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# Installation Manual

## Marine Pro Series

RP 480i Remote Panel

## Marine Watch S Series

S-ONE Alarm Panel



# Auto MASKIN

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# 1 Preface

## 1.1 About this Manual

This manual has been published primarily for professionals and qualified personnel. The user of this material is assumed to have basic knowledge in marine systems, and must be able to carry out related electrical work.



Work on the low-voltage circuit should only be carried out by qualified and experienced personnel.

Installation or work on the shore power equipment must only be carried out by electricians authorized to work with such installations.

## 1.2 Responsibilities



It is the sole responsibility of the installer to ensure that the installation work is carried out in a satisfactory manner, that it is operationally in good order, that the approved material and accessories are used and that the installation meets all applicable rules and regulations.



Auto-Maskin continuously upgrades its products and reserves the right to make changes and improvements without prior notice.

All information in this manual is based upon information at the time of printing. For updated information, please contact your local distributor.



The crossed-out wheeled bin symbol indicates that the item should be disposed of separately. The item should be handed in for recycling in accordance with local environmental regulations for waste disposal.

By separating a marked item, you will help reduce the volume of waste sent to incinerators or land-fill and minimize any potential negative impact on human health and the environment.

## 1.3 Revisions

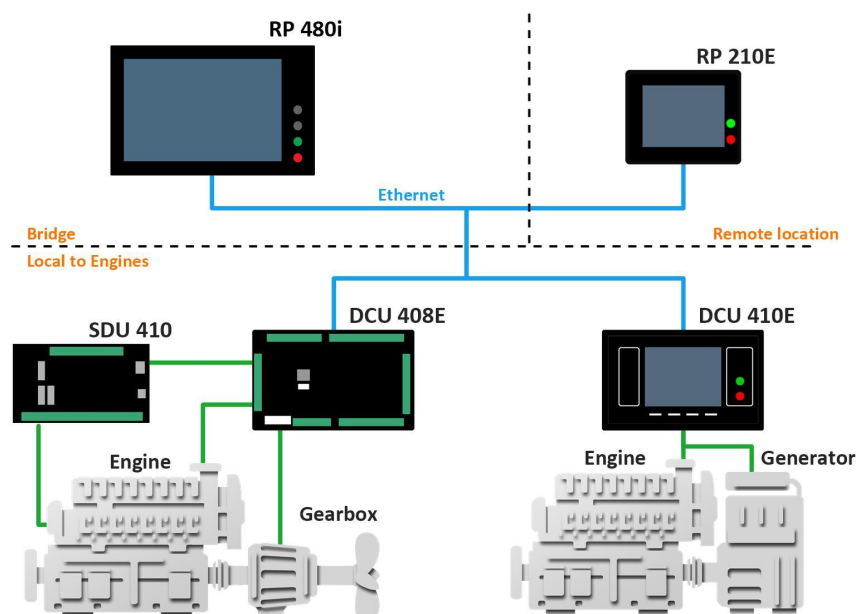
Manual revision: January 2023

## 2 Ordering Information

The Marine Pro and Marine Watch series covers a wide range of compatible products within both the series. Please visit our website for more information.

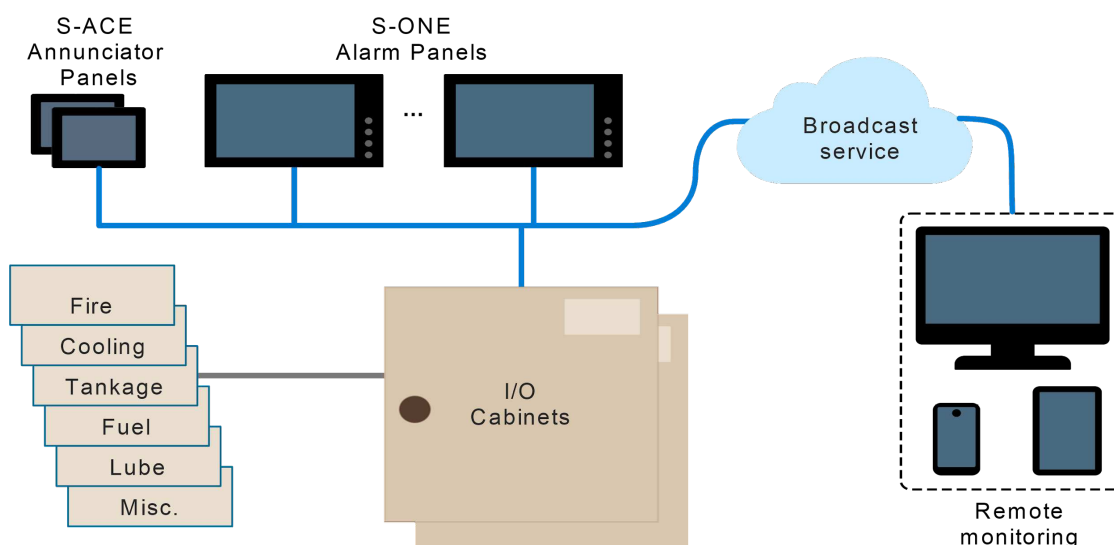
## 3 Overview

### 3.1 Overview of the Marine Pro Series



### 3.2 Overview of the Marine Watch S Series

Typical installation shown below.



### 3.3 Networking

The products use Ethernet as a communication medium. Either connect the products directly, or use Ethernet switches to expand the network.



For redundant Ethernet connection, *managed* Ethernet switches must be used.

## 4 Installation

This chapter covers the installation of the RP 480i and Marine Watch S-ONE panels.

### 4.1 Mounting

Panels with a screen should be mounted so the operator can easily view and operate the panel.

Ensure easy access to the rear wiring.



Use the included mounting frame.

The panel may be mounted on the engine's supporting structure provided shock absorbers are used either between the structure and the engine, or between the structure and the panel enclosure.



Mount the panels with a screen with care to avoid

- mechanical damage
- exposure to water or other liquids

#### 4.1.1 Panel Cut-out

The cut-out size is:

- 322 mm width, 191 mm height

#### 4.1.2 Mounting Screws

When mounting the panel, the thickness of the wall where the cutout is determines the screw length. Important to follow this guide not to damage the panel.

Wall thickness	Screw length	Included in package
0 - 2 mm	8 mm	Yes
3 - 5 mm	10 mm	No
6 - 8 mm	12 mm	No
9 -	Se formula below	No

When installing the panel on a thicker surface than 8 mm, use a screw length that is:

- Wall thickness + 6 mm.
- The gap between the screw head and the mounting frame must be 3 mm or less when the screw is just inserted into the threads.

Screw thread size: M3.



Using too long screws will damage the panel.

#### 4.1.3 Screw Torque

The threads in the unit are pre-fitted with threadlocker. Use only two fingers on the screwdriver as the image below shows to tighten the screws with a fair torque.

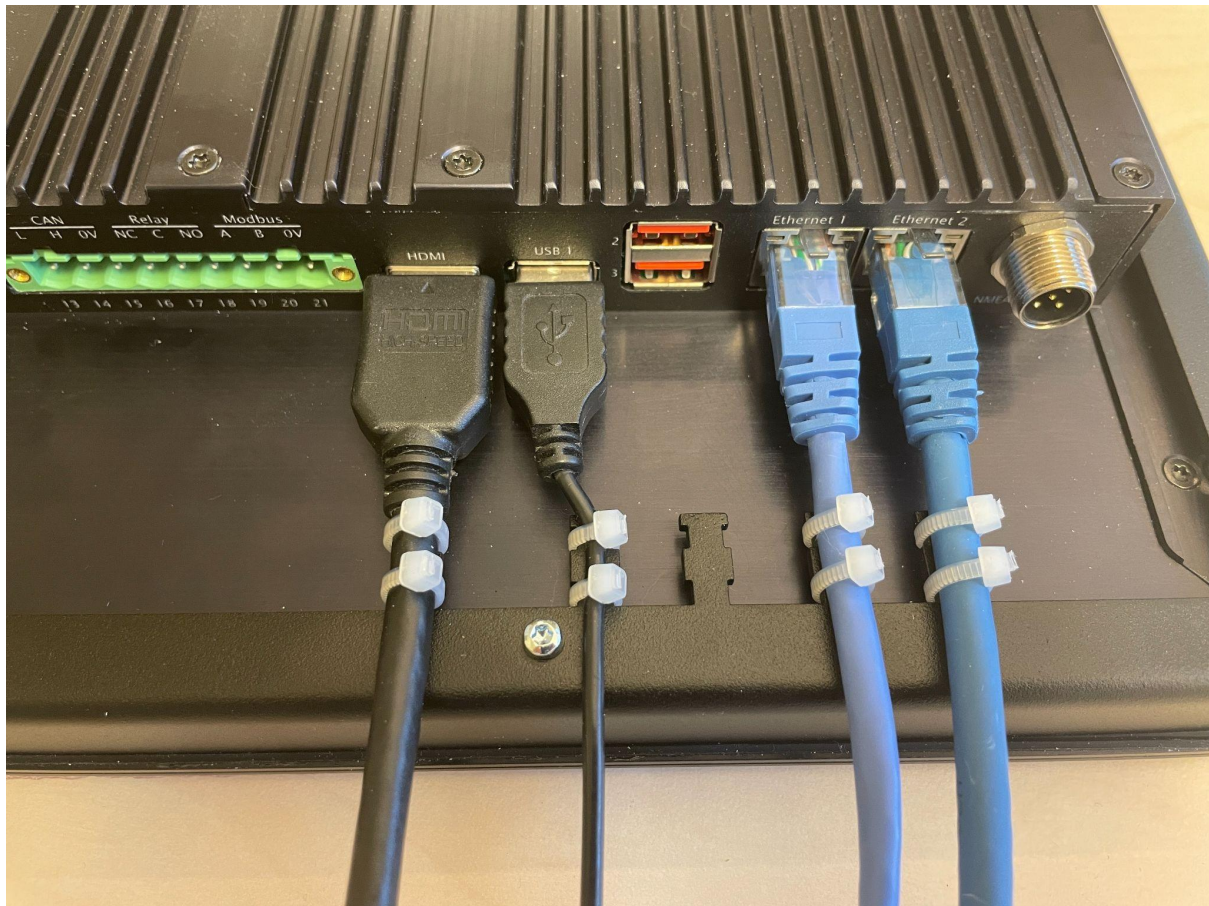


Do not over tighten the mounting screws.

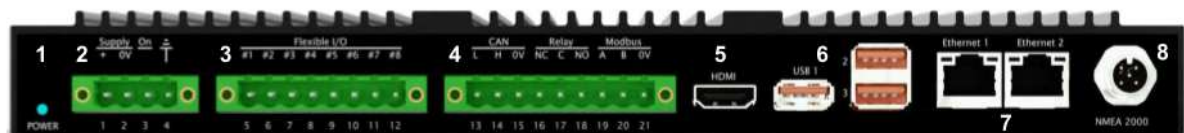
#### 4.1.4 Strain Relief

Secure cables that don't have built in strain relief, such as HDMI, USB and Ethernet, with double cable ties.





## 4.2 Connections & Wiring



1	<b>Power LED</b>	5 <sup>1</sup>	<b>HDMI</b>
2	<b>Supply</b> <ul style="list-style-type: none"> <li>1. +24 V</li> <li>2. 0 V</li> <li>3. Power on<sup>2</sup></li> <li>4. Shield</li> </ul>	6	<b>USB-A (2.0 High-speed interface)</b> <ul style="list-style-type: none"> <li>• USB 1</li> <li>• USB 2</li> <li>• USB 3</li> </ul> <p>Reserved for software update, event log extraction, and configuration file handling</p>
3	<b>Flexible I/O</b> <ul style="list-style-type: none"> <li>5. I/O #1</li> <li>6. I/O #2</li> <li>7. I/O #3</li> </ul>	7	<b>Ethernet</b> <ul style="list-style-type: none"> <li>• Ethernet 1, RJ45</li> <li>• Ethernet 2, RJ45</li> </ul>

<sup>1</sup> Not in use

<sup>2</sup> Not in use, connect to 24 V for future use



	8. I/O #4 9. I/O #5 10. I/O #6 11. I/O #7 12. I/O #8		Ethernet 1 is preferred for networking.
4 <sup>3</sup>	<b>CAN bus, Relay, Modbus RTU</b> 13. CAN L 14. CAN H 15. CAN 0V 16. Relay NC 17. Relay C 18. Relay NO 19. Modbus A 20. Modbus B 21. Modbus 0V	8 <sup>4</sup>	<b>NMEA 2000 – isolated</b>

#### 4.2.1 General

Wires shall have a minimum area of 0.5 mm<sup>2</sup>, except the power supply where at least 1.0 mm<sup>2</sup> (17 AWG) wires shall be used.

#### 4.2.2 Supply [T1-4]

The panels are designed to run on 24 V supply voltage.

Use a cable with twisted pair wires to minimize the effect of noise on the supply input.

Connect the Shield to the hull.



In marine installations, the 0 V should not be connected to the Shield. In a ship installation, the hull is the Shield whilst the battery minus is the 0 V.

#### 4.2.3 Flexible I/O [T5-12]

There are 8 flexible I/O channels available. They can be used for the following types<sup>5</sup>.

- Switch input
- Switch output
- Voltage input
- 4-20 mA input



For analog measurements, use shielded cables to minimize disturbance. The shield shall be connected to ground/hull, not to 0 V. Connect the shield to one end of the cable only.

See the datasheet for detailed characteristics.

<sup>3</sup> Not in use

<sup>4</sup> Not in use

<sup>5</sup> See User Manual for respective products in order to see which functionality is available.

#### 4.2.4 CAN [T13-15]

Use shielded twisted cables for CAN, where CAN-H and CAN-L are twisted.



Connect the shield to one end of the cable only.

#### 4.2.5 Relay [T16-18]

The relay has a 0.7 A overcurrent protection on the common pin.

See the respective User Manual for relay functionality.

#### 4.2.6 Modbus RTU [T19-21]

Use shielded twisted cables for Modbus RTU, where A and B are twisted.



Connect the shield to one end of the cable only.

#### 4.2.7 HDMI

Use strain relief as shown in the [Strain Relief](#) chapter.

See the respective User Manual for HDMI functionality.

#### 4.2.8 USB

Typically, the USB interface is used for software update and file extraction.

When using the USB for other purposes, use strain relief as shown in the [Strain Relief](#) chapter.

#### 4.2.9 Ethernet

Use CAT-5 (or better) network cables.



Do not bend the Ethernet cable or pull the cable sideways more than necessary during installation.

Use strain relief as shown in the [Strain Relief](#) chapter.

#### 4.2.10 NMEA 2000

See the respective User Manual for NMEA 2000 functionality.

## 5 Appendix A - Wiring

Contact your distributor for example diagram of recommended wiring for RP 480i The Marine Watch S-ONE is similar to this diagram.