



nemo gateway

Configuration Guide

Warnings

Use of the Nemo Gateway is at your own risk. Rose Point Navigation Systems does not warrant the accuracy of any information processed by the Nemo Gateway.

The Nemo Gateway contains magnetic material and should not be placed near a compass or other device that may be sensitive to magnetic interference.

The information in this user guide is subject to change without notice.

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Rose Point Navigation Systems

18005 NE 68th St

Suite A100

Redmond, WA 98052

Phone: 425-605-0985

Fax: 425-605-1285

E-Mail: support@rosepointnav.com

www.rosepoint.com

Table of Contents

- Introduction 1
 - Summary 1
 - Installation Requirements 1
- Launching the Nemo Gateway Configuration Utility..... 2
 - PC with Coastal Explorer 2011/Rose Point ECS 2011 2
 - PC with Coastal Explorer 4.0/Rose Point ECS 4.0 2
 - Mobile device using the iOS/Android Nemo Gateway App 2
- Configuration Utility 3
 - Main Menu 3
 - NEMA 2000 Network..... 4
 - Incoming Data 4
 - Outgoing Data 5
 - NMEA 0183 Over UDP 7
 - Outgoing Data 7
 - NMEA 0183 Ports 1-4 10
 - Baud Rate 10
 - Incoming Data 10
 - Outgoing Data 10

Introduction

Summary

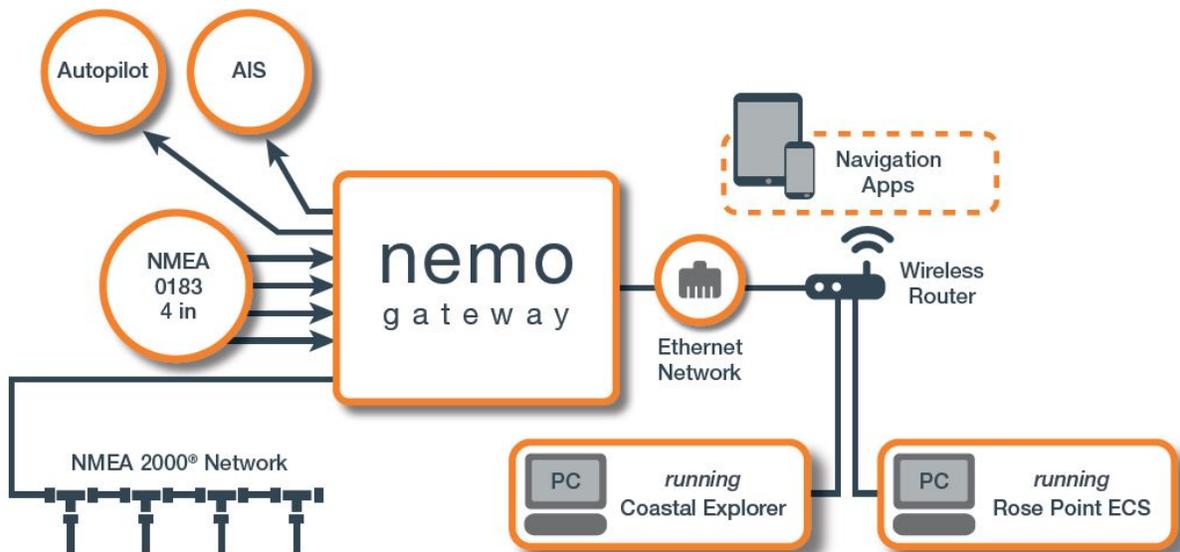
Thank you for purchasing a Rose Point Navigation Systems Nemo Gateway. The Nemo Gateway is a bridge between NMEA 0183, NMEA 0183-HS, NMEA 2000 marine electronic device network communication standards and your PC(s) running Rose Point ECS or Coastal Explorer.

The Nemo Gateway has been certified by the NMEA to meet the NMEA 2000 standard and conforms to the NMEA 0183 and NMEA 0183-HS standards.

This manual only covers the configuration of the Rose Point Nemo Gateway. *For detailed installation instructions, please refer to the Nemo Gateway User Guide.*

Installation Requirements

- Hardware/software for device configuration:
 - PC running the latest version of Rose Point ECS or Coastal Explorer, on the same network as the Nemo Gateway
 - or
 - Nemo Gateway app on iOS or Android device, connected to the same network as the the Nemo Gateway
- Ethernet Cable
- 8-32 VDC power source, negative ground



Configuring the Rose Point Nemo Gateway

Launching the Nemo Gateway Configuration Utility

Make sure that you have the latest version of Coastal Explorer or Rose Point ECS.

PC with Coastal Explorer 2011/Rose Point ECS 2011

1. Open Coastal Explorer/Rose Point ECS
2. Main Menu > Configure Vessel & Electronics > Electronics
3. Select the Rose Point Nemo Gateway that you would like to configure
4. Select Gateway Settings

PC with Coastal Explorer 4.0/Rose Point ECS 4.0

1. Open Coastal Explorer/Rose Point ECS
2. Press the gear icon (Settings) on the left side of the screen
3. Select Electronics
4. Select the Rose Point Nemo Gateway that you would like to configure
5. Select Gateway Settings

Mobile device using the iOS/Android Nemo Gateway App

(Make sure that you are connected to the appropriate Wi-Fi network)

(Make sure that you have the latest version of the app on the device)

1. Open the Nemo Gateway App
2. Select the Rose Point Nemo Gateway that you would like to configure

Configuration Utility

Whether you are using the mobile app or a PC, the configuration utility looks very similar and functions identically.

Main Menu

Upon connecting to the configuration utility, you will see the following:

- **Device Serial Number** (Product ID)
- **Assigned IP Address**

The following selection items allow the user to manage their gateway and customize how data flows through the device.

- **NMEA 2000 Network** – This option allows the user to view the network status, the network address, and the devices detected on the NMEA 2000 network along with their manufacturing information. This section will also display the incoming data and provide options for what is being output to the network.
- **NMEA 0183 Over UDP** – This section allows the user to configure what data is being sent to the router as well as the port number being used to transmit that information. The user can also view all data coming into the Nemo Gateway from the Ethernet network.
- **Rose Point GPS Sensor** – This option will only be visible if the user has a Rose Point Navigation Systems GPS unit plugged into the Accessory port on the Nemo Gateway (ACCY).
- **NMEA 0183 Ports 1-4** – The user can view the incoming data on each NMEA 0183 port. Each one of these ports can be individually configured to a specific Baud Rate and unique Talker options. Each Talker port on the Nemo Gateway can be set up to transmit different information, depending on what devices it may be connected to.
- **Sensors** – This section allows the user to Prioritize their Depth, Heading, Position, and Speed sensors. The primary sensor for each type of data will also be displayed here.
- **System Settings** – Allows for the configuration of the IP Address, device firmware, and security settings. This section also contains the system logs.

NEMA 2000 Network

Connecting the Nemo Gateway to the vessel's NMEA 2000 network allows the gateway to receive, interpret, and send a various PGNs. The user may also view all incoming data from each device on the network, and govern what PGNs are generated by the Nemo.

NMEA 2000 Network
Nemo Gateway / NMEA 2000 Network

Status	online
Network Address	0
Device Instance	0 Edit
System Instance	0 Edit

Generated PGNs

Devices

- SI-TEX MDA-1 - SN:2640016
- Airmar WX Series WeatherStation Sensor - SN:3152355

Incoming Data

Selecting one of the listed NMEA 2000 devices will show device information and all incoming data. The user can pause the **Data In** panel to more carefully examine the data. (Note: doing so does not actually stop the flow of data)

Airmar WX Series WeatherStation Sensor
Nemo Gateway / NMEA 2000 Network / Airmar WX Series WeatherStation Sensor

Address	36
Status	online
Manufacturer	Airmar
Manufacturer Information	Airmar 1-603-673-9570 www.airmar.com
Model ID	WX Series WeatherStation Sensor
Model Version	44-835-1-01,HW11:6,OEM0

Data In ||

- 126992 **System Time** (08:58:01.414)
FFF0FFFFFFFFFFFF
- 127250 **Vessel Heading** (08:58:02.317)
8405010000E80AFD
- 127251 **Rate of Turn** (08:58:02.308)
B05C1C0000FFFFFFFF
- 127257 **Attitude** (08:58:01.436)
5EFF7FDEFF6800FF
- 127258 **Magnetic Variation** (08:58:01.436)
5EF5FE42E80AFFFF
- 129025 **Position, Rapid Update** (08:58:02.217)
FFFFFFF7FFFFFFFF7F
- 129026 **COG & SOG, Rapid Update** (08:58:02.217)
FFFFFFF7FFFFFFFF7F
- 129033 (08:58:01.436)
FFFFFFF7FFFFFFFF7F
- 129539 (08:58:01.460)
FFDBFF7FFF7FFF7F
- 130306 **Wind Data** (08:58:02.159)
7E2400EAC5FAFFFF

Outgoing Data

Selecting **Generated PGNs** allows the user to configure what information the Nemo Gateway is putting onto the NMEA 2000 network for other devices to receive.

Selecting **Edit** underneath **PGN Generation Mode** allows the user to select one of 3 modes:

Disabled – The Nemo Gateway will not be generating any NMEA 2000 PGNs. It will, however, keep receiving data from the network.

Auto – The Nemo Gateway will automatically submit the following PGN, given that the enough data is available to generate them. The following table shows the PGNs that are generated in Auto mode.

<u>PGN</u>	<u>Description</u>	<u>Frequency</u>
127250 [0x1F112]	Vessel Heading	10 hz (0.1 s)
128259 [0x1F503]	Speed, Water Referenced	1 s
128267 [0x1F50B]	Water Depth	1 s
129025 [0x1F801]	Position, Rapid Update	10 hz (0.1 s)
129026 [0x1F802]	COG & SOG, Rapid Update	4 hz (0.25 s)
129029 [0x1F805]	GNSS Position Data	1 s

*Note – The data in this table was current at the time this document was published. Please refer to www.rosepoint.com for more current information.

Manual – This mode gives the user the ability to customize the generated PGNs. Selecting **Edit** next to **Generated PGNs** reveals the configuration controls.



Select the red “Do not enter” icon to the left of any PGN to remove it. (There will be a confirmation to ‘Delete’)

Select the gear icon to the right of the PGN to modify its *Identifier*, *Source*, and *Rate*. (Descriptions for these parameters can be found below)

Select **+ Add a Generated PGN** to setup a new PGN to generate.

The image shows a dialog box titled "Add Generated Data" with a close button (X) in the top right corner. Inside the dialog, there are four configuration fields: "Identifier" (dropdown menu showing "127251 - Rate of Turn"), "Source" (dropdown menu showing "NMEA 0183 Port 3"), "Rate" (dropdown menu showing "5 Hz"), and "Active" (checkbox that is checked). A blue "Add" button is positioned at the bottom left of the dialog area.

Identifier – The PGN that will be generated

Source – Where to acquire the data that will be used to generate the PGN

Auto – Uses the Sensor Priority list from the Main Menu of the configuration utility to pick a valid source

NMEA 0183 (Ports 1-4) – Forces the PGN to be generated using information from a specific NMEA 0183 Listener port on the Nemo Gateway

Rate – How often the PGN is generated and submitted to the network

Active – Allows the user to disable a specific PGN from being generated (without removing it from the Generated PGNs list)

Select **Done** above the list of PGNs to save your changes.

NMEA 0183 Over UDP

The Nemo Gateway allows the user to broadcast data through the connected Ethernet network. Select NMEA 0183 Over UDP from the main menu to configure.

Network Port – The output port number can be adjusted by selecting Edit, entering a port number, and then pressing Save

Outgoing Data

Selecting **Talker Options** allows the user to configure what information the Nemo Gateway is broadcasting onto the Ethernet network for other devices to receive. The Nemo Gateway can both Generate and Repeat data from other ports.

Generated Data – The Nemo Gateway can build sentences out of existing information

Selecting **Edit** underneath **Sentence Generation Mode** allows the user to select one of 3 modes:

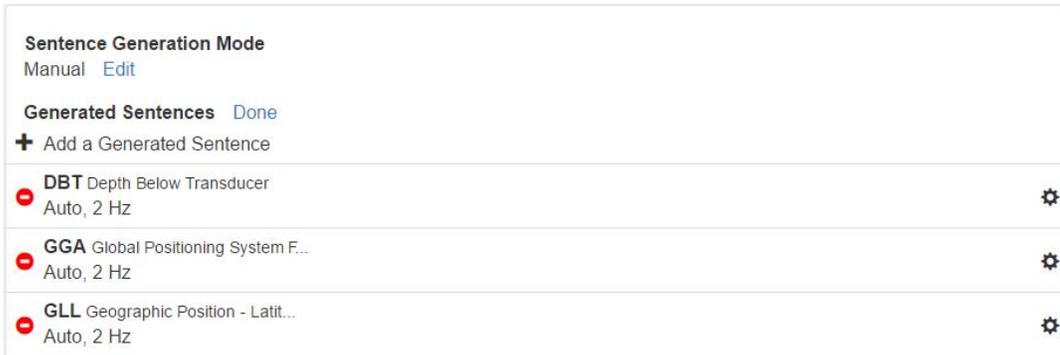
Disabled – The Nemo Gateway will not generate any sentences for broadcasting. Note: Even when the generated sentences are disabled, the Nemo Gateway can still broadcast the “Repeated” sentences (see below).

Auto – The Nemo Gateway will automatically submit the following NMEA 0183 sentences, given that the enough data is available to generate them. The following table shows the NMEA 0183 sentences that are generated by default for UDP broadcast in Auto mode.

<u>Sentence</u>	<u>Description</u>	<u>Frequency</u>
DBT	Depth Below Transducer	2 hz (0.5 s)
HDG	Heading, Deviation and Variation	2 hz (0.5 s)
RMC	Recommended Minimum Specific GNSS Data	2 hz (0.5 s)
GGA	Global Positioning System Fix Data	2 hz (0.5 s)
GLL	Geographic Position - Latitude/Longitude	2 hz (0.5 s)
GSA	GNSS DOP and Active Satellites	2 s
GSV	GNSS Satellites in View	10 s
VHW	Water Speed and Heading	2 hz (0.5 s)

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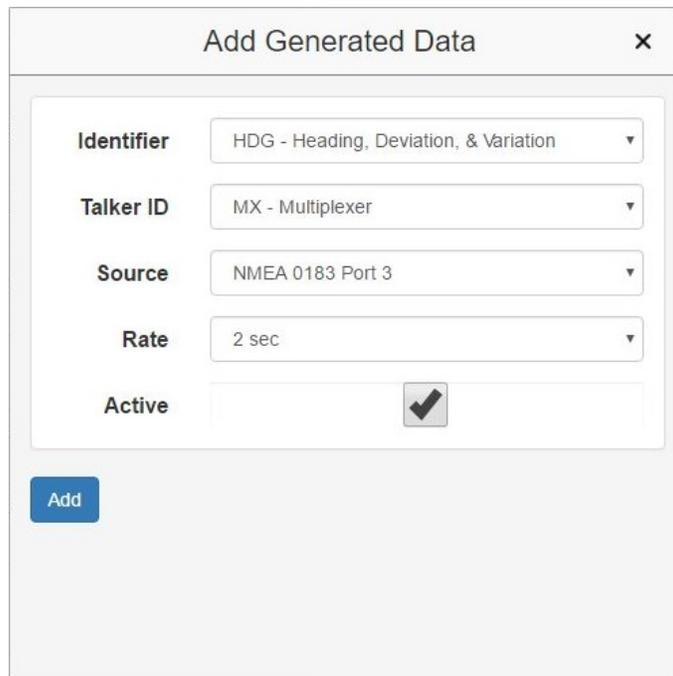
Manual – This mode gives the user the ability to customize the generated Sentences. Selecting **Edit** next to **Generated Sentences** reveals the configuration controls.



Select the red "Do not enter" icon to the left of any Sentence to remove it. (There will be a confirmation to 'Delete')

Select the gear icon to the right of any sentence to modify its *Identifier*, *Talker ID*, *Source*, and *Rate*. (Descriptions for these parameters can be found below)

Select **+ Add a Generated Sentence** to setup a new Sentence to generate.



Identifier – The Sentence that will be generated

Talker ID – Determines the first two characters of the Sentence ID. (e.g. Using the parameters from the sample image above, the sentence identifier would be \$MXHDG)

Source – Where to acquire the data that will be used to generate the Sentence

Auto – Uses the Sensor Priority list from the Main Menu of the configuration utility to pick a valid source

NMEA 0183 (Ports 1-4) – Forces the Sentence to be generated using information from a specific NMEA 0183 Listener port on the Nemo Gateway

NMEA 2000 Device – The Nemo Gateway will detect and list the devices on the connected NMEA 2000 network. Any of these devices can be selected as a source for the generated PGN. (Note: some of these sources might not be providing the information that is needed to generate the specified NMEA 0183 sentence)

Rate – How often the Sentence is generated and submitted to the network

Active – Allows the user to disable a specific Sentence from being generated (without removing it from the Generated Sentences list)

Select **Done** above the list of Sentences to save your changes.

Repeated Data – The Nemo Gateway has the option to broadcast the information that it is receiving from any of its NMEA 0183 Listener ports, as is.

Select **Repeating** at the bottom of the Talker Options screen to configure which Listener ports are to be broadcasted over UDP.

Select **Edit** to enable/disable specific NMEA 0183 Listener port broadcasting over UDP.

Select **Done** to save changes.

NMEA 0183 Ports 1-4

The NMEA 0183 Talker/Listener Ports on the Nemo Gateway can all be configured individually to have different baud rates and output different information.

Baud Rate – Select **Edit** to configure the baud rate for that port. Changing the baud rate for Port 1 changes the baud rate for both the Port 1 Listener and the Port 1 Talker. Changing the baud rate for Port 2 changes the baud rate both Port 2 Listener and Port 2 Talker. Ports 3 and 4 are just Listener ports, and do not have Talker ports associated with them.

When the unit is first set up, or reset, it will default to the following baud rates:

<u>NMEA 0183 Port</u>	<u>Default Baud Rate</u>
1	38,400 bps (High Speed, set up for most AIS units)
2	4,800 bps
3	4,800 bps
4	4,800 bps

Incoming Data

The data coming into the port can be seen in the **Data In** panel. The user can pause the **Data In** panel to more carefully examine the data. (Note: doing so does not actually stop the flow of data) The information can also be grouped by *Identifier* or be viewed as a *Raw* stream by selecting "Group by Identifier" or "Raw", respectively.

Outgoing Data

Selecting **Talker Options** allows the user to configure what information the Nemo Gateway is outputting through that particular port. The Nemo Gateway can both Generate new sentences and Repeat data from other ports.

Generated Data – The Nemo Gateway can build sentences out of existing information

Selecting **Edit** underneath **Sentence Generation Mode** allows the user to select one of 3 modes:

Disabled – The Nemo Gateway will not generate any sentence for this port. Note: Even when the generated sentences are disabled, the Nemo Gateway can still output the "Repeated" sentences (see below).

Auto – The Nemo Gateway will automatically submit the following NMEA 0183 sentences, given that the enough data is available to generate them. The following table below shows the NMEA 0183 sentences that are generated by default of each port.

<u>Port</u>	<u>Sentence</u>	<u>Description</u>	<u>Rate</u>
NMEA 0183 Port 1	No default output	N/A	N/A
NMEA 0183 Port 2	DBT	Depth Below Transducer	2 s
	HDG	Heading, Deviation and Variation	2 s
	RMC	Recommended Minimum Specific GNSS Data	2 s
	VHW	Water Speed and Heading	2 hz (0.5 s)

*Note – The data in this table was current at the time this document was published. Please refer to www.rosepoint.com for more current information.

Manual – This mode gives the user the ability to customize the generated Sentences. Selecting **Edit** next to **Generated Sentences** reveals the configuration controls.

Sentence Generation Mode
Manual [Edit](#)

Generated Sentences [Done](#)

+ Add a Generated Sentence

<div style="display: flex; align-items: center;"> ⊖ <div> <p>DBT Depth Below Transducer</p> <p>Auto, 2 Hz</p> </div> <div style="margin-left: auto; text-align: right;"> ⚙️ </div> </div>
<div style="display: flex; align-items: center;"> ⊖ <div> <p>GGA Global Positioning System F...</p> <p>Auto, 2 Hz</p> </div> <div style="margin-left: auto; text-align: right;"> ⚙️ </div> </div>
<div style="display: flex; align-items: center;"> ⊖ <div> <p>GLL Geographic Position - Latit...</p> <p>Auto, 2 Hz</p> </div> <div style="margin-left: auto; text-align: right;"> ⚙️ </div> </div>

Select the red “Do not enter” icon to the left of any Sentence to remove it. (There will be a confirmation to ‘Delete’)

Select the gear icon to the right of any sentence to modify its *Identifier*, *Talker ID*, *Source*, and *Rate*. (Descriptions for these parameters can be found below)

Select **+ Add a Generated Sentence** to setup a new Sentence to generate.

Add Generated Data ×

Identifier

Talker ID

Source

Rate

Active

Identifier – The Sentence that will be generated

Talker ID – Determines the first two characters of the Sentence ID. (e.g. Using the parameters from the image above, the sentence identifier would be \$MXHDG)

Source – Where to acquire the data that will be used to generate the Sentence

Auto – Uses the Sensor Priority list from the Main Menu of the configuration utility to pick a valid source

NMEA 0183 (Ports 1-4) – Forces the Sentence to be generated using information from a specific NMEA 0183 Listener port on the Nemo Gateway

NMEA 2000 Device – The Nemo Gateway will detect and list the devices on the connected NMEA 2000 network. Any of these devices can be selected as a source for the generated PGN. (Even though some of them might not be providing the information that is needed to generate the specified PGN)

Rate – How often the Sentence is generated and submitted to the network

Active – Allows the user to disable a specific Sentence from being generated (without removing it from the Generated Sentences list)

Select **Add** to add the sentence to the **Generated Sentences**.

Select **Done** above the list of sentences to save your changes.

Repeating Data – The Nemo Gateway has the option to output the information that it is receiving from any of its other NMEA 0183 Listener ports. This is essentially just 'forwards' the information.

Select **Repeating** at the bottom of the Talker Options screen to configure which Listener ports are to be routed through the selected Talker Port.

Select **Edit** to enable/disable data forwarding from specific NMEA 0183 Listener ports.

Select **Done** to save changes.