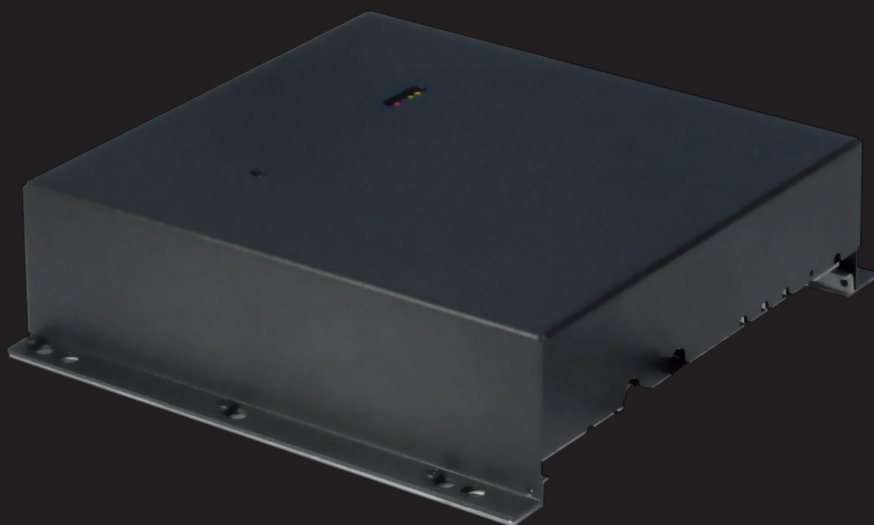


SAILOR 6195 Battery Option for TCU



SAILOR 6195 Battery Option for TCU

Installation & user manual

Document number: 98-136631-A

Release date: October 30, 2012

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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.

GROUND THE EQUIPMENT

To minimise shock hazard, the equipment chassis and cabinet must be connected to an electrical ground and the cable instructions must be followed.

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: 1.5 m

About the manual

Intended readers

This manual is an installation and user manual for the SAILOR 6195 system. The manual is intended 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 system according to the guidelines in this manual.

Manual overview

Note that this manual does not cover installation and use of the Thrane 6194 Terminal Control Unit nor the mini-C systems. For this information, refer to the manuals for these products. Part numbers for related manuals are listed in the next section.

This manual has the following chapters:

- **Introduction** contains a general introduction to the SAILOR 6195.
- **Installation** explains how to install the SAILOR 6195 with the Thrane 6194 Terminal Control Unit and how to connect cables.
- **Using the SAILOR 6195** explains how to use the battery for power backup.
- **Troubleshooting** gives examples of problems that can occur with the SAILOR 6195, and describes possible reasons and remedies to solve the problem. It also gives guidelines for service and maintenance.

Related documents

The below list shows the documents related to this manual and to the SAILOR 6195 system.

Title and description	Document number
THRANE 6194 Terminal Control Unit, Installation & user manual	98-131593
SAILOR 6110 GMDSS System, Installation manual	98-130752
SAILOR 6110 GMDSS System, User manual	98-130753
SAILOR 6120/6130/6140/6150 System, Installation manual	98-131589
SAILOR 6120/6130/6140/6150 System, User manual	98-131590

Typography

In this manual, typography is used as indicated below:

Bold is used for the following purposes:

- To emphasize words.
Example: “Do **not** touch the antenna”.
- To indicate what the user should select in the user interface.
Example: “Select **SETTINGS** > **LAN**”.

Italic is used to emphasize the paragraph title in cross-references.

Example: “For further information, see *Connecting Cables* on page...”.

COURIER is used to indicate low level commands such as AT commands.

Example: “In your terminal program, type **ATD**”.

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Introduction

This chapter introduces the SAILOR 6195 and gives an overview of the system.

1.1 The SAILOR 6195 Battery Option for TCU

The SAILOR 6195 Battery Option for TCU is designed to provide battery backup for the Thrane 6194 Terminal Control Unit (TCU) and the mini-C terminal in case of loss of external power. The TCU is mounted on top of the SAILOR 6195 inside a common cover.



Figure 1: SAILOR 6195 Battery Option for TCU

Installation

This chapter describes the mechanical installation of the system. It has the following sections:

- *Unpacking*
- *Installing the SAILOR 6195*

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 hidden 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 What's in the box

The following items are included in the delivery:

SAILOR 6195 Battery Option for TCU, including

- Screw kit
- Pre-cut wires for internal wiring

2.2 Installing the SAILOR 6195

2.2.1 General installation requirements

The SAILOR 6195 must be installed in a location which is

- indoors
- not exposed to water
- close to a ship ground connection point

Make sure the compass safe distance of 1.5 m is respected.

2.2.2 To install the SAILOR 6195

The SAILOR 6195 and the TCU are designed to be mounted indoors on a flat surface, e.g. on a bulkhead.

Important

Refer to the *THRANE 6194 Terminal Control Unit, Installation & user manual, 98-131593* for installation requirements to the TCU.

To install the SAILOR 6195, do as follows:

1. Remove the cover for the SAILOR 6195.
2. On the SAILOR 6195 Charger & Control Board (38-135563), remove the fuse F2.

Fuse F2

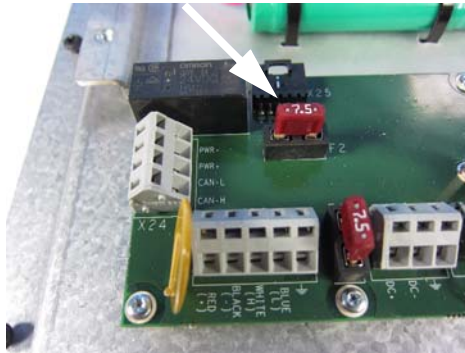


Figure 2: Fuse F2 location on SAILOR 6195

Important

Do not mount the fuse again until all wiring in the system is connected.

3. On the SAILOR 6195, connect the battery connector to X25.

Connector X25 with battery connected

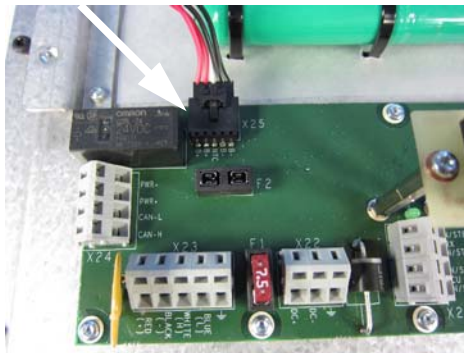


Figure 3: Battery connection on SAILOR 6195

4. On the TCU, remove the cover for the spring loaded terminals.
5. Place the TCU on top of the SAILOR 6195, fitting it onto the bracket on the SAILOR 6195 on each side as shown in Figure 4 below.

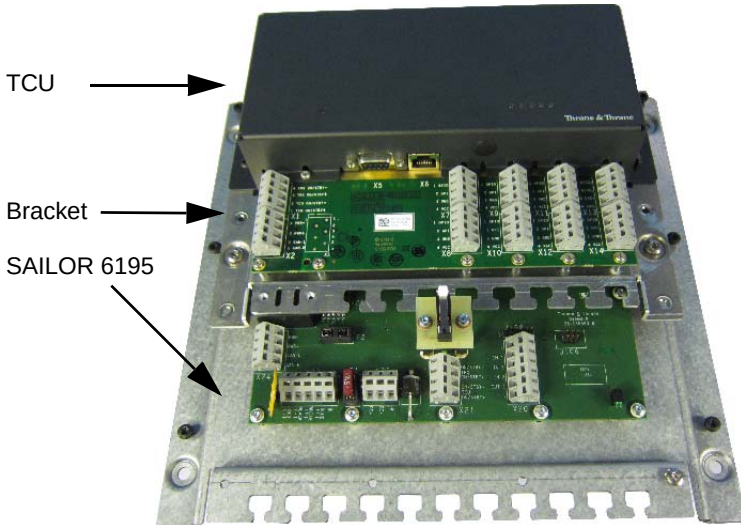


Figure 4: Mounting the TCU on the SAILOR 6195

6. Fix the TCU to the SAILOR 6195 with the M5x8 screws normally used to fix the TCU to a bulkhead.
7. Connect the wires between the TCU and the SAILOR 6195 as shown in Figure 5 and 6 below.

Note

Please respect the colour coding shown in the tables below Figure 6.

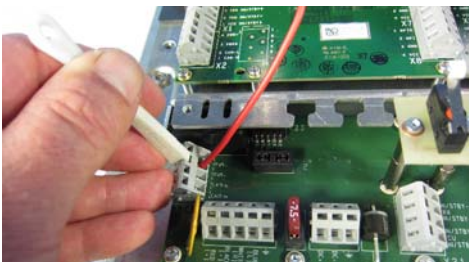


Figure 5: Connecting wires between TCU and SAILOR 6195

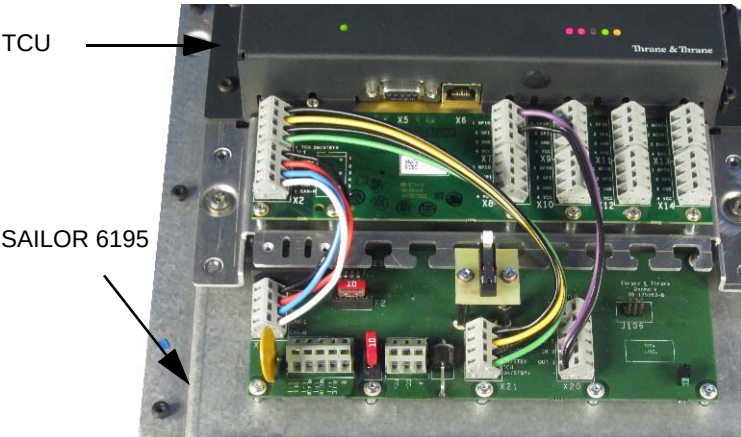


Figure 6: Wiring between TCU and SAILOR 6195

Connector X1 on TCU		Wire colour	Connector X21 on SAILOR 6195	
Pin no.	Pin name		Pin no.	Pin name
1	TCU ON/STBY+	Black	1	TCU ON/STBY+
2	TCU ON/STBY-	Yellow	2	TCU ON/STBY-
3	TRX ON/STBY+	Black	3	TRX ON/STBY+
4	TRX ON/STBY-	Green	4	TRX ON/STBY-

Connector X2 on TCU		Wire colour	Connector X24 on SAILOR 6195	
Pin no.	Pin name		Pin no.	Pin name
1	CAN-H	Black	1	CAN-H
2	CAN-L	Red	2	CAN-L
3	PWR+	Blue	3	PWR+
4	PWR-	White	4	PWR-

Connector X7 on TCU		Wire colour	Connector X20 on SAILOR 6195	
Pin no.	Pin name		Pin no.	Pin name
1	GPIO	Purple	2	OUT 1
3	GND	Black	1	-

8. Connect external power (nominal voltage 24 VDC) to X22 on the SAILOR 6195 as shown below. Remember to connect the drain wire to the chassis pin $\downarrow$ in the connector.

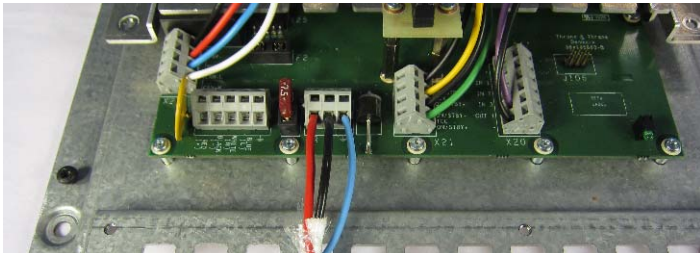


Figure 7: Connector X22 on SAILOR 6195

9. Fold back the shield of the cable and secure the cable firmly to the cable relief bracket.

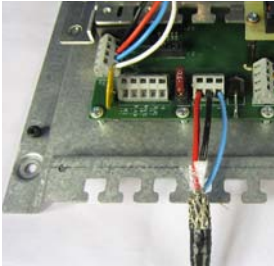
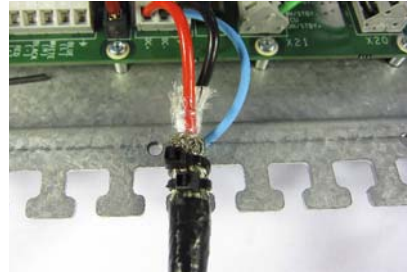


Figure 8: Connecting the cable shield for X22

10. Connect the mini-C cable to X23 according to the colour coding printed on the PCB. Remember to connect the drain wire to the chassis pin $\downarrow$ in the connector.

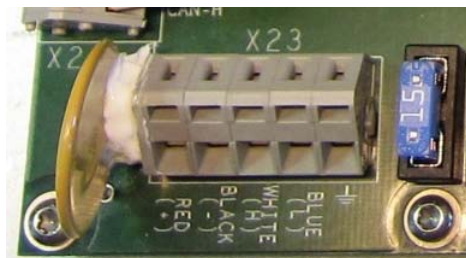


Figure 9: Connector X23 on SAILOR 6195

11. Fold back the shield of the cable and secure the cable firmly to the cable relief bracket.

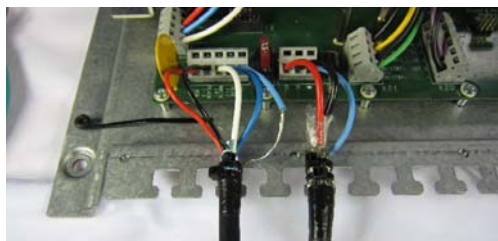


Figure 10: Wires and cable shield for X23

12. If scripting is used, insert the SD card in the TCU.

Reason: Once the final cover and the tampering protection is installed the SD card cannot be reached without breaking the tampering protection.

13. Reinsert the fuse F2 and apply external power.

Note

If the system is configured to send tampering reports, a report will now be sent because the unit is powered while the cover is off.

The system is now activated. If F2 is inserted and no external power is applied, the connected unit(s) will start operating from the SAILOR 6195 battery. See Chapter 3, *Using the SAILOR 6195* for details on operation.

Note

The system should not be left without external power for more than a few months.

14. Place the cover over the assembled unit and fix the cover with the 6 screws included.



Figure 11: Placing the cover on the assembled unit

15. If wanted, you can install wire seals through the holes on each side of the front, in order to be able to detect if the unit has been opened. The holes are shown in the figures below.

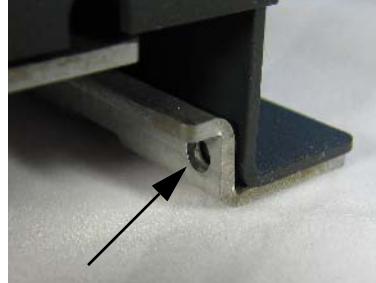


Figure 12: Holes for tampering seal



Figure 13: Tampering seal mounted

2.2.3 Tampering protection

The unit is equipped with sensors in order to detect intrusion. As soon as tampering is detected, the TCU is informed and the information is stored in non-volatile memory. If the TCU/mini-C is in sleep mode, they will wake up immediately. Transmission of the tampering event will be initiated and controlled by the scripting (on the SD Card) and the information will not be cleared until the report has been transmitted and acknowledged.

You can test the configured tampering function by taking the cover off and putting it back on.

For details on configuration, refer to the manuals for your mini-C system. See *Related documents* on page v at the start of this manual.

2.2.4 Mechanical drawings

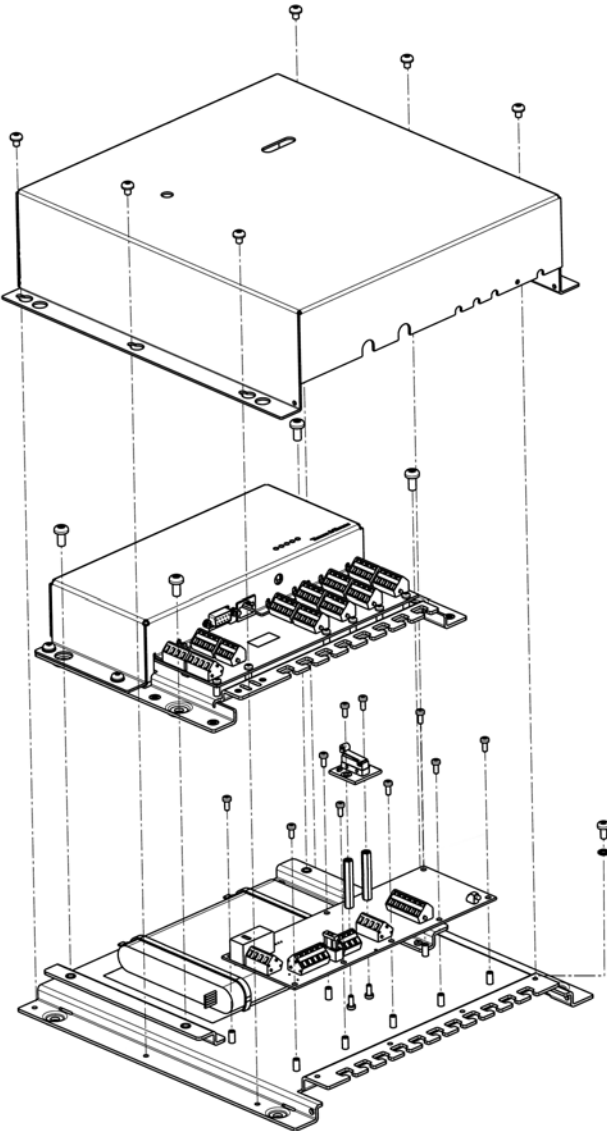


Figure 14: Assembly drawing for SAILOR 6195

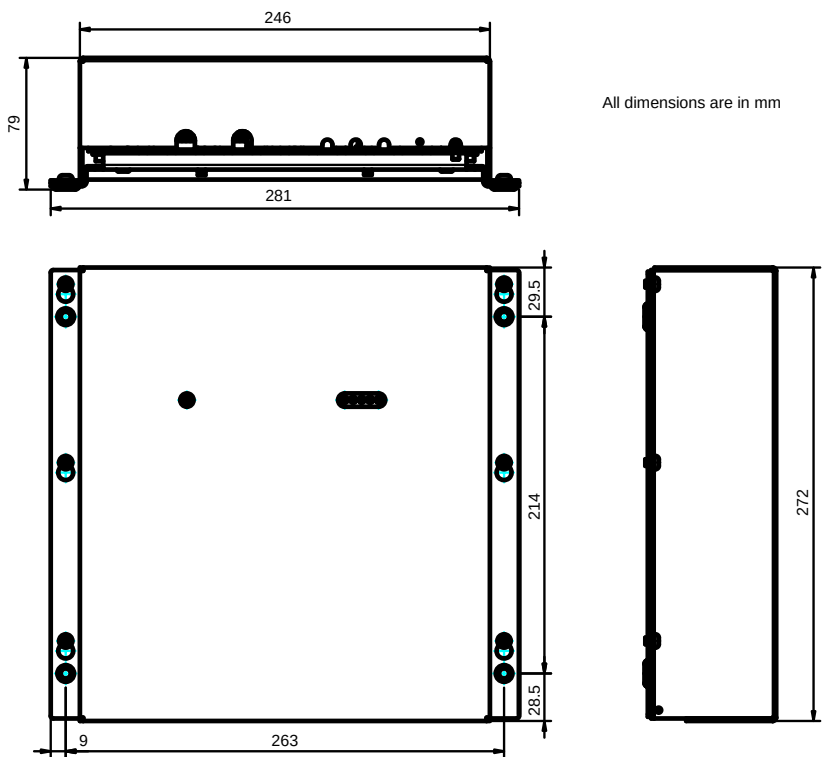


Figure 15: Outline drawing of SAILOR 6195

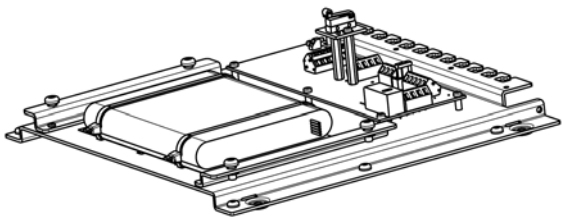


Figure 16: SAILOR 6195 without cover

Using the SAILOR 6195

This chapter explains how to use the SAILOR 6195 Battery Option for TCU for backup.

3.1 Battery operation

With the SAILOR 6195 installed, if external power is removed or lost, the TCU and mini-C will operate from the battery.

Note

In case the unit is left without external power for a long time, it will eventually drain the battery. Internal protection ensures, that the battery is not harmed, although it should not be left in this situation for more than a few months. See *Battery protection* on page 17.

When the external power is removed or lost, the system including the TCU and the mini-C will go into sleep mode. After 15 minutes the single green LED to the left (TCU Power/Sleep mode indicator) should start flashing.

TCU Power/Sleep mode indicator

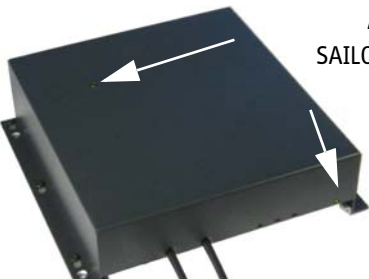


Figure 17: TCU Power/Sleep mode indicator

After some minutes the TCU will go into sleep mode. If not, the reason may be:

- the configuration of the mini-C or TCU is not correct, or
- the system cannot connect to the satellite. This means the TCU will keep trying to connect and thus cannot go into sleep mode.

The configuration of the TCU and the mini-C defines which situations should wake up the system. It may take up to 3 minutes for the system to be fully operational again after external power is applied. This includes powering up of the connected mini-C. You can follow the progress by looking at the LEDs:

Step	LED behaviour
External power applied to SAILOR 6195 (and TCU).	 <p>After 10 seconds SAILOR 6195 LED and TCU Power LED light up green</p>
After approximately 25 seconds the SAILOR 6195 starts charging the battery.	 <p>SAILOR 6195 LED Charging: flashing 1 sec. on, 1 sec. off etc. Fully charged: Steady green</p>
System is ready. For details on the TCU LEDs, see <i>THRANE 6194 Terminal Control Unit, Installation & user manual, 98-131593</i>	 <p>All LEDs green</p>

3.1.1 Charging the battery

The battery is automatically charged when external power is applied to the SAILOR 6195, provided the fuse F2 is inserted. It can take up to 10 hours to fully charge the battery. The SAILOR 6195 LED flashes while the battery is charging and lights steady when the battery is fully charged.

3.1.2 Battery protection

If the system is not in operation for a longer period, do as follows to protect the battery from deterioration:

- Remove the fuse F2.
For information on F2, see step 2 on page 5.
- Charge the battery at least 2 times per year.
To charge the battery, insert the fuse F2 and apply external DC power for 10 hours. Then remove the fuse F2 again.

Troubleshooting

This chapter gives guidelines for troubleshooting and provides an overview of the different means of status signalling. It has the following sections:

- *System LEDs*
- *Troubleshooting guide*
- *Service and repair*

4.1 System LEDs

There are several LEDs on the assembled SAILOR 6195/TCU unit. Most of them are located on the TCU. For information on the LEDs on the TCU, refer to *THRANE 6194 Terminal Control Unit, Installation & user manual, 98-131593*.

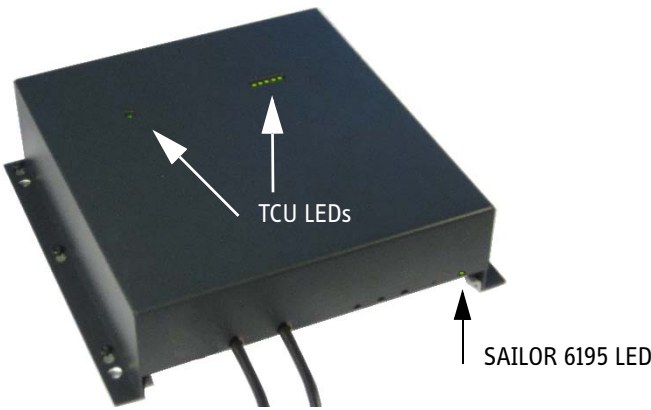


Figure 18: LEDs on SAILOR 6195/TCU unit

4.1.1 LED on SAILOR 6195

Behaviour	Description
Off	Battery only
On	External DC
Flash 1 sec. on, 1 sec. off	Charging battery
Flash 3 short flashes, pause etc.	Battery error. This could be: <ul style="list-style-type: none">• Battery not connected• Battery not charging correctly• Temperature out of range (0 to 40°C charging)• Battery defect

4.2 Troubleshooting guide

If a problem occurs, start by checking the LEDs. For details, See:

- *System LEDs* on page 20
- *Battery operation* on page 15
- The TCU manual, sections Status signalling and Troubleshooting

Tampering: If the system fails to signal a tampering event when the SAILOR 6195 has been opened, the reason may be one the following:

- No SD card inserted in the SD slot.
Insert the SD card containing the tampering script.
- The SD card is damaged. Acquire a new SD card.

If you are not able to solve the problem yourself, please contact your dealer or installer as described in the next section.

4.3 Service and repair

Should your Thrane & Thrane product fail, please contact your dealer or installer, or the nearest Thrane & Thrane partner. You will find the partner details on thrane.com where you also find the Thrane & Thrane Self Service Center web-portal, which may help you solving the problem.

Your dealer, installer or Thrane & Thrane partner will assist you whether the need is user training, technical support, arranging on-site repair or sending the product for repair.

Your dealer, installer or Thrane & Thrane partner will also take care of any warranty issue.

4.3.1 Disposal

Old electrical and electronic equipment marked with this symbol can contain substances hazardous to human beings and the environment. Never dispose these items together with unsorted municipal waste (household waste). In order to



protect the environment and ensure the correct recycling of old equipment as well as the re-utilization of individual components, use either public collection or private collection by the local distributor of old electrical and electronic equipment marked with this symbol.

Contact the local distributor for information about what type of return system to use.

4.3.2 Repacking for shipment

Should you need to send the product for repair, please read the below information before packing the product.

The shipping carton has been carefully designed to protect the SAILOR 6195 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, part number and full serial number. Mark the carton FRAGILE to ensure careful handling.

Note

Correct shipment is the customer's own responsibility.

If the original shipping carton is not available, the following general instructions should be used for repacking with commercially available material.

1. Wrap the defective unit in heavy paper or plastic. Attach a tag indicating the type of service required, return address, part number and full serial number.
2. Use a strong shipping container, e.g. a double walled carton.
3. Protect the front- and rear panel with cardboard and insert a layer of shock-absorbing material between all surfaces of the equipment and the sides of the container.
4. Seal the shipping container securely.
5. Mark the shipping container FRAGILE to ensure careful handling.

Failure to do so may invalidate the warranty.

Specifications

This appendix holds the specifications for the SAILOR 6195.

Item	Specification
Battery	Lithium Ion 6,600 mAh, 14.8 V nominal with built-in protection circuit & temperature sensor
Power	19 V - 31.2 V (Nominal 24 V/2.5 A)
Fuses	2 fuses, 7.5 A mini ATO
Power consumption	Max. 50 W, including SAILOR 6195, Thrane 6194 TCU and SAILOR 3027 mini-C terminal
Compliance	IEC 60945 (EMC) IEC 60950 (Safety)
IP protection	IP20
Ambient temperature	Operational: -15°C to 55°C Charging: 0°C to 40°C
Storage temperature	1 year at -20°C to 20°C 3 months at -20°C to 45°C 1 month at -20°C to 60°C
Compass safe distance	1.5 m
Dimensions H x W x D	80 mm x 290 mm x 270 mm
Weight including TCU	4.8 kg

Conformity

The SAILOR 6195 Battery Option for TCU is CE-certified as stated in the Declaration of Conformity with LVD and EMC Directives, enclosed on the next page.

Thrane & Thrane A/S

Declaration of Conformity with LVD and EMC Directives

The undersigned of this letter declares that the following equipment complies with the specifications of EC directive 2006/95/EC concerning Low Voltage Safety and EC directive 2004/108/EC concerning EMC.

Equipment included in this declaration

TT-6195A Battery Option for TCU

PN = 406195A

Equipment Applicability

The TT-6195A Battery Option for TCU is used as battery option for TT-6194A : THRANE 6194 Term. Ctrl. Unit.

Declaration

The safety requirement with respect to the LVD directive 2006/95/EC is met by conforming to the harmonized EU standards EN 60950-1. The protection requirement with respect to the EMC directive 2004/108/EC is met by conforming to the harmonized EU standards EN 60945.

Manufacturer

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Lundtoftegårdsvej 93D, DK-2800 Kgs. Lyngby, Denmark
Porsvej 2, DK-9200 Aalborg SV, Denmark

Place and Date

Kgs. Lyngby, 29. August 2012


Walther Thygesen, CEO
Thrane & Thrane A/S

CE

Doc. no. 99-136836-A

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