



Installation & Operating Manual

iWAP300



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1 Introduction

The iWAP300 Universal Industrial Access Point Enclosure is designed to deploy wireless networks in harsh, wet and corrosive environments. The concept allows installation of equipment from leading WLAN vendors such as Aeroscout, Meru, Symbol, Cisco, Firetide and many others. Each type of Access Point or RF transmitting device is rigorously checked and tested by Extronics to ensure that the vendors equipment is suited. This means that you can effectively use the vendor of your choice when you want to extend your WLAN to your plant areas where protection against the elements is essential.

The Extronics iWAP300 is designed for use with Extronics extensive range of antennas for optimum coverage. Optional features include surge arrestors for lightning suppression in outdoor installations and multimode fibre inputs for the Ethernet, enclosure heater for low temperature and anti-condensation plus the option of plug and socket cable entry instead of cable glands.

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!	The iWAP300 must not be operated in the hazardous area.
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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 iWAP300 shall be operated as intended and only in an undamaged condition.
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Caution	When powering the iWAP300 via POE do not apply an external power supply to the protection board.
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Caution	Never power the iWAP300 (if fans and/or heaters are installed) via POE.
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3 Installation and Setting-to-Work

3.1 Installation

The iWAP300 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.

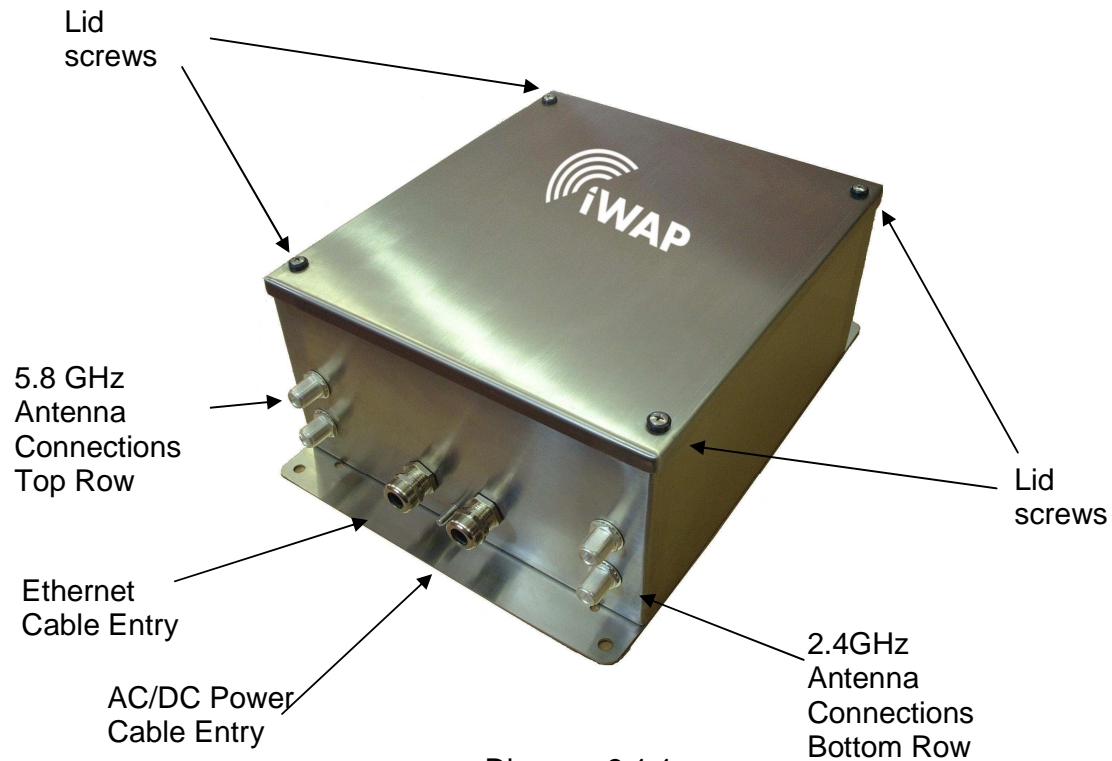


Diagram 3.1.1

3.1.2 Fitting the cables

Depending on the configuration of the iWAP300, 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 = 0.2mm²

Maximum cross section of cable = 2.5mm²

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 iWAP300 via the correct 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 3.1.2 shows the connectors on the mains variant of the iWAP300. Table 3.1.3 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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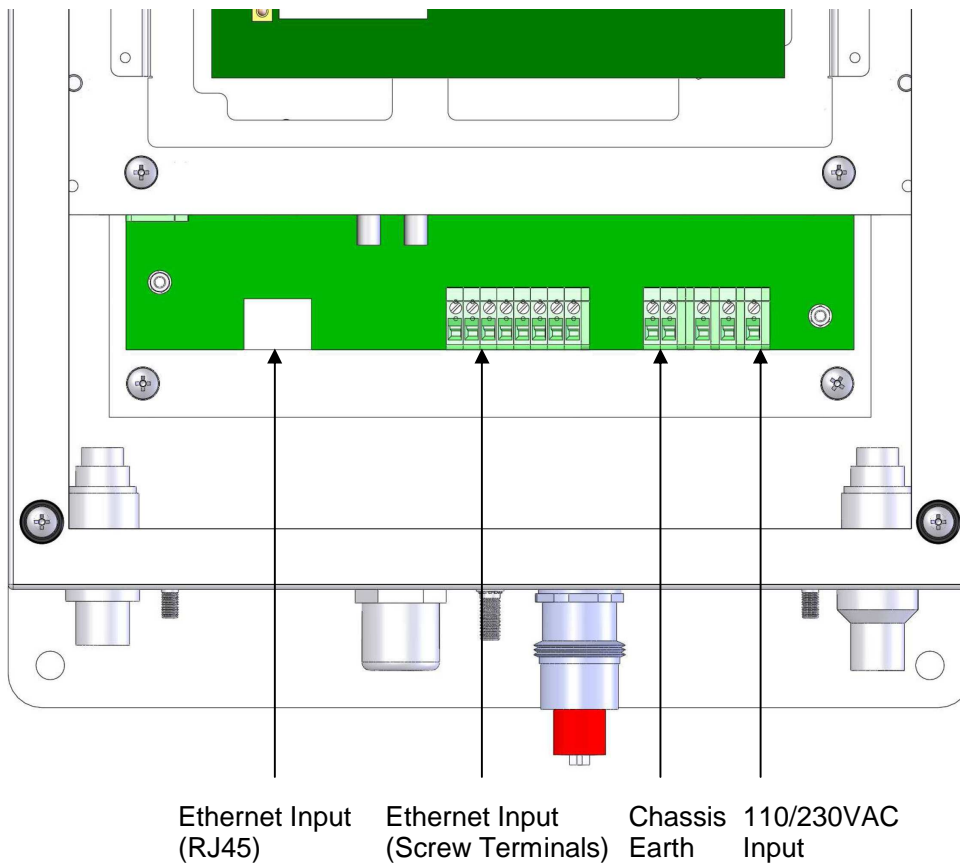


Diagram 3.1.2 – Mains Variant iWAP300 PCB

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 iWAP300 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 – iWAP300 Mains Variant Pinouts

Important Only connectors 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!

Caution When powering the iWAP300 via POE do not apply an external power supply to the protection board.

Caution Never power the iWAP300 (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 any of the two Ethernet inputs of connectors.

To obtain greater wired link distances the iWAP300 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 3.1.3 shows the connectors on the mains variant of the iWAP300. Table 3.1.3 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 connect one Ethernet cable to either the RJ45 connector or Ethernet screw terminals.

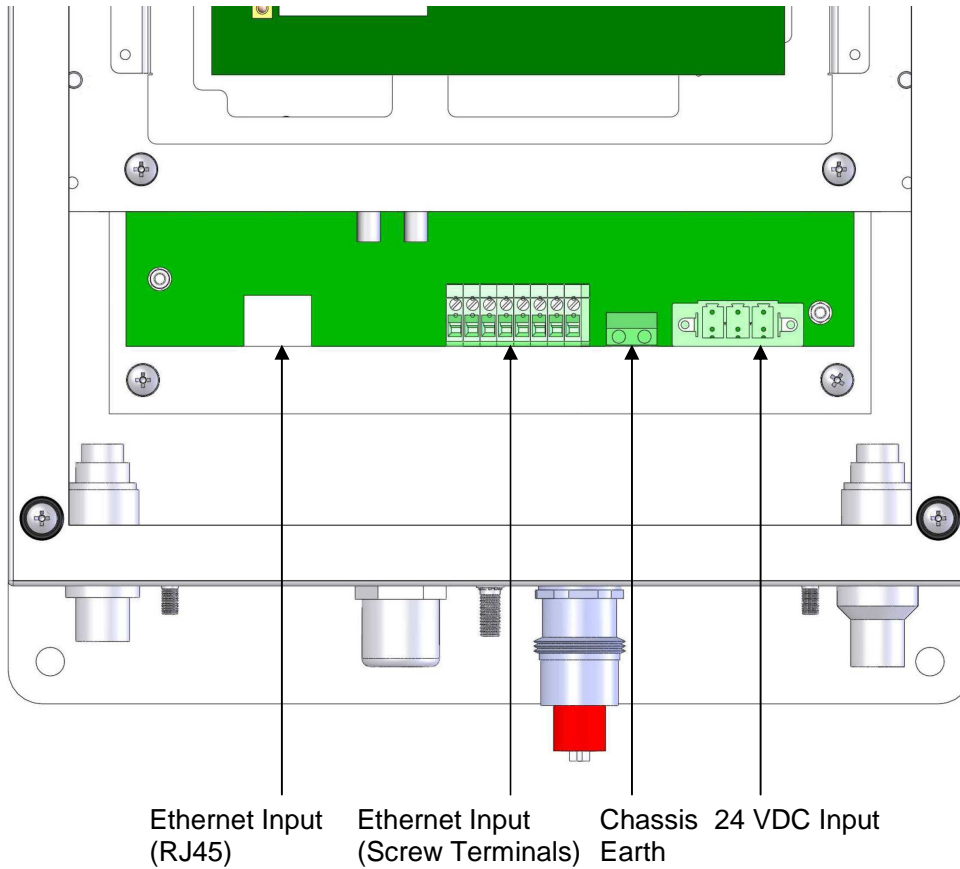


Diagram 3.1.3 – 24V Variant iWAP300 PCB

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 iWAP300 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 3.1.3 – iWAP300 24VDC Variant Pinouts

Important Only connectors 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 iWAP300 via POE do not apply an external power supply to the protection board.

Caution Never power the iWAP300 (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 any of the two Ethernet inputs of connectors.

To obtain greater wired link distances the iWAP300 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). 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 iWAP300 will be wired in this way when delivered.
- The iWAP300 may be used with any antenna. It is recommended to use the Extronics iANT200 series of antennas as these have already been pre-approved for use with the iWAP300.

IMPORTANT! Do not exceed the Effective Isotropic Radiated Power (EIRP) for the country/region of operation. Also when using the iANT100/iANT101 do not exceed the maximum EIRP for the gas group the iWAP300 is located in according to the standard BS 6656:2002 table 2.

3.1.9 Mounting The Antennas

Extronics can supply two sizes of antenna brackets which can be mounted either on the top or bottom of the enclosure. The bracket sizes offered are 365mm and 680mm in length. The brackets allow the mounting of two antennas (either the iANT100 or iANT200) at the far extremities of the bracket.

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

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.

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
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Note!	Ensure that the lid gasket is clean and undamaged before fitting the lid.
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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 iWAP300 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 iWAP300 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 iWAP300; 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 iWAP300 and all its components require no maintenance and are self-monitoring. All work on the iWAP300 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 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 iWAP300 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 iWAP300 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 iWAP300 will require additional protection if it is installed in a location where it may be subjected to damage.

5 Technical Data

5.1 Specification

Power Supply Universal 90-264VAC, 20-28VDC or IEEE802.3af POE

Maximum Power Consumption (hardware dependent)
 Without heating or cooling 40W
 With cooling 45W
 With heating and cooling 145W

Enclosure Material 316L Stainless Steel

Ingress Protection IP66

Weight Approximately 10 Kg, hardware dependent

Dimensions 390 x 286 x 300 mm (h x w x d)

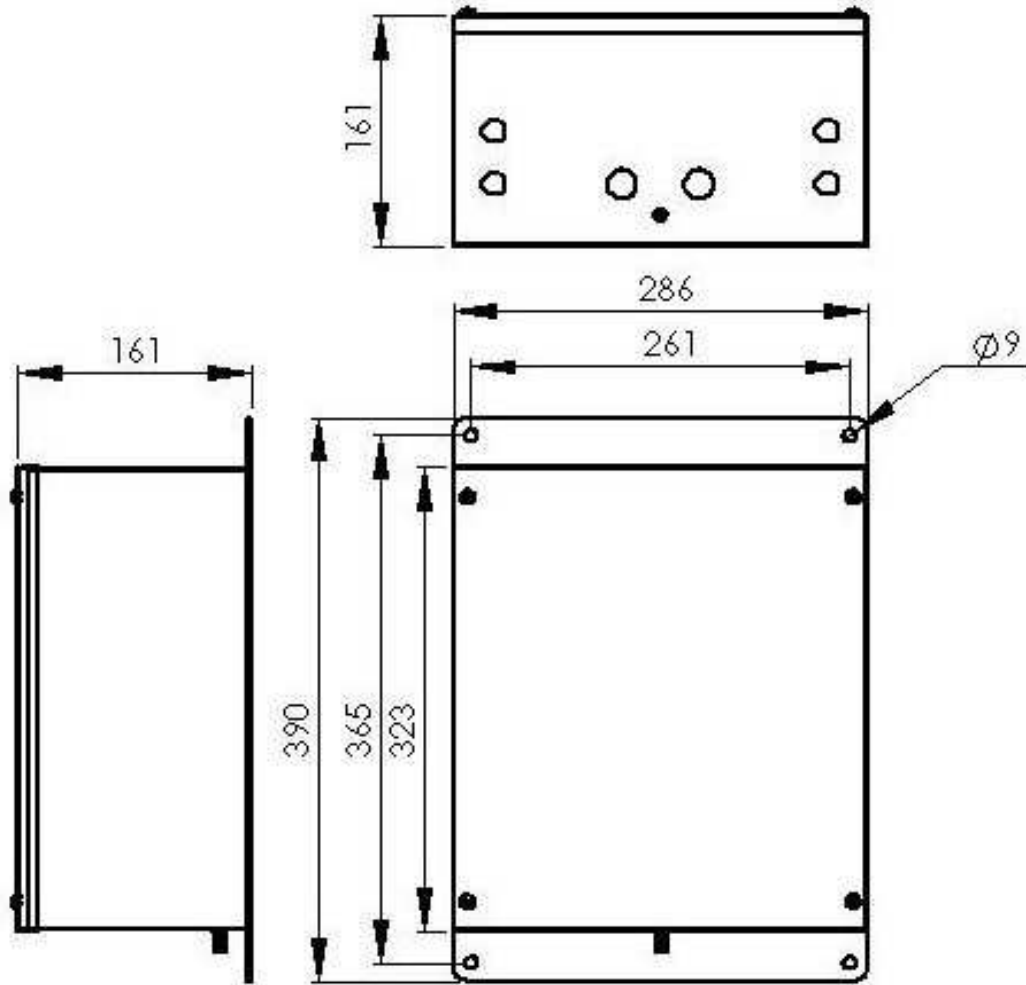
Environmental
 Operating temperature;
 -40°C/-20°C/-10°C/ to 60°C (hardware dependent)
 Storage temperature;
 -40°C/-20°C/-10°C/ to 60°C/70°C (hardware dependent)
 Relative humidity; 0 to 95%, non condensing

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 Up to four external RF outputs via N-type RF connectors with optional lightning arrestors

Antennas Any suitable antenna may be used (e.g. Extronics iANT200 series)

5.2 Enclosure Dimensions



6 Type Codes

iWAP300 - Universal Industrial Access Point Enclosure iWAP300-[#1]-[#2]-[#3]-[#4]-[#5]-[#6]-[#7]-[#8]-[#9]

Specify option [#1] - Wireless Network Hardware

Hardware supplied by customer*	0
Hardware supplied by Extronics	1

Specify option [#2] - Type Of Wireless Network Hardware

Cisco AP1231 Access Point	3
Cisco AP1242 Access Point	6
Cisco AP1242 LAP Light Access Point	7
Symbol AP300 Access Port Single Radio	8
Symbol AP5131 Access Point Single Radio	9
Symbol AP300 Access Port Dual Radio	10
Symbol AP5131 Access Point Dual Radio	11
Meru AP200	13
Meru AP150	14
Cisco AP1232 Access Point	15
Cisco AP1231 LWAPP Light Access Point	16
Cisco AP1232 LWAPP Light Access Point	18
Firetide Hotport 4500 Access Point	22

*Extronics can supply the above wireless network hardware, alternatively you may wish to “free issue” one of the above solutions so that we can factory fit it.

Specify option [#3] - Wireless MESH Backhaul—Number of Radios

No Mesh Backhaul	N
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
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 For Option [#2]

No Surge Arrestors	N
Surge Arrestors Fitted	S

Specify option [#7] - 2 x Antenna Lightning Protection For Option [#2]/Option [#3]

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	N
230VAC enclosure heating	H1
115VAC enclosure heating	H2

Specify option [#9] - Enclosure Cable Entry

Cable glands fitted	G
Quick Release Sockets fitted (Not for fibre optic input)	S

7 Manual Revision

Revision	Description	Date	By
01	Initial Release	15/12/06	DJR
02	Revised To Show Non Wireless Backhaul	23/02/07	NJS
03	New Picture On Front Cover	20/04/07	JE
04	Various changes throughout	13/11/08	JE