# TECHNICAL DATASHEET






# iWAP 107

## Universal wireless enclosure system for Zone 1 and Division 1 hazardous areas

Use any wireless technology, including Wi-Fi access points, UHF RFID readers, LTE routers, IoT gateways including LoRa, and more

ATEX and IECEx Zone 1, 2, 21, and 22 certified

cMETus Class I, II Division 1 and Zone 1 & 21 certified

Intrinsically Safe RF outputs

| | |
|---|---|
| Your choice of wireless technology | Fully certified for hazardous areas |
| Use non-certified antennas with the intrinsically safe RF outputs | Highly rugged, IP66 rated, and wide temperature range |
| Easy installation and low maintenance | Configured to suit your application |

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# SPECIFICATION

| | |
|---|---|
| Certification | Ⓔx II 2 (1) GD Ex d [ia IIC Ga] IIB+H2 T5 Gb<br>Ⓔx II 2 (1) GD Ex tb [ia Da] IIIC T100°C Db<br>cMETus Class I, II, Div 1, Groups B-G<br>cMETus Class I, II, Zone 1/21 Groups IIB+H2, III |
| Power supply | 120VAC or 230VAC (+/- 10%)<br>IEEE 802.3xx PoE |
| Maximum power consumption | Basic configuration: 25W<br>With heaters: 125W |
| Enclosure material | Marine grade copper-free aluminium light alloy, epoxy powder coated or 316L Stainless Steel (optional) |
| Ingress protection | IP66 |
| Weight | Aluminium: c. 26.5kg (POE version)<br>316L Stainless Steel: c. 70kg (hardware dependant) |
| Dimensions | Aluminium: 415 x 315 x 250mm (16.34 x 12.4 x 9.84in)<br>316L Stainless Steel: 415 x 315 x 253mm (16.34 x 12.4 x 9.96in) |
| Temperature | Ambient temperature depends on device chosen, see wireless device list. |
| Relative humidity | 0 to 95%, non-condensing |
| Input connections | 1 x AC power cable entry with screw terminals<br>1 x PoE power / data 10/100/1000BASE-T Ethernet on RJ45 socket<br>or 1 x Single or Multi mode fibre input on LC connector & Splice Tray<br>Note: MET enclosure entries are via 1/2" NPT drilled entries, all other variants are via M20 x 1.5-6H drilled entries |
| Ethernet link distance | 10/100/1000BASE-T Ethernet on CAT6: up to 100m<br>1000BASE-SX Multi mode fibre: up to 550m, wavelength 850nm<br>1000BASE-LX Single mode: fibre: up to 20km, wavelength 1310nm |
| Output connection<br><br>exceeded. | Up to 8 galvanically isolated N-Type RF outputs<br>Please note it is the customer's responsibility to ensure the maximum values for RF Threshold power as per Table 4.0 of IEC 60079-0: 2018 are not<br>The maximum RF output of the wireless transmitter and antenna gain must be taken into account when installing equipment. |

Typical internal RF loss (between output of access point and external N-type connector)

| Frequency band | Insertion loss (dB) | Loss including surge arrestor (dB) |
|---|---|---|
| 150MHz – 1GHz | 0.30 | 0.45 |
| 1GHz – 3.5GHz | 0.59 | 0.74 |
| 3.5GHz – 6GHz | 0.99 | 1.14 |
| 6GHz - 8GHz | 1.41 | 1.66 |

| Spot frequency | Insertion loss (dB) | Loss including surge arrestor (dB) |
|---|---|---|
| 400MHz | 0.15 | 0.30 |
| 900MHz | 0.16 | 0.31 |
| 2.45GHz | 0.48 | 0.63 |
| 5.5GHz | 0.99 | 1.14 |



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# Antenna Locations

The iWAP107 allows for over 50 standard antenna configurations which include top mounted, bottom mounted or split mouned antennas. The maximum number of antennas fitted to the enclosure is 8, up to 4 on the top and up to 8 on the bottom.

Below are common examples of antenna output locations.
Other options are available please discuss your requirements with an extronics engineer.




4 Top Mounted Antennas (T4)

6 Bottom Mounted Antennas (B6)

6 Split Mounted Antennas (S6)

| KEY |
| --- |
| Antenna location |
| Data input |
| Power input |

Example codes,
Location + Number of antenna outputs
4 Top mounted antennas (T4)
6 Bottom Mounted Antennas (B6)
6 Split Mounted Antennas (S6)



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# ORDERING INFORMATION

| | | |
|---|---|---|
| **Specify option [#1]** | **iWAP107 -[#1]-[#2]-[#3]-[#4] -[#5]-[#6]-[#7]-[#8]** | |
| Certification type | ATEX / IECEx | AI |
| | MET CI / D1 | USG |
| | MET CII / D1 | USD |
| | MET CI/II, Zone 1/21 | CA |
| | Ex certification for Japan | J |
| **Specify option [#2]** Wireless network hardware supply | Hardware supplied by customer | C |
| | Hardware supplied by Extronics | E |
| | *Extronics can supply the wireless hardware, or you may wish to 'free issue' (supply and deliver to Extronics at your cost) one of the already assessed solutions (see option #3), which we will factory fit.* | |
| **Specify option [#3]** Wireless network hardware type | Extronics iWAP range of hazardous area wireless enclosures are vendor agnostic. This means you can pick from a wide range of wireless devices, please visit the link below to see the wireless devices which have been certified.<br>[See www.extronics.com/wireless-device-list/ for current options]<br><br>If your preffered device is not listed please talk to an Extronics engineer who can advise on the process of certifiying a new device.<br><br>Depending on the wireless device chosen, additional components may be added or removed such as POE injector, media convertor or secondary power supply.<br><br>iWAP107 is subject to a certification limit of -40 to +60 degrees C. Operating temperatures will vary depending on the device chosen – if you have specific temperature limit requirements then please contact Extronics who will be able advise further. | |
| **Specify option [#4]** Power Supply | POE IEE 802.3xx | POE |
| | 20VAC | AC1 |
| | 230VAC | AC2 |
| | 24VDC | DC1 |
| **Specify option [#5]** Ethernet connection | 100/1000Base T-Ethernet on CAT6 Copper | C |
| | 100/1000Base T-Ethernet on CAT6 Copper (Surge Protected) | CS |
| | Multi mode 1000BASE-SX fibre with LC connector | SX |
| | Single mode 1000BASE-LX fibre with LC connector | LX |



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# ORDERING INFORMATION

| | | |
|---|---|---|
| **Specify option [#6]**<br>Antenna mounting | Top Mounted<br>Bottom Mounted<br>Split<br><br>The number of antenna outputs on the wireless device will determine the number of antenna output connections<br><br>Popular configurations and example coding shown on page 3 | T<br>B<br>S |
| **Specify option [#7]**<br>Surge protection | Antenna surge protection<br>No Antenna surge protection | S<br>N |
| **Specify option [#8]**<br>Enclosure heating | No enclosure heating<br>Enclosure heating | N<br>H |
| **Specify option [#9]**<br>Enclosure material | Marine grade copper-free aluminium light alloy<br>316L Stainless steel | AL<br>SS |
| **Accessories** | iANT2xx range of rugged simple apparatus antennas (see separate data sheets) | iANT2xx |
| | 316L stainless steel pipe mount bracket kit for iWAP107, to fit 2¼ - 2½"(58.0 - 63.5mm) diameter pipe. | iWAPMB03 |
| | Double suction door opening tool - used for opening Ex d enclosure doors size of iWAP107 and above. Rated 50KG. This item is available to purchase separately, but is included FOC with each shipment of iWAP107 (1 tool per 1-10 iWAPs) | 8580001 |



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