



NMEA2000® Tank Sender Adaptor

Part Number: 3125

Installation and Operating Instructions

Introduction

The NMEA2000® Tank Sender Adaptor allows a standard resistive tank level sender to connect to the NMEA2000® network.

It is configurable to either the European standard 0 - 180 (full) Ohm and the American standard 240 - 30 (full) Ohm tank level senders.

It is also easily configured to indicate levels from Fuel, Fresh Water, Waste Water, Live Well, Oil and Black Water (Sewage) tanks to the NMEA2000® network and configurable to identify up to 16 tanks of each type on a single network.

The Tank Sender Adaptor is robustly constructed to the IEC60945 Maritime Navigational and Radiocommunications Equipment Standard to ensure trouble free operation and high reliability.

It is certified to the NMEA2000® network standard version 1.2 and attaches to the network by a single "micro" plug. It draws less than 50mA from the network. No additional power cabling is required and the sender is simply connected to the adaptor..

Safety Instructions

This sender should only be installed by a person competent and experienced in working with electronic and electrical systems on boats.

Before beginning work the battery should be disconnected to avoid the risk of a short circuit, a fire or an explosion.

Before drilling any holes to mount any unit or run any cabling always make sure it is safe to do so.

Location and installation

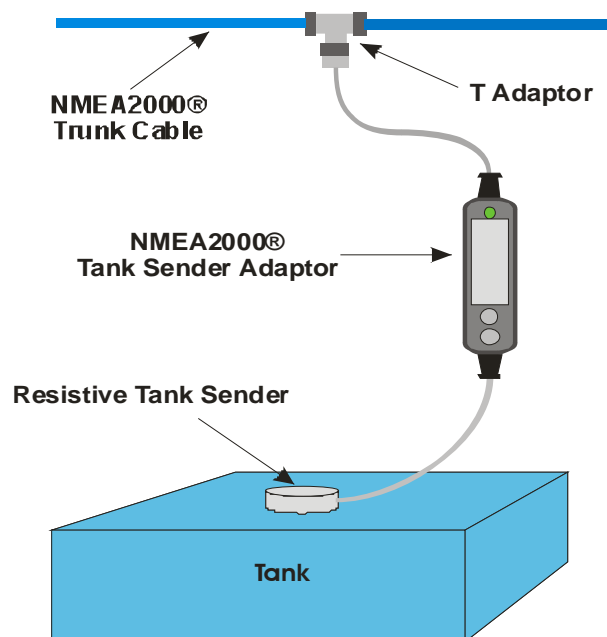
The Tank Sender Adaptor is water resistant but NOT waterproof. It is designed to be located in a dry and protected location in the cable run between the NMEA2000® network and the tank level sender. It does not need to be attached to any surface but should be restrained from free movement by means of cable ties to the rest of the cable run or similar.

Wiring

The Tank Sender Adaptor 1 metre NMEA2000® drop cable with the plug end should be plugged into a T adaptor on the NMEA2000® network. Ensure that it is mated securely and the retaining ring has been tightened correctly to ensure the junction is waterproof. Note that this cable length may be extended to a maximum of 6 metres by using micro drop cables.

The 2 metre sender cable from the Tank Sender Adaptor should be connected to the two terminals on the sender. The connection polarity of the sender wires is unimportant. Either way round will work correctly.

ENSURE THAT NO OTHER CABLES ARE CONNECTED TO THE TANK LEVEL SENDER.



Configuration

Device Instance and System Instance

The NMEA2000® standard requires that as multiple devices of the same type can exist on a single network that each device has a unique "Device Instance" value which can range from 00 to FF. As shipped, the Tank Sender Adaptor, has a Device Instance value set to 00. In the event that this needs to be changed, if for instance there were two tank sender adaptors in the vessel, this is easily done. The required "Device Instance" value should be entered into rotary switch 0 (first character) and rotary switch 1 (second character).

i.e. for Device Instance = 01 then rotary switch 0 should be set to 0 and rotary switch 1 be set to 1,

or for Device Instance = 02 then rotary switch 0 should be set to 0 and rotary switch 1 be set to 2,

or for Device Instance = 10 then rotary switch 0 should be set to 1 and rotary switch 1 be set to 0,

or for Device Instance = 15 then rotary switch 0 should

be set to 1 and rotary switch 1 be set to 5 and so forth.

Then, with power on and the unit operating normally apply a small magnet to the area marked on the label until the blue LED lights for 2 seconds. Then the Device Instance has been read from the switches and stored permanently in the adaptors non-volatile memory.

The NMEA2000(R) standard also has a "System Instance" value to allow for multiple networks to be linked together. As shipped the Tank Sender Adaptor has the System Instance value set to 0. In the very unlikely event that this needs to be changed please contact the manufacturers for details on how to do this.

After setting the Device Instance the Sender Resistance, Tank Contents and Tank Number MUST then be set using the following instructions.



Sender Resistance and Tank Contents

This adaptor is configured to either the European standard 0-180 or the American standard 240 - 30 Ohm tank level senders and to the range of different tank contents by means of rotary switch 0 as per the following table:-

Sender Resistance	Tank Contents	Switch 0 Position
European 0-180	Fuel	0
	Fresh Water	1
	Waste Water	2
	Live Well	3
	Oil	4
	Black Water	5
	Invalid	6
American 240-30	Invalid	7
	Fuel	8
	Fresh Water	9
	Waste Water	A
	Live Well	B
	Oil	C
	Black Water	D
	Invalid	E
	Invalid	F

Note that switch positions marked INVALID will not send valid information over the NMEA2000® network.

Tank Number

The NMEA2000® network protocol supports up to 16 tanks of each contents type which they number as Tank Number 0 to Tank Number 15. The adaptor is configured to identify the tank number of it's tank by means of rotary switch 1 as per the following table:-

Tank Number	Switch 1 Position
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

Note that setting the Sender Resistance, Tank Contents and the Tank Number can be done at any time without needing to use a magnet. Only setting the Device Instance needs to be set by using a magnet.

Operation

Once the adaptor has been installed there is no normal operator intervention required.

The unit has a blue LED which flashes every time the sender transmits a signal.

Calibration

The adaptor is already calibrated and requires no further calibration.

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