

TRANSAS PILOT PRO & NAVICOM DYNAMICS SENSORS

QUICK USER GUIDE

VERSION 1.1

TRANSAS



Transas Marine Limited
10 Eastgate Avenue,
Eastgate Business park,
Little Island, Cork, Ireland

pilotpro@transas.com
sales@transaspilot.com
www.transas.com
www.transaspilot.com

Content

1. Revision History	2
2. Transas Pilot PRO operation with Navicom Dynamics GyroPilot	3
3. Transas Pilot PRO operation with Navicom Dynamics ChannelPilot.....	8



Transas Marine Limited
10 Eastgate Avenue,
Eastgate Business park,
Little Island, Cork, Ireland

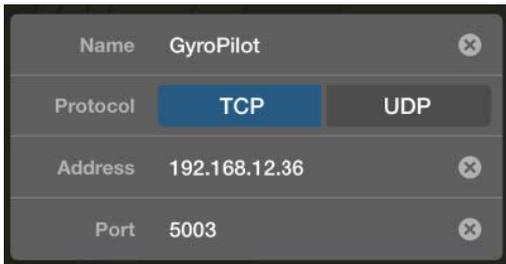
pilotpro@transas.com
sales@transaspilot.com
www.transas.com
www.transaspilot.com

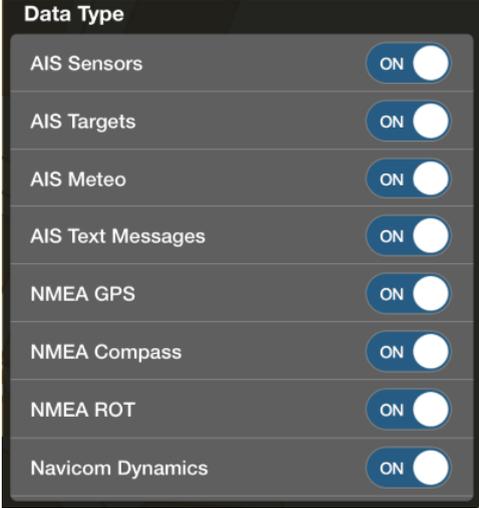
1. Revision History

Version 1.1. 06 July 2016
General changes
Version 1.0. First official release.
Version 1.1. IP addresses for the latest GyroPilot & ChannelPilot Mk3 were corrected

2. Transas Pilot PRO operation with Navicom Dynamics GyroPilot



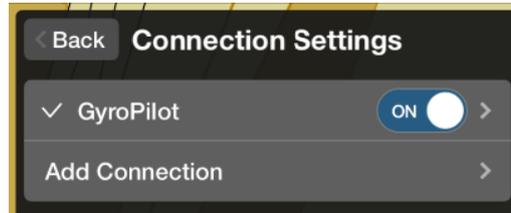
Item	Description
1. Preparations	
1.1 Charging	<p>Charge iPad and GP device before usage according to instructions from GP user manual.</p> <p>NOTE: Green flashing battery LED means that Battery status is 'Medium to Full (>40%)' or fully charged.</p>
1.2 Transas Pilot PRO. Connection Settings	<p>Adjust Pilot PRO connection settings for the Navicom Dynamics GyroPilot device. Run Pilot PRO app, open the "Sensors" menu item, "Connection Settings" and create connection for the GyroPilot as following:</p> <ul style="list-style-type: none"> • Connection name: GyroPilot (it's just a name, it can be any) • Connection Type: TCP • IP Address: <ul style="list-style-type: none"> GyroPilot (Wi-Fi, before the June 2016): 192.168.X.Y (where X and Y could be last 4 digits of the GP S/N, check it on the device label accordingly) GyroPilot (Wi-Fi, after the June 2016): 192.168.10.10 • Port: 5003 <p>Example:</p> 

	<ul style="list-style-type: none"> • Activate following Data Type switches for this connection:  <p>The screenshot shows a 'Data Type' menu with the following items and their toggle states:</p> <ul style="list-style-type: none"> AIS Sensors: ON AIS Targets: ON AIS Meteo: ON AIS Text Messages: ON NMEA GPS: ON NMEA Compass: ON NMEA ROT: ON Navicom Dynamics: ON
<p>1.3 Transas Pilot PRO. Operational Settings</p>	<p>Adjust Pilot PRO operational settings for the Navicom GyroPilot device. Open Pilot PRO "Sensors" menu item and adjust following items:</p> <ul style="list-style-type: none"> • Primary PS: AIS NOTE: it might be also NMEA, when GP is disconnected from the AIS Pilot Plug and switched to the own built-in backup GPS & GLONASS. It is only for backup positioning) • Heading: NMEA • ROT: NMEA

Item	Description
<p>2. On the Bridge, before the pilotage</p>	
<p>2.1 GyroPilot adjustments</p>	<ul style="list-style-type: none"> • Place the GyroPilot device to the flat space and horizontal plane, not far from the bridge AIS Pilot Plug Socket. • Connect the GP Pilot Plug cable to the AIS Pilot Plug socket onboard. • Switch on the GyroPilot by pushing and holding the power button for approximately 2 seconds. Check LED statuses according to the GP User Manual. It should be the Blue Solid status in the normal operational mode (AIS connection is locked and connection is established).
<p>2.2 GyroPilot calibration procedure</p>	<p>Once on, do not touch the unit as this will disturb the gyro! As soon as ship's data is received, the GyroPilot will automatically initialize its own gyro calibration process. This process takes up to 1 minute!</p> <p style="text-align: center;">IMPORTANT: DO NOT TOUCH THE GYROPILOT ONCE SWITCHED ON!</p> <p>NOTE: If the unit is moved for any reason, this will disturb the gyro and it will output invalid data until its bias is adjusted by internal algorithms, which is a long process. The fastest way to regain accurate data is to switch the unit off and on again, after which it will repeat the one-minute calibration process.</p>

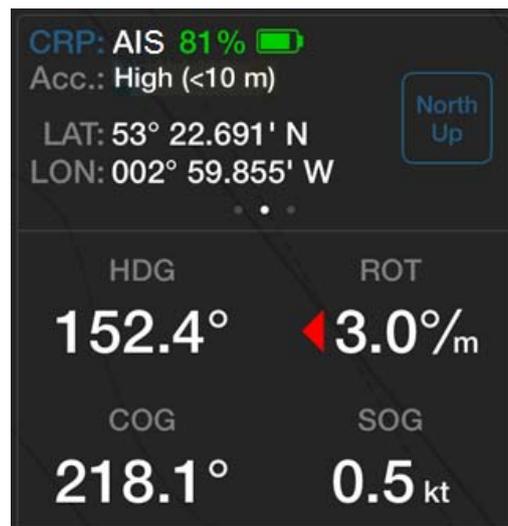
2.3 Pilot PRO Connection Check List

- Be sure that iPad connection to the GP device is established (check it in the **iOS 'Wi-Fi'** menu settings), Wi-Fi SSID: **GP XXXXX**
- Run Pilot PRO app, open **"Settings" / "Sensor"** menu, check that TCP connection is established to GP:



Open **'Docking'** or **'Route Monitoring'** panel: Once the calibration is complete, GyroPilot will autonomously output ROT data, smoothed heading and all AIS data from the Pilot Plug and pass it over the Wi-Fi to the Pilot PRO app.

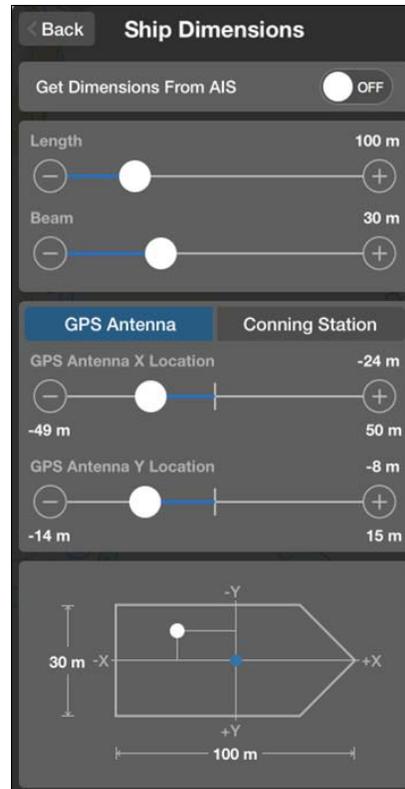
Now Pilot PRO will receive AIS GPS, AIS targets, ROT and Heading data (and also, **GyroPilot** battery status in the **"Position Data"** widget of the **'Docking'** or **'Route Monitoring'** panes:



Item	Description
3. Adjustments during Pilotage	
3.1 Position & Heading Offsets	<p>Please note that the GyroPilot will not autonomously correct any heading error from the ship. Use the "HDG & POS offset widget" in Pilot PRO to enter a heading (and/or position) offset, if a ship's gyro error is observed:</p> 

3.2 Ship Dimensions and AIS Antenna reference point

Open the 'Sensors', 'Ship settings', 'Ship Dimensions' menu item. Re-initialize the switch 'Ship Dimensions From AIS' from the OFF to the ON position:



Ship dimensions and AIS GPS antenna reference point should be obtained from AIS Class A within a 1 minute (in worst cases it might be up to 6 minutes by AIS IEC 61993 Ed2 standard). Received data is shown in the white color (otherwise – in red). It is recommended to use the 'Conning Station' position at the midship line, Conning Station reference point (CRP) is the main reference point in the Pilot PRO app and GPS data recalculates to the specified Conning Station Position.

Item	Description
4. End of Pilotage	
4.1 End of Pilotage	<ul style="list-style-type: none"> • Power OFF: To switch the unit off, simply repeat the process of pressing and holding the power button for 2 seconds. The LEDs will again flash purple together, then extinguish entirely. <p>NOTE: Once an iPad connection is established, the GyroPilot will monitor the status of this connection. If the connection is lost, a 30-second timer will start, after which time an alarm will sound. The purpose of this alarm is to act as a warning in case the pilot leaves the unit behind when leaving the ship. Note that this alarm can be silenced by reestablishing the connection to the iPad, by double-pressing the power button as described above, or by switching the unit off.</p>

COMMENT 1 – HEADING AND ROT INFORMATION:

- The GyroPilot uses the HDG information from the Pilot Plug's AIVDO messages, as well as its own internal gyro, to calculate NMEA ROT messages. Since the AIVDO HDG messages are used to calibrate and bleed-back the internal gyro, this means that the NMEA ROT messages produced are derived from both sets of information. Note, that the GyroPilot does not use ROT messages from the Pilot Plug for any calculations; however, it does pass on all AIS messages over the wireless link to the Transas Pilot PRO. This means that Transas Pilot PRO may use the ROT information from the AIVDO messages or from the GyroPilot's NMEA ROT sensor (selectable in the Transas Pilot PRO application).

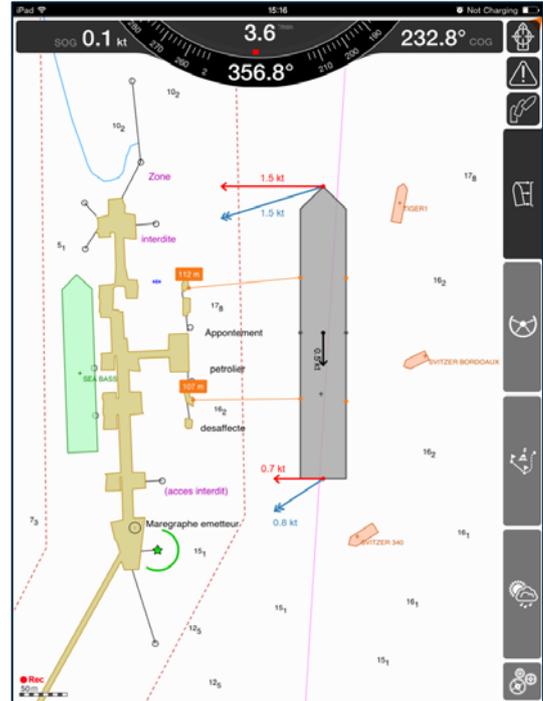
COMMENT 2 – GPS INFORMATION:

- The GyroPilot uses the AIVDO GPS position by default (i.e. it relays the exact AIS message received). If the GyroPilot is not connected to the Pilot Plug, then it will switch over to sending out its own internal GPS position (NMEA format). The user will have to select NMEA or AIS position data inside of the Transas Pilot PRO application.

Please note the following: The switching inside the GyroPilot is automatic (determined by lack of AIVDO messages being received) – the user cannot select whether the GyroPilot uses AIVDO position or its own internal GPS receiver (other than by unplugging it from the Pilot Plug). If the GyroPilot receives valid AIVDO messages, even those with no position data inside, it will not switch over to its own internal GPS module. Only in the event of the GyroPilot receiving no AIVDO messages (i.e. if it is unplugged or the AIS unit is faulty) will its own internal GPS units be used. The onboard GPS module is designed to be used for emergencies when AIVDO data is not available.



3. Transas Pilot PRO operation with Navicom Dynamics ChannelPilot



Item	Description
1. Preparations	
1.1 Charging	<p>Before use, - check that Channel Pilot is fully charged!</p> <p>Check the ChannelPilot is switched off. Connect the mains lead to the charger and plug it into the wall outlet. Do not switch on the wall outlet. Charge socket and plug the charger lead into the ChannelPilot, making sure the plug is locked. Switch on the charger at the wall outlet.</p> <p>Check the coloured LED on the charger turns red, this confirms the charger is charging the ChannelPilot.</p> <p>If the LED on the charger stays green when first switched on, this means there may be a charging fault, the battery is fully charged, or that power was supplied to the charger before the charger was plugged into the ChannelPilot unit.</p> <p>When the LED on the charger turns green the ChannelPilot is fully charged. Depending on the discharge state of the battery, the time to charge the ChannelPilot may take anywhere from 1 hour to a number of hours. Switch the charger off at the wall outlet and pull the charging lead connector out from the ChannelPilot.</p> <p>ChannelPilot Battery status LED and its operation time:</p> <ul style="list-style-type: none"> • Green Status means a battery charge in range of 60-99%. Operational time: 9-15 hrs. • Orange Status means a battery charge in range of 20-60%. Operational time: 3-9 hrs • Red Status means a battery charge less than 20%. Operational time: less than 3 hrs.

1.2 Transas Pilot PRO. Connection Settings

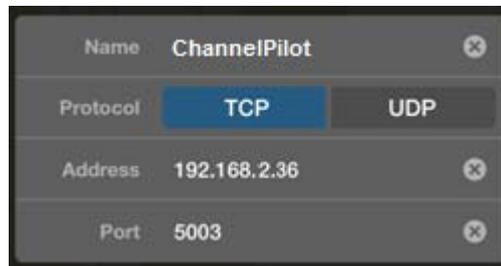
Adjust Pilot PRO connection settings for the Navicom Dynamics ChannelPilot device. Run Pilot PRO app, open the "Sensors" menu item, "Connection Settings" and create connection for the ChannelPilot as following:

- Connection name: **ChannelPilot** (it's just a name, it can be any)
- Connection Type: **TCP**
- IP Address:

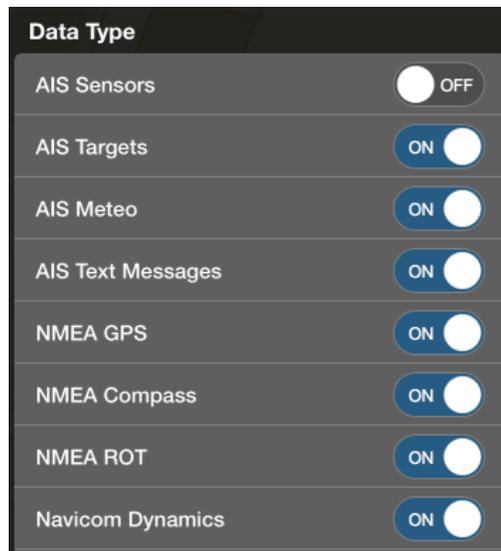
Channel Pilot Mk2 (Wi-Fi, before the June 2016): **192.168.2.X**
 (where **X** are the digits after the zeros in the serial number of the unit)

Channel Pilot Mk3 (Wi-Fi, after the June 2016): **192.168.10.20**

- Port: **5003**
 Example:



- Activate following **Data Type** switches for this connection:



1.3 Transas Pilot PRO. Operational Settings

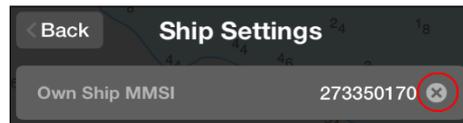
Adjust Pilot PRO operational settings for the Navicom ChannelPilot device. Open Pilot PRO "Sensors" menu item and adjust following items:

- Primary PS: **NMEA**
- Heading: **NMEA**
- ROT: **NMEA**

Item	Description
2. On the Bridge, before the pilotage	
<p>2.1 ChannelPilot adjustments</p>	<p>Locating the ChannelPilot: <u>Do not switch</u> on the ChannelPilot until it has been placed in the required operating location as the ChannelPilot needs to calibrate itself after being switching on. Failure to observe this caution will cause the ChannelPilot to give an incorrect and unstable heading.</p> <ul style="list-style-type: none"> • Screw the AIS antenna onto the ChannelPilot, making sure it is fully seated and not cross threaded. • It is recommended the ChannelPilot is operated outside for optimum performance. On the bridge wing, locate the best position (this is normally a clear view of the sky and away from overhead structures or awning framing) for the ChannelPilot and place down using its magnetic base to hold it in position. The ChannelPilot can be placed <u>in any orientation with respect to the vessel</u>. • NOTE: Make a note of the ChannelPilot’s physical position with respect to bridge-bow datum mark (offsets) as these are needed for the Pilot PRO app (See Chapter 3.1 below in relation to the Heading Offset adjustments). • Switch on the unit by pressing the power button for approximately 4 seconds until the battery and link indicators are lit.
<p>2.2 ChannelPilot initialization procedure</p>	<p>IMPORTANT: ChannelPilot will not transmit Heading or ROT until it has been initialized via the MMSI programming using Pilot PRO app</p> <p>When you switch on the Channel Pilot unit, initially it will transmit its GPS position (<i>once GPS lock has been established by its internal GPS receiver</i>) and any received AIS target messages. For Heading and Rate-of-Turn, it is waiting for an MMSI number. Please note, that the ChannelPilot must have seen, at least once, an AIS transmission from the vessel in question.</p> <p>After the CP has seen the data once, initialization can be performed. For initialization, Channel Pilot needs to be told the MMSI of the ship. The order of events in as follows:</p> <ul style="list-style-type: none"> • Method 1 (recommended): using the “Set as Own Ship” button in the bottom part of the selected ownship AIS Target information window: <div data-bbox="799 1509 1177 2029" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>The screenshot shows the following data for the vessel NIMBUS SPB:</p> <ul style="list-style-type: none"> Longitude: 029° 33.196' E Accuracy: Low (>10 m) SOG: 10.9 kt COG: 108.0° Heading: 108.0° Status: Under way using engine Ship type: Tanker Length: 100 m Beam: 17 m Draught: 6.5 m AIS Type: AIS Internet Target <p>The 'Set as Own Ship' button is highlighted with a red border.</p> </div>

If you send the MMSI message before the Channel Pilot has 'seen' an AIS message from that ship, (for example - before it shows up in the charting software), then calibration will fail and it will need to be restarted once it has seen it, (e.g. the software has shown the vessel)!

Filtering of the **Own Ship AIS target presentation** will be switched on automatically after that. Filtering may be disabled by the deletion of the Own Ship MMSI number using the "cross" symbol in the "Settings" / "Ship Settings" / 'Own Ship MMSI' field menu item.

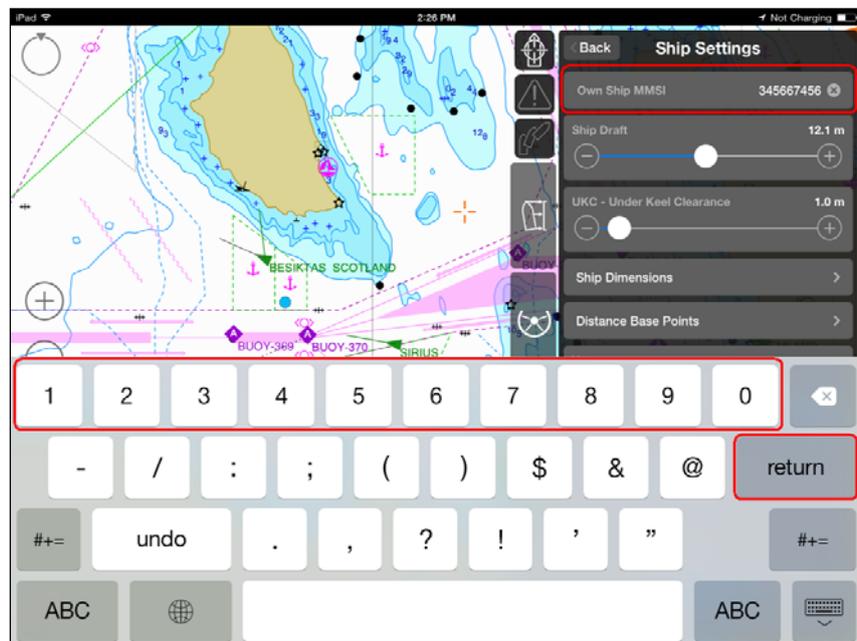


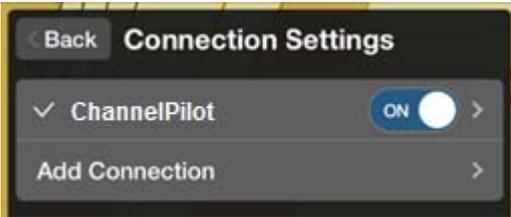
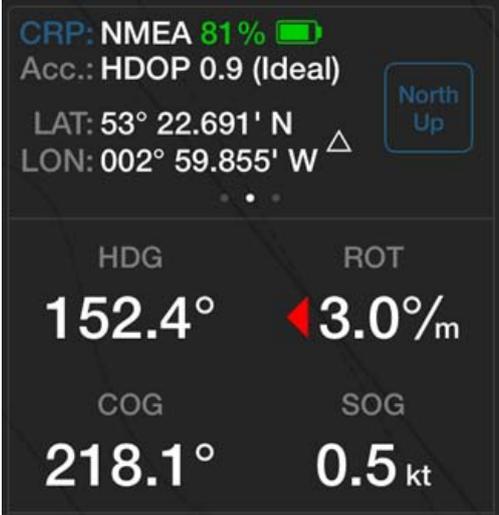
Once an **Own ship MMSI** has been received, the **Channel Pilot** goes into a (minimum) **2-minute calibration routine**. During this time, **no Heading or Rate-of-Turn is transmitted**.

After 2 minutes of AIS messages, but only if it has received a minimum of 2 of these from the ship in question, the **Channel Pilot** unit is calibrated and it starts transmitting Heading and Rate-of-Turn.

2.2 ChannelPilot initialization procedure

- **Method 2 (manually):** Own Ship MMS number can be also initiated in the "Settings" / "Ship Settings" menu item, 'Own Ship MMSI' field, using iOS Keyboard and confirmation via "Return" keyboard button:



<p>2.2 ChannelPilot initialization procedure</p>	<p style="text-align: center;">IMPORTANT NOTES:</p> <p>NOTE1: If you send the MMSI message before the Channel Pilot has 'seen' an AIS message from that ship, (for example - before it shows up in the charting software), then calibration will fail and it will need to be restarted once it has seen it, (e.g. the software has shown the vessel)!</p> <p>NOTE2: Re-sending the same MMSI number at any time, including during calibration, will be ignored – it does not either speed up or re-start the process other than if the Channel Pilot is switched off and on again. If you find you have sent an incorrect MMSI number (for example if you accidentally clicked on the wrong vessel), then sending a new or different MMSI number will restart the calibration process and no Heading or Rate-of Turn will be transmitted until the new calibration is completed.</p> <p>NOTE3: If you are on a stationary vessel (ship's AIS in alongside mode at the berth), during which AIS messages are only transmitted at 3 minute intervals, the calibration will take at least 6 minutes as it needs at least two valid AIS messages to complete the calibration. We recommend that pilots request crew put the ship's AIS into 'Underway using engine' navigational status to speed up the CP calibration procedure.</p>
<p>2.3 Pilot PRO Connection Check List</p>	<ul style="list-style-type: none"> • Be sure that iPad connection to the CP device is established (check it in the iOS 'Wi-Fi' menu settings), Wi-Fi SSID: CP XXXXX • Run Pilot PRO app, open "Settings" / "Sensor" menu, check that TCP connection is established to GP:  <p>Open 'Docking' or 'Route Monitoring' panel: Once the CP initialization is complete, ChannelPilot will autonomously output GPS, AIS targets + Heading & ROT data to the Pilot PRO app. Additionally, ChannelPilot battery status is shown in the "Position Data" widget of the 'Docking' or 'Route Monitoring' panes:</p> 

Item	Description
<h3>3. Adjustments during Pilotage</h3>	
<h4>3.1 Position & Heading Offsets</h4>	<p>Please note that the ChannelPilot will not autonomously correct any heading error from the ship. Use the "HDG & POS offset widget" in Pilot PRO to enter a heading (and/or position) offset, if a ship's gyro error is observed:</p>  <p>ChannelPilot's physical position should be respected to bridge-bow datum mark (offsets), so, main four Heading offsets (0 / +90 / -90 / 180) can be used in that widget to adjust a general Heading offset, "Plus" and "Minus" buttons – for the fine tuning (for example, at the berth or using leading lights at sea).</p> <p>Use the 'Reset All' button to cancel all adjusted offsets for Heading and Position.</p>

<p>3.1 Position & Heading Offsets</p>	<p>Corrected Position or Heading Data are shown with the Δ symbol in the "Sensor Data" data widget of the 'Docking' or 'Route Monitoring' panes. Heading with the adjusted offset:</p> <div data-bbox="858 421 1109 577" style="text-align: center; background-color: #333; color: white; padding: 10px; border: 1px solid #555;"> <p>HDG Δ 262.6°</p> </div>
<p>3.2 Ship Dimensions and AIS Antenna reference point</p>	<p>Open the 'Sensors', 'Ship settings', 'Ship Dimensions' menu item and keep the 'Ship Dimensions From AIS' switch in the ON position for the ChannelPilot device. AIS Ship Dimensions will be accepted automatically during the CP initialization procedure (starting from the Pilot PRO version 2.1.4), it may take 1 – 6 minutes (by IEC 61993 Ed2 standard, transmission of the Own Ship Static and Voyage data, Message 5).</p> <p>Then, it's necessary to set the 'Ship Dimensions From AIS' switch to the OFF position and adjust the proper location of the ChannelPilot (GPS Antenna X-Y points) manually, according to the actual location of the ChannelPilot device (on the wing or bridge).</p> <div data-bbox="751 931 1220 1839" style="background-color: #333; color: white; padding: 10px; border: 1px solid #555;"> <div style="display: flex; justify-content: space-between; align-items: center;"> < Back Ship Dimensions </div> <div style="margin-top: 10px;"> <p>Get Dimensions From AIS <input type="checkbox"/> OFF</p> <hr/> <p>Length 100 m</p> <div style="display: flex; align-items: center; justify-content: center;"> – <div style="flex-grow: 1; border-bottom: 1px solid #ccc; position: relative;"> <div style="position: absolute; left: 0; top: -5px;">–</div> <div style="position: absolute; right: 0; top: -5px;">+</div> </div> + </div> <p>Beam 30 m</p> <div style="display: flex; align-items: center; justify-content: center;"> – <div style="flex-grow: 1; border-bottom: 1px solid #ccc; position: relative;"> <div style="position: absolute; left: 0; top: -5px;">–</div> <div style="position: absolute; right: 0; top: -5px;">+</div> </div> + </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="background-color: #007bff; color: white; padding: 2px 5px; border-radius: 3px;">GPS Antenna</div> <div style="background-color: #6c757d; color: white; padding: 2px 5px; border-radius: 3px;">Conning Station</div> </div> <p>GPS Antenna X Location -24 m</p> <div style="display: flex; align-items: center; justify-content: center;"> – <div style="flex-grow: 1; border-bottom: 1px solid #ccc; position: relative;"> <div style="position: absolute; left: 0; top: -5px;">–</div> <div style="position: absolute; right: 0; top: -5px;">+</div> </div> + </div> <p style="margin-left: 10px;">-49 m 50 m</p> <p>GPS Antenna Y Location -8 m</p> <div style="display: flex; align-items: center; justify-content: center;"> – <div style="flex-grow: 1; border-bottom: 1px solid #ccc; position: relative;"> <div style="position: absolute; left: 0; top: -5px;">–</div> <div style="position: absolute; right: 0; top: -5px;">+</div> </div> + </div> <p style="margin-left: 10px;">-14 m 15 m</p> <div style="margin-top: 10px; text-align: center;"> </div> </div> </div> <p>NOTE: It is recommended to use the 'Conning Station' position at the midship line, Conning Station reference point (CRP) is the main reference point in the Pilot PRO app and CP GPS data recalculates to the specified Conning Station Position.</p>

Item	Description
4. End of Pilotage	
4.1 End of Pilotage	<p>Power OFF: Pressing the power button for another 4 seconds will switch the unit off.</p> <p>After use When finished with the ChannelPilot, switch it off, wipe the electronics box to remove moisture or dirt and store in a suitable dry place. Disconnect the MF DGPS Beacon unit if supplied. Recharge as soon as possible.</p> <p>WARNING! – leaving the MF BEACON DGPS unit connected to the CP will discharge the battery in the CP, even if CP is switched off!</p> <p>Long term storage If the unit is not going to be used for a long time, make sure the battery is fully charged and then once every 3 months recharge the battery.</p> <p>Operating in extreme temperatures In temperatures below -20°C, it is important that the unit is warm when switched on. Keep the unit in a place where the temperature is above 0°C before taking the unit outside and setting up.</p>



All specifications are subject to change.