



## **INSTALLATION MANUAL FOR CONTAINED SYSTEM**

(Ver 2.10)

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## Section 1 - Equipment Supplied

### **TowPro Yacht:**

TowPro Bridge Display unit

TowPro DataTraq-Y unit (VHF)

2no. M12 5-way 1m cables (NMEA2000)

1no. M12 12-way 1m cable

### **TowPro Tender: Contained**

TowPro Pre-Assembled Case

1no 7-Core interface Cable

1no. Heavy-duty VHF/AIS Antenna

1no. AIS/VHF Antenna splitter

1no. N-type RG58 Co-Ax Connector

2no. Fuse Links with fuses

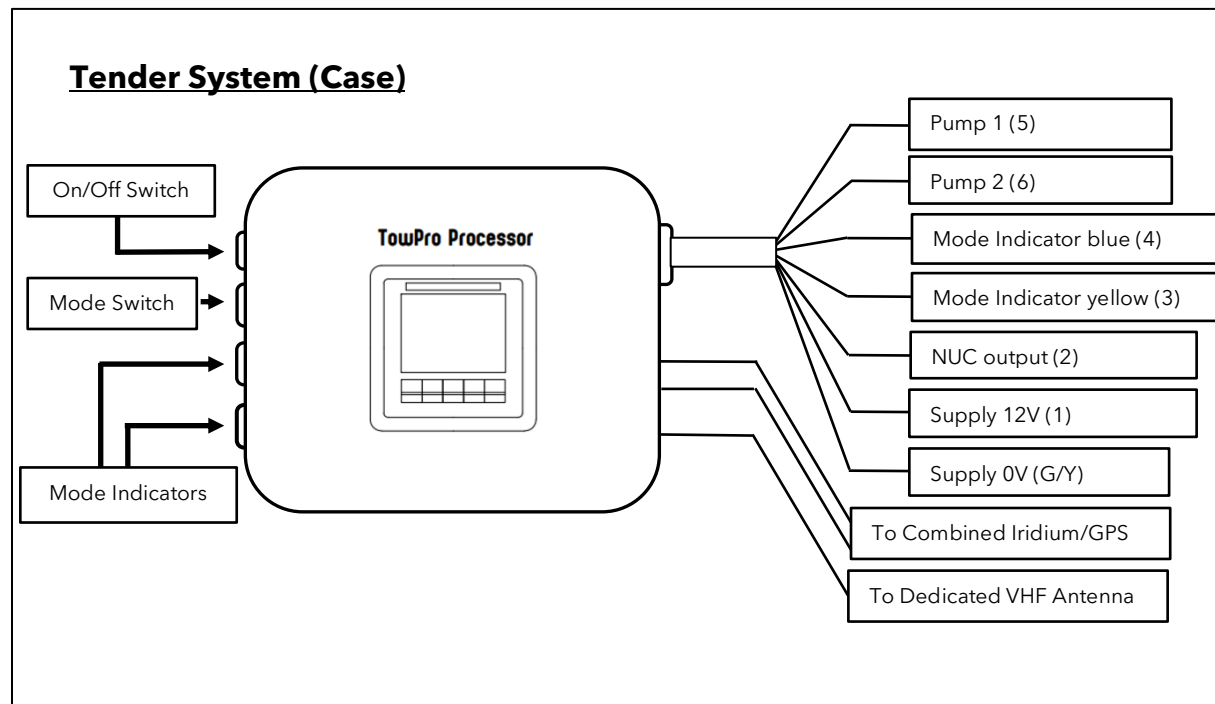
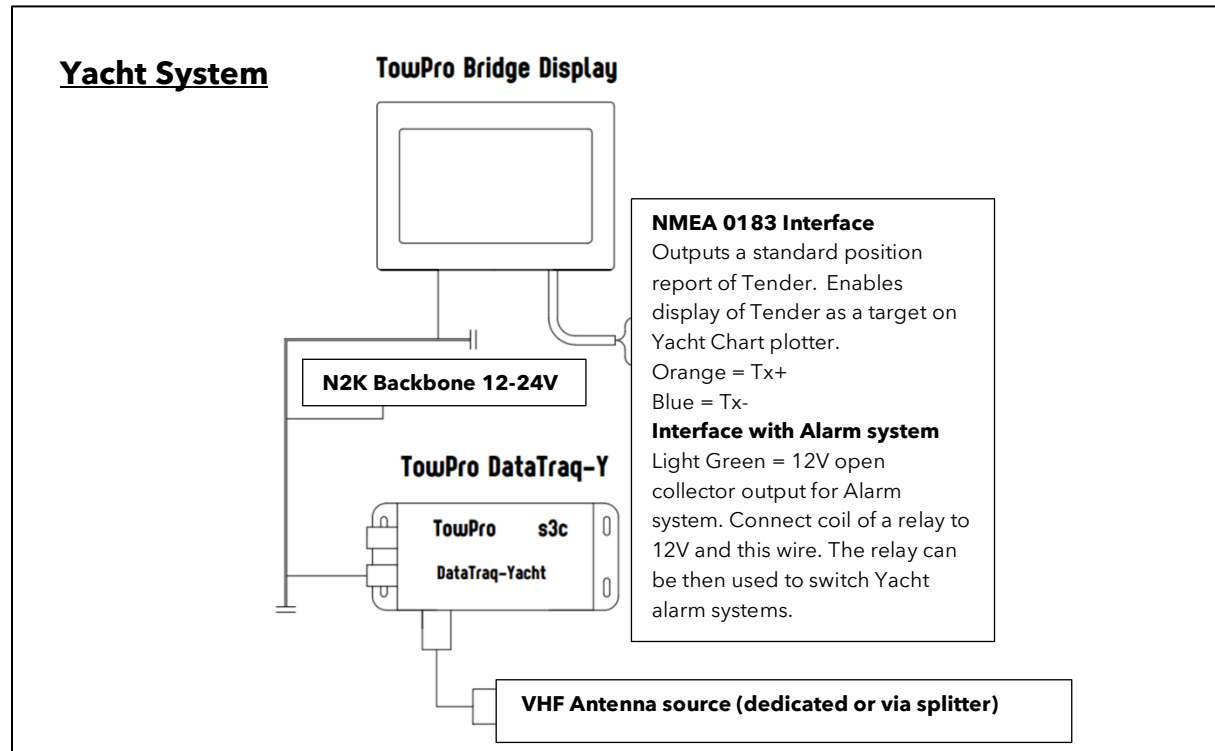
2no. LED Status lights

### **Customer required equipment**

Other equipment required for installation may be part of existing electrical service circuits within both vessels.

- 1) VHF antenna on Yacht (an existing one can be used with the splitter mentioned above).
- 2) 24V/12V supply for Yacht installation and associated wiring.
- 3) 24/12V relay for interfacing with Yacht Alarms.
- 4) 24V/12V supply for Tender installation and associated wiring.
- 5) Common consumables (connectors, cable ties etc.).

## Section 2 - TowPro Yacht and Tender installation layout



To enable the Mode Switch to operate the Mode button on the TowPro Processor must be disabled. This is done by holding the Mode button on the TowPro processor for 5 seconds when you see it will change colour. The system is supplied with the Mode Switch enabled.

## Section 3 - Installing TowPro

### 3.1 - Installing TowPro on the Yacht

1. Connect the TowPro Bridge Display and the DataTraQ-Y to a dedicated N2K backbone
  - It is essential that no other equipment is connected to this backbone
2. Connect the DataTraQ to a VHF antenna
  - DataTraQ on the yacht is only a receiver, it should be connected to a VHF antenna or via the splitter.
3. Provide 12-24VDC power to backbone, protected at 2A.

### 3.2 - Installing TowPro Contained on the Tender

The TowPro Contained system was introduced to expedite installation for situations where space was not a critical issue.

The single TowPro Case is linked to the electrical hub of the tender (usually behind the console) via a 7 core cable. The other connection is to the VHF antenna, usually installed on the T-Top.

Pump 1	Connect to Pump 12V Switch Line on Tender (optional)
Pump 2	Connect to Pump 12V Switch Line on Tender (optional)
Indicator 1	Connects to Console Indicator LED (optional)
Mode Switch	Connects to Console Switch (optional)
NUC output	Connects to positive of NUC lights (optional)
Supply 12V	Fused supply to unit (2A or less)
Supply 0V	Supply to unit

This unit is not intended for all aluminium tenders as its GPS/Iridium antenna is integral.

The TowPro Processor is used to configure the system. During start-up, users need to be aware of the system's status. They can either check it using the screen, the indicator LEDs on the side of the TowPro Case or using the console indicator light outputs (if fitted).

The unit should have a secure power source to ensure it will continue broadcasting AIS and Iridium safety information.

## Section 4 - Quick Guide to Configuration

The TowPro Bridge Display on the yacht, and the TowPro Processor on the tender both require configuration.

### Configuring TowPro Bridge Display

There are two stages in configuring the Bridge Display:

1. Input Settings
2. Set-up Bridge Alerts

Both of these are accessed:

- click on the “Config” icon on the main TowPro screen
- click on SETTINGS in the CONFIG MENU screen
- takes you to SETTINGS MENU screen



1. **Input Settings** by clicking on the following:

Short Distance	toggles between displaying tow distance in meters or feet
Tender MMSI	enter this MMSI
Yacht MMSI	enter this MMSI
Data Timeout	Do NOT change from default 90 secs
Optionally change main TowPro screen layouts, and/or toggle the key beep	

then “swipe up” to see and click on “Alerts” to take you to “ALERT SETUP MENU”

### 2. Set-up Bridge Alerts

- click on “Add New Alert”
- scroll left and right to select the variable name
- scroll left and right to decrease or increase the threshold value
- scroll left and right to select the condition under which the Alert is triggered
- swipe right to complete adding the new alert

This new alert should now appear in the list


- Click on  to edit
- Click on  to delete

When the Bridge Alerts are all correctly set, swipe right 3x to return to main TowPro screen.

Configuration of the Bridge Display is now complete

## Configuring TowPro Processor

The TowPro processor is configured via the "SETTINGS MENU":

- Press 
- Key 'Down' to "Settings"
- Press 'OK' to enter "SETTINGS MENU"

**Input settings** as follows to configure:

Bleep	toggles key beep ON and OFF
Yacht MMSI	enter this MMSI (see <i>Installation Preparation</i> tables)
Tender MMSI	enter this MMSI (see <i>Installation Preparation</i> tables)
GPS Antenna Position	enter distances in metres
DataTraq Orientation <sup>1</sup>	enter physical orientation of installed DataTraq ( <i>must be mounted on a vertical surface</i> )
Position Timeout	Do NOT change from default 90 secs
Sleep Time	(screensaver) Normally leave 'Disabled'
Acceptable Distance	enter distance (see <i>Installation Preparation</i> tables)

**Note 1:** Selecting 'DataTraq Orientation' causes the DataTraq to auto-calibrate list and trim. This should only be done when:

1. DataTraq is installed in its final location
2. The tender is at neutral list and trim

Press 'Back' 2x to return to the main TowPro Processor display.

## Status LEDs

In addition to the Mode Switch, these LEDs allow the user to check the status of the TowPro without looking at the TowPro Processor.

No LEDs Lit	TowPro Waiting
Blue LED Lit	TowPro Monitoring Mode
Yellow LED Lit	TowPro Tow Mode
Both LEDs Lit	Problem, TowPro Adrift, VHF Timeout in Towing Mode

## Configuring TowPro - An Overview

Both the Bridge Display and the tender Processor must be configured before use:

- the Bridge Display is a touch screen:
  - tap on items to select, swipe right to go back
- the TowPro Processor has 5 buttons:
  - "soft keys" to access and navigate menus, and to enter settings

You must:

1. enter the correct MMSIs for the yacht and tender on *both* the Bridge Display and tender TowPro Processor
2. set the orientation of the DataTraq unit and calibrate via the TowPro Processor
3. set the correct maximum Acceptable Distance on the TowPro Processor.

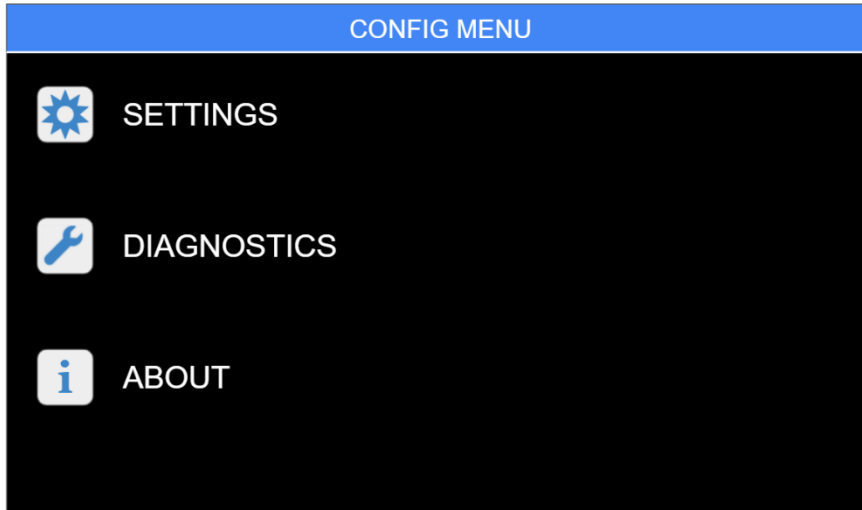
**You must** review and set up bridge alerts on the Bridge Display.

**We recommend** you review all the settings on each unit. Each yacht is different, and the settings which can best help you protect your tow are different too.

## Section 5 - Configuring the Bridge Display

### 5.1 - Config Menu

Tap the "cog" icon in the top right to access the CONFIG MENU. To leave this menu and return to the normal display, swipe 'right'.



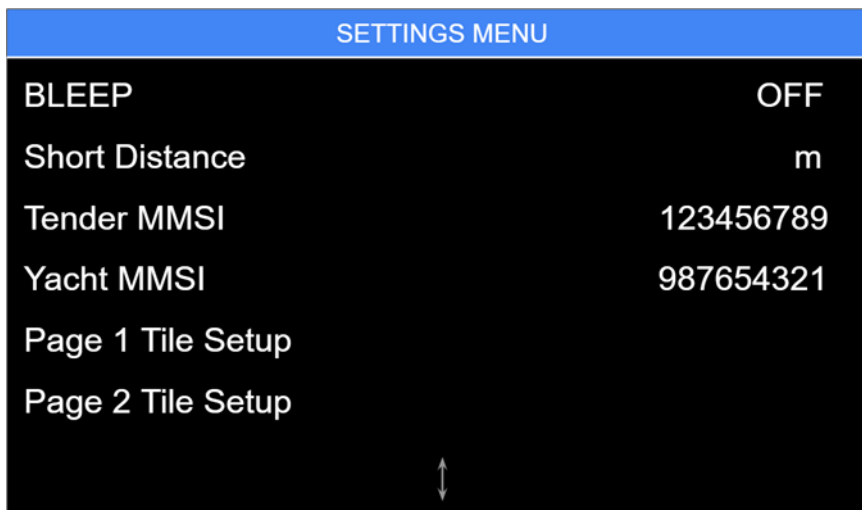
**Settings:** Tap to access user SETTINGS MENU, swipe 'right' to return to the CONFIG MENU.

**Diagnostics & About:** These options are used when troubleshooting with TSM Support, and should not otherwise be accessed by users

### 5.2 - Settings Menu

The SETTINGS MENU is used primarily to:

1. Enter the MMSIs for the yacht and tender
2. Personalise the tile layout on the display
3. Set specific Bridge Alerts appropriate for yacht operations and the type of tender





[Note that the menu is longer than can be displayed on the screen, swipe 'up' and 'down' to view the entire menu.]

A full list of settings is below. When initially configuring the system, we advise you check through all of these, but at minimum you **must** enter the Tender and Yacht MMSIs:

- **BLEEP:** Tap to toggle the display's bleep on or off
- **Short Distance:** Tap to toggle tow length between feet and meters
- **Tender MMSI:** Tap to enter the tender's MMSI. Swipe right to return to SETTINGS if tapped accidentally
- **Yacht MMSI:** Tap to enter the yacht's MMSI. Swipe right to return to SETTINGS if tapped accidentally
- **Page 1 Tiles Setup:** Tap to configure which safety indicators are shown on the display in indicator page 1 (User 2.1). Swipe up or down to scroll through the menu, and tap ← or → to select which tile should be in each position. Swipe right to return to SETTINGS once the desired layout is set
- **Page 2 Tiles Setup:** Tap to configure which safety indicators are shown on the display in indicator page 2 (User 2.1). Swipe up or down to scroll through the menu, and tap ← or → to select which tile should be in each position. Swipe right to return to SETTINGS once the desired layout is set
- **Bridge Alerts:** Tap to access ALERT SETUP MENU and set up bridge alerts. See below for full details
- **Data Time-Out: [not usually changed]** Set the period after which the system should trigger a Data Lost alarm if it does not receive an update from the tender while towing (User 2.6). The default is 90s and the minimum is 60s. Tap ← or → to decrease or increase the period, holding to quickly decrease/increase

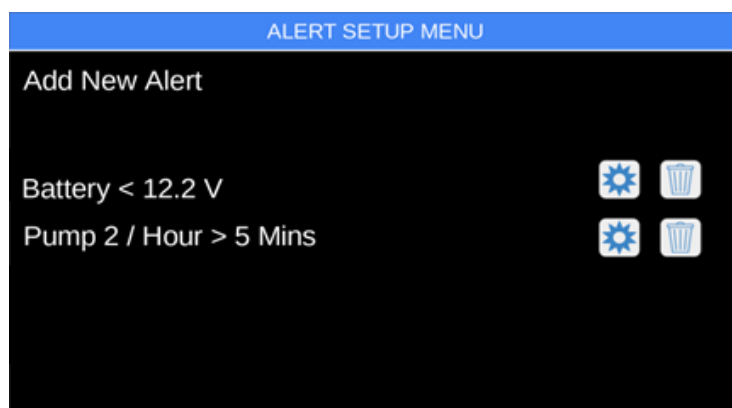
## 5.3 – Alert Setup Menu

Users can define conditions in which the system should trigger a bridge alert, based on a safety indicator. Alerts could be that the tender's battery voltage has dropped below a certain threshold, or that a bilge pump has been running a certain proportion of the last hour, for example. Bridge alerts are only triggered **while towing** not while in Standby or Ready.

### Setting Bridge Alerts

Any number of bridge alerts can be specified by the user via the ALERT SETUP menu:

- Tap "Add New Alert" to create a new alert, or tap the cog next to an alert to edit an existing alert.
- To delete an alert, tap the rubbish bin next to it.
- Once you have finished setting alerts, swipe right to return to SETTINGS.



There are three items to set for each alert:

- **Safety Indicator:** Select the desired indicator with ← and →
- **Threshold:** Set the threshold the alert should trigger at. A table of what each threshold represents can be found below. Tap ← and → to adjust the value, holding them to quickly decrease / increase
- **Condition:** Select whether the alert should trigger when the indicator is greater than, equal to or greater than, less than, or equal to or less than the threshold

Safety Indicator	Threshold Meaning
Pump 1 (2) / Hour	The number of minutes in the preceding hour that the automatic bilge pump has been running
Battery	The voltage output of the tender's battery
List or Trim Angle	The mean value for the tender over the previous minute
Rolling or Pitching Angle	The difference between maximum and minimum value over the previous minute
Surging Speed	The difference between maximum and minimum tender SOG over the previous minute
Yawing Angle	The difference between maximum and minimum tender COG over the previous minute
Tow Length	The current length of the tow, ie. distance to tender

Your TowPro system is shipped with the following alerts set by default:

- Pump 1 / Hour  $\geq$  5 mins
- Pump 2 / Hour  $\geq$  5 mins
- Battery  $\leq$  12.3

## Section 6 - Configuring the Tender Processor

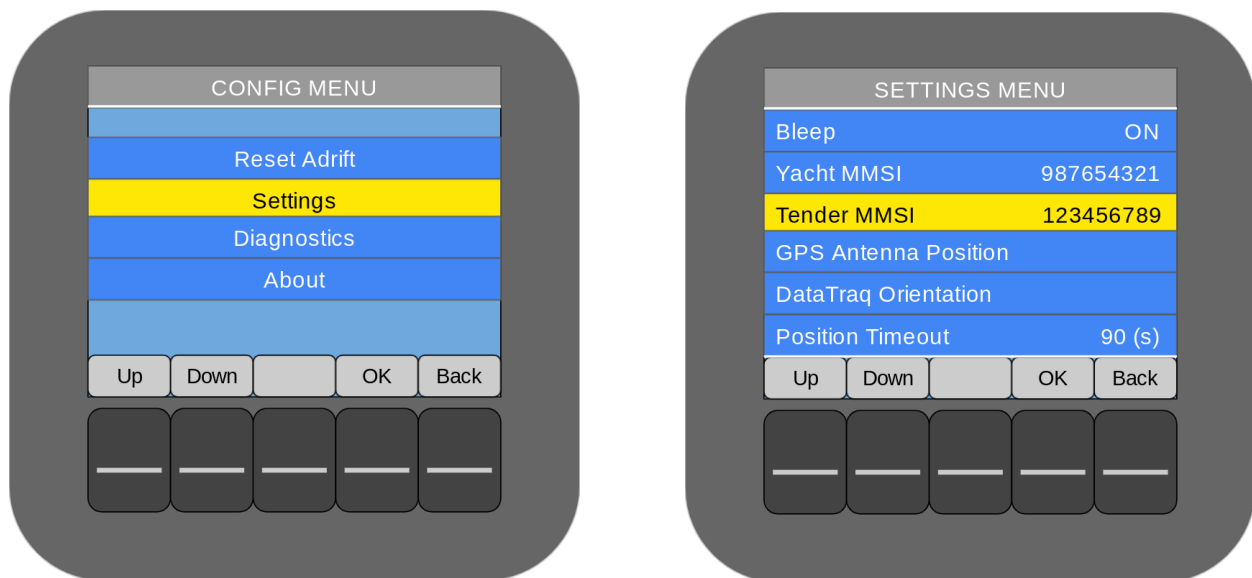
### 6.1 - Config Menu

The tender processor is configured via the CONFIG menu, accessed by holding down the right button for 3 seconds.

**Reset Adrift:** Used to take the system out of adrift mode and back to normal after recovery. Restarting the system has the same effect

**Settings:** Access system settings (see below)

**Diagnostics & About:** These options are used when troubleshooting with TSM Support, and should not otherwise be accessed by users



### 6.2 - Settings Menu

A full list of SETTINGS is below. When initially configuring the system, we advise you check through all of these, but at minimum you **must** enter the Tender and Yacht MMSIs and review the Acceptable Distance:

- **Bleep:** Toggle the display's bleep on or off
- **Yacht MMSI:** Set the tender's MMSI. Press okay, then use ← and → to move between digits, and - and + to adjust
- **Tender MMSI:** Set the yacht's MMSI. Press okay, use ← and → to move between digits, and - and + to adjust
- **GPS Antenna Position:** Used to correctly offset the position of the antenna on the tender
- **DataTraq Orientation:** Used to correctly orient and calibrate the DataTraq unit. Full details below
- **Position Timeout:** Period after which the tender moves to "Possibly Adrift" if it doesn't receive positions from either its own GPS, or the yacht's AIS

- **Sleep Time:** Period after which the screen turns off, to save power (the system stays on, and the display can be woken with any button)
- **Acceptable Distance:** The distance at which the tender should move to adrift mode. Use - and + to adjust

### 6.3 – DataTraq Orientation

The DataTraq unit must be mounted correctly in a permitted orientation (see the Installer manual).

In the SETTINGS menu select 'DataTraq Orientation'

- Select the correct orientation using the buttons 'A', 'B', 'C', 'D' - your selection will be highlighted with a dotted yellow square
- Press 'OK' to enter
- This will program the correct orientation AND cause the DataTraq to calibrate itself
- [Alternatively - to exit without programming, simply press 'OK' without having pressed 'A', 'B', 'C', 'D' button]

To confirm successful calibration, select 'DataTraq Orientation' a second time:

- Your selected orientation should now be highlighted with a solid green square
- Exit using OK without having pressed a button

A long beep from the tender processor after 10 seconds indicates that orientation / calibration has failed, and you should repeat the process.

## Section 7 - Troubleshooting

Issue	Cause	Remedial Action.
"TowPro Waiting" constantly displayed on TowPro Tender Processor. GPS position age constantly increases and never stops.	No reception of Yacht AIS transmissions	Check MMSI number settings for both vessels on TowPro Tender processor are set correctly.
		Ensure drop cables are connected to the correct ports on the back of the TowPro Processor.
		Ensure VHF antenna connections are sound.
		Ensure AIS on yacht is broadcasting.
"TowPro Waiting" constantly displayed on TowPro Tender processor. GPS position age increases to approximately 20 seconds and then resets to zero.	No GPS reception on Tender DataTraQ-T	Check GPS antenna connection on TowPro DataTraQ-T is sound.
"Tender Possibly Adrift" displayed on TowPro Tender Processor. GPS position age increases to approximately 20 seconds and then resets to zero.	Intermittent GPS reception on Tender DataTraQ-T	Check GPS antenna connection on TowPro DataTraQ-T is sound.
"Tender Possibly Adrift" displayed on TowPro Tender Processor. GPS position age constantly set at 00:00.	Intermittent VHF reception of Yacht AIS transmissions	Ensure VHF antenna connections are sound.
Nothing reported on TowPro Bridge display.	No DataTraQ-Y reception of Data-T transmissions/	Check MMSI number settings on TowPro Tender processor are correct.
	Poor GPS reception of TowPro DataTraQ-T	Check GPS antenna connection on DataTraQ-T unit. Ensure GPS reception by checking GPS position age displayed on the TowPro Tender Processor is 00:00.
Tender Position not reported on TowPro Bridge display, but Battery, Bilge Levels are.	TowPro DataTraQ-T not receiving AIS from yacht.	Check AIS on yacht is broadcasting. Ensure VHF antenna connections are sound.