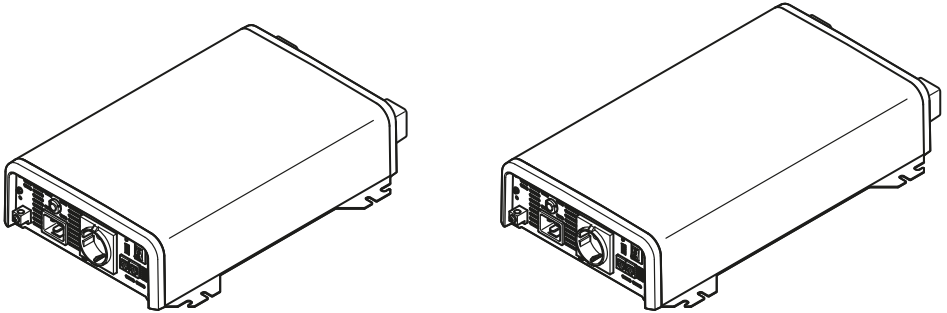




MOBILE POWER SOLUTIONS

DPSI



SinePower DPSI1512 TS, DPSI1524 TS, DPSI2012 TS, DPSI2024 TS, DPSI3012 TS, DPSI3024 TS

EN

Sinewave inverter

Installation and Operating Manual..... 3

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1 Important notes

Please read these instructions carefully and follow all instructions, guidelines, and warnings included in this product manual in order to ensure that you install, use, and maintain the product properly at all times. These instructions **MUST** stay with this product.

By using the product, you hereby confirm that you have read all instructions, guidelines, and warnings carefully and that you understand and agree to abide by the terms and conditions as set forth herein. You agree to use this product only for the intended purpose and application and in accordance with the instructions, guidelines, and warnings as set forth in this product manual as well as in accordance with all applicable laws and regulations. A failure to read and follow the instructions and warnings set forth herein may result in an injury to yourself and others, damage to your product or damage to other property in the vicinity. This product manual, including the instructions, guidelines, and warnings, and related documentation, may be subject to changes and updates. For up-to-date product information, please visit documents.dometic.com.

2 Explanation of symbols

A signal word will identify safety messages and property damage messages, and also will indicate the degree or level of hazard seriousness.



DANGER!

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



WARNING!

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION!

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.



NOTICE!

Indicates a situation that, if not avoided, can result in property damage.



NOTE Supplementary information for operating the product.

3 Safety instructions

Also observe the safety instructions and stipulations issued by the vehicle manufacturer and authorized workshops.

3.1 General safety



DANGER! Electrocutation hazard

- > Do not touch exposed cables with your bare hands.
- > To be able to disconnect the device quickly from the AC power supply, the socket must be close to the device and be easily accessible.



WARNING! Electrocutation hazard

- > Installation and removal of the device may only be carried out by qualified personnel.
- > Do not operate the device if the device itself or the connection cable is visibly damaged.
- > If this device's power cable is damaged, the power cable must be replaced in order to prevent safety hazards.
- > This device may only be repaired by qualified personnel. Improper repairs can lead to considerable hazards.
- > Only use accessories that are recommended by the manufacturer.
- > Do not modify or adapt any of the components in any way.
- > Do not disconnect any cables when the device is still in use.
- > Disconnect the device from the power supply:
 - After use
 - Before each cleaning and maintenance
 - Before changing a fuse



WARNING! Fire hazard/Flammable materials

In event of fire, use a fire extinguisher which is suitable for electrical devices.



WARNING! Risk of asphyxiation

The cable and control unit of the device can give rise to risks of entanglement, strangulation, tripping or treading if not correctly arranged. Ensure that excess ties and power cables shall be arranged in a safe way.



WARNING! Health hazard

- > This device can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the device in a safe way and understand the hazards involved.
- > **Electrical devices are not toys.** Always keep and use the device out of the reach of very young children.
- > Children must be supervised to ensure that they do not play with the device.
- > Cleaning and user maintenance shall not be made by children without supervision.



NOTICE! Damage hazard

- > Before start-up, check that the voltage specification on the data plate is the same as that of the power supply.
- > Ensure that other objects **cannot** cause a short circuit at the contacts of the device.
- > Ensure that the negative and positive poles **never** come into contact.

- > Do not pull on the connection cables or use the cables as a handle.
- > The device must not be exposed to rain or moisture. Store in a dry place.

3.2 Installing the device safely



DANGER! Explosion hazard

- > Only install and operate the device in closed, well-ventilated rooms.
- > Do **not** install or operate the device under the following conditions:
 - In salty, wet or damp environments
 - In the vicinity of corrosive fumes
 - In the vicinity of combustible materials
 - In the vicinity of heat sources (heaters, direct sunlight, gas ovens, etc.)
 - In areas where there is a risk of gas or dust explosion



WARNING! Risk of injury

- > Ensure that the device is standing firmly. The device must be set up and fastened in such a way that it cannot tip over or fall down.
- > When positioning the device, ensure that all cables are suitably secured to avoid any form of trip hazard.



NOTICE! Damage hazard

- > Place the device in a dry location where it is protected against splashing water.
- > Always use sockets which are grounded and secured by residual current circuit breakers

3.3 Safety when connecting the device electrically



DANGER! Electrocutation hazard

If you are working on electrical systems, ensure that there is somebody close at hand who can help you in emergencies.



WARNING! Electrocutation hazard

- > Observe the recommended cable cross-sections.
- > Lay the cables so that they cannot be damaged by the doors or the hood. Crushed cables can lead to serious injury.



NOTICE! Damage hazard

- > Use ductwork or cable ducts if it is necessary to lay cables through metal panels or other panels with sharp edges.
- > Do **not** lay the 230 V mains cable and the 12 V DC cable in the same duct.
- > Do **not** lay the cable so that it is loose or heavily kinked.
- > Fasten the cables securely.

3.4 Safety precautions when handling batteries



WARNING! Risk of injury

- > Batteries contain aggressive and caustic acids. Avoid battery fluid coming into contact with your body. If your skin does come into contact with battery fluid, wash that part of your body thoroughly with water. If you sustain any injuries from acids, contact a doctor immediately.

- > When working on batteries, do not wear any metal objects such as watches or rings. Lead acid batteries can cause short circuits which can cause serious injuries.
- > Only use insulated tools.
- > Do not place any metal parts on the battery and prevent any metal parts from falling on the battery. This can cause sparks or short-circuits the battery and other electrical devices.
- > Wear goggles and protective clothing when working on batteries. Do not touch your eyes when working on batteries.
- > Only use rechargeable batteries.
- > Do not use defective batteries.

**CAUTION! Explosion hazard**

- > Never attempt to charge a frozen or defective battery. Place the battery in a frost-free area and wait until the battery has acclimatised to the ambient temperature. Then start the charging process.
- > Do not smoke, use an open flame, or cause sparking near the engine or a battery.
- > Keep the battery away from heat sources.

**NOTICE! Damage hazard**

- > Ensure that the polarity is correct when connecting the battery.
- > Follow the instructions of the battery manufacturer and those of the manufacturer of the system or vehicle in which the battery is used.
- > If the battery has to be removed, first disconnect the ground connection. Disconnect all connections and all consumers from the battery before removing it.
- > Only store fully charged batteries. Recharge stored batteries regularly.
- > Do not carry the battery by its terminals.

3.5 Operating the device safely

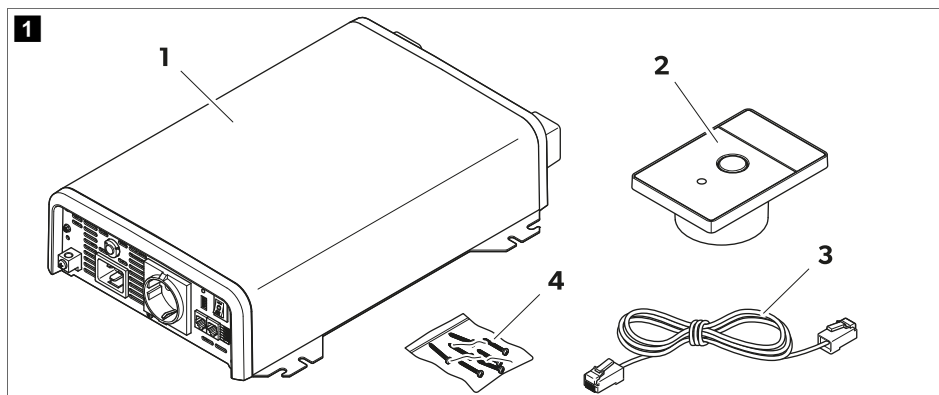
**WARNING! Electrocuting hazard**


- > Do not use the device in wet conditions or submerge in any liquid.
- > Before starting the device, ensure that the power supply line and the plug are dry and the plug is free from rust or dirt.
- > Observe that parts of the device may still conduct voltage even if the fuse has blown.

**NOTICE! Damage hazard**

- > Ensure that the air inlets and outlets of the device are not covered.
- > Ensure a good ventilation.

4 Scope of delivery



No. in  Fig. 1 on page 7	Designation	Quantity
1	Sine wave inverter	1
2	Remote control	1
3	Remote control connection cable	1
4	Fixing screws	6
-	Installation and operating manual	1

5 Accessories

Designation	Ref.no.
Remote control DPSI-RC	9620018306
TD283 touch display	9620013272

6 Intended use

The inverter is intended to convert direct current into a pure sine wave 230 V~ alternating voltage (AC) for operation and stable power supply of connected 230 V consumers.

The inverter can supply the connected consumers directly with AC voltage from an external power supply when it is connect via an IEC cable with an external mains socket.

The inverter is intended for connection to:

- DPSI1512TS, DPSI2012TS, DPSI3012TS: 12 V DC
- DPSI1524TS, DPSI2024TS, DPSI3024TS: 24 V DC

The inverter is suitable for:

- Installation in recreational vehicles (RV), trucks, commercial vehicles or motor and sailing yachts
- Stationary or mobile use
- Indoor use

The inverter is **not** suitable for:

- Outdoor use

This product is only suitable for the intended purpose and application in accordance with these instructions.

This manual provides information that is necessary for proper installation and/or operation of the product. Poor installation and/or improper operation or maintenance will result in unsatisfactory performance and a possible failure.

The manufacturer accepts no liability for any injury or damage to the product resulting from:

- Incorrect installation, assembly or connection, including excess voltage
- Incorrect maintenance or use of spare parts other than original spare parts provided by the manufacturer
- Alterations to the product without express permission from the manufacturer
- Use for purposes other than those described in this manual

Dometic reserves the right to change product appearance and product specifications.

7 Technical description

7.1 General description

The inverter is a DC-to-AC sine wave inverter with integrated transfer switch.

The inverter can be operated in the following network systems:

- TN network
- IT network

The network systems are set via a screw on the inverter.

The inverter has the following protective mechanisms:

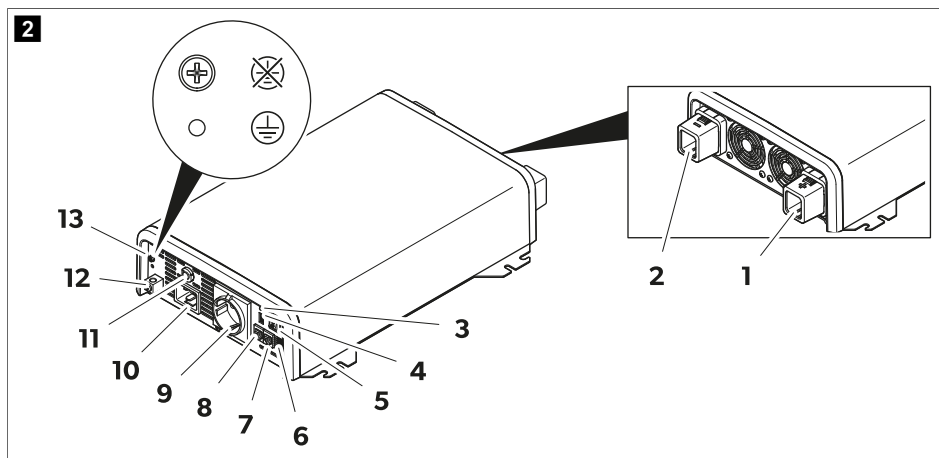
- **Overvoltage shutdown:** The inverter switches off when the voltage exceeds the cut-off value. The inverter restarts automatically when the voltage drops to the restart value.
- **Undervoltage shutdown:** The inverter switches off when the voltage falls below the cut-off value. The inverter restarts automatically when the voltage exceeds the restart value.
- **High temperature shutdown:** The inverter switches off when the internal temperature of the device exceeds the cut-off value. The inverter restarts automatically when the internal temperature drops to the restart value.
- **High output current protection:** The inverter switches off when too many loads are connected.
- **Protection against short circuit:** The inverter switches off when a short circuit has been generated. The inverter restarts automatically after a few seconds. If a short circuit is detected for five consecutive times, the inverter does not restart automatically and a manual restart is needed.

The inverter is N-BUS and CI-BUS compliant for data and function, both controllable on a touch display (accessories) and the mobile app.

The inverter is equipped with a remote control for switching the inverter on or off.

The inverter can be switched to the energy-saving mode in order to reduce idle consumption and minimize the load on the battery. This can be done via a DIP switch or

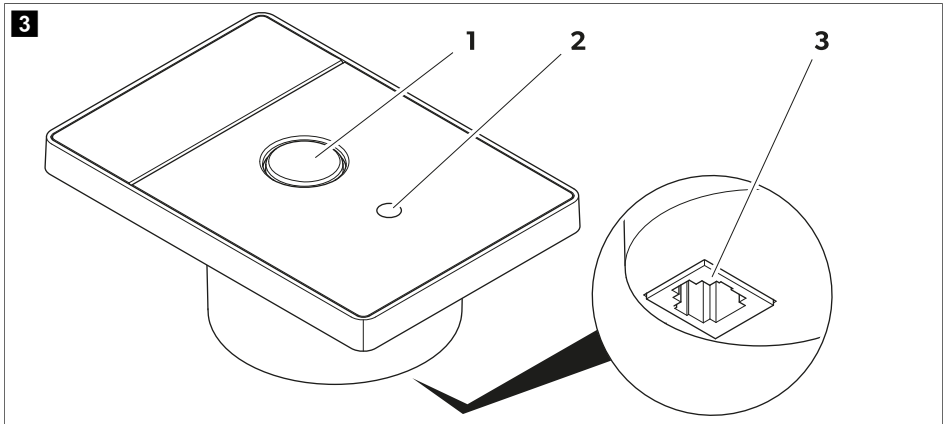
7.2 Control elements and connections



NOTE The figures show the versions for continental Europe.

No.	Designation
1	(+) terminal, connection to the positive pole of the house battery
2	(-) terminal, connection to the negative pole of the house battery
3	Status indication LED
4	Dip switch
5	On/off switch
6	Terminal for external control
7	CI BUS/N Bus/remote control connection
8	CI BUS/N Bus/remote control connection
9	AC outlet
10	AC inlet
11	AC fuse (for AC power input connection only)
12	Ground connection
13	Screw for IT/TN network setting

7.3 Remote control



No. in  Fig. 3
on page 10

Designation

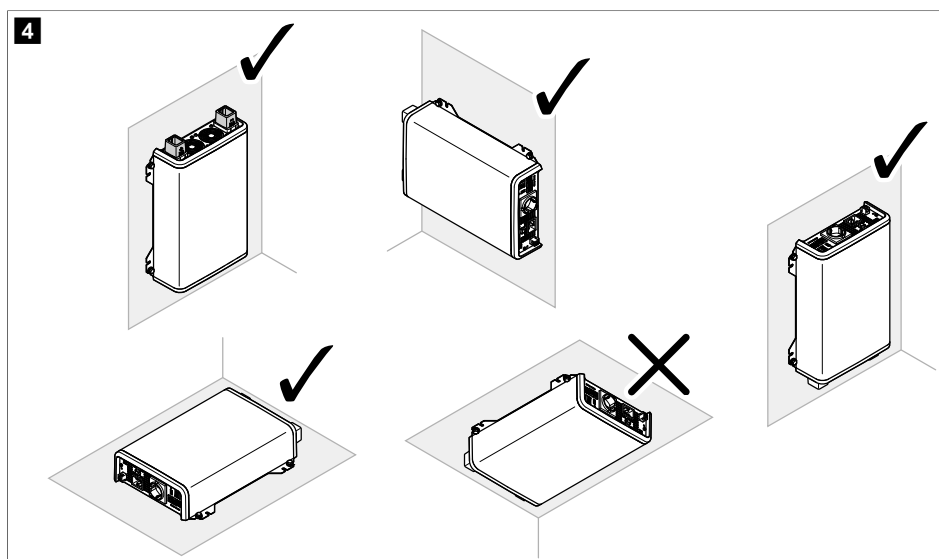
1	On/off button
2	Status indication LED
3	Remote control connection

7.4 Status indication LED

Status	Description
Green	Inverter operation
Orange	Warning: AC output present, risk of overvoltage, undervoltage, or power failures
Red	Error: No AC input present, inverter deactivated (see chapter Troubleshooting on page 19)

8 Installation

8.1 Installation location



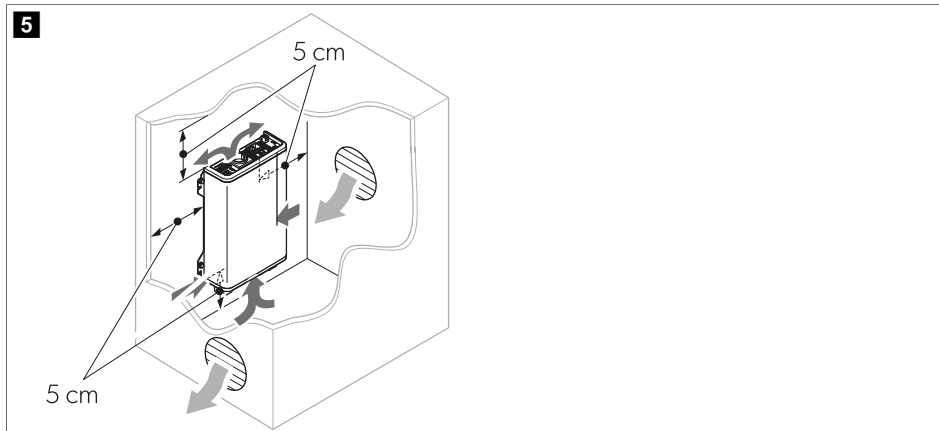
NOTICE! Damage hazard

- > Before drilling any holes, ensure that no electrical cables or other parts of the vehicle can be damaged by drilling, sawing and filing.
- > Do not mount the device with the connections facing upwards.




NOTE

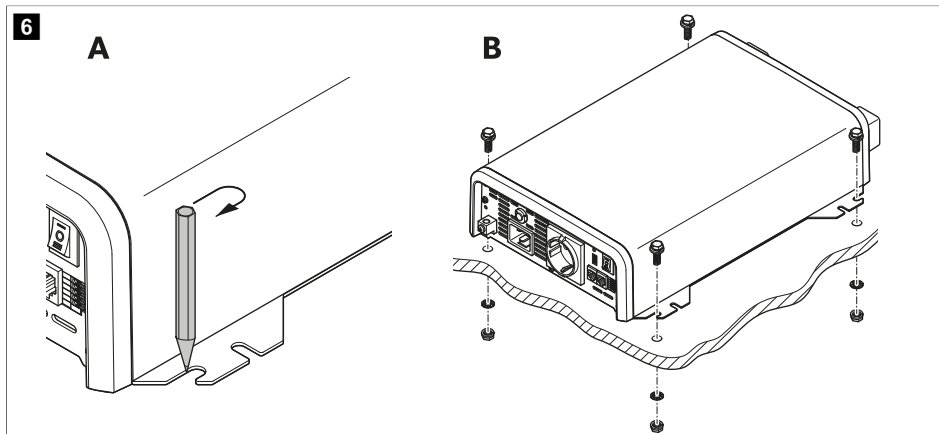
The inverter can be mounted either sitting or hanging ( Fig. **4** on page 11).





Observe the following instructions when selecting an installation location:

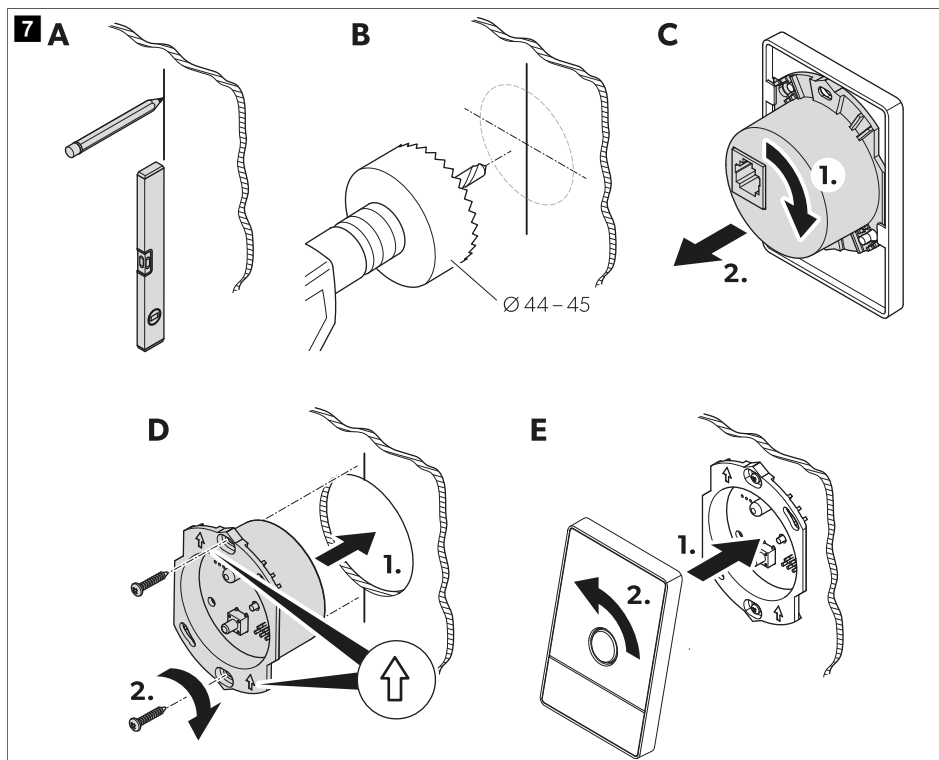
- Ensure that the mounting surface is solid and level.
- Observe the distance specifications for sufficient ventilation ( Fig. 5 on page 12).





8.2 Mounting the inverter



1. Select the appropriate mounting holes depending on the selected mounting type (sitting or hanging) and mark the drilling holes ( Fig. 6 on page 12, **A**).
2. Pre-drill the mounting holes.
3. Screw the inverter in place ( Fig. 6 on page 12, **B**).


8.3 Mounting the remote control



1. Mark the mounting surface ( Fig. 7 on page 13, **A**).
2. Drill a hole with a diameter of 44 mm ... 45 mm, e.g., with a hole saw ( Fig. 7 on page 13, **B**).
3. Remove the junction box from the control panel ( Fig. 7 on page 13, **C**).
4. Insert the junction box into the hole and screw the junction box in place ( Fig. 7 on page 13, **D**).



NOTE Ensure correct vertical alignment as indicated by the arrows on the junction box.

5. Attach the control panel to the junction box ( Fig. 7 on page 13, **E**).
6. Remove the protective film.

8.4 Connecting the inverter



The electrical installation and setup of the device must be performed by a qualified electrician who has demonstrated skill and knowledge related to the construction and operation of electrical equipment and installations, and who is familiar with the applicable regulations of the country in which the equipment is to be installed and/or used, and has received safety training to identify and avoid the hazards involved.

All other actions are intended also for non-professional users.



WARNING! Electrocuting hazard

Observe the recommended cable cross-sections, cable lengths and fuse.



CAUTION! Fire hazard

Place the fuses near the batteries to protect the cable from short circuits and possible burning.



NOTICE! Damage hazard

- > Do not reverse the polarity.
- > Tighten the screws and nuts to a maximum torque of 15 Nm. Loose connections can lead to overheating.

Observe the following instructions when connecting the inverter:

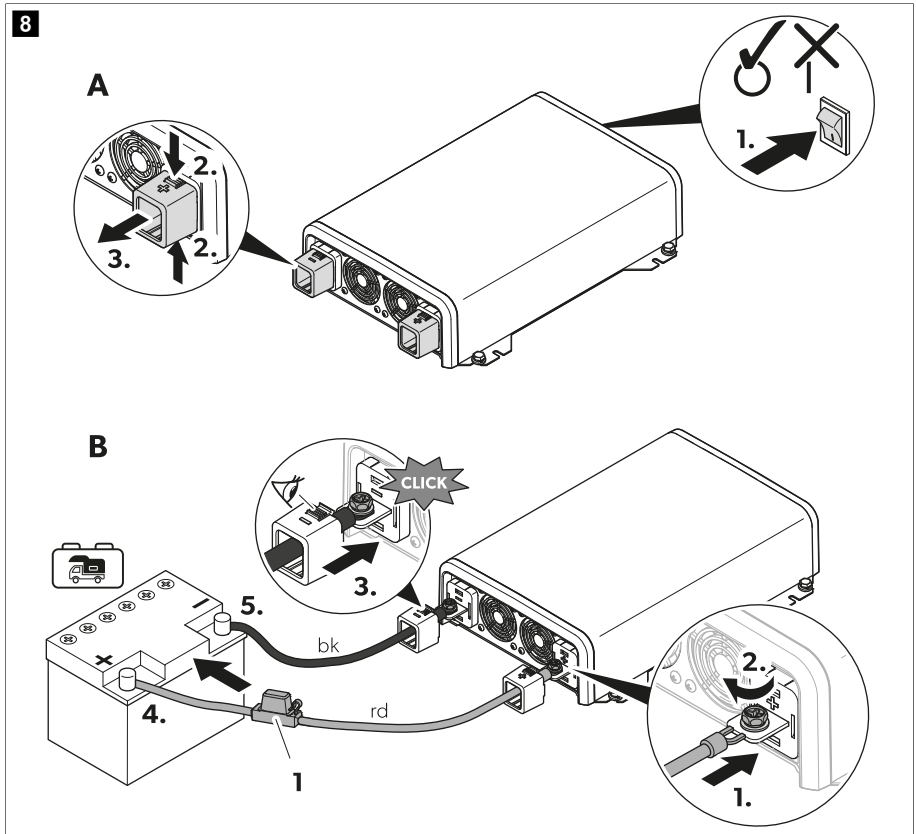
- Observe the applicable regulations when setting up a socket outlet distribution circuit (mains installation).
- Select the cable length of the DC cables (connection to battery terminals) as short as possible ≤ 1 m).
- For **TN network** connection: Install a residual current device (RCD).
- For **IT network** connection: Install an insulation monitoring device (IMD) if more than one load is connected.


National standards apply.


1. Determine the cable cross-sections and fuse:

	Cable cross-section	Cable fuse
DPSI1512TS	50 mm ²	200 A
DPSI1524TS	25 mm ²	100 A
DPSI2012TS	70 mm ²	200 A
DPSI2024TS	35 mm ²	100 A
DPSI3012TS	95 mm ²	350 A
DPSI3024TS	50 mm ²	150 A

2. Check that the device is switched off ( Fig. 8 on page 15, **A: 1**).






3. Detach the covers from the terminals ( Fig. 8 on page 15, **A:2-3**).


4.  **NOTICE! Damage hazard**
To avoid short-circuiting the device always first connect the black cable (negative terminal).


Connect the black (bk) connection cable to the (-) terminal.

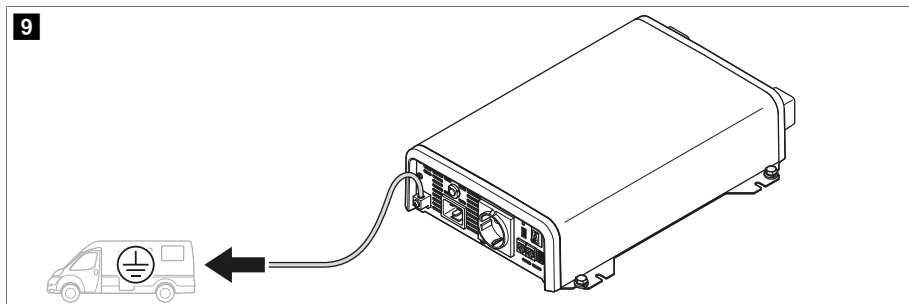
5. Connect the red (rd) connection cable to the (+) terminal ( Fig. 8 on page 15, **B:1-2**).

6. Connect (+) to the positive terminal of the house battery ( Fig. 8 on page 15, **B:4**).

 **NOTE** Protect the positive cable of the house battery with a fuse ( Fig. 8 on page 15, **1**).

7. Connect (-) to the negative terminal of the house battery ( Fig. 8 on page 15, **B:5**).

8. Connect the ground connection to ground (chassis) ( Fig. 9 on page 16).

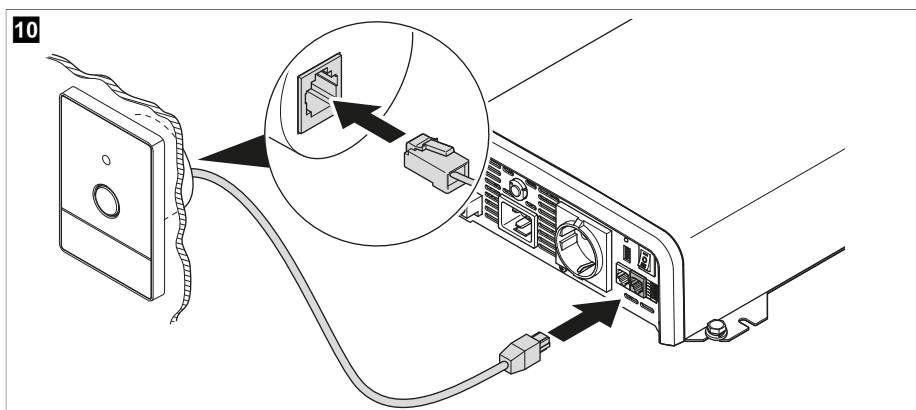


8.5 Connecting the remote control



NOTE The remote control and the N-BUS/CI-BUS network cannot be connected simultaneously.

- > Connect the remote control to the remote control connection using the remote control connection cable.

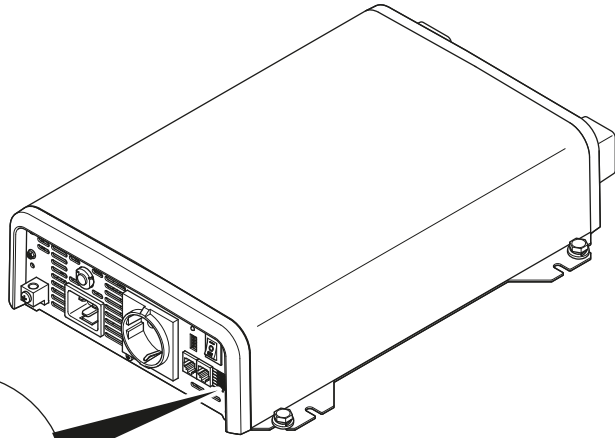
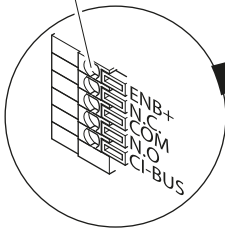


8.6 Connecting the external switch



NOTE If the ENB+ pin is connected, the status of the energy-saving mode cannot be changed.

11

12/24 V --- 

1. Set the on/off switch to position **0**.
2. Use the ENB+ pin as follows:
 - To switch the inverter on connect the ENB+ pin to the house battery's positive pole via a suitable electrical cable.
 - To switch the inverter off detach the ENB+ pin from the house battery.

9 Configuring the network system



The electrical installation and setup of the device must be performed by a qualified electrician who has demonstrated skill and knowledge related to the construction and operation of electrical equipment and installations, and who is familiar with the applicable regulations of the country in which the equipment is to be installed and/or used, and has received safety training to identify and avoid the hazards involved.

All other actions are intended also for non-professional users.

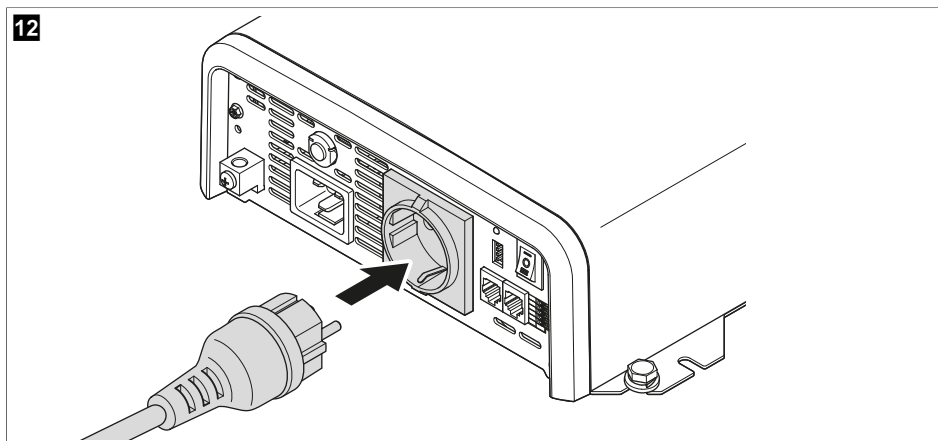


DANGER! Electrocutation hazard

- > Only remove the protective cap from the DIP switch for configuration.
 - > Replace the protective cap to prevent accidental adjustment of the DIP switch.
 - > For **TN network** configuration: Ensure that a residual current device (RCD) is installed.
 - > For **IT network** configuration: Operate one load only or install an insulation monitoring device (IMD). Observe the national standards.
- > Insert the screw into the position \oplus to set the **TN network**.
 - > Insert the screw into the position \otimes to set the **IT network**.

10 Operation

10.1 Operating 230V devices



NOTE

Only connect devices whose total load does not exceed the values listed in Technical data on page 21.

- > Connect 230 V devices to the AC outlet of the inverter ( Fig. 12 on page 18).

10.2 Switching the inverter on and off



NOTE

- > If the inverter is to be controlled via the remote control, the on/off switch must be set to position **II**.
- > If the inverter is to be controlled via the ENB+ pin, the on/off switch must be set to position **0**.

- > To switch on the inverter, set the on/off switch to position **I**.
- > To switch off the inverter, set the on/off switch to position **0**.
- > Use the remote control or the ENB+ pin to switch the inverter on and off.

10.3 Setting the energy saving mode



NOTE

- If the DIP switch S2 is set to position **OFF**, the inverter automatically switches to normal operation when a load ≥ 45 W is connected.
- If the DIP switch S2 is set to position **ON**, the inverter automatically switches to normal operation when a load ≥ 80 W is connected.
- The status of the energy saving mode cannot be changed if the remote control or the ENB+ pin are used unless a complete on-off cycle is done


Activating the energy saving mode

1. If necessary, switch the inverter off.
 2. Slide the DIP switch S1 in position **ON**.
- ✓ The energy saving mode is activated.

Deactivating the energy saving mode

1. Switch the inverter off.
 2. Slide the DIP switch S1 in position **OFF**.
- ✓ The energy saving mode is deactivated.

10.4 Connecting the external AC power supply for transfer switch usage

- > Connect an IEC cable to  Fig. 2 on page 9, 11.
- ✓ If the inverter is switched off, the external AC power supply is directly available at the AC output.

If the inverter is switched on, the external AC power supply is available at the AC output after the inverter's internal checks.

11 Cleaning and maintenance



WARNING! Electrocutation hazard

Unplug the device from the power supply before cleaning and maintenance.



NOTICE! Damage hazard

- > Never clean the device under running water or in dish water.
 - > Do not use sharp or hard objects, abrasive cleaning agents or bleach during cleaning as these can damage the device.
 - > Ensure that the air inlet and outlet vents of the device are free of dust and dirt so that the heat can be released.
- > Occasionally clean the device with a soft, damp cloth.
 - > Regularly check live cables or lines for insulation faults, breaks or loose connections.

12 Troubleshooting

Problem	Possible cause	Suggested remedy
The inverter does not work. The status indication LED is off.	Short circuit for five consecutive times.	> The device fuse must be replaced by an authorized service agent after it has been triggered by excess current.
	Insulation faults, breaks or loose connections at the live cables.	> Check live cables for insulation faults, breaks or loose connections. If you cannot find an error, contact an authorized service agent.
The inverter does not work. The status indication LED lights up red.	High output current protection.	Reduce the connected loads.
	High temperature shutdown.	1. Switch off the inverter and the connected loads.

Problem	Possible cause	Suggested remedy
		2. Check that the air inlets and outlets are not covered or obstructed. 3. Allow the inverter to cool down.
	Short circuit has been generated.	The device fuse must be replaced by an authorized service agent after it has been triggered by excess current.
	Overvoltage shutdown. Battery voltages too high.	> Reduce the connected voltages. The inverter restarts automatically when the voltage drops to the restart value (see chapter Overvoltage shutdown on page 22). > If the error still occurs: Increase the cable cross-sections. Reduce the cable length.
	Undervoltage shutdown. Battery voltages too low.	> Allow the battery to recharge slowly. The inverter restarts automatically when the voltage exceeds the restart value (see chapter Undervoltage shutdown on page 22).

13 Warranty

The statutory warranty period applies. If the product is defective, please contact the manufacturer's branch in your country (see dometic.com/dealer) or your retailer.

For repair and warranty processing, please include the following documents when you send in the device:

- A copy of the receipt with purchasing date
- A reason for the claim or description of the fault

Note that self-repair or nonprofessional repair can have safety consequences and might void the warranty.

14 Disposal

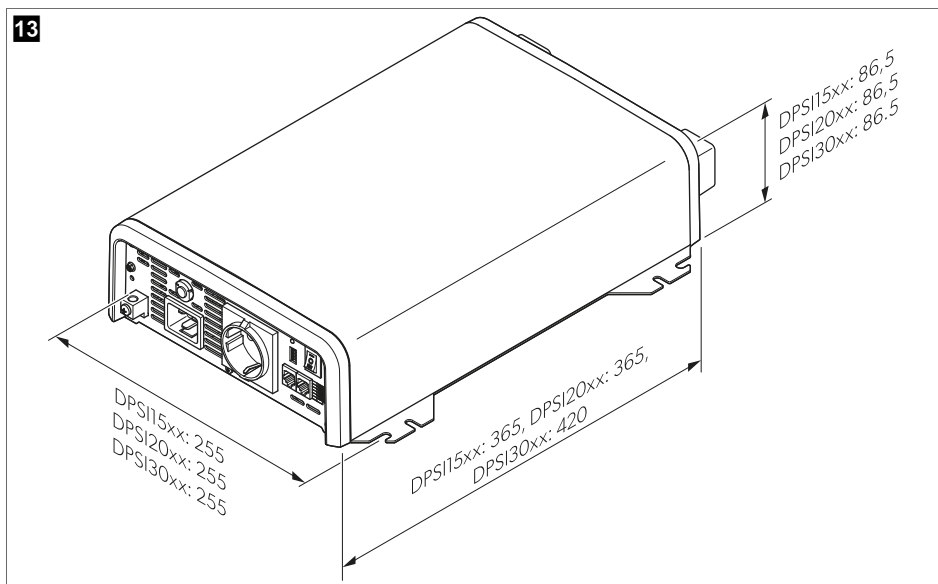


Place the packaging material in the appropriate recycling waste bins wherever possible.

Consult a local recycling center or specialist dealer for details about how to dispose of the product in accordance with the applicable disposal regulations.


The product can be disposed free of charge.

15 Technical data





	DPSI 1512TS	DPSI 2012TS	DPSI 1524TS	DPSI 2024TS
Nominal input voltage	12 V ^{nom}		24 V ^{nom}	
Input voltage range	10.5 ... 16.5 V ^{nom}		21 ... 33 V ^{nom}	
Continuous output power P _{nom}	1500 W	2000 W	1500 W	2000 W
Maximum output power (1 min)	1725 W	2300 W	1725 W	2300 W
Maximum surge power (1 s) P _{surge}	3000 W	4000 W	3000 W	4000 W
Current consumption in idle mode	≤ 1.2 A	≤ 1.5 A	≤ 0.7 A	≤ 0.8 A
Current consumption in standby mode	≤ 0.4 A	≤ 0.5 A	≤ 0.25 A	≤ 0.3 A
Dimensions	📷 Fig. 13 on page 21			
Weight	4.8 kg	4.9 kg	4.8 kg	4.9 kg

	DPSI 3012TS	DPSI 3024TS
Nominal input voltage	12 V ^{nom}	24 V ^{nom}
Input voltage range	10.5 ... 16.5 V ^{nom}	21 ... 33 V ^{nom}
Continuous output power P _{nom}	3000 W	3000 W
Maximum output power (1 min)	3300 W	3300 W
Maximum surge power (1 s) P _{surge}	5700 W	5700 W
Current consumption in idle mode	≤ 1.8 A	≤ 1.8 A
Current consumption in standby mode	≤ 0.6 A	≤ 0.35 A

	DPSI 3012TS	DPSI 3024TS
Dimensions	 Fig. 13 on page 21	
Weight	5.1 kg	5.1 kg

15.1 General technical data

Output voltage range	230 V \sim \pm 10%
Output frequency	50 Hz \pm 1%
Output waveform	Pure sine wave
Peak efficiency	90%
Ambient temperature for operation	0 ... 50°C
Ambient temperature for storage	- 30°C ... 70°C
Ambient humidity	0 ... 95%, non-condensing
Inspection/certification	 

15.2 Undervoltage shutdown

	Cut-off value	Restart value
DPSI _{xx} 12	10.3 V	11.8 V
DPSI _{xx} 24	20.6 V	23.6 V

15.3 Overvoltage shutdown

	Cut-off value	Restart value
DPSI _{xx} 12	16.5 V	15.5 V
DPSI _{xx} 24	33 V	31 V



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