COBHAM

SAILOR 6080 Power Supply

Installation manual

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Manufacturer address

Thrane & Thrane A/S, Lundtoftegaardsvej 93 D, DK-2800, Kgs. Lyngby, Denmark.

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.

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 A/S 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.

OBSERVE MARKED AREAS
Under extreme heat conditions do not touch areas of the unit that are marked with this symbol, as it may result in injury.

COMPASS SAFE DISTANCE
Minimum safety distance: 30 cm from the unit.

Warning! Never insert or remove a power supply while its power switch is in the On (I) position. Make sure the power switch is Off (O) first.

Failure to comply with the rules above will void the warranty!

About the manual

Intended readers

This manual is an installation manual for the SAILOR 6080 Power Supply. It is important that you observe all safety requirements listed in the beginning of this manual, and operate the SAILOR 6080 Power Supply according to the instructions and guidelines in this manual. All installation must be done by qualified service personnel.

Manual overview

This manual has the following chapters:

- ***Introduction*** contains a description of the principle of operation and uses and features of the power supply.
- ***Installation*** contains step-by-step guidelines how to install the power supply as a stand-alone unit or in a combined setup and describes the connectors.
- ***Service and repair*** contains information on support, how to return units for repair and instructions how to exchange the fuses.
- Appendices with ***Technical specifications***, information about the wall mount tray and wiring 4 or more units.

Typography

In this manual, typography is used as indicated below:
Bold is used to emphasize words and to indicate connector names of the unit.
Italic is used to emphasize the paragraph title in cross-references.

Table of Contents

Introduction

1.1 General description

The SAILOR 6080 Power Supply can deliver 300 W output power on average with a peak of 370 W for max. 2 minutes (10% duty cycle).This is useful for MF/HF applications and DSC transmissions of short duration. The SAILOR 6080 Power Supply is AC powered with a battery switch-over function and has an on/off switch which is lit when the power is turned on.

All connectors are placed at the same end of the power supply to simplify mounting and installation. The connector panel is protected by a transparent lid. To secure an installation with heavy cables a cable-relief bracket can be installed.

1.2 Features

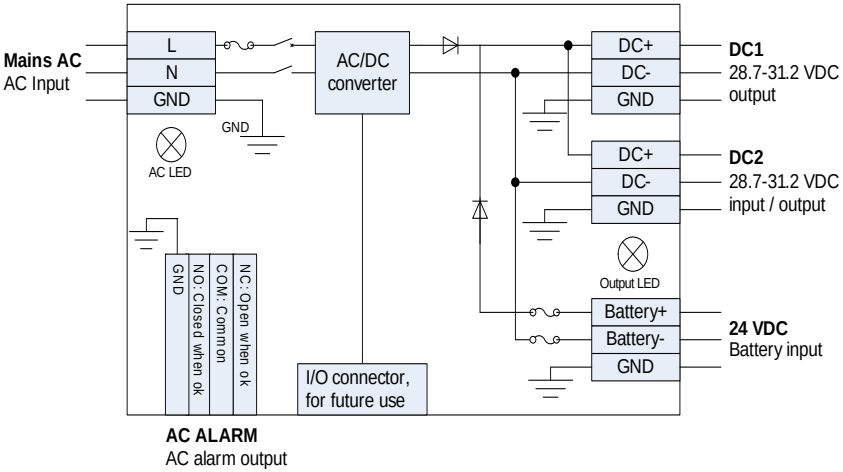
The SAILOR 6080 Power Supply has the following features:

- Two DC connectors, output, range: 28.7 V - 31.2 V
- Output power 300 W continuous, 370 W peak (max. 2 min., 10% duty cycle, 100-240 VAC) or 270 W continuous, 333 W peak (max. 2 min., 10% duty cycle, 90-100 VAC)
- Daisy-chaining of up to four units to give up to 1480 W.[1]
- AC input (100-240 VAC operating) with fuse (6.3 A) with Power Factor Correction
- Automatic detection of input voltage range
- AC alarm and Short circuit protection
- Over-temperature protection (shutdown with automatic restart)
- Switch over to battery power in case of AC supply failure
- On/off switch
- IP 30 protection
- Approval and certification: IEC 60945 approval

1. Output power capability depends on the mounting position (horizontal or vertical), input voltage, ambient temperature and ventilation at the place of installation.

1.3 Block diagram

The drawing below shows the block diagram of the SAILOR 6080 Power Supply.

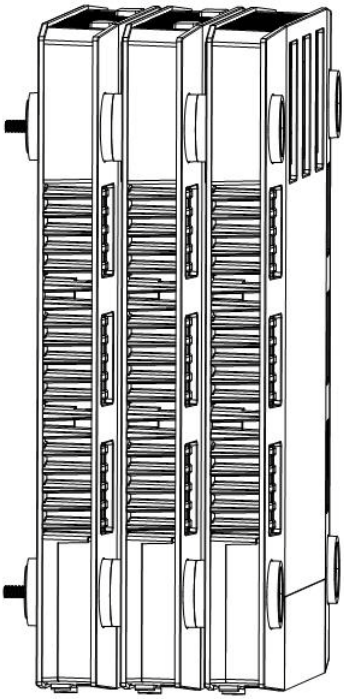


1.4 System configuration

The SAILOR 6080 Power Supply is designed to be used with BGAN-X and FleetBroadband terminals. It can be used as a stand-alone DC power supply or as a building block in a larger power supply.

When more power is needed than one power supply can give, i.e. 300 W, you can stack up to four power supplies on top of each other and connect them.[1]

When stacking two, three or four units the load on each of the units is automatically balanced among the units.



1. Vertical mounting is recommended, particularly if more than two units are stacked. If the system is powered from an emergency battery and more than 2 units are connected, the units must be connected in parallel, see *Wiring 3 or more SAILOR 6080 units* on page 27.

Installation

This chapter provides information about

- *Unpacking*
- *Installing the SAILOR 6080 Power Supply*

The SAILOR 6080 Power Supply can be mounted on its own as a single unit, or you can daisy-chain and stack up to 4 units. The SAILOR 6080 Power Supply can also be fitted in a 1 U rack mount.

2.1 Unpacking

- SAILOR 6080 Power Supply
- 4 mounting bolts for mounting 1 unit, M6X55 mm, DIN912 Hex
- 4 Top Caps for covering mounting holes
- Cable-relief bracket, comb-style
- SAILOR 6080 Power Supply Installation manual (this manual)

2.1.1 Optional accessories

The following optional accessories are available and can be ordered:

- Wall-mount tray, heavy duty, with cable-relief bracket,
  order number: S-406080A-001
- Mounting Kit F/ 3 additional 6080 power packs,
  order number: S-406081-004

2.2 Installing the SAILOR 6080 Power Supply

You can mount the power supply in a vertical or horizontal position. Vertical mounting is recommended if more than 2 units are stacked.

Warning! Never insert or remove a power supply while its power switch is in the On (I) position. Make sure the power switch is Off (O) first.

2.2.1 Temperature conditions

The SAILOR 6080 must be placed in a ventilated area with free space around all sides of the unit, except the bottom side.

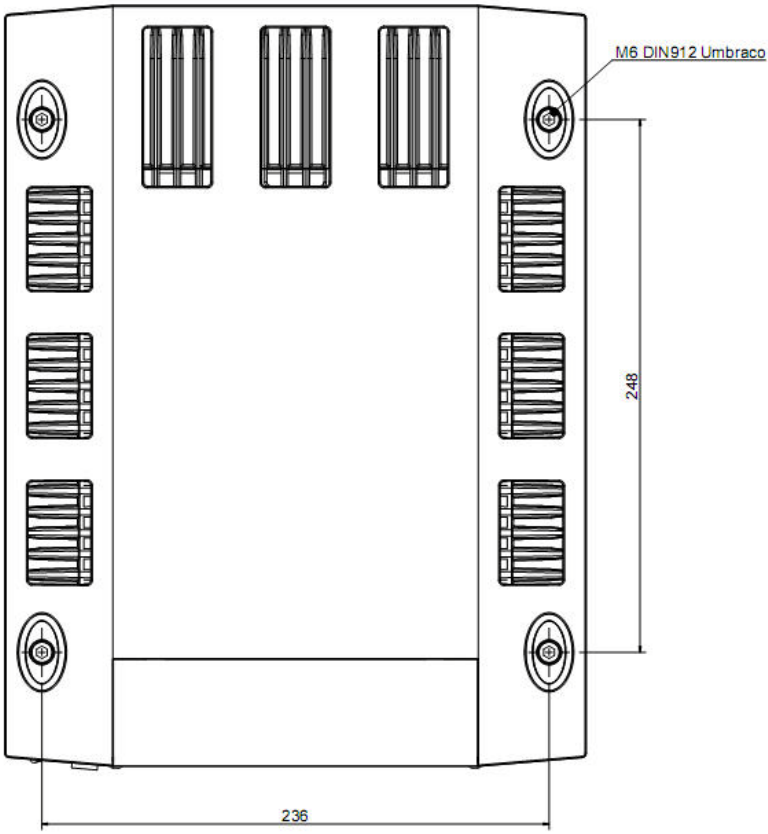
Ambient temperature range is –15 ˚C to +55 ˚C.

If the SAILOR 6080 is installed in a location where the ambient temperature may exceed 45 ˚C, we recommend placing the SAILOR 6080 where unintentional contact is avoided. If the maximum ambient temperature does not exceed 45 ˚C, the SAILOR 6080 can be placed in a public area.

2.2.2 Outline and dimensions

The following drawing shows the SAILOR 6080 Power Supply and the position of the mounting holes. It is mounted with four mounting bolts.

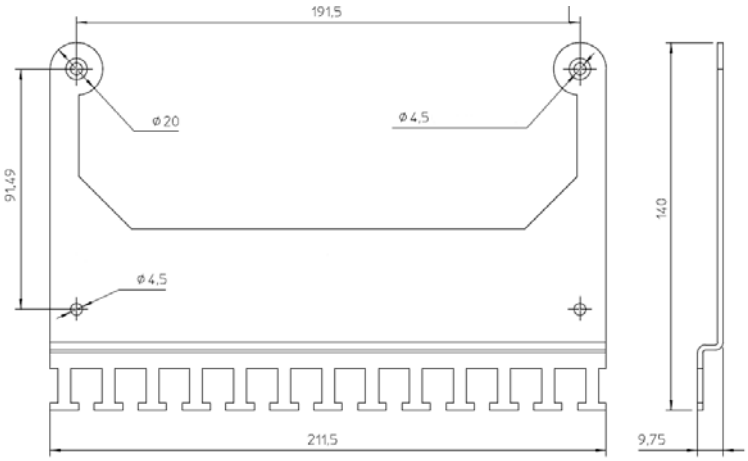
- *4 mounting bolts for mounting 1 unit, M6X55 mm, DIN912 Hex*



2.2.3 To install the SAILOR 6080 Power Supply

To install the SAILOR 6080 Power Supply, do as follows:

1. If you are using the cable-relief bracket, first fasten the cable-relief bracket to the wall with four screws according to the following drawing.

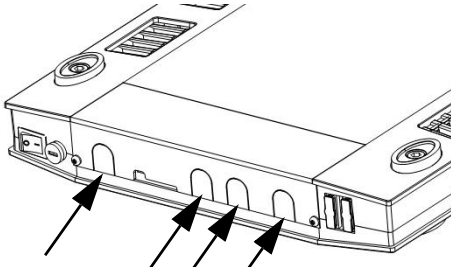


2. Fasten the SAILOR 6080 to the wall with 4 mounting bolts, M6X55 mm, DIN912 (included the delivery). For dimensions, see the drawing in the previous page.
   If you are using the cable-relief bracket, place the SAILOR 6080 over the cable-relief bracket and align the connector row of the SAILOR 6080 with the cable-relief bracket.

An optional, larger Wall-mount tray, heavy duty, is available for the SAILOR 6080. For further details see *Wall-mount tray (option)* on page 25.

2.2.4 Protective lid for the connector panel

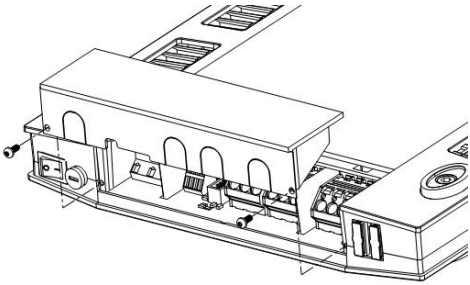
The connectors are protected by a plastic lid. To access a connector you have to remove the lid. To make room for the connector cables you must remove the U-shaped cutout for the respective cable in the plastic protective lid.



2.2.4.1 Removing the protective lid

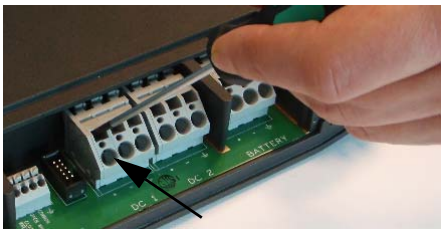
To connect the cables you must remove the protective lid.

To do this, unscrew the two screws (M3x7mm" Torx-8) as shown in the picture and put the lid aside.



2.2.5 Inserting the cable in the spring-terminal connector

The connectors are spring-terminal connectors. Use a suitable tool to open the spring and insert the cable in the opening below.



2.2.6 Connectors

Connector overview

- *AC input*
- *DC output*
- *DC output or optional input for daisy-chaining*
- *Battery input*
- *AC alarm output*

2.2.6.1 AC input

The SAILOR 6080 Power Supply is AC powered. To connect the AC input do as follows:

1. Remove the u-shaped cut-out for this input from the protective lid.
2. Connect the Mains cable to the connector marked **MAINS AC**.

Mains AC	
Connector type	Spring loaded terminal, dual-row connector
Wire cross section	Up to 2.5 mm^2
L	Line. AC power cord
N	Neutral. AC power cord
	GND. AC power cord
Fuse	6.3 A. It is accessible from outside the housing. It is positioned next to the on/off switch. To remove the fuse turn the device that holds the fuse and extract it.

This connector is used when adding a SAILOR 6080 Power Supply (dual row spring loaded terminal).

3. In order to be able to daisy-chain SAILOR 6080 Power Supply units the **Mains AC** connector has two terminals:
   - Use one terminal for the incoming mains power.
   - Use the other terminal for the mains power going to the next SAILOR 6080 Power Supply.

2.2.6.2 DC output

The SAILOR 6080 Power Supply supplies a DC output. To connect the DC output **DC1** do as follows:

1. Connect the DC cable between the connector marked **DC1** and the equipment that must be powered.

DC 1	
Connector type	Spring-loaded terminal
Wire cross section	Up to 6 mm^2
Maximum load	20 A
+	DC out, plus
-	DC out, minus
⏚	GND

2. Remove the u-shaped cut-out for this input from the protective lid.

When connecting 2 units in parallel, the combined power may be drawn from a single connector. A single connector can handle 20 A.

Caution! If the system is powered from an emergency battery and you need more than 2x300 W or 20 A you need to follow special guidelines when connecting the required SAILOR 6080 Power Supply units. Refer to *Wiring 3 or more SAILOR 6080 units* on page 27 to see how to connect the SAILOR 6080 Power Supply units to meet these requirements.

2.2.6.3 DC output or optional input for daisy-chaining

The second DC connector (DC 2) of the SAILOR 6080 Power Supply can be used for two purposes, to provide DC output or to serve as an input connector when daisy-chaining up to four SAILOR 6080 Power Supply units.

To connect to **DC2** do as follows:

1. To have a second DC output:
   Connect the DC cable between the connector marked **DC1** and the equipment that must be powered.
2. To daisy-chain a second SAILOR 6080 Power Supply.
   Connect the cables from **DC1** in SAILOR 6080 Power Supply unit 1 to **DC2** in SAILOR 6080 Power Supply unit 2.

   Caution! Use different colors for plus and minus and make sure you connect to the right polarity.

   Connect the DC cables between the connector marked **DC2** and the equipment that must be powered.
3. Remove the u-shaped cut-out for this input from the protective lid.

To daisy-chain a third SAILOR 6080 Power Supply repeat step 2. The connector specifications are the same for DC1 and DC2, but note the

special guidelines given in *Wiring 3 or more SAILOR 6080 units* on page 27.

To see an overview how to connect SAILOR 6080 Power Supply units in a daisy chain see *Wiring for daisy-chaining* on page 17.

2.2.6.4 Battery input

You can connect an external 24 V emergency battery to the SAILOR 6080 Power Supply to make sure the unit is operational in case the AC input fails. The battery input is protected against wrong polarity of the battery.

To connect the **BATTERY** input do as follows:

1. Connect the cable between the connector marked **BATTERY** and the battery.

BATTERY	
Connector type	Spring loaded terminal
Wire cross section	Up to 6 mm^2
+	Battery plus
-	Battery minus
	GND
Fuses	Two 20 A fuses, one for battery plus and one for the battery minus. These are accessible from outside the housing and are positioned to the right of the protective lid.

2. Remove the u-shaped cut-out for this input from the protective lid.

2.2.6.5 AC alarm output

The AC alarm output provides an alarm signal when the SAILOR 6080 Power Supply cannot deliver the required power from the AC input. This is the case when

- No AC power is present.
- The AC fuse is blown.
- The on/off switch is in the position off.
- The output is short-circuited or heavily overloaded.
- An internal error has occurred.

To wire the **AC alarm** output do as follows:

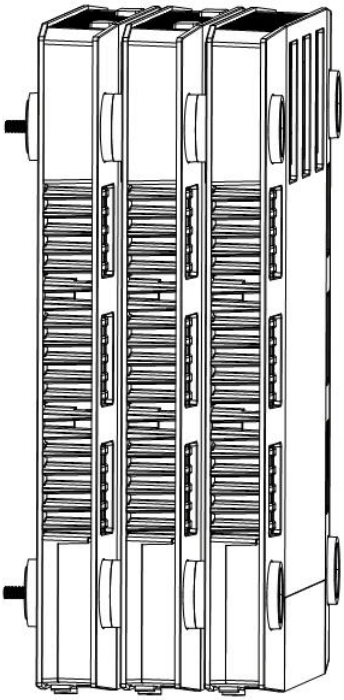
1. Attach the cable to the connector marked **AC Alarm** according to the specifications in the table below:

AC ALARM (SAILOR 6080 Power Supply)	
Connector type	Spring loaded terminal
Wire cross section	Up to 1.5 mm^2
Terminal 1	Closed when ok
Terminal 2	Open when ok
Terminal 3	Common
Terminal 4 	GND

2.3 Installing 2, 3 or 4 SAILOR 6080 units

You can mount up to four SAILOR 6080 Power Supply units (for vertical position we recommend to use the *Wall-mount tray, heavy duty, with cable-relief bracket, order number: S-406080A-001*).

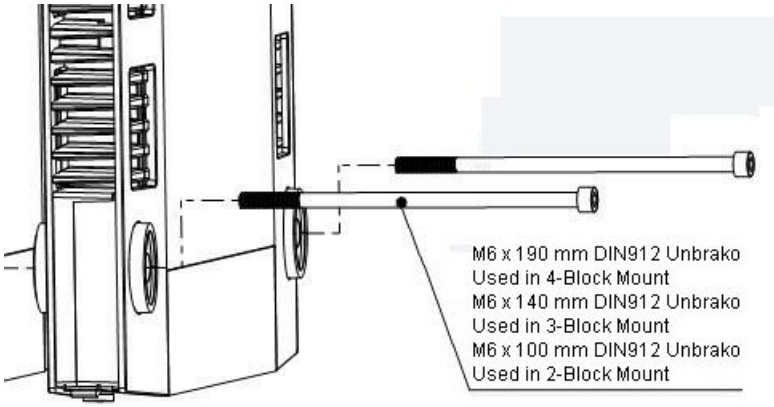
The mounting holes in the SAILOR 6080 Power Supply are designed in such a way that the units fit nicely on top of each other when being stacked.



Important To ensure adequate cooling of the Power Supplies maintain an unobstructed space of minimum 5 cm around all sides of the group of units (except between the units and the bottom side).

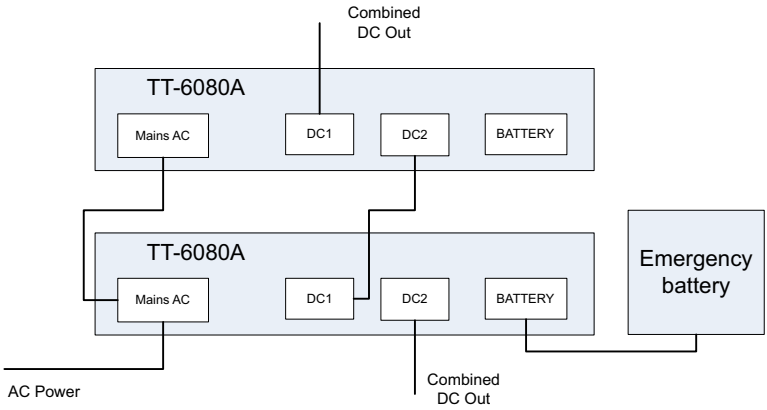
The following drawing shows the specifications of the mounting bolts needed when installing two, three or four units on top of each other.

- 2-block mount: 4 x M6X100 mm DIN912, A4
- 3-block mount: 4 x M6X140 mm DIN912, A4
- 4-block mount: 4 x M6x190 mm DIN 912, A4



2.3.1 Wiring for daisy-chaining

The following drawing shows how to wire the SAILOR 6080 Power Supply units when daisy-chaining two units.



To daisy-chain two SAILOR 6080 Power Supply units proceed as follows:

1. Connect Mains AC of unit 1 to unit 2.
2. Connect DC1 of unit 1 to DC2 of unit 2.

Caution! Use different colors for plus and minus and make sure you connect to the right polarity.

Caution! If you need more than 2x300 W or 20 A you need to follow special guidelines when connecting the required SAILOR 6080 Power Supply units. Refer to *Wiring 3 or more SAILOR 6080 units* on page 27 to see how to connect the SAILOR 6080 Power Supply units to meet these requirements.

Service and repair

The SAILOR 6080 Power Supply is designed to operate without preventive maintenance.

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 SAILOR 6080 Power Supply.

3.1 Support, repair and service

3.1.1 Contact for support

For support contact the distributor that supplied the SAILOR 6080 Power Supply. For further information on warranty and service, you may also use the Cobham SATCOM home page at www.cobham.com/satcom.

3.1.2 Repair and servicing

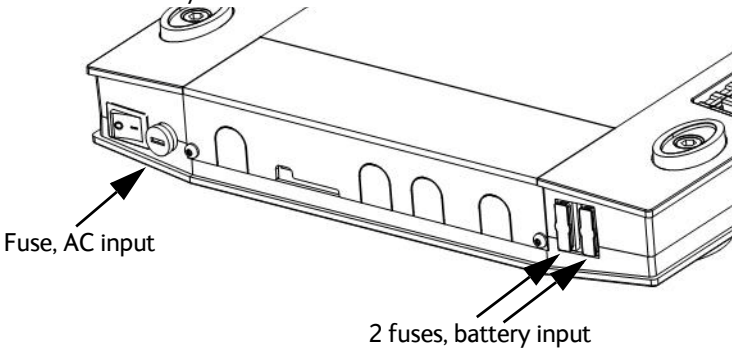
The device does not require maintenance and adjustment apart from routine checking of its installation.

Warning! Never insert or remove a power supply while its power switch is in the On (I) position. Make sure the power switch is Off (O) first.

Important In case of malfunction do not open the SAILOR 6080 Power Supply but send it in for repair. For information how to proceed see *Returning units for repair* on page 21.

3.2 Exchanging the fuses

The SAILOR 6080 Power Supply has fuses to secure AC input and input from an external battery.



3.2.1 Exchange the AC fuse

To exchange the AC fuse, do as follows:

1. Locate the fuse, it is accessible from outside the housing. It is positioned next to the on/off switch.
2. Turn the fuse holder and extract it.
3. Take out the old fuse and insert a new one (type: 5x20 mm, 6.3 AT).
4. Insert and fasten the fuse holder.

Caution! If the AC fuse is blown directly after being replaced there might be a critical fault in the SAILOR 6080 Power Supply. Return the unit for repair.

3.2.2 Exchange the BATTERY fuses

To exchange the two BATTERY fuses, do as follows:

1. Locate the fuses for battery plus and battery minus. These are accessible from outside the housing, They are is positioned to the right of the protective lid.
2. Pull out the fuses.
3. Insert two new fuses (type: ATO Blade Fuse, 20 A)

3.3 Returning units for repair

Should your Cobham SATCOM product fail, please contact your dealer or installer, or the nearest Cobham SATCOM partner. You will find the partner details on www.cobham.com/satcom, **Technical Service Partner List**. You can also access the Partner Portal at www.cobham.com/satcom, **Cobham SYNC Partner Portal**, which may help you solve the problem. Your dealer, installer or Cobham SATCOM 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 Cobham SATCOM partner will also take care of any warranty issue.

3.3.1 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 6080 Power Supply 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.

Technical specifications

The following table shows the specifications of the SAILOR 6080.

Specifications	Value
Output power at 100 VAC - 240 VAC	300 W continuous 370 W peak (max. 2 min. with 10% duty cycle)[a]
Output power at 90 VAC - 100 VAC	270 W continuous 333 W peak (max. 2 min. with 10% duty cycle)[a]
DC output (nominal)	31.2 VDC at 0 A 29.3 VDC at 10 A 28.7 VDC at 13 A
AC input voltage	115-230 VAC nominal, 100-240 VAC operating
Alarm in case of	AC power failure
IP rating	IP 30
Operating temperature	-15˚ to +55˚ C
Storage temperature	-40˚ to +80˚ C
Cooling	The SAILOR 6080 must be placed in a ventilated area with free space around all sides of the unit, except the bottom side.
Heat dissipation	31,104 Kcal / hour
Survival temperature (power on)	-40˚ to +80˚ C

a. Output power capability depends on the mounting position (horizontal or vertical), input voltage, ambient temperature and ventilation at the place of installation.

Specifications	Value
Dimensions	H: 46.5 mm, L: 354 mm, W: 265 mm
Weight	Approx. 3.7 kg
Compass safe distance	30 cm

Wall-mount tray (option)

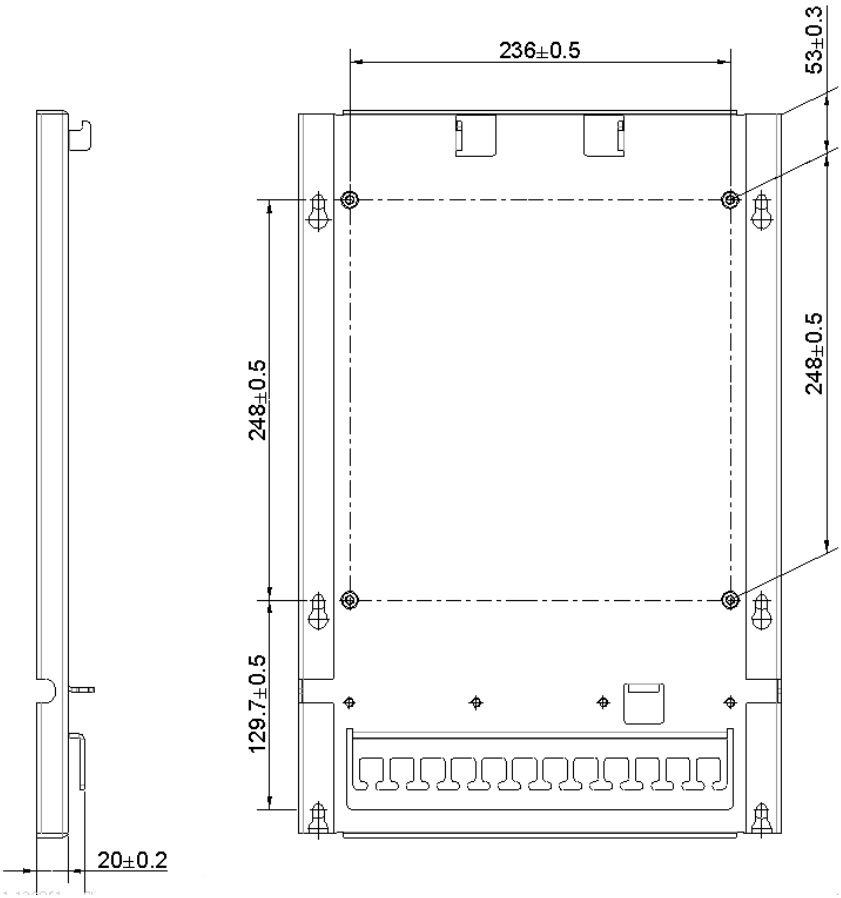
B.1 Overview

- A Wall-mount tray, heavy duty, with cable-relief bracket is available and can be ordered (order number: 406080A-opt.001).

Up to four SAILOR 6080 Power Supply units can be mounted on this tray.

B.1.1 Dimensions and weight

B.1.1.1 Dimensions



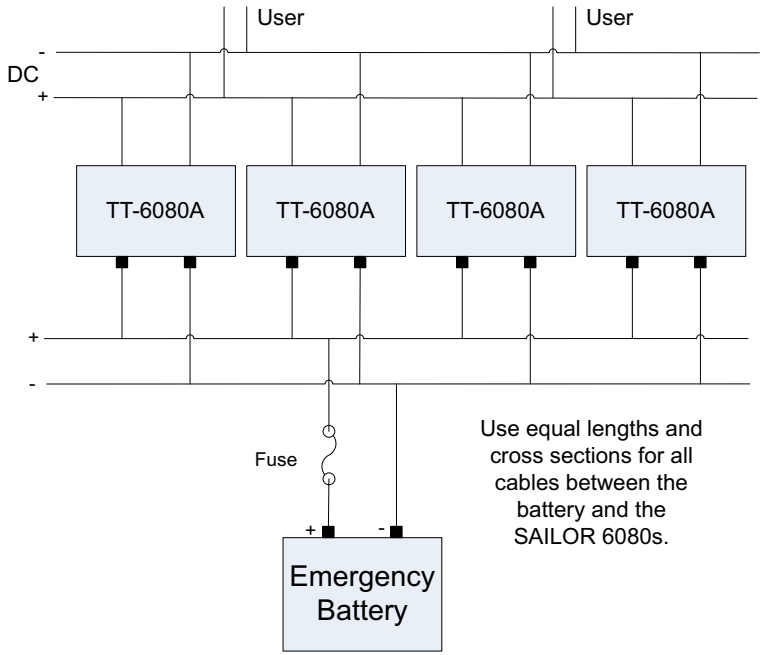
B.1.1.2 Weight

The Wall-mount tray, heavy duty, weighs 2.5 kg.

Wiring 3 or more SAILOR 6080 units

If you need more than 2x300 W or 20 A you can connect three or more SAILOR 6080 Power Supply units.

Important You must connect the units as shown in the drawing. This is to make sure that a single connector is never overloaded with more than 20 A.



Note Connected user equipment normally requires the cable resistance to be as low as possible. Refer to the specifications for your connected equipment to find the right cables for your installation.

Declaration of conformity

D.1 CE (LVD & EMC)

The SAILOR 6080 Power Supply is CE certified (LVD & EMC directives) as stated in the simplified "EU Declaration of Conformity", enclosed in copy on the next page.

EU Declaration of Conformity

Hereby **Thrane & Thrane A/S trading as Cobham SATCOM** declares that the following equipment complies with the specifications of:

EMC directive 2014/30/EU relating to electromagnetic compatibility and
Low Voltage Directive (LVD) 2014/35/EU related to Low Voltage Safety

Equipment included in this declaration

Model	Description	Part no.
TT-6080A	SAILOR 6080 Power Supply	406080A

The full text of the EU declaration of conformity is available at the following internet address:

http://sync.cobham.com/satcom/support/downloads

Document no.: 99-158115-B

A

AC	Alternating Current

C

CE	Conformité Européenne, European conformity in French.

D

DC	Direct Current

E

EMC	Electromagnetic Compatibility

I

IEC	International Electrotechnical Commission is an international standards organization that prepares and publishes International Standards for all electrical, electronic and related technologies.
IP	International Protection Rating, sometimes also interpreted as Ingress Protection Rating, consists of the letters IP followed by two digits and an optional letter. It classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact, and water in electrical enclosures.

L

LVD	Low Voltage Directive

A

B

C

D

F

G

I

L

M

O

P

R

S

T

U

W