



**ABRIOX**<sup>®</sup>  
www.abriox.com

**OSPREY™**  
**PRESSURE MANAGEMENT**

**Specialists**  
in Remote Monitoring

# OSPREY™

## Remote Pressure Monitoring

Gas distribution companies use network analysis models to underpin financial decisions in relation to asset investment. The accuracy of these models is determined through a rolling annual cycle of pressure monitoring and building models to analyse data to ensure the network is operating at its most efficient. Once the model has been shown to correspond to real-life data, it is released to the planners and used as the basis for decisions on new infrastructure, pipe replacements, etc. If new housing or a factory is built, the extra demand for gas can be modelled and predicted so that changes in delivery can be made to meet the required standards.

The primary objective is to supply all consumers with adequate pressure while operating the network at the lowest pressure commensurate with this. This also minimises gas leakage. Pressure data, recorded at various points, confirms the accuracy of a sophisticated computer model of the gas network.

### INTRODUCING OSPREY

Abriox's OSPREY system reduces costs for gas utilities and improves the quality and reliability of the gas pressure data. In turn the improved network model will enable better decisions to be taken to optimise the gas network, reducing the volume of gas into supply required to deliver minimum service levels and thereby also reducing gas leakage emissions.



In addition, the ability to view system pressures dynamically improves network management, enabling incidents or customer complaints of low pressure to be resolved more quickly. This can reduce leakage and creates improved customer satisfaction. OSPREY pressure data can also feed directly into average system pressure calculations.

OSPREY pressure monitors are extremely versatile and, as well as standard pressure monitoring, can be deployed in IEM (Incident Evaluation Mode) to cater for emergency situations including poor pressure, blockages and ingress or non-routine operations on the gas distribution network. The unit can be accessed directly giving accurate pressure in real time. The OSPREY is commonly used at:

- District governors and city gates
- Low points on the network
- Residential areas
- Sites with high gas consumption i.e. factories, commercial premises
- Areas of pipeline repair / known problems

### BENEFITS

With an established install base, OSPREY has proven to offer economic and operational advantages, safety and environmental benefits to offer our customers major cost savings across the network.

- Time savings
- Improved data quality
- Fast alert generation
- Low cost of ownership
- Easily maintained product
- Multiple network applications

### INNOVATIVE DESIGN

The OSPREY was designed specifically to monitor gas pressure, with careful consideration and liaison with network operators, planners and management. Abriox presents low power electronics, combined with modern communications technology to create efficient, cost effective units for multiple applications across the gas network. Key factors include:

- Ease of installation. OSPREY requires no specialist equipment, just standard tools and a cell phone, and can be installed with minimal training
- Full ATEX, IECEx and ETL approval for Class I (Zone 0) and Class I (Division 1) environments meaning the OSPREY can be deployed in any gas environment
- Reliability is ensured by extensive testing. Careful electronic design combined with highly accurate sensors mean the OSPREY can be relied on to provide accurate, repeatable readings

### INNOVATIVE FEATURES

#### BUILT-IN GPS

A common mistake when installing pressure loggers is to set the time incorrectly. Incorrect timing between data points can lead the network operator to believe there is a problem on the network. This can lead to wasted time and money on investigative work on non-existent issues that could be easily avoided. It is vitally important for the operator to ensure the data being reported across the network contains not only accurate pressure measurements, but also that the data from each monitor is taken at exactly the same time.

All OSPREY Pressure Loggers use a built-in GPS module for accurate time stamping of data, ensuring that the operator is confident that every single data point being monitored by OSPREY is reporting measurements at the specific time under scrutiny. Combined with this, the OSPREY will use the built-in GPS to report its position on installation. This eliminates the human factors element of incorrectly recording the location of each logger. This data is presented on a map in the software for a comprehensive view of the logger positions.

#### INCIDENT EVALUATION MODE™ (IEM™)

There are numerous potential causes for low or fluctuating pressure including pipework design, environmental effects such as freezing temperatures or water ingress, increased demand elsewhere in the network, regulator failure, etc. In cases where the cause of poor pressure is not evident, monitoring the gas supply to the affected and surrounding premises can provide essential information, enabling the results of investigative and remedial work to be confirmed immediately.

Each OSPREY Pressure Logger is equipped with an Incident Evaluation Mode (IEM). This mode will keep the OSPREY awake for a designated amount of time, allowing the user to deploy OSPREY in any emergency situation or non routine operation for the detection of escapes, blockages and water ingress. Each unit starts in this mode for 48 hours from install to allow fast deployment in case of emergency. OSPREYs already installed on the network can be switched to IEM mode via the pressure management software. If required IEM mode can be extended for as long as the operator requires. The unit will respond immediately to SMS text from any cell phone, giving the user accurate pressure data and will report data every hour to the software.

#### EASY MAINTENANCE

It is common for pressure loggers to need to be returned to their manufacturer for battery changes and calibration. This costs the user time and money removing the loggers and either replacing them with spare loggers or being without essential network data that the logger provides. OSPREY has been designed with commercially available, user replaceable batteries and the ability to easily calibrate at the customer's premises for fast turnaround and simple redeployment.

Combine this with OSPREY's 5 - 10 year battery life when operating under normal conditions. This long deployment life means that fewer visits need to be made to sites for maintenance allowing resources to be used elsewhere.

#### TECHNICAL SUCCESS

OSPREY has been installed on many gas networks and has been proven over time to offer the following advantages:

- Install time reduced by more than 50%
- Verified accurate location through GPS
- Sensor accuracy of  $\pm 0.15\%$  FS
- Automatic and on-demand transmission of data to a Pressure Management website
- Elimination of data loss through product failure
- Real-time and historical analysis of data to support emergency response and ongoing investigations
- Time saved in checking data is accurate
- Reputational benefit to network from faster resolutions leading to increased customer satisfaction

# OSPREY™ PL

## Single Channel Remote Pressure Monitor

### OVERVIEW

The Abriox OSPREY PL is an intrinsically safe, battery-powered remote monitoring unit that can be installed in posts and meter boxes to monitor gas pressure up to 145psi.

It transmits data automatically or on-demand to the PressureTrac system for displaying, interpreting and archiving the results and for export into 3rd party network management software and other business systems. OSPREY is extremely versatile and, as well as routine pressure monitoring, can be deployed in IEM to cater for emergency situations including poor pressure, blockages, ingress or non routine operations on the gas distribution network. The unit can be accessed directly giving accurate pressure in real time.

Right from the start, users will notice how easily and quickly OSPREY can be installed. There is no requirement for specialist equipment or software. Simply fix the unit in place, connect it to the gas supply and activate it with a magnet (supplied); from then on everything is automatic – after a few minutes the green light will flash to indicate that installation is complete.

The whole process can be done in 20-30 minutes at site and in all weather conditions. OSPREY is supplied with a roaming SIM that will allow unrestricted access to a host of networks.

A key feature of OSPREY is its inbuilt GPS module which provides timing reference so that measurements are logged precisely, with no drift or offset. No manual data cleansing is required.

GPS also enables the software to identify its geographic location automatically, ensuring that data is always uniquely identified with the correct monitoring point.

### FEATURES & BENEFITS

- Integrated sensor options 1.45psi, 14.5psi, 43.5psi & 145psi
- Ambient temperature monitoring
- Incident Evaluation Mode (IEM)
- Inbuilt GPS timing and location
- Auto-installation routine
- Instant reading to cell phone during installation
- Custom high/low alert thresholds
- Automatic daily upload
- 5 - 10 year battery life



### TECHNICAL SPECIFICATIONS

**Physical Dimensions (H x W x D):**  
11.61" x 3.54" x 2.20"

**Weight:**  
2.65lb

**Ingress Protection:**  
NEMA 6

**Temperature Range:**  
-4°F to +158°F

**Communications:**  
3G and 2G (GSM) networks

**Battery Type:**  
5 - 10 years (mode dependent) with internal battery gauge. User replaceable (SAFT LS 33600)

**Software Management:**  
PressureTrac

**Antenna:**  
Separate Cellular and GPS antennas or combined patch antenna

**Safety Certification:**  
Class I, Zone 0, AEx ia IIB T3 Ga  
Class I, Division 1, Groups C & D  
Ex ia IIB T3 Ga  
II 1 G Ex ia IIB T3 Ga

**Input Range:**  
1.45psi, 14.5psi, 43.5psi & 145psi

**Sensor Accuracy:**  
±0.15% FS

**Over Pressure Limit:**  
4 x input range

**Sensor Burst Pressure:**  
10 x input range

**Sensor Media Compatibility:**  
Any gas compatible with stainless steel

**Sensor Drift (Typical):**  
1.45psi sensor ±0.015psi  
14.5/43.5/145psi sensors ±0.1% FS

**Total Error Band (Temperature Compensated):**  
1.45psi sensor ±0.0174psi  
14.5/43.5/145psi sensors ±1.0% FS

**Measurement Resolution:**  
• 0.001psi on 1.45psi  
• 0.01psi on 14.5psi  
• 0.1psi on 43.5psi & 145psi

**Number of Pressure Channels:**  
1

**Pressure Connection:**  
1/4" NPT

**Real Time Clock Accuracy:**  
Max error 60 seconds (GPS corrected)

**Read/Log Rate:**  
6 second reads (configurable) combined into 6 minute logs (configurable)

**Data:**  
Automatic daily upload with immediate additional auto-upload on alert

**Data Storage:**  
Internal flash 10 year, time-stamped

Specifications are subject to change without prior notice.



# OSPREY™ PL PLUS

## Multichannel Remote Pressure Monitor

### OVERVIEW

The Abriox OSPREY PL Plus is an intrinsically safe, battery-powered remote monitoring unit that can be installed in Pressure Regulating Stations, District Governors, City Gates, posts and meter boxes to monitor gas pressure up to 145psi.

In conjunction with the OSPREY MCA an additional 2 sensors can be utilized. In this configuration you can monitor multiple pressures for a complete overview of the network performance; inlet/outlet of Pressure Regulating Stations and filter differentials.

Data is transmitted automatically or on-demand to the PressureTrac system for displaying, interpreting and archiving the results and for export into 3rd party network management software and other business systems. OSPREY is extremely versatile and, as well as routine pressure monitoring, can be deployed in IEM to cater for emergency situations including poor pressure, blockages, ingress or non routine operations on the gas distribution network. The unit can be accessed directly giving accurate pressure in real time.

Simply fix the unit in place, connect it to the gas supply and activate it with a magnet (supplied); from then on everything is automatic – after a few minutes the green light will flash to indicate that installation is complete.

The whole process can be done in 20-30 minutes at site and in all weather conditions. OSPREY is supplied with a roaming SIM that will allow unrestricted access to a host of networks.

A key feature of OSPREY is its inbuilt GPS module which provides timing reference so that measurements are logged precisely, with no drift or offset. No manual data cleansing is required. GPS also enables the software to identify its geographic location automatically, ensuring that data is always uniquely identified with the correct monitoring point.

### FEATURES & BENEFITS

- Integrated sensor options 1.45psi, 14.5psi, 43.5psi & 145psi
- 2 additional sensors when used with OSPREY MCA. Sold separately
- Ambient temperature monitoring
- Incident Evaluation Mode (IEM)
- Inbuilt GPS timing and location
- Auto-installation routine
- Instant reading to cell phone during installation
- Custom high/low alert thresholds
- Automatic daily upload
- 5 - 10 year battery life



### TECHNICAL SPECIFICATIONS

**Physical Dimensions (H x W x D):**  
11.61" x 3.54" x 2.20"

**Weight:**  
2.65lb

**Ingress Protection:**  
NEMA 6

**Temperature Range:**  
-4°F to +158°F

**Communications:**  
3G and 2G (GSM) networks

**Battery Type:**  
5 - 10 years (mode dependent) with internal battery gauge. User replaceable (SAFT LS 33600)

**Software Management:**  
PressureTrac

**Antenna:**  
Separate Cellular and GPS antennas or combined patch antenna

**Safety Certification:**  
Class I, Zone 0, AEx ia IIB T3 Ga  
Class I, Division 1, Groups C & D  
Ex ia IIB T3 Ga  
II 1 G Ex ia IIB T3 Ga

**Input Range:**  
1.45psi, 14.5psi, 43.5psi & 145psi

**Sensor Accuracy:**  
±0.15% FS

**Over Pressure Limit:**  
4 x input range

**Sensor Burst Pressure:**  
10 x input range

**Sensor Media Compatibility:**  
Any gas compatible with stainless steel

**Sensor Drift (Typical):**  
1.45psi sensor ±0.015psi  
14.5/43.5/145psi sensors ±0.1% FS

**Total Error Band (Temperature Compensated):**  
1.45psi sensor ±0.0174psi  
14.5/43.5/145psi sensors ±1.0% FS

**Measurement Resolution:**  
• 0.001psi on 1.45psi  
• 0.01psi on 14.5psi  
• 0.1psi on 43.5psi & 145psi

**Number of Pressure Channels:**  
1

**Pressure Connection:**  
1/4" NPT

**Real Time Clock Accuracy:**  
Max error 60 seconds (GPS corrected)

**Read/Log Rate:**  
6 second reads (configurable) combined into 6 minute logs (configurable)

**Data:**  
Automatic daily upload with immediate additional auto-upload on alert

**Data Storage:**  
Internal flash 10 year, time-stamped

Specifications are subject to change without prior notice.



# OSPREY™ MCA

## Multichannel Accessory

### OVERVIEW

MCA is an intrinsically safe, multiple channel accessory to the OSPREY PL Plus monitor. OSPREY MCA allows the user to extend the flexibility of OSPREY PL Plus by adding up to 2 extra pressure monitoring channels for specific applications.

Simply connect MCA, via its dedicated port, to the OSPREY PL Plus. Together this will provide up to 3 measurement channels offering a combination of the most commonly required pressure ranges. MCA is supplied with 2 pressure sensors, with selected combinations of 1.45psi, 43.5psi and 145psi.

OSPREY PL Plus incorporates one integrated sensor. Pressures are sampled every 6 seconds (configurable) for all channels and the minimum, maximum and average values over a six minute period (configurable) are then stored for each logging point.

Ease of use is key to the OSPREY range. There is no requirement for any additional user configuration as OSPREY PL Plus automatically detects which sensors are present in the connected MCA and informs the software accordingly. In combination with OSPREY's unique GPS time-stamping, this ensures that pressure data is accurate and requires no manual data cleansing.

MCA can be installed on critical points within the network, including District Governors, Pressure Regulating Stations and low points. In combination with OSPREY PL Plus, MCA can provide:

- Inlet (including bypass) and outlet pressure monitoring at governor stations
- Intermediate, Medium and Low Pressure monitoring
- Poor Pressure Surveys using IEM mode
- Critical node monitoring (with alarms)
- Clocking Verification
- Pressure differential across a filter
- Flow monitoring

### FEATURES & BENEFITS

- Up to 5 combinations of two separate pressure monitoring channels
- Selection of 1.45psi, 43.5psi and 145psi sensor combinations
- One step connection to OSPREY PL Plus
- Automatic detection and configuration of sensors and orientation
- Compact size high grade stainless steel casing



### TECHNICAL SPECIFICATIONS

**Physical Dimensions (H x W x D):**  
4.1" x 1.5" x 1.7"

**Weight:**  
1.9lb

**Ingress Protection:**  
NEMA 6

**Enclosure Material:**  
316 Stainless Steel

**Temperature Range:**  
-4°F to +158°F

**Communications:**  
As per OSPREY PL Plus

**Software Management:**  
PressureTrac

**Safety Certification:**  
Class I, Zone 0, AEx ia IIB T3 Ga  
Class I, Division 1, Groups C & D  
Ex ia IIB T3 Ga  
Ex II 1 G Ex ia IIB T3 Ga

**Input Range:**

- 1.45psi & 43.5psi
- 1.45psi & 145psi
- 43.5psi & 43.5psi
- 43.5psi & 145psi
- 145psi & 145psi

**Sensor Accuracy:**  
±0.15% FS

**Over Pressure Limit:**  
4 x input range

**Sensor Burst Pressure:**  
10 x input range

**Sensor Media Compatibility:**  
Any gas compatible with stainless steel

**Sensor Drift (Typical):**  
1.45psi sensor ±0.015psi  
43.5/145psi sensors ±0.1% FS

**Total Error Band (Temperature Compensated):**  
1.45psi sensor ±0.0174psi  
43.5/145psi sensors ±1.0% FS

**Measurement Resolution:**

- 0.001psi on 1.45psi
- 0.1psi on 43.5psi & 145psi

**Number of Pressure Channels:**  
2

**Pressure Connection:**  
1/4" NPT

**Lead Connectivity:**  
M8 receptacle, 5 pin with key feature

**Lead Length:**  
11.8"

Specifications are subject to change without prior notice.



# PRESSURELINK

## Field Interface Unit

### OVERVIEW

PressureLink is a communications interface for use with the OSPREY range of pressure monitors. It acts as an intrinsically safe barrier between the OSPREY and un-assessed equipment, such as a laptop PC.

PressureLink allows calibration, maintenance and data download from OSPREYs in the field. This provides technicians the ability to carry out required work, without having to completely remove the OSPREY and send back to the service team, saving time, costs and helping improve your carbon footprint.

PressureLink and the accompanying PCAT (Pressure Calibration and Test) software allow technicians to calibrate units out in the field as well as check battery status, carry out readings or power the OSPREY down. The software also allows technicians to download data from the OSPREY monitor as well as upload data to the PressureTrac server.

The PCAT software interface is easy to use and intuitive for all users, simply connect the PressureLink unit to a laptop via the USB lead, connect the OSPREY (out of the zone) and launch PCAT.

Having the ability to carry out maintenance and calibration in the field offers the opportunity to reduce costs associated with maintenance and calibration. Even a very small reduction in these areas will generate a massive payback on the capital cost of the system.

Its main purposes are:

- Calibration, maintenance and battery replacement of OSPREY monitors (requires PCAT software, which may be downloaded from the Abriox website)
- Manual downloads of pressure data from an OSPREY unit. This may be done in the field or office (in the event that wireless data download is not possible) outside the hazardous area. Once downloaded to a laptop, the data may be subsequently exported into the PressureTrac software.

### FEATURES & BENEFITS

- Intrinsically Safe
- Powered via USB
- Maintenance free
- Lightweight
- Hand Held
- No user configuration required



### TECHNICAL SPECIFICATIONS

**Physical Dimensions (H x W x D):**  
3.7" x 5.7" x 1"

**Weight:**  
0.4lb

**Ingress Protection:**  
NEMA 3

**Temperature Range:**  
-4°F to +158°F

**Communications:**  
USB

**Power:**  
Powered via USB

**Mounting:**  
Handheld

**Software Management:**  
PCAT Software

**Safety Certification:**  
Approved for use with OSPREY

**Input Connection:**  
Unspecified equipment (e.g. laptop) up to 250VAC

**Output Connection:**  
Approved equipment (OSPREY) up to 6.51V

**Unit Interface:**

- Transmit/Receive LEDs
- USB Mini B (to laptop)
- LTW 4 Way (to OSPREY)

Specifications are subject to change without prior notice.



# PRESSURETRAC™

## Database Software

### OVERVIEW

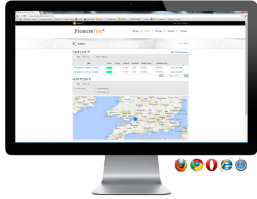
PressureTrac is a dedicated web-based pressure management software system for displaying, recording and exporting pressure data from the range of OSPREY pressure and control monitors. It also provides full remote configuration of all OSPREY monitors directly.



The data is displayed both graphically and tabulated for quick and easy viewing, along with accurate GPS positioning of all devices in the field.

The real advantage to PressureTrac is the method by which data from the OSPREY monitors is recorded.

Rather than a device serial number or a location description to identify the source of the data we use "Device Measuring Points" (DMPs). A DMP is the hybrid identifier of a monitoring device at a specific location.



The OSPREY's built-in GPS will allow PressureTrac to accurately plot the position of the units and ensures that all pressure readings are always attributed to the correct DMP.

This allows the user to move the OSPREY monitors wherever needed - but retain specific data and the history of each measured point on the gas network. This also eliminates errors associated with allocating monitor serial numbers to nodes and assets.

PressureTrac allows OSPREY monitors to be configured remotely. Device settings can be altered, providing full control and allowing changes dependent on the current environmental conditions. These include logging intervals, reporting times and alert thresholds. Alert conditions can be configured and are automatically reported to users via SMS and/or email.

PressureTrac has full data export capability, allowing the information gathered by the OSPREY monitors to be exported to business systems for integration into existing processes via an automatic customer-specific service or an industry-standard SQL interface to an Oracle or Microsoft SQL Server database system.

PressureTrac can be integrated with SynerGEE® Gas, DPRS, DNCS and more.

### HOSTING CHOICES

PressureTrac can be installed on the client's server or hosted by Abriox, depending on specific requirements.

**Hosted by Abriox** - cost-effective for short-term trials of the system but with a limit of 1000 OSPREYs and an ongoing hosting cost per month.

**Hosted by the User** - the software has been designed to be installed on an in-house server, so that users have full control over their own data. There is no limit to the number of OSPREYs and no ongoing hosting costs.

PressureTrac is designed and distributed uniquely by Abriox. Software updates are made freely available during the warranty (or service contract) period.

PressureTrac has been developed to be compatible with most modern browsers. We recommend you use the latest version of your chosen browser.

### TECHNICAL SPECIFICATIONS

#### Supported Operating Systems:

- Microsoft Server 2008 R2
- Microsoft Server 2012 R2

#### Supported Databases:

- Microsoft SQL Server
- Oracle

#### OSPREY Configuration and Control:

- Full remote configuration and control of OSPREY monitors including:
  - Communications
  - Server settings
  - Reporting Frequency
  - Data upload times
  - Sample and log rates
  - Export options

#### Data Management:

- Data stored in Enterprise Class SQL Server or Oracle database
- Full history
  - ◊ System logs
  - ◊ User events
  - ◊ Message logs
- Custom export options
  - ◊ Full data
  - ◊ Date range
  - ◊ Single export
  - ◊ Group export
- Export formats
  - ◊ CSV
  - ◊ XLXS

#### User Management:

- Easily create and manage system users
- Add/edit user alert format, email or text
- Multiple users can log in and access data
- Different roles restrict configuration and control access

#### DMP Management:

- Easily edit DMPs
- DMP group management

#### Alert Identification:

- Custom low/high alert thresholds (set graphically or by numeric input)
- SMS (text) and/or email alerts to supervisory staff
- Easily identify OSPREYs in alert mode via the PressureTrac software

#### Data Display:

- Easy-to-understand graphical display
- Numerical data table
- Google Maps API shows location of monitors
- Configurable measurement display period
- Unit battery level and status information
- Tool-tips - aid the user on how to utilise the PressureTrac software
- Responsive web layout to aid viewing no matter what device (PC/Tablet/Phone)

#### Business System Integration:

- SynerGEE® Gas
- DPRS
- DNCS
- SCADA

Specifications are subject to change without prior notice.

### USER TYPES AND ROLES

Depending on the type of system you choose, there are varying types of Licence available, each with different levels of authority.

**Admin\*:** Full control over the PressureTrac system and installed OSPREY units

**Controller:** Full control of OSPREY units but no control over the PressureTrac system

**Technician:** Limited control of OSPREY units but no control over the PressureTrac system

**Viewer:** No control of OSPREY units, read only access for viewing OSPREY data

\*The Admin role is only available to customers hosting their own systems.

#### ABRIOX HOSTING FEATURES

- Latest version applied automatically
- 99.99% uptime (resilient 100Mbps internet connection)
- 24/7 network and hardware monitoring
- Automatic backups
- Access from anywhere (no restrictions)

#### SELF HOSTING REQUIREMENTS

- Windows Server 2008/2012 R2
- Internet Information Services (IIS) 7
- Microsoft SQL Server or Oracle
- Internet Access
- Expandable storage
- Experienced IT staff to install

### FEATURES & BENEFITS

- Fully web-based (secure Intranet or Internet)
- No client PC software required; no dongles
- Integrated with Google Maps
- Automatic data collection from all units
- Instant SMS and email alerts
- Export designed for 3rd party software used by the customer
- Enterprise class database storage
- Simple configuration of measuring points
- Sophisticated graphing
- GPS positioning of devices
- More accurate control of gas network pressure
- Fast alerts mean that over or under pressures can be resolved quickly providing a more stable network
- One glance reporting for fast decision making
- Configure monitoring points quickly and easily
- Automatic data management eliminates manual errors
- Modern, simple and intuitive interface
- Full customer service and training





**ABRIOX**<sup>®</sup>  
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**Specialists**  
in Remote Monitoring