



Installation & Operating Manual

iWAP200-A/M/AM



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1 Introduction

The iWAP200 is a zone 2 & 21 WiFi access point or MESH Ethernet router designed to provide WiFi coverage or wireless MESH connectivity in a hazardous area. There are three variants of the iWAP200; the iWAP200-A, which provides access points for the wireless infrastructure, the iWAP200-M, which provides the MESH routing capabilities for a wireless infrastructure and the iWAP200-AM which provides both the wireless access points and MESH routing capabilities in the same enclosure.

To allow ease of installation to the end user the unit may be supplied from 110/230VAC, 24VDC or via IEEE802.3af POE (iWAP200-A only). The unit has an optional Fibre optic link to use the iWAP200 over longer distances.

The iWAP200 may be used with any suitable antenna (please see conditions of safe use). However, it is recommended that the Extronics iANT200 series are used, as these have been pre-approved for use with the iWAP200.

The unit is housed in a 316L stainless steel enclosure rated to IP66 allowing it to be installed in harsh, wet and corrosive environments.

The iWAP200 supports optional heating and/or fan cooling installed within the enclosure. The fans and access point/mesh router are set to run simultaneously, if the ambient temperature drops below a certain threshold the fans and AP/mesh router will shut down. The heaters may be independently configured to shut off above set temperature thresholds. The heaters are normally factory configured to shut off above 20°C, whilst the power supply low temperature cut-off is normally set at -5 °C. These values can be fixed by Extronics or altered by the user via potentiometers located on the protection board.

The iWAP200 can also be ordered to have both an access point and mesh router in the same enclosure (iWAP200-AM). This reduces installation time and costs by using one enclosure and less cabling in areas of the wireless infrastructure where a mesh router and access point are required to be located in the same proximity. If a full mesh network is not required a second access point can be configured to create a wireless bridge. Contact Extronics to discuss specific applications.

There are two variants to the iWAP200 protection board; a mains variant and a 24VDC variant. The variant required should be specified when ordering; both mains and 24VDC versions can also be used when powering a single AP via POE. Note that only the iWAP200-A can be powered using POE and only one power supply should be applied at any one time, i.e. mains only or 24VDC only or POE only. If two AP's or an AP and mesh router are installed the unit must be powered via the mains or 24VDC supply.

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 who have to work on or with the device should be advised on where the manual is stored.

2.2 List of Notes

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

- **Danger / 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 to be by skilled electricians and instructed personnel in accordance with national legislation, including the relevant standards and, where applicable, in accordance with IEC 79.17 on electrical apparatus for explosive atmospheres.
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Warning!	The iWAP200 must not be operated in Gas Zone 0, 1, or Dust Zone 20 hazardous areas. Refer to the specification for ATEX certificate information.
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Important	The technical data indicated on the iWAP200 rating plate, this manual and the ATEX certificate must be observed.
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Important	The technical data indicated on the iWAP enclosure must be observed.
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Important	Changes in the design and modifications to the equipment are not permitted. This includes adding or removing heaters/fans which were installed by Extronics Ltd. Changing the pre installed Access points and/or MESH routers is NOT permitted.
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Important	The iWAP200 shall be operated as intended and only in an undamaged condition.
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Important	Only antennas which have been approved for use by Extronics for the area which they are to be installed may be used with iWAP200.
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Caution	This assembly may weigh up to 10Kg depending on requirements, therefore ensure the assembly is mounted using suitable fixtures.
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Caution When powering the iWAP200-A via POE do not apply an external power supply to the protection board.

Caution Never power the iWAP200-M, iWAP200-AM, or iWAP200-A (if fans and/or heaters are installed) via POE.

Important For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable regulations and provisions concerned with explosion protection (EN60079-0:2006, EN 60079-14:2003) as well as the Accident Prevention Regulations.

Important The iWAP200 must not be stored or operated outside of its rated temperature range as stated on the ATEX certificate.

Important The nylon washers on the underside of the enclosure lid must be used with the gasket to maintain the IP rating of the enclosure.

3 Installation and Setting-to-Work

3.1 Installation

The iWAP200 is simple to install and can be secured directly to suitable surface using the mounting holes on the Enclosure.

3.1.1 Removing the cover

Unscrew the four screws and remove the enclosure lid. Do not lose nylon washers on the underside of the lid as these are needed to maintain an IP66 rating.

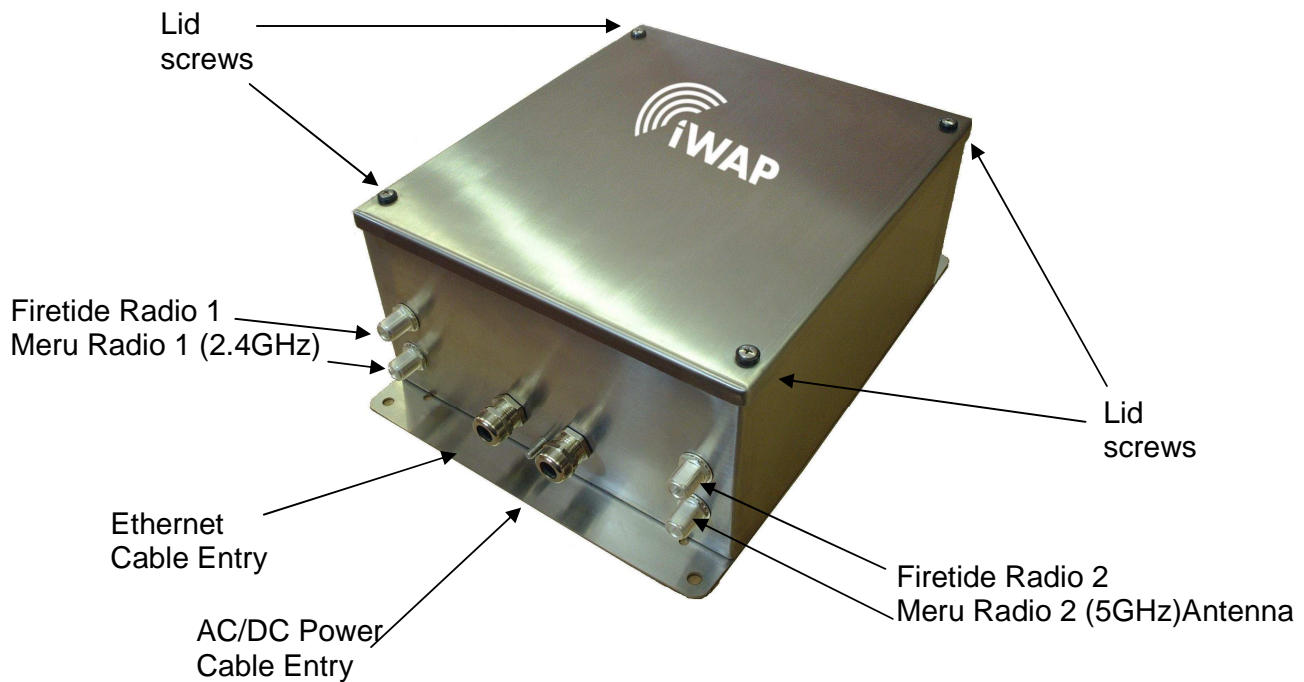


Diagram 3.1.1

3.1.2 Fitting the cables

Depending on the configuration of the iWAP200, the connections for power and communication will need to be terminated into the enclosure via the correct cable entries shown in Diagram 3.1.1.

The cables used to connect the power and/or Ethernet connection to the PCB screw terminals must conform to the following specification;

All wires should be stripped and, if stranded cable is used, should be crimped using 2.5mm bootlace ferrules. The stripped/crimped wires should then be placed into the corresponding screw terminal and securely screwed in place.

If using solid core cable;

Minimum cross section of cable = 0.2mm^2

Maximum cross section of cable = 2.5mm^2

If using crimped stranded core cable;

Minimum cross section of cable = 0.25mm²

Maximum cross section of cable = 1.5mm²

IMPORTANT!	All cables should be connected to the iWAP200 via a suitably certified (Ex e) or supplied cable gland, fitted by a competent person.
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IMPORTANT!	Changes in the design and modifications to the equipment are not permitted. This includes adding heaters/fans which are not installed at the factory.
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Important	The installer MUST ensure that that all cables have adequate mechanical protection to avoid damage to the wires.
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3.1.3 Mains Variant Cable Installation

Diagram 3.1.3.1 shows the connectors on the mains variant of the iWAP200. Table 3.1.3.2 describes the pin out connection required for operation. There are two blocks of screw terminals and one RJ45 connector. The Ethernet input screw terminals are wired in parallel with the RJ45 connector. Do not make an Ethernet connection to the RJ45 connector and the screw terminals at the same time, the installer should use only one of these connectors.

Follow the instructions in section 3.1.2 to correctly prepare the cables and feed them through the correct cable gland. Follow table 3.1.3 to connect the correct cable to the correct screw terminal. If using the RJ45 connector instead of the screw terminals simply connect the Cat-5 cable to the connector and ensure the cable is securely in place.

Caution	Only ever make one Ethernet cable to either the RJ45 connector or Ethernet screw terminals – NEVER both.
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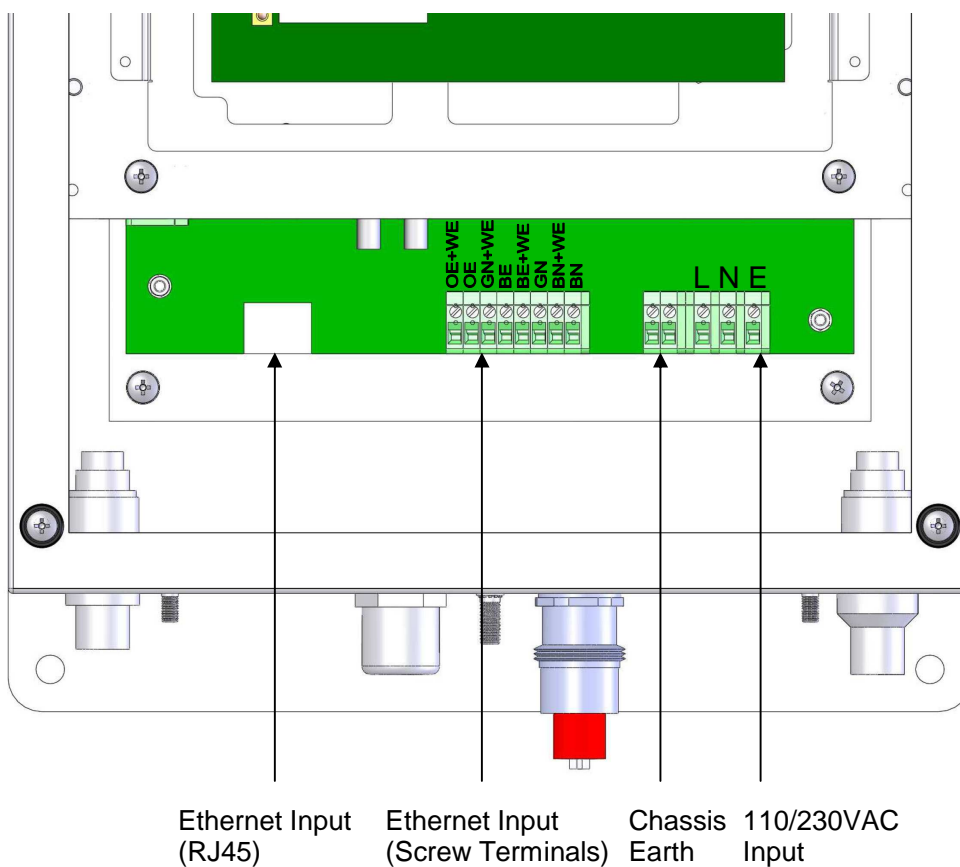


Diagram 3.1.3.1 – Mains Variant iWAP200 PCB

Connector	Description	Notes
110/230VAC input	These screw terminals allow the connection of a 110/230VAC power supply. Pinouts are; 1 = Live, 2 = Neutral, 3 = Earth.	
Chassis Earth	There are two terminals which allow a connection to earth. When the iWAP200 is delivered one of these terminals will be connected to the enclosure. The second earth terminal spare.	
Ethernet Input (Terminals)	Connect a Cat-5 cable to these screw terminals for the connection of the Ethernet input. The pinouts on this terminal correspond with the standard cat-5 TIA/EIA-568-B T568B wiring methods. If powering via POE this is where the power supply will come from.	Only one Ethernet input should be made, only use either the terminals or RJ45 connector NOT both.
Ethernet Input (RJ45)	This allows the connection of a standard Cat-5 cable with plugs.	Only one Ethernet input should be made, only use either the terminals or RJ45 connector NOT both.

Table 3.1.3.2 – iWAP200 Mains Variant Pinouts

Important Only connectors for the 110/230VAC Input, Chassis Earth and Ethernet Input (Terminals or RJ45) are user serviceable. The end user should not connect, disconnect or alter the wiring on any other connector!

Important If heaters are fitted, only the rated voltage of the heater should be supplied. The heater rating will be stated on the label

Caution When powering the iWAP200-A via POE do not apply an external power supply to the protection board.

Caution Never power the iWAP200-M, iWAP200-AM, or iWAP200-A (if fans and/or heaters are installed) via POE.

3.1.4 Fibre Ethernet Input

Important When connecting the access point via a fibre connection do not use the any of two Ethernet inputs of connectors Ref 3 or Ref 4.

To obtain greater wired link distances the iWAP200 can be shipped with an optional fibre module. The fibre module will be connected directly to the access point, the user should attach the fibre cable directly to the fibre module using a multimode fibre cable on an ST connector.

3.1.5 24VDC Variant Cable Installation

Diagram 3.1.5.1 shows the connectors on the mains variant of the iWAP200. Table 3.1.5.2 describes the pin out connection required for operation. There are two blocks of screw terminals and one RJ45 connector. The Ethernet input screw terminals are wired in parallel with the RJ45 connector. Do not make an Ethernet connection to the RJ45 connector and the screw terminals at the same time, the installer should use only one of these connectors.

Follow the instructions in section 3.1.2 to correctly prepare the cables and feed them through the correct cable gland. Follow table 3.1.5.2 to connect the correct cable to the correct screw terminal. If using the RJ45 connector instead of the screw terminals simply connect the Cat-5 cable to the connector and ensure the cable is securely in place.

Caution Only ever connect one Ethernet cable to either the RJ45 connector or Ethernet screw terminals.

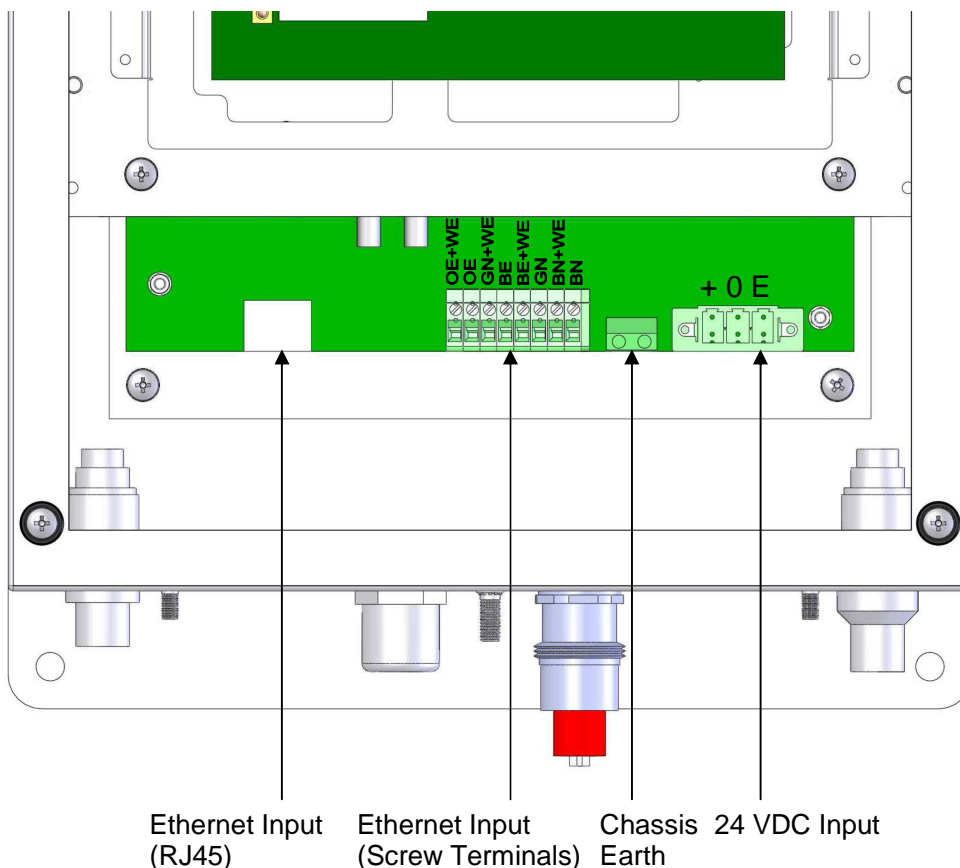


Diagram 3.1.5.1 – 24V Variant iWAP200 PCB

Connector	Description	Notes
24VDC input	These screw terminals allow the connection of a 24VDC power supply. Pinouts are; 1 = +24V, 2 = 0V/GND, 3 = Earth/cable outer sheath.	
Chassis Earth	There are two terminals which allow a connection to earth. When the iWAP200 is delivered from Extronics' factory one of these terminals will be connected to the enclosure. The second earth terminal spare.	
Ethernet Input (Terminals)	Connect a Cat-5 cable to these screw terminals for the connection of the Ethernet input. The pinouts on this terminal correspond with the standard Cat-5 TIA/EIA-568-B T568B wiring methods.	Only one Ethernet input should be made, only use either the terminals or RJ45 connector NOT both.
Ethernet Input (RJ45)	This allows the connection of a standard Cat-5 cable with plugs.	Only one Ethernet input should be made, only use either the terminals or RJ45 connector NOT both.

Table 3.1.5.2 – iWAP200 Mains Variant Pinouts

Important Only connectors for the 24VDC Input, Chassis Earth and Ethernet Input (Terminals or RJ45) are user serviceable. The end user should not connect, disconnect or alter the wiring on any other connector!

Caution When powering the iWAP200-A via POE do not apply an external power supply to the protection board.

Caution Never power the iWAP200-M, iWAP200-AM, or iWAP200-A (if fans and/or heaters are installed) via POE.

3.1.6 Fibre Ethernet Input

Important When connecting the access point via a fibre connection do not use the any of two Ethernet inputs of connectors Ref 3 or Ref 4.

To obtain greater Ethernet link distances the iWAP103 can be shipped with an optional fibre module. The fibre module will be connected directly to the access point, the user should attach the fibre cable directly to the fibre module using a multimode fibre cable on an ST connector.

3.1.7 Thermostat Control

The thermostats are currently not user configurable. The default configuration is for the heaters to be turned on when the internal ambient temperature is between -20°C and $+10^{\circ}\text{C}$ and for the fans/wireless hardware to be on above 1.5°C

3.1.8 Fitting the antennas

- Connect the antennas to the correct the N type connector on the outside of the enclosure (see Diagram 3.1.1). Cover connections in self amalgamating tape to prevent moisture ingress. Make sure to only connect antennas which are intended to be used at the frequency required (i.e. either 2.4GHz or 5.8GHz antennas).
- Depending on the options ordered some of the N-types may have been replaced with blanking plugs or surge arrestors.
- If the version ordered contains both a mesh router and access point; the mesh router and access point should be setup in software to run at 5.8GHz and 2.4GHz respectively. The iWAP200 will be wired in this way when delivered.
- The iWAP200 may be used with any antenna (all antennas will however, need to be assessed to the BS EN 60079-11:2007 standard and approved by Extronics for use with the iWAP200). It is recommended to use the Extronics iANT200 series of antennas as these have already been pre-approved for use with the iWAP200.

IMPORTANT! Do not exceed the Effective Isotropic Radiated Power (EIRP) for the country/region of operation. Also do not exceed the maximum EIRP for the gas group the iWAP200 is located in according to the standard BS 6656:2002 table 2.

Important	Only antennas which have been approved for use by Extronics for the area which they are to be installed may be used with iWAP200.
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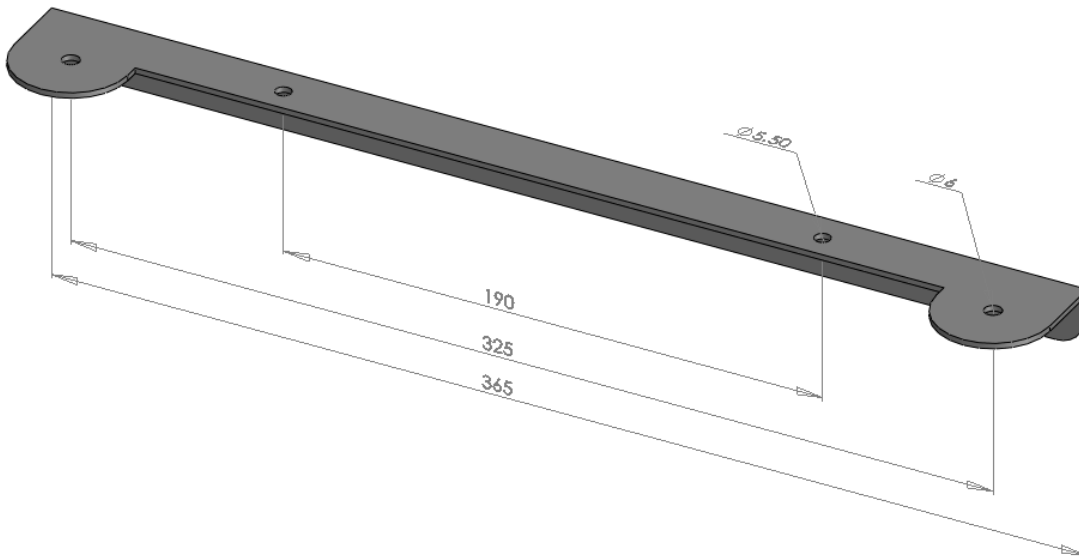
Important	Any plastic coated antenna shall have a warning label fitted to it stating "WARNING – Potential electrostatic charging hazard. Wipe only with a damp cloth"
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3.1.9 Mounting The Antennas

Extronics can supply an antenna bracket which can be mounted either on the top or bottom of the enclosure. The bracket size offered is 365mm in length. The bracket allows the mounting of two antennas (either the iANT100 or iANT200) at the far extremities of the bracket.

3.1.9.1 iANTMB02

316L SS Antenna bracket 365mm length for 2 iANT100 / iANT200 antennas for mounting on an iWAP enclosure



Bespoke mounting brackets can also be designed for most applications. Please contact Extronics for more information. For examples of this

The iWAP200-A and iWAP200-M offers the feature of dual radio to improve data integrity and network reliability, meaning up to two antennas can be connected to each network node. Each node can however, also run in single antenna mode. If the iWAP200-AM is used, the access point and mesh router will need to be setup in software to operate on different frequencies (usually 2.4GHz for the A and 5.8GHz for the M) this is in order to reduce possible noise and network interference.

With the iWAP200-AM there is the possibility of having up to four antennas connected to the enclosure (i.e. if both the A and M are using dual radio). The user can decide to mount two antennas - one antenna connecting to each access point/MESH router. Or alternatively four antennas can be connected – two antennas connected per network node. Four antennas can be mounted to the enclosure by mounting two brackets at the top and bottom of the enclosure. Diagram 3.1.9.1 below shows two methods of connecting the antennas to the enclosure or the iWAP200-AM.

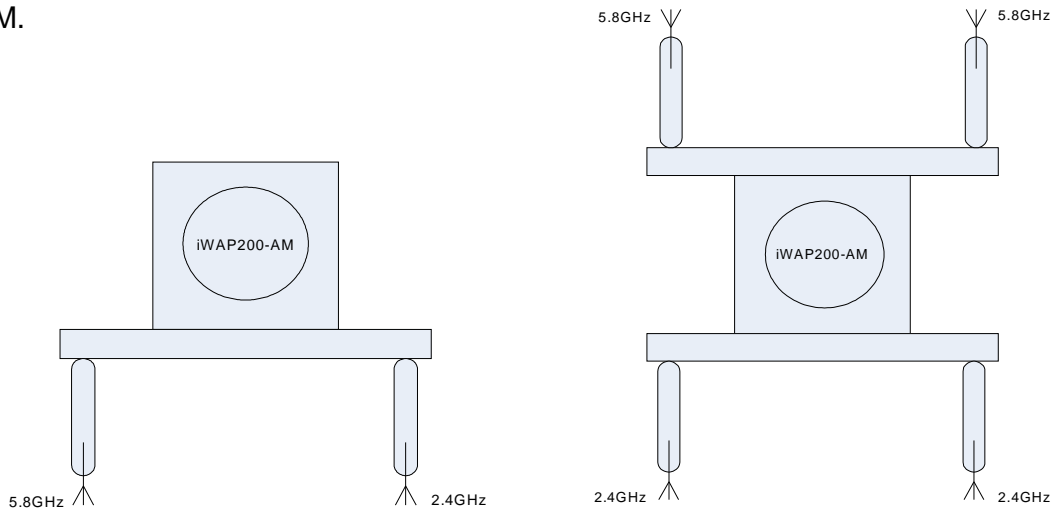


Figure 3.1.9.1 – Possible antenna mounting options for iWAP200-AM

3.1.10 Setting to work

- Once all cables are connected correctly, refit the enclosure lid using the four screws previously removed. Use a torque screwdriver set to 2.5 Nm. Do not over tighten screws.
- Refer to the original manufacturers instructions for a detailed information on setting the network to work correctly (iWAP200-A utilises the Meru AP150, iWAP200-M utilises the Firetide Hotport 6102)

Note! Ensure the lid is secure, correct cable glands are fitted and the unit device correctly wired and earthed for the particular application before applying power

Note! Ensure that the lid gasket is clean and undamaged before fitting the lid.

Figure 3.1.6 shows a possible setup for an iWAP200 network and how an iWAP200-AM can be used. The iWAP200-AM is used to connect a MESH network, a wireless access point and also connects a server to the rest of the network.

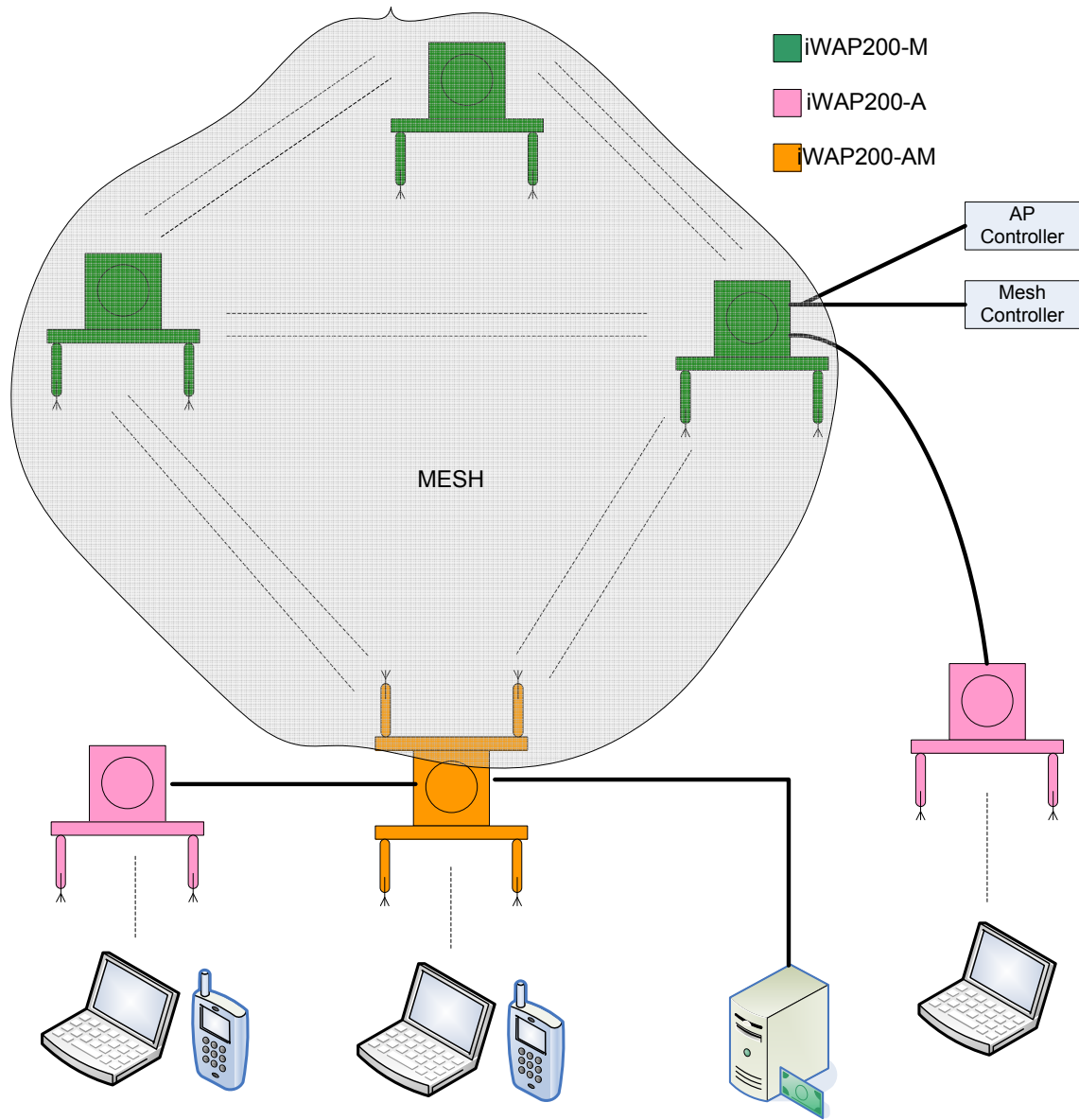


Figure 3.1.6 – Possible iWAP200 network

4 Intended Purpose Usage

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 iWAP200 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 iWAP200 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 iWAP200; they must be familiar with the unit and must be aware of the regulation and provisions required for correct installation as well as the relevant accident prevention regulations.

4.3 Cleaning and Maintenance

The iWAP200 and all its components require no maintenance and are self-monitoring. All work on the iWAP200 by personnel who are not expressly qualified for such activities will cause the guarantee to become void.

4.4 Safety Precautions

Important For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable regulations and provisions concerned with explosion protection (EN 60079-0:2006, EN 60079-14:2003) as well as the Accident Prevention Regulations.

4.5 Cleaning and Maintenance Intervals

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

4.6 Aggressive substances and environments

The iWAP200 is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

4.7 Exposure to external stresses

The iWAP200 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 iWAP200 will require additional protection if it is installed in a location where it may be subjected to damage.

5 Technical Data

5.1 Specification

5.1.1 iWAP200-A

Power Supply	Universal 90-264VAC, 20-28VDC or IEEE802.3af POE
Maximum Power Consumption	Without heating or cooling 16W With cooling 21W With heating and cooling 121W
Enclosure Material	316L Stainless Steel
Ingress Protection	IP66
Weight	Approximately 10 Kg
Dimensions	390 x 286 x 300 mm (h x w x d)
Environmental	Operating temperature: Without heating or cooling -10°C to 50°C With cooling -10°C to 60°C With heating and cooling -40°C to 60°C Storage temperature; -10°C to 70°C Relative humidity; 0 to 95%, non condensing
Input Connections	10/100BaseT Ethernet on RJ45 socket and screw terminals 115V/230VAC input option on screw terminals 24VDC input option on screw terminals Multimode fibre input option on ST connectors Note that connectors may be specified as an option in the ordering data
Output Connections	Dual energy-limited external RF outputs via N-type RF connectors with optional lightning arrestors
Security & Encryption	MAC filtering, WEP keys of 40, 64 or 128 bits, WPA, WPA2, TKIP, AES, VPN pass-through, Captive portal for guest access.
Wireless Specifications	Two Radios—IEEE 802.11a & IEEE 802.11b/g
Frequency Ranges	2.40-2.50 GHz, channels 1-14 5.180-5.240 GHz, 8 channels (34, 36, 38, 40, 42, 44, 46, 48) 5.280-5.320 GHz, 4 channels (52, 56, 60 and 64) 5.745-8.825, 5 channels (149, 153, 157, 161 and 165) Note: All channel configurations are country dependent
Receive Sensitivity (typical)	802.11a; -70dBm at 54 Mbps, -86 dBm at 6 Mbps 802.11b; -85 at 11 Mbps, -93 dBm at 1 Mbps 802.11g; -73 dBm at 54Mbps, -85 dBm at 6 Mbps
Transmit Power	+2dBm (1.5mW) to +20dBm (100mw) for 802.11b/g, +2dBm (1.5mW) to +16dBm (40mW) for 802.11a, variable in 1dBm increments
Antennas	To be used with one or two intrinsically safe antennas (not included) e.g. Extronics iANT200 series or any standard antenna conforming to the conditions of safe use in the Ex certificate
ATEX Certification	ATEX II 3 G Ex nA nL IIC T3 (-40°C≤Ta≤+60°C) T4 (-20°C≤Ta≤+60°C) T5 (-20°C≤Ta≤+30°C) ATEX II 2D Ex tD A21 IP66 T80°C (-40°C≤Ta≤+60°C)

5.1.2 iWAP200-M

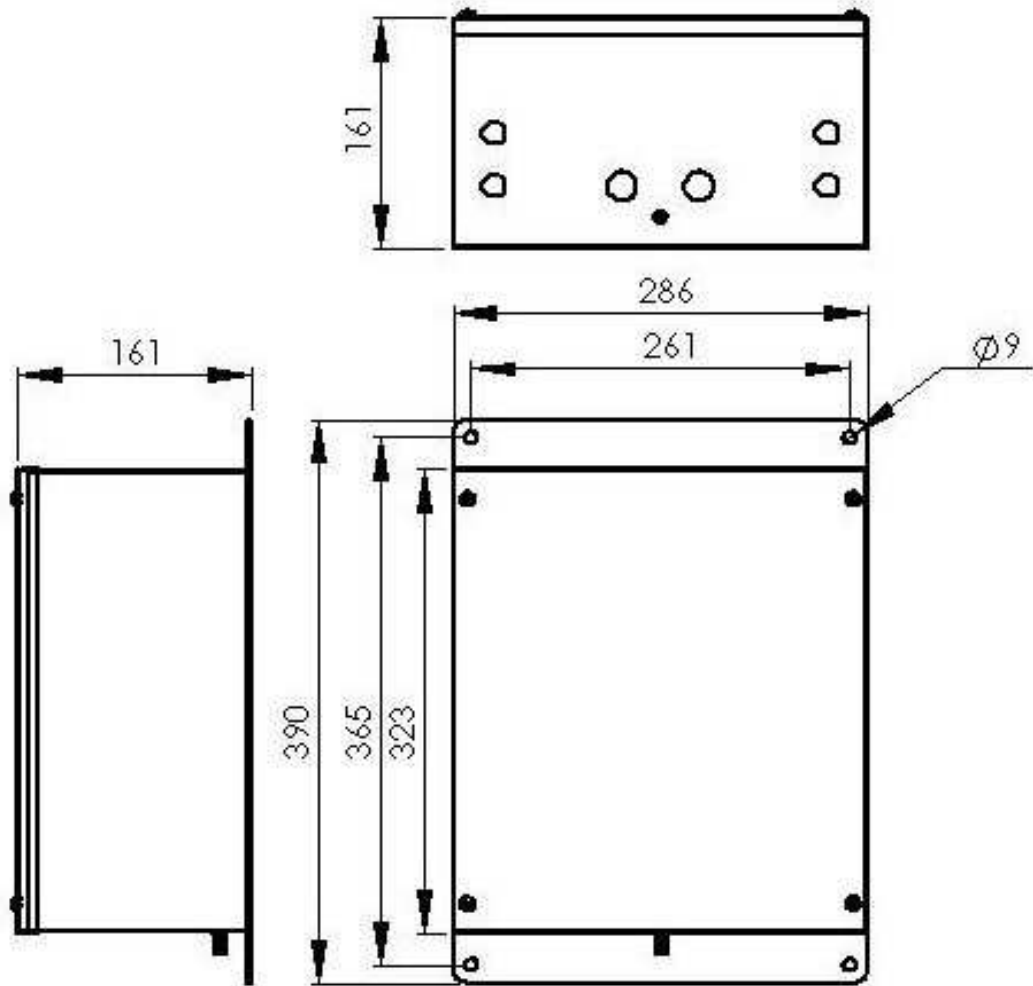
Power Supply	Universal 90-264VAC or 20-28VDC
Maximum Power Consumption	Without heating or cooling 19W With cooling 24W With heating and cooling 124W
Enclosure Material	316L Stainless Steel
Ingress Protection	IP66
Weight	Approximately 10 Kg
Dimensions	323 (390 including mounting plate) x 286 x 300 mm (h x w x d)
Environmental	Operating temperature: Without heating or cooling -10°C to 45°C With cooling -10°C to 55°C With heating and cooling -40°C to 55°C Storage temperature; -20°C to 70°C Relative humidity; 0 to 95%, non condensing
Input Connections	10/100BaseT Ethernet on RJ45 socket and screw terminals 115V/230VAC input option on screw terminals 24VDC input option on screw terminals Multimode fibre input option on ST connectors Note that connectors may be specified as an option in the ordering data
Output Connections	Dual energy-limited external RF outputs via N-type RF connectors with optional lightning arrestors
Security & Encryption	MAC filtering, WEP keys of 40, or 104 bits, WPA2, AES, digitally signed firmware files, digital certificates on nodes
Frequency Ranges	2.412-2.483 GHz 4.94-4.99 GHz (US public safety band) 5.15-5.25 GHz 5.25-5.35 GHz 5.470-5.725 GHz 5.725-5.825 GHz
Receive Sensitivity (typical)	2.4 GHz, DSSS : 1Mbps -90 dBm, 11Mbps -88 dBm 2.4 GHz, OFDM : 6Mbps -90 dBm, 11Mbps -73 dBm 5 GHz, 6Mbps -90 dBm, 11Mbps -73 dBm
Transmit Power	+10dBm (10mW) to +26dBm (400mW), variable in 1 dBm increments
Antennas	To be used with one or two intrinsically safe antennas (not included) e.g. Extronics iANT200 series or any standard antenna conforming to the conditions of safe use in the Ex certificate
ATEX Certification	ATEX II 3 G Ex nA nL IIC T3(-40°C≤Ta≤+60°C) T4 (-20°C≤Ta≤+60°C) T5 (-20°C≤Ta≤+30°C) ATEX II 2D Ex tD A21 IP66 T80°C (-40°C≤Ta≤+60°C)

5.1.3 iWAP200-AM

Power Supply	Universal 90-264VAC, 20-28VDC
Maximum Power Consumption	Without heating or cooling: With MESH Router and AP—35W, with 2 AP's—32W With cooling: With MESH Router and AP—40W, with 2 AP's—37W With heating and cooling: With MESH Router and AP—140W, with 2 AP's—137W
Enclosure Material	316L Stainless Steel
Ingress Protection	IP66
Weight	Approximately 11 Kg
Dimensions	390 x 286 x 300 mm (h x w x d)
Environmental	Operating temperature: Without heating or cooling -10°C to 50°C With cooling -10°C to 60°C With heating and cooling -40°C to 60°C Storage temperature; -10°C to 70°C Relative humidity; 0 to 95%, non condensing
Input Connections	10/100BaseT Ethernet on RJ45 socket and screw terminals 115V/230VAC input option on screw terminals 24VDC input option on screw terminals Multimode fibre input option on ST connectors Note that connectors may be specified as an option in the ordering data
Output Connections	2 x Dual energy-limited external RF outputs via N-type RF connectors with optional lightning arrestors
Antennas	To be used with one or two intrinsically safe antennas (not included) per wireless node e.g. Extronics iANT200 series or any standard antenna conforming to the conditions of safe use in the Ex certificate
ATEX Certification	ATEX II 3 G Ex nA nL IIC T3 (-40°C ≤ Ta ≤ +60°C) T4 (-20°C ≤ Ta ≤ +60°C) T5 (-20°C ≤ Ta ≤ +30°C) ATEX II 2D Ex tD A21 IP66 T80°C (-40°C ≤ Ta ≤ +60°C)

See iWAP200-A and iWAP200-M for a more detailed description of each unit operating specification

5.2 Enclosure Dimensions



6 Type Codes

6.1 iWAP200-A

iWAP200-A - Zone 2 WiFi Access Point	iWAP200-A-[#4]-[#5]-[#6]-[#8]-[#9]-[#10]-[#11]
Specify option [#4] - Power Supply	
Universal 90-264VAC (If heater option [#8] selected the unit is not universal voltage, either 115VAC or 230VAC)	AC
24V DC	DC
IEEE802.3af compliant Power-Over-Ethernet	POE
Specify option [#5] - Ethernet Connection	
10/100BaseT Ethernet on CAT5 copper	C
Multimode 10/100BaseFX fibre with ST connector	F
Specify option [#6] - 2 x Antenna Lightning Protection	
No Surge Arrestors	N
Surge Arrestors Fitted	S
Specify option [#8] - Enclosure Heating (not compatible with universal 90-264VAC or POE supplies)	
No enclosure heating - T4/T5 temperature classification	N
230VAC enclosure heating - T3 temperature classification	H1
115VAC enclosure heating - T3 temperature classification	H2
24VDC enclosure heating - T3 temperature classification	H3
Specify option [#9] - Enclosure Cable Entry	
Cable glands fitted	G
Quick Release Sockets fitted (Not for fibre optic input)	S
Specify option [#10] - Enclosure cooling (not compatible with POE supply)	
No enclosure cooling	N
Enclosure cooling fitted	
	C

6.2 iWAP200-M

iWAP200-M - Zone 2 Mesh Router	iWAP200-M-[#3]-[#4]-[#5]-[#7]-[#8]-[#9]-[#10]-[#11]
Specify option [#3] - Number of Radios	
Single radio backhaul	1
Dual radio backhaul	2
Specify option [#4] - Power Supply	
Universal 90-264VAC (If heater option [#8] selected the unit is not universal voltage, either 115VAC or 230VAC)	AC
24V DC	DC
Specify option [#5] - Ethernet Connection	
10/100BaseT Ethernet on CAT5 copper	C
Multimode 10/100BaseFX fibre with ST connector	F
Specify option [#7] - 2 x Antenna Lightning Protection For Option [#3]	
No Surge Arrestors	N
Surge Arrestors Fitted	S
Specify option [#8] - Enclosure Heating (not compatible with universal 90-264VAC supply)	
No enclosure heating - T4/T5 temperature classification	N
230VAC enclosure heating - T3 temperature classification	H1
115VAC enclosure heating - T3 temperature classification	H2
24VDC enclosure heating - T3 temperature classification	H3
Specify option [#9] - Enclosure Cable Entry	
Cable glands fitted	G
Quick Release Sockets fitted	S
Specify option [#10] - Enclosure cooling (not compatible with POE supply)	
No enclosure cooling	N
Enclosure cooling fitted	C

6.3 iWAP200-AM

iWAP200-AM - Zone 2 WiFi Access Point	iWAP200-A-[#3]-[#4]-[#5]-[#6]-[#8]-[#9]-[#10]-[#11]
Specify option [#3] - Configuration	
1 x Access Point, 1 x MESH Router	C1
2 x Access Point	C2
Specify option [#4] - Power Supply	
Universal 90-264VAC (If heater option [#8] selected the unit is not universal voltage, either 115VAC or 230VAC)	AC
24V DC	DC
Specify option [#5] - Ethernet Connection	
10/100BaseT Ethernet on CAT5 copper	C
Multimode 10/100BaseFX fibre with ST connector	F
Specify option [#6] - 2 x Antenna Lightning Protection	
No Surge Arrestors	N
Surge Arrestors Fitted	S
Specify option [#8] - Enclosure Heating (not compatible with universal 90-264VAC)	
No enclosure heating - T4/T5 temperature classification	N
230VAC enclosure heating - T3 temperature classification	H1
115VAC enclosure heating - T3 temperature classification	H2
24VDC enclosure heating - T3 temperature classification	H3
Specify option [#9] - Enclosure Cable Entry	
Cable glands fitted	G
Quick Release Sockets fitted (Not for fibre optic input)	S
Specify option [#10] - Enclosure cooling	
No enclosure cooling	N
Enclosure cooling fitted	C

7 Certification

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1 **ATEX Category 3 Certificate**

2 Equipment intended for use in potentially explosive atmospheres

3 Certificate Number: EPSILON 08 ATEX 2394X

4 Equipment: IWAP200

5 Manufacturer: Extronics

6 Address: Roe Street
Congleton, Cheshire
CW12 1PG, UK

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Epsilon certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the directive 94/9/EC.

The examination and test results are recorded in confidential report no RETS(A)2596/A/1.

Epsilon accepts no responsibility for the accuracy or completeness of declarations made by the manufacturer and detailed in the above report, on which aspects of the evaluation may be based.


9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN60079-0:2006, EN60079-15:2005

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 Certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC

12 The marking of the equipment shall include the following:

 II 3 G Ex nAnL IIC T3, T4 or T5 (See Schedule)



On behalf of Epsilon

S Clarke
Certification Manager

Date: 19 May 2008

Certificate 08 ATEX 2394X

This certificate may only be reproduced in its entirety and without any change, schedule included.
The certificate is only valid when it carries an original signature and holographic security label.
For help or assistance relating to this certificate, contact cs@epsilonex.com.

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ATEX Category 3 Certificate Schedule

Certificate Number: EPSILON 08 ATEX 2394X

Equipment Description:

The iWAP200 is designed to interface a wired or optical Ethernet communications link to a wireless LAN, using up to two commercially available wireless LAN Access Points (AP's).

The apparatus comprises of one of two PCB's segregated into several sectors. The first PCB contains options for mains power supply or power over Ethernet supply, an optical Ethernet communications interface and the ability to interface up to two wireless AP's. The second PCB contains options for 24Vdc power supply, an optical Ethernet communications interface and the ability to interface up to two wireless AP's.

The PCB and two AP's are all contained within a stainless steel enclosure offering a degree of ingress protection of at least IP66. Optional thermostatically controlled mains enclosure heaters allow for operation down to -40°C. Up to 4 DC brushless fans can be fitted within the enclosure to provide cooling as necessary.

The optional mains power is connected to the apparatus by means of screw terminals on the PCB, whilst the power over Ethernet and Ethernet communications link are terminated using standard Ethernet connectors or screw terminals. The 24Vdc power is connected to the apparatus by means of screw terminals. The optical interface is terminated via standard optical connectors. The antenna connections to the AP's are terminated using screw RF connectors. The wireless LAN antennas are mounted remote to the apparatus enclosure. All cables entering or leaving the enclosure use IP68-5 rated cable glands or Ex "d" live disconnect screw connectors. Any unused gland entries are fitted with IP66 blanking plugs.

The terminal parameters are as follows:

Mains Input Terminals:	Um = 253Vrms
Ethernet Interface (Power Over Ethernet):	Rated Voltage = 57Vdc
Ethernet Interface (un-powered):	Rated Voltage = 7.3Vdc

DC Input terminals:	Um = 24Vdc
---------------------	------------

The marking of the equipment shall include the following:

iWAP200 without heaters:

II 3 G Ex nAnL IIC T3 (-20°C ≤ Ta ≤ +70°C), T4 (-20°C ≤ Ta ≤ +65°C) or T5 (-20°C ≤ Ta ≤ +30°C)

iWAP200 with heaters:

II 3 G Ex nAnL IIC T3 (-40°C ≤ Ta ≤ +70°C)

Certificate 08 ATEX 2394X

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Drawings:

Number	Rev	Sheet	Date	Title
314926	Rel02	1 of 1	03/04/08	iWAP200 Enclosure General Assembly
316239	2	1 of 1	20/03/08	iWAP200 Enclosure ATEX Label Drawing
309117	3	1 to 8	15/10/2007	iWAP200 Protection Board
313525	02	1 of 1	16/10/2007	iWAP200 Protection board schematic
313533	02	1 of 1	23/04/2008	Bill of materials for iWAP200
317190	1	1 of 1	19/03/07	iWAP200 N-Type/DC blocking capacitor connector assembly
317243	02	1 of 1	09/04/08	iWAP200 Media converter schematic
317244	01	1 of 1	29/03/07	Bill of materials for iWAP200 media converter
320589	Rel01	1 of 1	17/01/08	iWAP200 AP Modification Matrix
320678	01	1 to 3	28/01/08	iWAP200 24V version schematic
320658	01	1 to 9	28/01/2008	iWAP200 24V version Protection PCB layout
321386	01	1 of 1	23/04/2008	Bill of materials for iWAP200 24VDC board

Conditions of Certification

None

Special Conditions of Certification:

The apparatus is not capable of withstanding the 500V insulation test required by clause 6.8.1 of EN60079-15:2005. This must be taken into account when installing the apparatus.

Certificate 08 ATEX 2394X

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Supplement to ATEX Category 3 Certificate

Certificate Number: 08 ATEX 2394X Dated: 19 May 2008
Variation Number: 01 (ONE)

Variation Detail:

To Permit:

1. The addition of an LED control PCB to allow the information provided by LED's located within the main IWAP200 enclosure to be viewed externally on suitably certified LED units mounted in a suitably certified enclosure.

Details of the variation are covered in short form report number 08034639

Descriptive Documents:

Number	Title	Rev	Date
321321	IWAP200/300 LED Control PCB Schematic	01	25/11/2008
321616	BOM for IWAP200/300 LED Control PCB BOM (Media Converter Footprint)	02	14/10/08
322655	BOM for IWAP200/300 LED Phototransistor PCB	01	10/07/08
314926	IWAP200 Enclosure General Assembly	REL03	18/11/08
313525	IWAP200 Protection PCB Schematic Sht 1 to 3	02	16/10/2007
313533	Bill of materials for IWAP200	03	25/11/2008
321386	Bill of materials for IWAP200 24VDC Board	01	23/04/2008

Additional Conditions of Certification:

None.

Additional Special Conditions for Safe Use:

No additional special conditions of safe use.



On behalf of Epsilon

S D'Henin
Certification Manager

Date: 11 December 2008

Certificate 08 ATEX 2394X Variation Number: 01

This variation may only be reproduced in its entirety and without any change, schedule included.
The variation is only valid when it carries an original signature and holographic security label.
For help or assistance relating to this variation, contact cs@epsilonex.com.

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1 **EC - Type Examination Certificate**

2 Equipment intended for use in potentially explosive atmospheres

3 Certificate Number: EPSILON 08 ATEX 2395X

4 Equipment: IWAP200

5 Manufacturer: Extronics

6 Address: Roe Street
Congleton, Cheshire
CW12 1PG, UK.

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Epsilon, Notified Body number 1712 in accordance with Article 9 of the Council directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the directive

The examination and test results are recorded in confidential report no RETS(A)2596/A/2 and /A/3


9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with:

EN 61241-0:2006
EN 61241-1:2004

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

12 The marking of the equipment shall include the following:

 II 2 D Ex tD A21 IP66 T82°C Ta = -40°C to +70°C



On behalf of Epsilon

S Clarke
Certification Manager

Date: 19 May 2008

Certificate 08 ATEX 2395X

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13 **Schedule**

14 Certificate Number: EPSILON 08 ATEX 2395X

15 Description of Equipment or protective system

The iWAP200 is designed to interface a wired or optical Ethernet communications link to a wireless LAN, using up to two commercially available wireless LAN Access Points (AP's).

The apparatus comprises of one of two PCB's segregated into several sectors. The first PCB contains options for mains power supply or power over Ethernet supply, an optical Ethernet communications interface and the ability to interface up to two wireless AP's. The second PCB contains options for 24Vdc power supply, an optical Ethernet communications interface and the ability to interface up to two wireless AP's.

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The terminal parameters are as follows:

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Ethernet Interface (un-powered):	Rated Voltage = 7.3Vdc

DC Input terminals:	Um = 24Vdc
---------------------	------------

The marking of the equipment shall include the following:

II 2 D Ex ID A21 IP66 T82°C -40°C ≤ Ta ≤ +70°C

16 Descriptive Documents

16.1 Reports: RETS(A)2596/A/2 and /A/3

Certificate 08 ATEX 2395X

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16.2 Drawings:

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321386	01	1 of 1	23/04/2008	Bill of materials for iWAP200 24VDC board

17 Conditions of Certification

17.1 Special Conditions for Safe Use

The apparatus is not capable of withstanding the 500V insulation test required by clause 6.8.1 of EN60079-15:2005. This must be taken into account when installing the apparatus.

17.2 Conditions for Use

None

18 Essential Health and Safety Requirements

Essential Health and Safety Requirements not covered by section 9:
Covered by manufacturer's instructions.

The manufacturer shall inform the notified body of any modifications to the design of the product described by this schedule

Certificate 08 ATEX 2395X

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Supplement to ATEX Category 3 Certificate

Certificate Number: 08 ATEX 2395X Dated: 19 May 2008
Variation Number: 01 (ONE)

Variation Detail:

To Permit:

1. The addition of an LED control PCB to allow the information provided by LED's located within the main iWAP200 enclosure to be viewed externally on suitably certified LED units mounted in a suitably certified enclosure.

Details of the variation are covered in short form report number 08034639

Descriptive Documents:

Number	Title	Rev	Date
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314926	iWAP200 Enclosure General Assembly	REL03	18/11/08
313525	iWAP200 Protection PCB Schematic Sht 1 to 3	02	16/10/2007
313533	Bill of materials for iWAP200	03	25/11/2008
321386	Bill of materials for iWAP200 24VDC Board	01	23/04/2008

Additional Conditions of Certification:

None.

Additional Special Conditions for Safe Use:

No additional special conditions of safe use.



On behalf of Epsilon

S D'Henin
Certification Manager

Date: 11 December 2008

Certificate 08 ATEX 2395X Variation Number: 01

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The variation is only valid when it carries an original signature and holographic security label.
For help or assistance relating to this variation, contact cs@epsilonex.com.



Specialists for intrinsically safe
& explosion proof equipment

EC Declaration of Conformity

Extronics Ltd, Meridian House, Roe street, Congleton, CW12 1PG UK

Declare under sole responsibility that the product;

iWAP200

To which this declaration relates is in accordance with the provision of the following directives

94/9/EC Equipment and protective systems intended for use in potentially explosive atmospheres.

89/336/EEC CE Marking for Electromagnetic Compatibility Directive

73/23/EEC Low Voltage Directive

And is in conformity with the following standards or other nominative documents

EN60079-0:2006	Electrical apparatus for potentially explosive atmospheres. General requirements
EN60079-15:2005	Electrical apparatus for explosive gas atmospheres - Construction, test & marking of type 'n'
EN61241-0:2006	Electrical apparatus for use in the presence of combustible dust - General requirements
EN61241-1:2004	Electrical apparatus for use in the presence of combustible dust - Protection by enclosures "tD"
EN61010-1:2001	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements
EN55022:1998	(+A1:2007) Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
EN55024:1998	(+A2:2003) Information technology equipment - Immunity characteristics - Limits and methods of measurement

Signed

Date : 30/05/08

Nick Saunders
Technical Services Manager

8 Manual Revision

Revision	Description	Date	By
01	Initial Release	05/03/2008	AJR
02	Added Certification Information	30/5/08	NS
03	General amendments made	23/12/08	JE
04	Updated ATEX certificates added	24/01/09	NE
05	Updated EC Declaration	10/02/09	JE
06	Made Antenna connections clearer	04/06/10	AJR