



www.vdo-marine.com

OceanLink - 7" TFT display

Operating instruction
v. 1.0



VDO

Contents

Getting started	48
Data pages	51
Data page configuration	53
System settings	57
Alarm management	60
Sensor configuration	64
MediaBox use	73
VDO Marine Configuration Tool use	77
Troubleshooting	78
Technical specifications	79
Spare parts, sensors and accessories	81
Appendix	82

Updated and multilingual instructions available

These instructions concern software version 0.07.
The version is displayed when turned on.

These instructions are always updated and available in several languages at
www.vdo-marine.com.

Customer service and warranty

In the event of malfunction, fault or for information on the warranty, contact a VDO
partner.

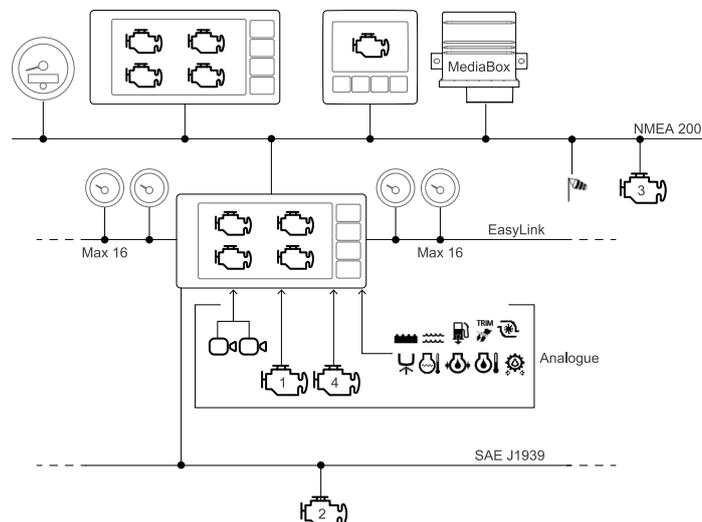
To find a partner, visit www.vdo-partner.com.

Getting started

Description

OceanLink Master 7" is a multifunction display that lets you monitor engines and related sensor parameters. Up to four engines can be connected to the display. The integrated NMEA 2000 gateway lets you acquire engine data also via analog signals or SAE J1939, to then convert and distribute them on NMEA 2000 network. The display manages up to six resistive sensors, three voltage sensors and one digital alarm. All data are also distributed on two EasyLink channels to a maximum of 16 52mm OceanLink gauges per channel.

NMEA 2000 connectivity lets you view navigation data from other devices on the network, such as wind, compass, GPS, speed and depth data. Following is an example of an application with two displays, one used as a gateway and the other as a NMEA 2000 monitor.



Operations

OceanLink Display 7" TFT is a versatile device. It lets you control all connected engines in a single monitoring point and at the same time. The motor whose data is displayed is selected during data page configuration.

Received signal priority

If the same data is available from more than one source for the same engine, the received signal priority is the following:

1. Analog input
2. SAE J1939
3. NMEA 2000

On/Off

The on/off mode depends on the connection made during installation.

The VDO logo and software version followed by a security message appear when turned on followed by the last data page viewed before turned off.

Page Calibration wizard

Page **Calibration wizard** appears when first turned on after reset and every time turned on until sensors are calibrated.

The display prompts you to configure sensors. Choose **Yes**, to open menu **SENSOR CONFIG**. Choose **No**, to display the first default data page and sensors can be configured later.

Button functions

Button	Function
	Briefly press: <ul style="list-style-type: none"> • Open the menu • Return to the previous menu Hold down: <ul style="list-style-type: none"> • From any point to return to the data pages
 	Briefly press: <ul style="list-style-type: none"> • Scroll pages/options Pressed simultaneously: <ul style="list-style-type: none"> • Set the display and connected 52 mm gauges brightness
	Briefly press: <ul style="list-style-type: none"> • Open a sub-menu • Confirm the selection Hold down: <ul style="list-style-type: none"> • In the MediaBox page to save the selected station radio frequency
	Briefly press: <ul style="list-style-type: none"> • View the data page linked to the button Hold down: <ul style="list-style-type: none"> • Link the button to the displayed data page

Configure the display

Following are the steps for initial configuration:

1. Connect any sensors to analog inputs.
2. When turned on, read the security message, then select **Yes** to open the menu **SENSOR CONFIG** and configure sensors (see "Sensor configuration" on page 64).
3. Set up general device operations (see "System settings" on page 57).
4. Add/remove data pages selecting the best layout and data to be viewed (see "Data page configuration" on page 53).

5. If a page layout with bar graphs is used, customize the minimum and maximum intervals (**Bargraph settings**, see "System settings" on page 57).
6. Enable/disable local input and NMEA 2000 and J1939 alarms (see "Alarm management" on page 60).

Data pages

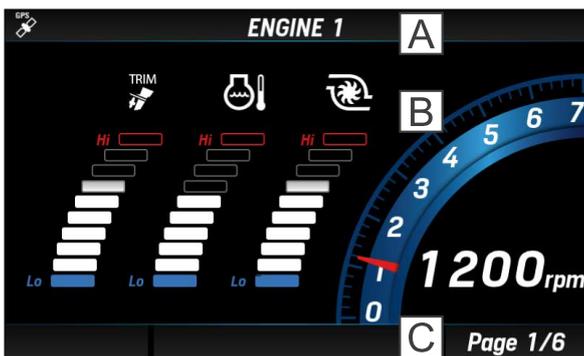
What are data pages

Data pages display data received from the various sources. There can be up to 10 data pages. Four data pages and a MediaBox page are displayed by default. The **ALARMS** page appears after data pages if alarms are triggered.

Possible operations

To scroll pages, press **▼** or **▲** or scroll the touch screen horizontally with your finger. To add/delete/edit pages, see "Data page configuration" on page 53.

Shared features



Part	Description
A	According to the type of layout: monitored engine ID or parameter name. GPS signal and time (if available).
B	Data page content
C	Data page progress bar

Managed data

NOTICE: to display the correct data, configure and calibrate the sensors properly (see "Sensor configuration" on page 64).

Icon	Information	Input signal			Output signal		Unit of measure
		NMEA 2000	SAE J1939	Analog sensor	NMEA 2000	EasyLink	
	Engine revolutions	x	x	x	x	x	rpm
	Trim	x	-	x	x	x	%
	Boost pressure	x	x	x	x	x	bar / psi / kPa

Icon	Information	Input signal			Output signal		Unit of measure
		NMEA 2000	SAE J1939	Analog sensor	NMEA 2000	EasyLink	
	Engine coolant temperature	x	x	x	x	x	°C / °F
	Battery voltage	x	x	x	x	x	V
	Fuel consumption	x	-	-	-	-	gal/h or l/h
	Engine oil temperature	x	x	x	x	x	°C / °F
	Engine oil pressure	x	x	x	x	x	bar / psi / kPa
	Total engine operating hours	x	x	x	x	-	h
	Rudder angle	x	-	x	x	x	°S (starboard) / °P (port)
	Depth below keel	x	-	-	-	-	m / ft
	Fuel level	x	x	x	x	x	%
	Fresh water level	x	-	x	x	x	%
	Waste water level	x	-	-	x	x	%
	Sea water temperature	x	-	-	-	-	°C / °F
	Course over ground (COG)	x	-	-	-	-	°T (true North)
	True heading	x	-	-	x	-	°
AWA	Apparent wind angle (AWA)	x	-	-	x	-	°
	Apparent wind speed (AWS)	x	-	-	x	-	km/h
	Speed through water (STW)	x	-	-	-	-	mph / kn or km/h
	Speed over ground (SOG)	x	-	-	-	-	mph / kn or km/h



Data page configuration

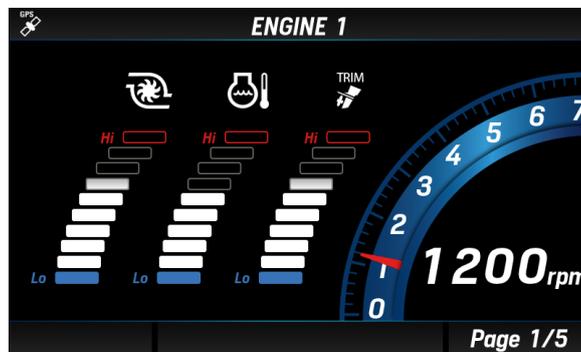
Configuration via layout

Each display page can be customized using five editable layouts, a default layout for MediaBox commands and a default layout for video inputs.

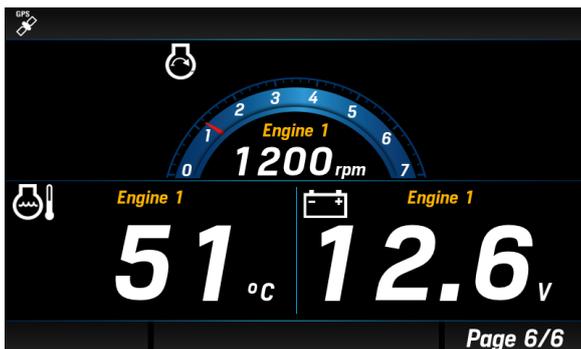
Layout description



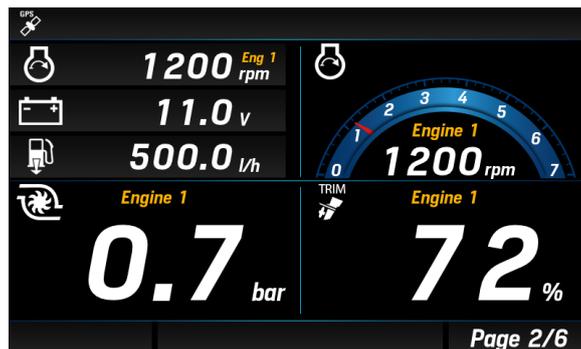
Layout **SINGLE**: single box. The data value is numeric or displayed by a gauge.



Layout **GRAPH**: with three bar graphs for the three data selected from Boost pressure, Trim, Engine coolant temperature, Battery voltage, Fuel consumption. One engine revolution gauge not editable.



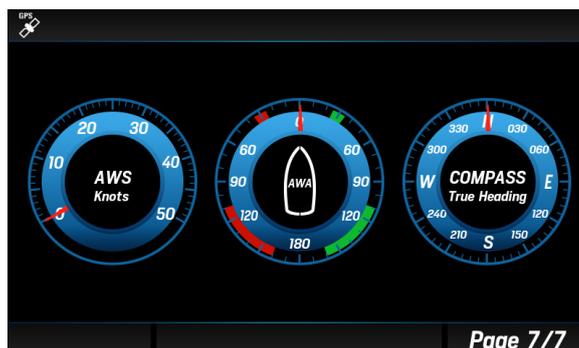
Layout **TRIPLE**: three boxes, from three data to nine data.



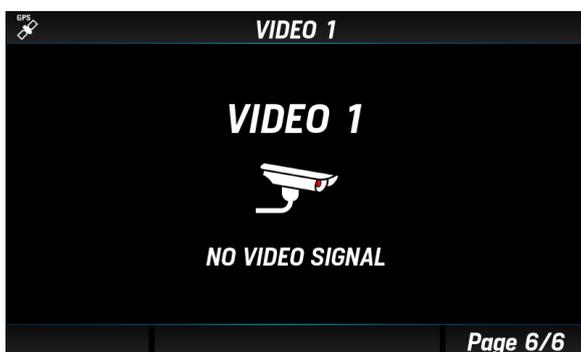
Layout **QUAD**: four boxes, from four data to twelve data.



Layout **RADIO**: MediaBox page. See "MediaBox use" on page 73.



Layout **NAV DASH**: two, three or eight editable analog gauge layout (see "Viewable data in Nav Dash layout" below)



Layout **VIDEO**: video input display.

Viewable data in Nav Dash layout

Gauges	Viewable data
Nav Dash 1 Nav Dash 2 Nav Dash 3 (large)	<ul style="list-style-type: none"> • Engine revolutions • Depth below transducer • Rudder angle • Apparent wind angle (AWA) • Apparent wind speed (AWS) • True heading • Speed through water (STW) • Speed over ground (SOG)
Nav Dash 3 (small)	<ul style="list-style-type: none"> • Engine revolutions • Fuel level • Fresh water level • Waste water level • Trim • Rudder angle • Battery voltage

Add a page with box layout

Following is an example of how to add a page to view five data (two in single boxes and three in a triple box).

Note: touch screen functions are disabled in configuration mode. To scroll pages and layouts, use the  or  buttons.

1. Press the **MENU** button and select **SCREEN CONFIG**.
2. Scroll until you see an empty page ("**NO SCREEN**") and select it.
3. Scroll and select the page layout **TRIPLE**: the layout opens with the first box green.
4. Press the **ENTER** button and select the engine whose parameters are to be displayed: the box layouts appear.
5. Select the layout **SINGLE**: the page layout reappears with the box red.
6. Scroll and select the required data: the box turns green.
7. Place the cursor on another box and select the engine whose parameters are to be displayed and then the box layout **TRIPLE**: the page layout reappears with the box divided in three sectors.
8. Select the sector to be set: the sector border turns red.
9. Scroll and select the required data: the sector border turns green.
10. Press **MENU** to select the box: the box border turns green.
11. Scroll and select the last box and repeat steps 4-5-6.
12. Hold down the **MENU** button to save settings and return to the data page.

Add a page with a bar graph layout

1. Press the **MENU** button and select **SCREEN CONFIG**.
2. Scroll until you see an empty page ("**NO SCREEN**") and select it.
3. Scroll and select the page layout **GRAPH**.
4. Select the engine whose parameters are to be displayed: the layout opens with the first bar graph green.
5. Press the **ENTER** button: the bar graph turns red.
6. Scroll and select the selected data: the bar graph turns green.
7. Scroll and place the cursor on the next bar graph and repeat points 5 and 6.
8. Scroll and place the cursor on the last bar graph and repeat points 5 and 6.
9. Hold down the **MENU** button to save settings and return to the data page.

Add a page with an analog gauge layout

An example of how to add a page with a **NAV DASH** three gauge layout is provided below.

1. Press the **MENU** button and select **SCREEN CONFIG**.
2. Scroll until you see an empty page ("**NO SCREEN**") and select it.
3. Scroll and select the page layout **Nav Dash 2**: the layout opens and the center of the first gauge is green.
4. Press **ENTER**: the gauge center turns red.
5. Scroll and select the selected data: the gauge center turns green.
6. Scroll and place the cursor on the next gauge and repeat points 4 and 5.
7. Scroll and place the cursor on the last gauge and repeat points 4 and 5.
8. Hold down the **MENU** button to save settings and return to the data page.

Delete a page

1. Press the **MENU** button and select **SCREEN CONFIG**.
2. Scroll until you see the page to be deleted and select it.

3. Scroll and select the page layout **REMOVE**: the layout **NO SCREEN** appears in correspondence to the page.
4. Hold down the **MENU** button to save settings and return to the data page.

Note: the deleted page disappears. To add it again, see examples "Add a page with box layout" on page 54, "Add a page with a bar graph layout" on the previous page and "Add a page with an analog gauge layout" on the previous page.

Apply a different layout to a page

1. Press the **MENU** button and select **SCREEN CONFIG**.
2. Scroll until you see the page to be edited and select it.
3. Scroll and select the new layout: the page opens.
4. Select the engine(s) whose data is to be displayed, the box layout and data to be displayed.
5. Hold down the **MENU** button to save settings and return to the data page.

Add a page to favorites

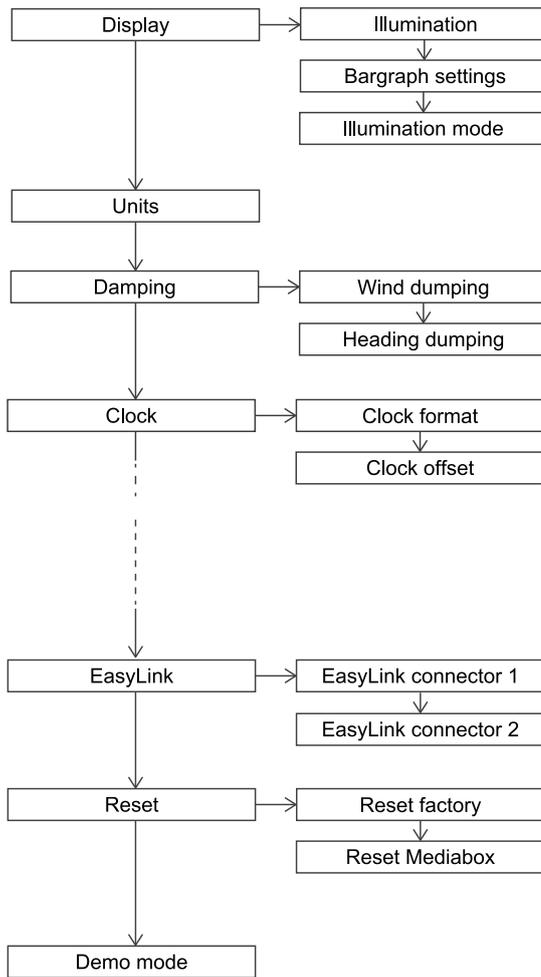
1. Scroll data pages until the page you want is displayed.
2. Hold down the touch screen button to be linked to the page for 3 seconds: the **SCREEN STORED** screen appears.



System settings

Menu layout SYSTEM CONFIG

Note*: the units of measure depend on parameter **SYSTEM CONFIG > Units**



Menu description SYSTEM CONFIG

Note: the underlined value/command is the default value/command. The units of measure depend on parameter **SYSTEM CONFIG > Units**

Setting	Description	Possible values/commands
Display > Illumination	Display and connected 52 mm gauges brightness	<u>1</u> -7
Display > Bargraph settings	Bargraph interval (values Hi and Lo)	<ul style="list-style-type: none"> • Boost press: 0–13 bar (default = 0-1) • Engine temp 0–300 °C (default = 0–200) • Battery voltage 8–32 V (default = 10-16) • Fuel flow 0–800 l/h (default = 0-150)
Display > Illumination mode	Color and brightness profile	<ul style="list-style-type: none"> • Blue day: blue gauge background, white characters, 7 brightness • Blue night: blue gauge background, red characters, 2 brightness • Amber day: amber gauge background, white characters, 7 brightness • Amber night: amber gauge background, red characters, 2 brightness
Units	Units of measure for the values displayed	<ul style="list-style-type: none"> • Metric • Imperial • Nautical • Custom: fully customizable See "Unit of measure" on the facing page.
Damping > Wind damping/ Heading damping	Data damping, see "Damping (Damping)" on the facing page	<ul style="list-style-type: none"> • No • Low • Medium • High
Clock > Clock format	Time format	<ul style="list-style-type: none"> • <u>12</u> h • 24 h
Clock > Clock offset	Time zone	From -12 to +12 h (<u>0</u> h)
EasyLink > EasyLink connector 1/EasyLink connector 2	Engines and tanks whose data is displayed on EasyLink gauges	<ul style="list-style-type: none"> • Show engine data from: Engine <u>1</u>–4 • Show fuel from: Tank <u>1</u>–4 • Show fresh water from: Tank <u>1</u>–4 • Show waste water from: Tank <u>1</u>–4
Reset > Reset factory	Restore all settings including MediaBox to factory settings	<ul style="list-style-type: none"> • Yes • No
Reset > Reset MediaBox	Available only with MediaBox connected. Only restore MediaBox settings to factory settings	<ul style="list-style-type: none"> • Yes • No
Demo mode	Device operating simulation. Note: <i>simulation mode remains on even after the device is turned off.</i>	<ul style="list-style-type: none"> • On: the device displays random values. Data is also transmitted to connected 52 mm gauges. • Off: turn off simulation mode

Unit of measure

Data	Metric	Imperial	Nautical	Custom
Boat speed	kmh	mph	kn	kmh, mph, kn
Wind speed	kmh	kn	kn	kmh, kn, m/s, bft
Depth	m	ft	ft	m, ft
Pressure	bar	psi	psi	bar, psi, kPa
Fuel	l	gal	gal	l, gal
Fuel flow	l/h	gph	gph	l/h, gph
Temperature	°C	°F	°F	°C, °F

Damping (Damping)

The function makes the displayed values more stable. It is available for wind and compass data.

Example

*With medium-strong wind, to prevent the wind speed value from quickly and suddenly changing, set damping to **High** or **Medium**. On the contrary, with slight or no wind, set **No** or **Low** for a reactive indication.*

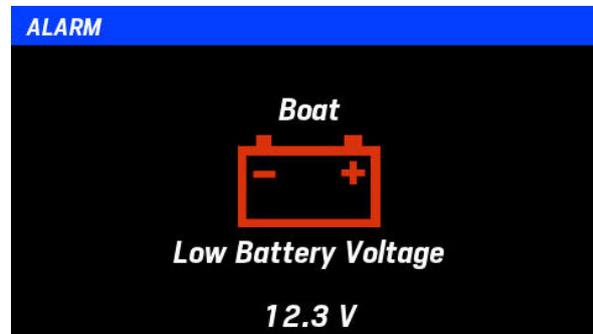


Alarm management

Signal mode

The displayed alarms are read by the NMEA 2000/SAE J1939 network or are processed by the display comparing the data received from the network or analog signals to the thresholds set. Engine alarms concern all engines on the network.

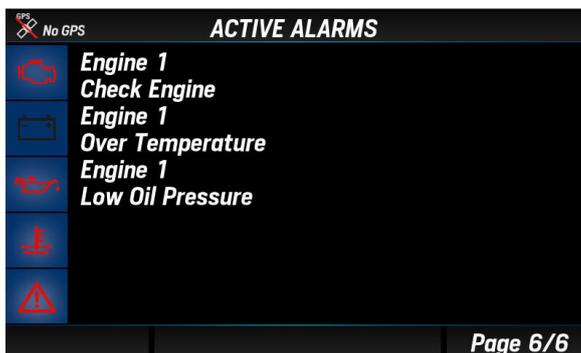
When an alarm is triggered, the **Alarm** page appears and then disappears after the alarm is acknowledged. See "Acknowledge an alarm" on the next page.



All active alarms appear in the **Active alarms** page that is added to the other data pages.

Note: an alarm configured as disabled is ignored and will not appear in the alarm list. The alarm signal is inhibited during device configuration.

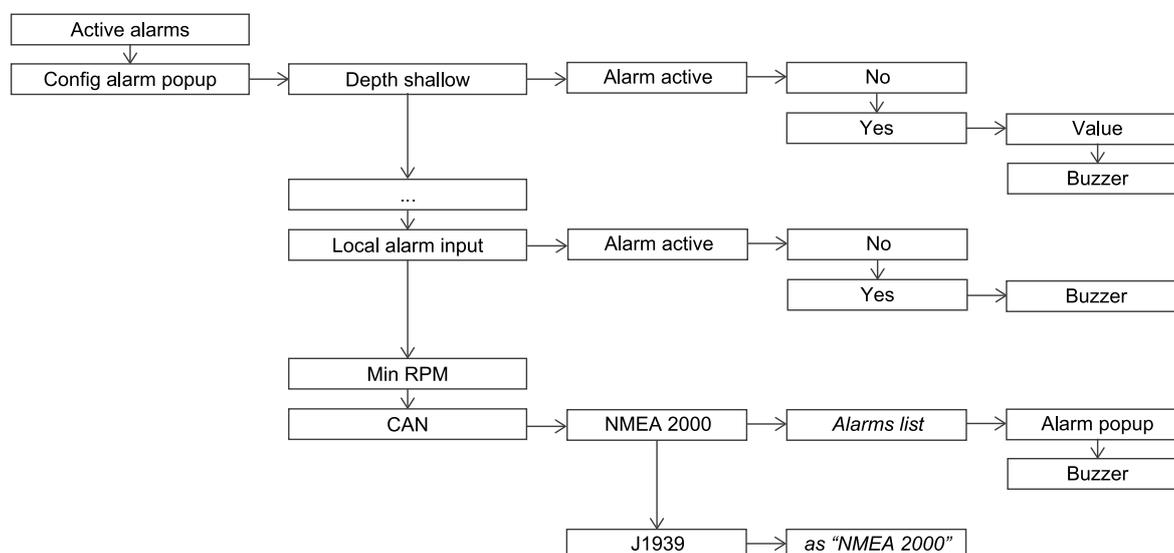
Active alarm page signals



Red icon: alarm.

-  engine alarms
-  battery alarms
-  oil alarms
-  temperature alarms
-  generic alarms

Menu layout ALARMS



Acknowledge an alarm

When an alarm is triggered, the **Alarm** page appears and the buzzer sounds (if connected).

To acknowledge the alarm and mute the buzzer, press any button on the keyboard: the page closes and the alarm is saved in the **Active alarms** page. The alarm is displayed in the **Active alarms** page for as long as it remains active.

View the active alarm list

If at least one alarm is active, scroll the data pages or press the **MENU** button and select **ALARMS > Active alarms**: the **Active alarms** page appears. Alarms are listed from the most to the least severe.

Configure alarms from sensors

1. Press the **MENU** button and select **ALARMS > Config alarms popup**.
2. Select one of the alarms from the sensors.
3. Select **No** and select **Yes**: parameters appear.
4. If necessary, select and edit the threshold(s) and enable/disable the buzzer.

Configure alarms from NMEA 2000/SAE J1939 network

1. Press the **MENU** button and select **ALARMS > Config alarms popup**.
2. Select **CAN** and the network: the managed alarm list appears.
3. Select one of the alarms from the network.
4. If necessary, enable/disable the alarm signal in the **Alarm** window and enable/disable the buzzer.

Alarms on several displays

If there are several OceanLink displays on the NMEA 2000 network, simply configure alarms from one of the devices. Configuration is automatically transmitted to the others.

When an alarm triggers, the **Alarm** page appears on all displays. After acknowledging the alarm from one device, the page disappears on all others.

Menu description ALARMS

Alarm	Description	Possible values/commands	Default
Depth shallow	Low water minimum threshold	0–9.9 m	<u>2</u> m, buzzer Yes
Depth navigation	Maximum threshold. For example, a value near the maximum value measurable by the sensor. Safety depth minimum threshold	0 – 99.9 m 0 – 99.9 m	<u>50</u> m, buzzer No <u>5</u> m, buzzer No
Wind	Wind speed maximum threshold	0 – 99.9 km/h	39.9 km/h, buzzer No
Battery	Battery voltage minimum threshold	0 – 32.9 V	<u>10.8</u> V, buzzer Yes
Engine water temp	Water temperature maximum threshold	0 – 139 °C	<u>110</u> °C, buzzer Yes
Engine oil temp	Engine oil temperature maximum threshold	0 – 149 °C	<u>120</u> °C, buzzer Yes
Engine oil pressure	Engine oil pressure minimum threshold	0 – 9.9 bar	<u>0.5</u> bar, buzzer Yes
Fuel	Fuel level minimum threshold	0 – 99 %	<u>20</u> %, buzzer Yes
Fresh water	Fresh water minimum threshold	0 – 99 % m	<u>20</u> %, buzzer Yes
Waste water	Waste water maximum threshold	0 – 99 %	<u>80</u> %, buzzer Yes
Local alarm input	Connected digital sensor alarm (low active alarm). Refer to the <i>Installation instructions</i> .	-	-
Min RPM	Engine revolutions minimum threshold. Only values under the threshold will be considered to trigger engine alarms.	0 -990 rpm	<u>300</u> rpm
CAN	Alarm access from CAN bus (NMEA 2000 and J1939). See "Managed alarms list" on the facing page	-	-

Managed alarms list

NMEA2000 - Engine Parameters, Dynamic (PGN 127489)

- Check engine
- Over temperature
- Low oil pressure
- Low oil level
- Low fuel pressure
- Low system voltage
- Low coolant level
- Water flow
- Water in fuel
- Charge indicator
- Preheat indicator
- High boost pressure
- Rev limit exceeded
- EGR system
- Throttle position sensor
- Engine emergency stop
- Warning level 1
- Warning level 2
- Power reduction
- Maintenance needed
- Eng com error
- Sub or secondary throttle
- Neutral start protectEngine shutting down

NMEA2000 - Transmission Parameters, Dynamic (PGN 127493)

- Transm. Check transmission
- Transm. Over temp
- Transm. Low oil pressure
- Transm. Low oil level
- Transm. Sail drive

SAE J1939 - Active Diagnostic Trouble Codes (DM1)

- Engine speed
- Boost pressure
- Exhaust gas temperature
- Engine oil pressure
- Engine coolant pressure
- Engine coolant temp
- Engine oil temp
- Transmission oil press
- Transmission oil temp
- Fuel Level
- Water in fuel

Analog input

- Depth Shallow (low)
- Depth Navigation (low/high)
- Wind (low)
- Battery (low)
- Engine water temp (high)
- Engine oil temp (high)
- Engine oil pressure (high)
- Fuel (low)
- Fresh water (low)
- Waste Water (high)
- Min RPM (by value)



Sensor configuration

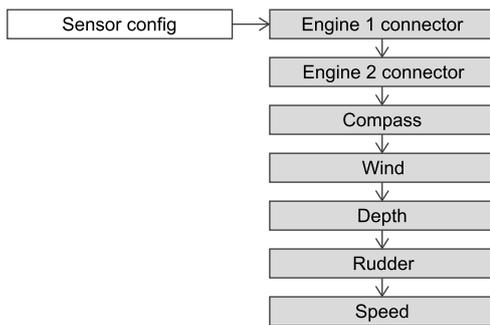
Sensor-engine link

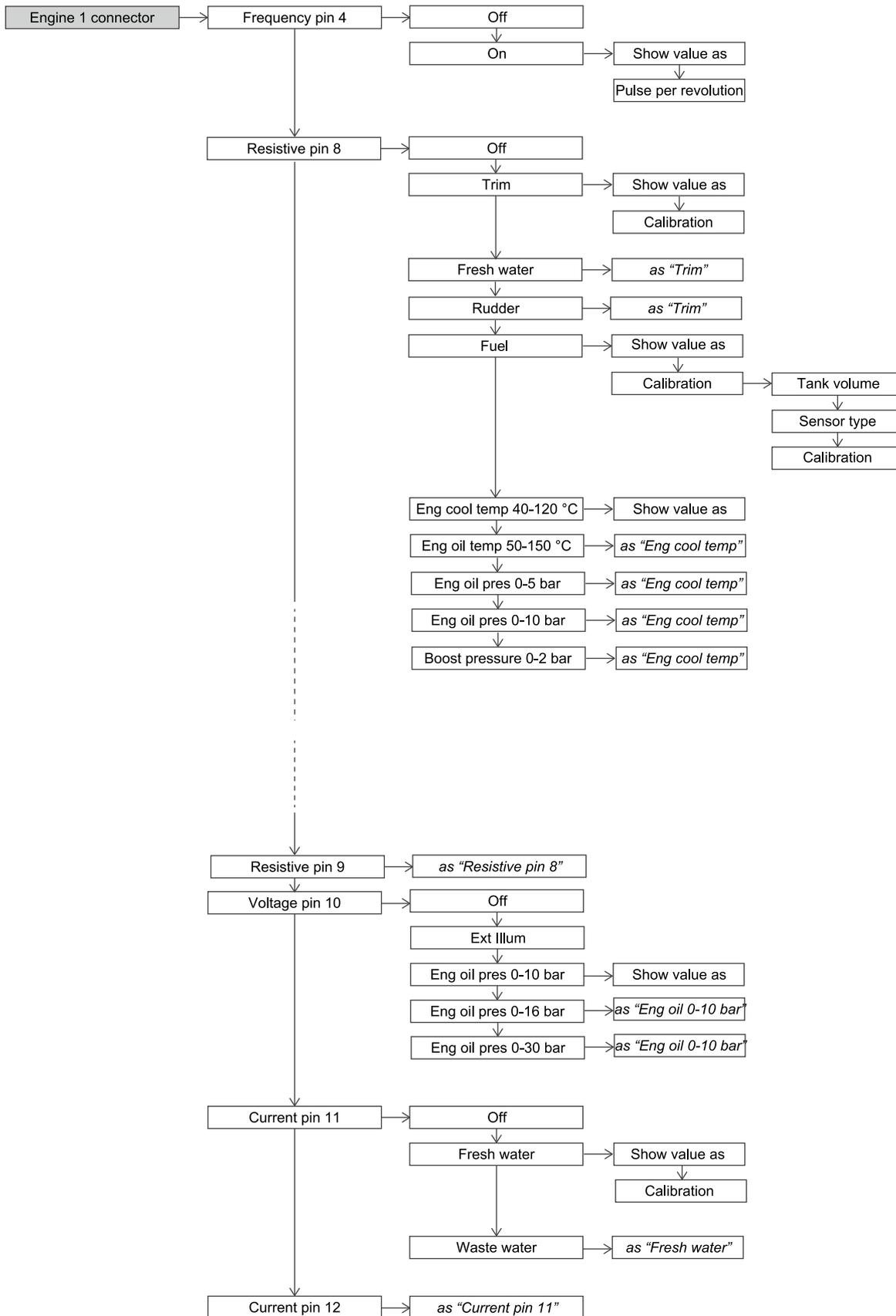
All values read by the sensors concerning engines are linked to the monitored engine before being converted and sent on the NMEA 2000 network.

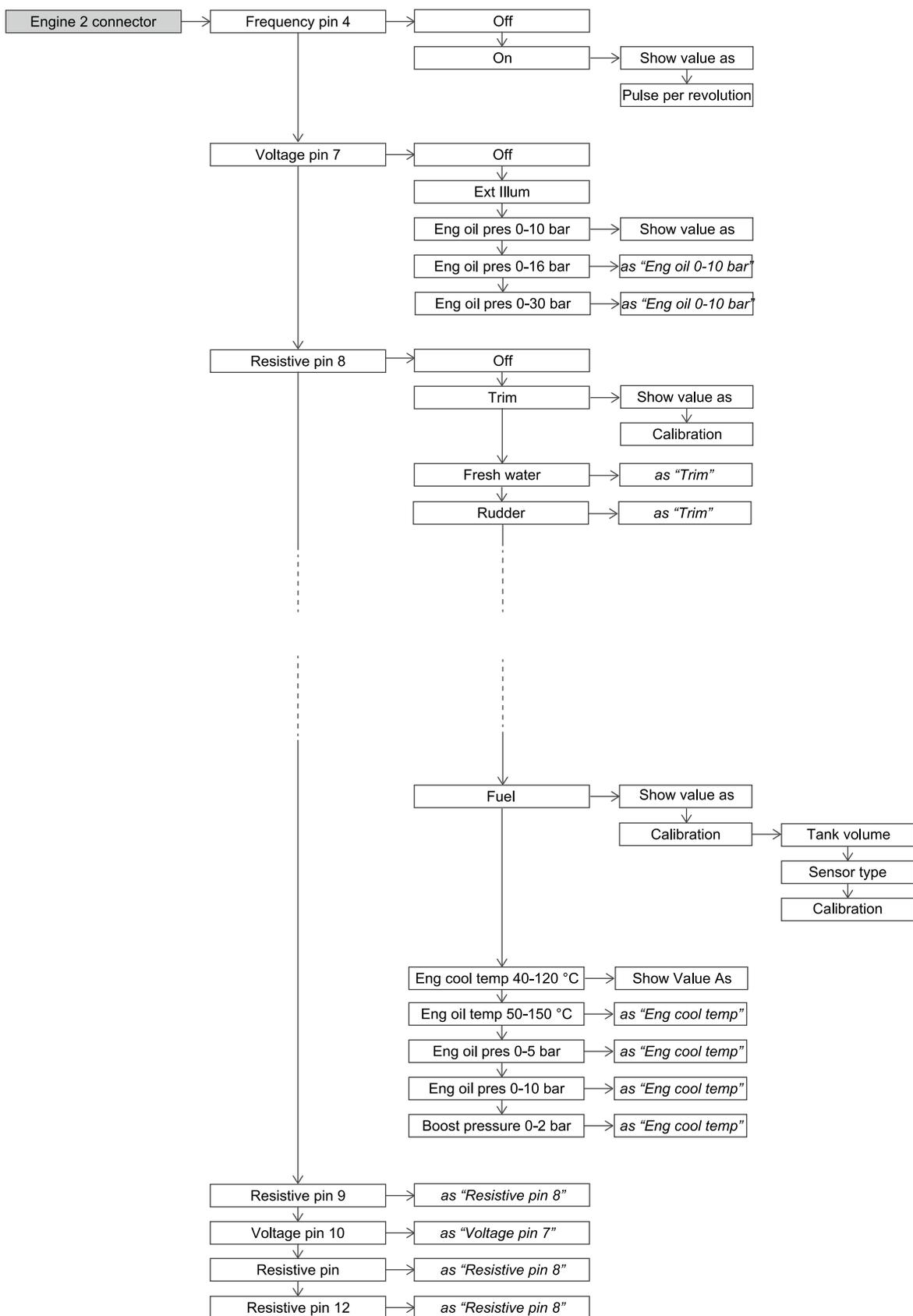
Menu layout SENSOR CONFIG

Only sensors connected to display analog inputs can be configured and/or calibrated.

Note*: the units of measure depend on parameter **SYSTEM CONFIG > Units**







When to calibrate a sensor

VDO sensors do not require calibration. The display recognizes them and applies default values. Simply declare the type and the sensor starts reading the value with good approximation.

For third party sensors or for more accurate readings, calibrate the sensor. Calibration occurs with subsequent readings (at one or three points) with a wizard.

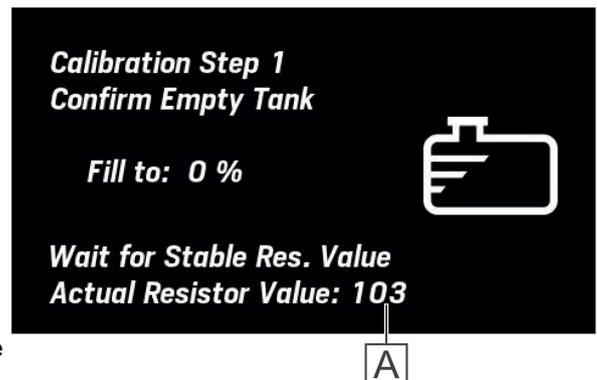
Configure a sensor without calibrating it

Following is the procedure to configure the sensors connected to resistive, voltage and current inputs without calibrating them:

1. Press the **MENU** button and select **SENSOR CONFIG**.
2. Use **Engine 1 connector** or **Engine 2 connector** to select the connector to which the sensor is connected.
3. Select the input connected to the sensor (i.e. **Resistive pin 8**): "Off" appears to indicate that no sensor is linked to the input or was disabled.
4. Select **Off**: sensor types appear
5. Select the sensor type: configuration parameters appear.
6. Select **Show value as**, then select the ID to be assigned to the engine/tank connected to the sensor.
7. Hold down the **MENU** button to return to the last data page displayed. The sensor is now enabled. Since not manually calibrated, the default calibration values will be applied.

Configure and calibrate the fuel level sensor

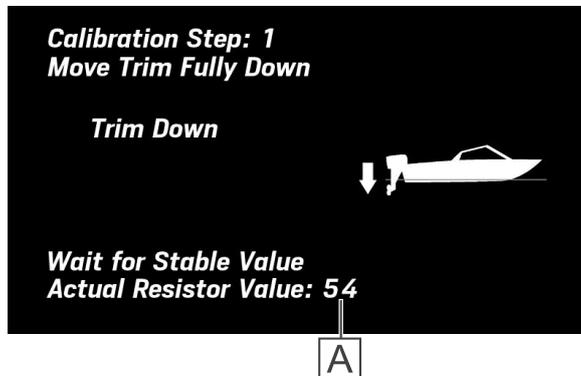
1. Press the **MENU** button and select **SENSOR CONFIG**.
2. Use **Engine 1 connector** or **Engine 2 connector** to select the connector to which the sensor is connected.
3. Select the input connected to the sensor (i.e. **Resistive pin 8**): "Off" appears to indicate that no sensor is linked to the input or was disabled.
4. Select **Fuel: Show value as** and **Calibration** parameters appear.
5. Select **Show value as**, then select the ID to be assigned to the tank connected to the sensor.
6. Select **Calibration** to open calibration options.
7. Select **Tank volume**, to set tank capacity.
8. Select **Sensor type**, then select the sensor type.
9. Select **Calibration**, then select the one or three point calibration procedure (**Do 1 point cal/Do 3 point cal**): calibration instructions and the ohm value read in real-time by the sensor **[A]** appear.
10. Empty the tank and wait for the read value to stabilize. Then confirm by pressing **ENTER**.
11. For three point calibration, follow the on-screen instructions.
12. Hold down the **MENU** button to return to the data pages.



Configure and calibrate the other sensors

Following is the procedure to configure and calibrate Trim, Fresh water level, Waste water level and Rudder angle sensors:

1. Press the **MENU** button and select **SENSOR CONFIG**.
2. Use **Engine 1 connector** or **Engine 2 connector** to select the connector to which the sensor is connected.
3. Select the input connected to the sensor (i.e. **Resistive pin 8**): "Off" appears to indicate that no sensor is linked to the input or was disabled.
4. Select the sensor type: **Show value as** and **Calibration** parameters appear.
5. Select **Show value as**, then select the ID to be assigned to the engine/tank connected to the sensor.
6. Select **Calibration**, then select **Do 3 point cal**: calibration instructions and the ohm value read in real-time by the sensor **[A]** appear. For tanks, they must be drained, wait until the value read stabilizes and press the **ENTER** button.
7. Proceed with all calibration points following the wizard.
8. Hold down the **MENU** button to return to the data pages.



Delete a calibration

1. Press the **MENU** button and select **SENSOR CONFIG**.
2. Select the connector and input linked to the sensor: the sensor type and calibration status appear.
3. Select the calibration status and select **Delete cal**: any manual calibrations are deleted and factory settings restored.
4. Hold down the **MENU** button to return to the data pages.

Connector 1 sensor types

Note: the underlined value/command is the default value/command. The units of measure depend on parameter **SYSTEM CONFIG > Units**

Setting	Description	Possible values/commands
Frequency pin 4	Impulses per engine revolution. If enabled, engine revolutions are read by the analog frequency sensor.	Off / On Show value as: Engine <u>1</u> - 4. Connected engine ID* Pulse per revolution: 0.0 – 655.34 (<u>1.0</u>). Offset factor to calculate the engine revolution number based on the frequency signal value.
Resistive pin 8	Input 8 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Trim • Fresh water: fresh water level • Rudder: rudder angle • Fuel: fuel level • Eng cool temp 40 - 120 °C: coolant temperature • Eng oil temp 50 - 150 °C: engine oil temperature • Engine oil pres 0 - 5 bar / Engine oil pres 0 - 10 bar: engine oil pressure • Boost pressure 0 - 2 bar: boost pressure Show value as: <ul style="list-style-type: none"> • Fuel: Tank <u>1</u> - 4. Connected tank ID • for engine sensors: Engine <u>1</u> - 4. Connected engine ID* Calibration: <ul style="list-style-type: none"> • for Fuel: one or three point calibration (see "Configure and calibrate the fuel level sensor" on page 68) • for Trim, Fresh water and Rudder: three point calibration (see "Configure and calibrate the other sensors" on the previous page)
Resistive pin 9	Input 9 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Ext illum: brightness control (day-night) from external control • Engine oil pres 0 - 10 bar / Engine oil pres 0 - 16 bar / Engine oil press 0 - 30 bar: engine oil pressure Show value as: Engine <u>1</u> - 4. Connected engine ID*
Voltage pin 10	Input 10 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Ext illum: brightness control (day-night) from external control • Engine oil pres 0 - 10 bar / Engine oil pres 0 - 16 bar / Engine oil press 0 - 30 bar: engine oil pressure Show value as: Engine <u>1</u> - 4. Connected engine ID*
Current pin 11	Input 11 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Fresh water: fresh water level • Waste water: waste water level Show value as: Tank <u>1</u> - 4. Connected tank ID Calibration: three point calibration (see "Configure and calibrate the other sensors" on the previous page)
Current pin 12	Input 12 sensor	Show value as: Tank <u>1</u> - 4. Connected tank ID Calibration: three point calibration (see "Configure and calibrate the other sensors" on the previous page)

Note*: the displayed ID is increased by 1 from the NMEA ID (i.e. Engine 1=NMEA 0 ID, Engine 2= NMEA 1 ID, etc.).

Connector 2 sensor types

Note: the underlined value/command is the default value/command. The units of measure depend on parameter **SYSTEM CONFIG > Units**

Setting	Description	Possible values/commands
Frequency pin 4	Impulses per engine revolution. If enabled, engine revolutions are read by the analog frequency sensor.	Off / On Show value as: Engine <u>1</u> - 4. Connected engine ID* Pulse per revolution: 0.0 – 655.34 (<u>1.0</u>). Offset factor to calculate the engine revolution number based on the frequency signal value.
Voltage pin 7	Input 7 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Ext illum: brightness control (day-night) from external control • Engine oil pres 0 - 10 bar / Engine oil pres 0 - 16 bar / Engine oil press 0 - 30 bar: engine oil pressure Show value as: Engine <u>1</u> - 4. Connected engine ID*
Resistive pin 8	Input 8 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Trim • Fresh water: fresh water level • Rudder: rudder angle • Fuel: fuel level • Eng cool temp 40 - 120 °C: coolant temperature • Eng oil temp 50 - 150 °C: engine oil temperature • Engine oil pres 0 - 5 bar / Engine oil pres 0 - 10 bar : engine oil pressure • Boost pressure 0 - 2 bar: boost pressure Show value as: <ul style="list-style-type: none"> • Fuel: Tank <u>1</u> - 4. Connected tank ID • for engine sensors: Engine <u>1</u> - 4. Connected engine ID* Calibration: <ul style="list-style-type: none"> • for Fuel: one or three point calibration (see "Configure and calibrate the fuel level sensor" on page 68) • for Trim, Fresh water and Rudder: three point calibration (see "Configure and calibrate the other sensors" on page 69)
Resistive pin 9	Input 9 sensor	
Resistive pin 11	Input 11 sensor	
Resistive pin 12	Input 12 sensor	
Voltage pin 10	Input 10 sensor	Input: <ul style="list-style-type: none"> • Off: no connected analog sensor • Ext illum: brightness control (day-night) from external control • Engine oil pres 0 - 10 bar / Engine oil pres 0 - 16 bar / Engine oil press 0 - 30 bar: engine oil pressure Show value as: Engine <u>1</u> - 4. Connected engine ID*

Note*: the displayed ID is increased by 1 from the NMEA ID (i.e. Engine 1=NMEA 0 ID, Engine 2= NMEA 1 ID, etc.).

Sensor types connected to the NMEA 2000 network

Note: the underlined value/command is the default value/command. The units of measure depend on parameter **SYSTEM CONFIG > Units**

Setting	Description	Possible values/commands
Compass > Heading offset	Alignment between compass bow and boat bow.	$\pm 0.0 - 180^\circ$ (<u>0</u> °)
Compass > Variation	Alignment between the magnetic North and true North.	$\pm 0.0 - 180^\circ$ (<u>0</u> °)
Wind > Wind direction offset	Alignment between the wind sensor position and longitudinal boat axis.	$\pm 0.0 - 180^\circ$ (<u>0</u> °)
Depth > Keel depth	Distance between the transducer and keel to calculate free water.	0 – 9.9 m (<u>2</u> m)
Rudder > Rudder offset	Alignment between the sensor center and counter-rudder blade.	$\pm 0 - 120^\circ$ (<u>0</u> °)
Speed > Speed correction factor	Alignment between the sensor Speed through water (STW) and real boat speed. See "Calculate the speed offset factor" below.	0 – 199.99 (<u>1.00</u>)

Calculate the speed offset factor

The speed offset factor lets you align the speed through water (STW) to the actual speed. If the measured speed differs from the real boat speed for more than 0.5 kn, this factor can be adjusted.

Increasing the offset factor reduces the displayed speed through water (STW).

MediaBox use

Operations

MediaBox can be controlled by OceanLink7" TFT display or the VDO MediaBox app available for Apple and Android devices in their stores. The app lets you remotely control MediaBox. It can control the following sources:

- FM stations
- AM stations
- playlists from USB key
- audio files from Bluetooth devices

Once connected to the NMEA 2000 network, MediaBox remains in stand-by, awaiting to be turned on from the display or VDO MediaBox app.

Several displays on the network

MediaBox can be controlled from all displays on the NMEA 2000 network. Only one source and one track can be played at a time.

Open MediaBox

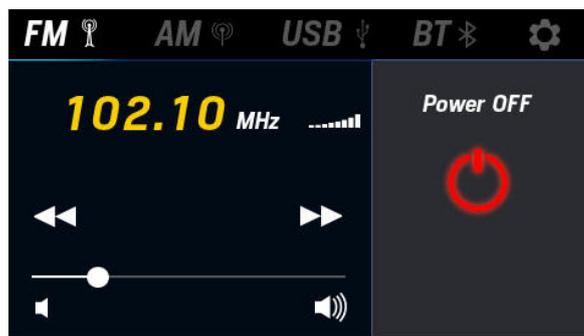
The relevant page must be enabled to open MediaBox. The page is already included in the default configuration. If not found, see "Add a MediaBox page" on page 76) to add it.

On/Off

1. The "MediaBox not powered" message appears the first time the display is turned on: the display is connected to MediaBox but the media player is off.

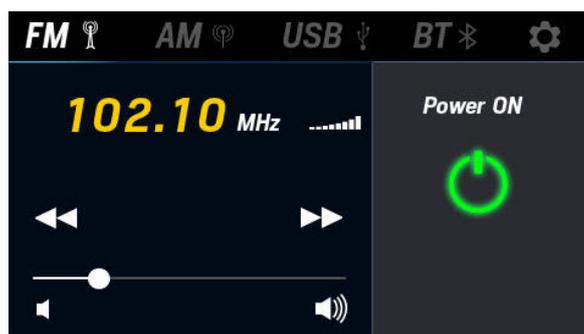


2. Press the button **ENTER**: the main page appears with the **Power OFF** red symbol.



3. Press the button **ENTER** again: MediaBox turns on.
4. Press the button **ENTER** again: MediaBox turns off.

Note: if the USB and BT sources are not connected, their menus are disabled.



Listen to FM/AM radio stations

1. Repeatedly press the **MENU** button until positioned on the menu bar. Scroll and highlight the **FM** or **AM** source.
2. Scroll default stations and select the one you want with the **ENTER** button.



Set FM/AM radio stations

1. Repeatedly press the **MENU** button until positioned on the menu bar. Scroll and highlight the **FM** or **AM** source.
2. Scroll to enable commands **⏪** or **⏩**. Briefly press the **ENTER** button to scroll frequencies, hold it down to scan them.



- Use the **▲** or **▼** button to move to the position where the station will be set and hold down the **ENTER** button to save.



Listen to a playlist from USB key

- Insert the USB key with the playlist.
- Repeatedly press the **MENU** button until positioned on the menu bar. Scroll and highlight the **USB** source.
- Scroll and use the **ENTER** button to select the various commands.
- To select a track, select the playlist: the track list appears.



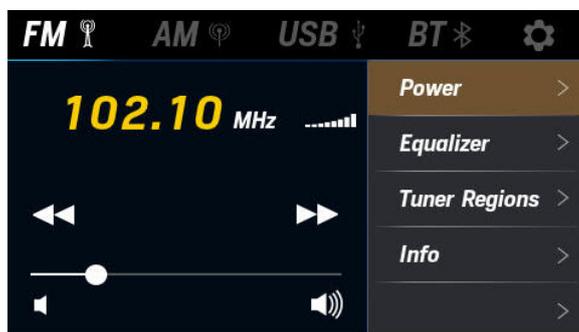
Listen to tracks from cell phone

- Link MediaBox to a cell phone via Bluetooth.
- Repeatedly press the **MENU** button until positioned on the menu bar. Scroll and highlight the **BT** source.
- Scroll and use the **ENTER** button to select the various commands.



Set MediaBox operations

1. Repeatedly press the **MENU** button until positioned on the menu bar. Scroll and select **Settings** by pressing the **ENTER** button.
2. To adjust the volume, scroll and select **Equalizer**.
3. To obtain the correct frequencies for the geographical area, select **Tuner region**.
4. To obtain information on the media player, select **Info**.



Add a MediaBox page

The page to control the media player is added after those already included.

1. Press the **MENU** button and select **SCREEN CONFIG**.
2. Scroll until you see an empty page ("**NO SCREEN**") and select it.
3. Scroll and select the page layout **RADIO**: the layout opens.
4. Repeatedly press the **MENU** button to exit the menu and save settings.

Reset MediaBox

To restore factory settings:

1. Press the **MENU** button and select **SYSTEM CONFIG**.
2. Select **Reset > Reset MediaBox**.

VDO Marine Configuration Tool use

Description

VDO Marine Configuration Tool desktop software lets you:

- Update display software and firmware.
- Run diagnostics and simulations.
- Configure the system and sensors connected to the display.

Operations

VDO Marine Configuration Tool communicates with devices connected on the NMEA 2000 network through VDO Diagnostic Tool that is connected to the PC via USB.

For further information and instructions for use on VDO Marine Configuration Tool, see VDO Marine Configuration Tool User manual available at www.vdo-marine.com.

Troubleshooting

Display problems

Problem	Cause	Solution
The displayed values are not those expected.	Incorrect sensor configuration.	Check configuration in menu Sensor config .
	Incorrectly connected sensor.	Check the connection, refer to the <i>Installation instruction</i> .
	The NMEA 2000 network backbone was incorrectly created.	Check connections and make sure there is a termination at the beginning and end of the backbone.
"–" and not the expected value is displayed or the gauge pointer blinks in the layout NAV DASH .	Data not available on the network.	Check the correct operations of the sensor.
	Sensor not connected.	Connect the sensor, refer to the <i>Installation instruction</i> .
	The NMEA 2000 network backbone was incorrectly created.	Check connections and make sure there is a termination at the beginning and end of the backbone.
The same data is displayed with two different alternating values.	Incorrect sensor configuration.	Check the engine/tank IDs (Show value as) in the sensor configuration, from menu Sensor config .
"Invalid value"	The sensor to be calibrated is faulty or disconnected.	Check or replace the sensor.
"No MediaBox connected"	MediaBox is not connected to the NMEA 2000 network or to the power supply.	Check connections.
"MediaBox not powered"	MediaBox is connected but off.	Turn on MediaBox, see "MediaBox use" on page 73

Problems on connected 52 mm gauges

Problem	Cause	Solution
The gauge is backlit but the pointer does not move.	Data not received from master	Check whether the 52 mm gauge is compatible with the master. If it is compatible, check that the data is on the master display.
The pointer does not move and the gauge is not backlit.	Master not powered	Check master connections. Connect the power supply.
	No 52 mm chain gauge is connected to the master.	Connect a 52 mm gauge to the master.

Technical specifications

General features

Material	PBT and glass screen
Connectors	<ul style="list-style-type: none">• 2 Molex MX150• NMEA 2000 Micro-C M12• 2 EasyLink• Video M12 D-coded
Input data	<ul style="list-style-type: none">• via CAN bus (NMEA 2000 and SAE J1939)• 2 capacitive analog inputs (4-20 mA)• 6 resistive analog inputs (0-400 Ω)• 2 frequency inputs (0-4 kHz)• 3 voltage inputs (0-5 V)• 1 digital alarm input
Output data	<ul style="list-style-type: none">• NMEA 2000• 2 EasyLink outputs (VDO proprietary protocol) to 52 mm gauges• 2 output alarms (500 mA)
Protection grade	IPX7
Display	TFT 7"
52 mm gauges	Maximum 16 per channel (32 total)

Environmental specifications

Working temperature	From -20 to +70 °C
Storage temperature	From -30 to +70 °C

Electrical specifications

Rated voltage	12 / 24 V
Voltage tolerance	9-32 V
Working current	< 900 mA @ 12 V only display, 100 mA each connected 52mm gauge
Absorption (LEN)	2

Conformity

Conformity	
Directives	2014/30/EU (Electromagnetic compatibility) 2011/65/EU (Electrical-electronic equipment hazardous substances)
Reference standards	IEC 60945: 2002-08 (environmental class: exposed)

Disposal instructions



Separate waste and use the collection centers indicated by the government or local public agencies.

Correct disposal and recycling will contribute to the prevention of potentially harmful consequences to the environment and population.

Spare parts, sensors and accessories

Available spare parts

Product	Part number
Connector 1 cable (data + power)	A2C1507870001
Connector 2 cable (data)	A2C1992110001
White bezel	A2C1697540001
Black bezel	A2C1697530001
Sun cover	A2C59501973
EasyLink extension cable	A2C1650700001
Cable with video connector	A2C1845710001

Available accessories

To view available accessories, visit www.vdo-marine.com.

Appendix

Supported NMEA 2000 messages

PGN	Description
65030	J1939 Generator Average Basic AC Quantities
65226	J1939 Diagnostic Message #1
65227	J1939 Diagnostic Message #2
65228	J1939 Diagnostic Message #3
65229	J1939 Diagnostic Message #4
65230	J1939 Diagnostic Message #5
65231	J1939 Diagnostic Message #6
65232	J1939 Diagnostic Message #8
65234	J1939 Diagnostic Message #10
65235	J1939 Diagnostic Message #11
65236	J1939 Diagnostic Message #12
126992	System time
127245	Rudder
127250	Vessel heading
127251	Rate of Turn
127257	Attitude
127258	Temperature (Old Version)
127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127493	Transmission Parameters, Dynamic
127497	Trip Fuel Consumption, Engine
127498	Engine Parameters, Static
127505	Fluid level
127508	Battery status
128259	Speed: Water referenced
128267	Water depth
129025	Position: Rapid update
129026	COG and SOG: Rapid update
129029	GNSS position data
129033	Local Time Offset
129044	Datum
129283	Cross track error

PGN	Description
129284	Navigation data
129285	Navigation route and waypoint info
129539	GNSS dilution of precision (DOP)
129540	GNSS satellites in view
130306	Wind data
130310	Environmental parameters
130311	Environmental parameters
130312	Temperature
130313	Humidity
130314	Actual Pressure
130569	Entertainment - Current File and Status
130570	Entertainment - Library Data File
130571	Entertainment - Library Data Group
130572	Entertainment - Library Data Search
130573	Entertainment - Supported Source Data
130574	Entertainment - Supported Zone Data
130576	Small Craft Status
130576	Trim Tab Status

Supported SAE J1939 messages

PGN	SPN	Description
61443	92	Engine Percent Load at Current Speed
61444	513	Actual Engine - Percent Torque
61444	190	Engine Speed
61445	523	Transmission Current Gear
65030	-	Generator Average Line to Line Voltage
65030	-	Generator Average Frequency
65030	-	Generator Average Line to Neutral Voltage
65030	-	Generator Average Current

PGN	SPN	Description
65176	1180	Exhaust Temperature
PGN	SPN	Description
65214	189	Engine Rated Speed
65226	624	Amber Warning
65226	623	Red Stop
65226	987	Protect lamp
65226	3098	MIL
65242	234	Software Identification
65260	237	Vehicle Identification Number
65262	110	Engine Coolant Temperature
65262	175	Engine Oil Temperature 1
65263	94	Engine Fuel Delivery Pressure
65263	100	Engine Oil Pressure
65263	109	Engine Coolant Pressure
65265	-	Vehicle Speed
65266	184	Fuel Economy
65266	183	Engine Fuel Rate
65270	102	Engine Turbocharger Boost Pressure
65270	173	Engine Exhaust Gas Temperature
65271	158	Battery Potential (Voltage), Switched
65271	167	Charging System Potential (Voltage)
65272	177	Transmission Oil Temperature
65272	127	Transmission Oil Pressure
65276	96	Fuel Consumption
65279	97	Water In Fuel Indicator