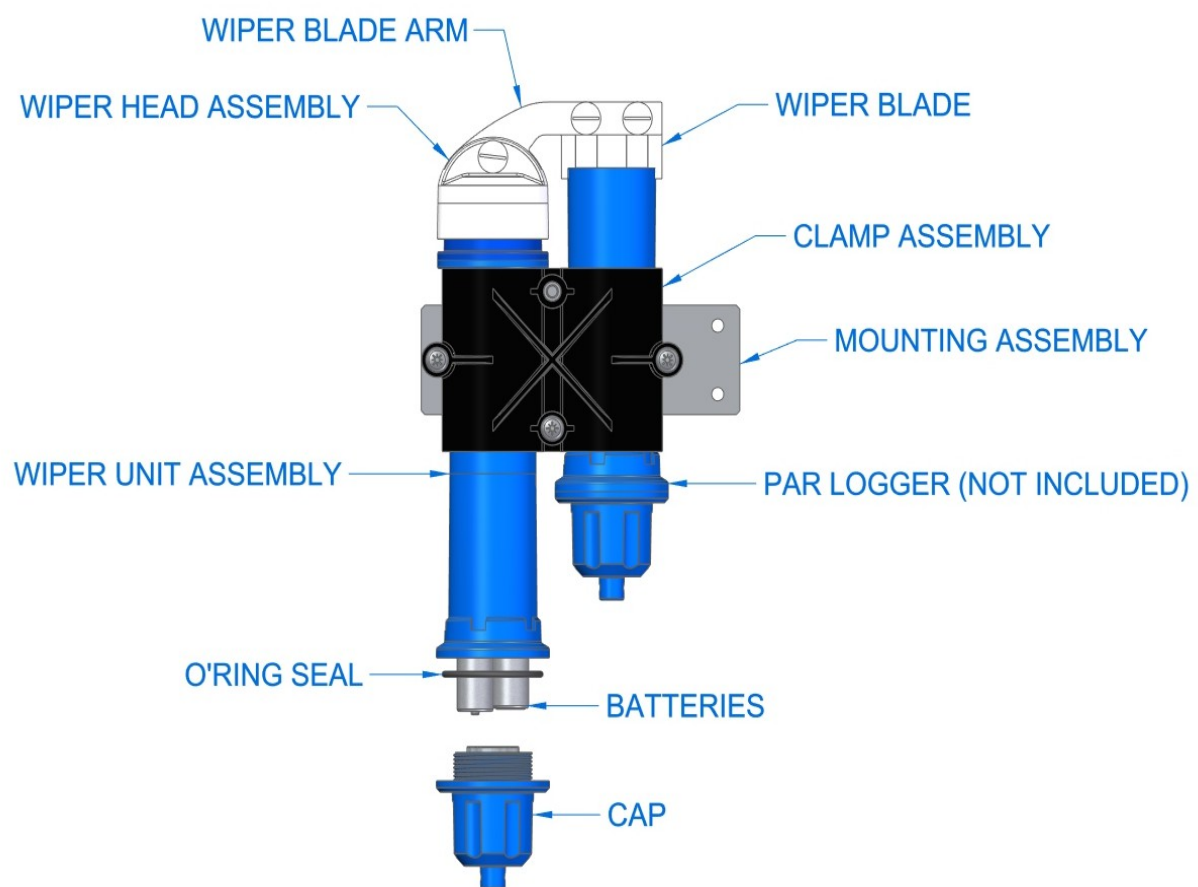




ODYSSEY
XTREEM

Odyssey® P.A.R. Wiper User Manual

Odyssey® P.A.R. Wiper User Diagram



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Kit Contents

– Wiper Main unit	Qty	1
– Wiper Arm Assembly	Qty	1
– AA Batteries (internal)	Qty	2
– Logger / Wiper Clamp half.	Qty	2
– Clamp Screws, M5x30mm SS	Qty	2
– Mounting Plate SS	Qty	1
– Clamp/Plate Screws M5x30mm SS	Qty	2
– Clamp Plate Wing nuts M5 SS	Qty	2
– Mounting Rod Plate SS	Qty	1
– Mounting Rod Screws M5x30mm SS	Qty	2
– Mounting Rod Nuts M5 SS	Qty	1

Principal of Operation

The Odyssey® P.A.R. wiper mechanically wipes away any bio-fouling on the Odyssey® P.A.R. Logger. Wiping even twice a day will keep the P.A.R. sensor window free from fouling. The wiper arm is magnetically coupled to the fully sealed motor so there are no moving parts passing through a seal therefore there is less likelihood of leaking.

The wiper arm simply pulls off the wiper body for inspection. It can be placed back on in any orientation. On every cycle the wiper will search for the PAR logger if it is not where it is expected. Every second wipe will be in the opposite direction from the previous wipe. The wiper arm will normally come to rest at 90 degrees to the plane of the wiper assembly.

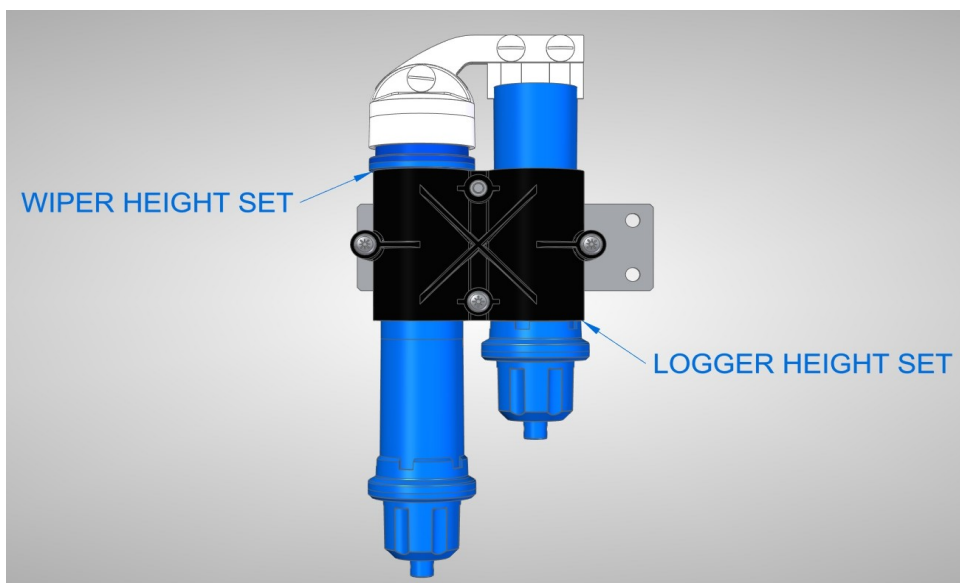
So that you can be sure the wiper has performed correctly, the wiper records a count every time it wipes. If a wipe is not detected when attempted or if an obstruction is detected, this is flagged along with the wipe count. The count and flags are graphed in the Xpert portal for easy analysis.

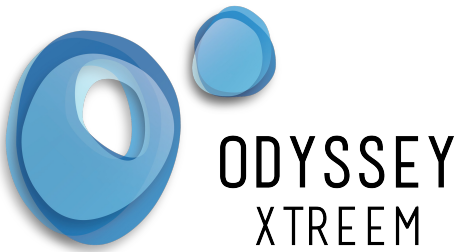
Installation Methods

The Odyssey® P.A.R. Wiper is supplied with a clamp (shown below in black). Place the wiper and the P.A.R. logger in the clamp and tighten together in the middle with the two M5x30mm SS screws supplied (one from each side). Do not over tighten these. To set the wipe height correctly press the wiper down until it touches the boss labelled 'Wiper Height Set' in the picture below and also push the PAR Logger up until it touches the castle boss labelled 'Logger Height Set' in the picture below.

Attach the metal mounting plate to the wiper assembly using the two M5x50mm SS screws and wing-nuts supplied. Do not over tighten these.

Attach the metal rod plate to the metal mounting plate using the two M5x25mm SS screws supplied. Place the whole assembly over a 12.5mm diameter metal rod (rebar) or similar and tighten with the two M5 nuts supplied.





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For easy retrieval the metal rod could be welded to a large metal pot and lowered to the ocean floor. Marked with a floating buoy the pot can be easily retrieved as and when required. Other methods include inserting a rod or bar into the sea floor but these require retrieval by diving for them.

Installing the Xtract Application

Search Google Play Store or Apple App Store for the Odyssey® Xtract application and install as usual. The application must have access to Bluetooth communications and GPS location services. In the Settings screen enter your username and password provided by Dataflow Systems.

Press the green **SERVER SYNC** button to load the Odyssey® P.A.R. wiper(s) and configuration(s) from the Xpert Web Portal.

The latest Odyssey® Xtract user manual and other user manuals are available on Xpert once you have logged in.

Identifying the Wiper

By default the Odyssey® P.A.R. wiper will arrive with its name being a hexadecimal representation of its serial number. In the Xtract Application press the View button. Once scanned, the Odyssey® P.A.R. wipers located will be shown in the list. The Odyssey® P.A.R. wiper with the highest signal (also coloured green if it is very close) is the wiper that is closest to the tablet / phone.

Testing the Wiper

In the View screen, select the logger serial number or if named, its name. The Xtract application will connect to the wiper. While connected, every 10s the wiper will wipe.

Check that the wiper passes over the PAR logger lens hence cleaning. If assembled correctly, the wiper arm moves over a 160 degree angle with the lens approximately in the middle.

Each wipe is in the opposite direction from the last wipe.

Note the first wipe could take longer as the wiper automatically locates the position of the PAR logger.

Setting Up the Wiper

The first time the wiper is used, unscrew the top cap and remove the battery insulation disc. All user configuration is carried out in the Xpert Web portal. The tablet / phone running the Xtract application transfers the logged data from the Odyssey® P.A.R. wiper to the Xpert web portal and transfers the configuration into the Odyssey® P.A.R. wiper. Using a web browser (Firefox is preferred) navigate to www.xpert.nz, then enter your username and password provided by Dataflow Systems. On the Map page (default), select Home from the drop down selection box, then select a wiper from the logger selection drop down box. An icon for the selected wiper will display on the Map. Click on this icon and an information box above it will pop up. To locate the icon for the first time, it may be necessary to zoom the Map out to find the wiper.

Download the full Odyssey® Xpert user manual from Xpert web portal.

Wiper Configuration

1. Select the Logger Config Tab. Enter a Wiper Name that will be used to Identify the Wiper from now on. The serial number can be used however this is very long and difficult to remember.
2. If you enable continuous logging, the wiper will continuously wipe until its memory is full and then start overwriting the oldest readings first. Start and stop times can also be entered.
3. Choose a wiping Interval in Hours, Minutes and Seconds. Intervals selected below 1 minute will force continuous logging to be disabled. At an interval of 10 minutes the wiper will not overwrite data for more than a year.
4. In the Site box, add some brief location information to help locate the wiper in the future. In the Notes box add any information that may be of use.
5. Select the Time Zone the Wiper is deployed at. This is important as it may be different from the time zone where the data is viewed.
6. Press the Submit button to apply the Logger Configuration.

Transfer Configuration to Wiper

The configuration will be sent to the wiper automatically (typically less than 10 minutes) through the tablet / phone running the Xtract Application. To apply this immediately, press the '**SERVER SYNC**' button in the Settings screen. Once the button has been pressed the time below the button will display the word 'Never', then once synced, it will change to a valid time.

Select the History screen in the Xtract Application to view the Wiper name(s) entered for the Odyssey® P.A.R. wiper(s).

The next time the tablet / phone sees the wiper, it will connect to it and automatically apply the settings.

Collecting Data

Bring the tablet / phone with the Xtract application running within range of the wiper and the application will automatically find, connect and collect the logs from the wiper. This can be seen happening on the main screen of the Xtract application. If any configuration changes have been made since the wiper was last connected, these will be applied at this time. If there is a firmware update for the wiper this will also be sent (this takes several minutes to complete) to the wiper if automatic firmware updates have been enabled (Contact Dataflow Systems to enable Automatic firmware updates).

To confirm the date of the last log that has been collected, select the History screen then tap on the wiper name.

Viewing Data

Using a web browser (Firefox is preferred) navigate to www.xpert.nz then enter your username and password provided by Dataflow Systems. On the Map page (default) select Home from the drop

down box then select a wiper to be configured. An Icon for the wiper will display on the Map. Click on the icon. (It may be necessary to Zoom the Map out to find the wiper).

ICON pop-up

This pop up shows brief data on the selected wiper.

Selected Wiper Box

This shows the wiper which has been selected on the Map tab.

Latest Information Box

This shows the latest known information about the wiper.

Chart

Once the wiper has been selected, choose the chart option from the menu.

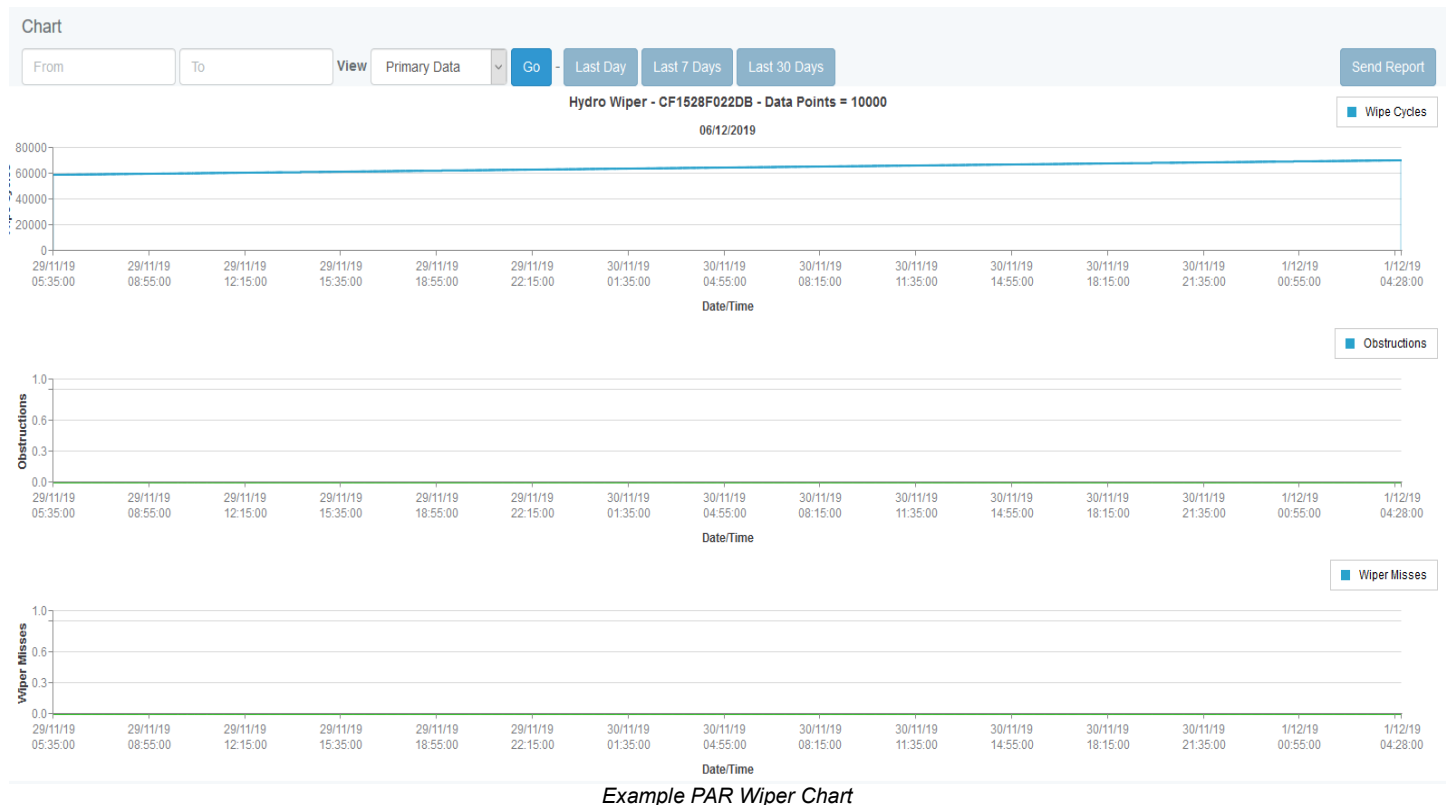
To view a graph of the logged data select a date range, then press the Go button. For a quick view press one of the Last Day, Last 7 Days, or Last 30 Days buttons. To export the data right mouse click on the graph then select the export format required. Alternately, enter a date range then press the Send Report button. A link to download the file will be sent to the registered email address. To view other data collected from the wiper, in the drop down box showing 'Primary Data', select 'Diagnostic Data', then select a date range or press one of the quick Day buttons.

In the example chart below, the wiping interval is set to 15s. The top chart shows the cycle count incrementing for the 10,000 wipe cycles. During this time, there is no Obstruction detected as shown in the second chart and every cycle has been detected correctly as shown in in the third chart with no wipe misses.



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Memory Storage Capacity

The memory is capable of recording at least 60000 records. The number of recording days before the memory is full can be calculated using the following formulae. If continuous logging is enabled the oldest will be overwritten first. If continuous logging is disabled no more data will be collected.

$$\text{Recording Days} = \frac{60000}{\text{Records per day}}$$

Examples.

Interval (hours)	Records per Day	Recording Days
1	24	2500
2	12	5000
6	4	15000
12	2	30000
24	1	60000

It is recommended to use the longest interval required as this reduces the collection time and speeds up the graphing process.

Batteries

Life

The battery life is dependent on a number of variables, including the sampling interval and operating temperature. The remaining battery life is indicated in the Xpert web portal. In typical conditions (25°C), battery life is expected to be approximately 2 years.

Replacement

To replace the batteries, unscrew the cap and lift out the 2 batteries. Over time the cap can become very tight, so use the special Odyssey® spanner for opening the cap which is available from www.OdysseyDataRecording.com. As the batteries are non-hazardous, disposal is with your normal rubbish. We recommend with temperatures greater than 0°C to use the Energizer Max E91 with PowerSeal Technology batteries as these have been tested in our products to give the best life and are least likely to leak. At 0°C the battery life is reduced to half of its calculated life and it further reduces to 1/8th of its life at -20°C.

For temperatures below 0°C we recommend Energizer Lithium L91 batteries and these will have a life of greater than 2 years even at -20°C. Replace the batteries in the wiper in the indicated orientation in the battery holder. (Note the unit will not be damaged if the batteries are inserted incorrectly). Before replacing the cap check the O-Ring seal is present, clean and free from debris. If required apply some silicon grease (available from www.OdysseyDataRecording.com). Replace the cap and tighten by hand. Do Not use any tools to tighten the cap.

If the wiper is not to be used for more than a year, then remove the batteries to prevent any chance of leaking.

Specifications

	Description
Radio	NRF52832 Bluetooth SOC from Nordic Semiconductor
Frequencies	2402 – 2480MHz
Modulation	GFSK
Bandwidth	1MHz
Output Power	+4.0dBm max
Antenna	Ceramic Chip with 0.5dB gain.Return Loss -9.5dB UFL (external)
Operating Temperature	-20 to 55°C (standard)
Relative Humidity	0% to 100%
Water Proof	IP68 30m
Dimensions	46mm Diameter, 240mm Length



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Intellectual Properties

- Bluetooth® is a registered trademark owned by Bluetooth SIG Inc.
- Odyssey® is a registered trademark of Dataflow System Limited.

Legal Information

FCC

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.

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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Radiation Exposure Statement

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

Japan (MIC)

The Xtream loggers are approved for use in the Japanese market.
In Japan, certification is valid for 80 channels between 2402...2481 MHz

CE Warning

This device has been tested for compliance with the relevant standards for the EU market.
A copy of the Declaration of Conformity is available upon request to the manufacturer.
Dataflow Systems, PO Box 13672, Christchurch 8023, New Zealand

Radiation Exposure Information

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

Industry Canada

This device complies with ISSED's licence-exempt RSSs. 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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be chosen so that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Radiation Exposure Statement

This equipment complies with ISSED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.