INSTALLATION MANUAL

SAILOR®

SAILOR 6004 Control Panel

Thrane & Thrane

SAILOR 6004
Control Panel

Installation manual

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Safety summary

The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the equipment. Thrane & Thrane assumes no liability for the customer's failure to comply with these requirements.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE
Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

KEEP AWAY FROM LIVE CIRCUITS
Operating personnel must not remove equipment covers. Component replacement and internal adjustment must be made by qualified maintenance personnel. Do not service the unit with the power cable connected. Always disconnect and discharge circuits before touching them.

DO NOT SUBSTITUTE PARTS OR MODIFY EQUIPMENT
Because of the danger of introducing additional hazards, do not substitute parts or perform any unauthorized modification to the equipment.

COMPASS SAFE DISTANCE
Minimum compass safe distance: 0.6 m.

Warning! If the Control Panel is flush-mounted in a console with high ambient air temperature (above 45°C), caution shall be taken to avoid skin burns when servicing the rear metal part of unit.

About the manual

Intended readers

This manual is an installation for the SAILOR 6004 Control Panel. The manual is intended primarily for installers of the system and service personnel. Personnel installing or servicing the system must be properly trained and authorized by Thrane & Thrane. It is important that you observe all safety requirements listed in the beginning of this manual, and install the Control Panel according to the guidelines in this manual.

Manual overview

This manual has the following chapters:

- ***Introduction*** – a short description of the Control Panel.
- ***Installation*** – a description of how to unpack, store and install the Control Panel.
- ***Connectors & controls*** – descriptions and pin-out for the connectors, guidelines for connecting the Control Panel.
- ***Verification*** – instructions how to verify a successful installation.
- ***Service & repair*** – a short description of how to handle defective units.
- ***Technical specifications*** – technical specifications for the Control Panel.

Table of Contents

Introduction

1.1 The SAILOR 6004 Control Panel

1.1.1 General description

You can use the SAILOR 6004 Control Panel as a generic control panel for a number of ThraneLINK applications. The individual applications are managed in separate windows. Notifications from the applications assist the user in monitoring all applications installed.

The Control Panel has a buzzer for alarm tones. It has also an alarm output providing 2 alarms to external equipment. The display supports night mode. The Control Panel can be remotely switched on.

The basic configuration application for ThraneLINK is already installed in the Control Panel upon shipping. All individual applications are installed and updated from the attached devices (e.g. SAILOR 628x AIS, SAILOR 6390 Navtex Receiver, SAILOR 100 Satellite TV, etc.).

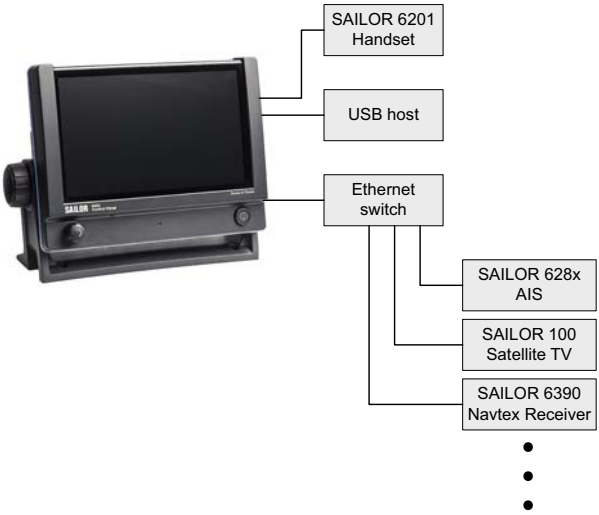
1.1.2 Key features and functions

The Control Panel has the following key features:

- 7 inch display with touch-screen functionality
- Dual LAN (2 Ethernet connectors)
- ThraneLINK compatible
- Handling of multiple applications
- Amplifier for external speaker, e.g. SAILOR 6270 Loudspeaker
- Rear mounted USB (x2, e.g. for external keyboard)
- Connector for SAILOR 6201 Handset or similar

1.1.3 System configuration example

The following drawing shows an example of how to connect other systems to a SAILOR 6004 Control Panel.



Installation

This chapter provides a description of how to unpack, store and install the Control Panel. It contains the following sections:

- *Unpacking*
- *Installing the Control Panel*

For information on cable connections see chapter 3 *Connectors & controls* on page 11.

2.1 Unpacking

2.1.1 Initial inspection

Inspect the shipping carton immediately upon receipt for evidence of damage during transport. If the shipping carton is severely damaged or water stained, request that the carrier's agent be present when opening the carton. Save the carton packing material for future use.

Warning! To avoid electric shock, do not apply power to the system if there is any sign of shipping damage to any part of the front or rear panel or the outer cover. Read the safety summary at the front of this manual before installing or operating the system.

After unpacking the system, inspect it thoroughly for damage and loose components or fittings. If the contents are incomplete, if there is mechanical damage or defect, or if the system does not work properly, notify your dealer.

2.1.2 Storage

The Control Panel may be stored or shipped in temperatures between -30° C and +80° C. Protect the Control Panel from extreme temperature variation which can cause condensation.

2.2 Installing the Control Panel

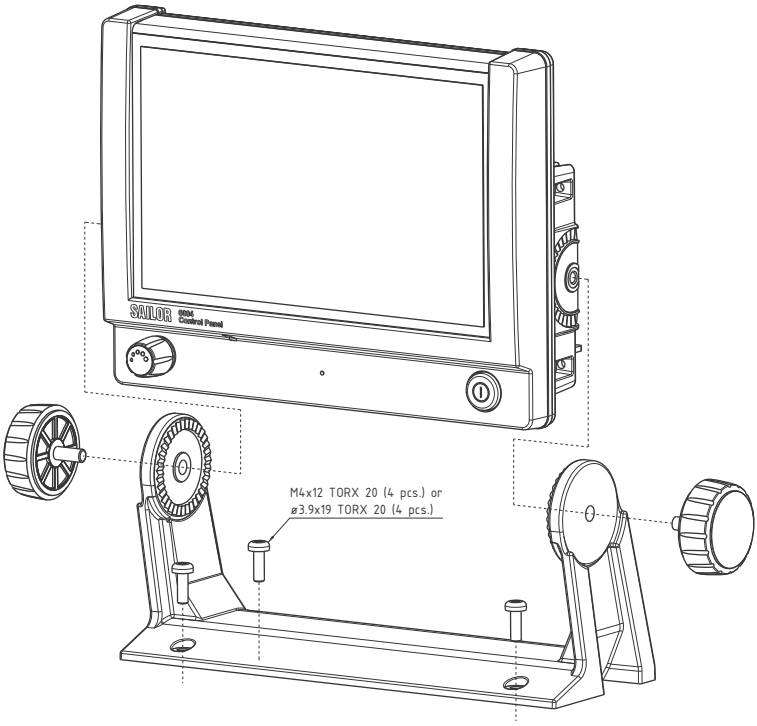
When installing, make sure the Compass Safe Distance of 0.6 m is maintained.

The Control Panel can be mounted in two ways, if needed with the cable relief:

- *Desktop mounting*
- *Flush mount* – typically in a console
- *Mounting the cable relief bracket*

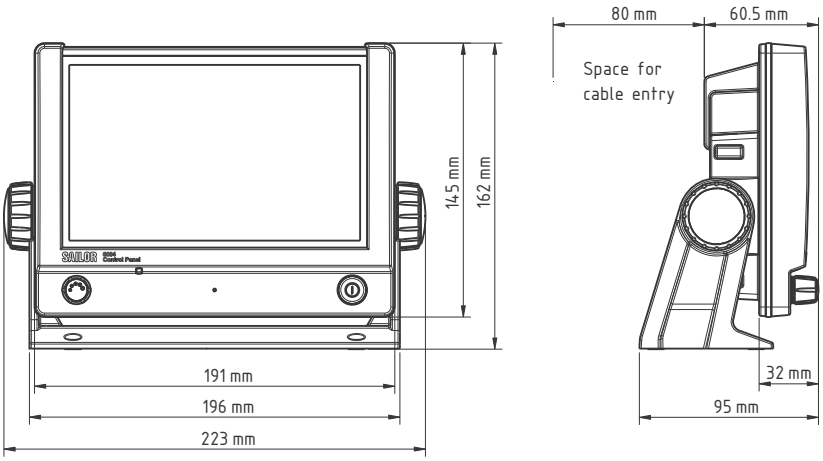
2.2.1 Desktop mounting

You can mount the Control Panel on a desktop using the mounting bracket.

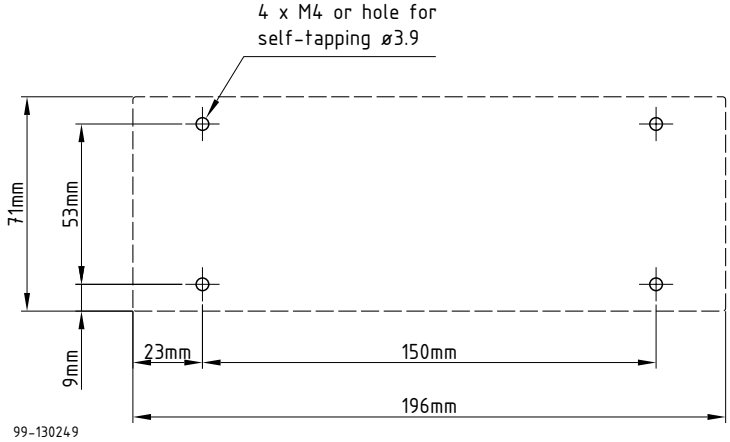


To mount the Control Panel using the mounting bracket, do as follows:

1. Find a suitable location to mount the Control Panel. Make sure there is minimum 80 mm of free space for cable access behind the Control Panel.



2. Use the four holes to fasten the mounting bracket to the mounting surface, see the drilling plan below. Screws are included with the mounting bracket.



3. Place the Control Panel in the mounting bracket.

4. Mount the two knobs on the sides of the bracket, but do not tighten them yet.
5. Connect the cables as described in chapter 3.
6. Adjust the angle of the Control Panel to the wanted position. The bracket can be adjusted ± 20°.
7. Tighten the two knobs on the sides of the bracket when the Control Panel is in the desired position.

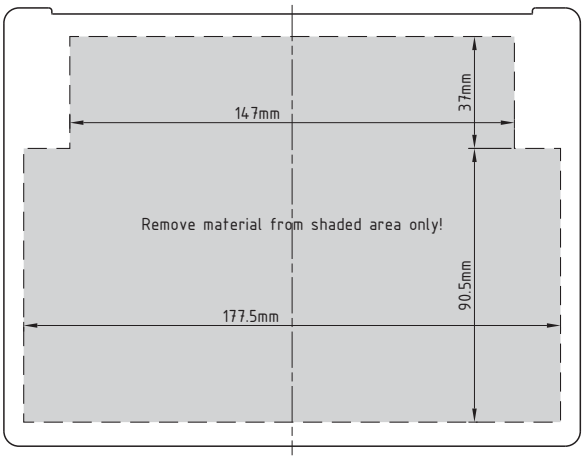
2.2.2 Flush mount

You can mount the Control Panel in a flat surface, e.g. in a console, using the flush mount brackets and screws included with the Control Panel.

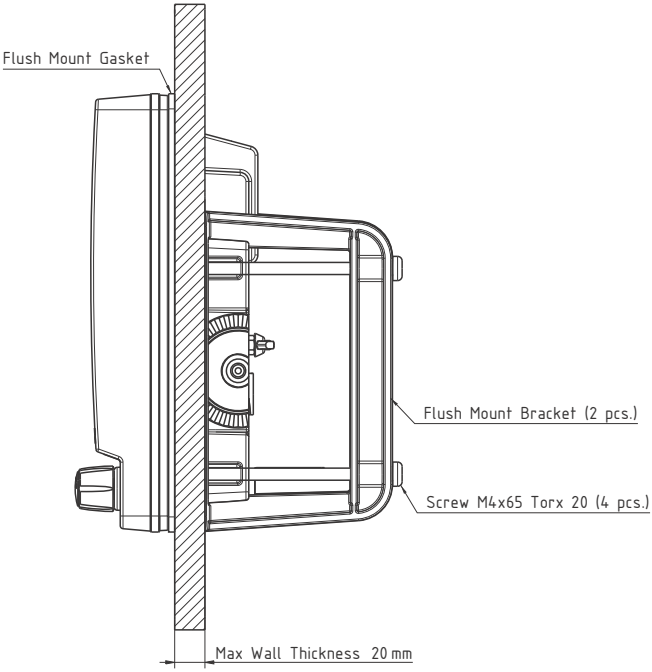
To mount the Control Panel in a console, do as follows:

1. Find a suitable location in the console. Check that there is enough space for the Control Panel and an additional 80 mm space for cable entry.
   Make sure that there is room for service access to the unit if it is fitted in a custom designed console.

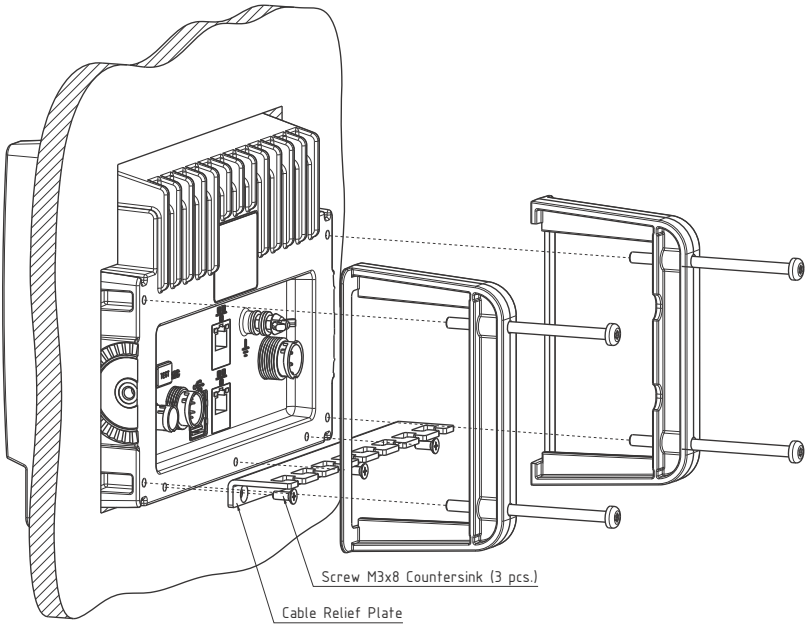
2. Cut a hole for the Control Panel, see the dimensions shown below.



3. Ensure that the flush mount gasket is placed correctly on the Control Panel.
4. Fit the Control Panel into the cut-out in the console.



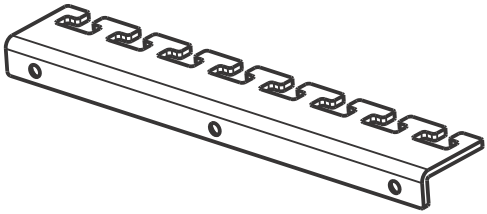
5. Mount the flush mount brackets on the back of the Control Panel by mounting the 4 Torx screws through the bracket and into the Control Panel.



6. Fasten the 4 Torx screws.
7. Connect the cables as described in chapter 3.

2.2.3 Mounting the cable relief bracket

A cable relief bracket is included in the delivery. You can fasten it to the rear panel.



See the previous section for an example how to mount the cable relief bracket.

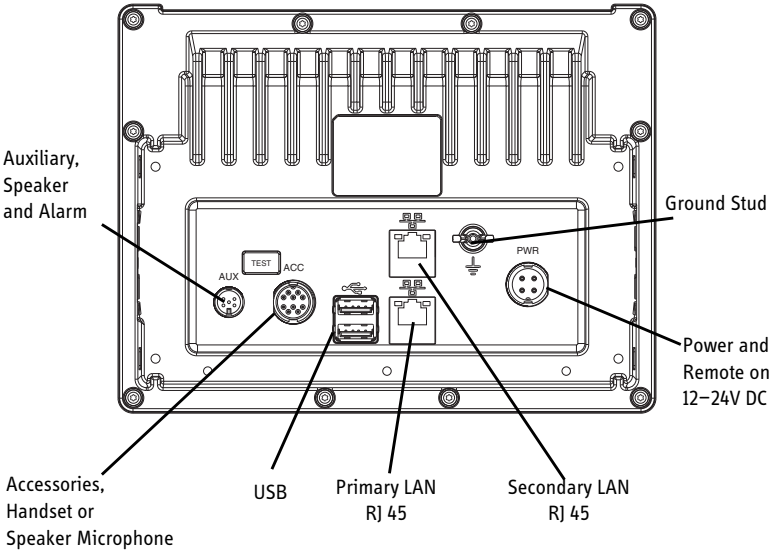
Connectors & controls

This chapter provides a description of all connectors on the Control Panel and gives guidelines to cabling. It has the following sections:

- *Connectors*
- *Cabling*
- *Controls*

3.1 Connectors

The drawing below shows the connectors and the ground stud on the rear panel of the Control Panel.



The connectors are described in detail in the following sections.

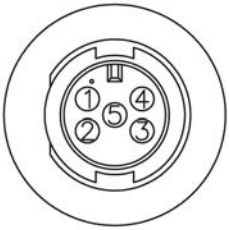
3.1.1 Auxiliary connector (AUX)

Pin 1 & 2 are for output to an external 8 Ohm loudspeaker, e.g. a SAILOR 6270 Loudspeaker. The internal audio amplifier can deliver up to 6 W.

Pin 4 & 5 are for alarm output. Both outputs are open collector (OC) and can sink up to 100 mA.

Pin	Description	Wire color
1	Speaker N	Green
2	Speaker P	Brown
3	GND	Red
4	Alarm 1 (OC)	White
5	Alarm 2 (OC)	Yellow

Mini Panel lock, 5 pin male



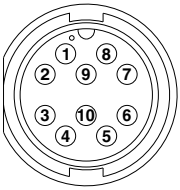
3.1.2 Accessories connector (ACC)

Use the connector marked **ACC** to connect a SAILOR 6201 Handset or a SAILOR 6202 Handmicrophone.

Connector type: Circular connector, 10 pin, male.

Connection cable with plug, part number 406209-941 or a SAILOR 6209 Connection Box.

Panel lock, 10 pin male



Pin assignment: Connector front view on the rear panel of the Control Panel.

Pin	Description	Wire color
1	NMEA in+	Brown
2	NMEA in-	Blue
3	NMEA out+	White
4	NMEA out-	Green
5	MIC	Yellow
6	EAR	Grey
7	Hook_PTT	Pink
8	12 V	Red
9	GND	Black
10	GND	Orange

3.1.3 USB connector

You can use the 2 USB connectors to connect ancillary equipment.

Pin	Description	Wire color
1	5 V	Red
2	D-	White
3	D+	Green
4	GND	Black

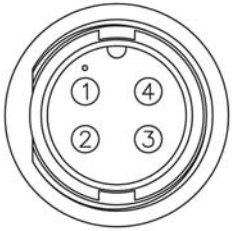
3.1.4 DC Power input 12–24 V DC (PWR)

The DC Power input connects to a DC supply with 12–24 V DC nominal (10.8 to 31.2 V DC). The Power connector is a custom connector; a matching cable with connector is included in the delivery.

The figure and table below show the connector outline on the Control Panel, pin assignments and wire color in the power cable delivered with the Control Panel.

Pin	Pin function	Wire color in power cable
1	DC+ (10.8 - 31.2 V DC)	Red
2	DC- (0 V DC)	Black
3	ON_IN	White
4	ON_OUT	Blue

Front view on Control Panel lock, 4 pin male



Connecting DC power

Connect DC+ (red wire) to DC out + from your DC supply.
Connect DC- (black wire) to DC out - from your DC supply.

Do not connect the white wire nor the blue wire in the power cable, unless you want to use the Remote on/off function or the On/off control function.

If the unit is to comply with 60950-1 safety regulations, the power cable must be supplied with an extra inline fuse similar in value to the one located inside the device.

Connecting Remote on (ON_IN)

With the Remote on function you can switch the Control Panel on from a remote location, without using the on/off button on the terminal. To connect the Remote on function in the Control Panel, do as follows:

1. Connect DC+ and DC- as described in the previous section.
2. Connect a switch to the **white wire** in the power cable (pin 3, ON_IN, in the Power connector.)
3. Connect the other side of the switch to the **black wire** in the power cable (DC- (0 V DC) in the Power connector), with a resistance below 10 kΩ.

To switch on the Control Panel, close the switch. When the switch is closed, Pin 3 in the Power connector is connected to DC-.

Note When the remote switch is closed (the Control Panel is switched on), you can only use the Power button on the Control Panel to reboot the unit.

Connecting On/off control (ON_OUT)

You can use pin 4 in the Power connector (blue wire) to switch other units on and off when the Control Panel is switched on and off. How to connect this pin depends on the units you connect.

The function of pin 4 is as follows:

- Control Panel off: Pin 4 is high (DC+ i.e. between 10.8 V DC and 31.2 V DC).
- Control Panel on: Pin 4 is low (DC- from the power supply, with 10 kΩ serial resistance).

3.1.5 LAN connector

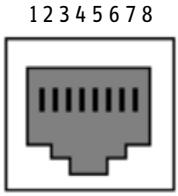
There are 2 LAN (10/100 Mbit/s Ethernet) connectors on the rear panel of the Control Panel, used for communication with connected equipment that is designed to be operated by the Control Panel.

Important

For GMDSS installations: Only connect units that are part of the system. For safety and compliance reasons, the Ethernet interface is restricted to internal communication in an isolated system.

The figure and table below show the connector outline and pin assignments.

Pin	Pin function	Wire colour
1	Tx+	White/Orange
2	Tx-	Orange
3	Rx+	White/Green
4	Not connected	Blue
5	Not connected	White/Blue
6	Rx-	Green
7	Not connected	White/Brown
8	Not connected	Brown



RJ-45 female

3.2 Cabling

Before using the Control Panel for the first time, check that all cables are correctly wired and fastened.

All cables attached to the Control Panel must be shielded.

- The shield of the Ethernet cable must be connected to ship ground or an Ethernet switch to which the Control Panel is connected.
- In the DC power cable the shield of the cable must be connected to ship ground at the power supply.

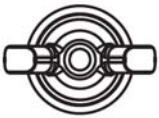
3.2.1 Cable requirements

Cable	Description
Power cable	Included in the delivery. Length: 2.5 m with AWG 16 wires and a custom connector at one end. If you are going to use another cable or extend the supplied cable, make sure the cables are dimensioned correctly.
Ethernet cable	Shielded Cat. 5E or higher (STP or FTP). The maximum length is 100 m.

3.2.2 Grounding

The ground stud is located at the rear side of the Control Panel. To connect the Control Panel to ship ground, do as follows:

Ground stud



1. Connect a ground cable of shortest possible length and minimum 4 mm^2 cross section to the Ground stud and fasten it with the wing nut.
2. Connect the other end of the cable to ship ground.

3.2.3 Connecting cables

To connect the Control Panel, do as follows:

1. Connect an Ethernet cable to the LAN connector on the Control Panel. For 1 cable, use the lower LAN connector (Primary LAN). Both connectors work in DHCP and zeroconf environments.
2. Connect the power cable to the PWR connector according to the description in *DC Power input 12–24 V DC (PWR)* on page 14.
3. Connect the other end of the Ethernet cable to one of the LAN connectors on the unit you want to control via the Control Panel.

When connected and powered, all the units are automatically set up to communicate with each other in the Ethernet network.

3.3 Controls

3.3.1 Power button

To switch on: Push the button.
To switch off: Push and hold for 2 seconds. If the Control Panel cannot switch off normally (e.g. due to a fault): Push and hold for 12 seconds.

Note When the remote switch is used and the Control Panel is switched on, you can only use the Power button on the Control Panel to reboot the unit.

3.3.2 Dim and night mode

Turn the dim knob to increase or decrease the display brightness. The display goes into **night mode** either when turning the dim knob on the front panel counterclockwise or when the internal light sensor detects the light level for changing to night mode.

Verification

4.1 Overview

With the built-in self test you can do the following:

- Test the basic functions of the Control Panel
- Display the test results
- Export the test results in a test log
- Show various unit information

4.2 Check of the Control Panel

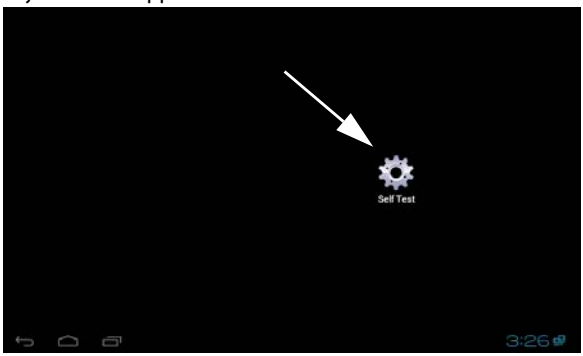
To verify the proper functioning of the Control Panel, run a self test.

Note The built-in self test only verifies the function of the Control Panel itself, not of any connected equipment nor the total system. For the total system, see the installation manual of the application in which the Control Panel is used.

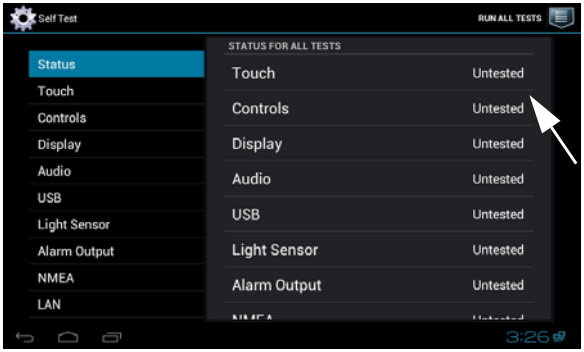
4.2.1 Running a self test

To run a self test, do as follows:

1. Press the power button to switch the Control Panel on.
   The display shows[1] the example below or the start screen of the already installed application:



2. To enter the self test, tap the icon **Self Test** or find the self test in the list of options of the application.
3. The self test status page is displayed.



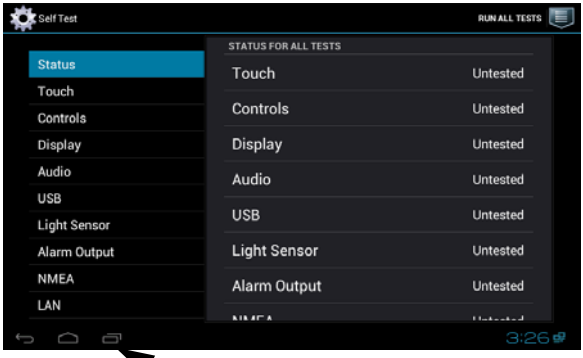
1. The clock might not be visible in all applications.

You can test the following parts and functions:

- Touch - the touch screen
- Controls - power button and dim/volume knob
- Display - pixel and colour check
- Audio - test of microphone and loudspeaker
- USB - test of USB connection
- Light sensor
- Alarm output - test of connection to connected alarm systems
- NMEA
- LAN

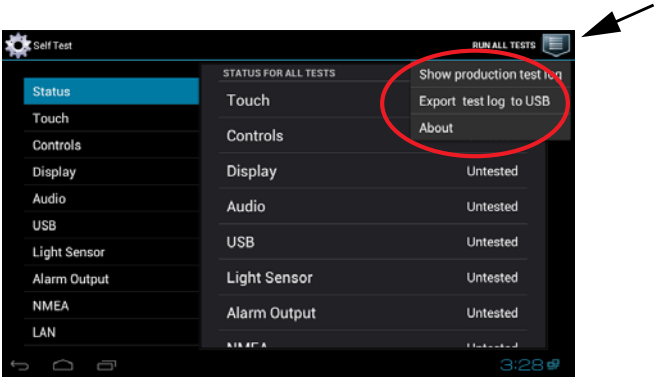
Further details for each test are shown on the screen for the individual test.

4. To run all tests, tap **Run all tests**, located in the upper right corner.
   To run one of the tests, tap the test and follow the instructions on the screen.
5. To leave the self test and go to a user application (if any are installed), tap the icon shown in the screen below.



4.2.2 Test log and further information

Tap the icon in the upper right corner to display the list of options. They show which type of further information is available.



The following options are available:

Option	Description
Show production test log	Shows the test results from the production tests.
Export test log to USB	Exports and saves the test results in a file to an inserted USB memory device.
About	Displays the About screen with the following information: • Status, e.g. network and IP address of the Control Panel (acquired with zeroconf or DHCP protocol) • Legal information • Software version of the Control Panel • Hardware version of the Control Panel

Service & repair

This chapter describes what to do with defective units, including how to pack them for shipment if they are to be returned.

5.1 General service information

The Control Panel is designed to operate without preventive routine maintenance.

Although the Control Panel is designed and built very service friendly, we strongly recommend that any acting service technician is trained specifically on the product. Repair or repair attempts performed by unqualified personnel may limit the warranty. The warranty on the system is defined and outlined by the distributor that supplied the system.

Replace the defective unit and have it repaired at a qualified workshop.

For further information on warranty and service, you may also use the Thrane & Thrane home page at http://www.thrane.com.

5.2 Maintenance & troubleshooting

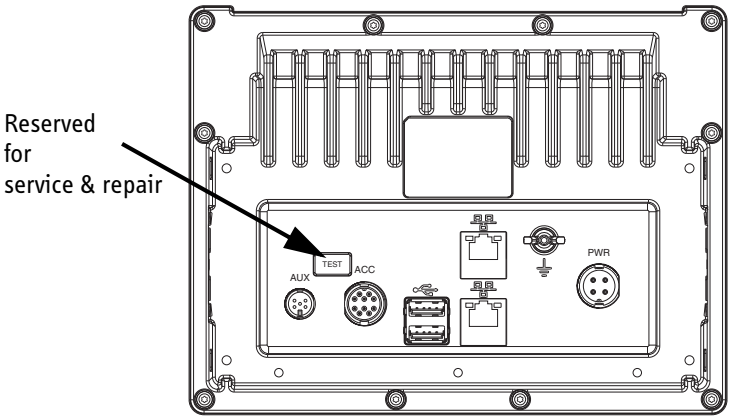
No maintenance is required for the Control Panel.

Switching off the touch screen temporarily

The touch screen can be blanked (e.g. for wiping off the screen) by briefly touching the power button. Touch the power button again to return the screen to normal operation.

Be careful when cleaning the display to avoid scratches on the touch screen.

There is a special access on the back of the unit reserved for service and repair.



5.3 Repacking for shipment

The shipping carton has been carefully designed to protect the Control Panel and its accessories during shipment. This carton and its associated packing material should be used when repacking for shipment. Attach a tag indicating the type of service required, return address, model number and full serial number. Mark the carton FRAGILE to ensure careful handling.

Note | Correct shipment is the customer's own responsibility.

Technical specifications

Item	Specifications
Mounting method	Flush mount or bracket
Voltage	10.8 to 31.2 V DC
Power consumption	Typical: 18 W active Peak: 42 W 3.15 A internal fuse (non-serviceable)
Audio input	Up to 6 W in 8 Ohm
Interfaces	2 x Ethernet (10/100 Mbit/s) Accessories connector Auxiliary connector
Compliance	• IEC 60945 • IEC 60950-1
IP rating	IP54[a]
Ambient temperature	-15°C to 55°C
Storage temperature	-30°C to 80°C
Compass safe distance	0.6 m
Dimensions W x H x D	191 mm x 145 mm x 61 mm (without mounting bracket)
Weight	1.1 kg (1.25 kg with mounting bracket)

a. Estimated.

A

AWG American Wire Gauge. A means of specifying wire diameters.

D

DC Direct Current

DHCP Dynamic Host Configuration Protocol. A protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network.

F

FTP Film Twisted Pair

G

GMDSS Global Maritime Distress and Safety System. The system is intended to perform the following functions: alerting (including position determination of the unit in distress), search and rescue coordination, locating (homing), maritime safety information broadcasts, general communication, and bridge-to-bridge communication.

GND Ground

I

IEC International Electrotechnical Commission. The international standards and conformity assessment body for all fields of electrotechnology.

IP Ingress Protection. An international classification system for the sealing effectiveness of enclosures of electrical equipment against the intrusion into the equipment of foreign bodies (i.e. tools, dust, fingers) and moisture. This classification system uses the letters "IP" followed by two or three digits. An "x" is used for one of the digits if there is only one class of protection; e.g. IPX4 which addresses moisture resistance only.

L

LAN — Local Area Network. A computer network covering a small physical area, like a home, office, school or airport. The defining characteristics of LANs, in contrast to wide-area networks (WANs), include their usually higher data-transfer rates, smaller geographic area, and lack of a need for leased telecommunication lines.

N

NMEA — National Marine Electronics Association (standard). A combined electrical and data specification for communication between marine electronic devices such as echo sounder, sonars, anemometer (wind speed and direction), gyrocompass, autopilot, GPS receivers and many other types of instruments. It has been defined by, and is controlled by, the U.S.-based National Marine Electronics Association.

O

OC — Open Collector

P

PTT — Push-To-Talk

R

Rx — Receive

S

STP — Screen Twisted Pair

T

Tx — Transmit

U

USB — Universal Serial Bus. A specification to establish communication between devices and a host controller (usually personal computers). USB is intended to replace many varieties of serial and parallel ports. USB can connect computer peripherals such as mice, keyboards, digital cameras, printers, personal media players, flash drives, and external hard drives.

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