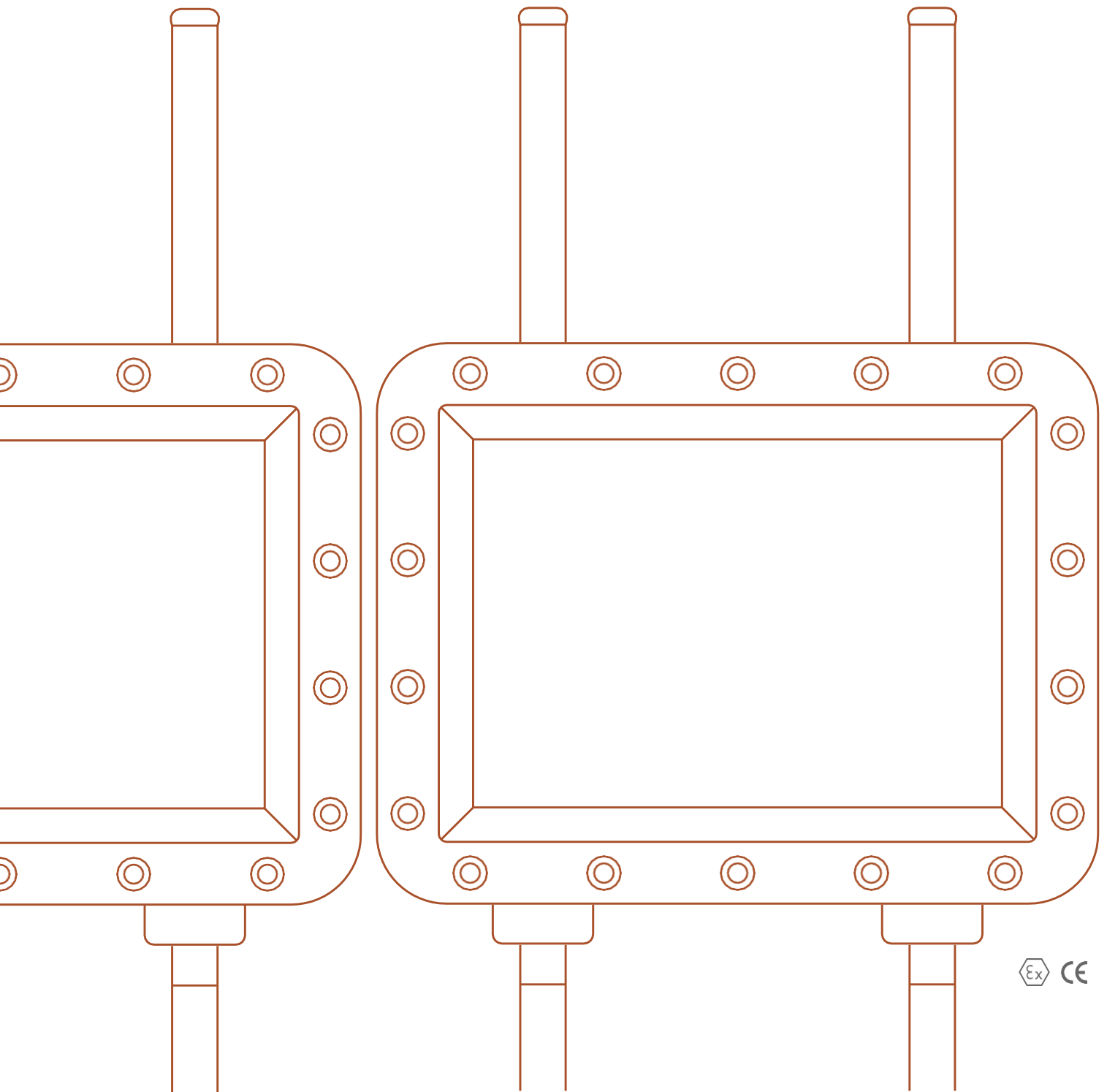


Installation & Operating Manual

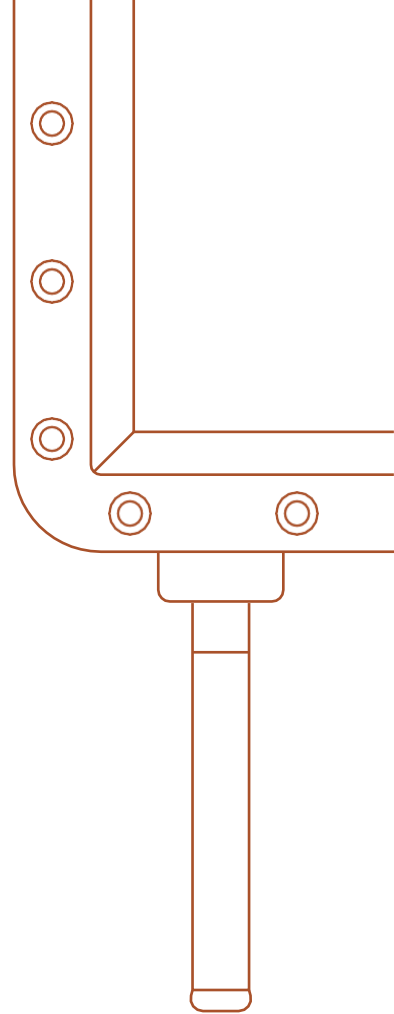
# Hazardous Environment Enclosure



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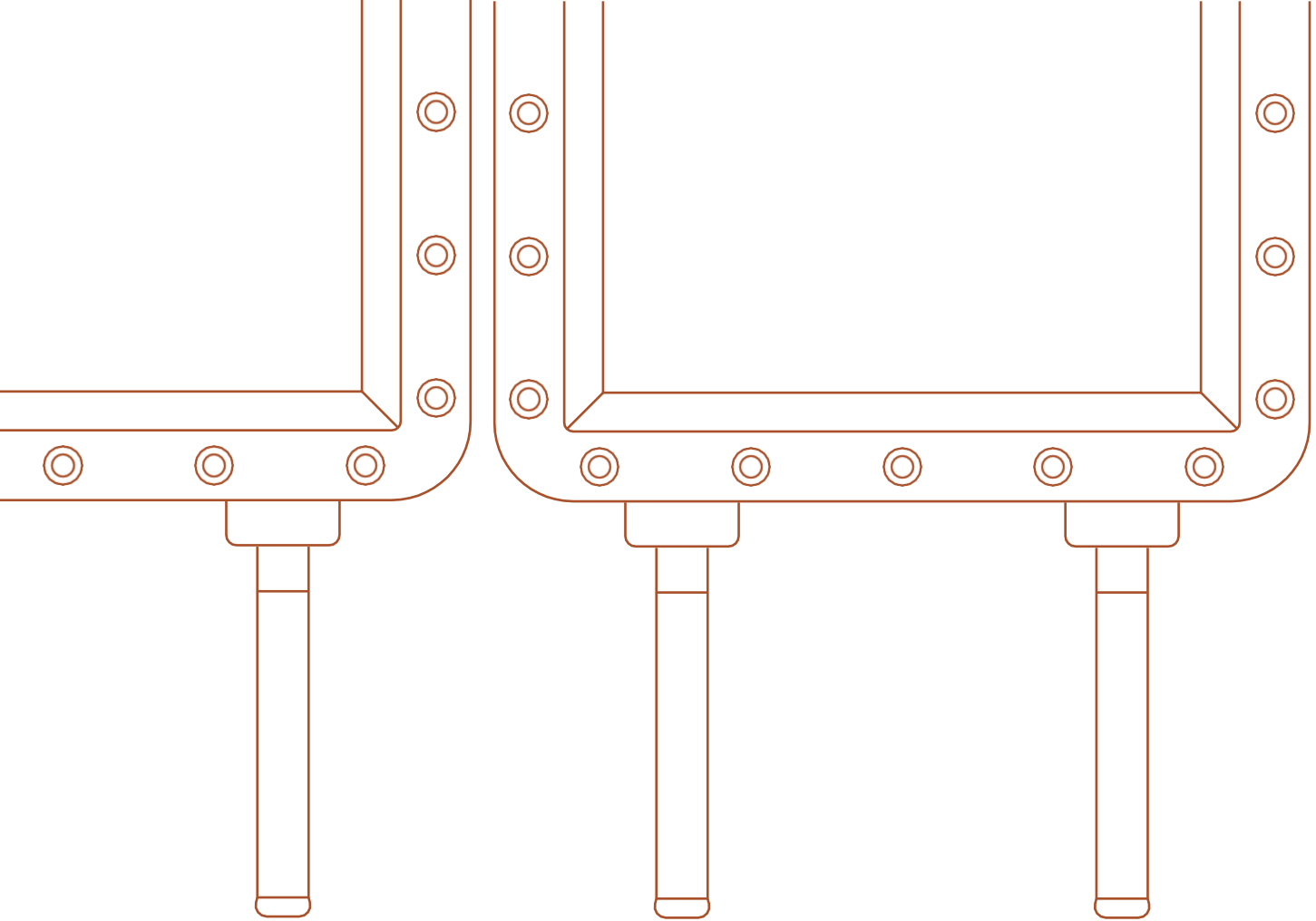
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The photograph above shows the Hazardous Environment Aluminum Enclosure version; a Stainless-Steel version is also available.

*For warranty information, refer to Terms and Conditions at [ventevinfra.com](https://ventevinfra.com).*

*Ventev reserves the right to change this manual and its contents without notice, the latest version applies.*



## 1 Introduction

*The Hazardous Environment Enclosure 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, and Meraki. Each type of access point or RF transmitting device is rigorously checked and tested by Ventev 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 Hazardous Environment Enclosure allows users to choose any antenna for use with their wireless hardware e.g., Ventev's range of high quality rugged outdoor antennas. Up to eight antennas can be utilized, allowing the MIMO functionality of the latest compatible Wi-Fi 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.

## 2 Safety Information & 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 Ventev 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 Hazardous Environment Enclosure 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 Hazardous Environment Enclosure is only to be performed by skilled electricians and instructed personnel in accordance with national legislation.

---



### **Warning!**

The Hazardous Environment Enclosure contains INTRINSICALLY SAFE circuits.

---



### **Warning!**

The Hazardous Environment Enclosure 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 Hazardous Environment Enclosure MUST be earthed. Refer to Section [earthing] for details.

---



### **Warning!**

The Hazardous Environment Enclosure 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 Hazardous Environment Enclosure may be installed in hazardous areas requiring Category 1 equipment, the Hazardous Environment Enclosure flameproof must NOT be installed in these environments.

---



### **Warning!**

The Hazardous Environment flameproof enclosure must NOT be opened when an explosive gas or dust atmosphere is present or when the equipment is energized.

---



### **Warning!**

The Hazardous Environment 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 Ventev for spare bolts.



### **Warning!**

The Hazardous Environment 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 Hazardous Environment Enclosure 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 Hazardous Environment Enclosure must not be modified in any way.

---



### **Warning!**

There are no user-serviceable parts below the top plate of the Hazardous Environment Enclosure. See Section 3.5 for details. Always refer service enquiries to Ventev.

---



### **Warning!**

Hazardous voltages are present within the Hazardous Environment Enclosure.

---



### **Warning!**

Hot surfaces may be present within the Hazardous Environment Enclosure. Observe the warning labels fitted.

---



### **Warning!**

Optical radiation hazards may be present within the Hazardous Environment Enclosure. Observe the warning labels fitted.

---



### **Warning!**

The Hazardous Environment Enclosure may weigh up to 70Kg. Exercise care when handling and mounting.

---





### **Warning!**

DO NOT lift the Hazardous Environment Enclosure using the threaded entries, N-type RF connectors, or door bolts. Lift only using suitably approved slings, fitted by suitably qualified personnel.

---



### **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 of coin cell as marked on the device.

---



### **Warning!**

The Hazardous Environment 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.

---



### **Important**

Always re-apply a thin layer of Loctite 8104 or Loxeal GS9 silicone grease to the enclosure flame paths whenever the Hazardous Environment 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 Hazardous Environment Enclosure external rating plate.

---



### **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**

Ensure that only the correct fiber transceiver format/power is connected to the Hazardous Environment Enclosure. Damage to the Hazardous Environment Enclosure fiber interface or customer equipment may occur if the wrong format/excessive optical power is used.

---



### **Important**

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

---

## 3 Installation

### 3.1 Mounting

Mount the Hazardous Environment Enclosure to a suitable structure, using the mounting points shown.

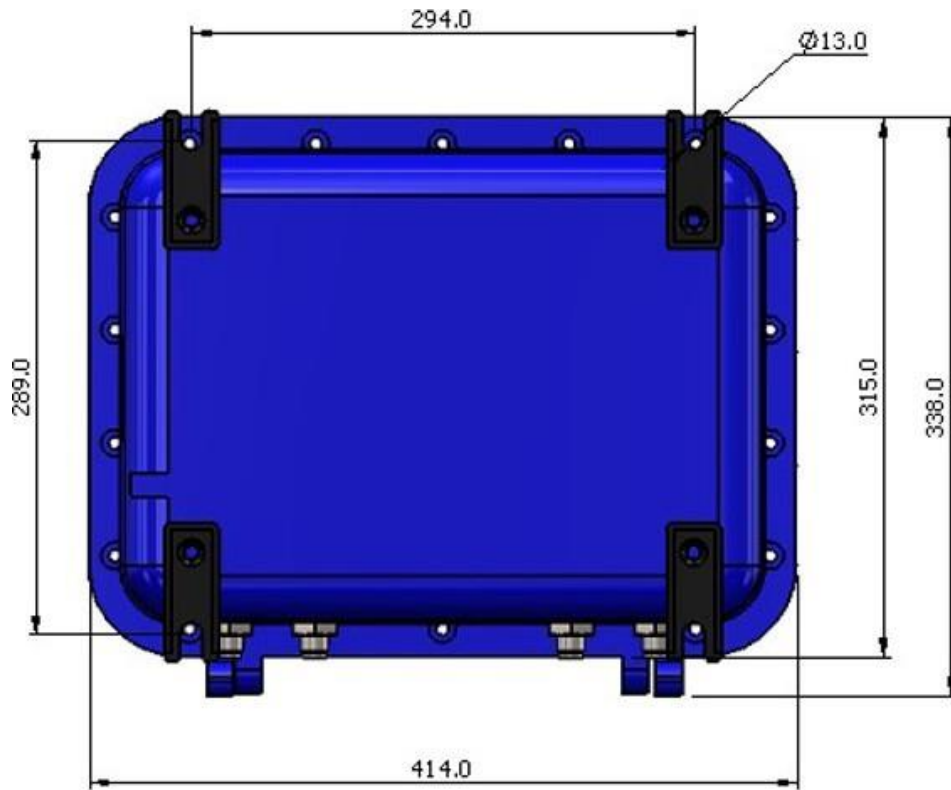


FIGURE 1: Aluminum Enclosure Mounting Dimensions

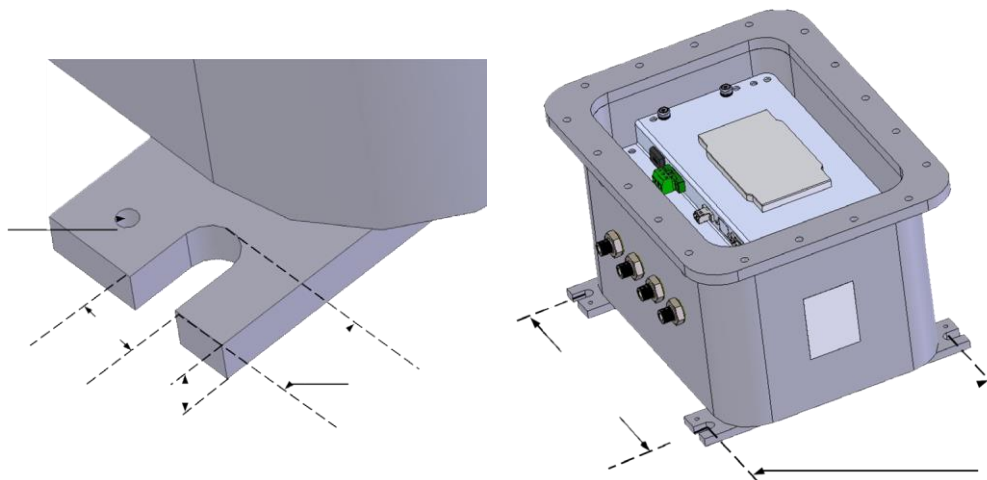


FIGURE 2: Hazardous Environment Enclosure Stainless Steel Enclosure Mounting Points

## 3.2 Opening & Closing the Enclosure



### **Warning!**

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



### **Warning!**

The Hazardous Environment flameproof enclosure lid must be secured only with the bolts supplied and these must be tightened to the correct torque value. Contact Ventev for spare bolts.



### **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 Hazardous Environment flameproof enclosure is opened. This is required to maintain the IP rating of the enclosure.

### 3.2.1 Opening the Enclosure (Aluminum & Stainless-Steel Enclosures)

The flamepaths of the Hazardous Environment 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. Ventev recommend the use of a double suction lifter. This tool is included with Hazardous Environment Enclosure deliveries and is available from hardware and builders supply stores. Ventev 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.

### 3.2.2 Closing the Enclosure

1. Check that the correct grease (Loctite 8104 or Loxeal GS9) has been applied to the flame-path, and that it is free of damage.
2. Check all bolts are the correct type and free from damage.
3. Re-insert the bolts and hand-tighten only.
4. 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.

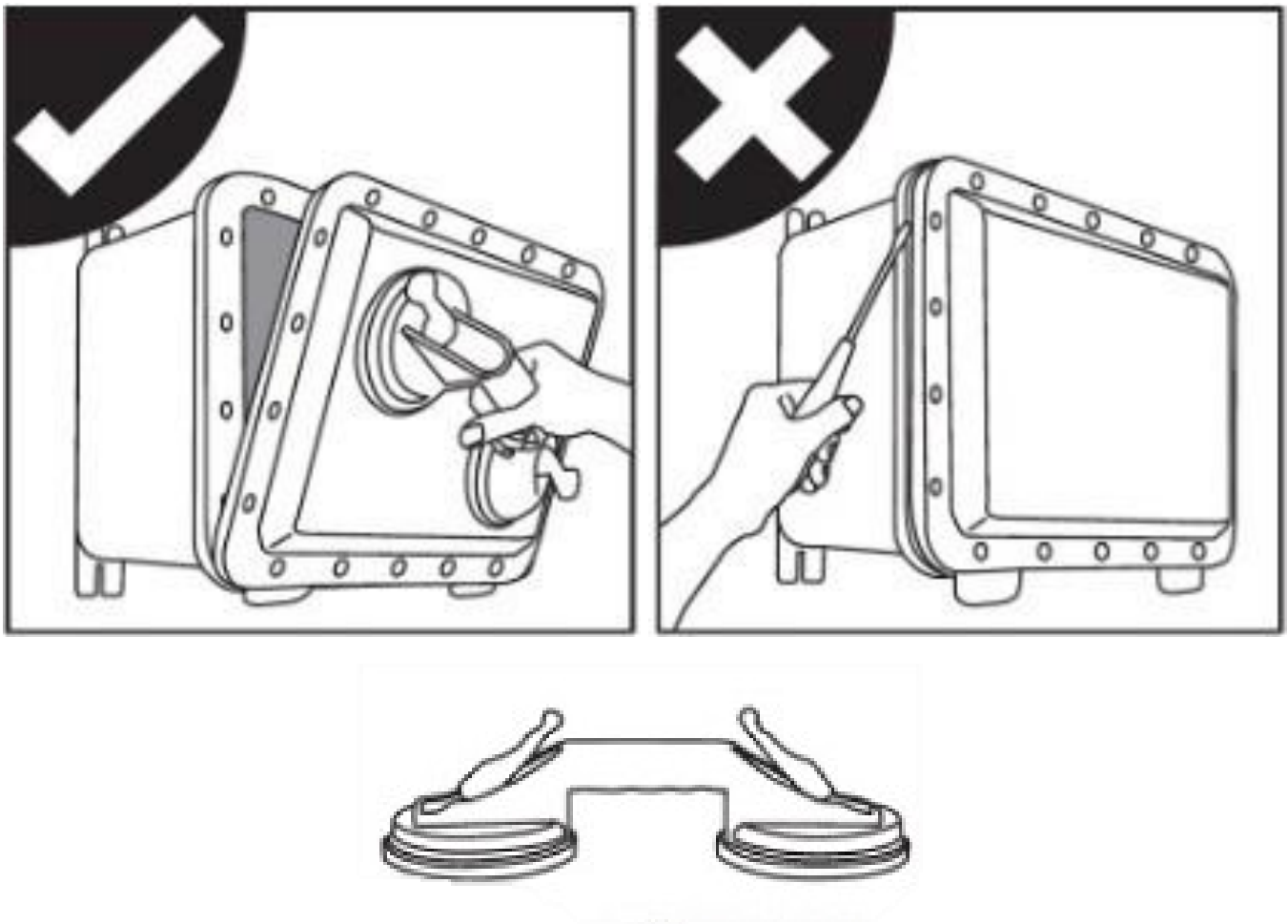


FIGURE 3: Opening Hazardous Environment Enclosure with Suction Lifter

#### Lid Bolt Torques

TABLE 1: Enclosure Bolt Torques

ENCLOSURE MATERIAL	MAXIMUM BOLT TORQUE
Aluminum	20Nm
Stainless Steel	44Nm

## 3.3 Cable Entries



### **Warning!**

The Hazardous Environment flameproof enclosure must only be fitted with suitably approved cable entry devices.



### **Warning!**

The Hazardous Environment Enclosure 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 Hazardous Environment Enclosure 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 Hazardous Environment Enclosure is supplied with entries and connectors as shown in [Figure 4](#).

- 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 Hazardous Environment Enclosure ATEX/IECEx certification.
- Entries D and E are M20 x 1.5 – 6H threaded Ex d entries. Entry D 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 Hazardous Environment Enclosure ordered. Check with Ventev for more information if required



*FIGURE 4: Hazardous Environment Enclosure  
External Entries and Connections*

## 3.4 Earthing



### **Warning!**

The Hazardous Environment Enclosure **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!**

Hazardous Environment Enclosure door earth bond must not be removed.

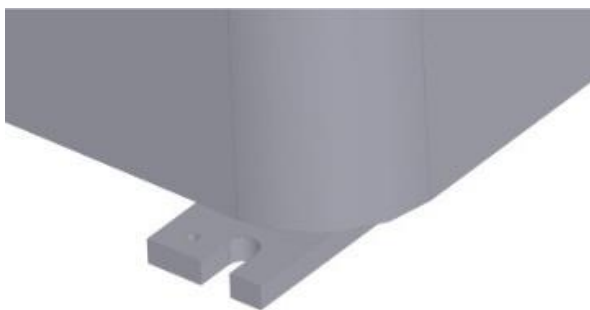


### **Warning!**

The Hazardous Environment Enclosure internal power input connector has an earth connection, which must be terminated to the protective earth conductor of the incoming power supply.

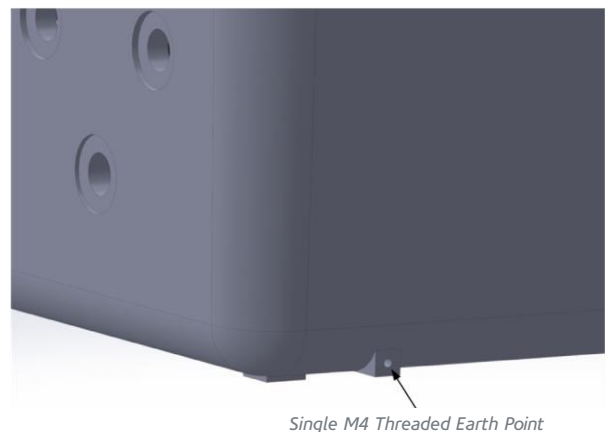
### 3.4.1 Location of Hazardous Environment Stainless-Steel Enclosure External Earth Bond Points

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



*FIGURE 5: Hazardous Environment Stainless Steel Enclosure External Earth Bond Points*

### 3.4.2 Location of Hazardous Environment Aluminum Enclosure External Earth Bond Points



*FIGURE 6: Hazardous Environment Enclosure Earth Bond Point*

## 3.5 Electrical Installation



### **Important**

Do not exceed the power supply parameters specified on the Hazardous Environment Enclosure external rating plate.



### **Important**

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

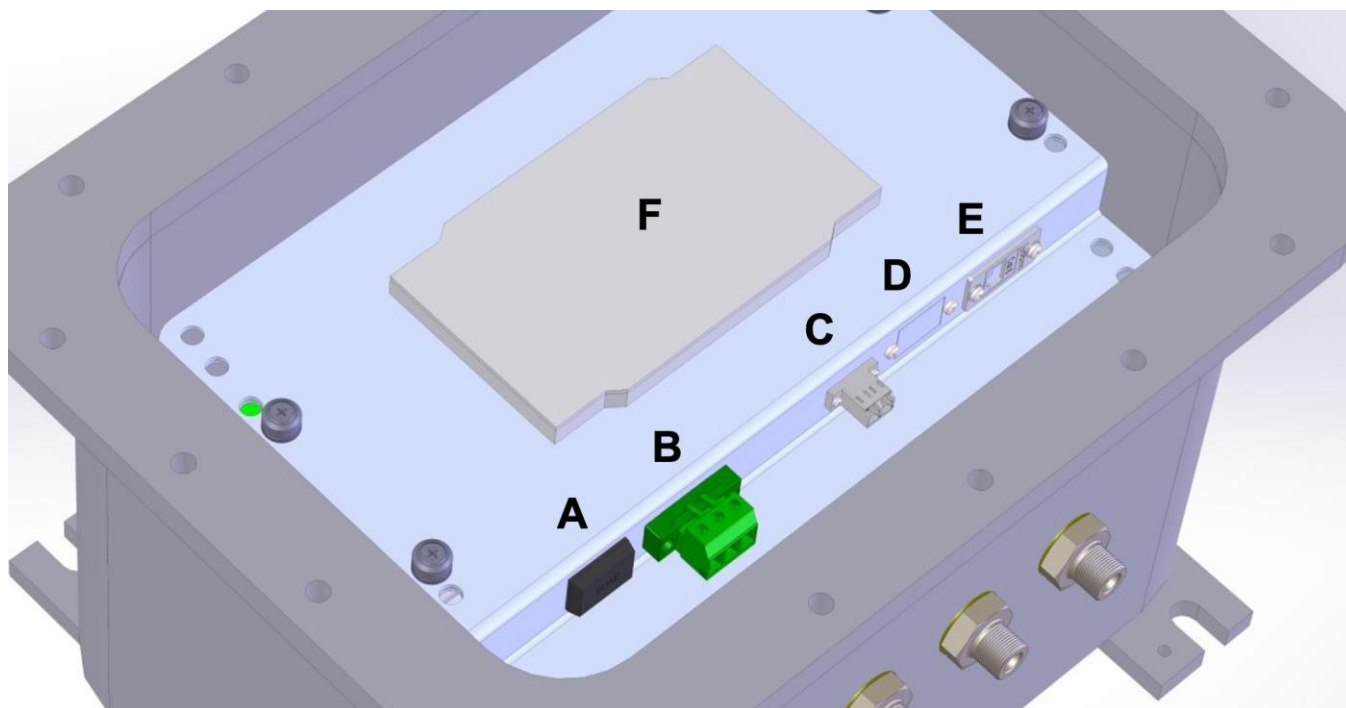


FIGURE 7: Hazardous Environment Enclosure Internal Connections Showing All Options

TABLE 2: Hazardous Environment Enclosure Internal Connection/Features

DESIGNATOR	PURPOSE	COMMENTS
A	Fuse Older	<p>Contains 1 active fuse and 1 spare. Not fitted on POE version.</p> <p>See Section 3.7 for details.</p>
B	Power Input	<p>Mains (L,N,E) or DC (+,-,E) input, dependent on product configuration. Not fitted on PoE version.</p> <p>See Section 3.6 for details.</p>
C	Fiber Input	<p>This can be single mode or multimode fiber, or replaced by a blanking plate, depending on product options.</p> <p>See Section 3.9.3 for details.</p>
D	CAT5E Input	<p>This 10/100/1000 Base T CAT5E data connection. It may also be replaced by a blanking plate, depending on product options.</p> <p>See Section 3.9.1 for details.</p>
E	Console Port	<p>This is a serial console port for Cisco access points.</p> <p>See Section 3.9.4 for details.</p>
F	Fiber Splice Tray	<p>This is a 12-way fiber splice tray, only fitted when the fiber option is selected.</p>

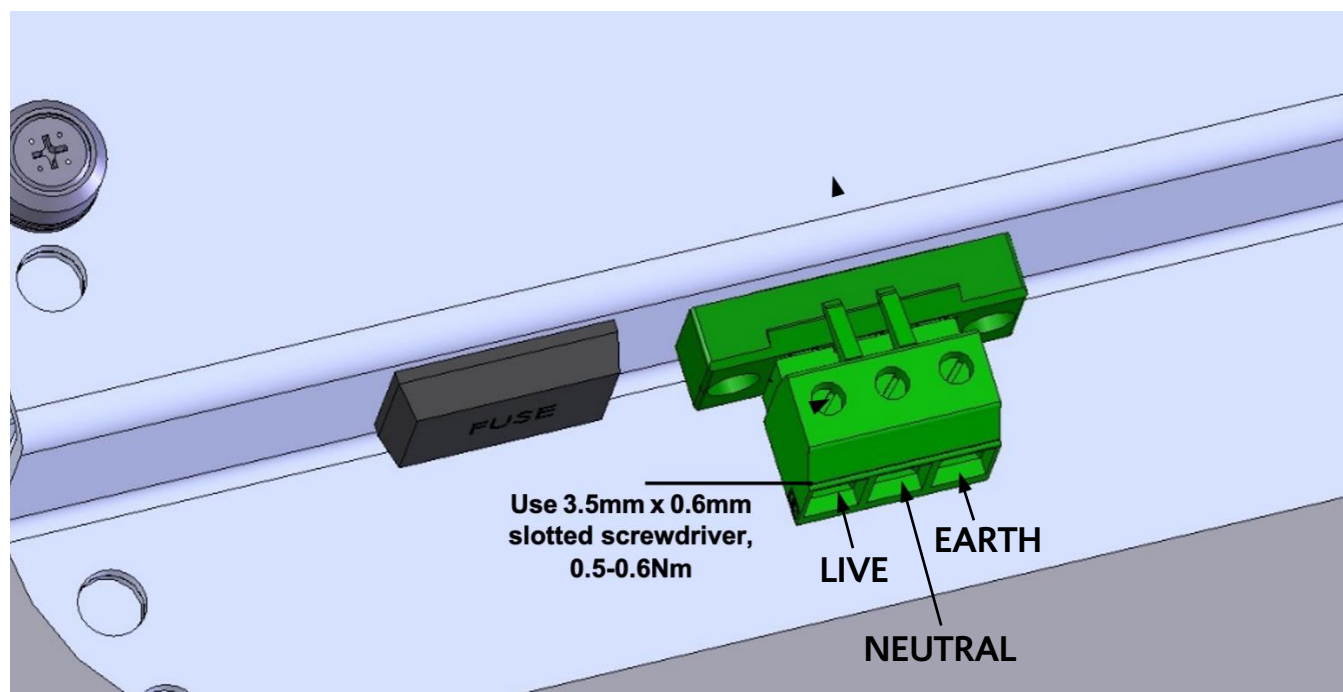


## 3.6 Power Supply



### **Important**

The Hazardous Environment Enclosure 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 8: Hazardous Environment Enclosure Mains Power Connection**

The mains power connection is made with a two-part screw-terminal connector (supplied), the plug part is Phoenix Contact 1804917. It has a minimum tightening torque of 0.5Nm, a maximum of 0.6Nm, and requires a 3.5mm x 0.6mm slotted screwdriver.

TABLE 3: Hazardous Environment Enclosure Power Connector Wire Gauges

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 and without Sleeve	0.25mm <sup>2</sup>	4mm <sup>2</sup>
Two Solid Conductors with Same Cross Section	0.2mm <sup>2</sup>	2mm <sup>2</sup>
Two Stranded Conductors with Same Cross Section	0.2mm <sup>2</sup>	1.5mm <sup>2</sup>
Two Stranded Conductors with Same Cross Section, with Ferrules without Sleeves	0.25mm <sup>2</sup>	1.5mm <sup>2</sup>

## 3.7 Fusing



### **Important**

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

### 3.7.1 Fuse Ratings

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

The Hazardous Environment Enclosure 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 9 for access to Fuse. The fuse holder also carries a spare fuse for convenience.

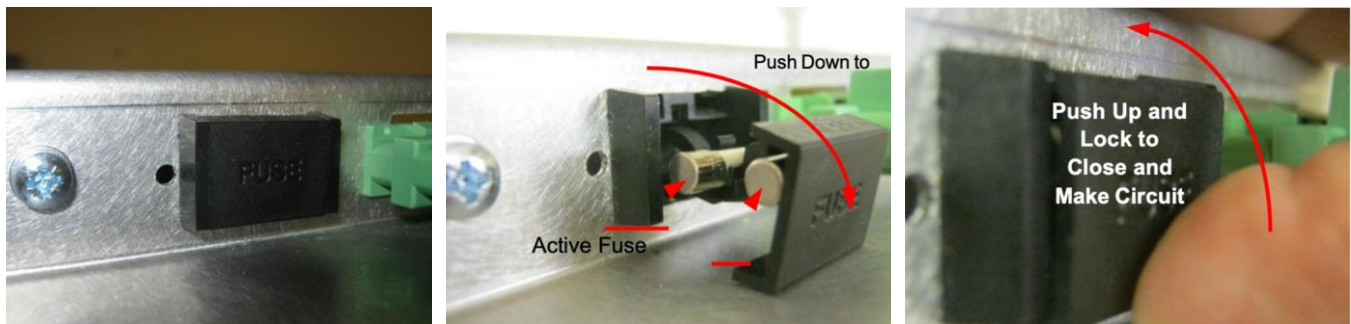


FIGURE 9: Fuse Access

## 3.8 External Overcurrent Protection

The Hazardous Environment Enclosure 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 Ventev 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 Hazardous Environment Enclosure is connected matches the Hazardous Environment Enclosure 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 Hazardous Environment Enclosure, 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):

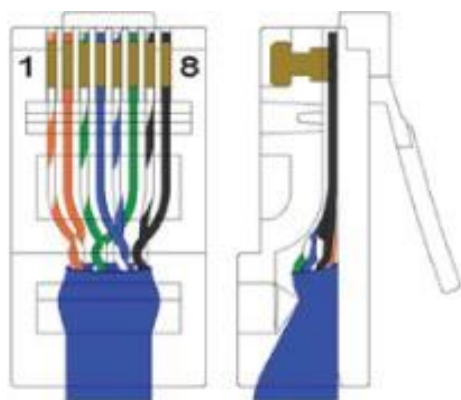


FIGURE 10: RJ45 CAT5E EIA 568B Plug Wiring

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



#### **Warning!**

Optical radiation hazards may be present within the Hazardous Environment Enclosure – observe the warning labels fitted.



#### **Important**

Ensure that only the correct fiber transceiver format/power is connected to the Hazardous Environment Enclosure. Damage to the Hazardous Environment Enclosure fiber interface or customer equipment may occur if the wrong format/excessive optical power is used.

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

### 3.9.3 Optical Fiber

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

Option 4

TABLE 4: Fiber Formats

FIBER FORMAT		CONNECTION	TRANSMITTER POWER	
F	100Base-FX	LC Duplex Multimode 62/125µm or 50/125µm	-14 to -20dBm (62/125µm) -14 to -23.5dBm (50/125µm)	
S	100Base-FX	LC Duplex Single Mode 9/125 µm	-8 to -15dBm	
FG	1000Base-FX	LC Duplex Multimode 62/125µm or 50/125µm	-1 to -9dBm (62/125µm) -1 to -9dBm (50/125µm)	
SG	1000Base-FX	LC Duplex Single Mode 9/125 µm	-3 to -9.5dBm	

	RECEIVER SENSITIVITY	MAX RECEIVER INPUT <i>without damage</i>	WAVELENGTH	TYPICAL RANGE
F	-31dBm	-8dBm	1310nm	2km
S	-34dBm	0dBm	1310nm	30km
FG	-19dBm	-1dBm	1310nm	2km (62/125µm) 1km (50/125µm)
SG	-20dBm	-3dBm	1310nm	10km


### 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.

TABLE 5: Cisco Console Port Wiring


PIN	FUNCTION	PIN	FUNCTION
1	RTS	5	GND
2	DTR	6	RXD
3	TXD	7	DSR
4	GND	8	CTS

### 3.10 Intrinsically Safe RF Outputs




**Warning!**

The Hazardous Environment Enclosure 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 Hazardous Environment Enclosure may be installed in a hazardous areas requiring Category 1 equipment, the Hazardous Environment Enclosure flameproof enclosure must NOT be installed in these environments.



**Warning!**

Do not exceed the RF Threshold Power for the equipment group in which the Hazardous Environment Enclosure 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 Hazardous Environment Enclosure are approved as:

Ex ia IIC Ga Ex  
ia IIIC Da Um =  
253Vr.m.s

### 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 Hazardous Environment Enclosure intrinsically Safe RF outputs must be assessed as ‘simple apparatus’ in accordance with IEC 60079-11.

## 3.12 Antenna Installation

Antennas approved by Ventev for use with the Hazardous Environment Enclosure may either be fitted directly to the RF connectors of the Hazardous Environment Enclosure, or via a length of coaxial cable.

If antennas are sited remotely from the Hazardous Environment flameproof enclosure, any metallic parts of the antennas must be isolated from earth by > 500Vr.m.s, to prevent hazardous earth currents from flowing in the coaxial cable.

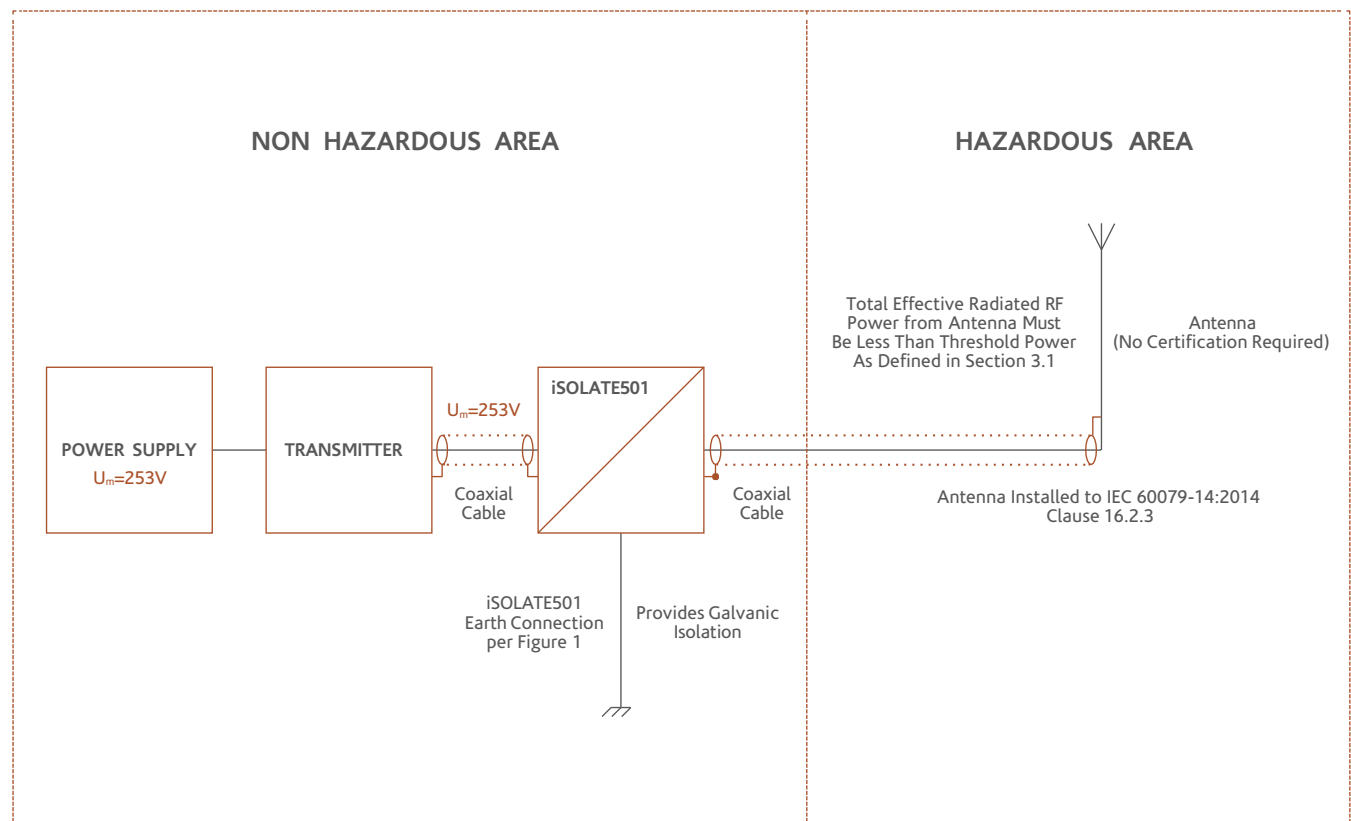
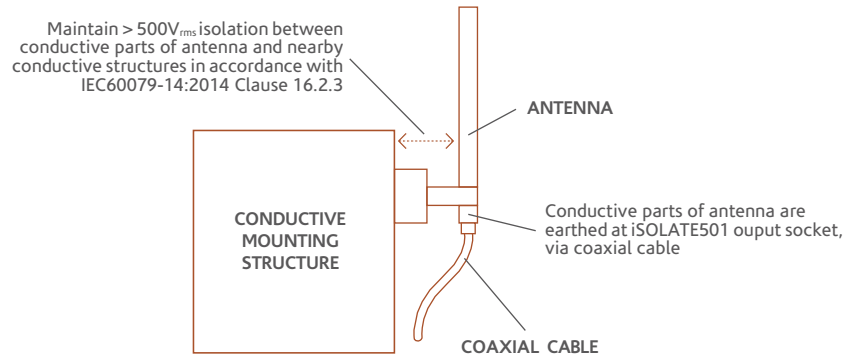


FIGURE 10.1: Hazardous Environment Enclosure IS RF Installation Diagram

# ANTENNA EARTHING

(To IEC 60079-14:2014 Clause 16.2.3)

## EXAMPLE OPTION 1



## EXAMPLE OPTION 2

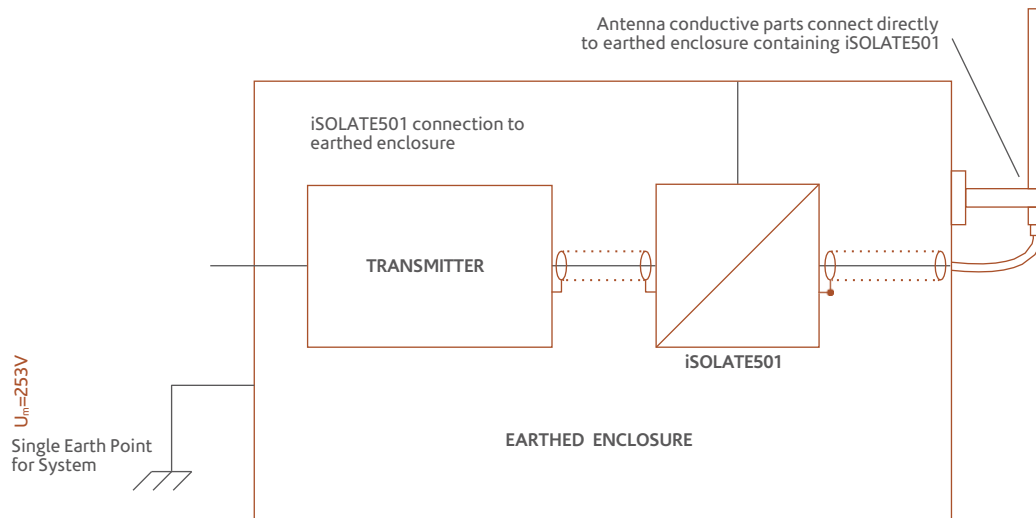


FIGURE 10.2: Hazardous Environment Enclosure IS RF Installation Diagram



### 3.13 Prevention of Electrostatic Charging

The Hazardous Environment 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 electrostatic 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 minimize 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.

## 4 Intended Purpose Usage



### **Warning!**

Maintenance and inspection of the Hazardous Environment Enclosure 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 Hazardous Environment Enclosure 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 Hazardous Environment Enclosure 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 Hazardous Environment Enclosure; 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 Hazardous Environment Enclosure and all its components require no maintenance. All work on the Hazardous Environment Enclosure 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 Hazardous Environment Enclosure 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 Hazardous Environment Enclosure is not designed to be subjected to excessive stresses e.g., vibration, heat, and impact. Additional protection is required to protect against these external stresses.

The Hazardous Environment Enclosure will require additional protection if it is installed in a location where it may be subjected to damage.

# 5 Technical Data

## Specification

CERTIFICATION	⚡ 11 2 (1) GD Ex d [ia IIC Ga] IIB+H2 TS Gb ⚡ 11 2 (1) GD Ex tb (ia Da] IIIC Tloo-c Db MET Class I, II, Div 1, Groups B-G MET Class I, II, Zone 1/21 Groups IIB+H2, III
POWER SUPPLY	120VAC or 230VAC ( /- 10%) IEEE802.3at PoE
MAXIMUM POWER CONSUMPTION	<b>Basic Configuration: 25W</b> <b>With Heaters: 125W</b>
ENCLOSURE MATERIAL	Marine grade copper-free Aluminum light alloy epoxy powder coated 316L Stainless Steel (optional)
INGRESS PROTECTION	IP66
WEIGHT	<b>Aluminum:</b> c. 30kg (hardware dependent) <b>316L Stainless Steel:</b> c. 70kg (hardware dependent)
DIMENSIONS	<b>Aluminum:</b> 415 x 315 x 250mm (16.34 x 12.4 x 9.84in) <b>316L Stainless Steel:</b> 415 x 315 x 253mm (16.34 x 12.4 x 9.96in)
TEMPERATURE	Ambient temperature depends on variant, see order information
RELATIVE HUMIDITY	0 to 95%, non-condensing
INPUT CONNECTIONS	1 x AC power cable entry with screw terminals 1 x PoE power/ data 10/100/1000Base-T Ethernet on RJ45 socket <b>or</b> 1 x Single or Multi mode fibre input on LC connector & Splice Tray <i>Note: MET enclosure entries are via 1/2" NPT drilled entries all other variants are via M20 x 1.5-6H drilled entries</i>
ETHERNET LINK DISTANCE	10/100/1000BASE-T Ethernet on CAT6: up to 100m 1000BASE-FX Multi Mode Fibre: up to 2km, wavelength 1310nm 1000BASE-LX10 Single Mode Fibre: up to 10km, wavelength 1310nm
OUTPUT CONNECTION	Up to eight galvanically isolated N-Type RF outputs. <i>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: 2011 are not exceeded. The maximum RF output of the wireless transmitter and antenna gain must be taken into account when installing equipment.</i>

**TYPICAL INTERNAL  
RF LOSS**

*(between output of  
access point and external  
N-type connector)*

FREQUENCY BAND	INSERTION LOSS (dB)	LOSS INCLUDING SURGE ARRESTOR (dB)
150MHz – 1GHz	0.3	0.45
1GHz – 3.5GHz	0.46	0.61
3.5GHz – 6GHz	1.09	1.24
6GHz – 8GHz	1.41	1.66

SPOT FREQUENCY	INSERTION LOSS (dB)	LOSS INCLUDING SURGE ARRESTOR (dB)
400MHz	0.12	0.24
900MHz	0.16	0.31
2.45GHz	0.48	0.61
5.5GHz	1.28	1.43

## 6 Coin Cell Information

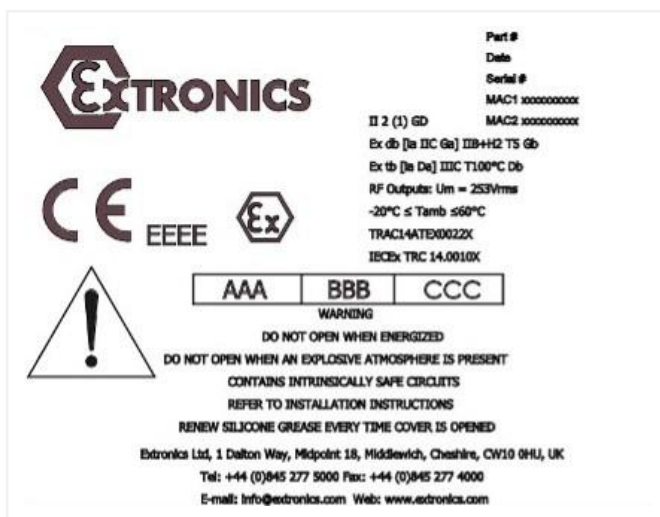
Single coin cells of IEC type A, B, C, E, L, and S conforming to UL 1642 or IEC 60086-4 may be fitted. These shall occupy no more than 1 percent of the free volume of the enclosure and have a capacity of no more than 1.5 Ah. All batteries shall be arranged and operated within the allowable limits specified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

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

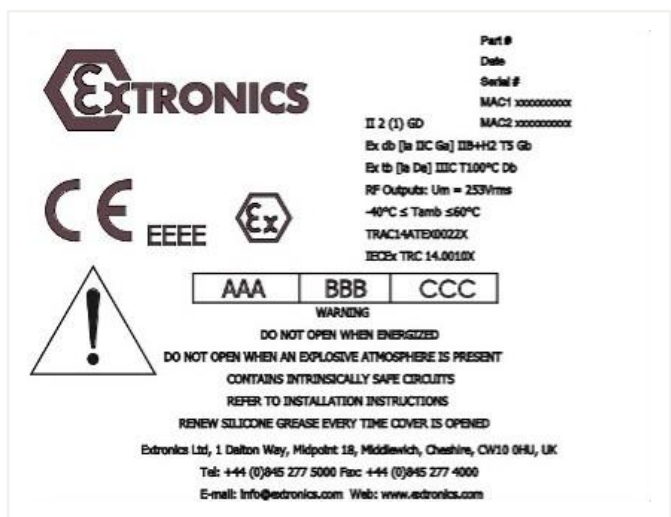
When a coin cell is required to be replaced, the exact same type as marked on the device shall only be fitted.

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

## 7 Label Drawing



LABEL 1: iWAP107-DDD



LABEL 2: iWAP107-T-DDD

AAA: Supply Voltage

BBB: Supply Current

CCC: Supply Frequency

DDD: Product Option Codes

EEE: Notified Body Number for Production

# 8 Type Codes

## Ordering Information

**IWAP107 -[#1]-[#2]-[#3]-[#4]-[#5]-[#6]-[#7]-[#8]-[#9]-[#10]-[#11]-[#12]**

### *Specify Option [#1] - Certification Type*

ATEX/IECEX	A1
METCI/D1	USG
METCII/ D1	USD
MET CI/11, Zone 1/21	CA

### *Specify Option [#2] - Wireless Network Hardware Supply*

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 113), which we will factory fit.

Hardware Supplied by Customer	C
Hardware Supplied by Extronics	E

### *Specify Option [#3] - Wireless Network Hardware Type*

Maximum operating temperature listed in brackets only applies to PoE powered units; take a lower value when considering heat rise inside the enclosure and if powered by AC. If the heater option is selected this will allow access points to operate at a lower ambient indicated on the certificate.

Aruba AP-304 Access Point (0°C to +45°C)	76
Aruba AP-314 Access Point 0°C to +45°C)	71
Aruba AP-334 Access Point (°C to +45°C)	78
Aruba AP-228 Access Point (-40°C to +55°C)	T-Special (59)
Cisco AP1562e Access Point (-40°C to +55/60°C)	T-Special (72)
Cisco AP1532e Access Point (-20°C to +55/60°C)	39
Cisco AP2.802e Access Point (-20°C to +45°C)	65
Cisco AP2702e Access Point {-20°C to +45°C)	52
Cisco AP3802e Access Point (-20°C to +45°C)	66
Cisco AP3702e Access Point (-20°C to +45°C)	45
Cisco Meraki MR74 Access Point (-40°C to +50°C)	T-Special (9)
Siemens Scala nee W774 Access Point (-20°C to +50°C)	53
Siemens Scala nee W788 Series Access Point (-20°C to +60°C)	54 or 74
New wireless hardware - order code to be advised	TBA

### *Specify Option [#4] - Power Supply*

120 VAC Supply	AC1
230 VAC Supply	AC2
IEEE802.3at Compliant Power-over-Ethernet (chosen hardware must be compatible with PoE supply)	POE

*Specify Option [#5] - Ethernet Connection*

100/1000Base-T Ethernet on CAT6 Copper	C
100/1000Base-T Ethernet on CAT6 Copper (Surge Protected)	CS
Multi-mode 1000BASE-LX Fibre with LC Connector	FG
Single-mode 1000BASE-LX Fibre with LC Connector	SG

*Specify Option [#6] - Isolated Output for Radio 1*

150MHz to 8GHz	501
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*Specify Option [#7] - Number of Antenna Outputs for Radio 1*

0/1/2/3/4 off, CT-01	0/1/2/3/4
0/1/2/3/4 off, CT-01 with Surge Protector	0S/1S/2S/3S/4S

*Specify Option [#8] - Isolated Output for Radio 2*

Not Required	N
150MHz to 8GHz	501

*Specify Option [#9] - Number of Antenna Outputs for Radio 2*

0/1/2/3/4 off, CT-01	0/1/2/3/4
0/1/2/3/4 off, CT-01 with Surge Protector	0S/1S/2S/3S/4S

*Specify Option [#10] - Enclosure Heating (Not Compatible with PoE Supplies)*

No Enclosure Heating	N
Supplied with Enclosure Heating	H

*Specify Option [#11] – Antenna Position (See Previous Page for Antenna Layout Pattern, which Relates to Total Number of RF Outputs)*

Remote Mount	R
Direct Mount	D

*Specify Option [#12] - Enclosure Material*

Marine Grade Copper-free Aluminum Light Alloy	AL
316L Stainless Steel	SS

*Accessories*

iANT2xx Range of Rugged Simple Apparatus Antennas	IANT2xx
316L Stainless Steel Pipe Mount Bracket Kit for iWAP107 (to fit 1.5- 2" diameter pipe or rectangular post)	IWAPMB03



# 9 EU Declaration of Conformity



## EU Declaration of Conformity

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

**Equipment Type: iWAP107**

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+H<sub>2</sub> T5 Gb  
Ex tb [ia Da] IIIC T100°C Db  
RF Outputs: U<sub>m</sub> = 253V<sub>r.m.s</sub>  
-20°C ≤ T<sub>amb</sub> ≤ 60°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"

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**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: 11<sup>th</sup> June 2021

404132(9)

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