

N2K SMART FUEL FILTER

NMEASig 2000 - Water-in-fuel Instance Reprogramming Procedure

GENERAL INFORMATION:

Signal Filters NMEA 2000 Fuel Filter Water Separator (NMEASig 2000 Water-in-fuel Instance Reprogramming Procedure)

The Entratech NMEASig 2000 Filter with Water In Fuel detection uses the Engine Parameters, Dynamic (PGN 127489) parameter group to transmit the presence of a water-in-fuel fault when detected. The instance value in PGN 127489 differentiates the NMEASig 2000 Filter from the vessel propulsion engines, which are also transmitting PGN 127489, and also differentiates between multiple NMEASig 2000 Filters that may be installed.

While instance values originate at 0 and count upward, most Multi-function Display (MFD) manufacturers label engines starting with 1 and count upward. So, the instance programmed as 0 appears on the MFD display as Engine 1. The following table shows typical device/engine instance values that may be preprogrammed into the NMEASig 2000 by the factory, and also indicates the resulting engine number that an MFD will display as part of a water-in-fuel warning. Factory instance values are chosen so that they do not conflict with instance values that may already be in use by the vessel engines.

Instance	Engine	Interpretation
10	Engine 11	NMEASig 2000 Filter associated with Engine 1
11	Engine 12	NMEASig 2000 Filter associated with Engine 2
12	Engine 13	NMEASig 2000 Filter associated with Engine 3
13	Engine 14	NMEASig 2000 Filter associated with Engine 4
14	Engine 15	NMEASig 2000 Filter associated with Engine 5
15	Engine 16	NMEASig 2000 Filter associated with Engine 6
16	Engine 17	NMEASig 2000 Filter associated with Engine 7
17	Engine 18	NMEASig 2000 Filter associated with Engine 8
18	Engine 19	NMEASig 2000 Filter associated with Engine 9

For convenience, the Address Claim (PGN 060928) device instance and the PGN 127489 engine instance in the NMEASig 2000 are programmed to use the same value, which is stored in EEPROM. NMEA 2000 requires that the device instance is reprogrammable in the field, meaning that the NMEASig 2000 engine instance can be reprogrammed, if necessary, in the field by reprogramming the device instance.

Reprogramming the device instance can be accomplished using either the Actisense NGT-1-USB with the Actisense NMEA Reader program, or using the Maretron USB100 with the Maretron N2KAnalyser program. The field programming procedure has been created to ensure that the device instance will not be inadvertently reprogrammed while configuring other devices on the NMEA 2000 Network.

THE GENERAL PROCESS FOR FIELD PROGRAMMING IS AS FOLLOWS:

1. Place the NMEASig 2000 in an alert condition. This can be accomplished by removing the filter, which will bypass the normal probe and connect the probe electronics to ground, thus causing a Water-in-Fuel alert to be transmitted on the NMEA 2000 Network.
2. While the filter is removed, attempt to reprogram the Device Instance according to the specific instruction below. No change will be made to the Device Instance on the first attempt.
3. While the filter is still removed, and within 30 seconds of the first attempt, reprogram the Device Instance to the same value a second time. The NMEASig 2000 will update the Device Instance and Engine Instance and transmit a new address claim.
4. Observe that the instance has changed in Alert messages, and in product lists displayed by diagnostic tools and/or MFD settings pages.

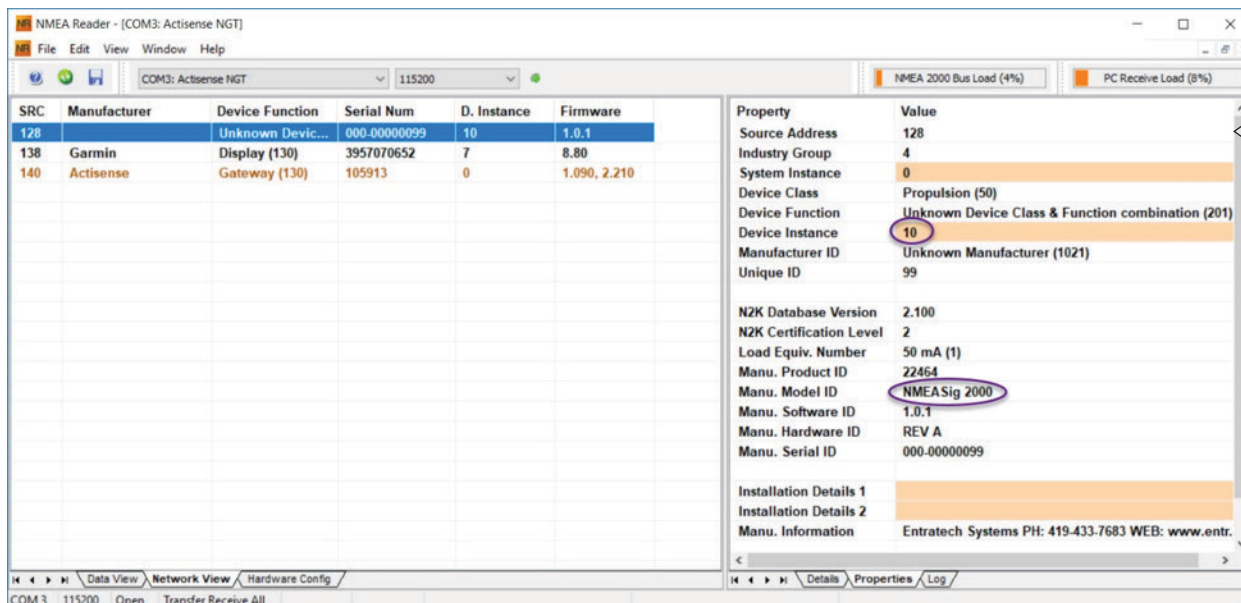
The following two sections provide instructions for steps two and three using either the Actisense NGT-1-USB with NMEA Reader or the Maretron USB 100 with N2KAnalysr.

ACTISENSE NGT-1-USB WITH NMEA REGENERAL INFORMATION:

This section spells out the required steps to reprogram an NMEASig 2000 Filter in the field using the Actisense NGT-1-USB and the NMEA Reader program. The basic approach, once the filter can has been removed from the filter head, is to use the NMEA Reader program to display the device instance from PGN 060928, and to enter the desired value into the associated input field. The reprogramming can be accomplished on any NMEA 2000 network. If there are multiple NMEASig 2000 Filters on the network, removing the filter can on only one filter at a time will help to ensure that each device is programmed with the correct instance.

Connect the Actisense NGT-1-USB to the NMEA 2000 network and your PC in accordance with Actisense instructions, and install the Actisense NMEA Reader program. Remove the filter can from the NMEASig 2000 Filter that you wish to reprogram. Launch the Actisense NMEA Reader program, and select the COM port to which the Actisense NGT is connected.

There are three tabs on the left-hand pane of the NMEA Reader, selecting the "Network View" tab will produce a display as shown in the following screen-shot. Select1 the Entratech Filter you wish to reprogram on the left-hand pane, and select the "Properties" tab on the right-hand pane. Confirm that you have selected the correct device by matching the Manufacturer Model ID and the current device instance, as shown. **(FIG 1)**



Changing the instance is accomplished by clicking your cursor in the Device Instance field, entering the desired instance over top of the current instance, and hitting the Enter key, as shown in the next two screen-shots **(FIG 2)** and **(FIG 3)** on the following page.

Remember that you will have to enter the same value twice before the NMEASig 2000 will accept the change.

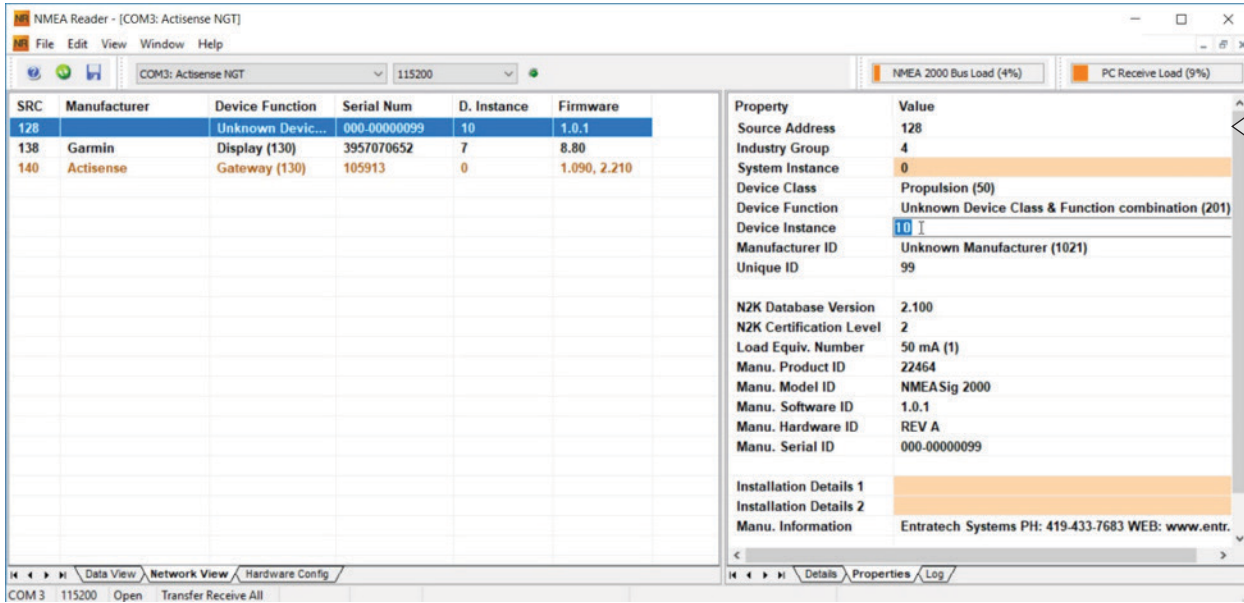


FIG 2

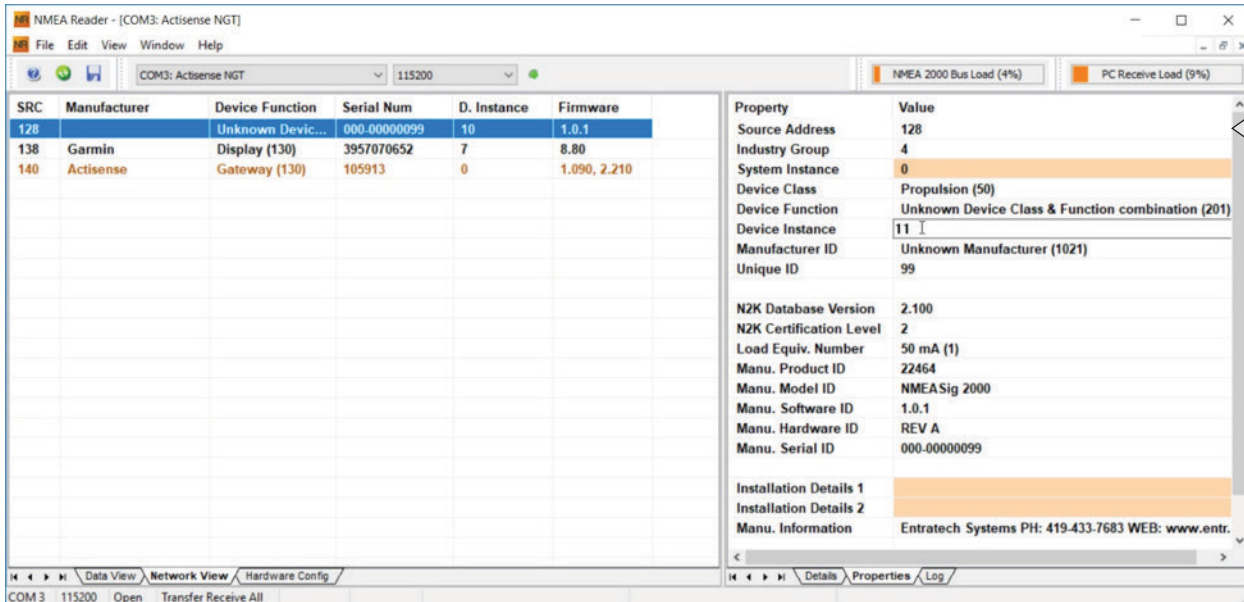


FIG 3

Notes:

1. Since the Entratech NMEASig 2000 is relatively new to the market, the Entratech manufacturer code and the Class/Function code may not be programmed into the Actisense NMEA Reader. This may require selecting each item on the list in the left-hand pane until the correct device appears in the right-hand pane.
2. The Entratech Manufacturer code is 1021, and the NMEASig 2000 Device Function code is 201.

MARETRON USB 100 WITH N2KANALYSER:

This section spells out the required steps to reprogram an NMEASig 2000 Filter in the field using the Maretron USB 100 and the N2KAnalysr program. The basic approach, once the filter can has been removed from the filter head, is to use the N2KAnalysr program to display the device instance from PGN 060928, and to enter the desired value into the associated input field. The reprogramming can be accomplished on any NMEA 2000 network. If there are multiple NMEASig 2000 Filters on the network, removing the filter can on only one filter at a time will help to ensure that each device is programmed with the correct instance.

Connect the Maretron USB 100 to the NMEA 2000 network and your PC in accordance with Maretron instructions, and install the N2KAnalysr program. Remove the filter can from the NMEASig 2000 Filter that you wish to reprogram.

Start the N2KAnalyser program on your PC, and follow the prompts until the N2KAnalyser program is displaying devices from the NMEA 2000 network as shown (FIG 4). Select the Entratech Filter you wish to reprogram from the list.

Expand	Node Address	Manufacturer	Mfg Model ID	Mfg Serial Number	Source	Unique Instance	Label	Current Software	Available Software	Installation Description #1	Installation Description #2	Bandwidth
	01	Maretron	USB100	1161574		0		1.8.3	1.9.1.1	Mystic Valley Co...		3.7%
	80	#1021	NMEASig 2000	000-00000999		10		1.0.1	-			0.0%
	8C	Actisense	NMEA 2000 PC Interface (NGT-1)	105913		0		1.090.2	-			0.3%
	65	Lowrance Ele...	HDS-5 MFD	2703312391		0		4.0.36.59...	-			0.1%
	39	Lowrance Ele...	HDS-5 iGPS	2703312391		0		4.0.36.59...	-			1.6%
	12	Lowrance Ele...	HDS-5 Sonar	2703312391		0		4.0.36.59...	-			0.6%
	51	Lowrance Ele...	HDS-5 Navigator	2703312391		0		4.0.36.59...	-			0.9%

FIG 4

Changing the instance is accomplished by clicking on the "Configure" menu item and selecting the "Device Instance" properties box (FIG 5). When the property box opens, change only the Device Instance value and click the "Ok" button (FIG 6). Remember that you will have to enter the same value twice before the NMEASig 2000 will accept the change.

Expand	Node Address	Manufacturer	Mfg Model ID	Mfg Serial Number	Source	Unique Instance	Label	Current Software	Available Software	Installation Description #1	Installation Description #2	Bandwidth
	01	Maretron	USB100	1161574		0		1.8.3	1.9.1.1	Mystic Valley Co...		0.0%
	80	#1021	NMEASig 2000	000-00000999		10		1.0.1	-			0.2%
	8C	Actisense	NMEA 2000 PC Interface (NGT-1)	105913		0		1.090.2	-			0.3%
	65	Lowrance Ele...	HDS-5 MFD	2703312391		0		4.0.36.59...	-			0.1%
	39	Lowrance Ele...	HDS-5 iGPS	2703312391		0		4.0.36.59...	-			1.9%
	12	Lowrance Ele...	HDS-5 Sonar	2703312391		0		4.0.36.59...	-			0.6%
	51	Lowrance Ele...	HDS-5 Navigator	2703312391		0		4.0.36.59...	-			0.5%

FIG 5

Expand	Node Address	Manufacturer	Mfg Model ID	Mfg Serial Number	Source	Unique Instance	Label	Current Software	Available Software	Installation Description #1	Installation Description #2	Bandwidth
	01	Maretron	USB100	1161574		0		1.8.3	1.9.1.1	Mystic Valley Co...		0.1%
	80	#1021	NMEASig 2000	000-00000999		10		1.0.1	-			0.3%
	8C	Actisense	NMEA 2000 PC Interface (NGT-1)	105913		0		1.090.2	-			0.4%
	65	Lowrance Ele...	HDS-5 MFD	2703312391		0		4.0.36.59...	-			0.1%
	39	Lowrance Ele...	HDS-5 iGPS	2703312391		0		4.0.36.59...	-			2.0%
	12	Lowrance Ele...	HDS-5 Sonar	2703312391		0		4.0.36.59...	-			0.6%
	51	Lowrance Ele...	HDS-5 Navigator	2703312391		0		4.0.36.59...	-			0.8%

FIG 6

NOTES:

1. Since the Entratech NMEASig 2000 is relatively new to the market, the Entratech Manufacturer code and the Class/Function code may not be translated from their numeric values to human readable labels. However, there should be enough other information displayed on each line to allow selection of the correct device.
2. The Entratech Manufacturer code is 1021, and the NMEASig 2000 Device Function code is 201.