TSM810C
8" Vessel Monitoring and Control Touchscreen

User's Manual

Revision 1.1

Revision History

Rev.	Description
1.0	Original document
1.1	Updated company profile and contact details Updated Firmware Revision reference Updated images used in multiple Figures Miscellaneous verbiage updates Updated Warranty details

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1 General

1.1 Introduction

Congratulations on your purchase of the Maretron TSM810C Vessel Monitoring and Control Touchscreen. Maretron has designed and built your display to the highest standards for years of dependable and accurate service.

The TSM810C is an 8" dedicated touchscreen that includes Maretron's N2KView® vessel monitoring and control software. The N2KView® software allows you to configure as many favorite screens as you want with exactly the information you want to see. The TSM810C provides an extremely simple touch interface for monitoring and controlling critical systems from anywhere on the vessel.

The TSM810C is ruggedized for marine use and includes a solid-state disk drive to withstand the pounding associated with waves. And since the TSM810C dissipates less than 10 watts, there is no need for internal cooling fans that are noisy and wear out causing electronics to overheat and fail. The TSM810C can be mounted outside given the high bright screen and waterproof front.

As an alternative to controlling the TSM810C through the touch screen, the TSM810C includes two USB ports for connecting keyboards, mice, or trackballs. The TSM810C also has an Ethernet port for connecting Internet Protocol (IP) cameras for viewing within the N2KView® software. Lastly, the TSM810C contains two completely isolated CAN bus connectors (M12) for easy connection to single, dual, or redundant NMEA 2000® networks.
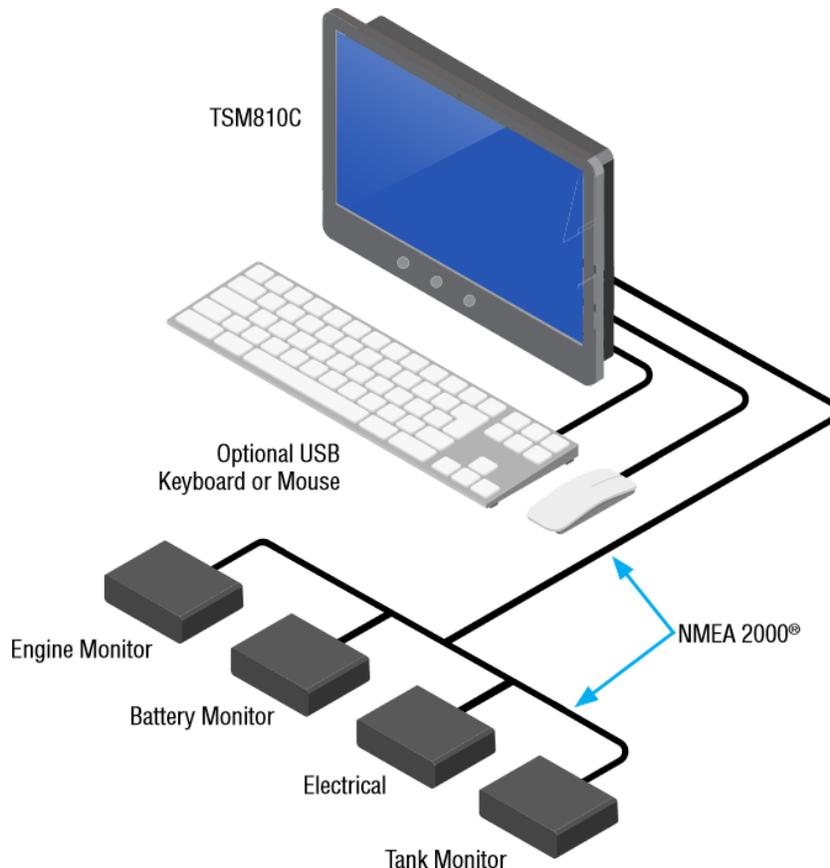
Figure 1 – TSM810C Network Diagram

The Maretron TSM810C is designed to operate within the harsh demands of the marine environment. However, no piece of marine electronic equipment can function properly unless installed, configured, and maintained in the correct manner. Please read carefully and follow these instructions for installation, configuration, and usage of the Maretron TSM810C to ensure optimal performance.

1.2   Firmware Revision

This manual corresponds to the TSM810C running N2KView® Version 6.4.1.

1.3   TSM810C Features

The Maretron TSM810C has the following features:

- Full version of N2KView® software preinstalled
- 8" TFT LCD panel, LED Backlit
- Widescreen aspect ratio 5:3
- 800 x 480 pixels
- 1350 nits' brightness (Optically bonded)
- Solid state disk drive
- Fanless cooling system
- Flush or VESA mounting capability
- Dual CAN Bus for Single or Redundant NMEA 2000® Network Connectors

1.4   Quick Install

Installing the Maretron TSM810C display involves the following five steps. Please refer to the individual sections for additional details.

- Unpacking the Box (Section 2.1)
- Choosing a Mounting Location (Section 2.2)
- Mounting the TSM810C (Section 2.3)
- Connecting the TSM810C (Section 2.4)
- Configuring the TSM810C (Section 2.6)

2 Installation

2.1 Unpacking the Box

When unpacking the box containing the Maretron TSM810C, you should find the following items:

- 1 – TSM810C 8" Vessel Monitoring and Control Touchscreen
- 2 – Snap On Bezels
- 1 – Blue Maretron USB Drive Containing (among other documents)
    - o 1 – TSM810C User's Manual
    - o 1 – N2KView® Documentation
- 1 – 1m USB Cable with Waterproof Bulkhead Connector
- 1 – Warranty Registration Card

If any of these items are missing or damaged, please contact Maretron.

⚠	**NOTE** To prevent damage to chassis corners and/or breaking front glass, please review the illustrations below before handling the TSM810C.
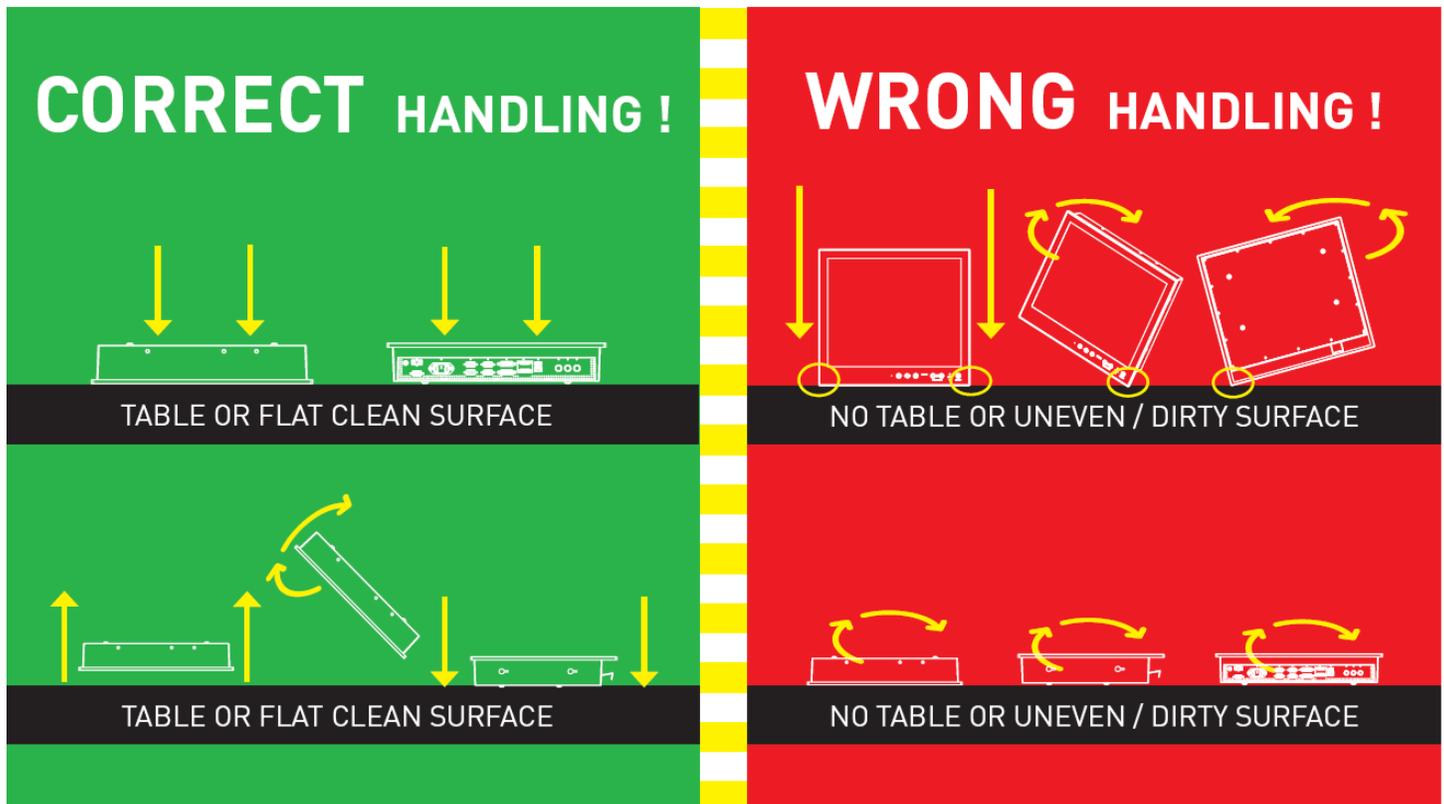
2.2 Choosing a Mounting Location

The TSM810C front panel is splash proof (IEC IP66 rating – protected against the effects of powerful water jets), while the rear of the TSM810C is drip proof (IEC IP22 rating – protected against the effects of dripping water when tilted up to 15°). The TSM810C may be mounted either in an indoor or outdoor location.

Adequate ventilation is a necessary prerequisite for the life of the product. The air inlet and outlet openings must definitely be kept clear; coverings which restrict ventilation are not permissible.

Generally, do not install the unit in a horizontal position (laying down), as this will cause heat to build up inside the unit which will damage the LCD Panel. To prevent this problem, we recommend installing the unit in a vertical position (±30 degrees) to improve the airflow through the unit.

To further improve the cooling of the unit, we recommend installing Cooling Fans underneath blowing upwards into the unit air inlet. This may be required in high temperature applications and also when there is reason to expect temperature problems due to non-optimal way of mounting.

Exposure to extreme direct sunlight can cause a considerable increase in the temperature of the unit, and might under certain circumstances lead to over temperature. This point should already be taken into consideration when the bridge equipment is being planned (sun shades, distance from the windows, ventilation, etc.).

Space necessary for ventilation, for cable inlets, for the operating procedures and for maintenance, must be provided. The NMEA 2000 cables require at least 140mm (5.5") clearance from the back surface of the TSM810C for the plug and cable minimum bend radius. If a 90° field attachable connector is used on the cable, then this can be reduced to 51mm (2")

Proper strain relieve should be installed on cables attached to the TSM810C so that cable breaks will not occur, e.g. during service work.

Do not paint the product. The surface treatment influences on the excess heat transfer. Painting, labels or other surface treatments that differ from the factory default, might cause overheating.

Expose to heavy vibration and acoustic noise might under certain circumstances affect functionality and expected lifetime. This must be considered during system assembly and installation. Mounting position must carefully be selected to avoid any exposure of amplified vibration.

2.3   Mounting the TSM810C
The TSM810C has two mounting options, which include:

- Wall/Panel mounting
- Arm mounting (requires purchase of a VESA 75mm mounting arm)

2.3.1 Mounting Considerations
The useful life of the components of all Electronics Units generally decreases with increasing ambient temperature; it is therefore advisable to install such units in air-conditioned rooms. If there are no such facilities, these rooms must at least be dry, adequately ventilated and kept at a suitable temperature in order to prevent the formation of condensation inside the display unit.

Since the TSM810C is fanless, cooling takes place via the surface of the casing. The cooling must not be impaired by partial covering of the unit or by installation of the unit in a confined cabinet.

In the area of the wheel house, the distance of each electronics unit from the magnetic standard compass or the magnetic steering compass must not be less than the permitted magnetic protection distance. This distance is measured from the center of the magnetic system of the compass to the nearest point on the corresponding unit concerned.

Units which are to be used on the bridge wing must be installed inside the "wing control console" protected against the weather. In order to avoid misting of the viewing screen, a 25 ... 50 W console-heating (power depending on the volume) is recommended.

When selecting the site of a display unit, the maximum cable lengths have to be considered.

When a product is being installed, the surface base or bulkhead must be checked to ensure that it is flat in order to avoid twisting of the unit when the fixing screws are tightened, because such twisting would impair mechanical functions. Any unevenness should be compensated for by means of spacing-washers.

Transportation damage, even if apparently insignificant at first glance, must immediately be examined and be reported to the freight carrier. The moment of setting-to-work of the equipment is too late, not only for reporting the damage but also for the supply of replacements.

The classification is only valid for approved mounting brackets provided by Maretron. The unit shall be mounted stand-alone without any devices or loose parts placed at or nearby the unit. Any other type of mounting might require test and re-classification.

2.3.2 Ergonomics
Adjust the unit height so that the top of the screen is at or below eye level. Your eyes should look slightly downwards when viewing the middle of the screen.

Adjust screen inclination to remain gaze angle to the center of the screen approximately perpendicular to the line of gaze.
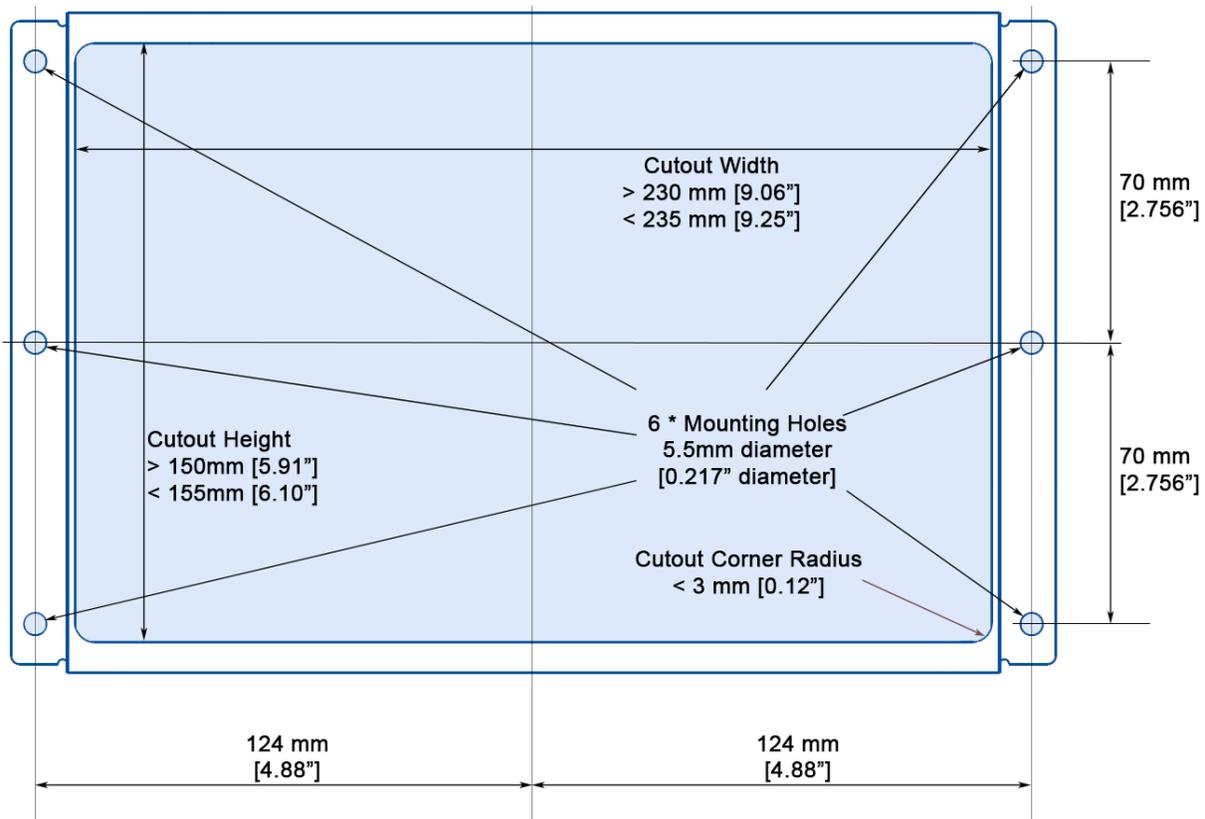
When products are to be operated both from a sitting position and from a standing position, a screen inclination of about 30° to 40° (from a vertical plane) has turned out to be favorable.

The brightness of displays is limited. Sunlight passing directly through the bridge windows - or its reflection – which falls upon the screen workplaces must be reduced by suitable means (negatively inclined window surfaces, venetian blinds, distance from the windows, dark coloring of the deckhead). These units are equipped with optical enhanced technology to reduce reflections and are viewable in direct sun light, but as a general rule the units at the bridge wing area is recommended to be installed or mounted by suitable alignment or bulkhead /deckhead mounting in such a way that reflections of light from the front panel of the display are not directed into the observer's viewing direction.

The use of ordinary commercial filter plates or filter films is not permitted for items of equipment that require approval (by optical effects, "aids" of that kind can suppress small indicators, for example).

2.3.3 Wall or Panel Mounting

Mounting the TSM810C on a wall or panel requires a cutout in the wall or panel. Please ensure there is sufficient space behind the unit to connect the NMEA 2000 cables. Typically they require 190mm (7.5") for a straight connector, or 102mm (4") for a right angle connector, measured from the front face of the wall or panel.

Cutout Width
> 230 mm [9.06"]
< 235 mm [9.25"]

70 mm
[2.756"]

Cutout Height
> 150mm [5.91"]
< 155mm [6.10"]

6 * Mounting Holes
5.5mm diameter
[0.217" diameter]

70 mm
[2.756"]

Cutout Corner Radius
< 3 mm [0.12"]

124 mm
[4.88"]

124 mm
[4.88"]

Figure 2 – TSM810C Cutout Dimensions (not to scale)

Step 1: Select the position on the panel or wall to mount the TSM810C.

Step 2: Cut out a section from the panel that corresponds to the rear panel dimensions of the TSM810C. Take care that the panel section that is cut out is smaller than the overall size of the front panel of the TSM810C but just large enough for the rear panel of the TSM810C to fit through, according to the dimensions in Figure 2 above.

Step 3: Slide the TSM810 through the hole from the front until the frame is flush against the panel and then mark the positions of the 6 mounting holes. Remove the TSM810 before drilling the holes.

Step 4: Drill six 5.5mm holes for the mounting screws according to the dimensions in Figure 2 above.

Step 5: Slide the TSM810C through the hole until the frame is flush against the panel.

Step 6: From the front of the panel, place six #10 flat/countersunk bolts through the TSM810C frame and the panel, add washers and nuts, and tighten until the display is firmly secured to the panel. Suitable #10 countersunk screws may be used in place of the bolts for wall mounting. The bolts and screws are not provided by Maretron.

Step 7: Clip the two bezels on to the front of the TSM810, hiding the screws.

2.3.4 Arm Mounting

The TSM810C is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 75mm interface pad. To mount the TSM810C on an arm, please follow the steps below.

NOTE

When purchasing a mounting arm please ensure that it is VESA compliant and that the arm has a 75 mm interface pad. If it is not VESA compliant, it cannot be used to support the TSM810C.

Step 1: Please correctly mount the arm onto the base surface. To do this, refer to the installation documentation that came with the mounting arm.
Step 2: Once the mounting arm has been firmly attached to the base surface, lift the TSM810C onto the interface pad of the mounting arm, inserting the clinch screws already mounted on the TSM810C into the holes on the interface pad.
Step 3: Secure the TSM810C to the interface pad by adding the washers and nuts and tightening until the TSM810C is firmly secured to the interface pad.
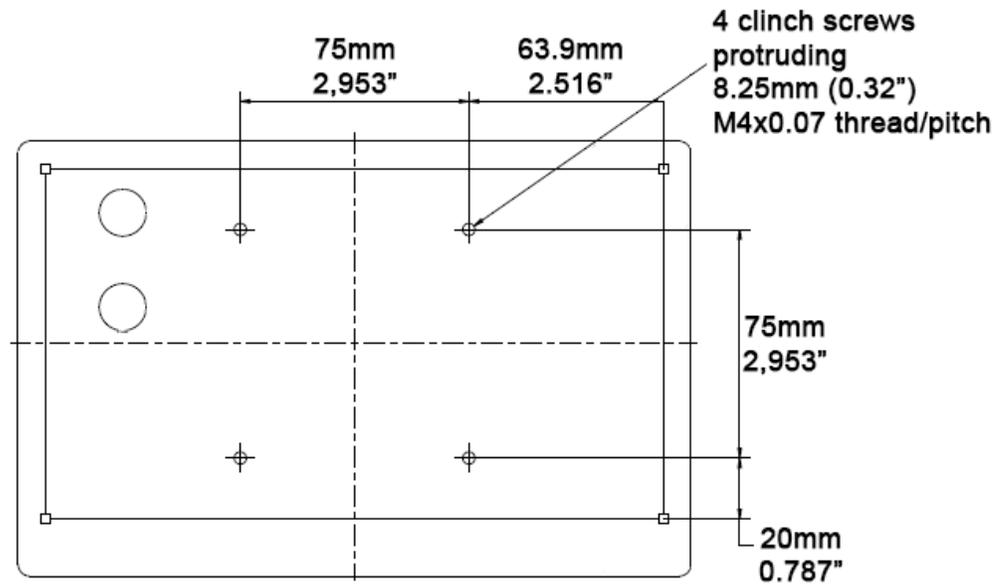
Figure 3 – TSM810C VESA Arm Mounting Retention Screws

Figure 4 – TSM810C VESA Arm Mounting Retention Screws

2.4 Connecting the TSM810C

Most I/O interface connections of the TSM810C are found on the bottom panel. The I/O interface panel located on the bottom of the TSM810C has the following I/O interface connectors:

- 24V DC Power input connector
- 1 x RJ-45 Gigabit Ethernet LAN port
- 1 x USB 2.0 connector
- 1 x USB 3.0 connector

Additionally, the rear panel of the TSM810C has the following interface connectors:

- 2 x M12 (DeviceNet Micro) NMEA 2000 ® network CAN connectors

The bottom panel and rear panel of the TSM810C is shown in Figure 5.

Figure 5 – TSM810C Bottom and Rear Panels

2.4.1 LAN Connection

NOTE

The LAN Connection is not necessary unless you are using any of the following features:
- Video
- E-mail actions on Alerts
- Online Updates
- Remote Support

There is one external RJ-45 LAN connector. The RJ-45 connector enables connection to an external network. To connect a LAN cable with an RJ-45 connector, please follow the instructions below.

Step 1: Locate an RJ-45 connector on the bottom panel of the TSM810C.

Step 2: Align the connector. Align the RJ-45 connector on the LAN cable with the RJ-45 connector on the bottom panel of the TSM810C. See Figure 6.

Step 3: Insert the LAN cable RJ-45 connector. Once aligned, gently insert the LAN cable RJ-45 connector into the onboard RJ-45 connector.
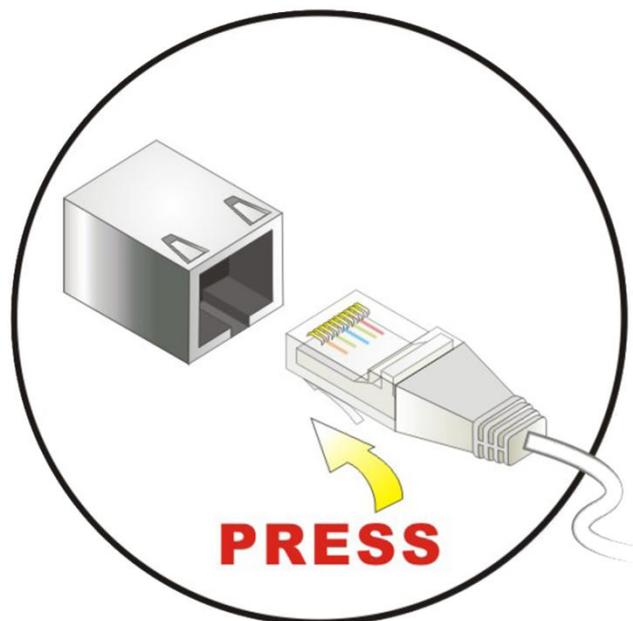
Figure 6 – LAN Connection

2.4.2 USB Device Connection

There is one USB 3.0 connector and one USB 2.0 connector. The USB connectors are used to transfer N2KView® configurations between the TSM810C and other N2KView® devices, and for applying software updates to the TSM810C. Install the included waterproof USB bulkhead connector in a position where it is easily accessible and plug into one of the USB connectors on the TSM810C per the instructions below. This will make the USB connection easily accessible once the TSM810C is installed.

The USB connectors may optionally be used to install USB keyboards or USB mice for an alternative means of controlling the TSM810C user interface.

To connect a USB 3.0, USB 2.0 or USB 1.1 device, please follow the instructions below. If a USB 3.0 device is plugged into the USB 2.0 port, the USB 3.0 device will downgrade to USB 2.0 speeds.

Step 1: Locate the USB connectors. The locations of the USB connectors are shown in Figure 5.
Step 2: Align the connectors. Align the USB device connector with one of the connectors on the bottom panel. See Figure 7.
**Step 3**: Insert the device connector. Once aligned, gently insert the USB device connector into the onboard connector.
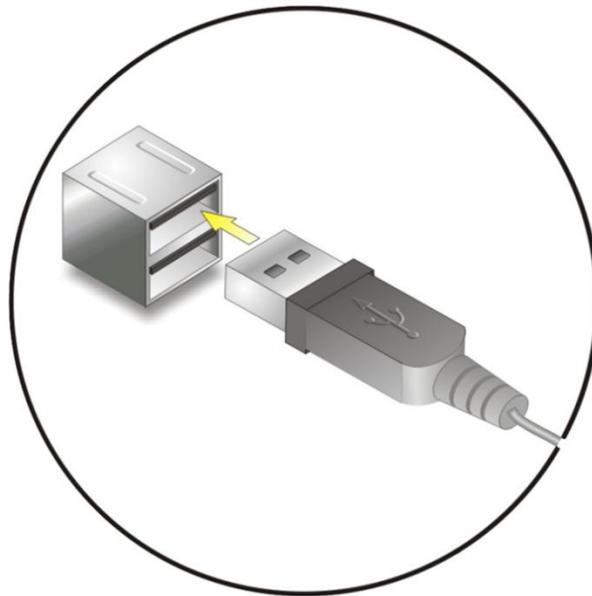
Figure 7 – USB Device Connection

2.4.3 Power Connection

The TSM810C must be connected to a power source (over current protection should be provided and should be sized in accordance with ABYC E-11, AC and DC ELECTRICAL SYSTEMS ON BOATS). The TSM810C provides one power connection.
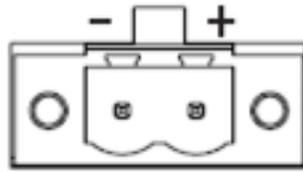
Figure 8 – Power Connections

Connect your DC power cable to the SL-SMT 09F connector block as follows:

Step 1: Unscrew (from top) or make sure that the screw terminals (square area) are fully open, so you can secure the inserted cables correctly to the loose housing connector (it may already be plugged into the unit as per factory installation).

Step 2: Insert cables (from front) and screw / secure the cables by turning the screw on top of the housing to secure the cables properly. Check that the cables are firmly in place and do not appear loose or fall out when pulling gently.

NOTE

Required polarization verification (for instance -/+ for DC power input) should conform to the markings on the connector area of the unit. Ignoring the markings on the unit or its add-on modules might damage the unit and/or external equipment in which end, warranty will be void.

Step 3: Plug the housing into the appropriate connector area of the unit and check again that the cables secured conforms to the markings on the connector area of the unit.

Step 4: Finalize the installation by fasten the screws located in front on each side of the housing connector.

Step 1   Step 2   Step 3   Step 4
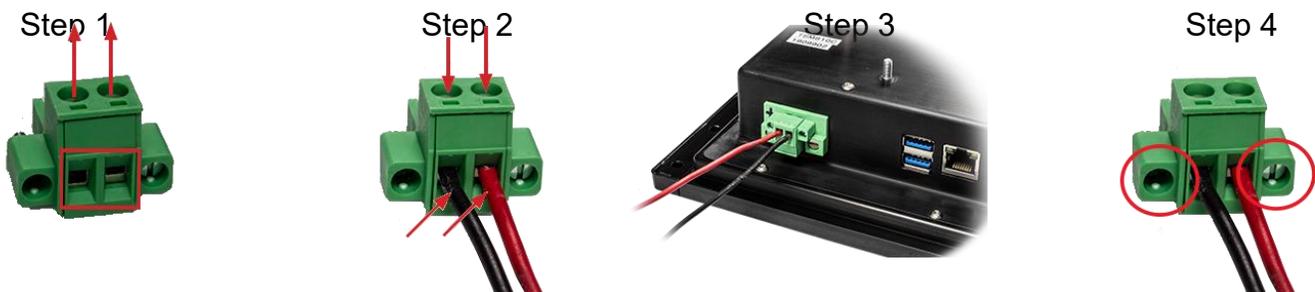
Figure 9 – Attaching Power Cables to Connector

2.4.4 NMEA 2000® Connection

The two NMEA 2000® connectors can be found on the rear panel of the TSM810C. If you are using a single NMEA 2000® network, connect either of the connectors to the NMEA 2000® network. If you are using dual NMEA 2000® networks, connect each NMEA 2000® connector to one of the NMEA 2000® networks. Note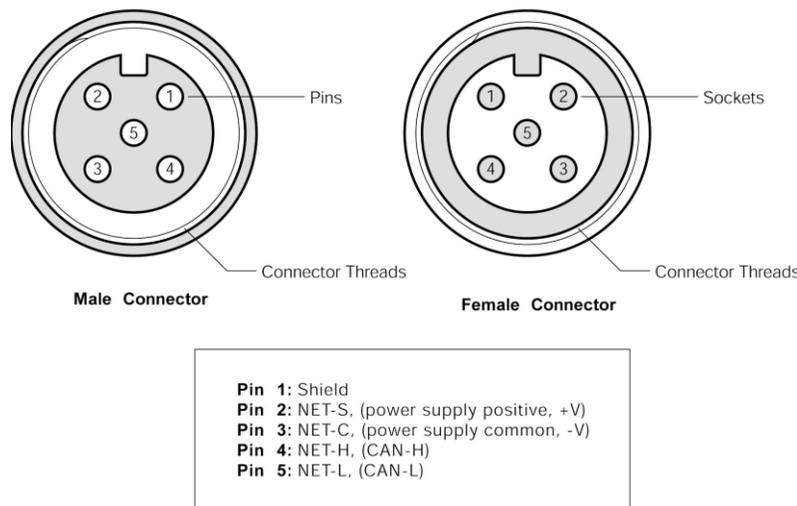 that if you are using dual NMEA 2000® networks, the instancing of device and data instance on the network nodes must be unique across both networks. For example, if one network has a device which transmits fluid level data for Fuel Tank instance 0, the other network must not contain a device which transmits fluid level data for Fuel Tank instance 0.

The NMEA 2000® connectors are round five pin male connectors (see Figure 10). You connect the TSM810C to an NMEA 2000® network using a Maretron NMEA 2000® cable (or an NMEA 2000® compatible cable) by connecting the female end of the cable to the TSM810C (note the key on the male connector and keyway on the female connector). Be sure the cable is connected securely and that the collar on the cable connector is tightened firmly. Connect the other end of the cable (male) to the NMEA 2000® network in the same manner. The TSM810C is designed such that you can plug or unplug it from an NMEA 2000® network while the power to the network is connected or disconnected. Please follow recommended practices for installing NMEA 2000® network products.

Pin 1: Shield
Pin 2: NET-S, (power supply positive, +V)
Pin 3: NET-C, (power supply common, -V)
Pin 4: NET-H, (CAN-H)
Pin 5: NET-L, (CAN-L)

Figure 10 – NMEA 2000® Connector Face Views

2.5 Power Sequencing

When the TSM810C is connected to an appropriate power source, you can use the power switch located at the center of the front panel to turn the TSM810C on or off.

The TSM810C can also be switched on and off by applying or removing power through an external switch or breaker. Anytime the power is reapplied to the TSM810C, it will turn on.

If the TSM810C is turned on, then the switches found on the front panel will be brightly illuminated and the LED will illuminate green. If the TSM810 is turned off, and power is still applied, the front panel switches + and – brightness switches will be dim, the center power switch will be bright, and the LED will illuminate red when the shutdown process is complete.

2.6   Configuring the TSM810C

The TSM810C will start up with the following warning screen:

Figure 11 – TSM810C Startup Screen

The first time you start the TSM810C, N2KView® will ask you to assign it a unique name. Assigning a unique name to the TSM810C is necessary to help you determine the source of alerts generated by a TSM810C or other Maretron device capable of generating alerts.

You are required to press **Accept** and thereby acknowledge this warning message before N2KView® will run in Live Mode.

Alternatively, you may **Enter Demo Mode**. In Demo Mode, you will not be able to connect to an NMEA 2000® network and view live data; instead, simulated data will be provided to stimulate the controls.

Finally, you may choose **Exit**, in which case the TSM810C will power off.

### 2.6.1 Manually Entering LAN Connection Information

NOTE

The LAN Connection is not necessary unless you are using any of the following features:
- Video
- E-mail actions on Alerts
- Online Updates
- Remote Support

If you intend to use the Video feature or send e-mails via the Alerts feature, you must ensure that the device can connect to your LAN (local area network). The TSM810C comes from the factory preconfigured to obtain its LAN connection information from a DHCP (Dynamic Host Control Protocol) server. If your local area network uses a DHCP server, no configuration is necessary, and the TSM810C should be able to successfully connect to the local area network.

If your local area network does not use DHCP, you must manually enter the LAN connection information into the TSM810C. This is done through the following steps:
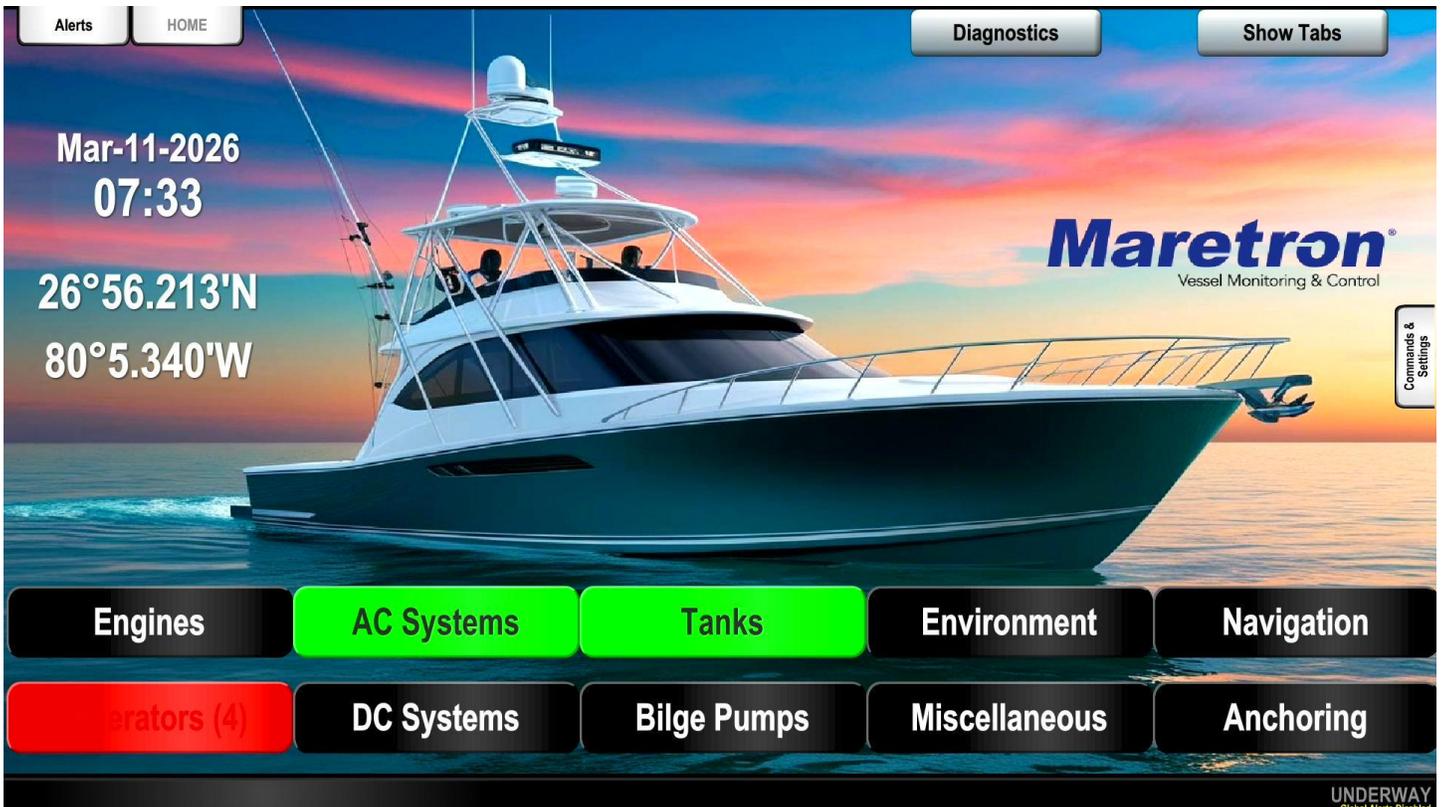
Figure 12 – N2KView® Window with Tabs Displayed

a.   Click anywhere inside the N2KView® screen to display the screen tabs as shown in Figure 12 above.

b.   Click on the "**Commands & Settings**" tab on the right side of the N2KView® screen to display the Commands & Settings window.

c.   Click on the "**Configuration"** button in the Commands & Settings window to display the Configuration dialog.

d.   Click on the "**Ethernet**" tab in the Configuration dialog to display the Ethernet dialog.

Figure 13 – Ethernet Dialog

e.   Uncheck the "**DHCP**" box to indicate that your LAN does not use DHCP.

f.   Optionally, in the "**Hostname**" field, enter a hostname for the TSM810C. This is used by the network router.

g.   In the "**IP Address**" field, enter the IP address you wish to assign to the TSM810C.

h.   In the "**Subnet Mask"** field, enter the net mask value used on your LAN (in most cases, this value will be "255.255.255.0").

i.   In the "**Default Gateway***"* field, enter the IP address of the default gateway of your LAN.

j.   In the "**Default DNS***"* field, enter the IP address of a DNS (Dynamic Name Service) Server used on your LAN.

k.   Click the "**Save**" button to make these changes permanent and exit the dialog.

3 Operating the TSM810C

3.1 Turning the TSM810C On

To turn on the TSM810C, press the power button, located on the front panel of the TSM810C for at least one second. The screen brightness buttons backlights will change from dim to bright, and the LED will turn green once the power-on process begins.

3.2 Turning the TSM810C Off

To turn the TSM810C off, use the "Shutdown" administrative tab of the N2KView® software. Alternatively, you can power down the unit by pressing the power button, located on the front panel of the TSM810C for at least one second. The brightness buttons backlights will change from bright to dim and the LED will turn red once the power-off process is complete.

3.3 Adjusting the Screen Brightness on the TSM810C

Touch the illuminated (-) or (+) symbols underneath the screen to adjust the brilliance/brightness of the displayed image.

3.4 Using the TSM810C

The TSM810C runs a fully functional and fully licensed version of the Maretron N2KView® software. Please refer to the *N2KView® User's Manual*, included with the TSM810C on the USB Drive, for detailed operating instructions.

4 Maintenance

Regular maintenance is important to ensure continued proper operation of the Maretron TSM810C. Perform the following tasks periodically:

- Clean the unit with a soft cloth. Do not use chemical cleaners as they may remove paint or markings or may corrode the TSM810C enclosure or seals. Do not use any cleaners containing acetone, as they will deteriorate the plastic enclosure. Do not spray cleaning liquids directly onto the TSM810C.
- Ensure that the unit is mounted securely and cannot be moved relative to the mounting surface. If the unit is loose, tighten the mounting screws.
- Check the security of the power and network cables connected to the TSM810C and tighten if necessary.

5 Troubleshooting

If you notice unexpected operation of the Maretron TSM810C, follow the troubleshooting procedures in this section to remedy simple problems.

Symptom	Troubleshooting Procedure
LED is not illuminated	Check the connection to the power connectors and tighten if necessary. Ensure that power is supplied to the connected power cable.
No activity on the display	Check the connection to the network connectors and tighten if necessary. Repower the unit by unplugging the power cable and then plugging it back in. Carefully watch the display during startup for any messages.
All the data values on the displays are grey or show dashes.	Check that the NMEA 2000® interfaces are correctly connected to the NMEA 2000® network. Check that the NMEA 2000® network is correctly powered up.
Unable to send test emails.	Check that the Ethernet cable is correctly plugged in and connected to a router with Internet Access. Verify the email settings in the Email Setup dialog are correctly spelled.
Other Issues	Please refer to the Troubleshooting section of the *N2KView® User's Manual*.

If these steps do not solve your problem, please contact Maretron Technical Support (refer to Section 8 for contact information).

Warning: There are no user-serviceable components inside the Maretron TSM810C. Opening the TSM810C will expose the sensitive electronic components to adverse environmental conditions that may render the unit inoperative. Please do not open the TSM810C, as this will automatically void the warranty. If service is required, please return the unit to an authorized Maretron service location.

6 Mechanical Drawings
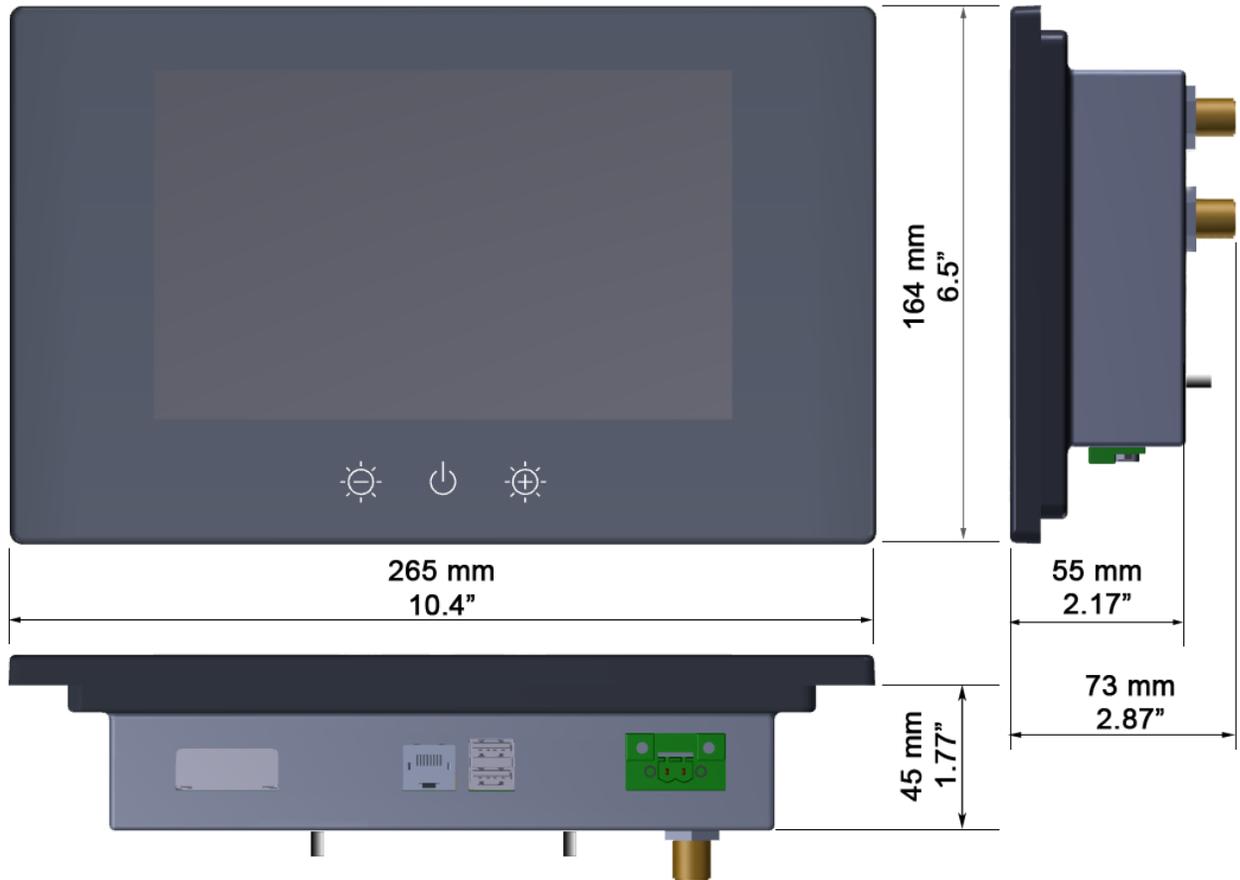
7 Technical Specifications

Specifications

Parameter	Value	Comment
Display Size	8"	LED Backlit LCD with Projected Capacitive Touch Screen
Display Resolution	800x480	WVGA
Display Brightness	600cd/m^2	Optically Bonded
Contrast Ratio	600:1	
LCD Color	262K	
Viewing Angle	70° H, 60° V	
USB Ports	One USB 2.0, one USB 3.0	
Ethernet Ports	One RJ-45 GbE	For connection to IP cameras, email alert notifications, N2KView updates and remote support.

Approvals

Parameter	Comment
IEC 60945	Electromagnetic Compliance
FCC Part 15B class A and CE mark	
IC ICES-003 Issue 6	
NMEA 2000®	

Electrical

Parameter	Value	Comment
Operating Voltage (Dedicated Supply Connection)	10-32 Volts	DC Voltage
Power Consumption (Dedicated Supply Connection)	<10 Watts	Typical
	15 Watts	Maximum
Operating Voltage (NMEA 2000® Connection)	8-32 Volts	DC Voltage
Power Consumption (NMEA 2000® Connection)	50mA	
Load Equivalence Number (LEN)	1	NMEA 2000® Spec. (1 LEN = 50 mA)
Reverse Battery Protection (NMEA 2000® Connection)	Yes	Indefinitely
Load Dump Protection (NMEA 2000® Connection)	Yes	Energy Rated Per SAE J1113

Mechanical

Parameter	Value	Comment
Overall Dimensions (DxWxH)	2.01" x 9.29" x 6.54" (51mm x 236mm x 166mm)	
Weight	4.2 lbs (1.9kg)	
Front Panel Material	Glass	
Front Panel Controls	Power, Brightness +/-	
Mounting	VESA mounting 75mm x 75mm	4 x M4x0.07 clinch screws protrude 8.25mm (0.32") from back of unit, washers and nuts required, not supplied by Maretron.
	Front mount flush into console with 6 screws	6 x #10 Flat / Countersunk bolts or screws required, not supplied by Maretron.

Environmental

Parameter	Value
Operating Temperature	-20°C to 55°C (Humidity up to 95%)
Storage Temperature	-30°C to 60°C (Humidity up to 95%)
IP Rating	IP66 Front, IP22 Rear (EN60529)

8 Technical Support

If you require technical support for Maretron products, you can reach us in any of the following ways:

Toll Free:	1-866-550-9100
Phone:	1-603-324-7900
E-mail:	support@maretron.com
Customer Portal:	Customer.Raymarine.com
World Wide Web:	http://www.maretron.com
Mail:	Raymarine-Maretron FL Service Center
	120 Intracoastal Pointe Drive
	Jupiter, FL 33477
	USA

Customer Portal

Knowledge Base

9   Maretron (2 Year) Limited Warranty

Maretron warrants the TSM810C to be free from defects in materials and workmanship for **two (2) years** from the date of original purchase. If within the applicable period any such products shall be proved to Maretron's satisfaction to fail to meet the above limited warranty, such products shall be repaired or replaced at Maretron's option. Purchaser's exclusive remedy and Maretron's sole obligation hereunder, provided product is returned pursuant to the return requirements below, shall be limited to the repair or replacement, at Maretron's option, of any product not meeting the above limited warranty and which is returned to Maretron; or if Maretron is unable to deliver a replacement that is free from defects in materials or workmanship, Purchaser's payment for such product will be refunded. Maretron assumes no liability whatsoever for expenses of removing any defective product or part or for installing the repaired product or part or a replacement therefore or for any loss or damage to equipment in connection with which Maretron's products or parts shall be used. With respect to products not manufactured by Maretron, Maretron's warranty obligation shall in all respects conform to and be limited to the warranty actually extended to Maretron by its supplier. The foregoing warranties shall not apply with respect to products subjected to negligence, misuse, misapplication, accident, damages by circumstances beyond Maretron's control, to improper installation, operation, maintenance, or storage, or to other than normal use or service.

THE FOREGOING WARRANTIES ARE EXPRESSLY IN LIEU OF AND EXCLUDES ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE.

Statements made by any person, including representatives of Maretron, which are inconsistent or in conflict with the terms of this Limited Warranty, shall not be binding upon Maretron unless reduced to writing and approved by an officer of Maretron.

IN NO CASE WILL MARETRON BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, DAMAGES FOR LOSS OF USE, LOSS OF ANTICIPATED PROFITS OR SAVINGS, OR ANY OTHER LOSS INCURRED BECAUSE OF INTERRUPTION OF SERVICE. IN NO EVENT SHALL MARETRON'S AGGREGATE LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT(S) INVOLVED. MARETRON SHALL NOT BE SUBJECT TO ANY OTHER OBLIGATIONS OR LIABILITIES, WHETHER ARISING OUT OF BREACH OF CONTRACT OR WARRANTY, TORT (INCLUDING NEGLIGENCE), OR OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY MARETRON, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO.

Maretron does not warrant that the functions contained in any software programs or products will meet purchaser's requirements or that the operation of the software programs or products will be uninterrupted or error free. Purchaser assumes responsibility for the selection of the software programs or products to achieve the intended results, and for the installation, use and results obtained from said programs or products. No specifications, samples, descriptions, or illustrations provided by Maretron to Purchaser, whether directly, in trade literature, brochures or other documentation shall be construed as warranties of any kind, and any failure to conform with such specifications, samples, descriptions, or illustrations shall not constitute any breach of Maretron's limited warranty.

Warranty Return Procedure:
To apply for warranty claims, you must first contact Maretron or one of its dealers to describe the problem and determine the appropriate course of action. If a return is necessary, place the product in its original packaging together with proof of purchase and register your Maretron product via the Raymarine Customer Portal. Registration is required for all users. Within the Customer Portal, locate Repair and Service option and Create new Request. Users will be provided with a shipping label for product to be sent to a select Raymarine-Maretron Service Location. *Customer may incur charges for service and/or shipping if product is notably damaged by customer actions and not a behavior of manufacturing results. Maretron will return the replaced or repaired product with all shipping and handling prepaid except for requests requiring expedited shipping (i.e. overnight shipments). Failure to follow this warranty return procedure could result in the product's warranty becoming null and void.

Customer Portal: Customer.Raymarine.com

Maretron reserves the right to modify or replace, at its sole discretion, without prior notification, the warranty listed above. To obtain a copy of the current warranty policy, please go to the following web page:

Warranty Information: https://www.maretron.com/warranty/