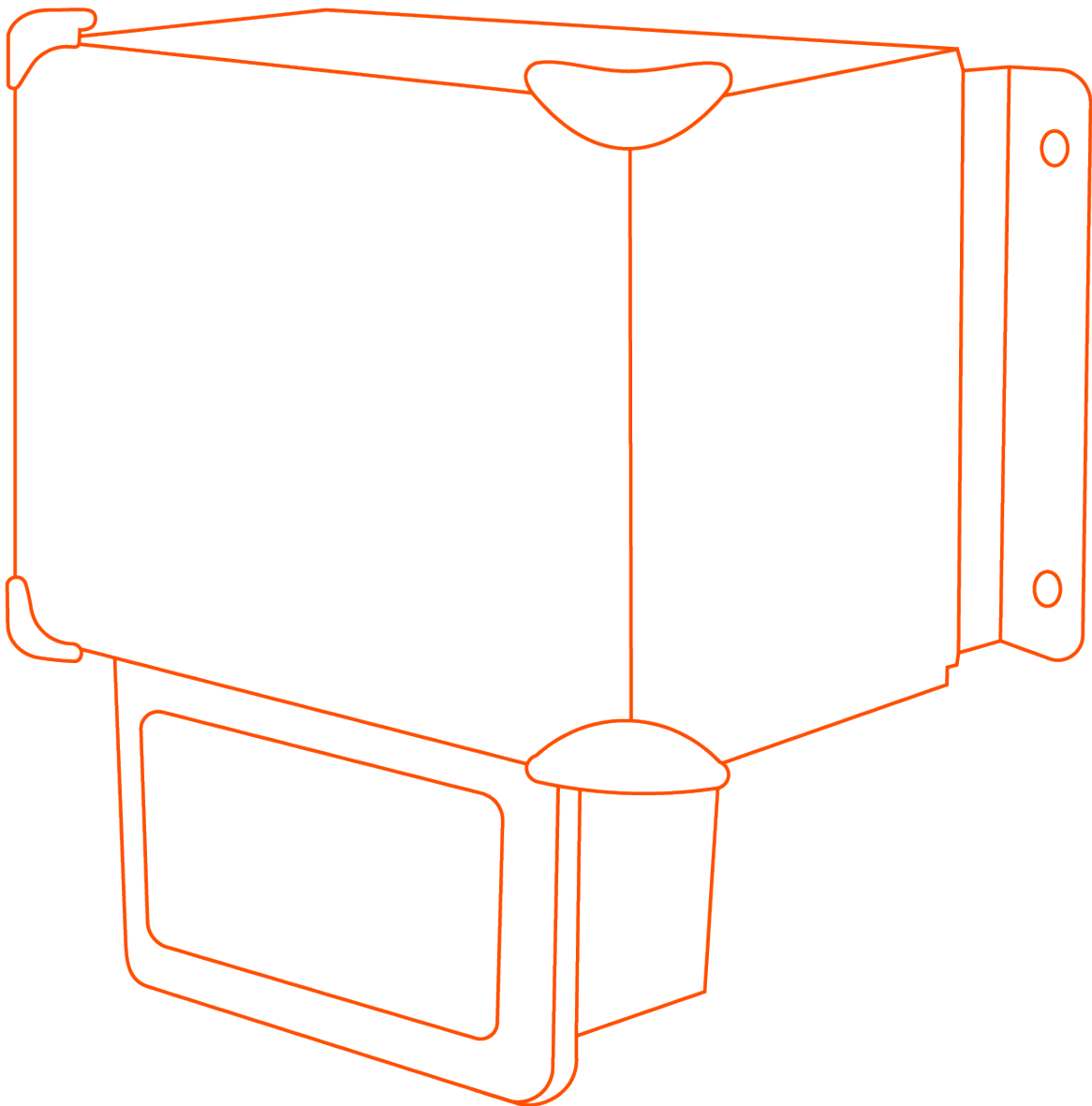


Installation and Operation Manual

# Class 1 Division 2 Enclosure System





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# 1: Introduction

*Ventev's Class 1 Div. II Enclosure has been designed to enable the deployment of popular wireless access points, radio, and communications equipment, or Industrial Internet of Things (IIoT)/ Industry 4.0 devices in Zone 2 / Division 2 hazardous areas (gas or dust).*

*The RF outputs of the enclosure are galvanically isolated to make them intrinsically safe, allowing users to choose non-certified antennas for use with their wireless hardware.*

*A range of wireless devices from multiple manufacturers, including Cisco, Meraki, and Aruba, have been assessed by our engineers, following the guidelines of our Notified Body, as suitable for use in the Ventev Class 1 Div. II Enclosure System and complying with all regulations.*

*With IP66 / Type 4 (NEMA standards) ingress protection and a Marine grade copper-free aluminium alloy, e-coat with epoxy powder coated enclosure, the Ventev Class 1 Div. II Enclosure System is suitable for a wide variety of industrial and off-shore locations including chemical and pharmaceutical plants, oil refineries, FPSOs, and oil and gas platforms.*

# 2: Safety Information and Notes

## 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.*

## Special Conditions for Safe Use

### ATEX/IECEX

1. The equipment is not to be mounted in a high airflow dust-laden atmosphere and should only be cleaned with a damp cloth.
2. The equipment is to be mounted in a vertical orientation with the Ec connection box at the base.
3. The connection between the antenna and the factory-installed N-type connector shall maintain at least IP54.
4. The 'ec' portion of the enclosure may contain a USB console connection. When fitted, this connection is for service purposes only and shall not be used in normal operation.

### MET

1. The equipment is not to be mounted in an area with a high airflow dust laden atmosphere, in addition, cleaning of the enclosure shall only be done with a damp cloth.
2. The enclosure shall only be mounted in a vertical orientation with the top plate face up.
3. The connection between the antenna and the factory installed N-type connector shall maintain at least IP54.
4. The 'ec' portion of the enclosure may contain a USB console connection. When fitted, this connection is for service purposes only and shall not be used in normal operation.
5. Temperatures may exceed 70°C at the junction box gland entry point and 80°C at the cable branching point, use suitably rated cable and cable entry devices.

## List of Notes

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

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



### **Warning!**

Installation of the Ventev Class 1 Div. II Enclosure System is only to be performed by skilled electricians and instructed personnel in accordance with national legislation.

This contains INTRINSICALLY SAFE circuits.

The Ventev Class 1 Div. II Enclosure System Intrinsically Safe RF output ports are located in the positions shown in Section 3.4. Only antennas in accordance with Section 3.12 may be connected to these ports. Refer to Section 3.13 for antenna installation requirements

The Ventev Class 1 Div. II Enclosure System 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. Refer to Section 3.4 for details. The cover plate earth bond must not be removed.

The Ventev Class 1 Div. II Enclosure System front cover plate earth bond must not be removed.

The Ventev Class 1 Div. II Enclosure System internal power input connector has an earth connection, which must be terminated to the protective earth conductor of the incoming power supply..

The Ventev Class 1 Div. II Enclosure System must NOT be installed in hazardous areas requiring Category 1, 2, M1, or M2 equipment.

The Ventev Class 1 Div. II Enclosure System enclosure must be secured only with the bolts supplied, and these must be tightened to the correct torque value. See Section 3.3.2 for details.



## **Warning!**

The Ventev Class 1 Div. II Enclosure System enclosure must NOT be opened when an explosive gas or dust atmosphere is present, or when the equipment is energized.

Do not exceed the RF Threshold Power for the equipment group in which the Ventev Class 1 Div. II Enclosure System 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 3.11.1 for an example of how to calculate the RF Threshold Power

The Ventev Class 1 Div. II Enclosure System must not be modified in any way.

Hazardous voltages are present within the Ventev Class 1 Div. II Enclosure System.

Hot surfaces may be present on the Ventev Class 1 Div. II Enclosure System enclosure – observe any warning labels fitted.

Optical radiation hazards may be present within the Ventev Class 1 Div. II Enclosure System enclosure – observe any warning labels fitted.

The Ventev Class 1 Div. II Enclosure System may weigh up to 55 lbs./25 kg. Exercise care when handling and mounting.

DO NOT lift the Ventev Class 1 Div. II Enclosure System using threaded entries or N-type RF connectors. Good manual handling practices should be followed.

User access: Normal user access to the enclosure is through the cover plate and junction box.

Special access: If the main enclosure is opened, the integrity of the main enclosure sealing must be confirmed by a competent person.

Console port connections can only be used during setup or maintenance activities. They should not be left connected in a hazardous area.

Internal cells or batteries if applicable must only be replaced with cells or batteries of the same type.

Ventev Class 1 Div. II Enclosure System's 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!**

Maintenance and inspection of the Ventev Class 1 Div. II Enclosure System must be performed in accordance with IEC 60079-17.

Although antennas connected to the Intrinsically Safe RF outputs of the Ventev Class 1 Div. II Enclosure System may be installed in a hazardous area requiring Category 1 equipment, the Ventev Class 1 Div. II Enclosure System enclosure must NOT be installed in these environments.

### **Important!**

There should be no need to enter the unit and change the fuse as it is resettable.

The Ventev Class 1 Div. II Enclosure System may be powered from several different power sources, depending on its configuration. Refer to the rating plate of the unit supplied for details.

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

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

Do not exceed the power supply parameters specified on the Ventev Class 1 Div. II Enclosure System external rating plate.

Ensure that only the correct fiber transceiver format/power is connected to the Ventev Class 1 Div. II Enclosure System. Damage to the Ventev Class 1 Div. II Enclosure System fiber interface or customer equipment may occur if the wrong format/excessive optical power is used.

Ensure that NO TOOLS come in contact with the gasket of the enclosure, as this may cause irreparable damage and render the unit unsafe.

# 3: Installation

## Installation Overview for MET Certified Enclosure

Mount the Ventev Class 1 Div. II Enclosure System to a suitable structure using mounting points shown in Figure 1. The recommended fixings are:

- M10 Flat Washer Form A DIN125A A4.
- Socket Cap Head Screw M10 x 30 DIN912 A4-80 (minimum thread length of 30mm). The Thread can be longer to suit the application.

Connect suitably assessed antennas to RF outputs, Figure 3 marked A-D as appropriate.

- Connection type: N-type.

Apply suitably assessed glands to cable entries, Figure 3 marked E and F as appropriate.

- Thread maximum size is M25x1.5 or 3/4" NPT depending on customer specification.
- Connect cables to glands as required.

Make off connections inside the junction box

- Remove the cover plate and keep the bolts for reassembly
- When refitting the cover plate, only use supplied bolts and tighten to a torque of 3.5Nm. Check seal position and condition

## Mounting

Mount the Ventev Class 1 Div. II Enclosure System to a suitable structure, using the mounting points shown in Figure 1.

The recommended fixings are:

- M10 Flat Washer Form A DIN125A A4.
- Socket Cap Head Screw M10 x 30 DIN912 A4-80 (minimum thread length of 30mm). The Thread can be longer to suit the application.

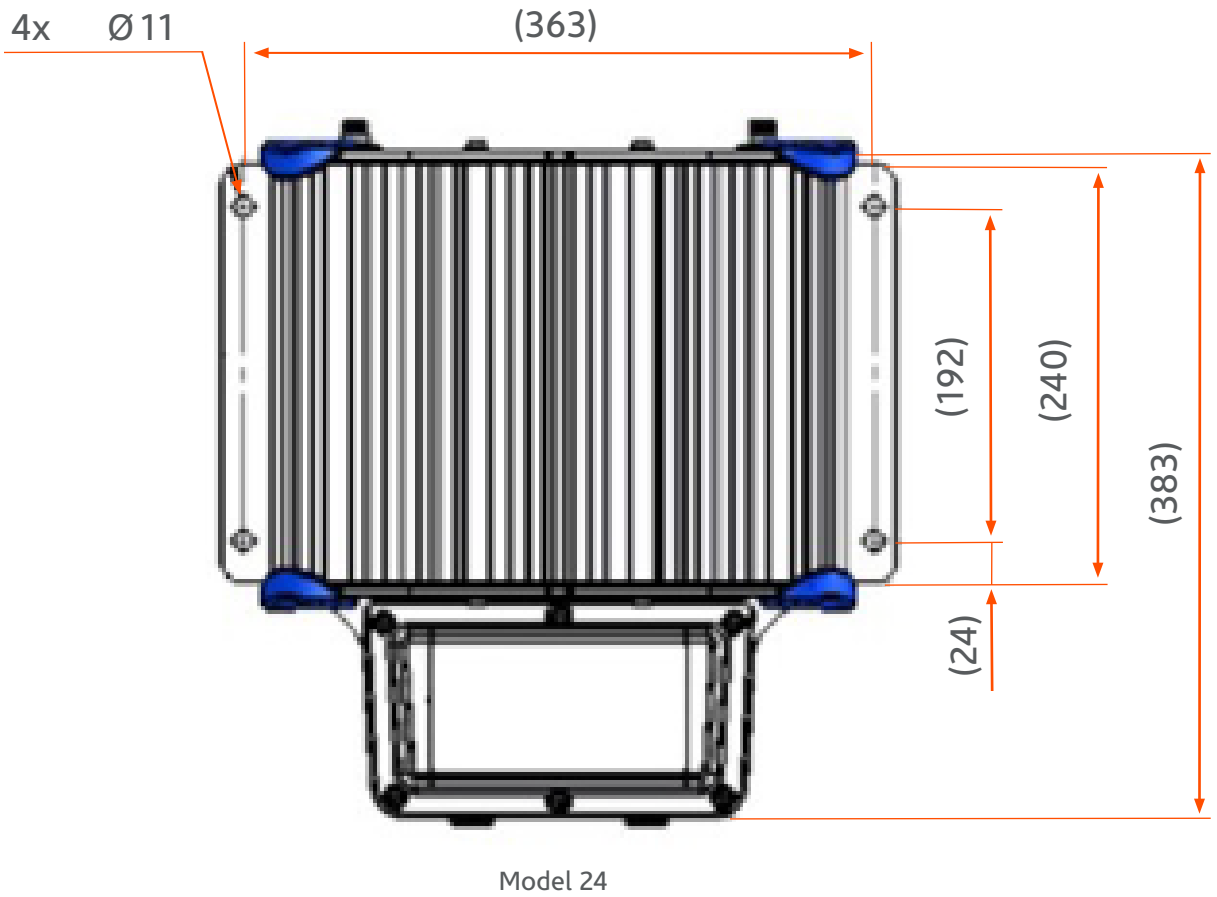


Figure 1: Aluminium Enclosure Mounting Dimensions



# Opening and Closing the Enclosure

## Opening the front cover plate

The front cover plate is shown in Figure 2.

- Remove all bolts using a metric hex key. Store the bolts carefully to avoid damage or loss.
- Ensure care is taken when removing the cover. Do not use a screwdriver or any other sharp implement to prise the cover apart as it may damage the sealing gasket.



*Figure 2: Opening the Front Cover Plate.*

## Closing the Enclosure

- Inspect the gasket to ensure its sealing integrity. If the front cover gasket is damaged, it must be replaced.
- Check all bolts are the correct type and free from damage.
- Re-insert the bolts and hand-tighten them only.
- Using a torque wrench fitted with a 3mm hex head, tighten the bolts in opposite corners of the enclosure, then work clockwise around the front cover. Tighten to a torque of 3.5Nm.

# Cable Entries

## Typical Cable Entries and Connections

Ventev Class 1 Div. II enclosures are supplied with entries and connectors as shown in Figure 3.

- Connections A-D are INTRINSICALLY SAFE outputs providing galvanically isolated RF signals (see Section 3.10 for details), carried on conventional 50Ω impedance N-type female connections. The N-type connections are the front part of the bulkhead which transit through the enclosure and are approved as part of the ATEX/IECEx certification.
- Apply suitably assessed blanking plugs or cable entry devices to locations marked E and F as appropriate.
  - The standard thread size is M20 x 1.5.
  - Suitably certified M20 IP66 blanking plugs can be fitted.
  - Cable entry devices or adaptors can be fitted to meet IP66.
    - Threaded adaptors may be used according to customer order specifications.
  - The Enclosure may be shipped with thread protectors in cable entries E and F, which are not to be used for Ex or IP protection.
- The position and configuration of cable entries and connections can vary. Mark off connections inside the junction box.
  - Remove the cover plate and keep the bolts for reassembly.
  - When refitting the cover plate, only use supplied bolts and tighten to torque 3.5Nm.
  - Check seal position and condition. Refer to Section 3.2.2.



Figures 3: Entries and Connectors.

# Earthing

## Protective Earth Connection

The protective earth connection is provided on the power input connector, Figure 6, item B. The protective earth conductor must have the minimum sizes, Table 1, and must be protected.

CONDUCTOR PROTECTION	NON-FLEXIBLE METAL CONDUIT
Heavy-duty cord jacket, metallic flexible conduit	2.5mm <sup>2</sup>
Non-flexible metal conduit	1.5mm <sup>2</sup>

Table 1: Protective Earth Connection

The use of non-metallic flexible conduits is not allowed.

## Location of enclosure earth bond points

There are two earth bonding points, one inside the junction box and one outside the junction. Torque earth bonding fixings 3.5Nm.

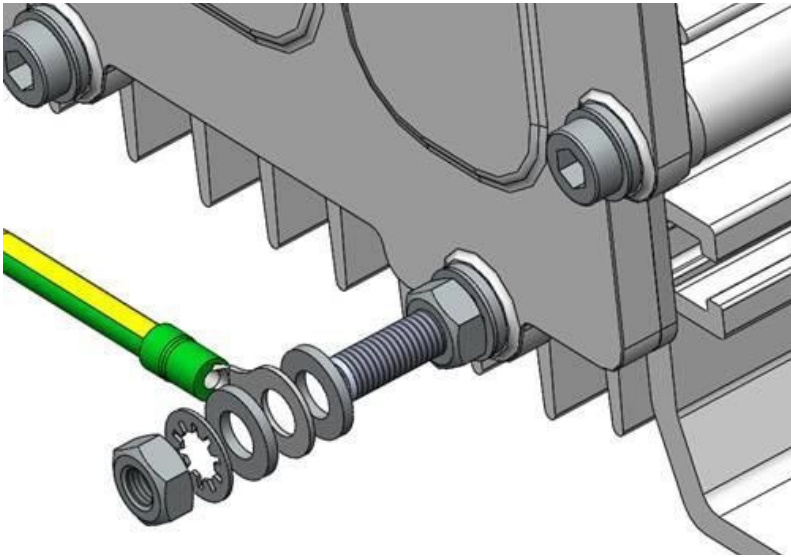
Inside the junction box, there is an M6 threaded earth bonding point, Figure 4. Removal of the front cover plate is required to access the area. Before putting in service:

- Perform applicable electrical safety checks.
- Visually check the integrity of seals.



Figure 4: Enclosure Junction Box Earth Bonding Point.

Outside the Junction Box, an earth bonding point is also provided, Figure 5.



*Figure 5: External Earth Bonding Point.*

MET additional information:

- The Ventev Class 1 Div. II Enclosure System must be connected to the plant earth system using at least one of the bonding points, using a minimum 4mm<sup>2</sup> conductor. The earth cable must be installed in accordance with the requirements of NFPA 70 and CSA C22.1.
- Assemble the external earth bond as shown in Figure 5.

# Electrical Installation

View inside the junction box, Figure 6, and Table 2.

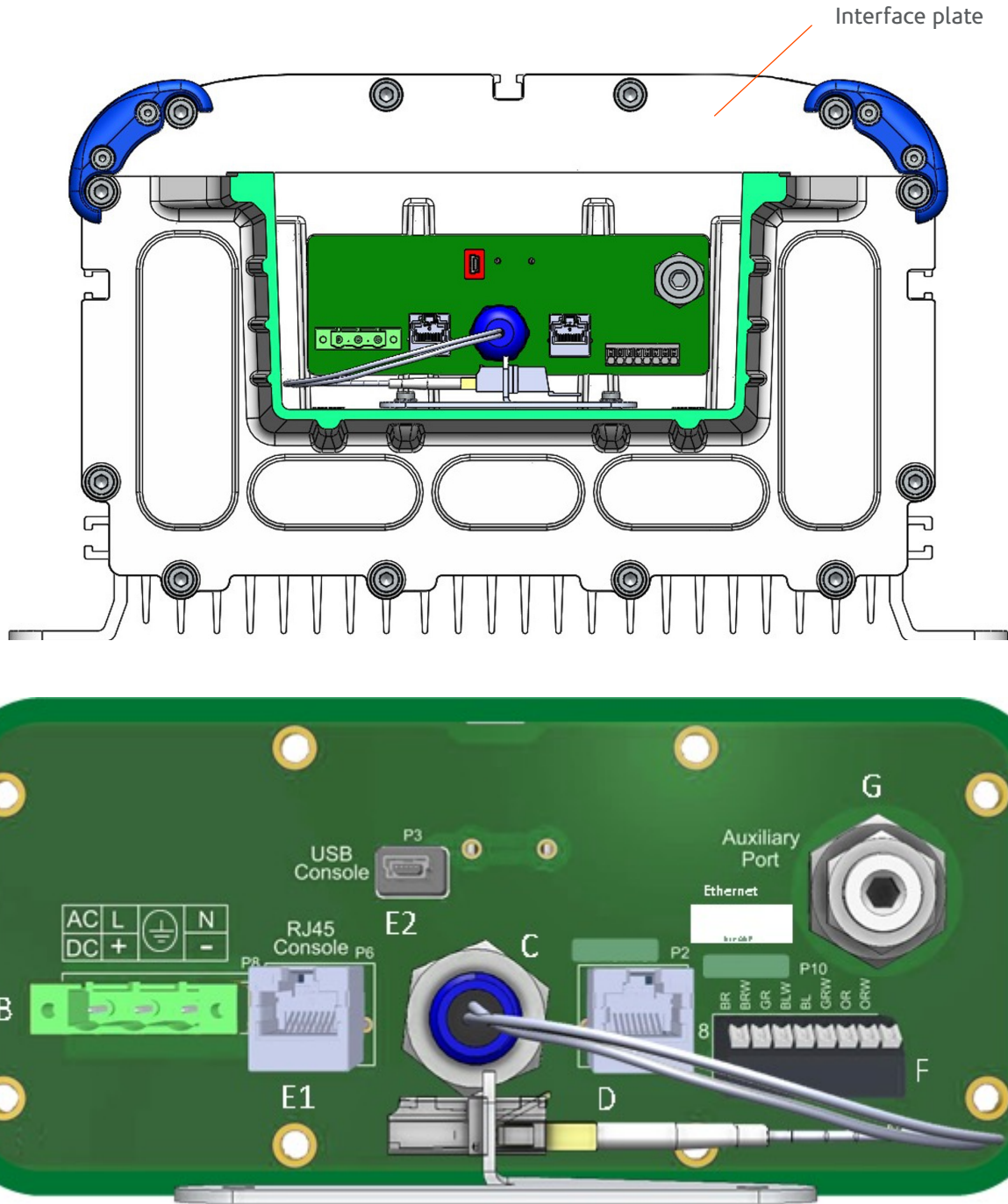


Figure 6: Internal Connections Showing All Options.



DESIGNATOR	PURPOSE	COMMENTS
B	Power input	Mains (L, N, E) or DC (+, -, E) input, dependent on product configuration
C	Fiber input is cabled to separate dual LC couplers	Can be replaced by a blanking plate, depending on product options. None fiber configurations will be supplied with a different PCBA.
D	Ethernet input	For or Ethernet connection. Alternative connection to F.
E1	Console port	Alternative connection to E2.
E2	Console port	Maintenance/setup use only. Must not be used when Ventev Class 1 Div. II Enclosure System is in service. Note* On some Access Points a USB converter is supplied to enable a connection using AP-specific maintenance cables.
F	PoE/PoE (+) input	Alternative connection to D for Ethernet. 8-way push-fit connector.
G	Auxiliary port	Pressure test port

Table 2: Internal Connection/Features

## Power Supply / Input Connector

The mains power connection is a phoenix socket on the PCB. The plug part is Phoenix contact 1795789. It requires a minimum tightening torque of 0.5Nm. Note wire types in Table 3.

WIRE TYPE	MINIMUM CROSS-SECTIONAL AREA	MAXIMUM CROSS-SECTIONAL AREA
Single Solid Core	0.2mm <sup>2</sup>	2.5mm <sup>2</sup>
Single Stranded Wire	0.2mm <sup>2</sup>	2.5mm <sup>2</sup>

Table 3: Power Connector Wire Gauges

MET additional information:

The actual wire gauge size to be used should be sufficiently rated with regards to the overcurrent protection device fitted and must be as per the applicable installation code - National Electrical Code, Canadian Electrical Code, etc.

## Fuse Rating

The Enclosure is fitted with a single resettable fuse on the live circuit with a rating dependent on the application. Maximum (and typical) values are:

- AC input: 2A (750mA)
- DC input: 7A (2.5A)

If there is a power fault, the fuse may activate in which case power should be removed from the unit and reapplied.

## External Overcurrent Protection

The Enclosure should be installed on a circuit with a double-pole circuit breaker of a maximum rating of 25A. This is the maximum current rating of the smallest internal chassis earth bond in accordance with EN60950-1 2.6.3.3.

## Data Connections

### Copper Ethernet

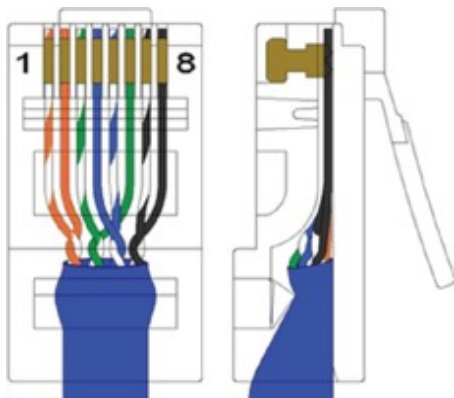


#### **Important!**

Check that the line speed of the switch port to which the Enclosure is connected matches the 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 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 shown in Figure 7 (EIA 568B standard).



PIN	FUNCTION
1	OE/WE
2	OE
3	GN/WE
4	BE
5	BE/WE
6	GN
7	BN/WE
8	BN

Figure 7: RJ45 CAT5E EIA 568B Plug Wiring

### Power-Over-Ethernet (POE)

If POE is used, the format will depend on the access point installed in the Enclosure. Ensure that the correct Power Sourcing Equipment (PSE) is used. Connect the RJ45 cable per Section 3.10.1.

### Optical Fiber

The Enclosure optical fiber format may be any shown in Table 4, refer to product option code #5 for details. Other optical formats are available on request.

OPTION #5	FIBER FORMAT	CONNECTIONS	TRANSMITTING POWER	RECEIVER SENSITIVITY	MAX RECEIVER INPUT WITHOUT DAMAGE	WAVELENGTH	TYPICAL RANGE
MF	1000 Base- SX	LC Duplex Multimode	3 to -9.5dBm (62/125µm)  -1 to - 9dBm (50/125µm)	-19dBm	-1dBm	850nm	550m
SF	1000 Base- LX	LC Duplex Single	-3 to -9.5dBm	-20dBm	-3dBm	1310nm	20km

Table 4: Fiber Formats

#### Table 4: Fiber Formats

MET additional information:

Where fitted, the fiber optic connection may only be supplied from a Class 1 laser source. The output from the fiber optic connection is also a Class 1 laser source.

## Console Port

Two types of console port connectors that can be specified below. Only one type is possible on the same unit.

### RJ45

The console port, Table 5, 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, and 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

Mini USB

PIN	FUNCTION
1	Vcc
2	D-
3	D+
4	ID
5	GND

Table 5: Cisco console port wiring

## Intrinsically Safe RF Outputs

Refer to Figure 8 for the location of Intrinsically Safe RF outputs.

### Example of RF threshold power calculation

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

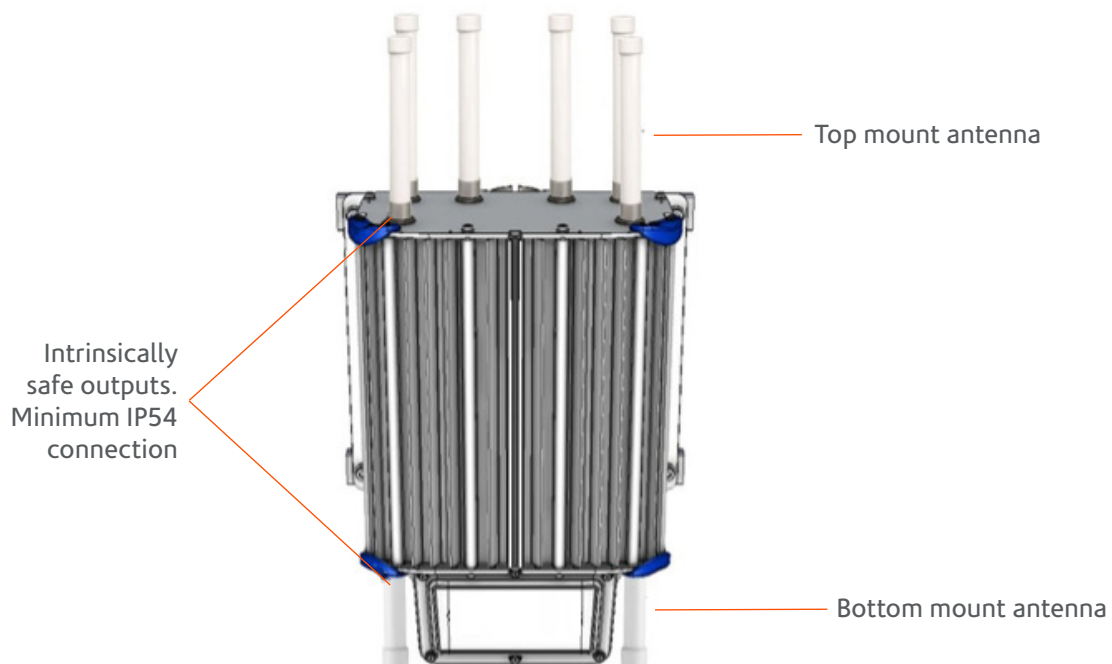
Maximum transmitter output power (from transmitter datasheet) = 20dBm (100mW)

Coaxial cable loss = 2dB Antenna gain = 5dBi

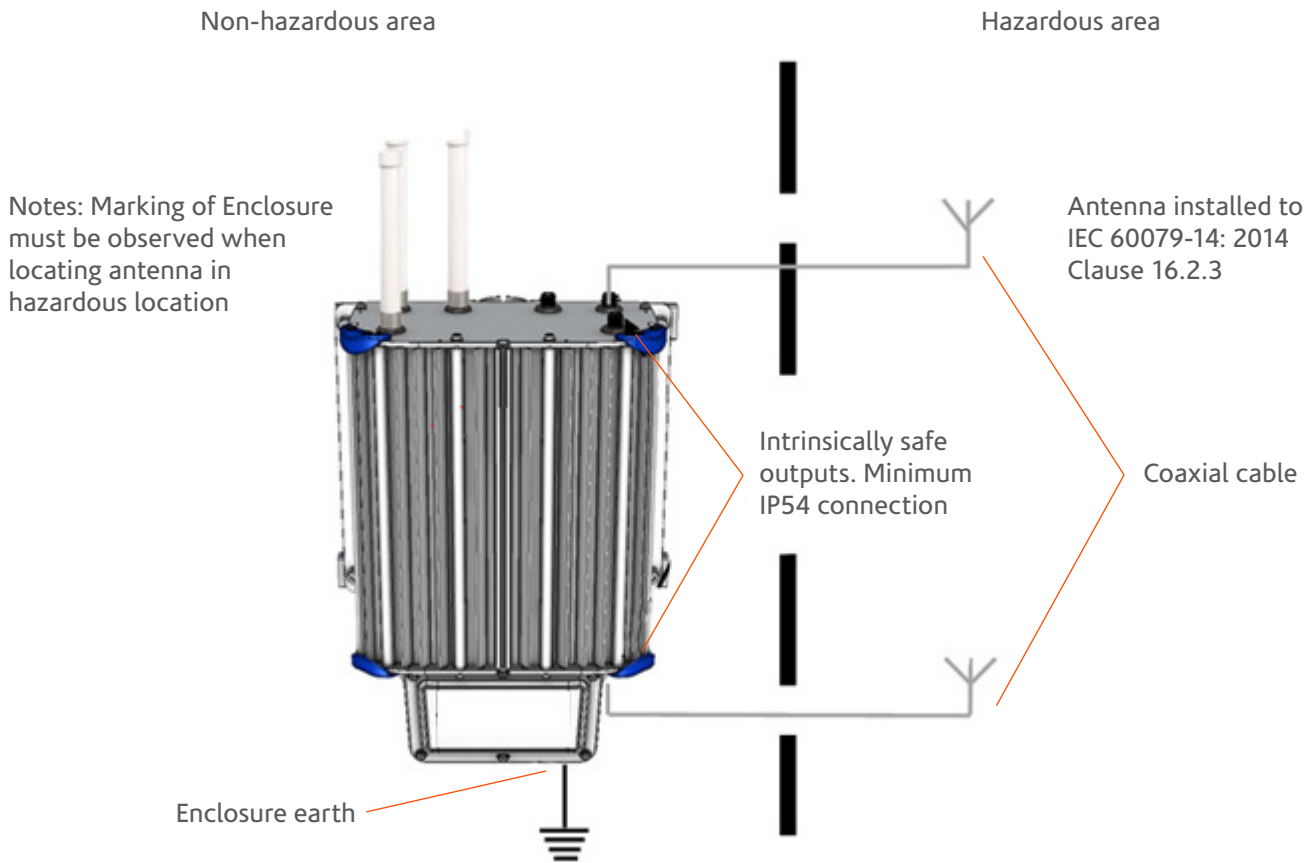
Threshold power = 20dBm – 2dB + 5dBi

Threshold power = 23dBm (200mW)

### Standard configuration



Remote configuration



Maintain >500Vrms isolation between conductive parts of the antenna and nearby conductive structures in accordance with IEC60079-14:2014 clause 16.2.3

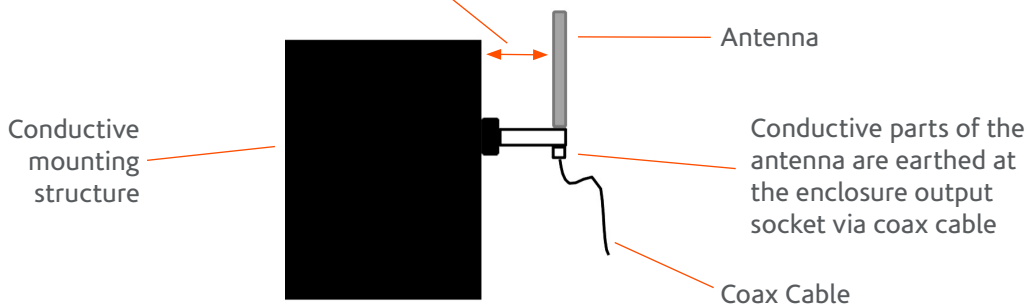


Figure 8: IS RF Installation Diagram

## Antenna Requirements

Antennas connected to the Enclosure’s Intrinsically Safe RF outputs must be assessed as ‘simple apparatus’ in accordance with IEC 60079-11.

## Antenna Installation

Antennas approved by Ventev for use with the Class 1 Div. II Enclosure System may either be fitted directly to the RF connectors of the Enclosure or via a length of coaxial cable.

Table 6: Approved Antennas.

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

## Ex Main Enclosure Test

If required, the integrity of the main enclosure sealing can be checked. To order at Pressure Test Kit, Figure 9, use order code VNV-C1D2-PRESSURE-KIT.

Sealing integrity confirmed if under constant temperature conditions, the timeinterval required for an internal pressure of 0.3kPa (+10%, -0%) below atmosphere to change to half the initial value shall not be less than 180 seconds.



Figure 9: Pressure Test Kit

## 4: Intended Purpose Usage

*The Ventev Class 1 Div. II Enclosure System is built using modern components and is extremely reliable in operation. 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.*

### Transportation and Storage

All Ventev Class 1 Div. II Enclosure System devices must be so transported and stored that they are not subjected to any excessive mechanical stresses.

### Authorized Persons

Only persons trained for the purpose are authorized to handle the Ventev Class 1 Div. II Enclosure System; 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.

### Cleaning and Maintenance

In general, the Ventev Class 1 Div. II Enclosure System and all its components require no maintenance. The Ventev Class 1 Div. II Enclosure System does include seals. These seals should be replaced every 10 years.

All work on the Ventev Class 1 Div. II Enclosure System by personnel who are not expressly qualified for such activities will cause the Ex-approval and the guarantee to become void.

### Cleaning and Maintenance Intervals

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

### Aggressive substances and environments

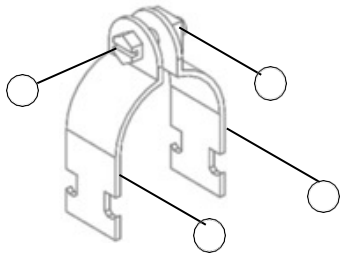
The Ventev Class 1 Div. II Enclosure System is not designed to encounter aggressive substances or environments, please be aware that additional protection may be required.

### Exposure to external stresses

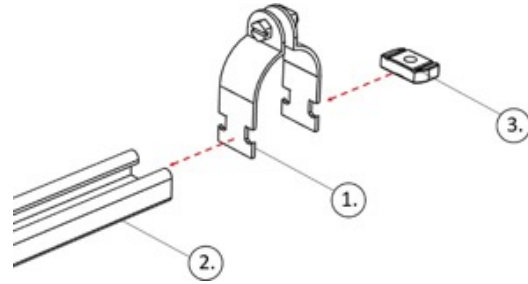
The Ventev Class 1 Div. II Enclosure System is not designed to be subjected to excessive stresses e.g., vibration, heat, or impact. Additional protection is required to protect against these external stresses.

The Ventev Class 1 Div. II Enclosure System will require additional protection if it is installed in a location where it may be subjected to damage.

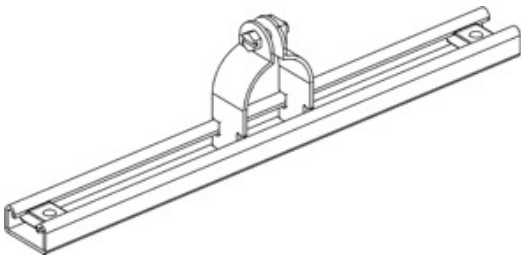
# 5: Pole Mounting



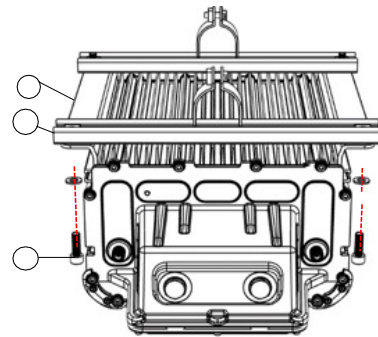
1. Using the clamp brackets (1) and (2) place them together as shown.
2. Align the square nut (3) on one side and secure it with the fixing screw (4).



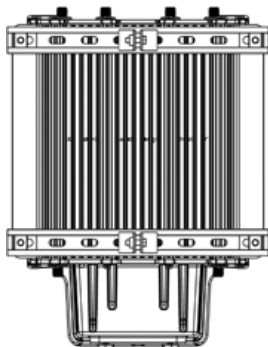
3. Align the pole mounting bracket (1) with the end of the rail (2) and slide it down the rail as shown.
4. Align the fixing nut (3) and repeat the process.
5. Repeat for the other side and the other rail.



6. This is how the assembly looks when completed.



7. Place the Ventev Class 1 Div. II Enclosure System on a protective surface as shown 3.
8. Align both rails on the rear as shown 4.
9. Using washer 1, affix this into the fixing screw 2 and pass through both the chassis and the mounting rail, and screw into the pre-fitted nut.
10. Repeat for the other side and the other rail.



11. The unit is now ready to slide onto the mounting pole.
12. Tighten all fixings.



# 6: Technical Data

Certification	<p>Ⓔ II 3 (3) G Ex ec [ic Gc] nR IIC T6 Gc          3 (3) D Ex [ic Dc] tc IIIC T85°C Dc          cMETus Class I, Div 2, Groups A - D          Class II, Div 2, Groups F - G          cMETus Class I, Zone 2 AEx ec ic nR IIC T6 Gc          Class II, Zone 22 AEx ec ic tc IIIC T85°C Dc          -40°C &lt;= Tamb &lt;= 60°C</p>																											
Power supply	Specify POE / POE+ IEEE802at, AC or DC power																											
Maximum power consumption	Dependant on access point chosen and power supply option, see below																											
Enclosure material	Marine grade copper-free aluminium alloy with electrophoretic base and polyester powder top coat																											
Ingress protection	IP66 and NEMA 4																											
Enclosure weight (approx. excluding AP)	<table border="0"> <tr> <td>Model 15</td> <td>7.8 Kg</td> </tr> <tr> <td>Model 24</td> <td>10.3 Kg</td> </tr> <tr> <td>Model 30</td> <td>12.0 Kg</td> </tr> <tr> <td>Model 36</td> <td>13.7 Kg</td> </tr> </table>	Model 15	7.8 Kg	Model 24	10.3 Kg	Model 30	12.0 Kg	Model 36	13.7 Kg																			
Model 15	7.8 Kg																											
Model 24	10.3 Kg																											
Model 30	12.0 Kg																											
Model 36	13.7 Kg																											
Dimensions (including connection chamber and mounting points)	<table border="0"> <tr> <td>Model 15</td> <td>293 x 388 x 220 mm (height x width x depth)</td> </tr> <tr> <td>Model 24</td> <td>383 x 388 x 220 mm</td> </tr> <tr> <td>Model 30</td> <td>443 x 388 x 220 mm</td> </tr> <tr> <td>Model 36</td> <td>503 x 388 x 220 mm</td> </tr> </table>	Model 15	293 x 388 x 220 mm (height x width x depth)	Model 24	383 x 388 x 220 mm	Model 30	443 x 388 x 220 mm	Model 36	503 x 388 x 220 mm																			
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Model 30	443 x 388 x 220 mm																											
Model 36	503 x 388 x 220 mm																											
Operating temperature	Dependant on access point chosen, see below																											
Storage temperature	Dependant on access point chosen, see below																											
Relative humidity	0 to 95%, non-condensing																											
Input connections	POE / POE+ Gigabit Ethernet on Weidmuller 8-way wired connector with console connections RJ45 and mini USB B sockets <u>or</u> AC or DC power via Phoenix 1829167 socket with console connections RJ45 and mini USB B sockets <u>and either</u> Gigabit Ethernet on RJ45 connector <u>or</u> Dual LC fibre connector (specify multi mode or single mode fibre)																											
Output connection	<p>Up to 8 galvanically isolated, intrinsically safe external RF outputs via external N-type RF connectors (maximum of 6 top or 6 bottom mounted). Internal surge arrestors are optional. Antennas may be Direct (top) mounted or Remote (bottom) mounted. Unless otherwise specified, Extronics will use the same number of RF outputs as available on the wireless device(s) chosen.</p> <table border="1"> <thead> <tr> <th>Frequency band</th> <th>Insertion loss (dB)</th> <th>Loss including surge arrestor (dB)</th> </tr> </thead> <tbody> <tr> <td>150MHz - 1GHz</td> <td>0.25</td> <td>0.40</td> </tr> <tr> <td>1GHz - 3.5GHz</td> <td>0.33</td> <td>0.48</td> </tr> <tr> <td>3.5GHz - 6GHz</td> <td>0.38</td> <td>0.53</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Spot frequency</th> <th>Insertion loss (dB)</th> <th>Loss including surge arrestor (dB)</th> </tr> </thead> <tbody> <tr> <td>400MHz</td> <td>0.22</td> <td>0.37</td> </tr> <tr> <td>900MHz</td> <td>0.24</td> <td>0.39</td> </tr> <tr> <td>2.45GHz</td> <td>0.32</td> <td>0.47</td> </tr> <tr> <td>5.5GHz</td> <td>0.36</td> <td>0.51</td> </tr> </tbody> </table>	Frequency band	Insertion loss (dB)	Loss including surge arrestor (dB)	150MHz - 1GHz	0.25	0.40	1GHz - 3.5GHz	0.33	0.48	3.5GHz - 6GHz	0.38	0.53	Spot frequency	Insertion loss (dB)	Loss including surge arrestor (dB)	400MHz	0.22	0.37	900MHz	0.24	0.39	2.45GHz	0.32	0.47	5.5GHz	0.36	0.51
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5.5GHz	0.36	0.51																										

# 7: Marking Information


## ATEX/IECEX

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

--- PRODUCT #  
--- SERIAL #  
--- DATE #  
ExVeritas 19ATEX0530X  
IECEX EXV 19.0051X

--- Ⓜ II 3 (3) G Ex ec [ic Gc] nR IIC T6 Gc  
D Ex [ic Dc] tc IIIC T85°C Dc  
-40°C ≤ Tamb ≤ 60°C

Um = xxxV






**WARNING-POTENTIAL ELECTROSTATIC CHARGING  
HAZARD AND INSTALLATION RESTRICTIONS - SEE  
INSTRUCTIONS.**

**DO NOT OPEN, MAINTAIN OR SERVICE IN AN  
AREA WHEN AN EXPLOSIVE ATMOSPHERE  
IS PRESENT.**

Part # iWAPXN3-AI-C-99-AC-SF-N-D-M20-99

Date # 01/01/2020 Ⓜ II 3 (3) G Ex ec [ic Gc] nR IIC T6 Gc  
Serial # 123456 D Ex [ic Dc] tc IIIC T85°C Dc  
MAC1 #12345654321 Um =253V rms -20°C ≤ Tamb ≤ 60°C  
MAC2 #12345654321 ExVeritas 19ATEX0530X  
IECEX EXV 19.0051X

  
2804  


 **100-240VAC** **10A** **47-63Hz**

**WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD AND INSTALLATION RESTRICTIONS -  
SEE INSTRUCTIONS**  
**DO NOT OPEN, MAINTAIN OR SERVICE IN AN AREA WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT**


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- Um = 60Vdc or 253Vac depending on customer specification.
- Alternative ambient temperature ranges may be specified depending on the service temperature of installed equipment.
- Alternative coding when iSOLATE501 is installed for DC isolation: All 3 (1) G Ex ec [ia Ga] nR IIC T6 Gc
- D Ex [ja Da] tc IIIC T85°C Dc
- Alternative coding for configurations with no RF output: All 3 G Ex ec nR IIC T6 Gc
- D Ex tc IIIC T85°C Dc

# MET

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

1 ---- PRODUCT #  
2 ---- SERIAL #  
3 ---- DATE#

 EXXXXXX

4 ---- Class I, Division 2, Groups A - D  
Class II, Division 2, Groups F - G  
Class I, Zone 2 AEx ec [ic Gc] nR IIC T6 Gc  
Class II, Zone 22 AEx [ic Dc] tc IIIB T85°C Dc  
-40°C <= Tamb <= 60°C

Um = xxxV

WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD AND  
INSTALLATION RESTRICTIONS - SEE INSTRUCTIONS.

AVERTISSEMENT - RISQUE DE CHARGE ÉLECTROSTATIQUE ET  
RESTRICTIONS D'INSTALLATION - VOIR LES INSTRUCTIONS.

DO NOT OPEN, MAINTAIN OR SERVICE IN AN AREA WHEN AN EXPLOSIVE  
ATMOSPHERE IS PRESENT.

NE PAS OUVRIR, ENTREtenir OU RÉPARER DANS UNE ZONE À  
ATMOSPHERE EXPLOSIVE.

REFER TO INSTRUCTION DOCUMENT FOR SPECIFIC CONDITIONS OF USE.  
SE REPORTER AU DOCUMENT D'INSTRUCTION POUR LES CONDITIONS  
PARTICULIÈRES D'UTILISATION.

vw V cc	aaa A	fff Hz
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**RATING INFORMATION:**

Um= xxx (SEE SHEET 1, NOTE 2)	vw V cc	aaa A	fff Hz
60Vdc	0-60Vdc	0-7A	Not Used
253Vac	0-253Vac	0-2A	47-63Hz

MAXIMUM AND MINIMUM VALUES SHOWN  
ACTUAL VALUES DEPEND ON INCLUDED EQUIPMENT

- Alternative ambient temperature ranges may be specified depending on the service temperature of installed equipment.
- Alternative coding when iSOLATE501 is installed for DC isolation:
  - Class I, Zone 2 AEx ec [iaGa] nR IIC T6 Gc
  - Class II, Zone 22 AEx [iaDa] tc IIIB T85oC Dc
- Alternative coding for configurations with no RF output:
  - Class I, Zone 2 AEx ec nR IIC T6 Gc
  - Class II, Zone 22 AEx tc IIIB T85oC Dc

# 8: Type Codes

## ATEX/IECEx

- BS EN 60079-0: 2018
- BS EN 60079-7: 2015+A1:2018
- BS EN 60079-11: 2012
- BS EN 60079-15: 2019
- BS EN 60079-31: 2014

## MET

- UL62368-1, Third Edition: Standard for Audio/video, Information and Communication Technology Equipment - Part 1: Safety requirements, Rev. December 2019
- CSA C22.2 No. 62368-1, Third Edition: Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements, Rev. December 2019
- UL 60079-0, 7th Ed: Standard for Explosive Atmospheres - Part 0: Equipment - General Requirements; 2019-03-26
- UL 60079-7, 5th Ed: Standard for Explosive Atmospheres - Part 7: Equipment
- Protection by Increased Safety “e”; 2017-02-24
- UL 60079-11, Ed 6: Explosive Atmospheres - Part 11: Equipment Protection by Intrinsic Safety ‘i’; 2018-09-14
- UL 60079-15, Ed 4: Explosive atmospheres - Part 15: Equipment protection by type of protection ‘n’; 2017-05-05
- CSA C22.2 NO 60079-0: 2015; Standard for Explosive Atmospheres - Part 0: Equipment - General Requirements
- CSA C22.2 NO 60079-7: 2016; Standard for Explosive Atmospheres – Part 7:  
Equipment protected by Increased Safety “e”
- CSA C22.2 NO 60079-11: 2014 (R2018); Standard for Explosive Atmospheres  
– Part 11: Equipment protected by Intrinsic Safety “i”
- CSA C22.2 NO 60079-15: 2018; Standard for Explosive Atmospheres – Part  
15: Equipment protected by a type of protection “n”

# 9: EU Declaration of Conformity



## EU Declaration of Conformity

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

Equipment Type: **iWAP XN3, iRFID XN3**

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 3 (3) **G Ex ec [ic Gc] nR IIC T6 Gc**  
**D Ex [ic Dc] tc IIIC T85°C Dc**  
**-20°C ≤ T<sub>amb</sub> ≤ 60°C**

Notified Body **Ex Veritas 2585** performed EU-Type Examination and issued the EU-Type certificate.

EU-Type Examination Certificates:

**19ATEX0530X Issue 0**

Notified Body for Production:

**Ex Veritas 2804**

Harmonised Standards used:

<b>EN 60079-0:2018</b>	Explosive atmospheres – Part 0: Equipment - General requirements
<b>EN 60079-7:2015+A1:2018</b>	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
<b>EN 60079-11:2012</b>	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>EN 60079-15:2019</b>	Explosive atmospheres – Part 15: Part 15: Equipment protection by type of protection "n"
<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

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

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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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: 6 February 2020

X124361(1)

Extronics Limited

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