

# 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

[www.extronics.com](http://www.extronics.com) | [info@extronics.com](mailto:info@extronics.com) | +44 (0) 845 277 5000

405010(12)

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Extronics Released

# SPECIFICATION

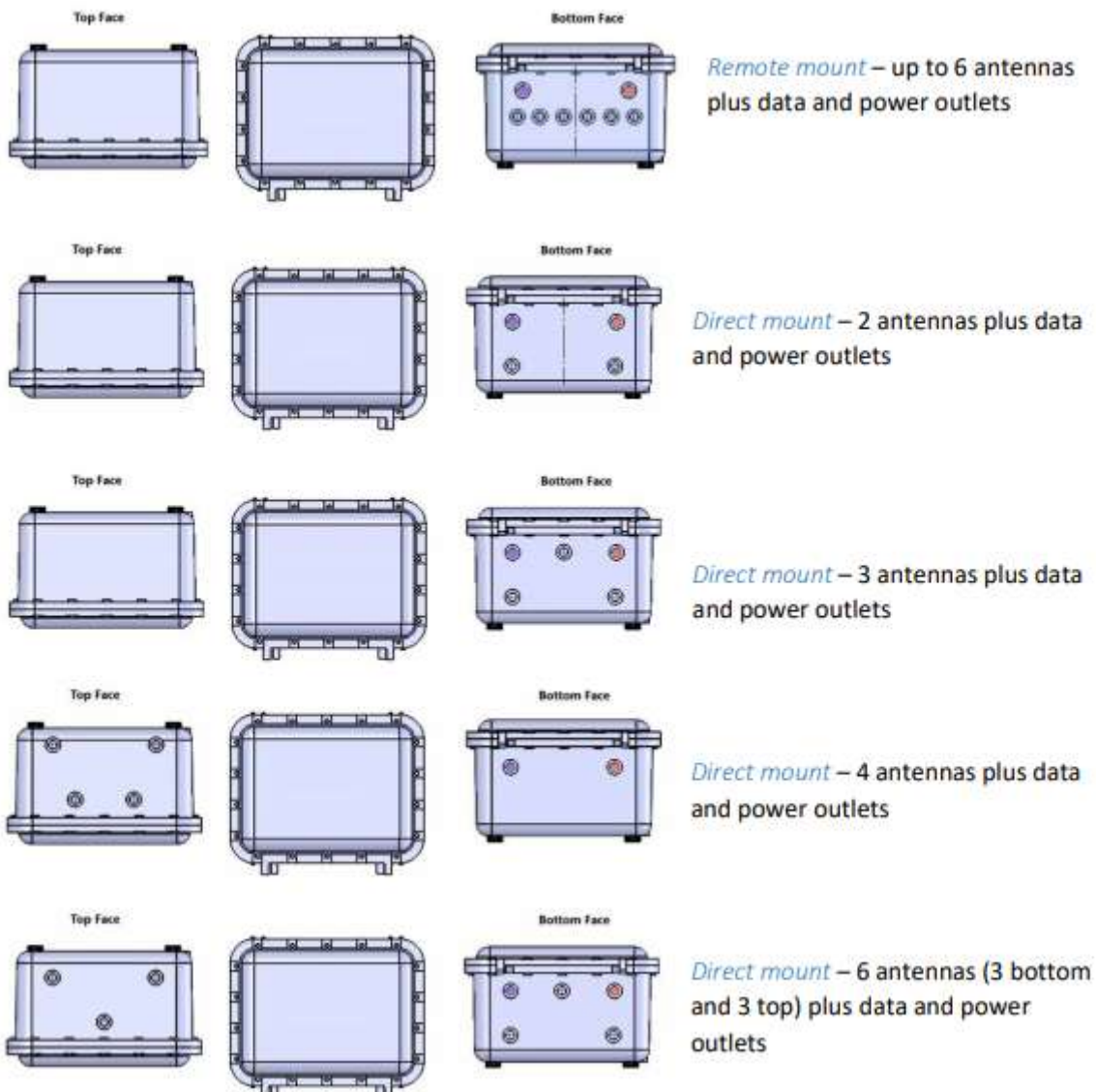


| Certification                                                                           | <p>  II 2 (1) GD Ex d [Ia IIC Ga] IIB+H2 T5 Gb<br/>  II 2 (1) GD Ex tb [Ia Da] IIIC T100°C Db<br/>                     cMETus Class I, II, Div 1, Groups B-G<br/>                     cMETus Class I, II, Zone 1/2I Groups IIB+H2, III                 </p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------|------------------------------------|---------------|------|------|---------------|------|------|---------------|------|------|-------------|------|------|----------------|---------------------|------------------------------------|--------|------|------|--------|------|------|---------|------|------|--------|------|------|
| Power supply                                                                            | <p>120VAC or 230VAC (+/- 10%)<br/>IEEE 802.3at PoE</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Maximum power consumption                                                               | <p>Basic configuration: 25W<br/>With heaters: 125W</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Enclosure material                                                                      | <p>Marine grade copper-free aluminium light alloy, epoxy powder coated or 316L Stainless Steel (optional)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Ingress protection                                                                      | <p>IP66</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Weight                                                                                  | <p><b>Aluminium:</b> c. 26.5kg (POE version)<br/><b>316L Stainless Steel:</b> c. 70kg (hardware dependant)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Dimensions                                                                              | <p><b>Aluminium:</b> 415 x 315 x 250mm (16.34 x 12.4 x 9.84in)<br/><b>316L Stainless Steel:</b> 415 x 315 x 253mm (16.34 x 12.4 x 9.96in)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Temperature                                                                             | <p>Ambient temperature depends on variant, see order information</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Relative humidity                                                                       | <p>0 to 95%, non-condensing</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Input connections                                                                       | <p>1 x AC power cable entry with screw terminals<br/>1 x PoE power / data 10/100/1000BASE-T Ethernet on RJ45 socket<br/><b>or</b> 1 x Single or Multi mode fibre input on LC connector &amp; Splice Tray<br/><b>Note:</b> MET enclosure entries are via 1/2" NPT drilled entries, all other variants are via M20 x 1.5-6H drilled entries</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Ethernet link distance                                                                  | <p><b>10/100/1000BASE-T Ethernet on CAT6:</b> up to 100m<br/><b>1000BASE-LX Multi mode fibre:</b> up to 2km, wavelength 1310nm<br/><b>1000BASE-LX Single mode:</b> fibre: up to 10km, wavelength 1310nm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Output connection                                                                       | <p>Up to eight galvanically isolated N-Type RF outputs<br/><i>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: 2011 are not exceeded. The maximum RF output of the wireless transmitter and antenna gain must be taken into account when installing equipment.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                               |                                    |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| Typical internal RF loss (between output of access point and external N-type connector) | <table border="1"> <thead> <tr> <th>Frequency band</th> <th>Insertion loss (dB)</th> <th>Loss including surge arrester (dB)</th> </tr> </thead> <tbody> <tr> <td>150MHz – 1GHz</td> <td>0.30</td> <td>0.45</td> </tr> <tr> <td>1GHz – 3.5GHz</td> <td>0.59</td> <td>0.74</td> </tr> <tr> <td>3.5GHz – 6GHz</td> <td>0.99</td> <td>1.14</td> </tr> <tr> <td>6GHz - 8GHz</td> <td>1.41</td> <td>1.66</td> </tr> <tr> <th>Spot frequency</th> <th>Insertion loss (dB)</th> <th>Loss including surge arrester (dB)</th> </tr> <tr> <td>400MHz</td> <td>0.15</td> <td>0.30</td> </tr> <tr> <td>900MHz</td> <td>0.16</td> <td>0.31</td> </tr> <tr> <td>2.45GHz</td> <td>0.48</td> <td>0.63</td> </tr> <tr> <td>5.5GHz</td> <td>0.99</td> <td>1.14</td> </tr> </tbody> </table> | Frequency band                     | Insertion loss (dB) | Loss including surge arrester (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 arrester (dB) | 400MHz | 0.15 | 0.30 | 900MHz | 0.16 | 0.31 | 2.45GHz | 0.48 | 0.63 | 5.5GHz | 0.99 | 1.14 |
| Frequency band                                                                          | Insertion loss (dB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Loss including surge arrester (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 arrester (dB) |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| 400MHz                                                                                  | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.30                               |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| 900MHz                                                                                  | 0.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.31                               |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| 2.45GHz                                                                                 | 0.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.63                               |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |
| 5.5GHz                                                                                  | 0.99                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.14                               |                     |                                    |               |      |      |               |      |      |               |      |      |             |      |      |                |                     |                                    |        |      |      |        |      |      |         |      |      |        |      |      |

## Antenna Locations

For best wireless performance from your iWAP107 system, we recommend that, where possible, antennas are remotely mounted as high as possible and with sufficient separation. For instances where remote mounting of antennas is not feasible, we have optimised the antenna positions for the various configurations.

When ordering your iWAP107 system, you must specify remote or direct mounted antennas. The RF connections will then be supplied as shown in the diagrams below depending on the total number of RF ports for your device.



# ORDERING INFORMATION



## iWAP107 -[#1]-[#2]-[#3]-[#4] -[#5]-[#6]-[#7]-[#8]-[#9][#10][#11]-[#12]

| Specify option [#1]                                                                                                                                                                                                                                                                                                 |                                                                                                           |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------|
| Certification type                                                                                                                                                                                                                                                                                                  | ATEX / IECEx                                                                                              | AI             |
|                                                                                                                                                                                                                                                                                                                     | MET CI / D1                                                                                               | USG            |
|                                                                                                                                                                                                                                                                                                                     | MET CII / D1                                                                                              | USD            |
|                                                                                                                                                                                                                                                                                                                     | MET CI/II, Zone 1/2I                                                                                      | CA             |
| Specify option [#2]                                                                                                                                                                                                                                                                                                 |                                                                                                           |                |
| Wireless network hardware supply                                                                                                                                                                                                                                                                                    | Hardware supplied by customer                                                                             | C              |
|                                                                                                                                                                                                                                                                                                                     | Hardware supplied by Extronics                                                                            | E              |
| <p><i>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.</i></p>                                                                                          |                                                                                                           |                |
| Specify option [#3]                                                                                                                                                                                                                                                                                                 |                                                                                                           |                |
| Wireless network hardware type                                                                                                                                                                                                                                                                                      | Aruba AP-304 access point (0°C to +45°C)                                                                  | 76             |
|                                                                                                                                                                                                                                                                                                                     | Aruba AP-314 access point (0°C to +45°C)                                                                  | 71             |
|                                                                                                                                                                                                                                                                                                                     | Aruba AP-334 access point (0°C to +45°C)                                                                  | 78             |
|                                                                                                                                                                                                                                                                                                                     | Aruba AP-228 access point (-40° C to +55°C)                                                               | T-Special (59) |
|                                                                                                                                                                                                                                                                                                                     | Cisco AP1562e access point (-40°C to +55°C)                                                               | T-Special (72) |
|                                                                                                                                                                                                                                                                                                                     | Cisco AP1532e access point (-20°C to +55°C)                                                               | 39             |
|                                                                                                                                                                                                                                                                                                                     | Cisco AP2802e access point (-20°C to +45°C)                                                               | 65             |
|                                                                                                                                                                                                                                                                                                                     | Cisco AP2702e access point (-20°C to +45°C)                                                               | 52             |
|                                                                                                                                                                                                                                                                                                                     | Cisco AP3802e access point (-20°C to +45°C)                                                               | 66             |
|                                                                                                                                                                                                                                                                                                                     | Cisco AP3702e access point (-20°C to +45°C)                                                               | 45             |
|                                                                                                                                                                                                                                                                                                                     | Cisco Meraki MR74 access point (-40°C to +50°C)                                                           | T-Special (9)  |
|                                                                                                                                                                                                                                                                                                                     | Siemens Scalance W774 access point (-20°C to +50°C)                                                       | 53             |
|                                                                                                                                                                                                                                                                                                                     | Siemens Scalance W788 series access point (-20°C to +60°C)                                                | 54 or 74       |
|                                                                                                                                                                                                                                                                                                                     | New wireless hardware – order code to be advised                                                          | TBA            |
| <p><i>Maximum operating temperature listed in brackets only applies to POE powered units; take a lower value when considering heat rise inside the enclosure if powered by AC. If heater option is selected, APs may operate at up to approx. 20°C lower than shown, subject to certificate limit of -40°C.</i></p> |                                                                                                           |                |
| Specify option [#4]                                                                                                                                                                                                                                                                                                 |                                                                                                           |                |
| Power supply                                                                                                                                                                                                                                                                                                        | 120 VAC supply                                                                                            | AC1            |
|                                                                                                                                                                                                                                                                                                                     | 230 VAC supply                                                                                            | AC2            |
|                                                                                                                                                                                                                                                                                                                     | IEEE 802.3at compliant Power-over-Ethernet<br><i>(chosen hardware must be compatible with POE supply)</i> | POE            |
| Specify option [#5]                                                                                                                                                                                                                                                                                                 |                                                                                                           |                |
| Ethernet connection                                                                                                                                                                                                                                                                                                 | 100/1000Base-T Ethernet on CAT6 copper                                                                    | C              |
|                                                                                                                                                                                                                                                                                                                     | 100/1000Base-T Ethernet on CAT6 copper (surge protected)                                                  | CS             |
|                                                                                                                                                                                                                                                                                                                     | Multi mode 1000BASE-LX fibre with LC connector                                                            | FG             |
|                                                                                                                                                                                                                                                                                                                     | Single mode 1000BASE-LX fibre with LC connector                                                           | SG             |

# ORDERING INFORMATION



|                                                                                                             |                                                                                                                                                                                                                                          |                             |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Specify option [#6]</b>                                                                                  |                                                                                                                                                                                                                                          |                             |
| Isolated output for radio 1                                                                                 | 150MHz to 8GHz                                                                                                                                                                                                                           | 501                         |
| <b>Specify option [#7]</b>                                                                                  |                                                                                                                                                                                                                                          |                             |
| Number of antenna outputs for radio 1                                                                       | 0/1/2/3/4 off, CT-01<br>0/1/2/3/4 off, CT-01 with surge protector                                                                                                                                                                        | 0/1/2/3/4<br>0S/1S/2S/3S/4S |
| <b>Specify option [#8]</b>                                                                                  |                                                                                                                                                                                                                                          |                             |
| Isolated output for radio 2 (if applicable)                                                                 | Not required<br>150MHz to 8GHz                                                                                                                                                                                                           | N<br>501                    |
| <b>Specify option [#9]</b>                                                                                  |                                                                                                                                                                                                                                          |                             |
| Number of antenna outputs for radio 2 (if applicable)                                                       | 0/1/2/3/4 off, CT-01<br>0/1/2/3/4 off, CT-01 with surge protector                                                                                                                                                                        | 0/1/2/3/4<br>0S/1S/2S/3S/4S |
| <b>Specify option [#10]</b>                                                                                 |                                                                                                                                                                                                                                          |                             |
| Enclosure heating (not compatible with POE supplies)                                                        | No enclosure heating<br>Supplied with enclosure heating                                                                                                                                                                                  | N<br>H                      |
| <b>Specify option [#11]</b>                                                                                 |                                                                                                                                                                                                                                          |                             |
| Antenna position (see earlier page for antenna layout pattern, which relates to total number of RF outputs) | Remote mount<br>Direct mount                                                                                                                                                                                                             | R<br>D                      |
| <b>Specify option [#12]</b>                                                                                 |                                                                                                                                                                                                                                          |                             |
| Enclosure material                                                                                          | Marine grade copper-free aluminium light alloy<br>316L stainless steel                                                                                                                                                                   | AL<br>SS                    |
| <b>Accessories:</b>                                                                                         |                                                                                                                                                                                                                                          |                             |
|                                                                                                             | 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                     |
|                                                                                                             | Extended Warranty and Technical Support (over and above standard first year), available on all iWAP107 configurations                                                                                                                    | W001                        |

Accessories:

|                                                                                                                                                                                                                                                   |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| iANT2xx range of rugged simple apparatus antennas<br>(see separate data sheets)                                                                                                                                                                   | iANT2xx  |
| 316L stainless steel pipe mount bracket kit for iWAP107,<br>to fit 2¼ - 2½"(58.0 - 63.5mm) diameter pipe.                                                                                                                                         | iWAPMB03 |
| Double suction door opening tool - used for opening Ex d<br>enclosure doors size of iWAP107 and above. Rated 50KG.<br>This item is available to purchase separately, but is included<br>FOC with each shipment of iWAP107 (1 tool per 1-10 iWAPs) | 8580001  |
| Extended Warranty and Technical Support<br>(over and above standard first year)<br>available on all iWAP107 configurations                                                                                                                        | W001     |