Abriox

a MOBILTEX brand

OSPREY®

& MCA
Installation Instructions

V6

Revision Date
05/02/2025

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2. SAFETY INFORMATION

Please ensure you are familiar with the safety regulations of your company and observe them at all times.

2.1 General Safety Summary

This document contains information and warnings that must be observed to keep the unit in a safe condition and ensure safe operation. Please ensure you fully understand all instructions throughout this document and follow all site safety practices and procedures.

2.2 Safety Symbols

The table below lists safety symbols that appear on the units and within this document.

Symbol	Description
	Risk of danger. Important information. See warnings. This provides safety precaution information, that is, information that you need to be careful about to prevent potential problems.

2.3 Maximum Pressure

The maximum calibrated pressure for the OSPREY and MCA is model dependant, please refer to the pressure detailed on the label. Do not install on systems with higher pressures than those detailed. Refer to technical specifications.

 **IMPORTANT: DO NOT EXCEED THE MAXIMUM PRESSURE RANGE AS THIS COULD CAUSE IRREPARABLE DAMAGE TO THE SENSOR AND THE UNIT.**

2.4 Working Temperature

The OSPREY and MCA have been tested and certified to work in temperatures between **–40ºC to +70ºC (-40ºF to +158ºF)** . The units must not be installed in an environment which exceeds these temperatures. Below -30°C the modem enters 'extended operation' mode.

 **WARNING: DO NOT EXCEED THE MAXIMUM TEMPERATURE RANGE –40ºC TO +70ºC (-40°F TO +158°F)**

2.5 Battery Replacement

The OSPREY batteries are specific to the product (**SAFT LS33600**) nominal battery voltage **3.6V** per cell. Batteries must be replaced by suitably trained personnel with the approved type in non-hazardous locations only. See Annex A, F & G for further information.



WARNING – DO NOT REPLACE BATTERY WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. USE ONLY SAFT LS33600 BATTERIES. DO NOT ATTEMPT TO REUSE CELLS. INSTALL ONLY NEW UNUSED BATTERIES, BEARING THE SAME DATE CODE, FROM THE SAME MANUFACTURER AND THE SAME APPROVED BATTERY TYPE: SAFT LS33600. ENSURE CORRECT INSTALLATION OF CELLS; INCORRECT INSTALLATION OF OR MIXING OF NEW AND USED CELLS CAN RESULT IN CELL VENTING OR EXPLOSION AND POSSIBLE FIRE.

2.6 Communications Port

The maximum value of Um which may be applied to the OSPREY communication port is **6.51V.** The maximum value of Um which may be applied to the PressureLink® USB Port (unspecified equipment) is **250VAC.** The OSPREY communications port can only be used with a PressureLink® unit. Contact Abriox for more information.

2.7 Special Conditions for Safe Use

i. Electrostatic hazard - clean only with a damp cloth, care must be taken when unit is installed to avoid static discharge, avoid dry dusty airflow.
ii. Isolated metal parts of the equipment (Cellular, GPS & Communications Port connector shells and sensor coupling), have a maximum capacitance of 22pF.
iii. MCA enclosure has a total capacitance of 308pF. The user must ensure that these parts are not subject to electrostatic charging - these risks may be mitigated if a MCA enclosure is earthed.
iv. No other electrical connections (including earth but excluding the MCA) shall be made to the OSPREY unit whilst the PressureLink is connected.
v. Care must be taken to minimise unnecessary physical shock and impact to the units. See Annex F for more detail.

2.8 Additional Notes for Safety

If it is not possible to ensure that these parts are not subject to electrostatic charge, the MCA shall have a connection to earth of $<10^9\Omega$. Either through direct bonding or if you have a metal framework in the vicinity of your apparatus (e.g. gas pipes), this would be considered adequate as an earth connection point. Such a connection would ensure equipotential bonding.

Where this is not practical, the following precautions may reduce the risk:

i. Equipment should not be installed in an area prone to fast moving dry airflows.
ii. Equipment should not be installed where it is prone to brushing from non-metallic materials.
iii. If the equipment is in contact with non-metallic materials, cleaning should be with a damp cloth to minimize electrostatic charging.
iv. The capacitance value would also significantly decrease when spaced with a thicker insulator/dielectric such as a wooden backboard.

2.9 Disclaimer

If this equipment is used in a manner not specified by Abriox, the protection provided by the equipment may be impaired. Ensure you have read and understand all safety and installation requirements before installing this equipment. Do not make any changes or modifications to the equipment. If such changes or modifications should be made, you should stop operation of the equipment.

3. COMPLIANCE



The following instructions apply to equipment covered by certificate numbers **ITS13ATEX27828X & IECEX ITS 16.0050X**:

i. The equipment may be used with flammable gases and vapours with apparatus groups IIB and with temperature classes T3.
ii. The equipment is only certified for use in ambient temperatures in the range of –40ºC to +70ºC and should not be used outside this range.
iii. The certificate number has an 'X' suffix which indicates that special conditions of installation and use apply.
iv. Installation shall be carried out in accordance with the applicable code of practice by suitably-trained personnel.
v. Repair of this equipment should be carried out by authorised personnel only.
vi. If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.
    - Aggressive substances — e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.
    - Suitable precautions — e.g. regular checks as part of routine inspections or establishing from the material's data sheet that it is resistant to specific chemicals.
vii. There are no special checking or maintenance conditions other than a periodic check.

USA Marking:	Class I, Zone 0, AEx ia IIB T3 Ga Class I, Division 1, Groups C & D -40ºC ≤ Tamb ≤ +70ºC	Certificate number:	ITS 13 ATEX 27828X IECEx ITS 16.0050X
Canada Marking:	Ex ia IIB T3 Ga -40°C ≤ Tamb ≤ +70°C"	Marking:	II 1 G Ex ia IIB T3 Ga Ta = –40ºC to +70ºC

Conforms to UL 60079-0, UL 60079-11 and UL 61010-1.
Certified to CSA C22.2 No. 60079-0, No.60079-11 and No.61010-1.

This product is ETL, ATEX & IECEX approved by:

Intertek Testing and Certification Limited. (Notified Body Number: 0359)
Cleeve Rd, Leatherhead, Surrey, KT22 7SB. United Kingdom

Intertek Italia S.p.A (Notified Body Number: 2575)
Via Guido Miglioli 2/A, 20063 Cernusco sul Naviglio, Milano (MI) Italy



The ETL Listed Mark is proof that the product is compliant to North American safety standards has been independently tested and meets the applicable published standard.
The OSPREY is designed and approved for mounting in **Class I, Division 1 & Class I, Zone 0** Hazardous area locations (refer to the NFPA Electrical code book)

CE

For European model, this product is CE marked which means that Abriox declares that the product or equipment complies with all applicable European Directives. A copy of the Declaration of Conformity can be obtained from Abriox.

FC

For the US model, this device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

i) Reorient or relocate the receiving antenna.
ii) Increase the separation between the equipment and receiver.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.



In the European Union (EU) this symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to a designated collection point, e.g., on an authorised one-for-one basis when you buy a new similar product or to an authorised collection site for recycling waste electrical and electronic equipment (WEEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with WEEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

Abriox believe that we should all tread as lightly on the planet as possible and are committed to continuous environmental improvement. Consideration of the environment begins with the design of our products, and continues through their life cycle from manufacture to end of life. We have made small, but highly considered decisions about the design, manufacture and distribution of our products in order to lessen their environmental impact and will continue to work with manufacturers and suppliers to achieve improvement wherever we can. Abriox, as producer of this Electrical/Electronic Equipment, passes all obligations to the End User for subsequent disposal as WEEE. In accordance with our Terms and Conditions of Sale, the End User must finance collection, treatment, recycling, recovery and environmentally sound disposal of this equipment when discarded in the UK. However, Abriox operates a take-back service. Producer Compliance Registration No. WEE/JG0293UR.

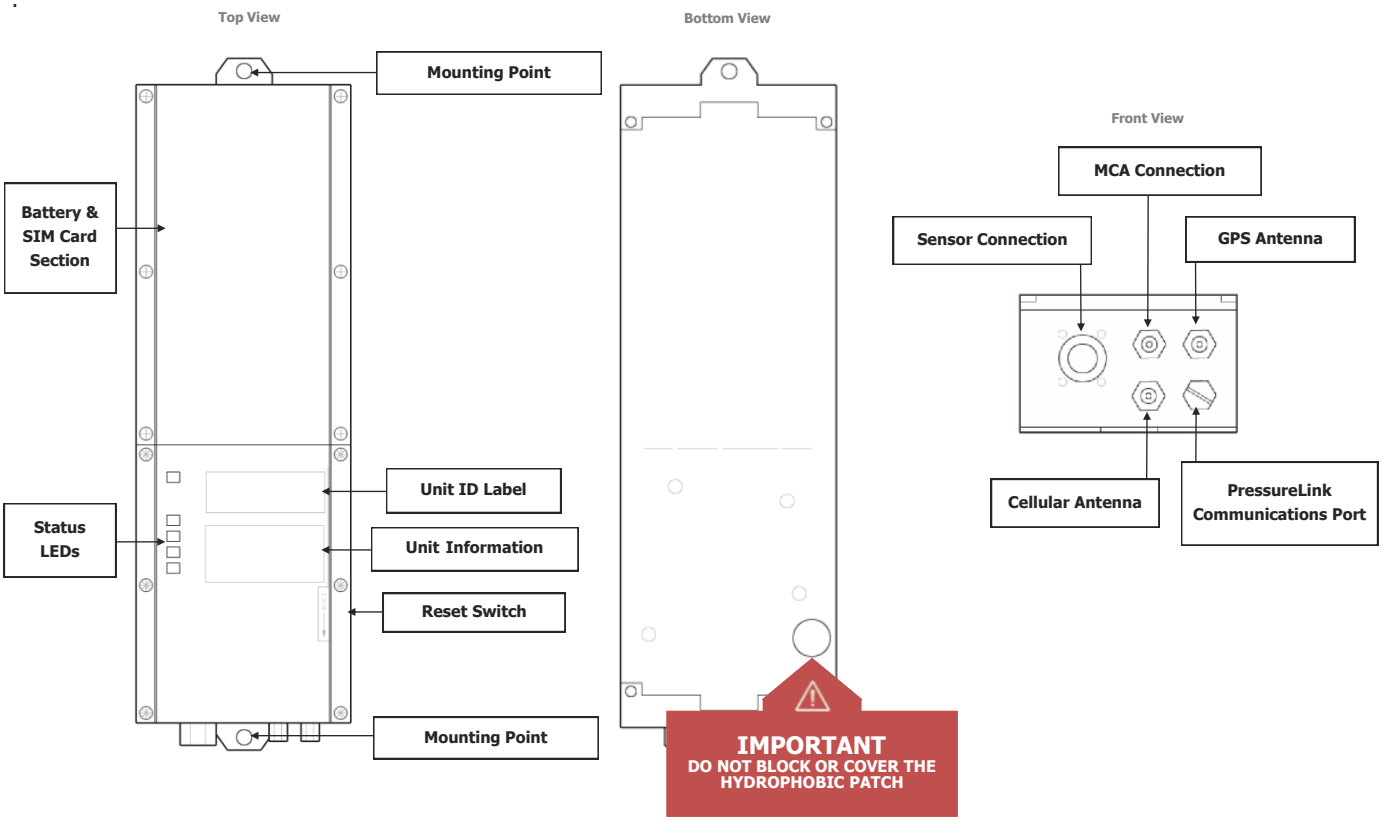


In the European Union (EU) this symbol indicates that the batteries in this product should be collected separately and not be disposed of with household waste. Substances in batteries can have a potential negative impact on health and environment and you have a role in recycling waste batteries thus contributing to the protection, preservation and improvement of the quality of the environment.

4. INTRODUCTION

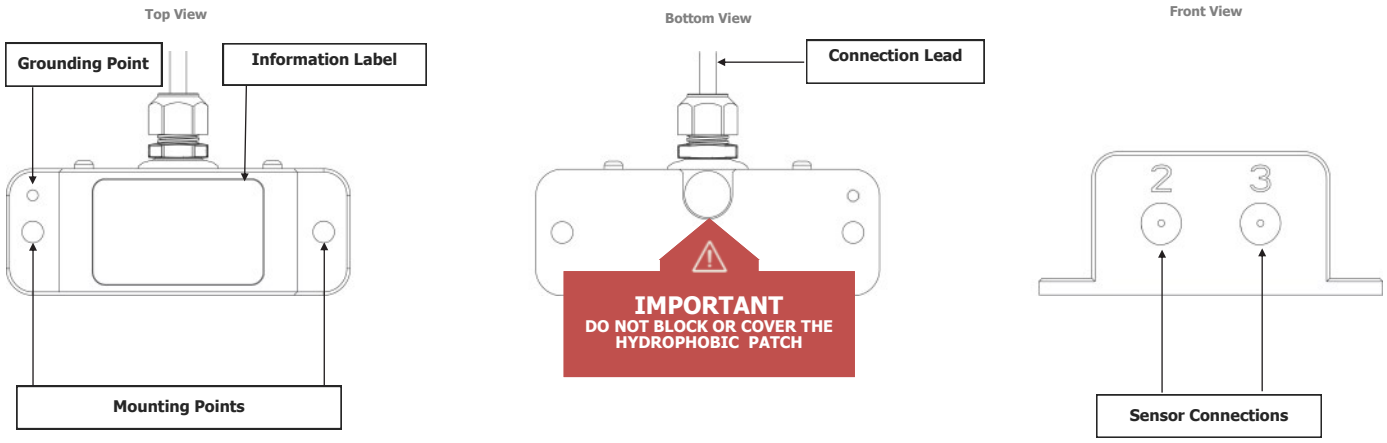
4.1 OSPREY

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4.2 OSPREY MCA (Optional Accessory)

The MCA is an intrinsically safe, multi-channel adaptor that connects to the OSPREY, it can be supplied with various sensor combinations.
Refer to technical specification.
When connecting the MCA to an OSPREY the thumb wheel should be hand tight only. Do not apply excessive torque as this may damage the connector.

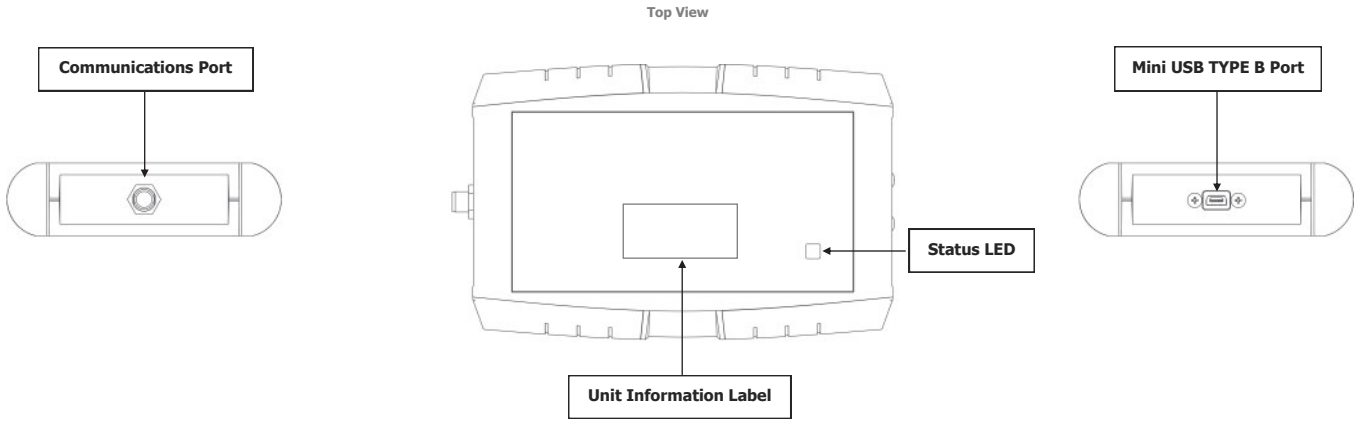


4.3 PressureLink (Optional Accessory)

PressureLink is a interface device for use with the OSPREY range of pressure monitors. It acts as an intrinsically safe barrier between the OSPREY unit and unassessed equipment such as a laptop/PC.

PressureLink is used for the calibration of OSPREY monitors, manually downloading pressure data from an OSPREY unit and during battery replacement.

Refer to technical specification.



WARNING: THE PRESSURELINK DEVICE MUST ONLY BE USED IN A NON-HAZARDOUS LOCATION.

5. MODE OF OPERATION

The OSPREY system is a continuous gas distribution pressure monitoring system that transmits the recorded data automatically to the PressureTrac® server. As well as pressure validation/monitoring, it can be used for any operational investigation on the gas distribution network such as poor pressure zones, customer complaints, maintenance work etc.

The OSPREY unit takes a pressure reading every 6* seconds (sample rate), averages the readings over 6* minutes (log rate) and automatically uploads the readings on an hourly or daily basis (every 24 hours in normal mode).

During normal mode of operation, the OSPREY will 'wake' every 12 hours and respond to any SMS commands.

Note
* These are the default values set. Both the sample rate and log rate can be configured via PressureTrac.

5.1 Incident Evaluation Mode

By default, the OSPREY will power up in **I**ncident **E**valuation **M**ode (**IEM**). In this mode the OSPREY will take a pressure reading at the defined sample rate, average the readings over the defined log rate and upload this data every hour, for 48 hours. This allows the system to provide the user with an accurate and immediate overview of the pressure readings over a 48 hour period.

The IEM period can be extended up to a maximum of 30 days or disabled completely via PressureTrac. During the IEM period, the OSPREY will respond to SMS commands to provide on the spot pressure readings for investigation purposes.

See Section 7.7 for an example of the STATUS SMS command.

Once the IEM period has finished, the OSPREY will return to the normal mode of operation, e.g. taking a pressure reading at the defined sample rate, average the readings over the defined log rate and upload this data to the PressureTrac server on a daily basis.

Note
PressureTrac can be used to enable, disable and change the Incident Evaluation Mode options.

5.2 Normal Mode

Whilst in this mode, the OSPREY will take a pressure reading at the defined sample rate, average the readings over the defined log rate and upload this data to the PressureTrac server on a daily basis at a specified time.

The OSPREY will not respond to SMS commands immediately, it will only respond when it wakes up every 12 hours.

Note
In normal mode, the OSPREY will only respond to an SMS command when it wakes up. This will cause a delay in getting a response back.

6. BEFORE GOING TO SITE

6.1 Install the Batteries

If you are required to install the batteries prior to installation in the zone, see Annex A & G for battery fitting/replacement details.

⚠

WARNING – DO NOT REPLACE BATTERY WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. USE ONLY SAFT LS33600 BATTERIES. DO NOT ATTEMPT TO REUSE CELLS. INSTALL ONLY NEW UNUSED BATTERIES, BEARING THE SAME DATE CODE, FROM THE SAME MANUFACTURER AND THE SAME APPROVED BATTERY TYPE: SAFT LS 33600. ENSURE CORRECT INSTALLATION OF CELLS; INCORRECT INSTALLATION OF OR MIXING OF NEW AND USED CELLS CAN RESULT IN CELL VENTING OR EXPLOSION AND POSSIBLE FIRE.

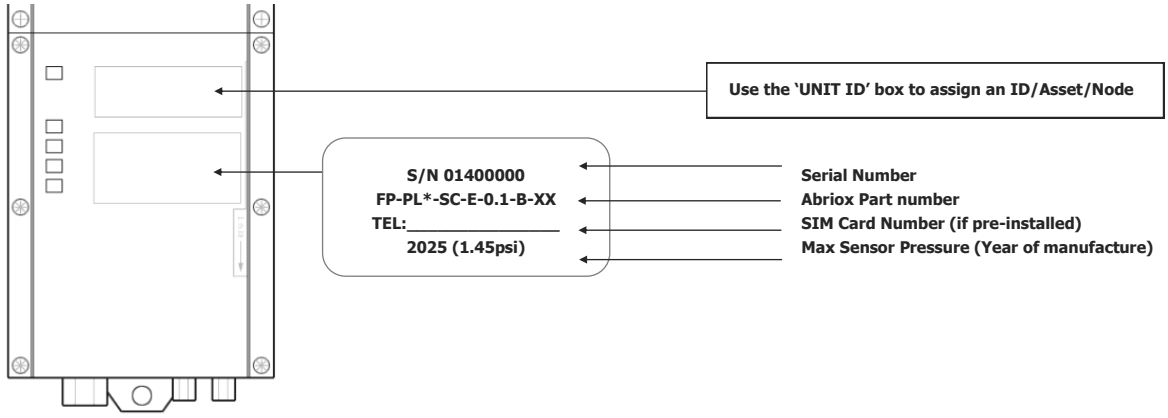
6.2 Install the SIM Card

In most circumstances the SIM card for the unit will have been pre-installed during manufacturing; the number of the SIM card will have been printed on the label. However, in some circumstances, customers may opt to install their own SIM cards. If this is the case, please install the SIM card prior to going to site and make sure the number for the SIM card is clearly written on the label to aid installation and for your own future reference. See Annex A for SIM card fitting/replacement details.

N.B. Factory settings will need updating if SIM card is changed. For further assistance please contact Abriox.

6.3 Assign the OSPREY

To aid asset management and deployment, you can write a specific unit ID (asset number, node, address, name etc…) on the OSPREY front label with a marker pen or using a label maker if required.



6.4 Equipment Check

Make sure you have the following equipment prior to going to site.

Item	Description
OSPREY	The OSPREY unit with fitted batteries and SIM card
MCA	The MCA.
Cellular Antenna	Reverse Polarity SMA, Hinged antenna identified with RED marker
GPS Antenna	Cabled 20" (0.5m) antenna for the GPS signal, identified with BLUE marker
Dual Patch Antenna (optional)	Cabled 40" (1m) combined dual patch antenna for both cellular and GPS signal
Magnet	A strong magnet to activate the unit on site (can be supplied by Abriox)
Tool Kit	Tool kit for installation at the site. Sensor connection(s) ¼" NPT or ¼" BSPT
PTFE Tape	PTFE Tape for sealing sensor connection
Documents	OSPREY Installation Instructions and/or OSPREY Quick Start Guide
Cell Phone	For checking the install status and pressure reading during installation (outside the zone)

7. ON SITE

7.1 The Install Process

> ⚠ **IMPORTANT: ENSURE YOU ARE FAMILIAR WITH THE SAFETY REGULATIONS OF YOUR COMPANY AND OBSERVE THEM AT ALL TIMES. ENSURE YOU ISOLATE THE GAS PRIOR TO MAKING CONNECTIONS TO THE OSPREY.**

1. Isolate the gas supply.
2. Open the enclosure
3. House the OSPREY (see section 7.2)
4. Connect the sensor(s) (see section 7.3)
5. Connect the antennas (see section 7.4)
6. Position the antennas (see section 7.5)
7. Turn on gas supply
8. Activate the OSPREY (see section 7.6)
9. Check the status (optional) (see section 7.7)
10. Secure the enclosure (see section 7.8)

7.2 House the OSPREY

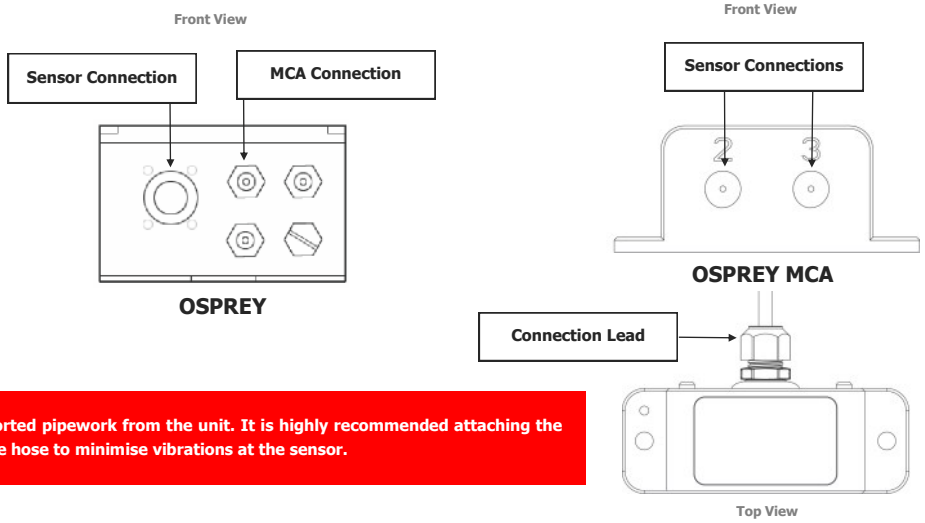
Fit the OSPREY (and MCA if required) in place inside the enclosure. When selecting the final fixed position take into consideration that the antennas should be mounted as high as possible inside the enclosure in order to achieve the best possible signal for both cellular and GPS communications.

If required, use the provided ground point (M4 threaded hole) to connect the MCA to ground. See Section 9 for dimensions and mounting information for the OSPREY and MCA.

> ⚠ **IMPORTANT: ENSURE THE HYDROPHOBIC PATCH ON THE BACK OF THE OSPREY (AND MCA) IS NOT RESTRICTED OR BLOCKED WHEN FIXED IN POSITION.**

7.3 Connect the Sensor(s)

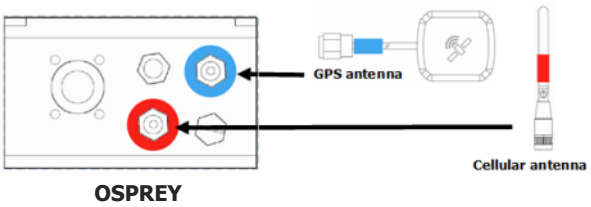
With the gas isolated, connection to the OSPREY (and MCA) sensor(s) is made via ¼" NPT (Female) or ¼" BSPT (Female). To avoid damage to the OSPREY use a wrench to hold the sensor connector to prevent it from rotating. See Annex C for further information on connecting and disconnecting MCA.



Warning: Do not suspend unsupported pipework from the unit. It is highly recommended attaching the pipework to the unit with a flexible hose to minimise vibrations at the sensor.

7.4 Connect the Antennas

Connect the antenna leads as shown.

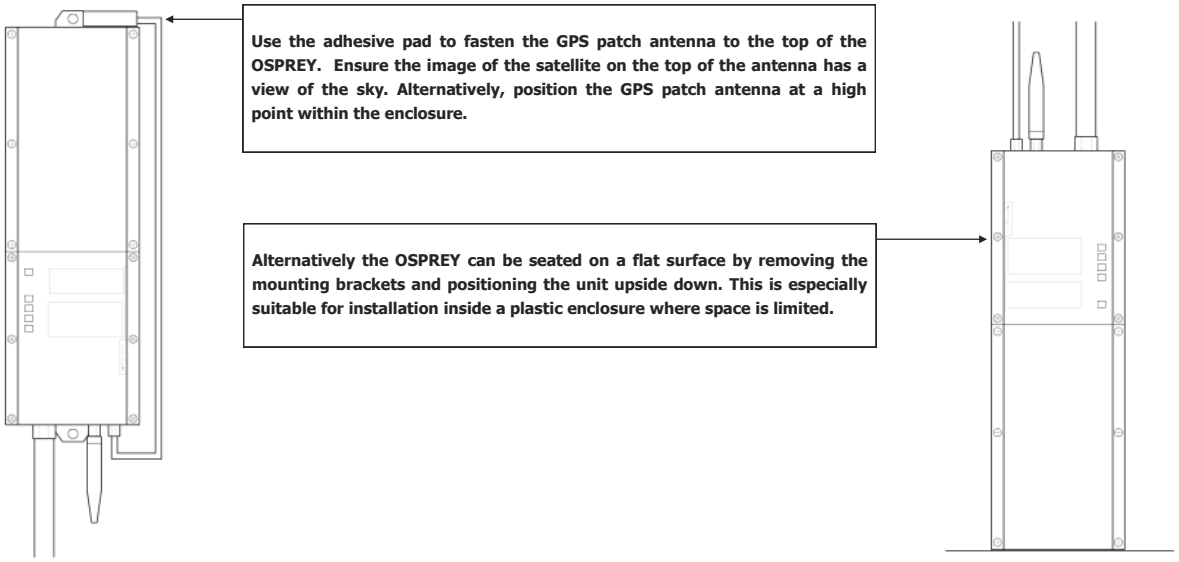


7.5 Positioning the Antennas

The OSPREY has the option to use separate cellular and GPS antennas or a single combined patch antenna (for external fixing). The positioning of the antennas is vital for a successful installation.

7.5.1 Separate Antennas

Where the OSPREY is installed inside a plastic enclosure or post, most installations can utilise the separate antennas. Position and mount the OSPREY as high as possible in the enclosure in order to gain the best signal. The GPS patch antenna is suitable for magnetic or adhesive mounting. The GPS antenna must have a view of the sky. If the view of the sky is blocked by E.G. buildings/trees than the GPS performance will be degraded.



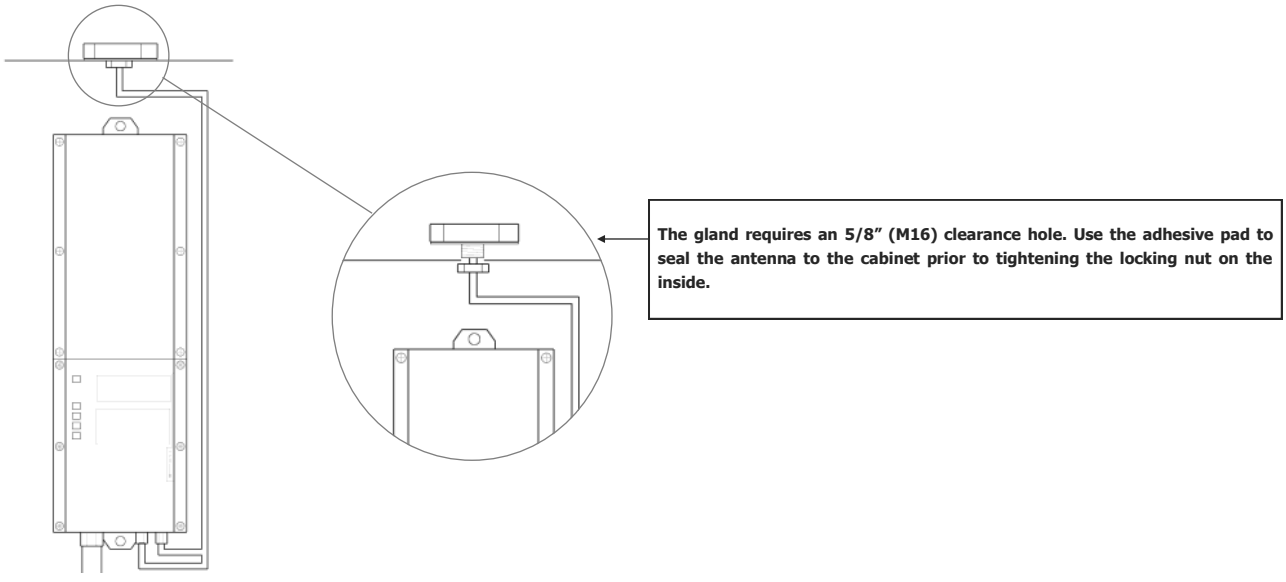
Use the adhesive pad to fasten the GPS patch antenna to the top of the OSPREY. Ensure the image of the satellite on the top of the antenna has a view of the sky. Alternatively, position the GPS patch antenna at a high point within the enclosure.

Alternatively the OSPREY can be seated on a flat surface by removing the mounting brackets and positioning the unit upside down. This is especially suitable for installation inside a plastic enclosure where space is limited.

7.5.2 Combined Patch Antenna

When the OSPREY is installed inside a metal cabinet, the external combined cellular/GPS patch antenna must be used.

The antenna should be fitted on top of the enclosure facing the sky. The antenna is secured in place with the adhesive backing and secure locking nut tightened from the inside.

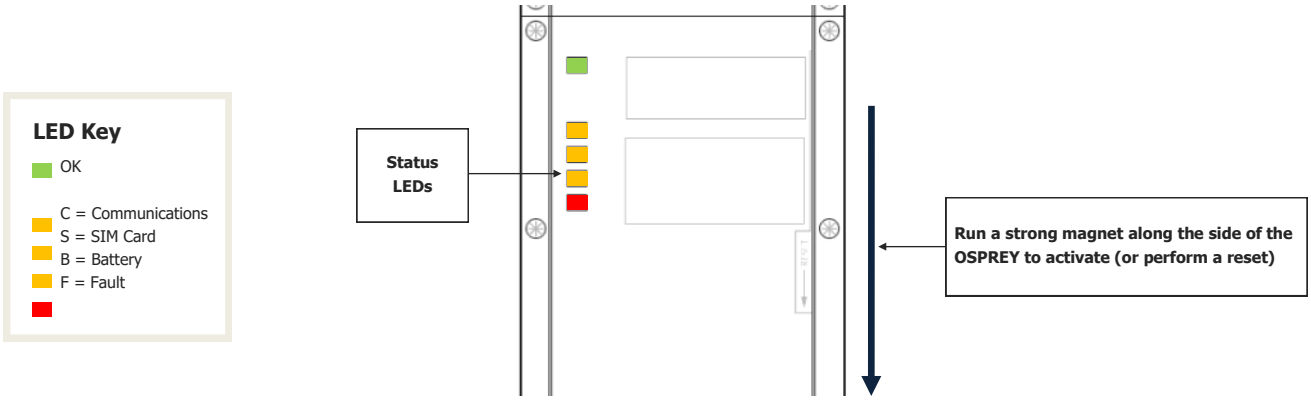


The gland requires an 5/8" (M16) clearance hole. Use the adhesive pad to seal the antenna to the cabinet prior to tightening the locking nut on the inside.

TIP: The combined patch antenna can be used at points where the separate antennas suffer with poor cellular or GPS performance .

7.6 Activate the OSPREY

Activate the OSPREY by swiping a magnet once along the side of the unit where it is labelled 'RESET'; the LEDs on the unit will momentarily light up. The OSPREY will now start the automated installation process. See Section 7.6.1 for additional options after performing a reset.



TIP: Once you have activated the unit do not move it as this may hinder the GPS location process.

The installation process performs several self-checks and highlights any warnings via the Status LEDs; if there are any issues the relevant LED will flash in 6 second cycles.

The LEDs notify you of the unit's current status and indicate any problems/faults found during installation. Once activated the unit will attempt to acquire both cellular and GPS communications. Note that this can take up to 25 minutes, depending on both cellular and GPS signal strengths. If any of the following LEDs flash after activation/reset, installation will be compromised and/or unsuccessful:

- **- No Flash** = Battery depleted. Remove from zone and change batteries
- **S - Single flash** = SIM Card. Remove from zone and check SIM card
- **B - Single flash** = Battery Low. Remove from zone and change batteries
- **F - Single flash = Fault. Stop operation immediately. Do not use. Return to Abriox**
- **F - Double flash = Fault. Stop operation immediately. Do not use. Return to Abriox**

Assuming no warnings/faults are detected (as shown by the S, B or F LEDs), the unit will initially flash the 'C' LED 4 times every six seconds.

When both cellular and GPS communications are acquired, the unit will attempt to connect to the data server.

- **C - Quadruple flash** = Attempting to establish both cellular and GPS communications
- **C - Triple flash** = Has logged on to the cellular network but has not yet established GPS communications
- **C - Double flash** = Has established GPS communications but has not yet logged onto the cellular network
- **C - Single flash** = Has logged on to both cellular and GPS networks but has not yet established a connection to the data server

Note
It can take up to 25 minutes to establish full communications.

Once the (green) 'OK' LED flashes once every 6 seconds, installation is complete.

The LEDs are disabled after 60 minutes regardless of any warnings/faults encountered.

IF NOT ALREADY LIVE, YOU MAY NOW TURN ON THE GAS SUPPLY.

7.6.1 Additional SMS Commands

> ⚠ **WARNING: ENSURE YOU ARE OUTSIDE THE ZONE WHEN USING YOUR CELL PHONE AND FOLLOW ALL SAFETY PRECAUTIONS.**

There are a number of additional SMS commands that can be used with the OSPREY after performing a reset with a magnet. To use these commands, swipe the OSPREY with a magnet and send the required SMS command (typically within 5 minutes of the magnet swipe). The commands are not case SenSiTive (i.e. you may use UPPER or lower case text).

Responses may differ dependent on number of pressure channels. Unit display measurements may differ dependent on geographical location.

Note
The OSPREY will only respond to SMS commands once it has logged on to the cellular network.

7.6.1.1 New Install

This command is used to force install a new **D**evice **M**easuring **P**oint (**DMP**) that is within close proximity to its previous deployed location.

Usage scenario: OSPREY is being installed at a new DMP within 200ft (60m) of its previous location. This command prevents the OSPREY from being "re-installed" at its previous DMP location.

To do this, swipe the OSPREY with a magnet and send the text message `NEW INSTALL` (within 5 minutes of the magnet swipe) to the telephone number on the front label of the OSPREY.

Example Responses:

`UNIT: 10400001 'New Install' requested, this will force a new DMP to be created.`

`UNIT: 10400001 Requested 'New Install' received too late. A new DMP may not have been created. Please reset and try again.`

7.6.1.2 No Install

This command instructs the OSPREY unit not to start an installation after the magnet swipe.

Usage scenario: This allows a technician to obtain a pressure reading from the OSPREY without starting an installation.

To do this, send the text message `NO INSTALL` (within 5 minutes of the magnet swipe) to the telephone number on the front label of the OSPREY.

Example Responses:

`UNIT: 10400001 'No Install' requested. A new DMP will not be created. CH1=0.371psi`

`UNIT: 10400051 Requested 'No Install' received too late. A new DMP may have been created. CH1=0.371psi CH2=43.54psi CH3=10.21psi`

`UNIT: 01401021 'No Install' requested. Warning, there is no DMP for this unit. CH1=0.371psi`

At this point, the OSPREY will also attempt to upload any outstanding data to the server. At the end of the upload process, an additional SMS will be sent to the sender of the `NO INSTALL` command advising the status of the data upload process.

Example Responses:

`UNIT: 10400001 All records uploaded.`

`UNIT: 10400001 Record upload unsuccessful.`

7.6.1.3 Upload

This command instructs the OSPREY unit not to start an installation after the magnet swipe and to upload any outstanding data to the server.

Usage scenario: This command is used to instruct the OSPREY to upload any outstanding data to the server. This is most useful for situations where the OSPREY has been installed but the signal level on site has been too low for data to upload. i.e. in a building basement.

To do this, send the text message `UPL0AD` (within 5 minutes of the magnet swipe) to the telephone number on the front label of the OSPREY.

Example Responses:

`Unit: 10400001 'No Install' requested. A new DMP will not be created. CH1=0.371psi`

`Unit: 10400001 Requested 'No Install' received too late. A new DMP may have been created. CH1=0.371psi`

`Unit: 10400051 'No Install' requested. Warning, there is no DMP for this unit. CH1=0.00psi CH2=43.54psi CH3=0.00psi`

The OSPREY will then attempt to upload any outstanding data to the server. At the end of the upload process, an additional SMS will be sent to the sender of the `UPL0AD` command advising the status of the data upload process.

Example Responses:

`Unit: 10400001 All records uploaded.`

`Unit: 10400001 Record upload unsuccessful.`

7.6.1.4 Unit Off

This command turns the OSPREY off completely.

Usage scenario: This allows a technician to power the OSPREY down completely. This should be used when the OSPREY unit is not in service or for short periods of storage. Usage also for taking offsite for calibration.

To do this, send the text message `UNIT 0FF` (within 5 minutes of the magnet swipe) to the telephone number on the front label of the OSPREY. Please note, the OSPREY must be disconnected from the gas supply prior to sending this command.

Example Responses:

`Unit: 10400001 Turning off in 30 seconds.`

`Unit: 10400001 'Unit 0ff' request ignored; please disconnect from the gas supply first.`

`Unit: 10400001 Already turning off. Duplicate command has been ignored.`

⚠ **IT IS IMPORTANT TO TURN OFF THE UNIT BEFORE IT IS RETURNED TO STORAGE.**

7.7 Check the Status by SMS (Optional)

> ⚠ **WARNING: ENSURE YOU ARE OUTSIDE THE ZONE WHEN USING YOUR CELL PHONE AND FOLLOW ALL SAFETY PRECAUTIONS.**

The SMS STATUS command allows you to view the current pressure and the installation status directly via your cell phone. You can only perform a status check once the OSPREY has logged onto the cellular network.

To do this, send the text message STATUS to the telephone number on the front label of the OSPREY. The command is not case SenSiTive (i.e. you may use UPPER or lower case text).

The OSPREY will take a pressure reading, check the progress of the installation and send the details back to your cell phone.

Example Response:

UNIT: 01400301 CH1=0.371psi CH2=43.54psi CH3=10.21psi BATT=80% INSTALLED: xxx

Where:

UNIT: 01400301 - unit serial number (located on the 'UNIT INFO' label of the OSPREY)
CH1=0.371psi CH2=43.54psi CH3=10.21psi - pressure measured
BATT=80% - battery level remaining
INSTALLED: xxx - installation status

The INSTALLED: response can be one of three:

INSTALLED: Yes	Indicates the OSPREY successfully logged on to the cellular network and has installed itself on the data server
INSTALLED: Pending	Indicates the OSPREY has not yet completed its installation. See LEDs for current status.*
INSTALLED: No	Indicates the OSPREY has not been able to communicate with the data server. Installation has failed.

*The OSPREY will continue to attempt establishing GPS communications and the data connection to the server for up to 1 hour from activation/ reset. If the OSPREY is unable to install itself successfully (indicated by the green 'OK' LED) check the other LED activity for an indication of how it has failed i.e. no GPS, no data server connection.

7.8 Secure the Enclosure

With the green 'OK' LED flashing once every six seconds and the gas turned back on, you may secure the enclosure.

8. OFF SITE

Once the physical installation has been completed, the OSPREY is now fully functional and will automatically upload data to the PressureTrac server. PressureTrac is a dedicated web-based pressure management software system for displaying, recording and exporting pressure data from the range of OSPREY monitors.

If desired (but not essential) the unit can be assigned a node ID or friendly name via the web-interface. You can also change the OSPREY settings such as alert thresholds or the time it uploads its data.

Further configuration options and system features are available via PressureTrac.

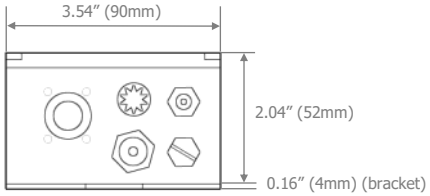


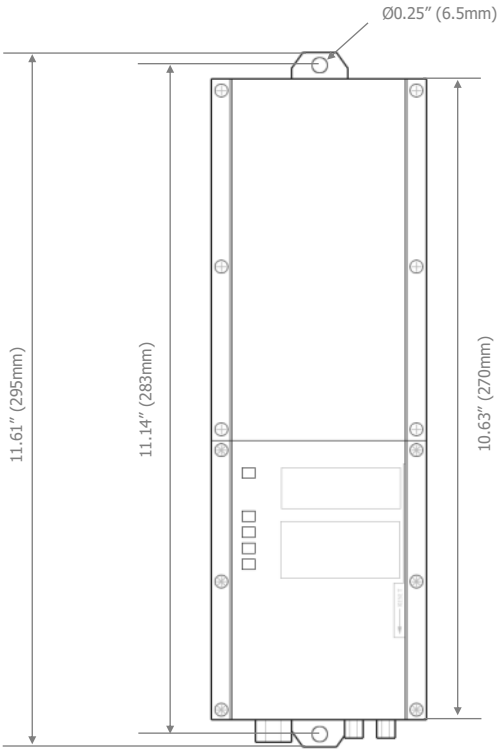
Log on to your PressureTrac server to view data, configure OSPREY units, manage groups and more.

9. DIMENSIONS

OSPREY

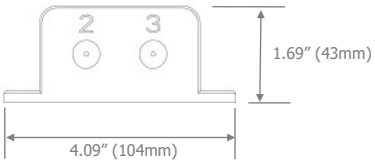
WEIGHT	2.65lbs (1200g)
INGRESS PROTECTION	IP 67

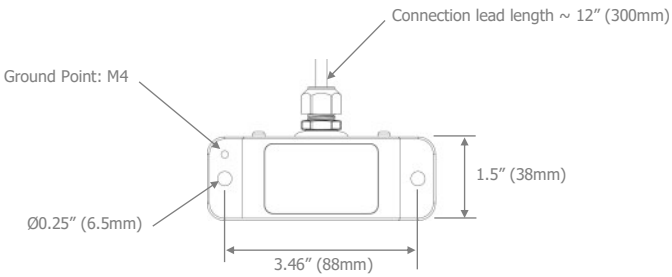




OSPREY MCA

WEIGHT	1.85lbs (840g)
INGRESS PROTECTION	IP 67





10. TROUBLESHOOTING

Q: I have swiped the unit with a magnet but it is not doing anything?
A: Remove the unit from the zone. Check the batteries are installed correctly, See Annex A for further information.

Q: I have swiped the unit with a magnet but the "S" LED on the unit is flashing amber once every 6 seconds?
A: Remove the unit from the zone. Check the SIM card has been installed correctly. See Annex A for further information.

Q: I have swiped the unit with a magnet but the "B" LED on the unit is flashing amber once every 6 seconds?
A: Remove the unit from the zone. Replace batteries. See Annex A for further information.

Q: I have swiped the unit with a magnet but the red "F" LED on the unit is flashing once or twice every 6 seconds?
A: Do not use. Safely remove the unit from the zone. Return to Abriox for fault diagnosis.

Q: I have swiped the unit with a magnet but the amber "C" LED on the unit is flashing 4 times every six seconds?
A: The unit has yet to establish both cellular and GPS communications. Check the antennas are connected and positioned as high as possible inside the enclosure, ideally with a clear view of the sky. It can take up to 25 minutes to establish both cellular and GPS communications. If the antennas are inside the enclosure and you are unable to establish cellular or GPS communications after repositioning, consider using an external antenna.

Q: I have swiped the unit with a magnet but the amber "C" LED on the unit is flashing 3 times every six seconds?
A: The unit has logged on to the cellular network but has not yet established GPS communications. Check the GPS antenna is connected and positioned as high as possible inside the enclosure, ideally with a clear view of the sky. If the antenna is inside the enclosure and you are unable to gain GPS communications after repositioning, consider using an external antenna.

Q: I have swiped the unit with a magnet but the amber "C" LED on the unit is flashing 2 times every six seconds?
A: The unit has established GPS communications but has not yet logged on to the cellular network. Check the cellular antenna is connected and positioned as high as possible inside the enclosure. Check the SIM card can get a signal with the chosen network (this can be checked by installing the SIM card in an unlocked cell phone) - if reception is poor, consider using an alternative network. If the antenna is inside the enclosure and you are unable to gain cellular communications after repositioning, consider using an external antenna.

Q: I have swiped the unit with a magnet but the amber "C" LED on the unit is flashing once every six seconds?
A: The unit has established both cellular and GPS communications but has not yet established a connection to the data server.

Q: I have requested a status from the OSPREY but nothing has arrived?
A: The STATUS command can only be used whilst the OSPREY is in installation or IEM mode and only then when it has logged on to the cellular network (in order to receive/send SMS).

Q: I want to move the unit to a new location - what do I need to do?
A: Safely disconnect the OSPREY from its current location. Turn off OSPREY (See below). Install as new (following steps given in Section 7). See Section 7.6.1 for additional SMS commands that you may find useful, i.e. NEW INSTALL for new installations/deployments within close proximity.

Q: How do I turn the OSPREY off?
A: The OSPREY should not be turned off once installed; it will continuously take pressure readings and upload the data. If the OSPREY is to be put in storage or is to be transported to another location, swipe the OSPREY with a magnet and send the SMS command UNIT OFF. See Section 7.6.1.4 for further information.

Q: I need technical support - who do I contact?
A: Please visit www.MOBILTEX.com for contact details.

Q: The OSPREY was working but has since stopped for a period of time. What do I need to do?
A: Visit the site. Using a magnet swipe the OSPREY to reset. All LEDs will flash and the unit will start normal operation. If, after a magnet swipe, the LEDs do not flash the unit's batteries will need to be replaced. Follow instructions in Annex A.

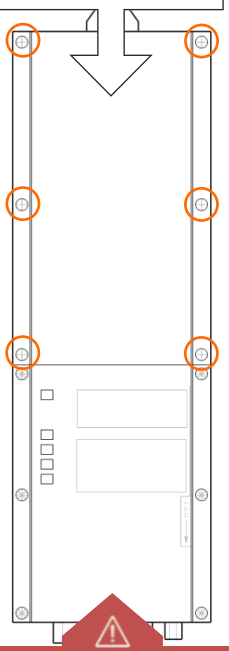
11. NOTES

Use this space to write your own notes to aid future installations.

ANNEX A — BATTERY AND SIM CARD REPLACEMENT

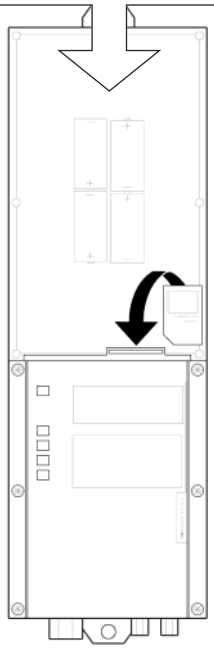
WARNING – DO NOT REPLACE BATTERY WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. USE ONLY SAFT LS33600 BATTERIES.
SIM CARD INSTALLATION OR REPLACEMENT MUST BE CARRIED OUT IN A NON-HAZARDOUS LOCATION.
INCORRECT INSTALLATION OF OR MIXING OF NEW AND USED CELLS CAN RESULT IN CELL VENTING OR EXPLOSION AND POSSIBLE FIRE.
ENSURE CORRECT INSTALLATION OF CELLS. DO NOT ATTEMPT TO REUSE CELLS.

1 Remove the 6 screws on the top lid.

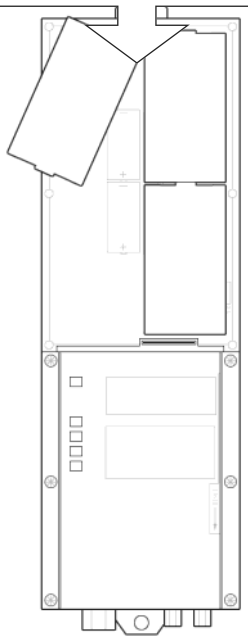


WARNING
DO NOT REMOVE THE LOWER LID AS THIS WILL VOID ANY WARRANTY!

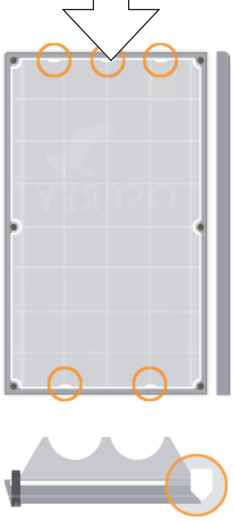
2 Insert the SIM card, chip side facing the lower lid. The SIM card has a push in/push out fitting.



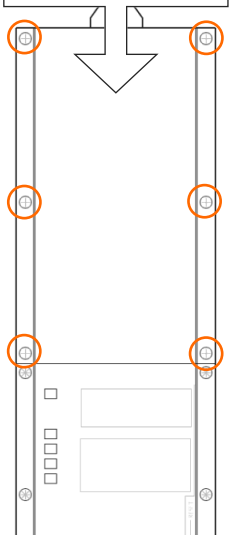
3 Observe polarities during installation. Install or replace the batteries (where applicable) using the guides as shown. Package used batteries in a manner that prevents shorting with the container or another battery.

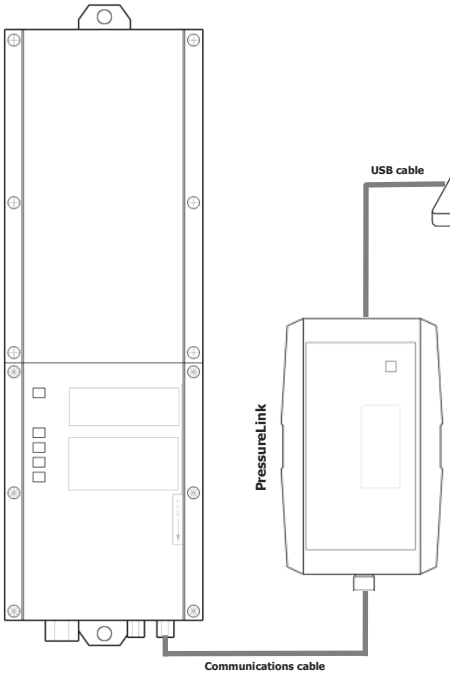


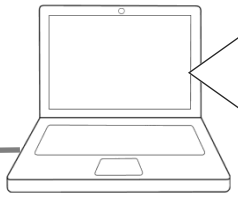
4 Carefully replace the lid gasket. The gasket has 3 pips that should be fitted and located at the top of the unit (as shown below). Ensure the tapered edge is face down when inserting the gasket.



5 Replace the 6 screws on the top lid and tighten to 0.44lbft (0.6Nm) do not over tighten.



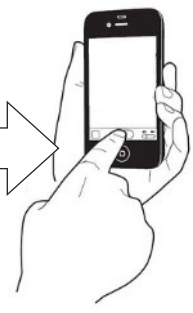




6 After replacing the batteries, connect a Laptop/PC to the OSPREY using the Abriox PressureLink accessory. Send the unit the NEW BATTERY command. See Annex B for further information.

7 If the OSPREY is going in to storage or not being installed/redeployed immediately, send the text command "`unit off`" to the number on the front label of the OSPREY.

The OSPREY will reply back advising it is turning off.



ANNEX B — COMMUNICATIONS DEVICE - PRESSURELINK

OSPREY Calibration Using PressureLink

To calibrate an OSPREY unit using a PressureLink device, the following items are required:

> ⚠ **WARNING: THE PRESSURELINK DEVICE MUST ONLY BE USED IN A NON-HAZARDOUS LOCATION. THE FOLLOWING INSTRUCTIONS MUST BE CARRIED OUT IN A SAFE ZONE.**

Item	Description
Laptop / PC	Windows® 7 or 8 running the latest PCAT software
USB Cable	A standard USB A Male to Mini B Male Cable (**Abriox Part No. RC-CAB-00-006**)
Communications Cable	A 4 way LTW to LTW (**Abriox Part No. CA-EX-013-00-023**)
Pressure Calibration Rig	Abriox recommend the PACE 6000

Connecting the Pressure Calibration Rig

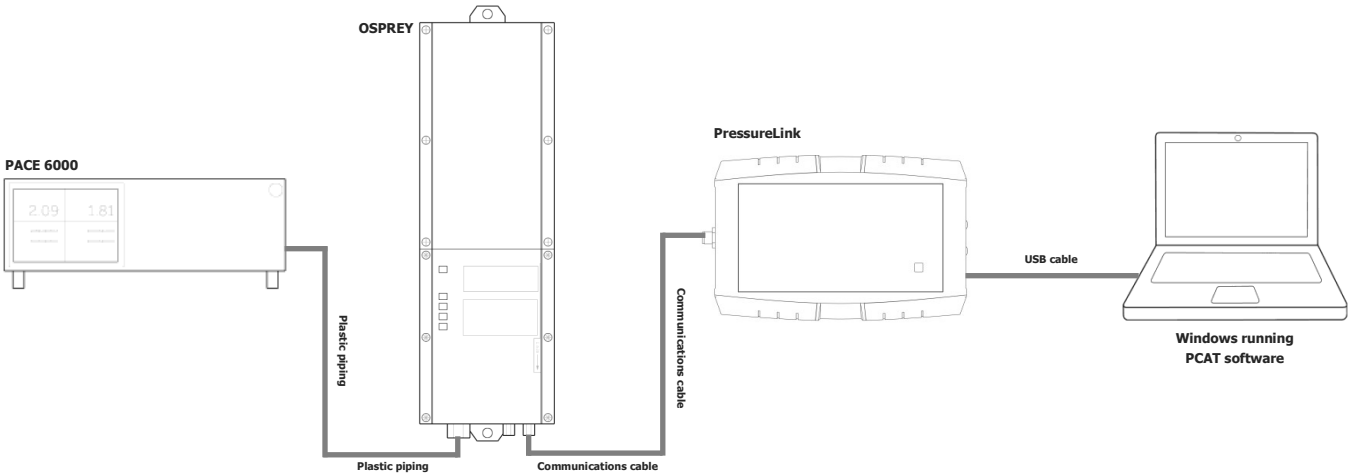
Ensure the pressure calibration rig is set up as per manufacturers handbook. Abriox PCAT software is required to calibrate units; PCAT is compatible with PACE 1000, 5000 and 6000 machines. Only plastic fittings and pipes are to be connected to the OSPREY pressure port during calibration, this is an ATEX safety requirement to ensure no electrical connection between OSPREY and the pressure rig exists.

> ⚠ **WARNING: WHEN CALIBRATING, ONLY PLASTIC FITTINGS ARE TO BE CONNECTED TO THE PRESSURE PORT OF OSPREY.**

Connect the PressureLink Device

Remove the protective plastic caps from the communications port on both the OSPREY unit and the PressureLink device.

1. Connect the **Communications cable** to the **Comm Port** of the OSPREY unit and PressureLink device as detailed on the labels
2. Connect the **USB cable** to the PressureLink device and a free USB port on a Windows laptop/PC running PCAT
3. Launch PCAT to interrogate and/or calibrate the OSPREY unit



The PressureLink communications device is ATEX, IECx and ETL approved for use with the OSPREY transducers.

This product is ATEX. IECx, ETL approved by:

Intertek Testing and Certification Limited.
(Notified Body Number: 0359)
Cleeve Rd
Leatherhead
Surrey
KT22 7SB
United Kingdom

Certificate numbers: ITS13ATEX27828X
IECEX ITS 16.0050X

Ex Coding: II 1 G Ex ia IIB T3 Ga
Class I, Zone 0, AEx ia IIB T3 Ga
Class I, Division 1, Group C - D
-20ºC ≤ Tamb ≤ +70ºC
Conforms to UL 60079-0, UL 60079-11 & UL 61010-1.
Certified to CAN/CSA C22.2 No. 60079-0, 60079-11 & 61010-1.

ANNEX C — CONNECTING AND DISCONNECTING MCA

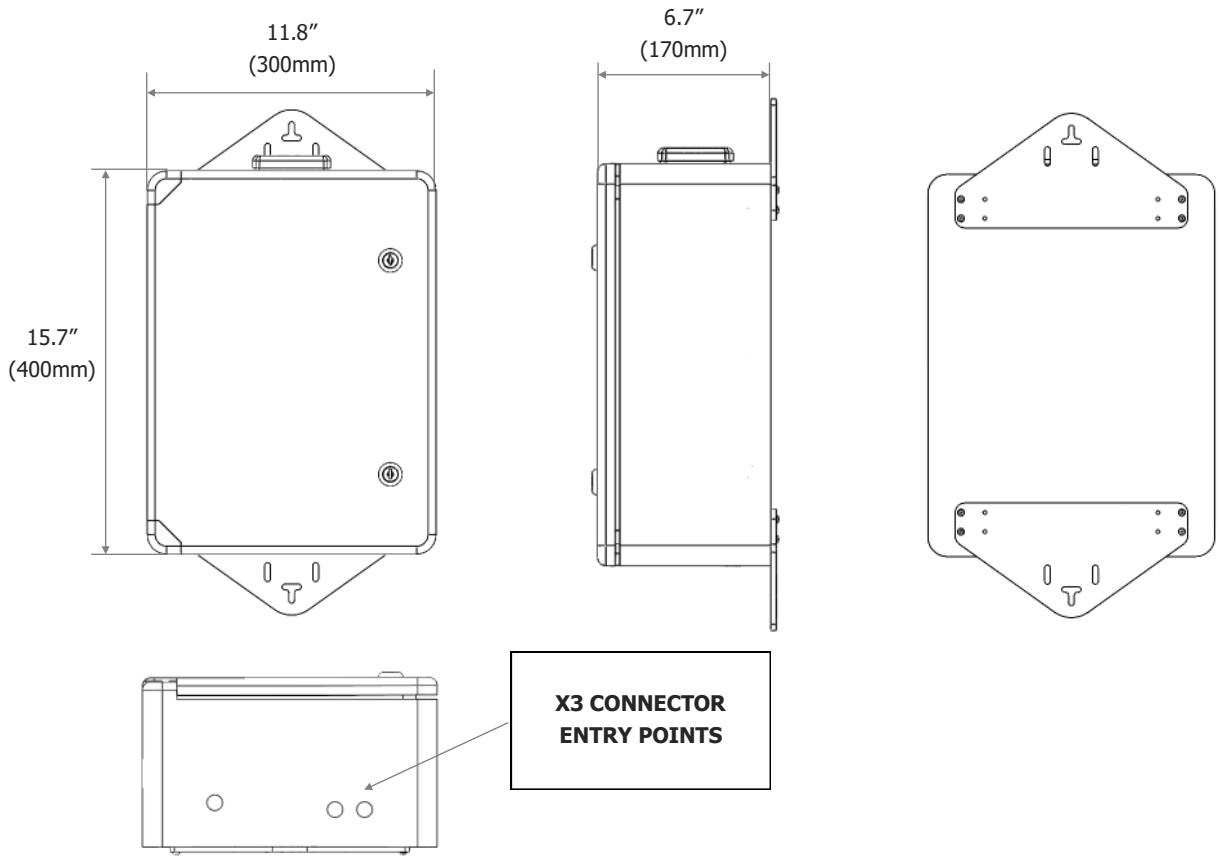
When connecting or disconnecting an MCA follow the procedure below:

1. Ensure the OSPREY is off; send a `UNIT OFF` command via SMS (section 7.6.1.4) or via PressureLink (see Annex B)
2. Connect the MCA connection lead to the OSPREY MCA connector. The thumb wheel should be **hand tight only**. Do not apply excessive torque as this may damage the connector
3. Disconnect/connect the pressure sensor on the MCA
4. Reset the OSPREY with a magnet swipe, when ready, for installation

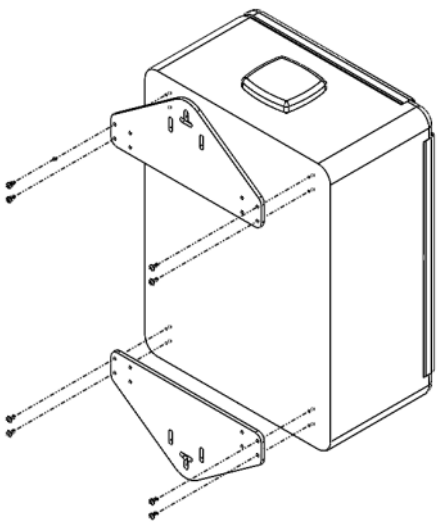
ANNEX D — MOUNTING KITS

Mounting kit options for post mount or wall mount, for further information contact Abriox.

N.B. Mounting and environmental protection device, does not form part of the intrinsic safety of the OSPREY unit and/or MCA.



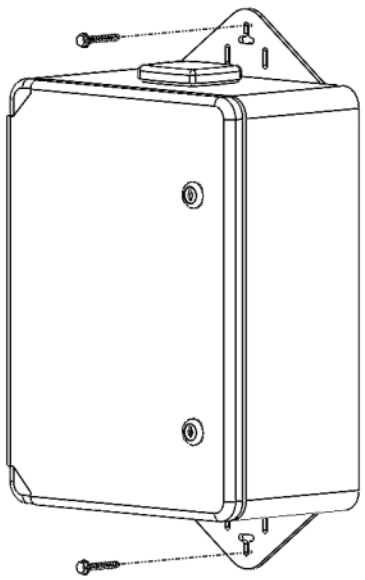
ATTACHING THE MOUNTING BRACKETS



- Attach the 2 mounting brackets to the rear of the enclosure using the supplied screws (x8)
- Note the orientation of the brackets as shown:

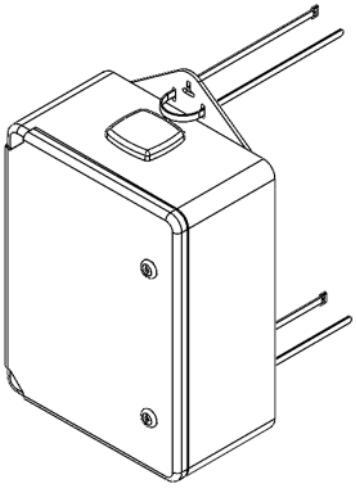
ANNEX D — CONTINUED

MOUNTING TO A WALL



- Use the 2x hex head screws supplied to secure the enclosure to the wall.

MOUNTING TO A POST



- Feed the x2 cable ties through the slots in the mounting brackets as shown:
- Then, secure the enclosure to the post by securing the cable ties around it. Make sure the cable ties are secured tight.
- Trim any excess cable tie length as required

> ⚠ **Important**! When installing the top of the unit must have no obstructions and a clear view of the sky.

ANNEX E — SENSOR CONNECTION

- Isolate the gas supply prior to connection.
- Connect the OSPREY pressure sensor to the measurement point. The OSPREY has a ¼" NPT or ¼" BSPT Female fitting
- PTFE tape should be used for sealing the pipe threads. **Do not** use Jointing compounds.
- To avoid damage to the OSPREY enclosure use a wrench to hold the sensor connector when connecting or disconnecting ¼" NPT or ¼" BSPT male fitting.
- Do not suspend unsupported pipework from the unit. It is highly recommended attaching the pipework to the unit with a flexible hose to minimise vibrations at the sensor.

ANNEX F — SAFE HANDLING AND TRANSPORTATION OF OSPREY

OSPREY is an intrinsically safe device, but when handling and transporting OSPREY, care must be taken to avoid shocks and impacts to the unit.

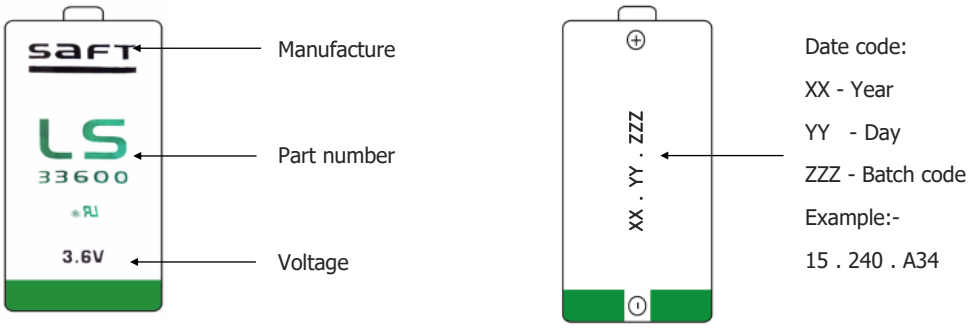
- OSPREY should be kept in its original packaging, or similar, when transporting.
- Alternative packaging should securely hold the unit and cushion any impacts to minimise movement and shock.
- If a unit is dropped, or it is subjected to a heavy impact, its cells should be considered to be damaged and unsuitable for use. The cells must be replaced and disposed of responsibly.

ANNEX G — SAFE HANDLING AND STORAGE OF BATTERIES

Abriox PCAT software is required to finalise the battery replacement process. Refer to Annex A for more detail.
The batteries are sealed units which are not hazardous under normal operating conditions in accordance with the recommendations stated in the installation instructions or other similar documentation. Under normal use, the battery integrity is maintained and the active components it contains are isolated from the outside. These recommendations are provided solely as information in assistance, and relates to the OSPREY products and may not be valid if used in combination with any other materials or in any processes.

IMPORTANT: SAFT LS33600 batteries are not rechargeable and should not be tentatively charged or recharged.

Identification



Storage

- Store cells/batteries in a cool (preferably less than 85°F/30°C), dry and well ventilated area.
- Keep away from moisture, source of heat, open flames.
- Keep cells/batteries in their original packaging until used.
- Do not apply pressure that may deform the cells/batteries.
- Package used cells/batteries in original packaging or similar manner that prevents shorting with the container or another cell/battery.

Transport

- Transport cell/battery in the original packaging or similar means.
- Package used cell/battery in a manner that prevents shorting with the container or another cell/battery.
- Do not subject cell/battery to mechanical stress or impact during transportation.
- Dropped cells/batteries should be considered to be damaged and unsuitable for use and must be segregated and disposed of responsibly.

Handling

- Cells/batteries should be inspected for physical damage prior to use.
- Do not mix cells/batteries of different types or mix new and old together. Use approved cell type: SAFT LS33600.
- Install only new unused cells/batteries, bearing the same date code and being of the same model.
- Do not crush or pierce the cells/batteries.
- Do not short (+) or (-) terminal with conductors.
- Do not reverse the polarity.
- Do not submit to excessive mechanical stress.
- Do not expose the cell/battery to water or condensation.
- Do not directly heat, solder or throw into fire. Such unsuitable use can cause leakage or spout vaporized electrolyte fumes and may cause fire or explosion.

ANNEX H — MOBILE COMMUNICATIONS

In this document the term cellular indicates that this device supports LTE (4G) communications.

Abriox

a MOBILTEX brand

www.MOBILTEX.com