



DSM Series Displays

NMEA 2000® Data Display

User's Guide

SW: 1.8.8.4

Maretron®
Vessel Monitoring & Control

Overview:

- Overview
- Basic Navigation
- Alerts
- Configuration
- Display Settings
- Favorite Screens
- Units
- Advanced Features
- Maretron Website & Resources

DSM SERIES DISPLAYS

Overview - Features

Key Features

- Maretron's latest DSM Series displays offer a high-resolution sunlight viewable color display that interprets and displays NMEA 2000® instrument, navigation, and vessel monitoring data.
- A user friendly dedicated marine display with custom screen configurations and an easy-to-use five-key illuminated keypad.
- Unlike traditional single-display units, users can choose numeric, gauge, bar or graph formats in single or multiple displays, with cycling options possible for a wide range of favorite data. These multiple display options conserve mounting space and reduce overall system cost.



DSM SERIES DISPLAYS

Overview - Features

Key Features, cont.

- Connects directly with any NMEA 2000® network and, except for AIS data, will display nearly all information captured throughout the vessel. Various audio and visual alarms are also programmable.
- The DSM Series displays offer a multitude of information to view including AC power, anchor status, battery, depth, electrical distribution, engine, environment, fuel management, GPS, heading, navigation, pressure/vacuum, rudder, speed, status indicators, tanks, temperature, time, transmission, water makers, weather, wind and more.



DSM SERIES DISPLAYS

Overview - Models

DSM Displays

Similar software and user interface can be found on a historical selection of our DSM series displays and are cross compatible with many features.



DSM150
3.5" Multi-Function Color Display
DISCONTINUED



DSM250
5.7" Multi-Function Color Display
DISCONTINUED



DSM410
4.1" Multi-Function Color Display



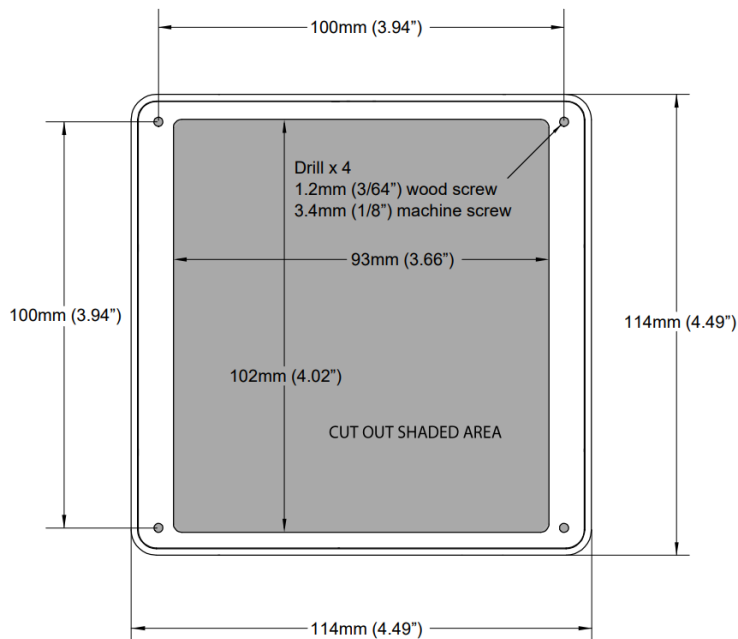
DSM570
5.7" Multi-Function Color Display

DSM SERIES DISPLAYS

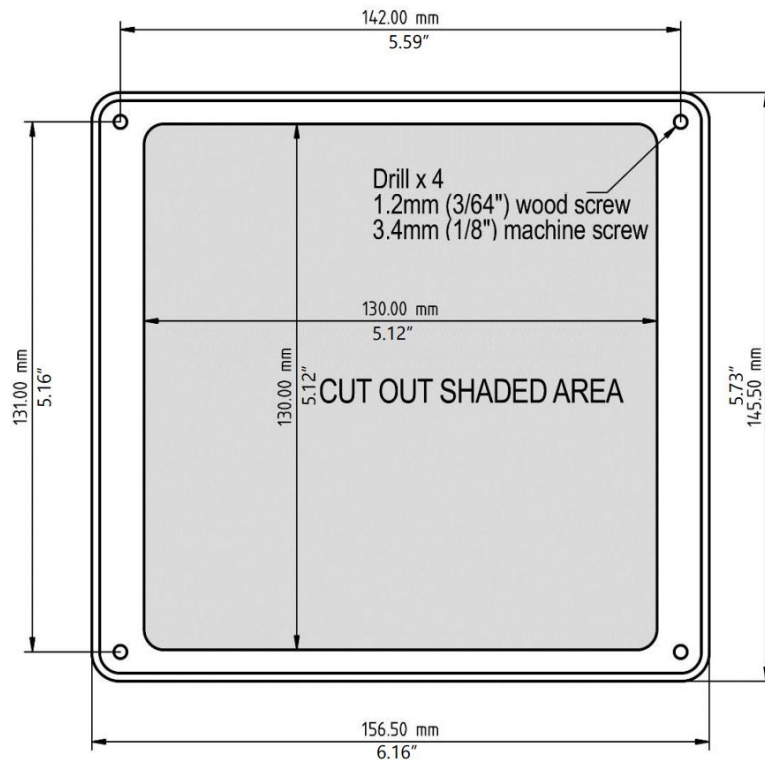
Overview - Installation

Installation Templates

DSM410



DSM570



DSM SERIES DISPLAYS

Overview - Power Up Screen

Device Power Up

Connecting your DSM Series display to the NMEA 2000® network will also energize your display.

No separate power needed!!

From the initial power on display we can identify multiple items about the display.

- DSM Model #
- Current Software Version
- Device Serial #

There are only 2 active keys available on the landing screen.

- Power
 - Pressing & holding this key for 3 seconds will power on / off the display
- Accept
 - Pressing this key will enter the user into your Favorite Screens



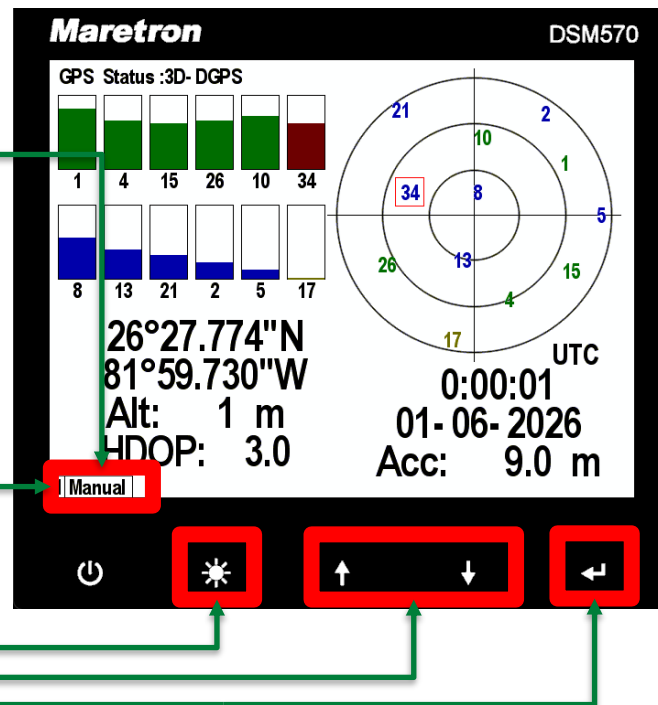
DSM SERIES DISPLAYS

Overview - Operations

Favorite Screens

After pressing the Accept key on the Landing page will navigate the user to the 16-user configurable NMEA 2000® data screens.

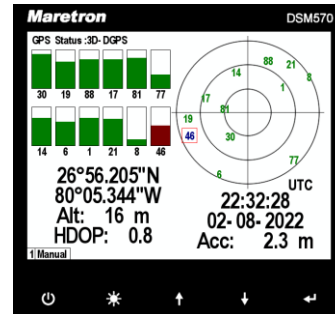
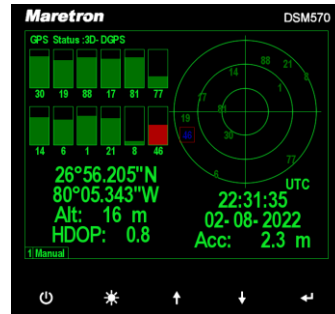
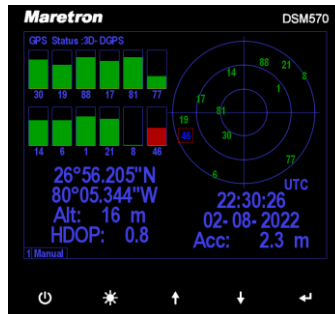
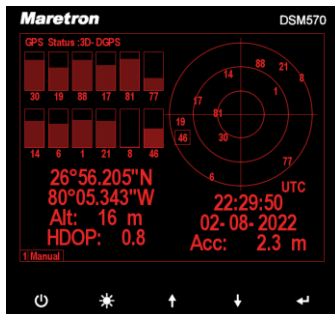
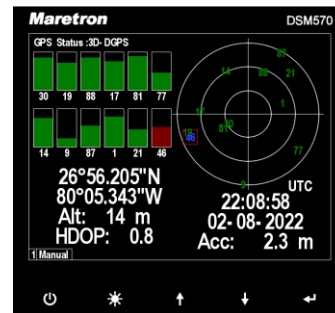
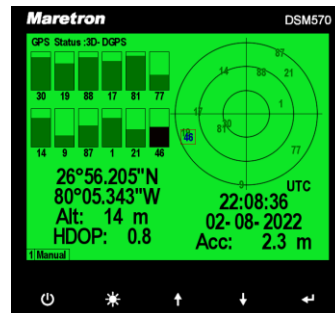
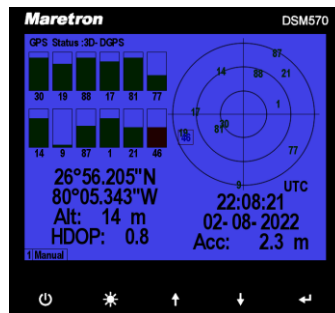
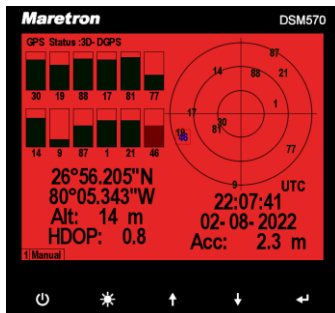
- Favorite Screen Operating Mode
- Current Favorite Screen page #
- Brightness and Background color adjustment
 - Single press to this key will adjust the brightness
 - Press & hold will cycle through different background color options
- Up/Down Arrow keys will cycle through the available Favorite Screens
- Enter key will provide access to the Settings menu



DSM SERIES DISPLAYS

Overview - Color Modes

Color Options



DSM SERIES DISPLAYS

Settings Menu

The settings menu provides the following services, and this guide will begin navigating into each of these features.

- **Alert Setup**
 - Generate & manage NMEA2000® alerts
- **Alert Status**
 - Displays generated NMEA 2000® alert statuses from both local and remote devices
- **Configuration**
 - Provides access to Maretron device setup and NMEA 2000® connected device status
- **Display Settings**
 - Physical display settings
- **Favorite Screens Mode**
 - Auto and Manual
- **Favorite Screens Setup**
 - Accesses the setup menu for the 16 screens
- **Units**
 - Sets the defaults units through the DSM screens



DSM SERIES DISPLAYS

Settings - Alert Management

Alert Management

- Add New Alert
 - Create an NMEA 2000® alert
 - ** Note that alerts created by a DSM are currently only visible across Maretron products (DSM, N2KView & MConnect)
- Delete Alert
 - Delete an existing alert on the display.
- Edit Alert
 - Modify an existing alert on the display.
- Operating Mode
 - Allows users to create alerts respective to vessel's status (Underway, Moored, Anchored)
- SMS Phone Book
 - Contact listing for outputting via the SMS100/SMS200
- Advanced Configuration
 - Enabling/Disabling remote audible annunciation and Flashing Screen for all alerts
- Restore Alert Setup Factory Defaults
 - Wipes all existing alerts.



DSM SERIES DISPLAYS

Settings - New Alert Setup

Add New Alert

This screen offers the user to create an alert monitoring the status of a desired NMEA2000® parameter. The source of the data does not have to be provided by a Maretron product, supports most standard NMEA 2000® PGNs.

- Enable/Disable
- Alert Type
 - Defines the profile type of the alert: Alarm or Warning
- Priority
 - Alarm or Warning #, list
- Description & Location
 - Open texts fields to provide user additional information in reference to the location and profile of the alert
- Trigger Source
 - Defines what type and source location of the data you are wanting to monitor, such as High Water, Low Fuel, etc
- Trigger Type
 - Varies depending on Source Type:
High Alert, Low Alert, On Alert, Off Alert, No Data, Error State

The screenshot shows the 'Alert Detail' screen on a Maretron DSM570 display. The screen is divided into sections for 'Alert Detail', 'Trigger Configuration', and 'SMS (Text) Settings...'. The 'Alert Detail' section includes fields for 'Enable/Disable Control' (set to Enable), 'Alert Type' (set to Alarm), 'Priority' (set to -), 'Trigger Source' (with sub-fields for Type, Data, and Instance, all set to -), 'Description' (set to -), and 'Location' (set to -). The 'Trigger Configuration' section includes 'Trigger Type' (set to -), 'Re-trigger Period' (set to 0:00 min:sec), 'Local Audible' (set to Enable), 'Local Tone' (set to Continuous), and 'Remote Annunciator(s)...'. The 'SMS (Text) Settings...' section includes 'Operating Mode Moored' (set to Enable), 'Operating Mode Underway' (set to Enable), 'Operating Mode Anchored' (set to Enable), and 'Scope' (set to Global). At the bottom of the screen, there is a 'Test this alert now' button. Below the screen, there are physical buttons for Power, Back, Scroll Up, Scroll Down, and Enter, along with their corresponding touch-screen icons.

Maretron DSM570

Alert Detail

Enable/Disable Control : Enable

Alert Type : Alarm

Priority : -

Trigger Source

Type: : -

Data: : -

Instance: : -

Description : -

Location : -

Trigger Configuration

Trigger Type : -

Re-trigger Period : 0:00 min:sec

Local Audible : Enable

Local Tone : Continuous

Remote Annunciator(s)...

SMS (Text) Settings...

Operating Mode Moored : Enable

Operating Mode Underway : Enable

Operating Mode Anchored : Enable

Scope : Global

Test this alert now

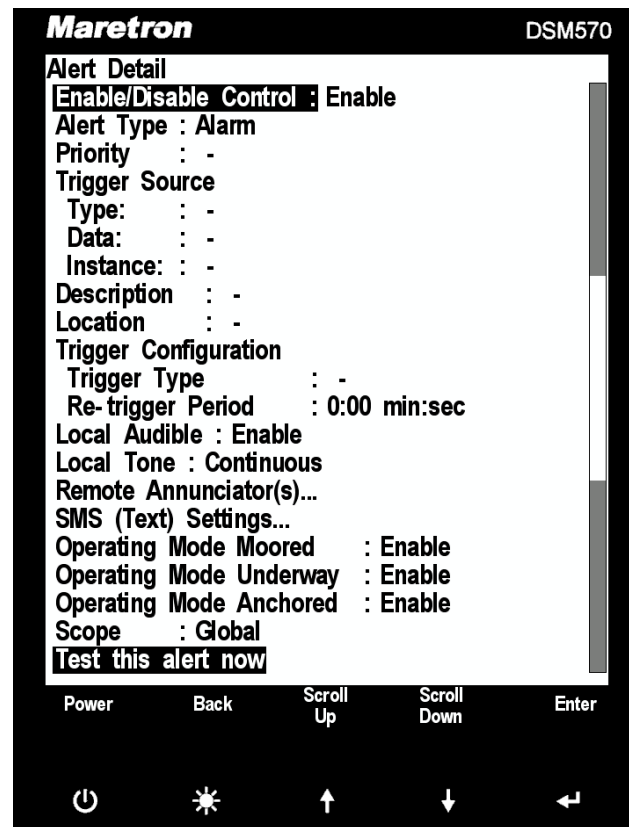
Power Back Scroll Up Scroll Down Enter

⏻ ⚙️ ⬆️ ⬇️ ↩️

DSM SERIES DISPLAYS

Settings - New Alert Setup

- Re-trigger Period
 - When an alert is engaged, the user can “acknowledge” the alert to silence the annunciation and address the issue. You can apply a re-trigger time period to re-engage the alert if the status has not been corrected to alert users.
- Local Audible & Tone
 - Engage the internal buzzer within the DSM display and tones
- Remote Annunciators
 - ALM100 (audible) and/or a DCR100 channel (switch/relay)
- SMS Text Settings
 - Select from contacts to be notified via text/SMS of the alert
- Operating Mode
 - Vessel status of when to engage an alert
Not going to monitor shore power loss while vessel is underway
- Scope
 - Global Broadcasts to entire NMEA2000® network
 - Local Local display only
- Test



DSM SERIES DISPLAYS

Settings - Delete Alert

Delete Alert

Navigating back to the Alert Setup menu, the next option is Delete Alert.

This menu will populate a list of all of the created alerts organized by their priority number. Highlighting and selecting the Enter key will allow the user to remove the alert from the system.

Alert Setup...

Delete Alert...

| Pri. | Ena. | Type | Description |
|------|------|--------------|------------------|
| 0 | No | Local Alarm | Anchor Watch |
| 1 | Yes | Global Alarm | Bilge High Water |



DSM SERIES DISPLAYS

Settings - Edit Alert

Edit Alert

Navigating back to the Alert Setup menu, the next option is Edit Alert.

This menu will populate a list of all of the created alerts organized by their priority number. Highlighting and selecting the Enter key will allow the user to modify the alert, gaining access to all the settings when setting up the alert.

Alert Setup...

Edit Alert...

| Pri. | Ena. | Type | Description |
|------|------|--------------|------------------|
| 0 | No | Local Alarm | Anchor Watch |
| 1 | Yes | Global Alarm | Bilge High Water |



DSM SERIES DISPLAYS

Settings - Operating Modes

Operating Modes

Navigating back to the Alert Setup menu, the next option is Operating Mode. This defines the vessel's alert monitoring status.

There are four operating mode states to choose from:

- Underway
- Anchored
- Moored
- Disabled

Provides the user opportunity to establish alerts in the appropriate vessel operating mode / status.

- You would only monitor shore power status while moored/dockside.
- You would only monitor low oil pressure while underway/engine's running.



DSM SERIES DISPLAYS

Settings - SMS Alert Phone Book

SMS Phone Book

Navigating back to the Alert Setup menu, the next option is SMS Phone Book directory.

Allows you to store up to 8 contacts for sending a text message if an alert engages, and if desired, clears.

Alert Setup...

SMS (Text) Phone Book...

| Phone Number | Name |
|--------------|---------|
| 123456789 | Captain |
| - | |
| - | |
| - | |



DSM SERIES DISPLAYS

Settings - Alerts Adv Configuration

Advanced Configuration

Navigating back to the Alert Setup menu, the next option is Advanced Configuration.

➤ Remote Alert Audible

- If Remote Alerts are enabled, and an active alert is received from another device on the bus, the DSM will respond by adding the Alert to its list of Active Alerts and sounding the internal speaker.

➤ Flashing Screen

- As an extra means to gain the operator's attention to an Active Alert, the DSM570 may be set up to flash the entire screen between Red (for Alarms) or Yellow (for Warnings) and Black.

Alert Setup...

Advanced Configuration...

Remote Alert Audible : Enable

Flashing Screen : Disable



DSM SERIES DISPLAYS

Settings - Alerts Factory Settings

Restore Alert Setup Factory Defaults

The Alert parameters of the DSM may be restored to the factory defaults by pressing the Enter button while this item is highlighted.

The operator will be prompted to confirm this action before it applies.

Restore Factory Defaults will reset all alerts back to the original factory settings

Are you sure you want to
restore factory defaults ?



DSM SERIES DISPLAYS

Settings - Alert Status

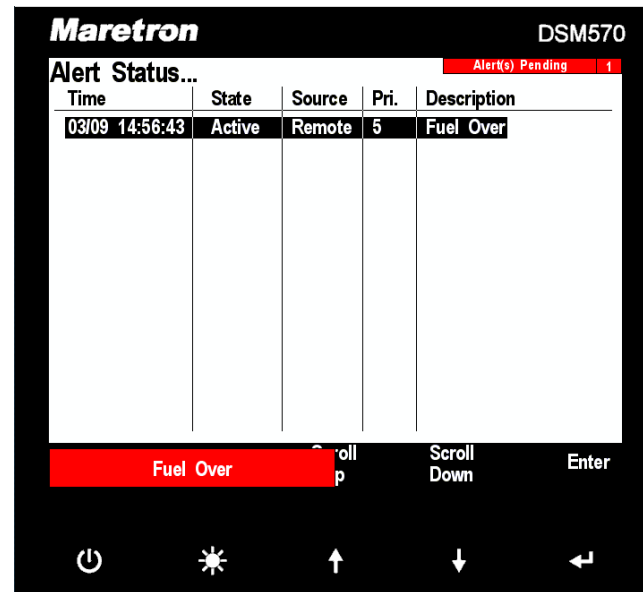
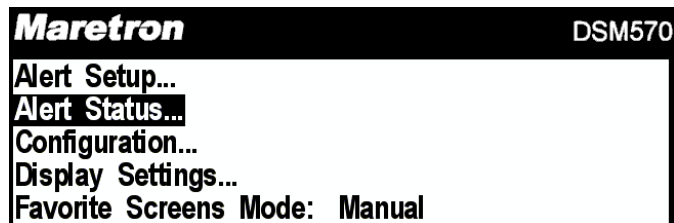
Alert Status

Jumping back to the Settings Menu, the next menu option is Alert Status.

This menu populates a list of active NMEA 2000® alerts, generated either locally or via a Remote Device.

Illustrates the status of each alert or warning whether it is currently engaged or have cleared but awaiting acknowledgement (U.S. Coast Guard Guideline)

Pressing the Power Key once will acknowledge the alert.



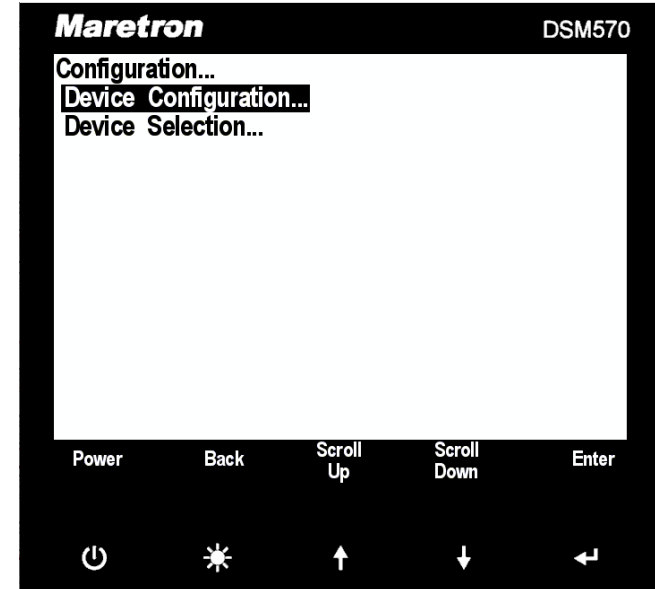
DSM SERIES DISPLAYS

Configuration Menu

Configuration Menu

Configuration menu will populate 2 options

- Device Configuration
 - Lists all devices on the connected NMEA 2000® network that this display has configuration/setup tools for a majority of the Maretron branded and most of the D/S/T Series of Airmar NMEA 2000® devices.
- Device Selection
 - Provides a “history” list of NMEA 2000® connected devices



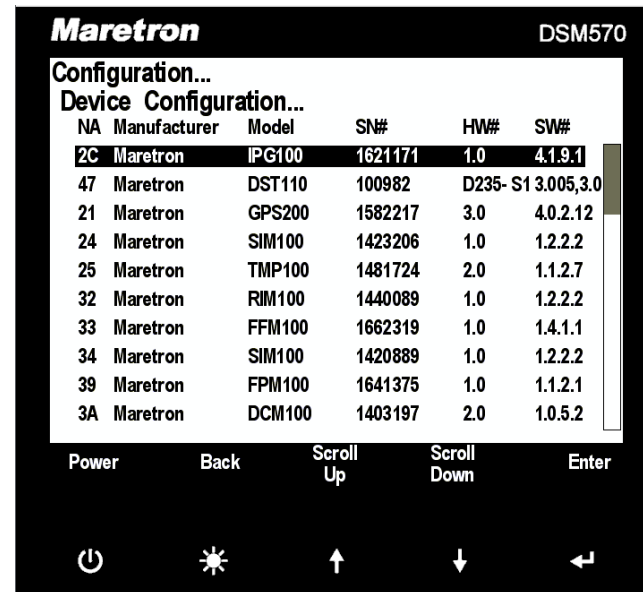
DSM SERIES DISPLAYS

Configuration - Device Configuration

Device Configuration

This menu populates a list of all devices that the DSM display has support tools to adjust settings of that specific device, such as other Maretron components, select models of Airmar DSTs and select models of Trim Tab devices

Using the Up / Down arrow keys will allow you to navigate through the list, press the enter key on a desired unit you need to adjust. Each configuration menu will be unique to the product.



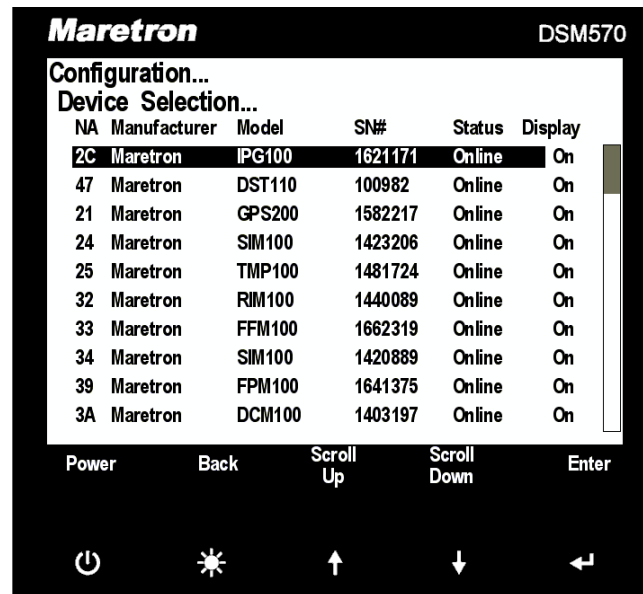
DSM SERIES DISPLAYS

Configuration - Device Selection

Device Selection

The DSM will retain information on devices that have been connected to the NMEA 2000® network, all manufactures, and their current connection status.

Additionally, you are able to select whether to display data or ignore data from a particular device when populating values for a Favorite Screen.

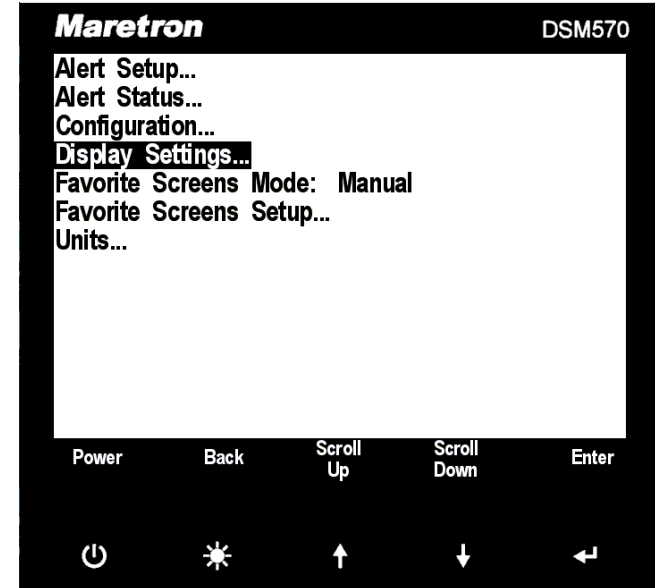


DSM SERIES DISPLAYS

Display Settings

Display Settings

The next settings menu option is the display settings. This menu allows you to change parameters related to the user's interface operations.

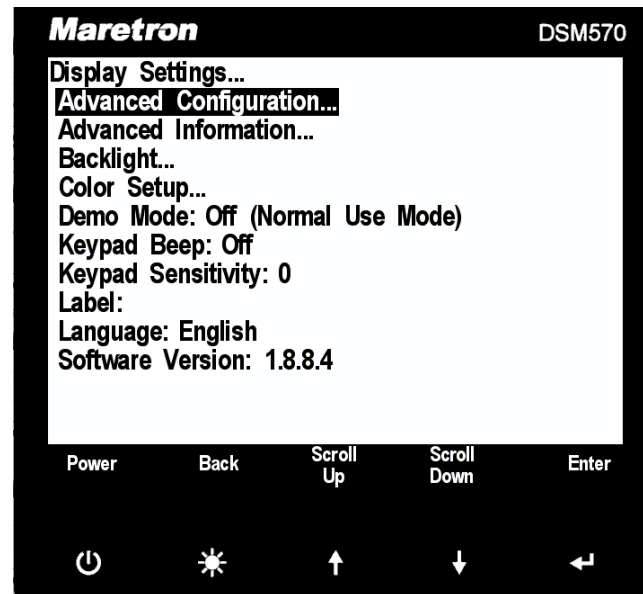


DSM SERIES DISPLAYS

Display Settings - Menu

Display Settings

- Advanced Configuration
 - Access to parameters such as Device Instance, Installation Description and Factory Reset
- Advanced Information
 - Displays information pertaining to the permanent setup and configuration of the DSM
- Backlight - Adjust the 3 brightness level values
- Color Setup - Programmable color palettes
- Demo Mode – On or Off
- Keypad Beep – On or Off
- Keypad Sensitivity - Increase/Decrease sensitivity
- Label - Station label
- Languages - English, French or Dutch
- Software Version – Current running

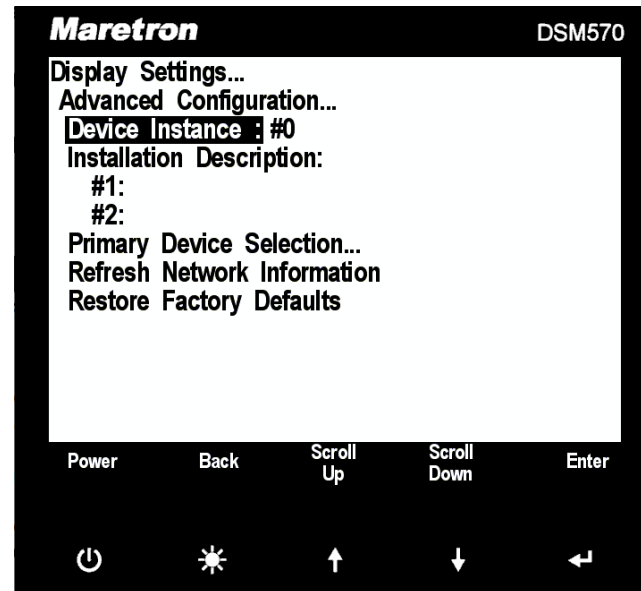
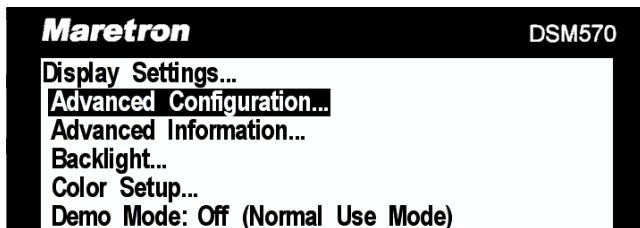


DSM SERIES DISPLAYS

Display Settings - Adv Configuration

Advanced Configuration

- Device Instance
 - Unique Instance defined per DSM / N2KView / MConnect.
- Installation Description
 - Notes defined by installer, with install location details
- Primary Device Selection
 - Define preferred Instance source for select parameters
- Refresh Network Information
 - Clears lists of N2K devices under Device Configuration & Device Selection menus.
- Restore Factory Defaults



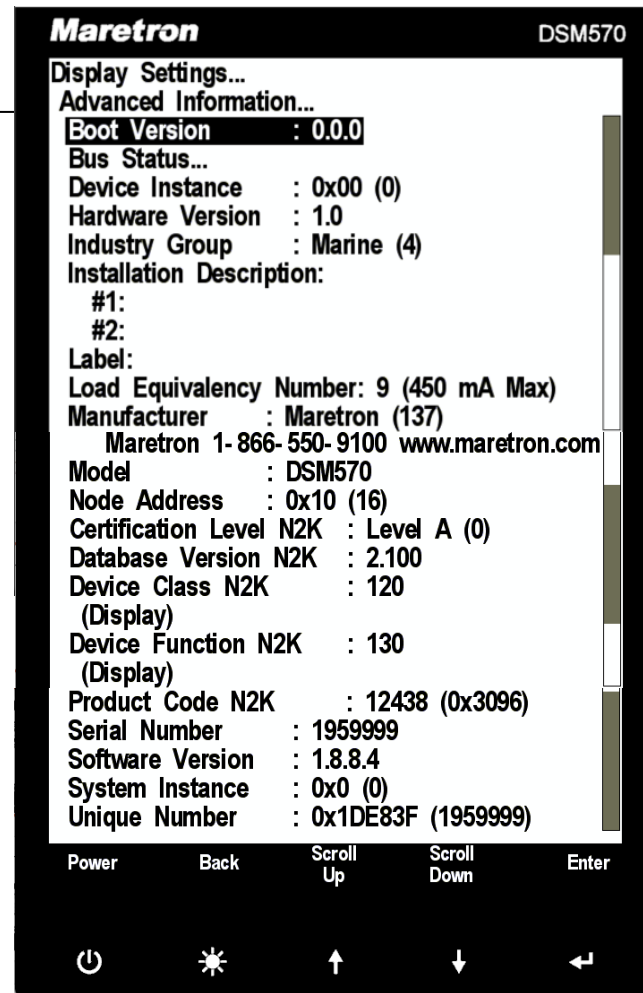
DSM SERIES DISPLAYS

Display Settings - Adv Info

Advanced Information

The Advanced Information Page displays information pertaining to the permanent setup and configuration of the DSM Display.

Most of the items within the Advanced Information menu are straight forward details and not described further here, although a less obvious menu item (Bus Status) which is described next.



DSM SERIES DISPLAYS

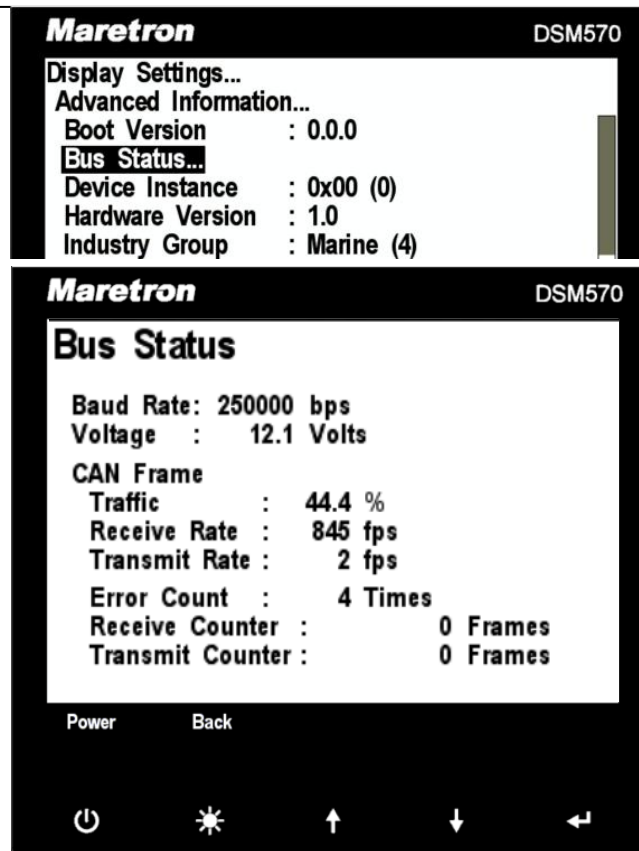
Display Settings - Bus Status

Advanced Information, cont.

Bus Status

The DSM Display is capable of monitoring the NMEA 2000® network and displaying certain statistics.

- Baud Rate: the speed capability of the connected network given in bits per second (bps)
- Voltage: the network voltage as measured by the DSM Display
- Traffic: the percent usage of the total available bandwidth
- Receive Rate: received rate in frames per second (fps)
- Transmit Rate: transmit rate in frames per second (fps)
- Error Count: error frames since entering the Bus Status screen
- Receive Counter: received frames counter
- Transmit Counter: transmitted frames counter

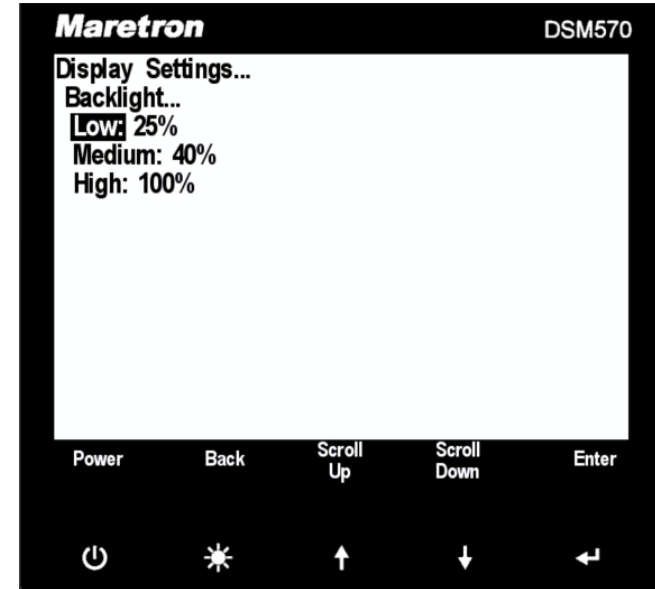


DSM SERIES DISPLAYS

Display Settings - Backlight

Backlight

The Backlight menu allows you to program the “Low”, “Medium”, and “High” brightness levels. The value that appears next to the appropriate setting is measured in percent of full brightness.



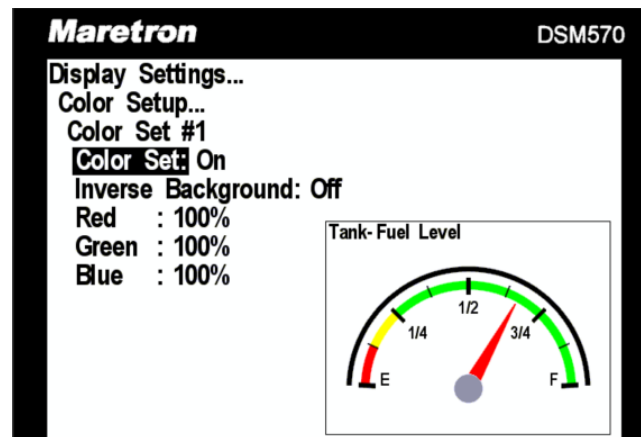
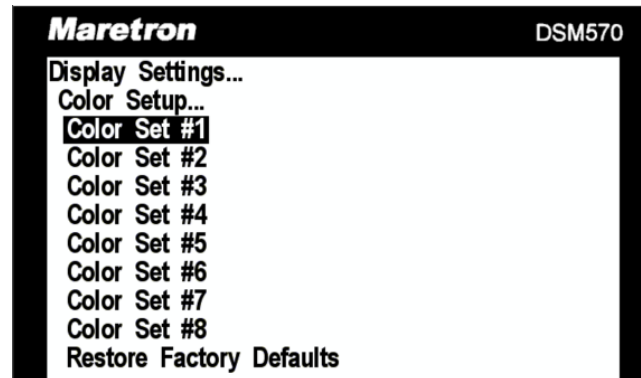
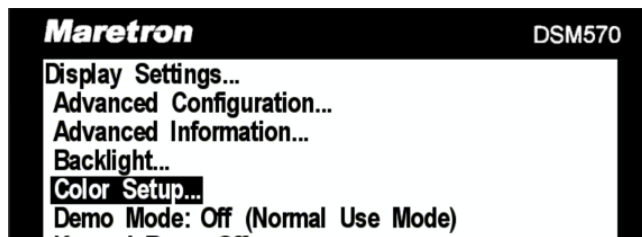
DSM SERIES DISPLAYS

Display Settings - Color Setup

Color Setup

The DSM Displays offers eight user-programmable color palettes.

This allows the user to define a unique look of gauges while in different color modes.



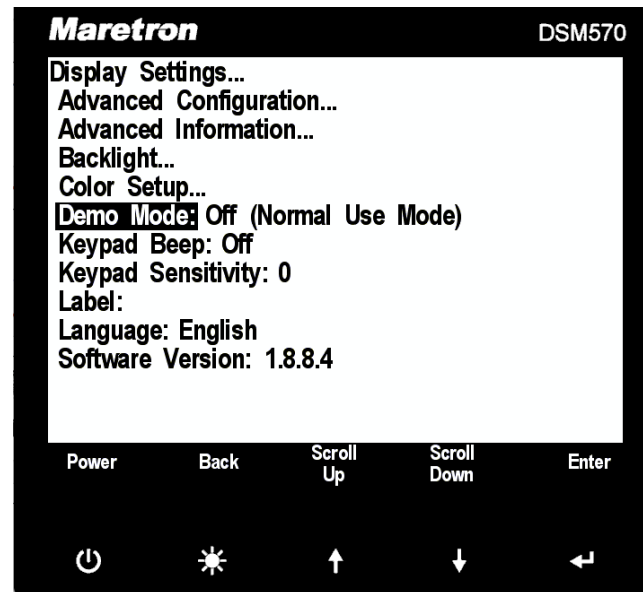
DSM SERIES DISPLAYS

Display Settings - Demo Mode

Demo Mode

The DSM Display offers a demo mode suited for displaying the capabilities of the unit. It causes the Display to operate in a “simulated data” mode, coupled with a set of pre-defined favorite screens and ignore any data arriving over the NMEA 2000® bus.

- On (Show Room Mode)
 - Resets the data back to Demo settings after 5 minutes.
- On (Boat Show Mode, No Auto Reset)
 - Offers continuous Demo Data and configurations
- Off (Normal Use Mode)”
 - Will return the DSM Display to using data from the NMEA 2000® bus.



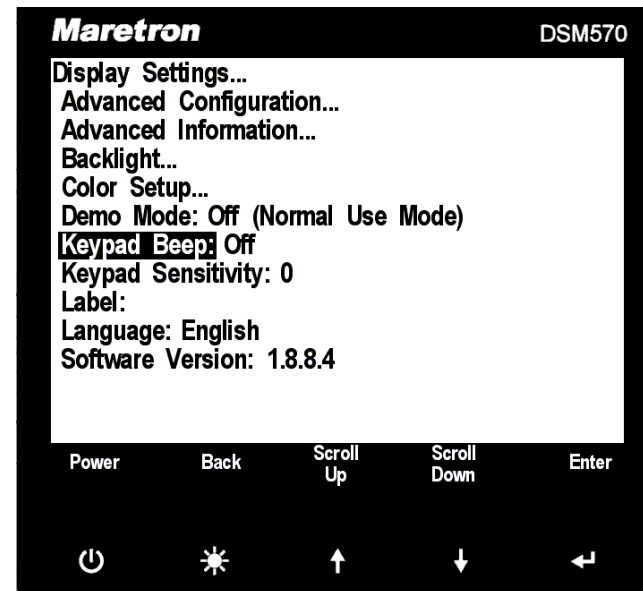
DSM SERIES DISPLAYS

Display Settings - Keypad Beep

Keypad Beep

The DSM Displays offer an annunciator that can be programmed to beep every time a key is pressed.

The keypad beep may be disabled if desired.



DSM SERIES DISPLAYS

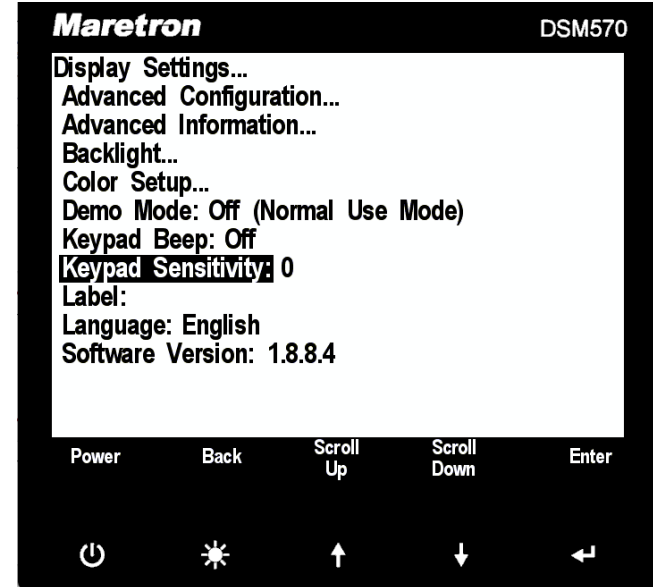
Display Settings - Keypad Sensitivity

Keypad Sensitivity

The DSM Series displays are available to use in a variety of installation environments both wet & dry locations.

The Keypad Sensitivity allows the user to adjust the responsiveness of the keypad controls to support the installation environment as needed.

***Exclusive feature for DSM410 and DSM570**

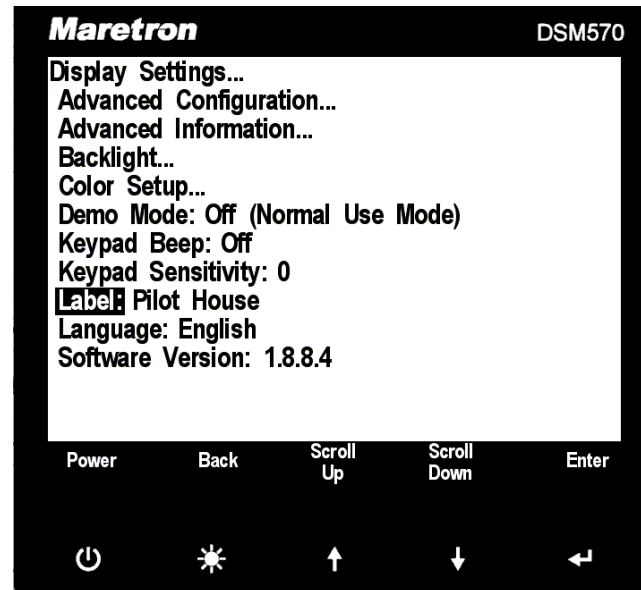
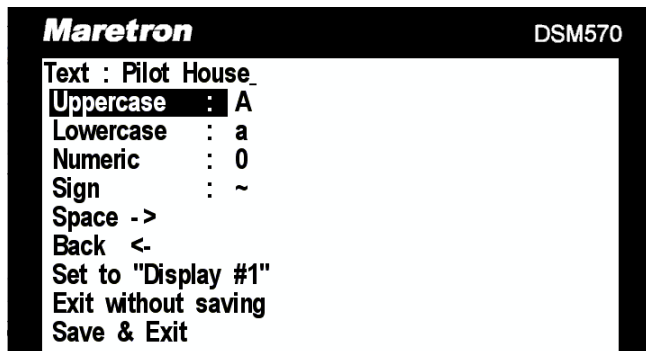


DSM SERIES DISPLAYS

Display Settings - Label

Label

Each DSM Display can be given a software label.
Normally this label will indicate the position/location
of the Display and is used by the Alert System to
identify one DSM Display from another on a network.



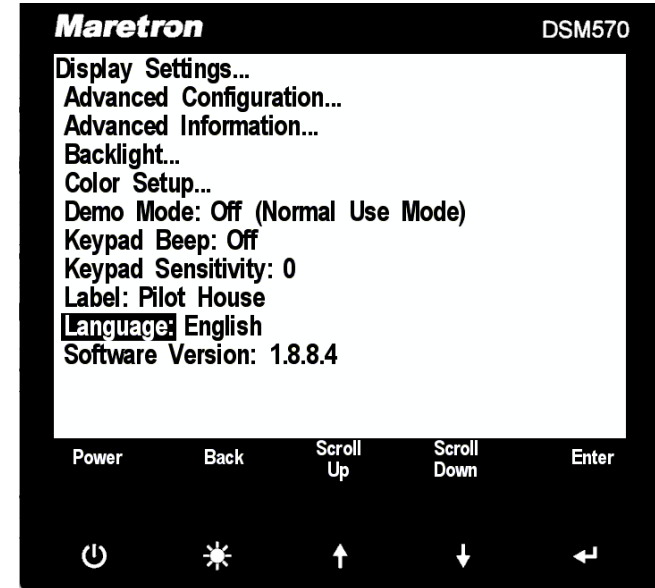
DSM SERIES DISPLAYS

Display Settings - Language

Language

The DSM Displays offers 3 languages of support.

- English
- Français (French)
- Dutch



DSM SERIES DISPLAYS

Display Settings - Software

Software

Displays the active Software Version running on the display.



DSM SERIES DISPLAYS

Settings - Favorite Screens

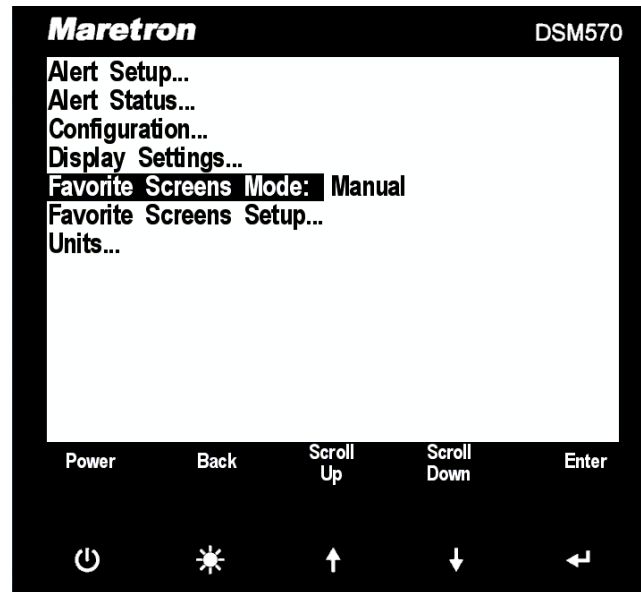
Favorite Screens Mode

Manual

- A particular “favorite” screen remains on the display until you select another one

Auto

- The DSM automatically cycles between “favorite” screens, at time intervals which are individually programmable for each “favorite” screen.



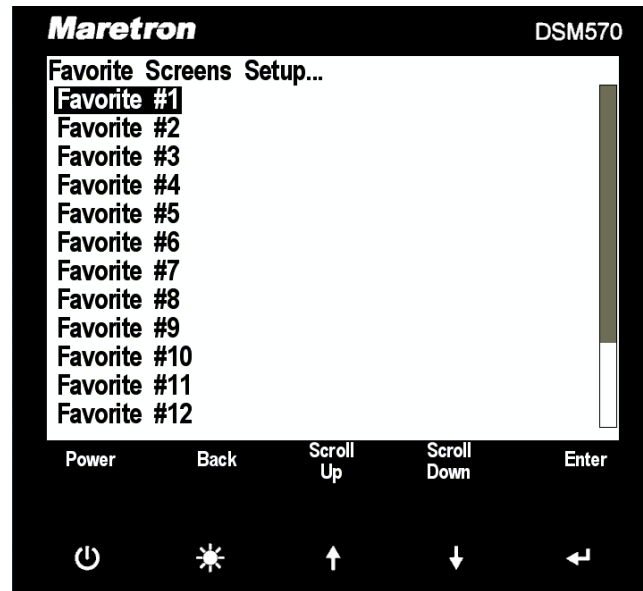
DSM SERIES DISPLAYS

Favorite Screens - Screens Setup

Favorite Screens Setup

Supports the configuration of sixteen favorite screens.

The favorite setup screen allows you to select which of the sixteen favorite screens you wish to configure.



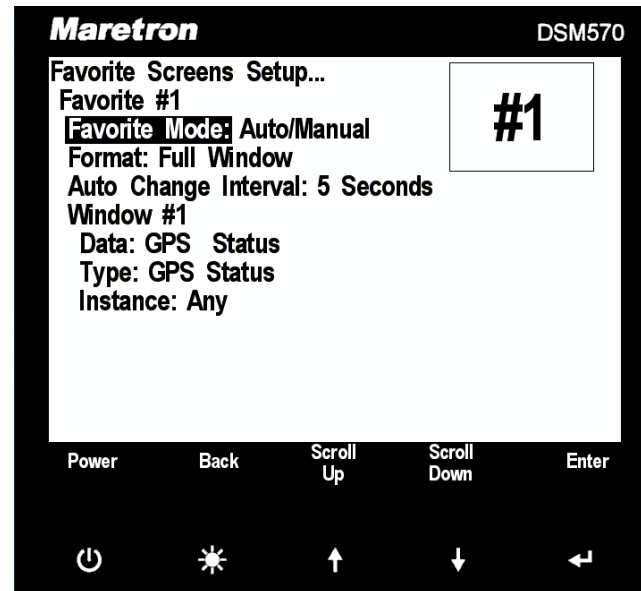
DSM SERIES DISPLAYS

Favorite Screens - Favorite Mode

Favorite Mode

Illustrates which screen mode this page will be displayed

- **Auto/Manual**
- **Auto** Cycles through screen at set change interval
- **Manual** User manually toggles through screens
- **Off** Disables screen



DSM SERIES DISPLAYS

Favorite Screens - Format

Format

Defines the layout of the Favorite Screen

- Full Window

| |
|----|
| #1 |
|----|
- Half Left/Right

| | |
|----|----|
| #1 | #2 |
|----|----|
- 2/3 Top – 1/3 Bottom

| |
|----|
| #1 |
| #2 |
- Half Top/Bottom

| |
|----|
| #1 |
| #2 |
- 1/3 Top – 2/3 Bottom

| |
|----|
| #1 |
| #2 |
- 2 Qtrs – Half Bottom

| | |
|----|----|
| #1 | #2 |
| #3 | |
- Half Left – Qtr – Qtr

| | |
|----|----|
| #1 | #2 |
| #3 | |
- Half Top – 2 Qtrs

| | |
|----|----|
| #1 | |
| #2 | #3 |
- Qtr – Half – Qtr

| | |
|----|----|
| #1 | #2 |
| #3 | |
- 4 Qtrs

| | |
|----|----|
| #1 | #2 |
| #3 | #4 |



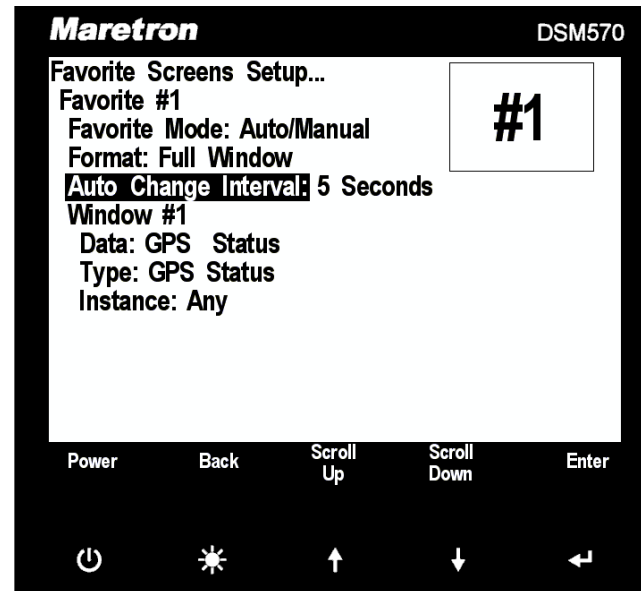
DSM SERIES DISPLAYS

Favorite Screens - Screen Change Interval

Auto Change Interval

While in Auto mode, this parameter determines the amount of time this favorite screen is displayed before the DSM automatically cycles to the next higher numbered favorite screen.

This parameter is programmable between 1-180 seconds.



DSM SERIES DISPLAYS

Favorite Screens - Window Data

Window Data

The Window Data section of the menu allows you to select a particular type of data to be displayed in each part of the screen.

Selecting the data to be displayed is a two-step process.

- First, press the Enter key and select the category of data to be displayed.
- Once you select the category, press the Enter key to accept this category, at which time the highlight will move to the data type field, where you can display the particular data type from the selected category to be displayed



DSM SERIES DISPLAYS

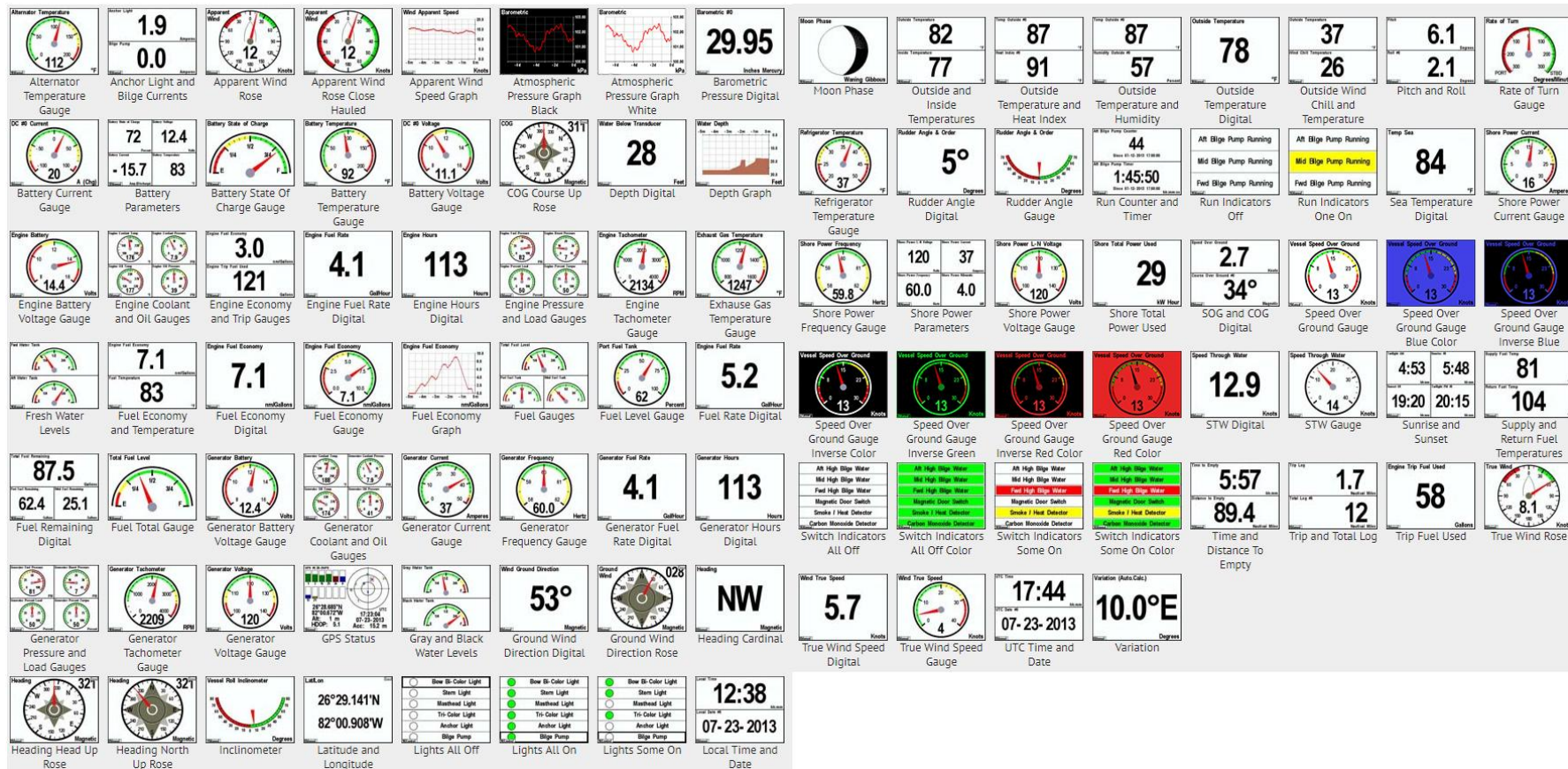
Favorite Screens - Data Categories

Window Data Categories

| | | |
|------------------------------|-------------------|----------------|
| AC (Bus, Generator, Utility) | GPS | Special Device |
| Anchor Watch | Heading | Speed |
| DC | Humidity | Tank |
| Depth | Indicator | Temperature |
| Electrical | Mechanical | Time/Date |
| Elec. Distribution | Motion | Transmission |
| Engine | Navigation | VDR |
| Environment | Pressure/Vacuum | Vessel |
| Fluid Flow | Rudder | Wind |
| Fuel Management | SMS (Text) Status | |

DSM SERIES DISPLAYS

Favorite Screens - Data Window Snapshot



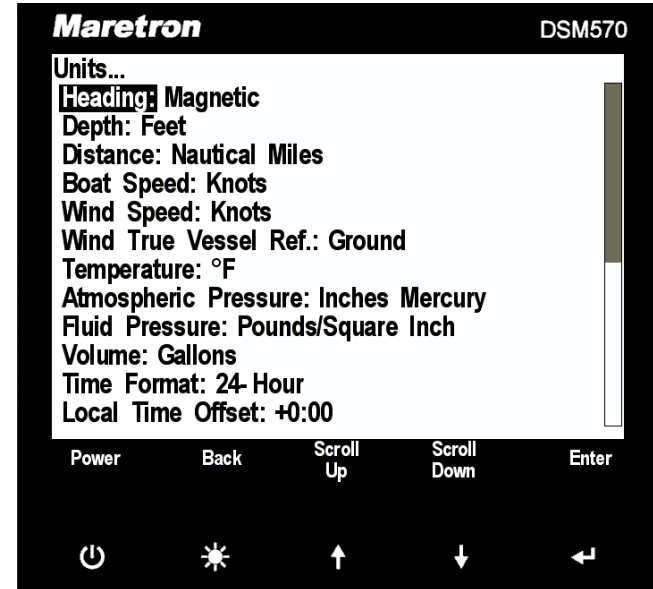
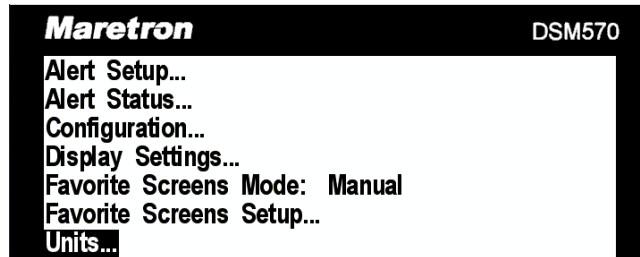
DSM SERIES DISPLAYS

Settings - Units

Units

Allows you to set the desired profile of units for multiple parameters, such as:

- Depth
- Speed
- Temperature
- Volume
- etc.



DSM SERIES DISPLAYS

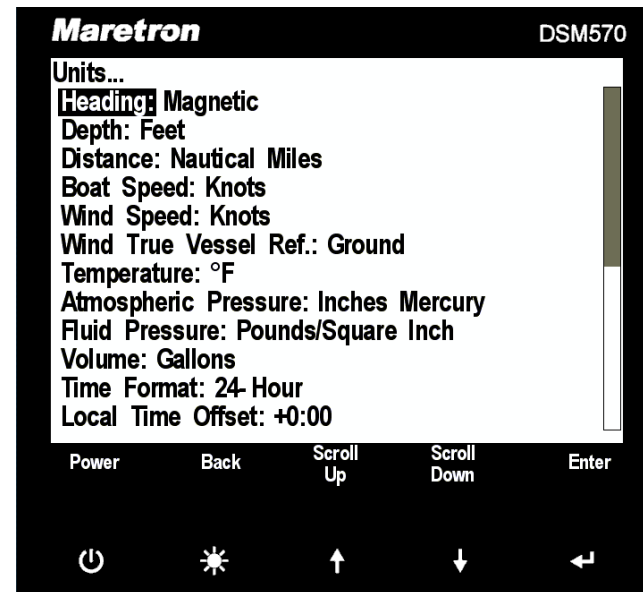
Adv Features - Control Mode

Control Mode

Control mode may be entered from the favorite screens mode of the display to perform certain control and reset functions.

The following functions may be performed in control mode:

- **Switch/Breaker** – may be switched on and off
- **Anchor Watch** – Anchor Drop position may be set to the current GPS position
- **Engine Trip Fuel Used** – may be reset to zero for fuel flow transducers that are capable of being reset via the 126208 NMEA 2000® command message, such as the Maretron FFM100
- **Trip Volume** – may be reset to zero for fluid flow transducers that are capable of being reset via the 126208 NMEA 2000® command message, such as the Maretron FFM100
- **Trip Log** – may be reset to zero for log transducers that are capable of being reset via the NMEA 2000® command message, such as the Maretron DST110, may be reset with the control mode of the display



DSM SERIES DISPLAYS

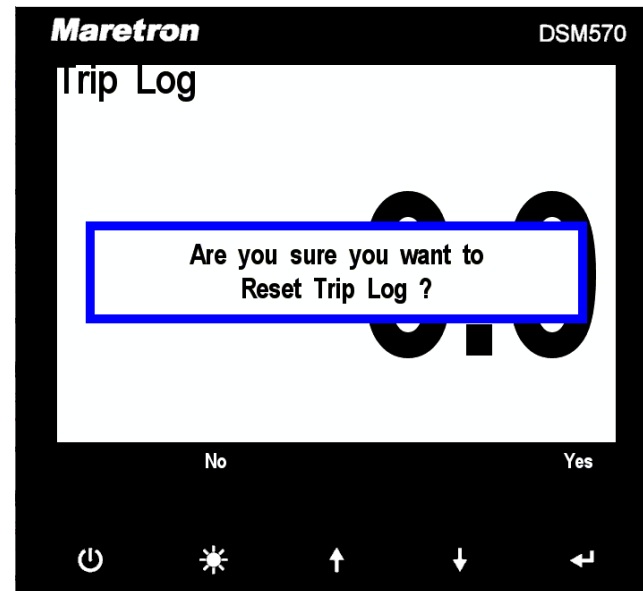
Adv Features - Control Mode

Control Mode

For resetting “Engine Total Fuel Used”, “Trip Volume”, or “Trip Log”, use the following procedure to reset the total in the transducer providing the value.

In normal operating mode, use the “Scroll Up” and “Scroll Down” keys to change to the screen containing the display to be reset. Once that screen is displayed, follow these steps to reset the appropriate display:

- Press the “Enter” key for approximately one second. This will place the display into “Control mode”, and one of the controllable items on the screen will be highlighted with a thick border.
- If there is more than one controllable item on the screen, you may use the “Scroll Up” and “Scroll Down” keys to change the highlight to the display to be reset.
- Once the display to be reset is selected, then press the “Power” key. You will then see a confirmation popup asking whether it is okay to set the Anchor Drop position to the current position. If you answer “Yes”, then the Anchor Drop position will be set to the current GPS position.
- To exit the control mode, press the “Lights” key to return to normal operating mode. The highlight will disappear.



DSM SERIES DISPLAYS

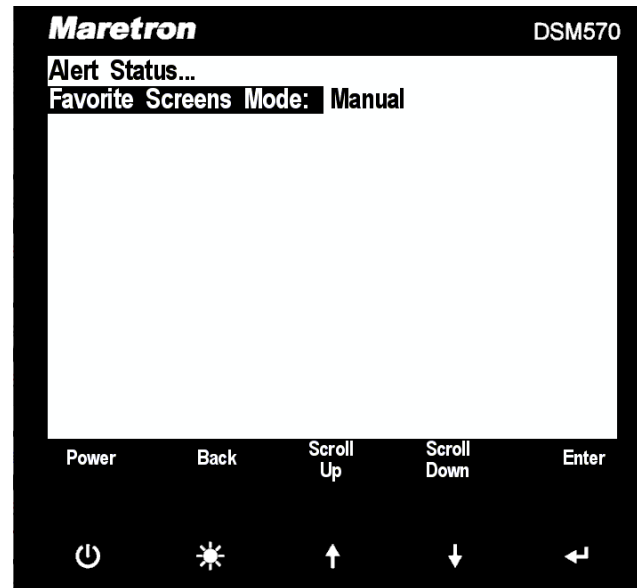
Adv Features - Screen Lock

Screen Lock

Sometimes, it is desirable to lock the settings of the DSM in order to keep them from being inadvertently changed. The DSM has a settings lock mode in which the settings of the DSM cannot be changed.

To enter the lock mode, do the following steps:

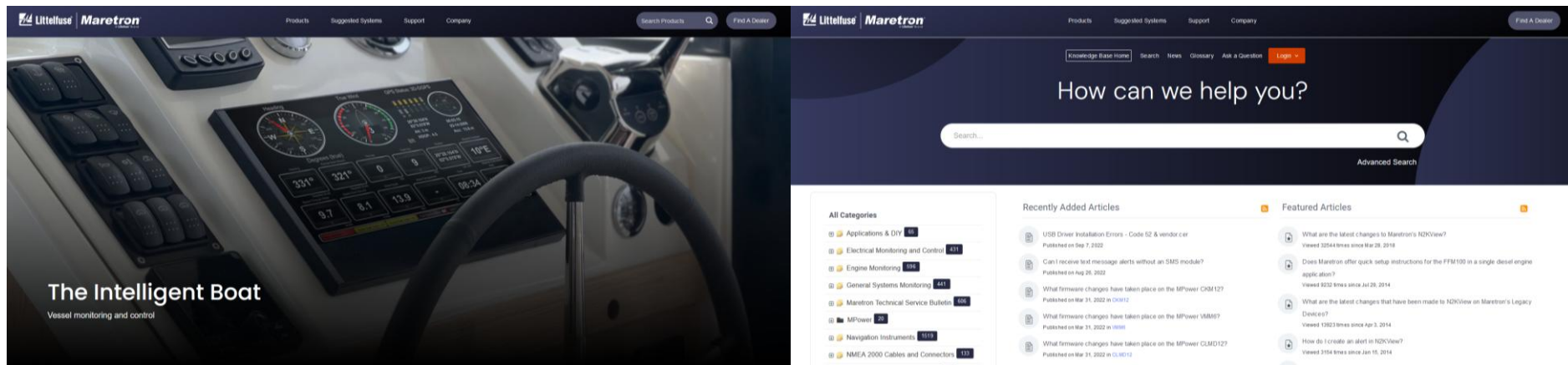
1. Begin with the DSM570 powered off.
2. Press and hold the Up and Enter buttons.
3. While you are holding these two buttons, press and release the Power button.
4. Once the DSM570 has powered on and is displaying the warning screen, you may release the two buttons you are holding.
5. The DSM570 is now in settings lock mode. You can verify this by pressing the Enter key to display the main menu. You should see only the “Alert Status” and “Favorite Screens Mode” menu entries.
6. Repeat to disable this feature.



RESOURCES

Website Resources

The Maretron website has been recently updated to offer our users access to all of the latest technical materials with the ease of navigation. Datasheets, Manuals, Training Videos, Software, Knowledge Base and Sample Systems and more at your fingertips!!



www.Maretron.com

RESOURCES

Technical Support

Maretron Technical Support (Maretron, MPower and OctoPlex Brands)

Monday – Friday 830am - 5pm (EST)

End-User Support: (603) 324-7900

Inquiries & RMAs



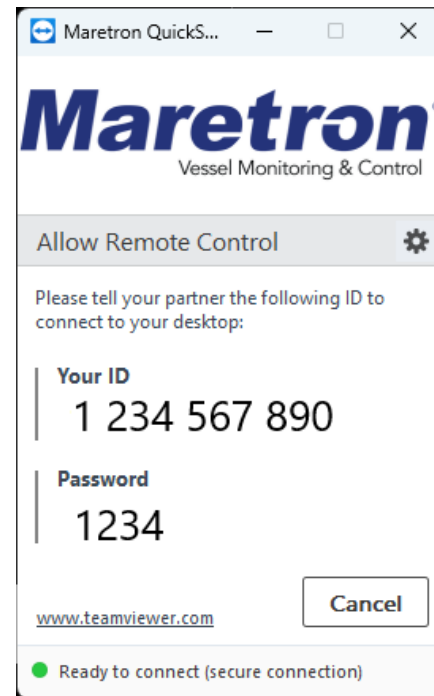
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