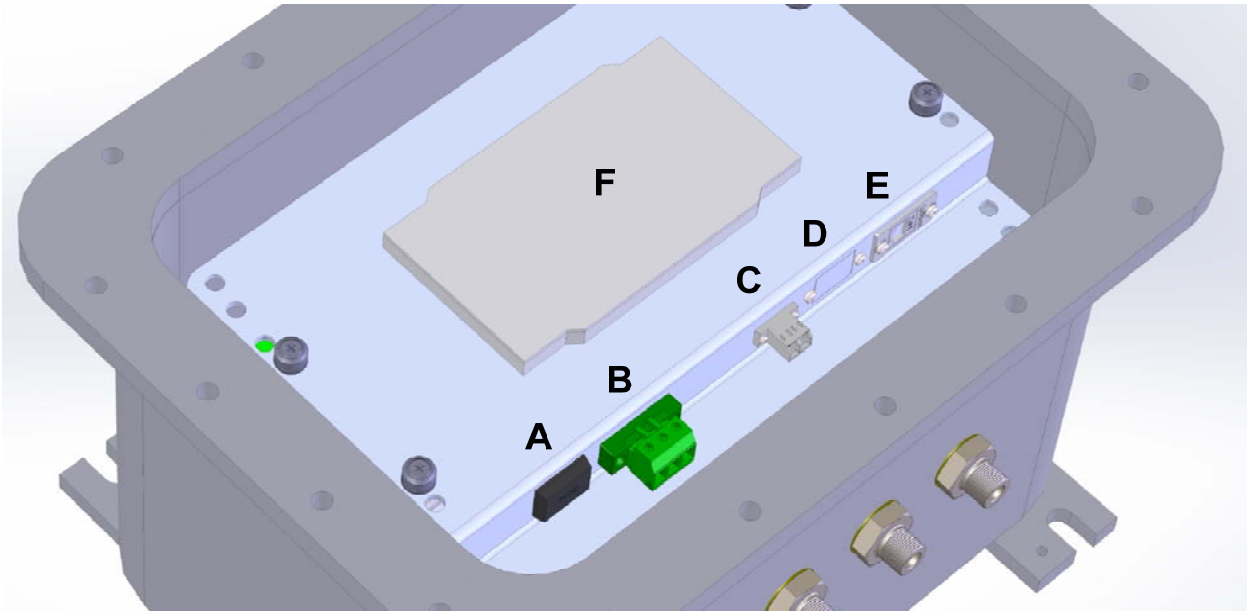


Figure 9: iWAP107 Internal Connections Showing All Options

Designator	Purpose	Comments
A	Fuse Holder	Contains 1 active fuse and 1 spare. Not fitted on POE version. See Section 0
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	CAT5E input	This 10/100/1000 Base T CAT5E 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 Cisco Access Points. See 3.9.4 for details.
F	Fibre splice tray	This is a 12-way fibre splice tray, only fitted when the fibre option is selected.

Table 2: iWAP107 Internal Connection/Features

3.6 Power supply

Important **The iWAP107 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.**

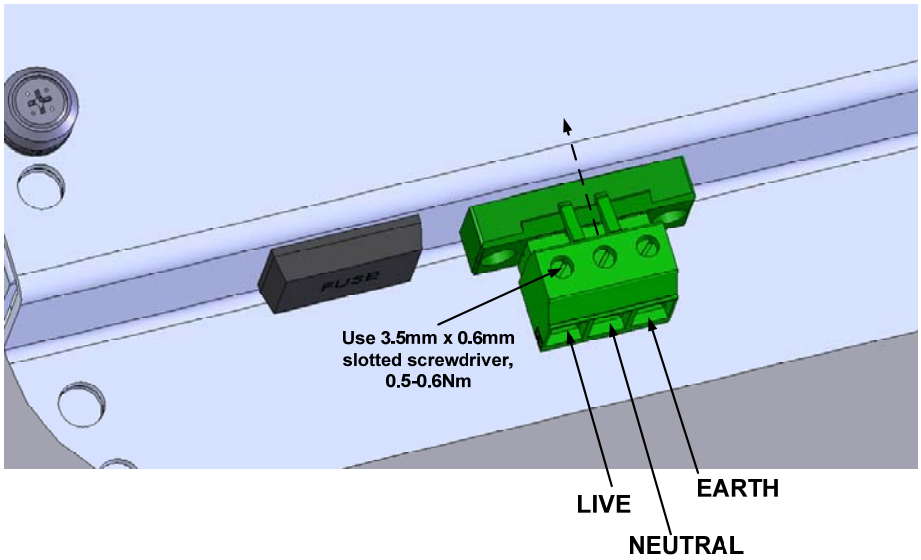


Figure 10: iWAP107 Mains Power Connection

The mains power connection is made with a 2-part screw-terminal connector (supplied), the plug part is Phoenix Contact 1804917, 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^2	4mm^2
Single Stranded Wire	0.2mm^2	4mm^2
Single Stranded Wire, With Ferrule With/Without Sleeve	0.25mm^2	4mm^2
2 Solid Conductors With Same Cross Section	0.2mm^2	2mm^2
2 Stranded Conductors With Same Cross Section	0.2mm^2	1.5mm^2
2 Stranded Conductors With Same Cross Section, With Ferrules Without Sleeves	0.25mm^2	1.5mm^2

Table 3: iWAP107 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 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 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 11 for access to Fuse. The fuse holder also carries a spare fuse for convenience.

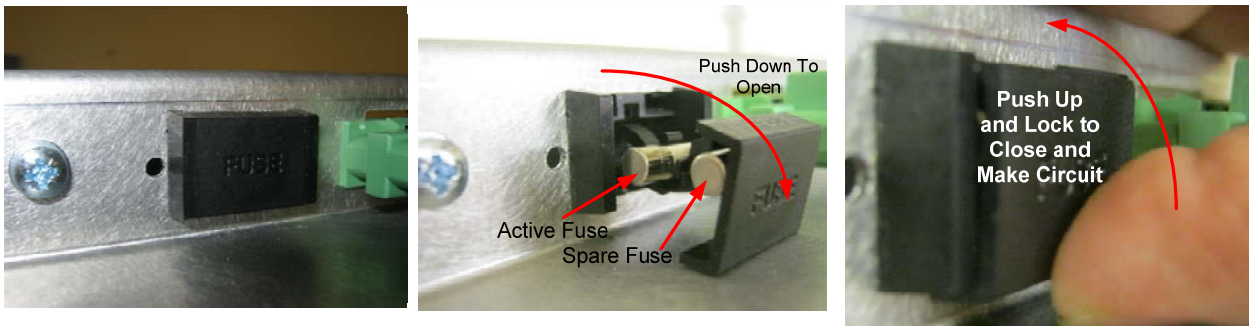


Figure 11: Fuse Access

3.8 External Overcurrent Protection

The iWAP107 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 is connected matches the iWAP107 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, Position D in Figure 9. Typically the interface will be a IEEE 10/100/1000BaseT format, but this is dependent on the access point installed.

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

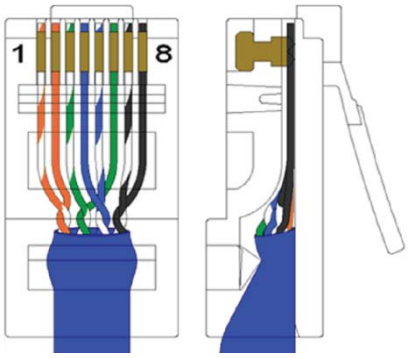


Figure 12: RJ45 CAT5E EIA 568B Plug Wiring

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. 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 enclosure – observe the warning labels fitted.

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

The iWAP107 optical fibre format may be any of the following, refer to product option code #4 for details. Other optical formats are available on request.

Option #4	Fibre Format	Connection	Transmitter Power	Receiver Sensitivity	Max Receiver Input Without Damage	Wavelength	Typical Range
F	100Base-FX	LC Duplex Multimode 62/125µm or 50/125µm	-14 to -20dBm (62/125µm) -14 to - 23.5dBm (50/125µm)	-31dBm	-8dBm	1310nm	2km
S	100Base-FX	LC Duplex Single Mode 9/125 µm	-8 to -15dBm	-34dBm	0dBm	1310nm	30km
FG	1000Base-FX	LC Duplex Multimode 62/125µm or 50/125µm	-1 to -9dBm (62/125µm) -1 to - 9dBm (50/125µm)	-19dBm	-1dBm	1310nm	2km (62/125µm) 1km (50/125µm)
SG	1000Base-FX	LC Duplex Single Mode 9/125 µm	-3 to -9.5dBm	-20dBm	-3dBm	1310nm	10km

Table 4: Fibre Formats

3.9.4 Console Port

The console port is a standard Cisco RS232 configuration port on an RJ45 socket. The port for Cisco Access Points is 9600 Baud, 8 Data Bits, No Parity, 1 Stop Bit. Other vendors may use different formats.

Pin	Function
1	RTS
2	DTR
3	TXD
4	GND
5	GND
6	RXD
7	DSR
8	CTS

Table 5: Cisco Console Port Wiring

3.10 Intrinsically Safe RF Outputs

Warning! The iWAP107 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 may be installed in a hazardous areas requiring Category 1 equipment, the iWAP107 flameproof enclosure must <u>NOT</u> be installed in these environments.

Warning! Do not exceed the RF Threshold Power for the equipment group in which the iWAP107 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 are approved as:

Ex ia IIC Ga
Ex ia IIIC Da
U_m = 253$V_{r.m.s}$

<u>Refer to Figure 7 for location of Intrinsically Safe RF outputs of iWAP107-C-37-AC-SG-2450-4S-N-0-N</u>

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)

3.11 Antenna Requirements

Antennas connected to the iWAP107 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 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 may either be fitted directly to the RF connectors of the iWAP107, or via a length of coaxial cable.

If antennas are sited remotely from the iWAP107 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.

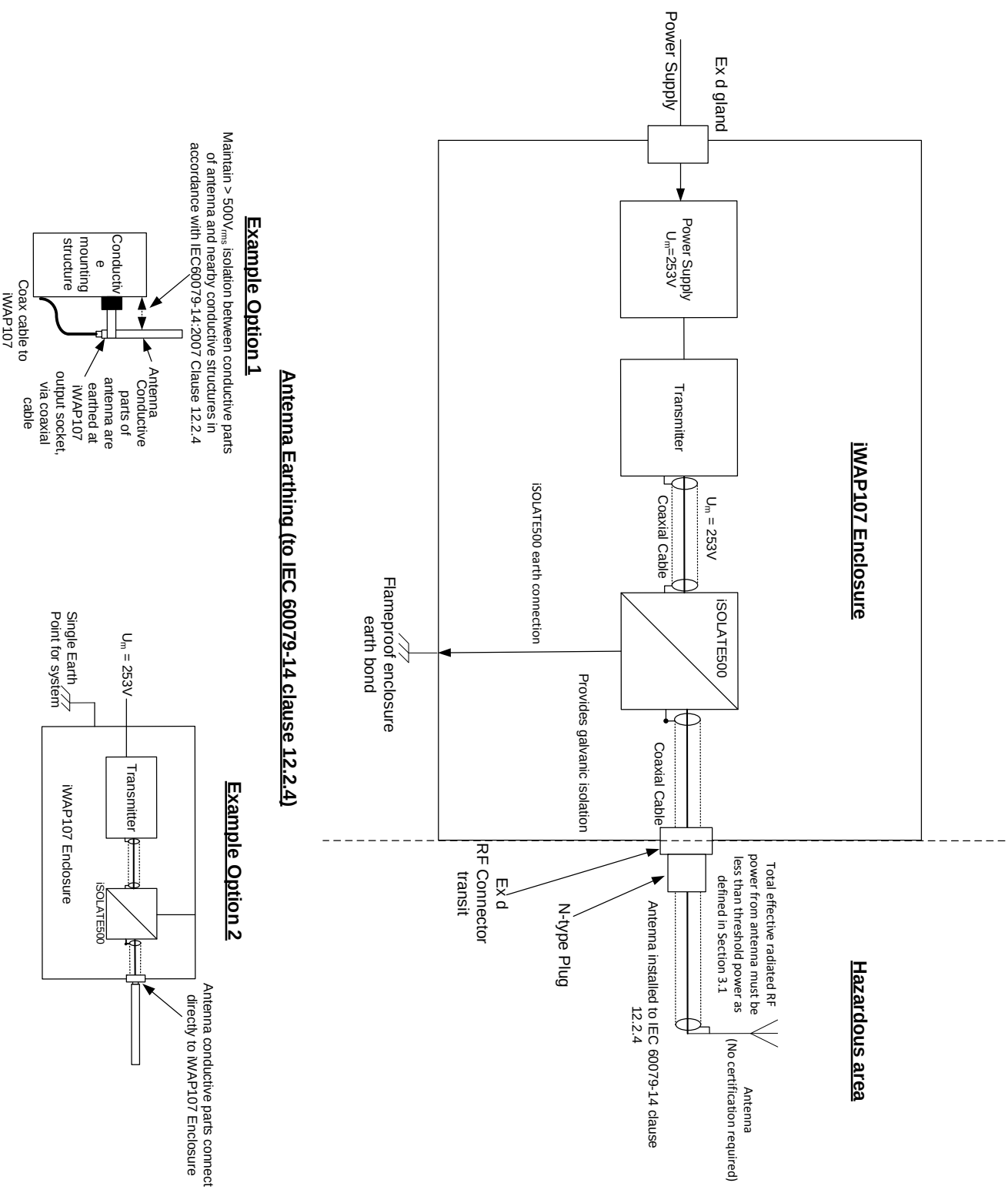


Figure 13: iWAP107 IS RF Installation Diagram

4 Intended Purpose Usage

Warning! Maintenance and inspection of the iWAP107 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 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 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; 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 and all its components require no maintenance. All work on the iWAP107 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 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 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 will require additional protection if it is installed in a location where it may be subjected to damage.

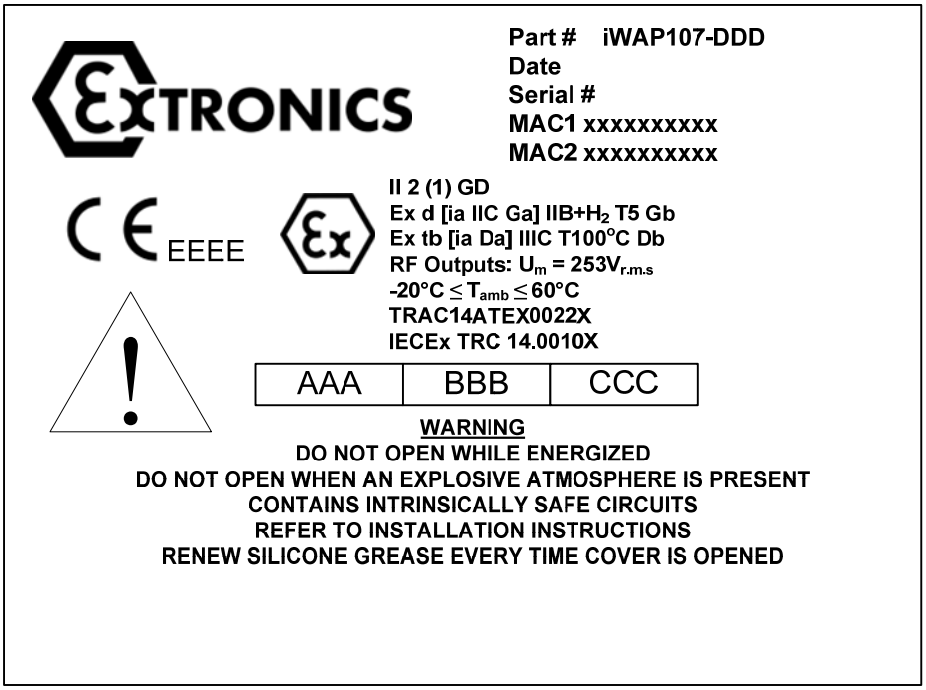
5 Technical Data

Certification Type	II 2 (1)GD Ex db [ia IIC Ga] IIB+H2 T5 Gb II 2 (1)GD Ex tb [ia Da] IIIC T100°C Db
Power Supply Options	90-120 VAC/ 200-253Vac / IEEE802.3at PoE+ / DC
Maximum Power Consumption	Basic configuration: 25W With heaters: 125W
Enclosure Material	Marine grade copper free aluminium light alloy, epoxy powder coated or 316L Stainless Steel (optional)
Ingress Protection	IP66
Weight	Aluminium—approx. 30kg (hardware-dependent) 316L Stainless Steel—approx. 70kg (hardware-dependent)
Dimensions	Aluminium— 415 x 315 x 250 mm (w x h x d) 316L Stainless Steel— 415 x 315 x 253 mm (w x h x d)
Environmental	Ambient temperature: -20ºC to +60ºC (dependent on wireless hardware) Relative humidity: 0 to 95%, non-condensing
Input Connections	- AC power input screw terminals - 100/1000Base-T Ethernet on RJ45 socket - Single or Multi mode fibre input on LC connector
Ethernet Link distance	**100/1000Base-T** Ethernet on CAT5e: up to 100m **100Base-FX** Multi Mode fibre : up to 2km **100Base-LX**-10 Single mode fibre: up to 10km **1000Base-LX** Multi Mode fibre : up to 550m **1000Base-LX**-10 Single mode fibre: up to 10km
Output Connection	Up to eight intrinsically safe N-Type RF outputs
Maximum Internal RF Cable Loss	

Loss	2.4Ghz	5.0GHz	2.4/5GHz dual-band
Without Surge Arrestor	3.2dB	4.6dB	3.4dB/6.1dB
With Surge Arrestor	3.3dB	4.9dB	3.5dB/6.4dB

Certification	ATEX & IECEx

6 Label Drawing



Where AAA=Supply voltage, BBB=Supply current, CCC=Supply Frequency, DDD=Product option codes, EEE=Notified body number for production, MAC1/MAC2 are the Ethernet MAC addresses of up to 2 devices installed in the unit.

7 Type Codes

iWAP107 - Universal Access Point Enclosure **iWAP107-[#1]-[#2]-[#3]-[#4]-[#5]-[#6]-[#7]-[#8]-[#9]-[#10]-[#11]**

Specify option [#1] - Wireless Network Hardware

Hardware supplied by customer*	C
Hardware supplied by Extronics	E

*Extronics can supply the wireless hardware, or alternatively you may wish to "free issue" one of the already certified solutions so that we can factory fit it (see option #2 for certified hardware list). ***("Free Issue" means to supply and deliver to Extronics HQ at your own cost.)***

Specify option [#2] - Type Of Wireless Network Hardware *(Max operating temperature listed in brackets only applies to PoE powered units, take lower value if powered by AC/DC. If the heater option is selected this will allow all AP's to operate at a lower ambient temperature of –20°C.)*

Aruba AP-134 Access Point	*(0°C to 40/45°C)*	29
Configuration for AeroScout Location Receiver	(0°C to 45/50°C)	31
Cisco AP3500 Series Access Point	*(-20°C to 45/50°C)*	33
Cisco AP1260 Series Access Point	*(-20°C to 45/50°C)*	35
Cisco AP1600 Series Access Point	*(-20°C to 45/50°C)*	36
Cisco AP2600 Series Access Point	*(-20°C to 45/50°C)*	37
Cisco AP3600 Series Access Point	*(-20°C to 45/50°C)*	38
Cisco AP1530 Series Access Point	*(-20°C to 55/60°C)*	39
Aruba AP-110 Series Access Point	*(0°C to 40/45°C)*	40
Aruba AP-220 Series Access Point	*(0°C to 40/45°C)*	41
Lancom IAP-321	*(-20°C to 40/45°C)*	44
New Wireless Hardware—Order code to be advised		*TBA*

Specify option [#3] - Power Supply

120VAC Supply	AC1
230VAC Supply	AC2
IEEE802.3at compliant Power-Over-Ethernet (Chosen hardware must be compatible with PoE supply)	POE

Specify option [#4] - Ethernet Connection

100/1000Base-T Ethernet on CAT5e copper	C
100/1000Base-T Ethernet on CAT5e copper - surge protected	CS
Multimode 100BASE-FX fibre with LC connector	F
Single mode 100BASE-LX10 fibre with LC connector	S
Multimode 1000BASE-LX fibre with LC connector	FG
Single mode 1000BASE-LX10 fibre with LC connector	SG

Specify option [#5] - Frequency Output for Radio 1

2.4GHz	24
5GHz	50
Dual band output (2.4GHz & 5GHz)	2450

Specify option [#6] - Number of Antenna Outputs for Radio 1

0/1/2/3/4 off N-type connector	0/1/2/3/4
0/1/2/3/4 off N-type connector with surge protector	0S/1S/2S/3S/4S

Specify option [#7] - Frequency Output for Radio 2

Not Required	N
2.4GHz	24
5GHz	50
Dual band output (2.4GHz & 5GHz)	2450

Specify option [#8] - Number of Antenna Outputs for Radio 2

0/1/2/3/4 off N-type connector	0/1/2/3/4
0/1/2/3/4 off N-type connector with surge protector	0S/1S/2S/3S/4S

Specify option [#9] - Enclosure Heating (not compatible with POE or DC supplies)

No enclosure heating	N
Supplied with enclosure heating	H

Specify option [#10] - Antenna Position (see previous page for antenna layout pattern which relates to total No. of RF outputs)

Remote Mount	R
Direct Mount	D

Specify enclosure material [#11]

Marine grade copper free aluminium light alloy	AL
Direct Mount	SS

8 EC Declaration of Conformity

EXTRONICS

Wireless Vision Engineering Tracking

EC Declaration of Conformity

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

Equipment Type:

iWAP107

Directive 94/9/EC Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Provisions of the directive fulfilled by the equipment

Ⓔx II 2 (1) GD
Ex d [ia IIC Ga] IIB+H_2 T5 Gb
Ex tb [ia Da] IIIC T100°C Db
RF Outputs: U_m = 253$V_{r.m.s}$
-20°C ≤ T_{amb} ≤ 60°C

Notified Body for EC-Type Examination:

TRaC Global Ltd 0891

EC-Type Examination Certificate:

TRAC14ATEX0022X

Notified Body for Production:

SIRA 0518 Chester UK

Harmonised Standards used:

EN 60079-0:2012	Explosive atmospheres – Part 0: Equipment - General requirements
EN 60079-1:2007	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
EN 60079-11:2012	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Other Standards and Specifications used:
None

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Wireless Vision Engineering Tracking

Directive 2004/108/EC Electromagnetic Compatibility (EMC)

Harmonised Standards used:

EN 55022:2010	Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement
EN 61000-4-4 :2012	Electromagnetic compatibility (EMC) Testing and measurement techniques. Electrical fast transient/burst immunity test, heavy industry level, Criteria A
EN 61000-4-5 :2012	Electromagnetic compatibility (EMC) Testing and measurement techniques, heavy industry level, Criteria A
EN 61000-4-6 :2014	Electromagnetic compatibility (EMC) Testing and measurement techniques. Immunity to conducted disturbances, induced by radio-frequency fields, heavy industry level, Criteria A

Other Standards and Specifications used:

None

Directive 2011/65/EU Restriction of the use of certain hazardous substances (RoHS)

Compliant

Other Standards and Specifications used:

EN60950-1:2006 + A2:2013	Information technology equipment. Safety General requirements

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

D.J.C

David Crump

Technical Manager

25th April 2014

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9 Manual Revision History

Revision	Description	Date	By
1.0	Initial Release	25/04/2014	BTS
2.0	Added aluminium enclosure details	29/04/2014	BTS
2.1	Updated Type codes & Enclosure image	01/07/2014	AJP