DIAGNOSTIC TOOLS

VERATRON CONFIGURATION TOOL

USER MANUAL
rev. AE

FOR CONFIGURATION TOOL V 3.15

EN

DE

IT

FR

ES

TABLE OF CONTENTS

INTRODUCTION

The Veratron Configuration Tool is a PC software which allows you to configure Veratron devices and perform troubleshooting activities of your digital onboard network.

From your PC, you can configure the devices on board, connecting directly to the NMEA 2000 network or the VDO Bus network. You can also define your configuration and save it into a file and download it later aboard.

This tool also allows you to read the current configuration parameters of connected devices.

You can perform several maintenance and troubleshooting activities such as:

- ✓ Software updates
- ✓ EngineBox configuration
- ✓ Test and diagnostic activities using the simulator
- ✓ NMEA 2000 and SAE J1939 data simulation and readout
- ✓ Report generation for service purposes

INTENDED USERS

⚠ WARNING

This product is intended for use only by authorized Veratron representative technicians.

Any kind of issues, damages or malfunction caused by an incorrect use from a NOT authorized Veratron Dealer is not recognized as a Veratron responsibility.

Any actions and costs needed to fix the issue will not be covered by Veratron.

VERATRON DIAGNOSTIC TOOL

To communicate with the on-board devices, the Veratron Configuration Tool requires the Veratron Diagnostic Tool interface along with its drivers properly installed on your PC.

This interface is required to connect your PC to the CAN network (NMEA 2000 or VDO Bus).

The Veratron Diagnostic Tool kit A2C3931270001 includes:

- USB to NMEA 2000 interface
- T-joiner
- VDO Bus to NMEA 2000 adapter cable

SYSTEM SETUP

SOFTWARE INSTALLATION

The installer for the Veratron Configuration Tool can be downloaded free of charge from the downloads section on the Veratron website: https://veratron.com/pages/downloads

The software only works on Windows operating systems.

It is also required to install the hardware drivers for the Diagnostic Tool. These can be found on the Kvaser Website: https://kvaser.com/download/

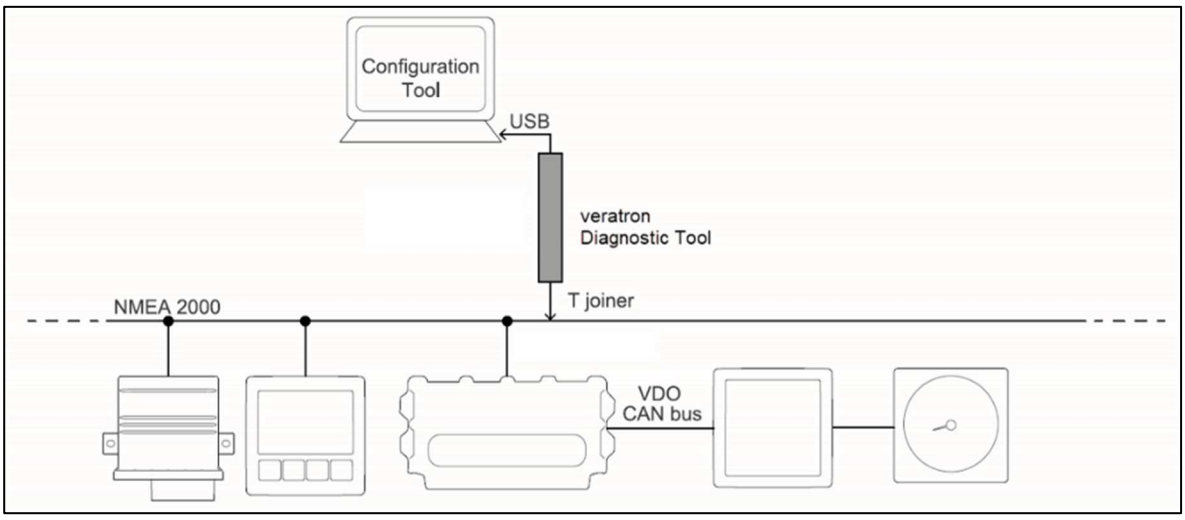
NMEA2000 CONNECTION

Connect the Veratron Diagnostic Tool to the NMEA 2000 backbone through the dedicated plug on the unit.

A T-joiner is included in the kit, to easily interface the network without the need of disconnecting other devices.

The normal restrictions for NMEA 2000 Networks apply.

- Drop Cables may not be longer than 6m.
- The backbone must be terminated with resistors.
- The NMEA bus must be powered by a 12V supply.

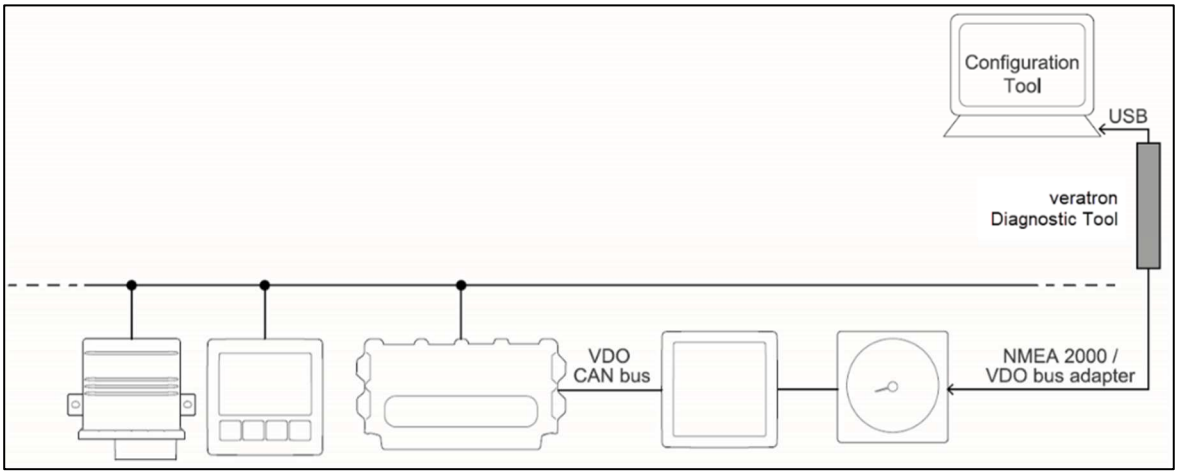


VDO-BUS CONNECTION

Only in case of operation with an AcquaLink system, the Diagnostic Tool interface must be connected on a VDO Bus port, and not on NMEA 2000.

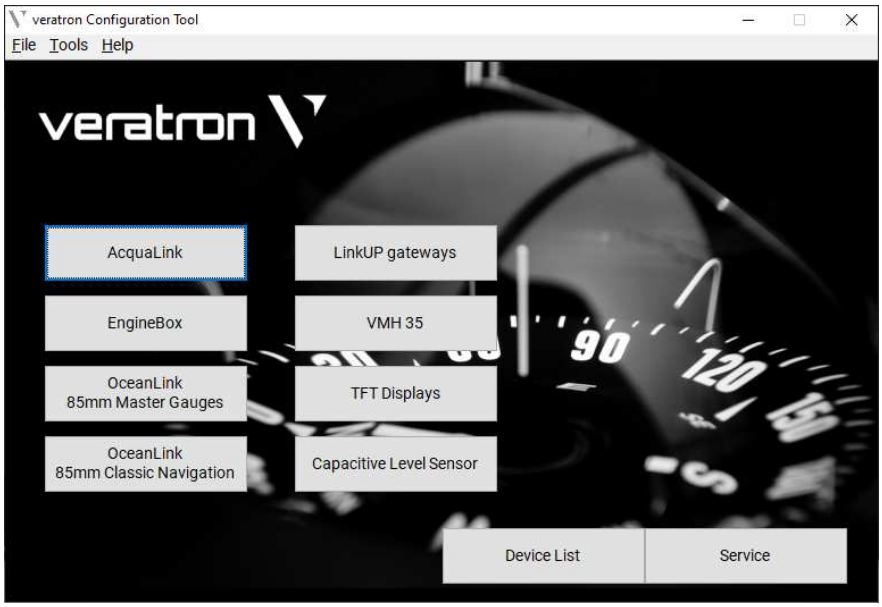
To interface the VDO Bus it is necessary to use the NMEA 2000 to VDO Bus adapter cable A2C96244900, which is also included in the Veratron Diagnostic Tool kit.

The VDO Bus access can be obtained either from one of the NavBox ports, or by connecting the interface in series after the last AcquaLink device on the VDO Bus network.



LAUNCH

Once the Veratron Configuration Tool is launched from its desktop icon, the main window is displayed.



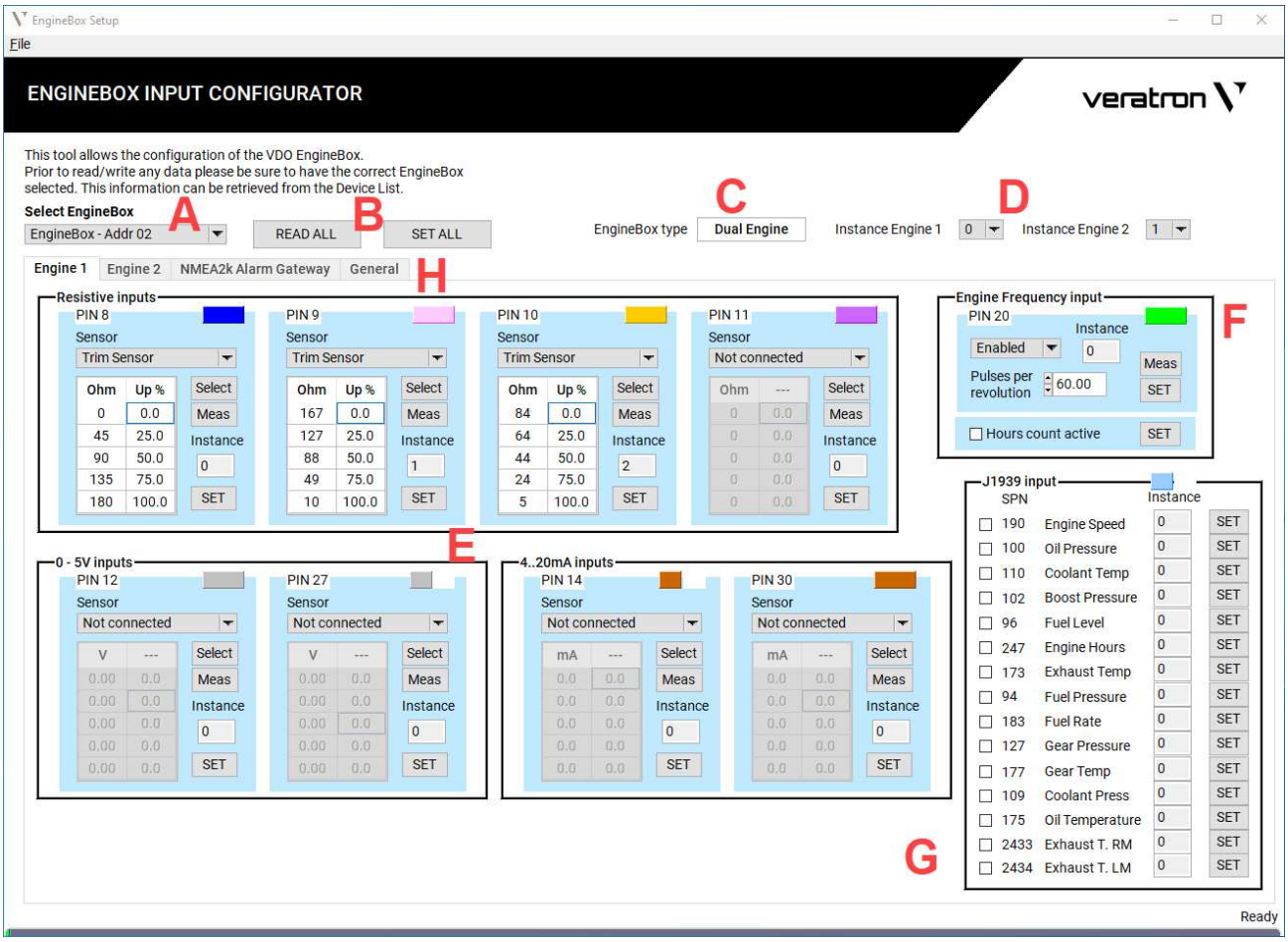
⚠ INFORMATION

Do not start the Veratron Configuration Tool before the USB interface is connected to the PC, otherwise an error message will be displayed, and the Configuration Tool will close.

ENGINE BOX

OVERVIEW

How to access it: Main window → EngineBox

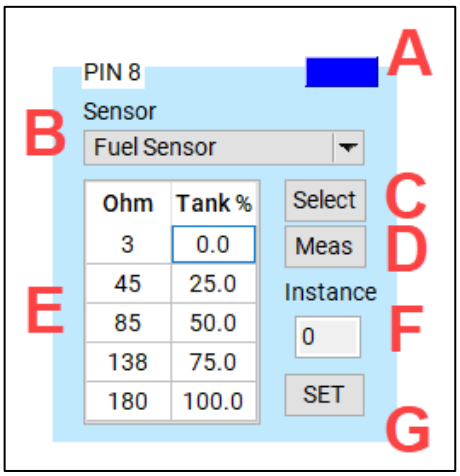


Element	Description
A	Target selection
B	READ ALL and WRITE ALL buttons
C	EngineBox type
D	Instance selectors for all the engine data

Element	Description
E	Analog sensor configurations
F	RPM sensors configuration
G	SAE J1939 configuration
H	Tab Headers

CONFIGURE A SENSOR

To configure a sensor connected to any EngineBox analog port (resistive, 4-20mA and 0-5V) it is important to know to which input it is connected.

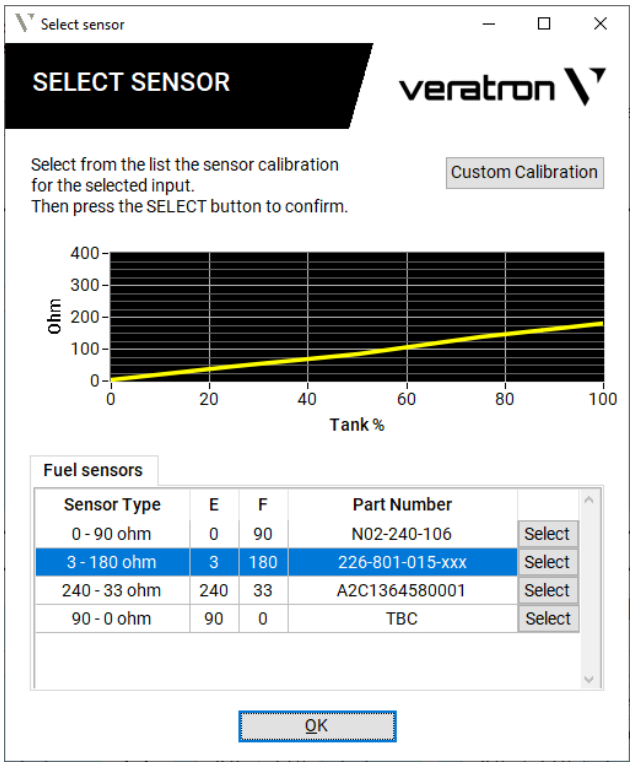


Element	Description
A	Wire color on EngineBox harness
B	Sensor type selector
C	Select from the given standard curves
D	MEAS button to display the sensor signal graph
E	Adjustable calibration table
F	NMEA 2000 data instance
G	Upload configuration to EngineBox

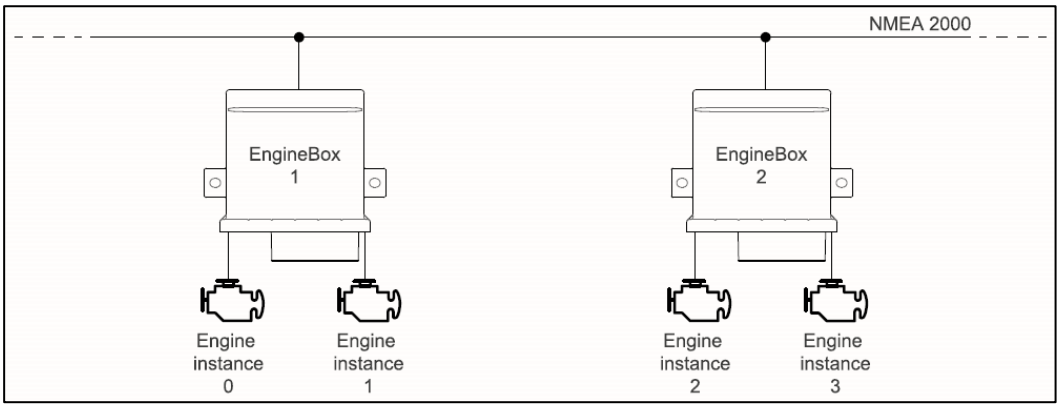
1 **Select the Sensor type** from the drop-down list **[B]**.

2 **Choose the calibration** for the selected sensor.

Press the "Select" button to see a list of predefined calibrations, or manually enter the calibration by adjusting it in the table.



4 **Define the NMEA 2000 instance.**
Depending on the engine number (for engine-related data) or the tank number the sensor is referring to, the NMEA 2000 instance must be set accordingly.



NOTE: the NMEA 2000 instance is a zero-based index, so the data belonging to the first engine must be set with Instance 0. Likewise, data belonging to the second shall be Instance 1.

5 **Upload the port configuration.**
Press the SET button to write the configuration for the specific pin.
Press the SET ALL button to write THE ENTIRE configuration to the EngineBox.

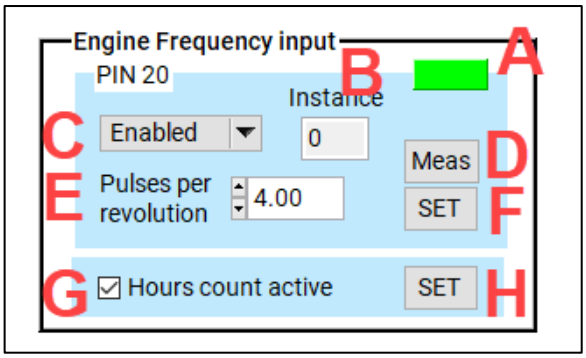
SUPPORTED SENSORS

Sensor Type	NMEA PGN	Sensor Type	NMEA PGN
Fuel Level	127505	Coolant Pressure	127489
Trim	127488	Boost Press	127488
Rudder Angle	127245	Engine Room Temp	130316
Fresh Water Level	127505	Trim Tab - Port	127489
Waste Water Level	127505	Trim Tab – Starboard	127489
Gear Oil Temp	127493	Ammeter	127489
Gear Oil Press	127493	Outside Temp	130316
Engine Oil Press	127489	Sea Water Temp	130316
Engine Oil Temp	127489	Fuel Press	127488
Coolant Temp	127489	Exhaust Temp	130316

The supported configurations may be updated at any time. Please make sure to always use the latest Tool version.

CONFIGURE THE TACHOMETER

The EngineBox is equipped with either 1 (Single Engine) or 2 (Dual Engine) tachometer inputs which are configurable through the tool.



Element	Description
A	Wire color on EngineBox harness
B	NMEA 2000 engine instance
C	Enable/Disable the input
D	MEAS button to display the sensor signal graph
E	Pulses per Revolution factor
F	Write RPM configuration
G	Enable/Disable internal engine-hours counter

Two configurations can be set for the frequency input: the engine revolution sensor calibration and the internal engine-hour counter settings.

Each setting shall be confirmed separately with the respective **SET** buttons **[F]** and **[H]** (or via **SET ALL** button on top of the window).

When the engine-hours counter is activated the EngineBox will transmit the operating engine hours information through NMEA 2000.

The NMEA 2000 engine instance setup **[B]** follows the same rules as any other analog input.

This setting is very important to have your engine revolution sent with the correct engine number over the NMEA 2000 network.

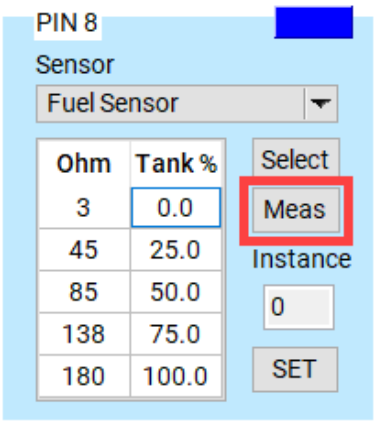
With the MEAS button **[D]** it is possible to read the signal currently being transmitted from the RPM sensor to make sure the connections are properly made and the signal is received correctly.

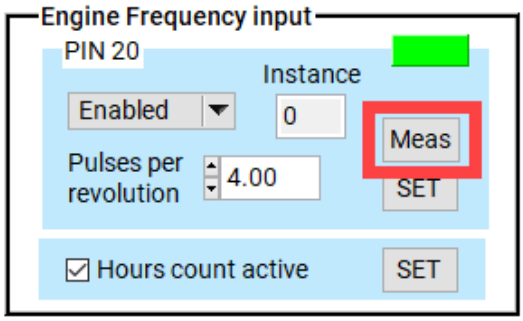
See the dedicated chapter of this document for more information.

SEEING THE SENSORS RAW DATA

Press the "MEAS" button within the input configuration box to read the raw signal coming from the related input.

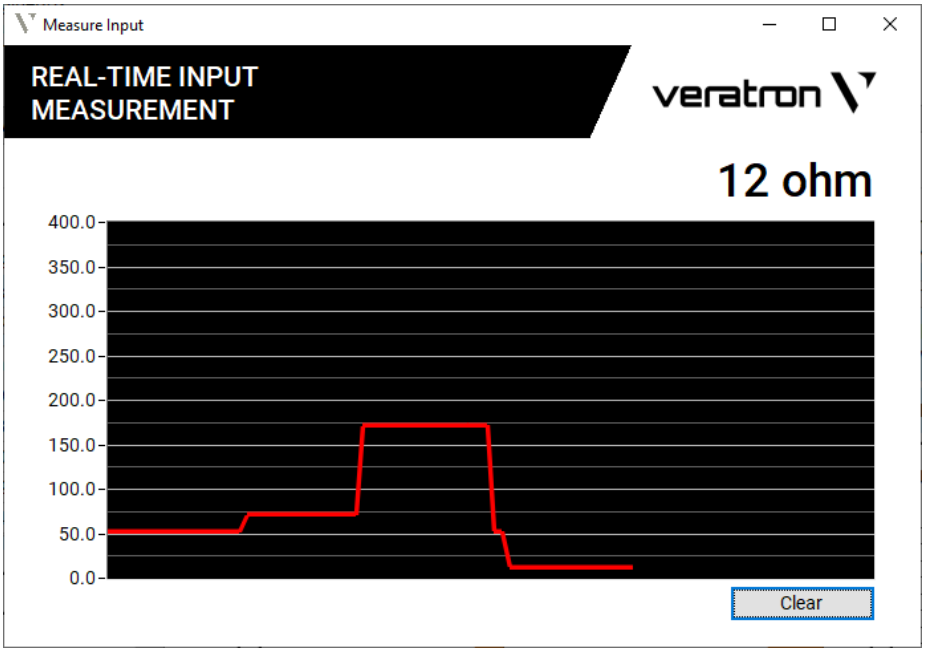
This feature is available for every analog port of the EngineBox.





The sensor measurement window will appear to help you make sure the sensor is correctly wired to the EngineBox and its signal is received.

Move the sensor if possible (e.g. level sensors) to verify that the signal is varying accordingly.

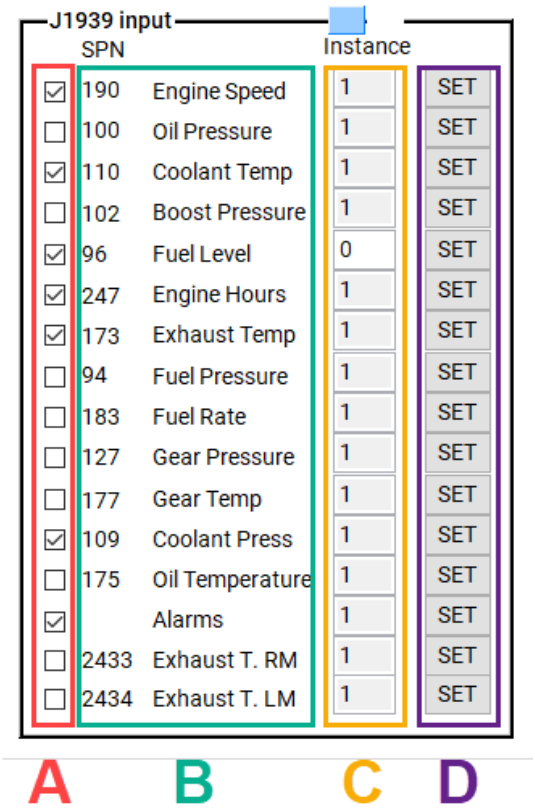


Depending on the input type being measured, the graph will display ohmic readings (resistive input types), current readings (4-20mA input types), voltage readings (0-5V input types), or frequency readings (RPM input only).

CONFIGURE THE SAE J1939 INTERFACE

The EngineBox supports the SAE J1939 protocol, and it translates the data coming from this bus over NMEA 2000.

The EngineBox is equipped with either 1 (Single Engine) or 2 (Dual Engine) J1939 independent ports which are configurable through the tool.



Element	Description
A	Enable/Disable a specific SPN
B	Data name with SPN
C	NMEA 2000 data instance
D	Write single SPN activation

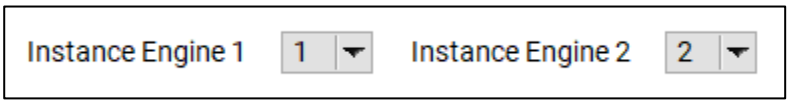
The configuration of the SAE J1939 to NMEA 2000 gateway requires less information, as the data is already received in digital form from the CAN system.

Only the instance for the information in the NMEA 2000 network must be defined and the messages marked that should be transmitted.

The NMEA 2000 engine instance setup **[C]** follows the same rules as any other input.

This setting is very important to have your data sent with the correct engine or tank number over the NMEA 2000 network.

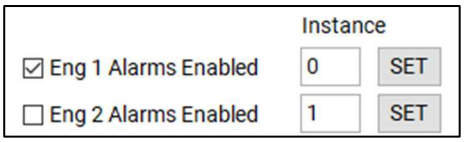
If all the J1939 data belong to the same engine the instance can be adapted for all messages in one go by making use of the Engine Instance drop-down on top of the window. (engine data only, not applied to tanks)



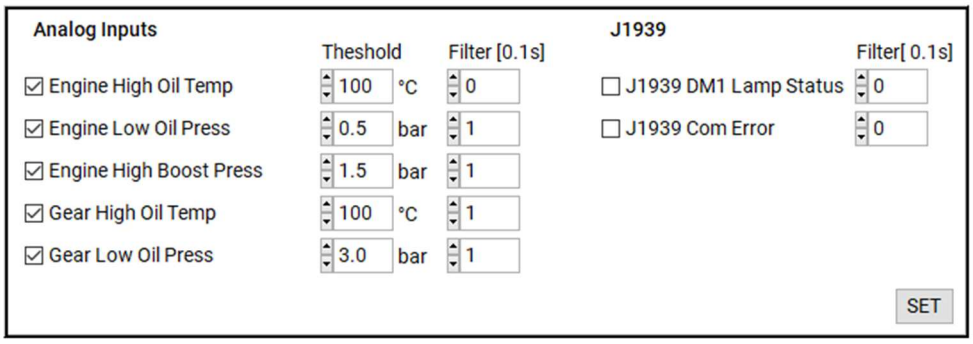
SETTING A NMEA 2000 ALARM

The EngineBox provides the possibility to locally trigger and send an alarm message to the NMEA 2000 network.

The configurations are located in the “NMEA 2000 Alarm Gateway” tab.



All the alarms regarding the analog inputs of one engine tab will be sent on messages with the same instance. This field is used to define which engine tab sends alarms on which instance.



Each of the available alarms can be enabled independently. Use the tick boxes to do so.

For the analog inputs an alarm threshold must be defined. The pressure alarms will be triggered if the value falls below the given threshold, temperature alarms when the value surpasses it.

A filter can be applied to the alarms. This will cause the EngineBox to only trigger an alarm, when the input state occurred for longer than the time defined. This is to prevent alarms if there is just a quick peak in the measurement due to some noise on the signal.

SEND THE INTERNAL VOLTAGE

The EngineBox can measure the voltage level of its supply voltage. To share this measurement value on the NMEA 2000 network, open the tab **General** and set the tick mark next to the label “Send Internal Voltage”.

The value will be sent as battery voltage on PGN 1F214. The battery instance can be selected in the respective field.

CHANGE THE ENGINE HOUR COUNT

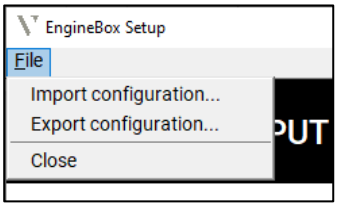
When installing the EngineBox on a new setup, one might want to adapt the hour counter value to the age of the engines in this system. To do so, simply enter the desired value in the according text fields. These fields can be found in the tab **General**.

The value will be stored for the engine with the instance defined in the header of the EngineBox page.

EXPORT CONFIGURATION TO YOUR PC

Through the tool the current EngineBox' configuration can be exported and stored on the PC so it can be applied to other units as well.

With the configuration displayed in the tool, click on the **File** menu on the top bar of the window and then on Export configuration.

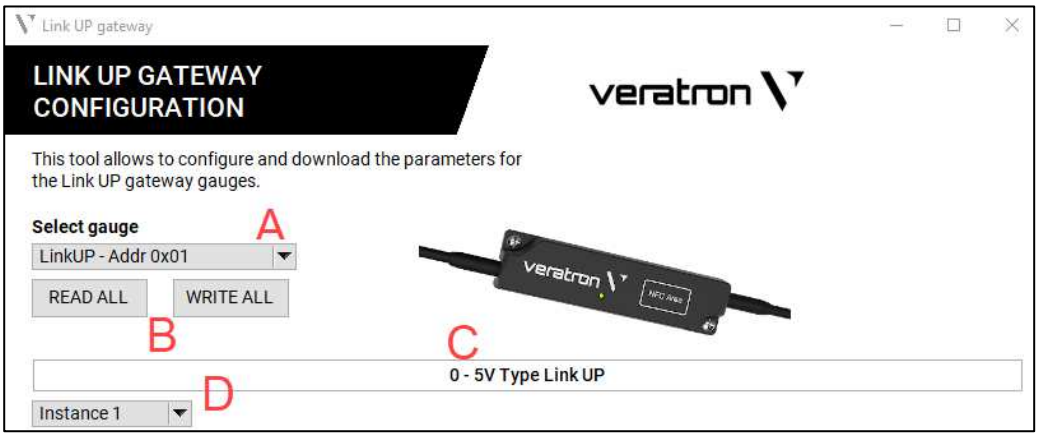


The tool will then ask where to store the file on your PC.

Likewise, to import a stored EngineBox configuration, click on File → Import configuration and select the file in your PC.

LINK UP

How to access it: Main window → Link UP



Element	Description
A	Target Selection
B	Read / Write configurations
C	LinkUp type description
D	Instance selection

The Configuration Tool enables doing the LinkUp configuration using the PC instead of a smartphone with NFC interface.

To do so, the correct LinkUp device must be selected in the target selection section **[A]**. The LinkUp type of the selected device will then be displayed in section **[C]**.

To see the current configurations, press the button **READ ALL** in section **[B]**.

CONFIGURE THE GATEWAYS

Depending on the type of LinkUp, different settings will be available.

All the fields under the given LinkUp type title shall be defined. The instance of the engine/ tank /battery must be selected in the dropdown menu at the upper part of the screen **[D]**.

To send the configuration to the LinkUp the button **Write All** in section **[B]** shall be pressed.

READ LIVE MEASUREMENT VALUES

On the "Resistive" and "0-5V" Type LinkUps it's possible to read the live measurement values.

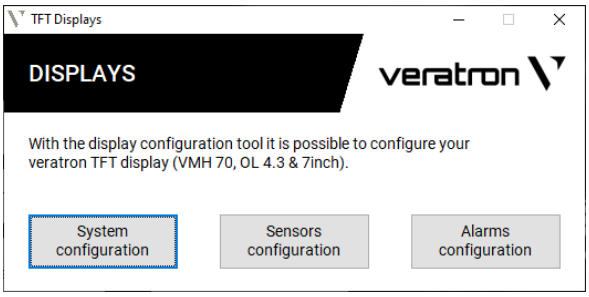
To do so press the button "Live Value" and a window will pop up showing the values in a graph.

TFT SCREENS

OVERVIEW

How to access it: Main window → TFT Displays

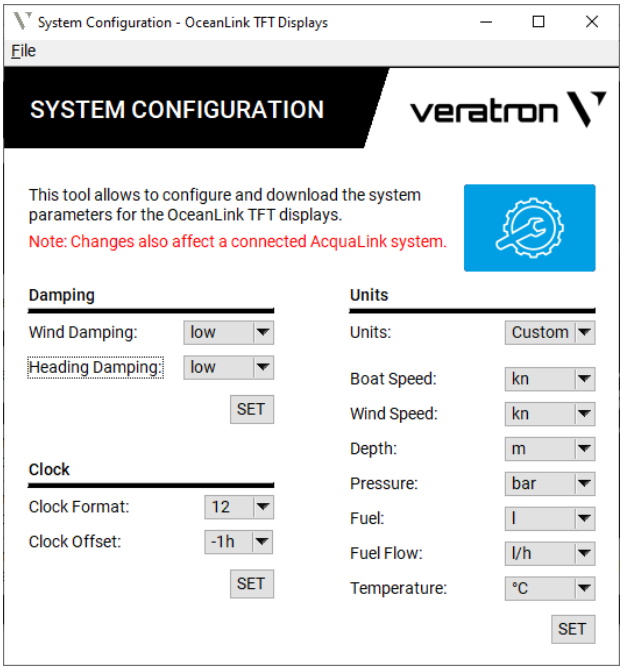
Which Instruments: OceanLink 4.3" / OceanLink 7" / VMH 70



With this Tool it is possible to set the configuration of your OceanLink display (4.3" or 7") directly from your PC.

NOTE: not all the configuration possibilities are available through the tool. For some of them it is still required to use the display menu.

SYSTEM CONFIGURATION



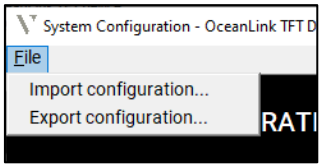
With the System Configuration panel, it is possible to set some display settings. Such as:

- Wind damping
- Clock format preference and time zone
- Units of measurement for every data type

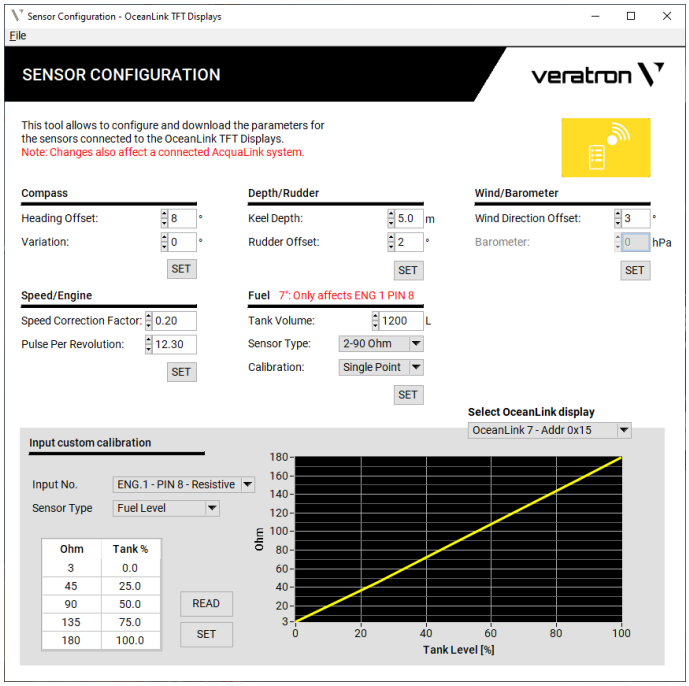
Press the SET button next to each section to upload your preferences to the displays.

NOTE: this configuration will be set on every OceanLink device online.

In the **File** menu on the top bar, it is possible to save the current configuration to your PC, so to recall it at any time using the Import function.



SENSORS CONFIGURATION



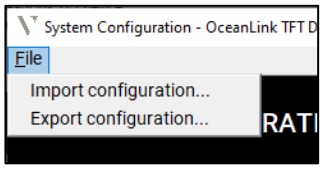
With the Sensor Configuration panel, it is possible to set offsets and corrections for adjusting the sensor results. The following sensors can be calibrated :

- Compass
- Speed / Engine Speed
- Depth / Rudder
- Fuel Level
- Wind

Press the **SET** button next to each section to upload your configurations to the displays.

NOTE: this configuration will be set on every OceanLink device online.

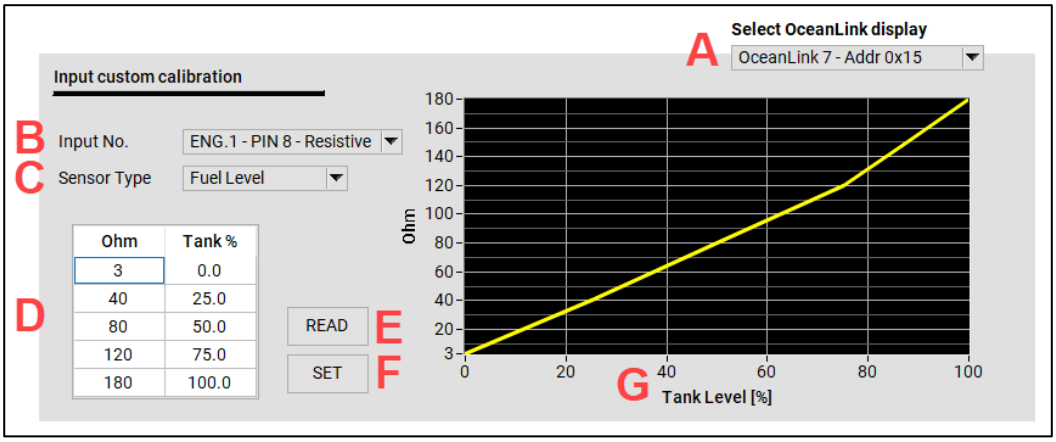
In the **File** menu on the top bar, it is possible to save the current configuration to your PC, so to recall it at any time using the Import function.



CUSTOM SENSORS CONFIGURATION

In the bottom part of the Sensor Configuration panel, it is possible to fully customize the configuration of every analog port of your OceanLink display.

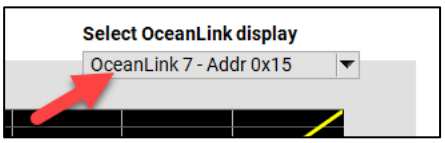
NOTE: this operation still requires you to perform some setting on the display itself (set the input to **Custom** *and select the data instance).*



1

Select the display to be programmed from the drop-down list **[A].**

If more OceanLink displays are on the network, they will all be visible in this list.



2

IN THE DISPLAY MENU set the pin configuration to "**CUSTOM**".

Sensor Config → Choose the port to be configured → Input → Custom

This setup is required on the display to allow the local pin configuration to be overwritten.

When CUSTOM is selected, the configuration must come from the tool.

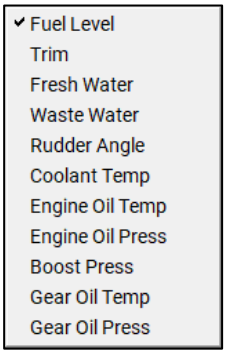
3

Back on the PC Tool, **select the input to configure [B].**

This selection must match the pin configured as CUSTOM on the display in the step before.

4

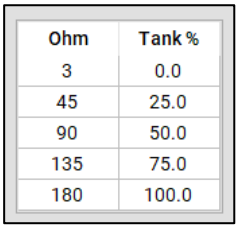
Select the Sensor type from the drop-down list **[C]**.



5

Manually set the 5-points calibration into the table **[D]** for the selected sensor.

The graph **[G]** will display the calibration being set.



Ohm	Tank %
3	0.0
45	25.0
90	50.0
135	75.0
180	100.0

The example above is for a standard 3-180Ω fuel level sensor.

6

Upload the configuration to the display.

Press the **SET** button **[F]** to write the configuration for the specific pin.

A popup will appear as a safety confirmation.

Press the **READ** button **[E]** to read back from the display the configuration for the pin defined in **[A].**

ALARM CONFIGURATION

⚠ WARNING

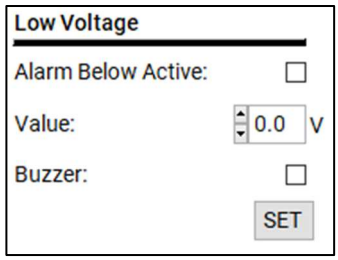
Settings changed on this page will not only affect the OceanLink 85mm Masters. AcquaLink systems and all Veratron TFT Screens present on the NMEA network will also apply these changes.

The first tick mark defines whether the alarm for the corresponding value is activated or not.

The alarm threshold is defined in the text field by entering a number or using the arrow buttons.

Whether this alarm should also trigger the buzzer output of the gauge is defined with the second tick mark.

To upload the settings to the device, the SET button must be pressed.



The alarm description which will be displayed if the local alarm input is triggered, can be defined by pressing the button LOCAL ALARM NAME, choosing the display on which this change should be made, and adding the name to the text field.

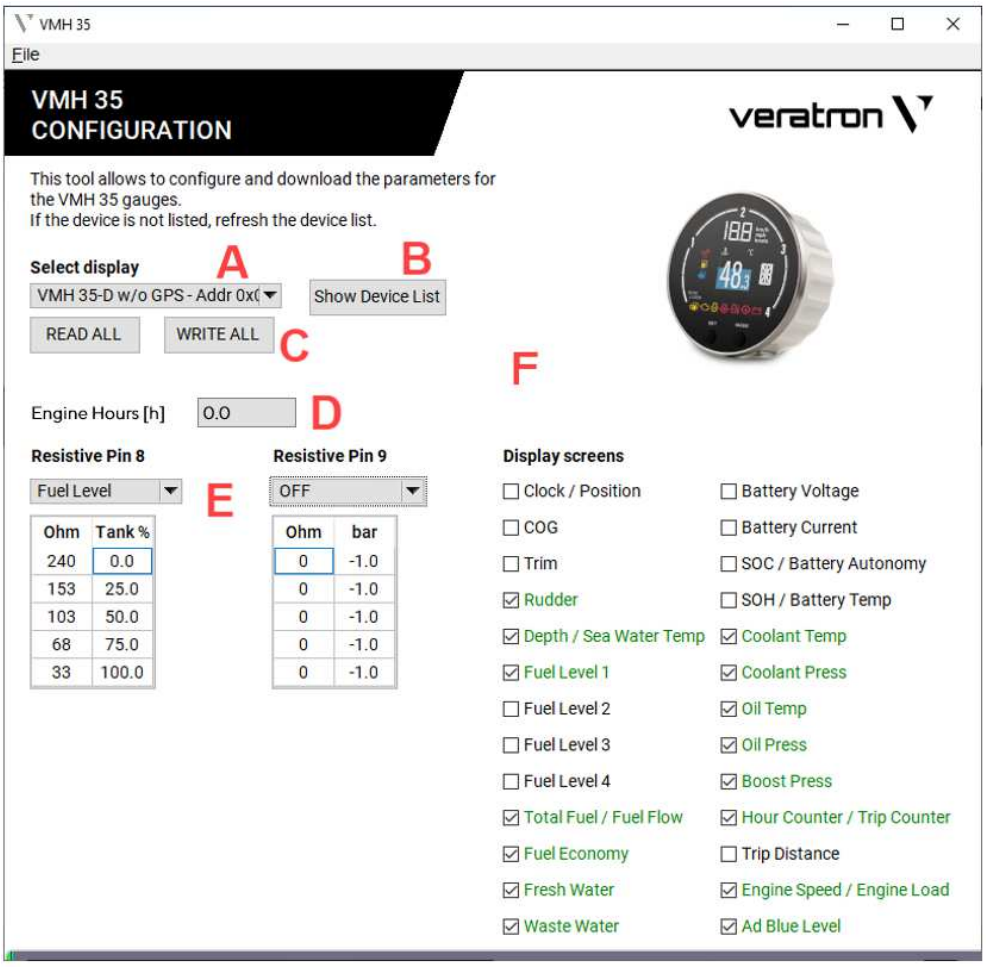
VMH 35

OVERVIEW

How to access it: Main window → VMH 35

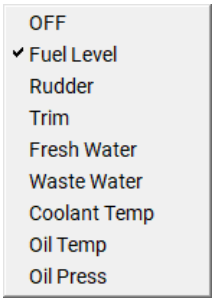
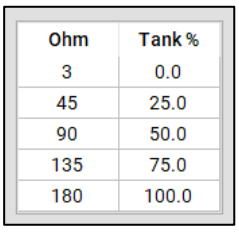
Which Instruments:

VM H 35 / VMH 35-D / VMH 35-D GPS:	Full functionality
VMH 35-S / VMH 35-S w.o. GPS:	Analog sensor configuration only



Element	Description
A	Target Selection
B	Device List
C	Read / Write configurations
D	Engine hour counter setting
E	Analog input settings
F	Data screen selection

CUSTOM SENSOR CONFIGURATIONS

1	**Select the display** to be programmed from the drop-down list **[A].** If more VMH 35 displays are on the network, they will all be visible in this list.
2	**Select the Sensor type** from the drop-down list in section **[D]**. 
3	**Manually set the 5-points calibration** into the table for the selected sensor. 
4	**Upload the configuration** to the display. Press the button **Write all** at **[C]** to write the configuration for the specific pin. A popup will appear as a safety confirmation.

Ohm	Tank %
3	0.0
45	25.0
90	50.0
135	75.0
180	100.0

SELECTING DATA SCREENS

Use the tick mark boxes in section [E] to select which data screens should be enabled on the screen and which not.

The setting can also be made manually through the VMH 35's menu on the display.

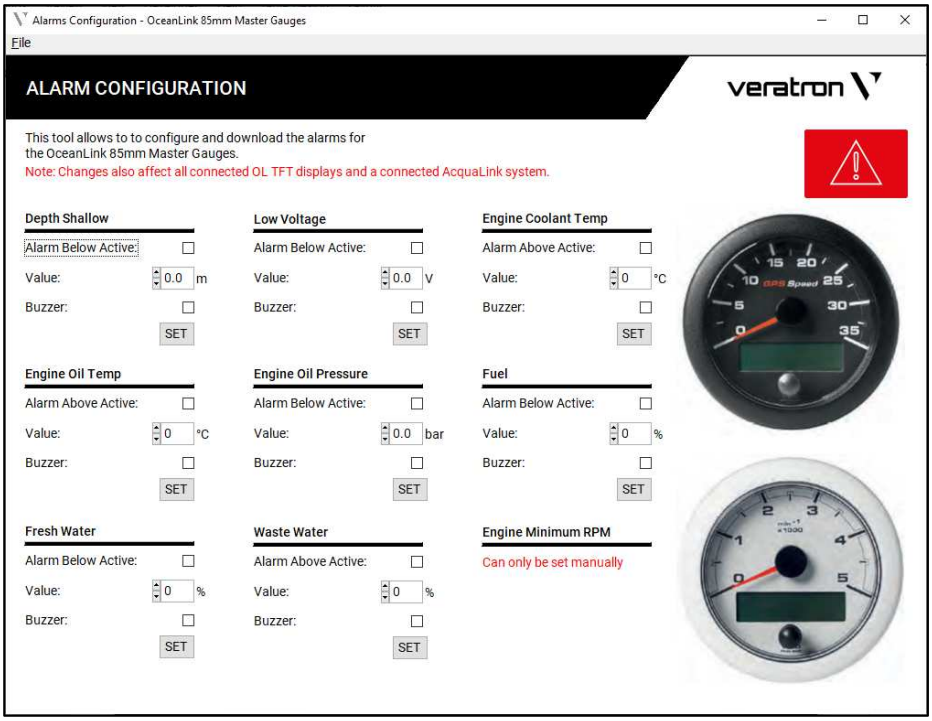
Note: This feature is currently only available for the VMH 35-D versions.

OCEANLINK 85MM MASTER

OVERVIEW

How to access it: Main window → OceanLink 85mm Master Gauges

Which Instruments: OceanLink 85mm Tachometers / OceanLink 85mm GPS Speedometers



The OceanLink 85mm Master page helps with setting up the analog alarms on the gauges.

Other settings must be changed with the integrated menu on the device. (Access the menu by keeping the push button pressed, while turning on the ignition.)

⚠ WARNING

Settings changed on this page will not only affect the OceanLink 85mm Masters. AcquaLink systems and all Veratron TFT Screens present on the NMEA-network will also apply these changes.

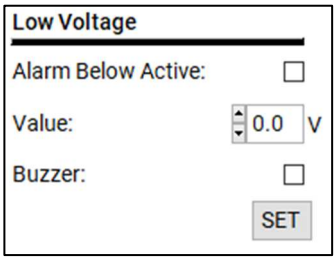
DEFINING AN ALARM

The first tick mark defines whether the alarm for the corresponding value is activated or not.

The alarm threshold is defined in the text field by entering a number or using the arrow buttons.

Whether this alarm should also trigger the buzzer output of the gauge is defined with the second tick mark.

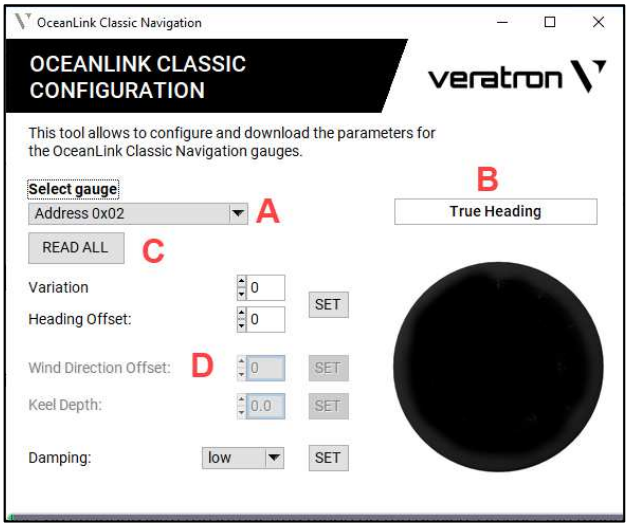
To upload the settings to the device, the **SET** button must be pressed.



OCEANLINK 85MM NAVIGATION

OVERVIEW

How to access it: Main window → OceanLink 85mm Classic Navigation



Element	Description
A	Target selection
B	Target type description
C	Read configurations from target
D	Settings

To configure any settings first the according gauge must be selected with the target selection dropdown menu **[A]**.

To figure out which address represents which gauge refer to the device list (accessible from the Configuration Tools main window) or by clicking through the options and see what type of gauge the according selection is, which is described in field **[B]**.

Press the button **Read all** in section **[C]** to update all the current configurations in the content fields **[D]**.

The configurations can be changed in section **[D]** and uploaded to the device by pressing the **SET** button on the right-hand side of the respective setting.

SETTINGS DESCRIPTIONS

Variation:

With the Variation configuration a difference between the magnetic and true north can be added to the values.

Heading Offset:

This option allows you to add an offset for the heading data. This must be done if the compass sensor is installed in a way that is not aligned with the vessels line of direction.

Wind Direction Offset:

This option allows you to add an offset for the wind direction data. This must be done if the wind direction sensor is installed in a way that is not aligned with the vessels line of direction.

Keel Depth:

The option Keel Depth allows to add an offset to the water depth value received from the sensor. The defined value represents the difference in height between the sensor and the lowest point of the boat.

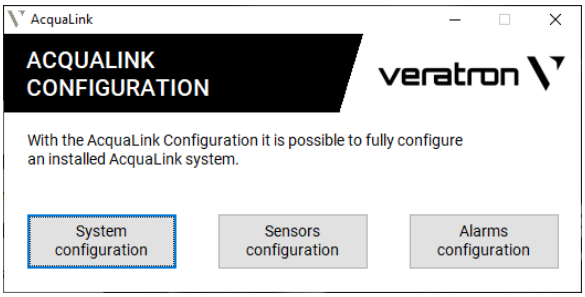
Damping:

When getting nervously fast changing values from the sensor an additional damping can be added to the gauge. This can improve readability on the gauge.

ACQUA LINK

OVERVIEW

How to access it: Main window → AcquaLink



With this Tool it is possible to set the configuration of your AcquaLink devices directly from your PC.

NOTE: not all the configuration possibilities are available via the tool. For some of them it is still required to use the display menu.

SYSTEM CONFIGURATION

The functionality of this configuration page is almost equivalent to the process for the OceanLink TFTs. Refer to the chapter "TFT Screens – System Configuration" for more information.

The AcquaLink – system configuration page has the additional chapter "D110 Tacho". This is for changing the engine instance on the 110mm AcquaLink Tachometers.

SENSOR CONFIGURATION

The functionality of this configuration page is almost equivalent to the process for the OceanLink TFTs. Refer to the chapter "TFT Screens – Sensor Configuration" for more information.

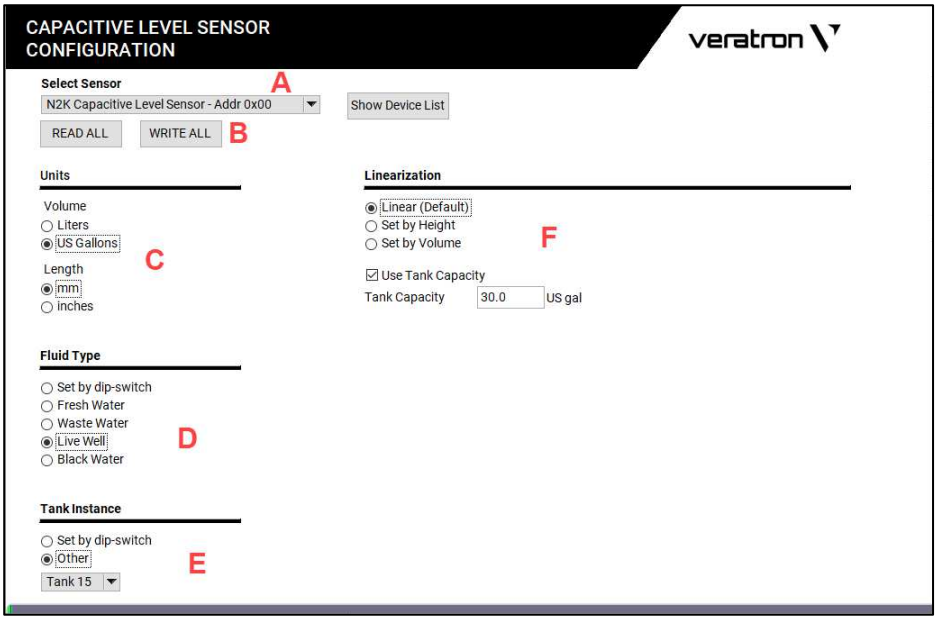
ALARMS CONFIGURATION

The functionality of this configuration page is almost equivalent to the process for the OceanLink TFTs. Refer to the chapter "TFT Screens – Alarms Configuration" for more information.

CAPACITIVE LEVEL SENSORS

OVERVIEW

How to access it: Main window → Capacitive Level Sensor



Element	Description
A	Target Selection
B	Read / Write configurations
C	Units Settings
D	Fluid type selection
E	Tank instance selection
F	Sensor curve settings

With the configuration tool there are additional settings to choose from when installing a capacitive level sensor with NMEA 2000 connection.

To do so, the correct sensor must be selected in the target selection section **[A]**. The current configurations will be displayed when clicking the button **READ ALL** in section **[B]**.

CONFIGURATION

Units

The units for length and volume measurements can be defined in the chapter **Units** in section **[C]**.

These settings do not have an immediate impact on the sensor readings but rather only affect the settings on this page.

Fluid Type
By choosing an option different from **Set by dip switch** the status of the dip switch will be overwritten.

Tank Instance
To choose any value higher than four as the tank number requires the configuration tool.

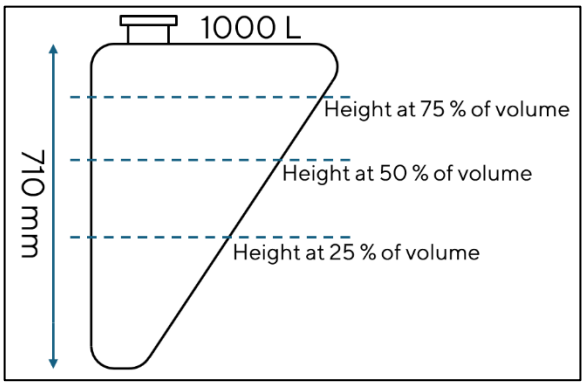
Click the tick mark Other to overwrite the number defined by the dip switch position and select the desired option.

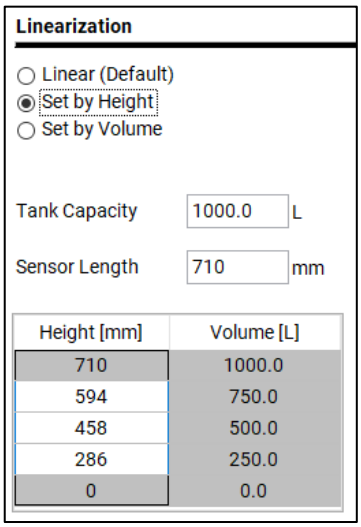
Keep in mind that the numerating in the Configuration Tool starts at 1 while the NMEA standard refers to the first tank as “instance zero”. (2. tank = instance 1 must be selected as Tank 2)

Linearization
If the sensor is to be applied on a tank with walls that are not parallel, the sensor curve must be adapted to get a precise relation between sensor reading and actual percentage of the volume.

This can be done by selecting either **Set by Height** or **Set by Volume**. The sensor length and the volume of the tank must be defined either way.

Fill out the white fields in the provided table to describe the sensor curve. A possible example is given in the pictures below.





Displaying Level in Liters/Gallons
The tank capacity can also be defined when using a normal linear sensor curve. This will make the sensor send out this data on the NMEA network too. Some displays will then have the possibility to display the tank level in liters or gallons rather than in a percentage.

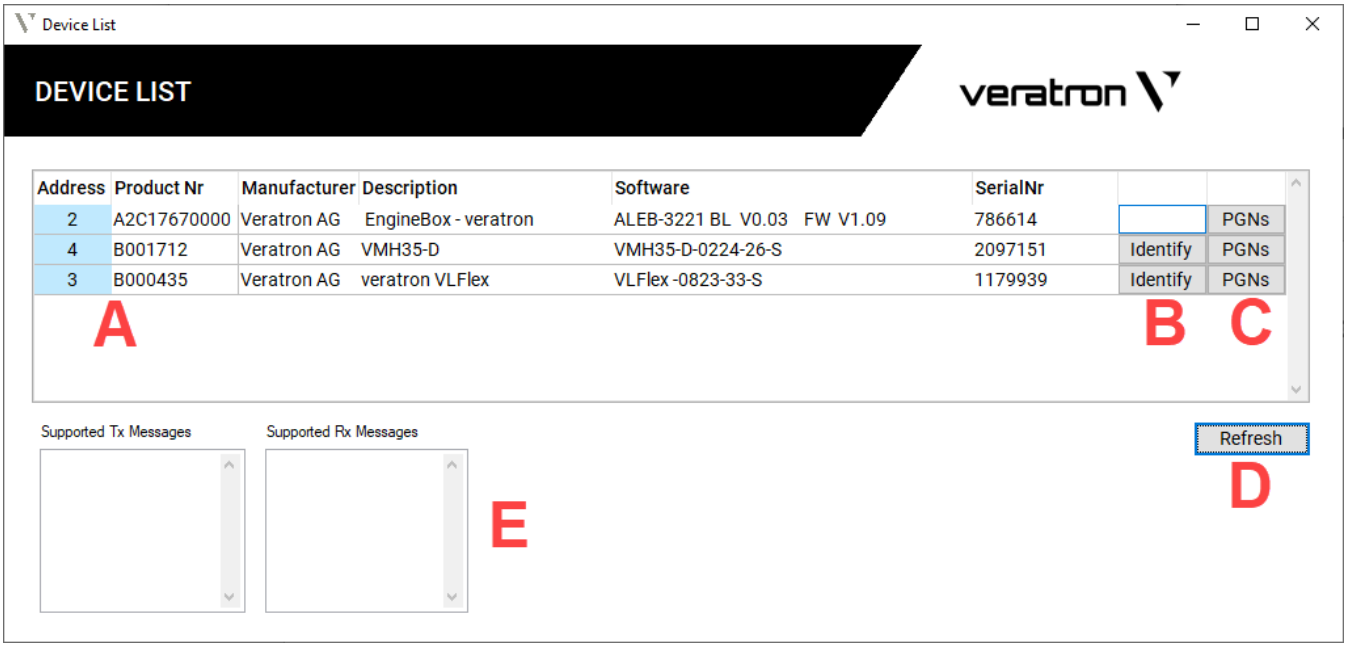
Upload
When all the settings are defined press **Write All** to upload the configuration to the sensor.

DEVICE LIST

OVERVIEW

How to access it: Main window → Device List

Or through the dedicated buttons on the "Software Update" and "NMEA Simulator" pages.



Element	Description
A	Device list
B	Button to identify devices
C	Request supported PGNs
D	Update device list
E	List of supported PGNs for current device

TABLE CONTENT

Address	This number represents the address of the respective instrument, that was assigned to it on the NMEA 2000 network.
Product Nr	The article number of the device as defined in the NMEA 2000 PGN 126996, field 2 (NMEA Manufacturer's Product Code).
Manufacturer	The manufacturer of the device as defined in NMEA 2000 PGN 060928, field 2 (Manufacturer Code)
Description	The article number of the device as defined in the NMEA 2000 PGN 126996, field 3 (Manufacturer's Model ID).
Software	The article number of the device as defined in the NMEA 2000 PGN 126996, field 4 (Manufacturer's Software Version Code).
Serial Nr	The article number of the device as defined in the NMEA 2000 PGN 126996, field 6 (Manufacturer's Model Serial Code).

IDENTIFYING A DEVICE

To identify a Veratron device, the button **Identify** in region **[B]** can be helpful.

By pressing the button, the corresponding device will start to blink. On TFT screens the display backlight will start flickering and on other devices (like the LinkUps) there might be a status LED that starts blinking very fast.

This feature is not supported on all devices.

SEE SUPPORTED PGNS

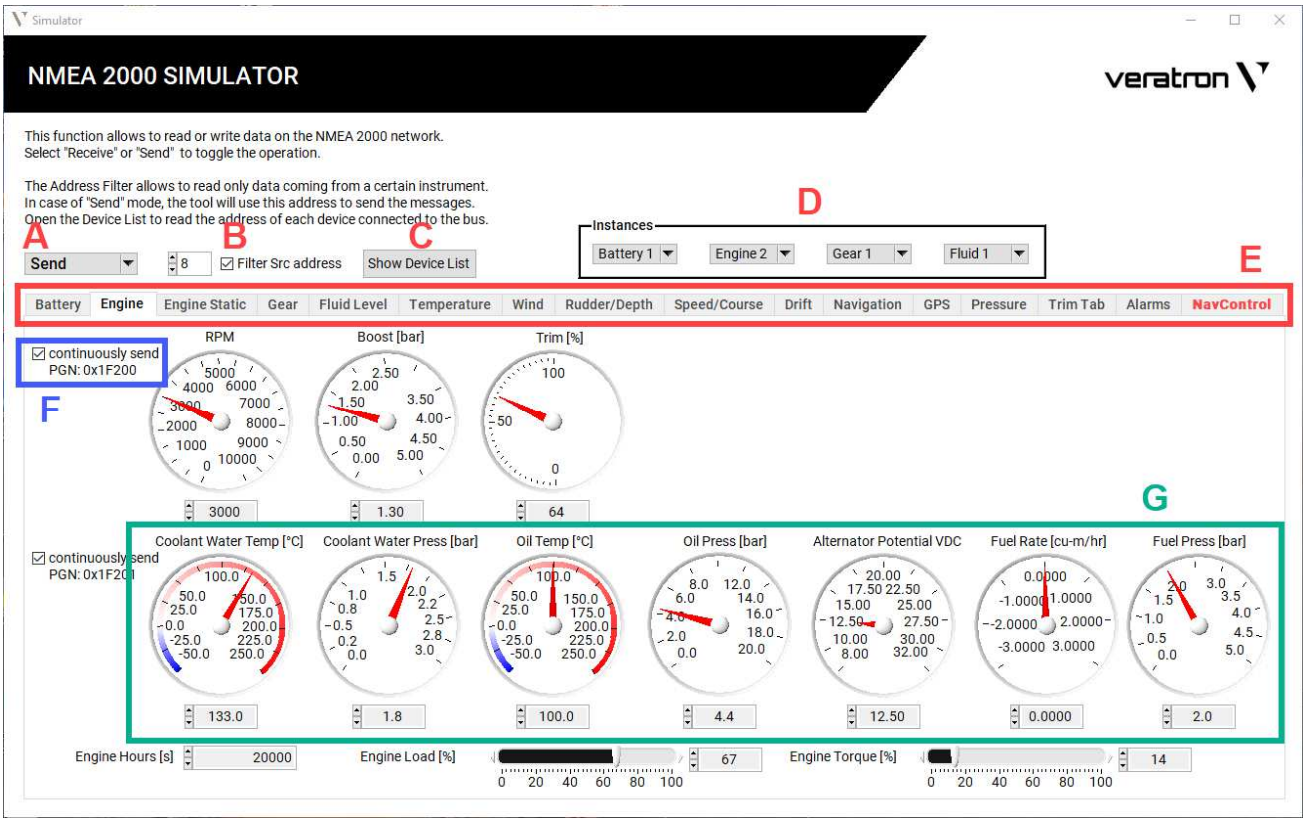
By pressing the button **PGNs** in section **[C]** most Veratron instruments will respond by sending the NMEA 2000 messages which they are supporting.

The results will then be presented in the fields at section **[E]**, separated for messages that can only be received and such that are sent out by the device.

NMEA 2000 SIMULATOR

OVERVIEW

How to access it: Main window → Service → NMEA 2K Simulator



The NMEA 2000 simulator can receive and display or simulate data on NMEA 2000 networks.

This feature is of great value for troubleshooting NMEA 2000 systems.

All the supported data (see the table below for the complete list) are grouped per PGN according to the NMEA 2000 standard and arranged in tabs. Each tab represents a specific type of data.

The simulator can only read or write ONE instance at a time (e.g., only data from Engine 1).

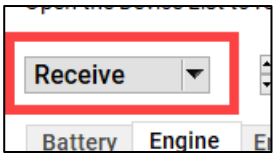
Element	Description
A	Send/Receive switch
B	Source address filtering
C	Open Device List
D	Instance selection

Element	Description
E	Tabs bar to access data groups
F	Send specific PGN switch
G	Single data gauges

READ DATA FROM A SPECIFIC DEVICE

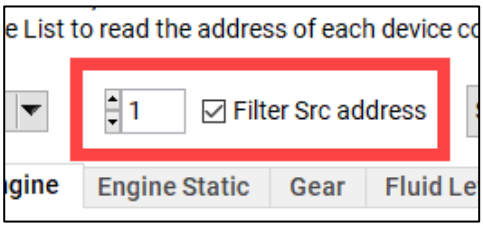
This function can be of particular interest to understand if a specific NMEA 2000 component is sending data or not.

To do so, first make sure the simulator is in Receiving mode.

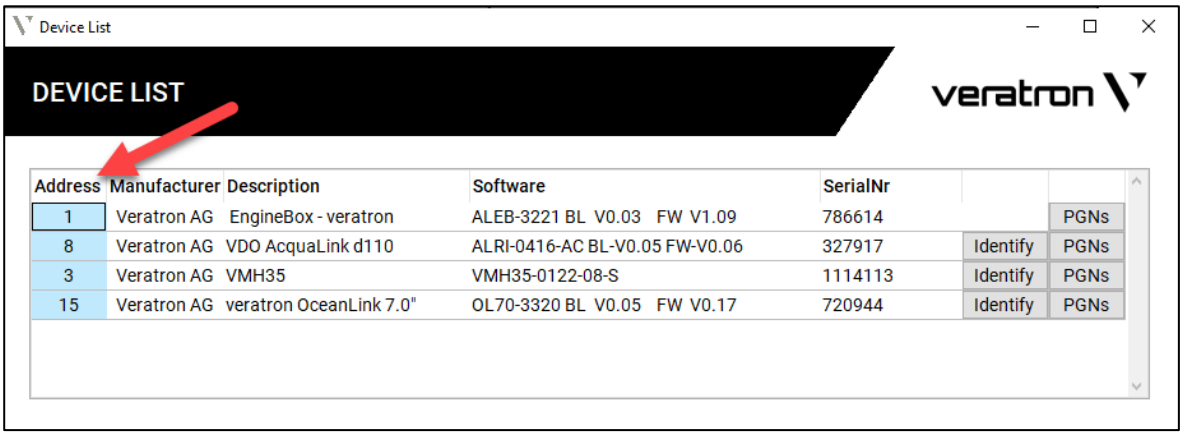


Then tag the "**Filter Src Address**" field and type in the source address of the device you'd like to receive messages from. (Use hexadecimal format)

Un-tick this option to read the data coming from each device (default option, no filtering).



The source address of every device can be found in the "Device List" of the tool (see dedicated chapter in this document). To open this out of the simulator page, click the button **[C]**.



In the example above, the simulator is set to only listen for the data coming from the EngineBox with Source Address 01 (EngineBox).

SIMULATING NMEA 2000 DATA

Through this function sending data on the NMEA 2000 network is possible.

Simulating data can be very useful to understand if a specific NMEA 2000 component is receiving data from the bus or not, or to check the NMEA 2000 network functionality aboard.

To do so, make sure the simulator is in **Send** mode.

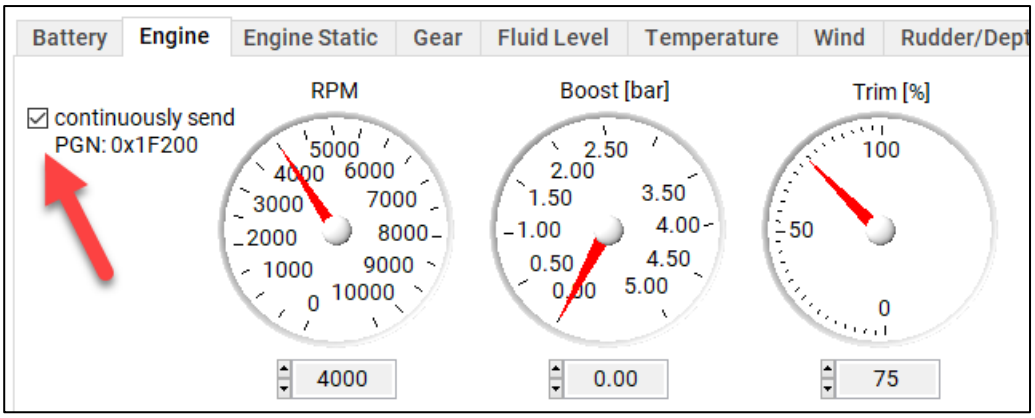
Choose the instance for the data you want to simulate.

NOTE: NMEA 2000 defines an instance for every data, but the tool allows one instance per datatype only.

Four instance types are available for Battery, Engine, Gear and Fluid (tanks) data.

NOTE: Be aware that the instance for battery 1 is actually instance 0 and likewise the second engine is sent as engine instance 1.

Find the data you want to simulate among the tabs and tick the PGN which contains that data.



NOTE: the tool will transmit the entire PGN and not only data of a single dial.

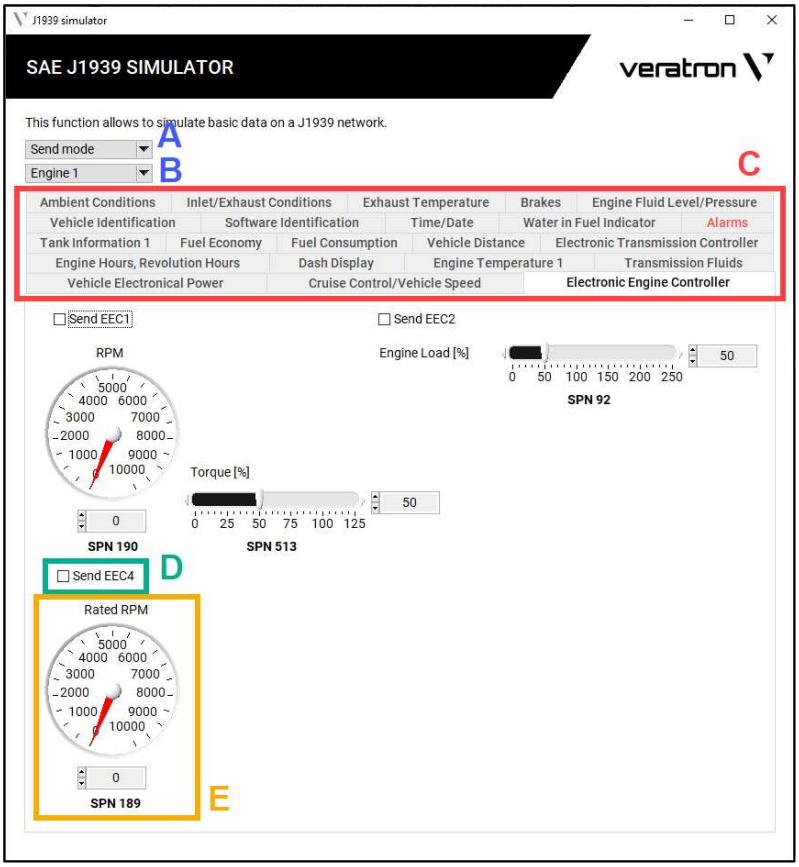
In the example above, when the PGN 1F200 is enabled, RPM, Boost Press and Trim will all be sent on NMEA 2000.

Operate the related gauge or type-in the value for the data to be simulated.

SAE J1939 SIMULATOR

OVERVIEW

How to access it: Main window → Service → J1939 Simulator



Element	Description
A	Send/Receive switch
B	Data instance selection
C	Tabs grouping data
D	Send specific PGN switch
E	Single data gauges (SPNs)

SIMULATING SAE J1939 DATA

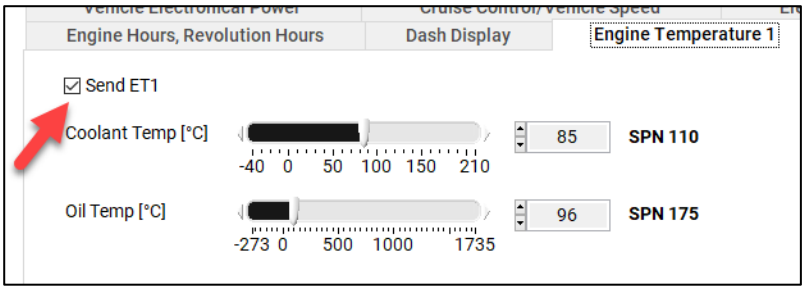
With this function it is possible send data on the J1939 bus.

To do so, first make sure the simulator is in **Send** mode by setting the Send Receive switch **[A]** accordingly.

Choose then the engine instance for the data you want to simulate **[B].**

NOTE: it is only possible to simulate one instance at a time (no multiple engines).

Find the data you want to simulate among the tabs and tick the PGN which contains that data.



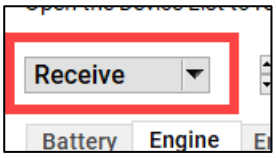
NOTE: the tool will transmit the entire PGN and not only the SPN you changed the value off. In the example above, when the PGN "ET1" is enabled, both Coolant Temp and Oil Temp will all be sent out on the bus.

Operate the related gauge or type-in the value for the data to be simulated.

READING SAE J1939 DATA

This function can be of particular interest to understand if the engine is sending specific data on the CAN bus or not.

To do so, first make sure the simulator is in **Receiving** mode by setting the Send Receive switch **[A]** accordingly.



Then choose then the engine instance related to the engine you want to listen from **[B].**

NOTE: it is only possible to read from one engine at a time (no multiple engines).

Navigate through the tabs to read all the values received from the engine.

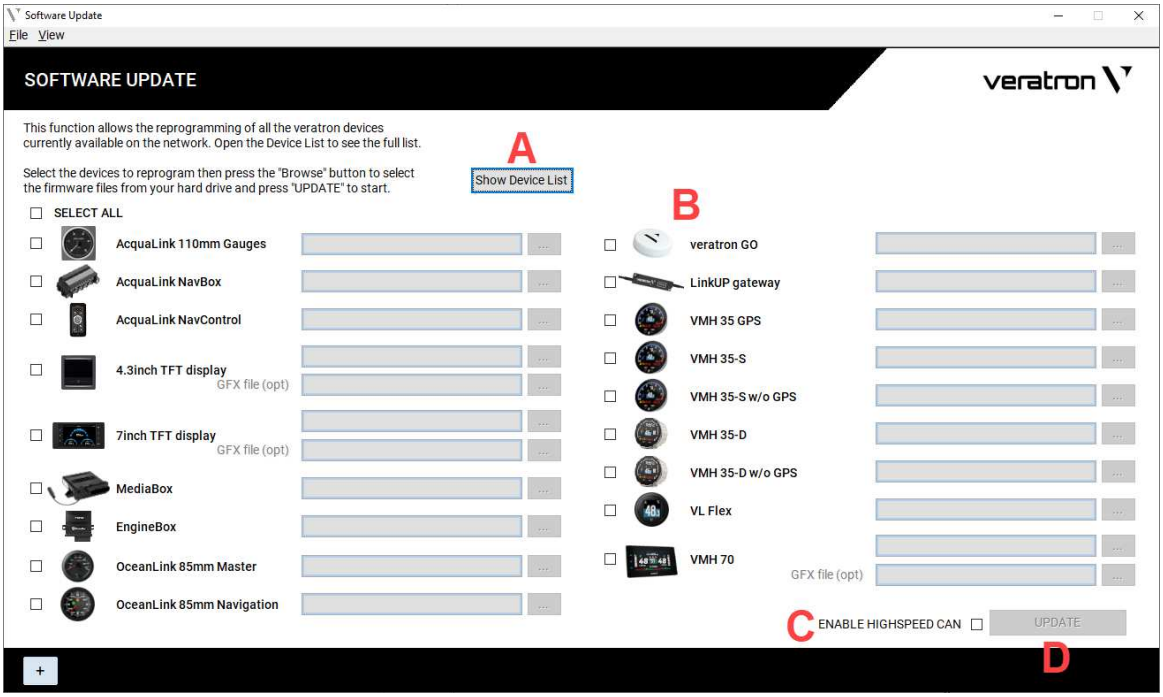
SOFTWARE UPDATE

OVERVIEW

How to access it: Main window → Service → Software Update

⚠ WARNING

While a software update is running do not interrupt the process by closing the program window or separating the bus or the gauge from the power supply.
This would result in the gauge not being able to start anymore.



Element	Description
A	Device List
B	Device selection
C	High-Speed CAN
D	Update button

START AN UPDATE

To make a firmware update on a Veratron device click the tick mark next to the corresponding instrument type. Select then the firmware file by pressing the button with the three dots in the same line, which will open a folder explorer window.

The latest firmware files can be found on the Veratron website on the product page for the corresponding device in the section “Downloads”.

It can be downloaded also from the collection of files from this link or from the Resources page on the Veratron website.

HIGH-SPEED CAN

To improve the upload speed of bigger firmware files, there is the option of enabling the High-Speed CAN.

Use the tick mark in the field on the bottom right edge of the window to enable this feature.

All the devices must be removed from the NMEA 2000 network except the instrument to be updated. The high-speed CAN can not be used if there are several instruments on the bus.

Using this feature makes sense when updating the graphics file on any of the TFT screens, as those can take quite long.

RECOVER FROM BOOTLOADER MODE

If something goes wrong during a firmware update, the instrument will not be able to start again. (This can happen, if the instrument gets disconnected from its power source, the Configuration Tool gets closed or the NMEA connection gets interrupted, while the software update is ongoing.)

The instrument is now in “bootloader mode” which means, there is no complete firmware file installed on the instrument. The TFT displays will indicate this through blinking the backlight while the screen is all black. Most other devices will not show anything at all.

If this happens, follow the instructions on this page.
(https://veratron.com/blogs/tech-papers/recover-a-display-in-bootloader-mode?_pos=1&_sid=91790a24a&_ss=r)

If the issue persists, get in contact with our service team: service@vertron.com

ACCESSORIES

Accessory	Part Number
Veratron Diagnostic Tool (USB to NMEA 2000 interface)	A2C3931270001
NMEA 2000 to VDO Bus adapter cable	A2C96244900
T-Joiner	A2C3931270002
NMEA 2000 Drop Cable – 2m	A2C9624380001
NMEA 2000 Drop Cable – 6m	A2C9624400001

Visit http://www.veratron.com for the complete list of accessories.

REVISION HISTORY

Version	Changes	Date
Rev.AC	Initial Release of Document	02.04.2024
Rev.AD	Adapted for new functionality due to firmware update on "NMEA 2000 Capacitive Level Sensors"	06.05.2024
Rev.AE	Additional information about required hardware drivers. Description for new features in V3.15: – EngineBox – changing engine hour counter values – VMH 35 – changing engine hour counter values – VMH 35 – settings supported on further types	26.08.2024

Veratron AG
Industriestrasse 18
9464 Rüthi,
Switzerland

T +41 71 7679 111
info@veratron.com
veratron.com