Guide to Custom Gauge Manager

NMEA 2000®

Actisense®

Award Winning NMEA Specialists

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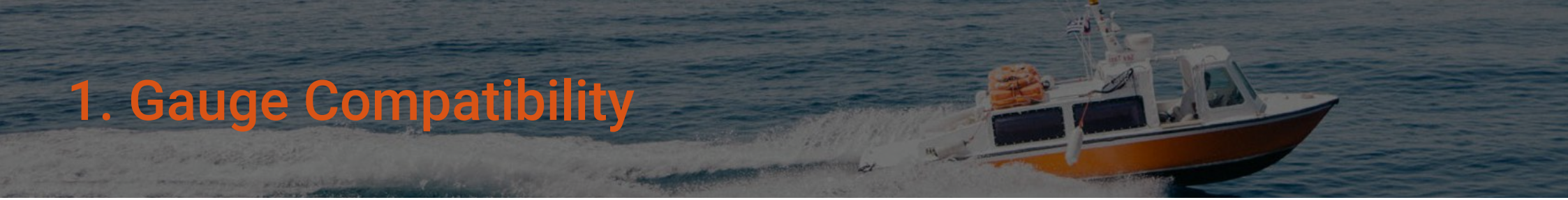


1. Gauge Compatibility

EMU-1 Gauge Compatibility

The EMU-1 already supports a large library of gauges. However, the CGM can be used to configure your own gauge if it isn't supported in our library.

Gauge Compatibility Table

Fluid Level

Unit	Min Range	Max Range	Voltage	Market	Manufacturer
Ohms	3	180	12/24	EU	VDO
Ohms	3	180	12/24	EU	VDO/Volvo (Ocean)
Ohms	10	180	12/24	EU	VDO/Volvo (Ocean)
Ohms	10	180	12/24	EU	Faria
Ohms	240	33	12/24	US	VDO
Ohms	240	33	12/24	US	Faria
Ohms	240	33	12	US	US Marine (Faria)

Pressure

Type	Unit	Min Range	Max Range	Voltage	Market	Manufacturer
Engine Boost	Bar	0	2	12/24	EU	VDO
Engine Boost	Bar	0	5	12/24	EU	VDO
Engine Boost	Bar	0	8	12/24	EU	VDO
Engine Boost	Bar	0	10	12/24	EU	VDO
Engine Boost	Bar	0	10	12/24	EU	VDO/Volvo (Ocean)
Engine Boost	Bar	0	10	12/24	EU	VDO Viewline
Engine Boost	Bar	0	10	12/24	EU	Faria

VIEW THE FULL LIST OF COMPATIBLE GAUGES

2. What is the Custom Gauge Manager?

What is the Customer Gauge Manager?

The Custom Gauge Manager (CGM) within Actisense Toolkit is a utility designed for users to create their own gauges by creating a graph consisting of Voltage against the output of the connected sender/gauge pairing.

A physical analogue gauge must be present for the gauge created in the CGM to operate correctly. If there is no analogue gauge present, the EMU-1 will inject current as it is expecting to be operating from a resistive sender alone.

EMU-1 NMEA 2000® Engine Monitoring Unit

DOWNLOAD THE ACTISENSE TOOLKIT

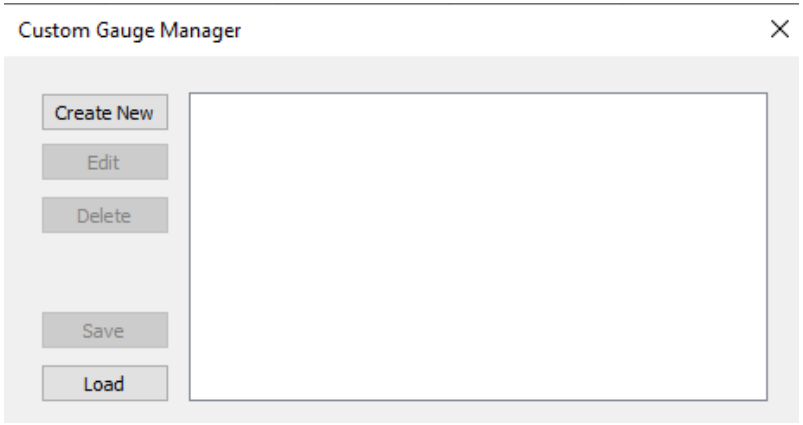
3. How to access the CGM

How do I access the CGM?

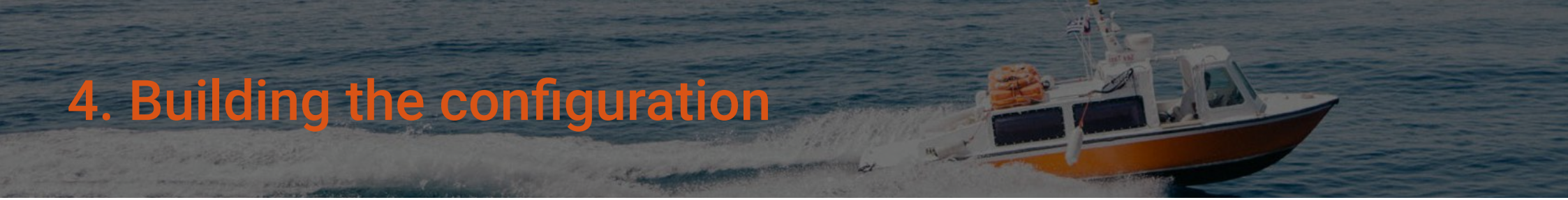
To access the CGM, load Toolkit and select the CGM from the Ribbon Menu, pictured here:

This guide is a simplified step by step for creating a new gauge, however some of the processes still apply if editing an existing one that has already been created.

Once the CGM has opened, the following screen will be presented, which allows you to create a new gauge, edit a previously defined one, or delete old ones which are not required anymore.



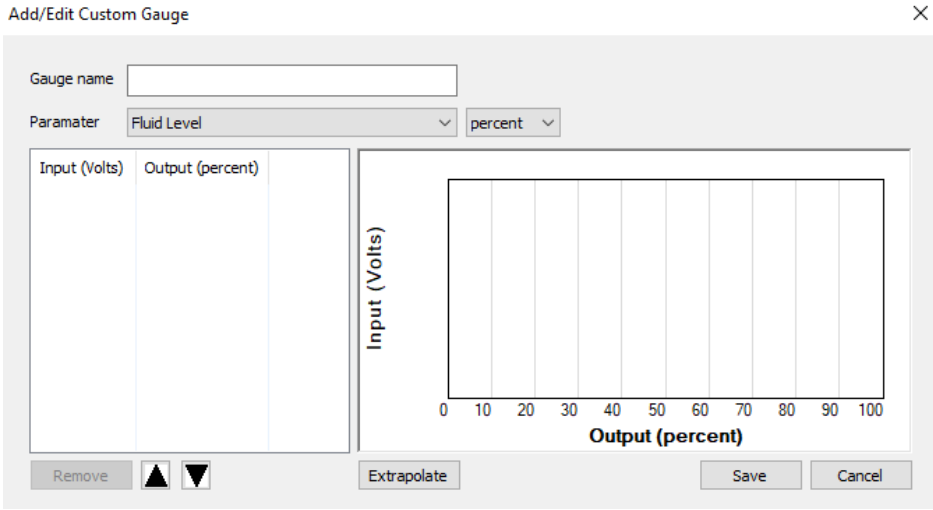
Clicking ‘Create New’, will start a new gauge. From here an option box will pop up indicating if you want to use a blank configuration to start from fresh, or a previously configured gauge can be selected from this list and act as a template for the new gauge being created.



4. Building the configuration

Building the configuration

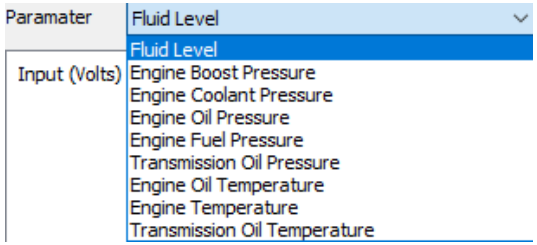
Building the custom gauge is done from this window:

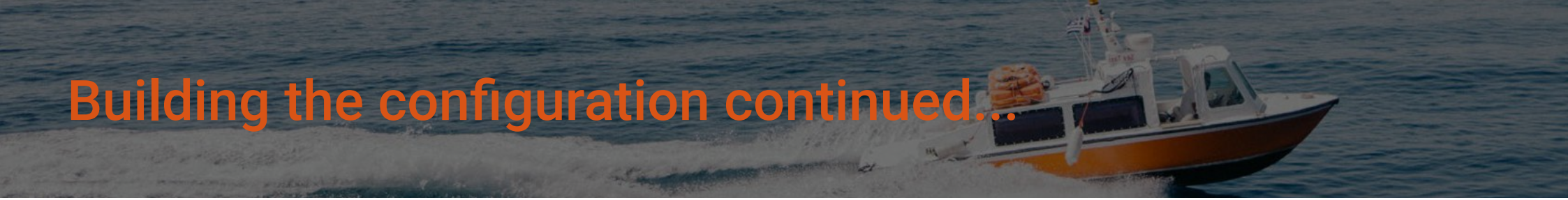


In this Window, the values are entered into the table on the left to start building the graph.

The first step is to name the gauge. It is important to name the gauges, as they will show in the config gauge list when configuring the EMU-1. If the name is relevant, e.g. ‘Custom Fluid Gauge #1’, then it is obvious that the gauge is custom, which can save headaches later on for installers / technicians who may need to investigate issues should they arise with the engine system etc…

Once the gauge has been named, then the defining parameter for the gauge needs to be set. In the below example it is Fluid Level, but others are available.





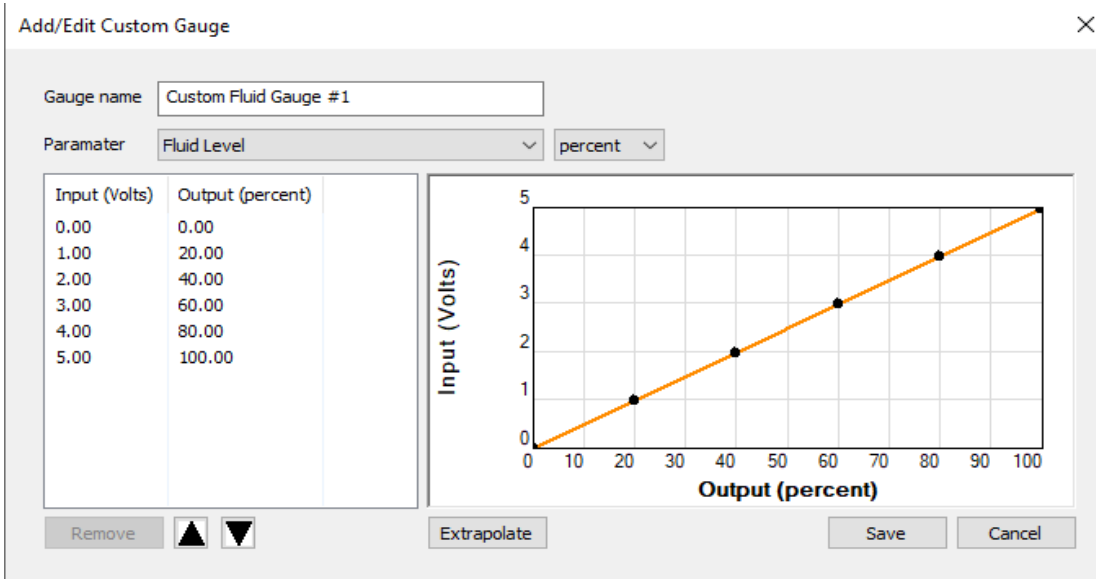
Building the configuration continued...

The left-hand side of the CGM gauge screen is where the values are entered to build the graph on the right side. As the voltages are entered in the Input (Voltage) column, the y-axis of the graph will populate accordingly. The voltage readings are taken from the gauge input connection on the EMU-1 by using a voltmeter / DMM across the connection terminals.

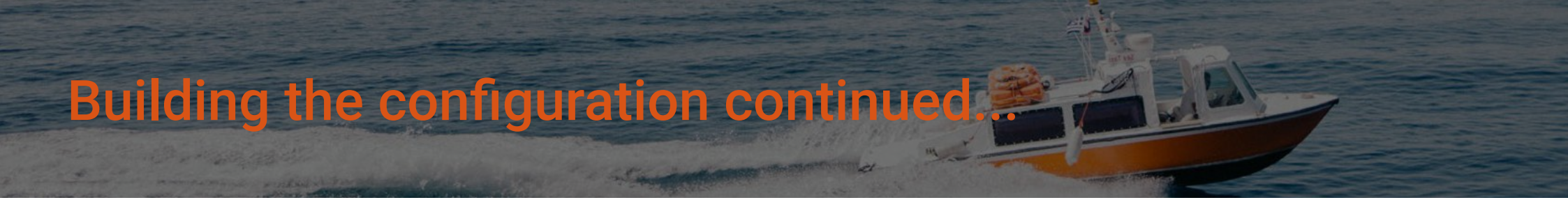
The Output (percent) column is what fluid level % is present, relative to the voltage value seen on the gauge input. This reading is taken by looking at the physical analogue gauge on the vessel, and then entering this value into the CGM tool.

When building a custom gauge, the more readings entered, the more accurate the output value and graph is going to be. It is always suggested to take a minimum of 3 readings to get a reasonable level of accuracy, containing one low, one middle and one higher value.

Once the values have been entered, the graph is configured, giving the EMU-1 reference values for each voltage reading on the input. Here is an example of a completed custom gauge: (Please note, this is not an actual value range, and has been configured purely to give a graphical representation of how it looks)



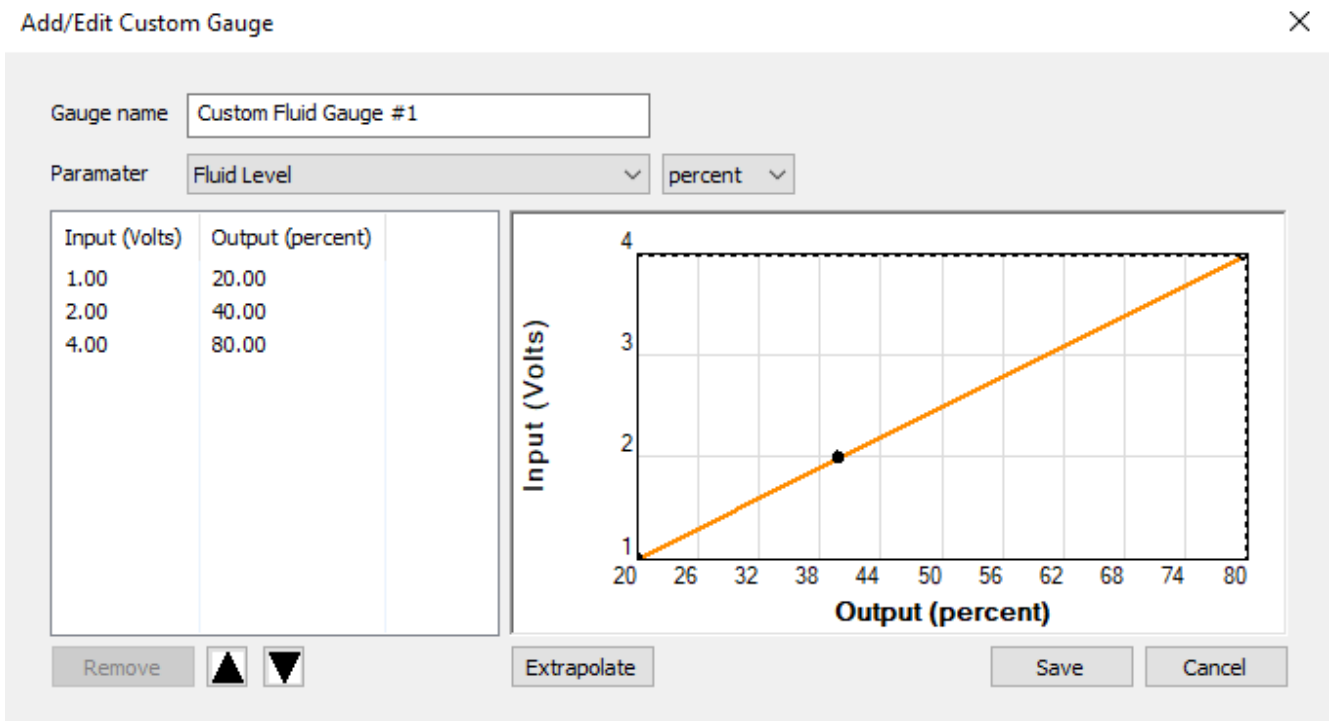
This gauge can then be saved to store it in the gauge library. It can also be saved as an .actj file, which can then be loaded back into Toolkit later.



Building the configuration continued...

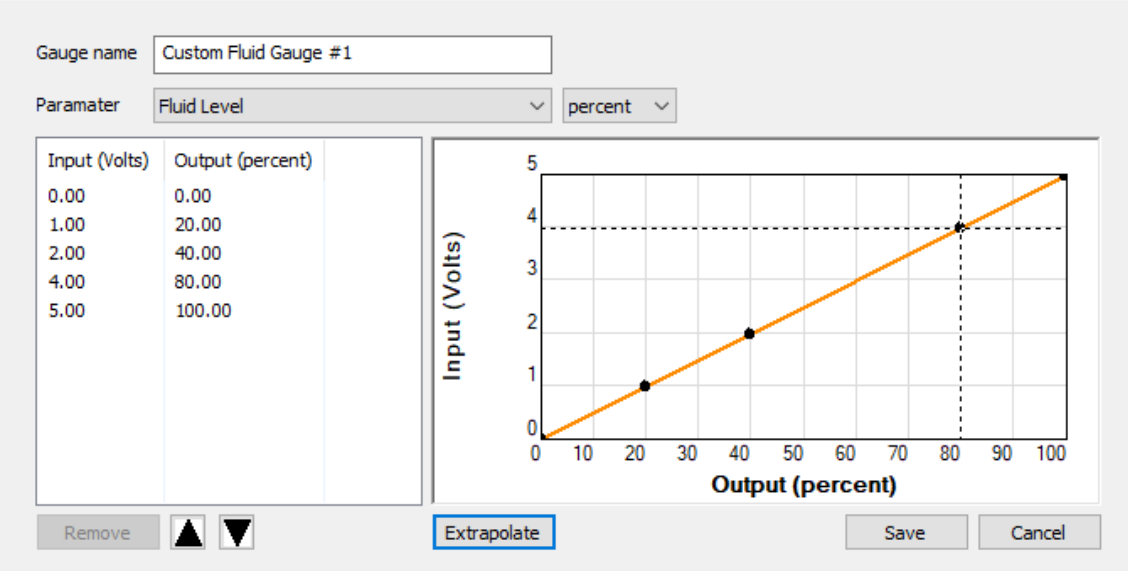
If a minimum or maximum value cannot be taken, the CGM tool can extrapolate the graph, by using the values already entered. For example, if readings were only entered for 20%, 40% and 80% on the fluid level, the extrapolate function can be used to extend the graph to a defined min / max range (usually 0 to 100 on fluid level).

The extrapolate function, allows a graph which has 2 or more readings (3 readings in this example):



Building the configuration continued...

To be turned into a graph with a value for 0% to 100% output, where the EMU-1 then has a reference for voltages from 0-5V in this example:



It is important to remember that the more readings that are added, the more accurate the custom gauge is going to be. Alongside this, extrapolation with fewer values can result in some values being way off, especially when the graph should be curved but it has extrapolated in a straight line due to lack of data being input.

5. Additional Support

Learn more about the features, advantages and benefits of the EMU-1.

EMU-1 FEATURES, ADVANTAGES & BENEFITS

Discover the rest of our NMEA 2000 and NMEA 0183 ranges at actisense.com