



Installation and operating instructions

Steca PF166 refrigerator / freezer
for 12 / 24 V DC



Contents

1	About this manual	3
1.1	Applicability	3
1.2	Users	3
1.3	Description of symbols	3
2	Safety	4
2.1	Dangers during installation and commissioning	4
2.2	Exclusion of liability	4
3	Disposal instructions	5
4	Device and features overview	5
5	Installation	6
6	Connection	6
6.1	Direct connection to the battery	7
6.2	Connection to a charge controller with deep discharge protection	7
7	Operating the device	7
7.1	Switching the device on / off	7
7.2	Setting the temperature	7
7.3	Temperature alarm	8
8	Menu functions	8
8.1	Setting the brightness	8
8.2	Setting the display of Celsius / Fahrenheit	8
8.3	Setting refrigerator / freezer mode	8
9	Power outage display	9
10	Notes on freezing and storage	9
11	Features	10
11.1	Baskets	10
11.2	Lock	10
11.3	Freezer tray (depending on features)	10
11.4	Cold battery (depending on features)	10
12	StopFrost system	10
13	Defrosting	10
14	Cleaning	11
15	Faults	12
16	Decommissioning	12
17	Technical data	13

1 About this manual

1.1 Applicability

This manual describes the installation, commissioning, function, operation, maintenance and deinstallation of the refrigerator / freezer.

When installing the remaining components, e.g. the photovoltaic modules, the cabling, and other accessories, be sure to observe the appropriate installation instructions provided by each manufacturer.

1.2 Users

Installation, commissioning, maintenance and deinstallation of the refrigerator / freezer may only be done by trained personnel in accordance with the applicable on-site installation regulations. The professional personnel must be familiar with this operating manual and follow the instructions contained herein.

1.3 Description of symbols




1.3.1 The structure of the warning notices

SIGNAL WORD

Type, source and consequences of the danger!

- ▶ Measures for avoiding danger

1.3.2 Danger levels in warning notices

Danger level	Probability of occurrence	Consequences resulting from non-compliance
 DANGER	imminent threat of danger	death, serious bodily injury
 WARNING	possible threat of danger	death, serious bodily injury
 CAUTION	possible threat of danger	minor bodily injury
CAUTION	possible threat of danger	property damage

1.3.3 Notes

NOTE

Note on easier and safer working habits.

- ▶ Measures for easier and safer working habits

1.3.4 Other symbols and markings

Symbol	Meaning
▶	call to action
▷	result of action
-	action description
•	list
Emphasis on issue at hand	emphasis on issue at hand

Pictogram with corresponding warning symbol

2 Safety

2.1 Dangers during installation and commissioning

The following dangers exist during installation / commissioning of the refrigerator / freezer and during operation (in case of installation errors):

- To avoid personal and material damage, the device should be unpacked and installed by two people.
- If the device is damaged, contact the supplier immediately - before connection.
- To ensure safe operation, only install and connect the device according to the information in the operating instructions.
- If a fault occurs, immediately remove power from the device. Remove the fuse and disconnect the battery or pull the power plug.
- Only allow trained personnel to perform repairs and other internal work on the device, otherwise this may result in significant danger for the users.
- Do not bring open flames or other ignition sources into the internal spaces of the device. Ensure that the cooling circuit is not damaged when transporting and cleaning the device. In case of damage, keep ignition sources away and ventilate the room well.
- This device is not intended for persons (or children) with physical, sensory, or mental disabilities, or who have inadequate experience and knowledge, unless they are instructed in the use of the device, or initially supervised, by a person responsible for their safety. Children should not be left alone with the device, to ensure that they do not play with it.
- Avoid long-term skin contact with cold surfaces or cooled / frozen products. This can lead to pain, numbness and freezing. Wear protective clothing, e.g. gloves, when longer skin contact is unavoidable.
- Do not immediately consume ice cream, especially frozen drinks and ice cubes, after removal or while they are still too cold. The low temperatures can present a "burn danger".
- Do not consume food that has been stored for too long, it can lead to food poisoning.
- The device is intended for cooling and freezing food and for the preparation of ice products. It is conceived for household use. The applicable commercial regulations must be observed when the device is used in a commercial environment.
- For lockable devices, do not store the key near to the device or within the reach of children.
- Do not store explosive substances or spray cans with inflammable materials, such as propane, butane, pentane etc., in the device. Escaping gases can be ignited by electrical components. These types of spray can be recognized by the contents printed on the can or by a flame symbol.
- Do not use electrical equipment within the device.

2.2 Exclusion of liability

The manufacturer cannot monitor the compliance to this manual as well as the conditions and methods during the installation, operation, usage and maintenance of the refrigerator / freezer. Improper installation of the system may result in damage to property and, as a result, in bodily injury.

Therefore, we assume no responsibility and liability for loss, damage or costs which result or are in any way related to incorrect installation, improper operation and incorrect use and maintenance.

Similarly, we assume no responsibility for patent right or other right infringements of third parties caused by usage of this refrigerator / freezer.

The manufacturer reserves the right to make changes to the product, technical data or assembly and operating instructions without prior notice.

- ▶ As soon as it becomes evident that safe operation is no longer possible (e.g. if there is visible damage), remove the device from the power supply immediately.

3 Disposal instructions

The packaging is made from recyclable materials.

- Corrugated cardboard / Cardboard
- Moulded polystyrene parts
- Polyethylene plastic
- Polypropylene reinforcing straps

WARNING

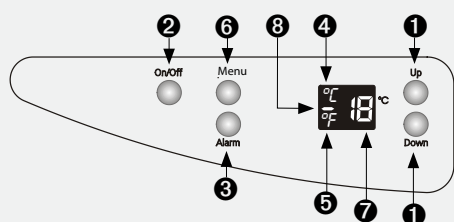
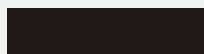
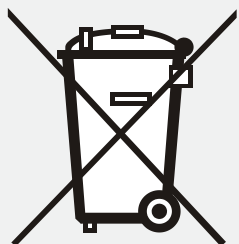
Packaging material is not a toy for children - danger of suffocation from plastic!

- ▶ Bring the packaging to an official recycling centre.

The worn out device:

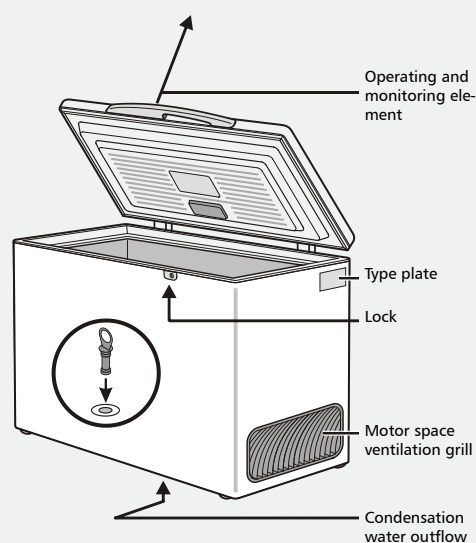
The device still contains valuable materials and is not to be disposed of in the normal household waste.

- Render worn out devices unusable. Pull the power plug, cut the power cable and make the lock unusable to prevent children from locking themselves inside.
- Ensure that the cooling circuit of the worn out device is not damaged when being transported.
- Information on the coolant used is on the type plate.
- Worn out devices must be professionally disposed of in accordance with local regulations and legislation.



4 Device and features overview

- ➊ ▶ Temperature adjustment button
- ➋ ▶ On / Off button
- ➌ ▶ Alarm off button
- ➍ ▶ Temperature display °C
- ➎ ▶ Temperature display °F
- ➏ ▶ Menu button for configuration
- ➐ ▶ Digital temperature display
- ➑ ▶ Minus display



NOTE

Be sure to close the condensation-water outflow opening in the base of the device!

- ▶ Be sure to close the condensation-water outflow opening in the base of the device using the plugs provided before commissioning the device! This is important for proper functioning of the device.



5 Installation

- Avoid installation locations in direct sunlight, or next to stoves, heating, or similar heat sources.
- The floor at the installation location should be level and flat. Install the device a sufficient distance from the wall so that the lid can open and close unhindered.
- Do not cover the gap between the lower edge of the cabinet and the floor, because the chiller must be provided with cooling air.
- The minimum clearance between the ventilation grill and the wall is 20 cm. This clearance must always be maintained and the ventilation grill must not be covered.
- Do not alter the outer cladding of the device. A minimum all-round clearance of 20 mm must be maintained to ensure adequate heat dissipation.
- According to the EN 378 standard, the installation room for the device must have a volume of 1 m³ per 8 g of R 600a coolant, so that if a leak develops in the cooling circuit no inflammable gas-air mixture can result in the installation room. Information on the coolant volume can be found on the type plate.
- Do not connect the device together with other devices using an extension cable - danger of overheating.
- Take note of the cable cross-section information in the table below when extending the power cable.

Cable sizes		12 V Cable length		24 V Cable length	
Cross-section	AWG				
mm ²	Gauge	m	ft.	m	ft.
2.5	12	2.5	8	5	16
4	12	4	13	8	26
6	10	6	19.5	12	39

6 Connection

The power type and voltage at the installation location must match the specifications on the type plate. The type plate is located on the upper right side wall of the cabinet.

WARNING

Risk of electrical shock and fire when connected to a voltage supply outside the specified range.

- ▶ The cable provided must be connected to a 12 V or 24 V DC connection at the battery or the charge controller.
- ▶ Please pay attention to the correct polarity: blue (-) and red (+).

NOTE

Energy saving

- ▶ Avoid long and unnecessary opening of the lid.
- ▶ Allow warm food to first cool to room temperature before storing it in the device.
- ▶ Defrost the device when an ice layer has formed. This improves the cooling transfer and reduces the energy consumption.



6.1 Direct connection to the battery

⚠ CAUTION

The device does not function

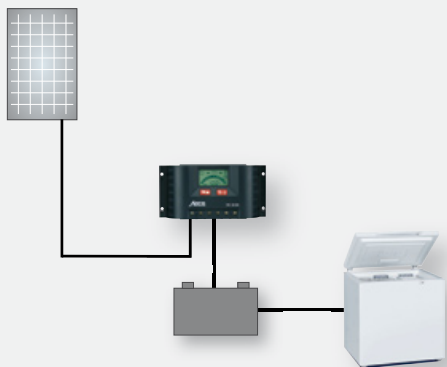
- ▶ Please pay attention to the correct polarity!

The compressor is switched off by the integrated deep discharge protection, but the control unit remains in operation. The alarm sounds when the temperature increases (see chapter 7.3).

ℹ NOTE

Connection to the battery

- ▶ Select this type of connection when you wish to give your device a high priority in the solar energy system, e.g. when you wish to cool / freeze critical products.



6.2 Connection to a charge controller with deep discharge protection

⚠ CAUTION

The device does not function

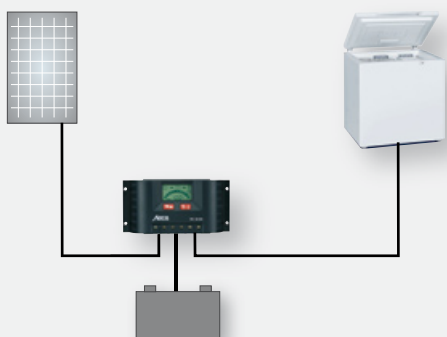
- ▶ Please pay attention to the correct polarity!

If the deep discharge protection of the charge controller completely switches off the cabinet power, then the control unit also receives no power. When the device is switched on again automatically, the integrated power outage display (see chapter 9) informs you of the internal temperature reached.

ℹ NOTE

Connection to a charge controller

- ▶ Select this type of connection when you wish to give your device the same priority as other loads in the solar energy system, e.g. when you wish to cool / freeze non-critical products.



7 Operating the device

7.1 Switching the device on / off

The device can be manually switched on or off using the **2** button (On / Off).

If the cabinet is switched off, the minus symbol **⊖** flashes to indicate that the cabinet is still connected to the power.

When the device is connected for the first time, it must be manually switched on by pressing the **2** button (On / Off).

On delivery, the device is set to cool (8 °C | 46.4 °F).

7.2 Setting the temperature

The standard internal temperature for normal operation is +8 °C | 46.4 °F. This value can be changed in the following manner.

- The desired internal temperature is set by pressing the **1** buttons (Up / Down). Pressing a button once causes the display to begin flashing. If the **1** button is pressed again while the display is flashing, each button press increases / reduces the value by 1 °C.
- If no button is pressed within a period of 5 seconds, the currently set value is adopted as the actual temperature.

ℹ NOTE

Adjustable temperature range

- ▶ In refrigerator mode, temperatures from +2 °C (36 °F) to +12 °C (54 °F) can be set, and in freezer mode, temperatures from -10 °C (14 °F) to -20 °C (-4 °F) can be set.

7.3 Temperature alarm

The temperature alarm helps to protect your cooled / frozen products and also helps to save energy.

The alarm sounds when the internal space is not cold enough. The temperature display flashes at the same time, or when too much warm air enters the cabinet while sorting, placing, or removing food.

Pressing the "ALARM" button mutes the alarm. The temperature display continues to flash until the alarm state is over.

8 Menu functions

The following functions can be set using the menu:

- The display brightness
- Temperature display in degrees Celsius or Fahrenheit
- The use of the device as a refrigerator or freezer

8.1 Setting the brightness

- ▶ Pressing the **Ⓜ** button (Menu) for 3 seconds brings you to the menu, the **°F** display (°F symbol) flashes and "b" is displayed.
- ▶ Pressing the **Ⓜ** button (Menu) again causes a "1" to appear in the display.
- ▶ The **⬆** buttons (Up / Down) allow a brightness value of 1, 2 or 3 to be selected. The higher the number, the brighter the display.
- ▶ Once the desired brightness has been set, this has to be confirmed by pressing the **Ⓜ** button (Menu).

Pressing the **Ⓜ** button (On / Off) returns you to the standard mode.

i NOTE

Energy saving

The higher the brightness, the higher the power consumption. The factory setting b1 is the power-saving mode.

8.2 Setting the display of Celsius / Fahrenheit

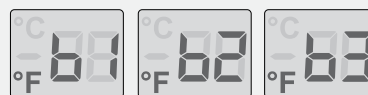
- ▶ Pressing the **Ⓜ** button (Menu) for 3 seconds brings you to the menu, the **°F** display (°F symbol) flashes and "b" is displayed.
- ▶ Pressing the **⬆** button (Up) allows you to change from "b" to **□**.
- ▶ If you now press the **Ⓜ** button (Menu) then °C appears.
- ▶ The **⬆** buttons (Up / Down) can now be used to select between °C and °F.
- ▶ Once the desired value has been set, this is confirmed by pressing the **Ⓜ** button (Menu).

Pressing the **Ⓜ** button (On / Off) returns you to the standard mode.

8.3 Setting refrigerator / freezer mode

- ▶ Pressing the **Ⓜ** button (Menu) for 3 seconds brings you to the menu, display 5 (°F symbol) flashes.
- ▶ Pressing the **⬆** button (Up) causes **□** to appear.
- ▶ Pressing the **⬆** button again causes F to appear.
- ▶ Pressing the **Ⓜ** button (Menu) again causes F **□** to display.
- ▶ The **⬆** buttons (Up / Down) can now be used to select between refrigerator F **□** and freezer F **□**.
- ▶ Once the desired value has been set, this is confirmed by pressing the **Ⓜ** button (Menu).

Pressing the **Ⓜ** button (On / Off) returns you to the standard mode.



Refrigerator

Freezer



9 Power outage display

If PS is shown in the display, this means that: A power interruption in the last hours or days has resulted in a temperature increase within the device. This can occur as a result of (e.g.) deep discharge protection (charge controller).

If you press the "Alarm" button while PS is displayed, then the display shows the highest temperature reached during the power outage. Depending on the level of warming or thawing, you should check the quality of the food and decide whether it can still be used, even when the cabinet has returned to the set temperature long after the power outage!

This highest temperature is displayed for about one minute. The electronics then display the actual cooling / freezing temperature once more.

10 Notes on freezing and storage

- Store the same types of cooled / frozen products together.
- **The following products are suitable for freezing:** meat, game, poultry, fresh fish, vegetables, fruit, dairy products, bread, cakes and pastries, convenience food.
- **The following products are not suitable for freezing:** Cabbage or lettuce, radishes, grapes, whole apples and pears, fatty meat.
- Always pack food that you freeze yourself in household-sized portions. To ensure that the products quickly freeze to the core, the following quantities per package should not be exceeded: Fruit and vegetables up to 1 kg, meat up to 2.5 kg.
- Blanch vegetables after washing and portioning (place in boiling water for 2-3 minutes, then remove and rapidly cool in cold water).
- Do not salt or season fresh food and blanched vegetables before freezing. Other food should only be lightly salt and seasoned. Seasoning changes the taste intensity.
- Commonly available freezer bags and reusable plastic, metal, and aluminium containers can be used for packaging.
- Do not allow unfrozen food to come into contact with already frozen food. Always store dry packages to ensure that they do not freeze together.
- Always label the packaging with date and contents and never exceed the recommended maximum storage time of the frozen products.
- Do not freeze bottles and cans containing carbonated liquids. They may burst.
- Only thaw the quantity that you currently actually require. Prepare thawed

food as quickly as possible for consumption.

11 Features

11.1 Baskets

The baskets make sorting easier. The upper baskets can be hung by the handle on the cabinet frame. The lower baskets stand on the floor of the device or on the inwardly pivoted handles of the lower baskets. Press the handle down, then lift and pivot inwards. Simply grasp the handle from above to remove the lower baskets.

11.2 Lock

The device has a lock and 2 keys are provided.

11.3 Freezer tray (depending on features)

Depending on the model, the partition wall between the pre-freezing and storage area consists of two freezer trays. When placed above each other they fit below the hanging basket in the pre-freezing area.

The freezer tray allows you to gently freeze fruit (e.g. berries, fruit pieces), herbs and vegetables for garnishing. Loosely distribute the cooled / frozen products on the freezer tray (the fruit do not stick together and largely retain their original form). Allow to freeze for 10 to 12 hours, then pack into freezer bags or containers and store in a basket.

You can also use the trays as partition walls. This allows you to create two different temperature zones. The freezer trays can also be used to catch condensation water.

11.4 Cold battery (depending on features)

The cold batteries provided prevent a rapid temperature increase inside the device in the case of a power outage – the quality of the food is retained for longer.

To ensure fastest possible freezing of the batteries when power is restored, these should be placed in direct contact with the internal walls and floor of the device. Once the batteries are fully frozen, they should be placed in the uppermost region of the internal storage. Use the freezer tray provided, which can be positioned in the upper row of baskets together with the battery.

12 StopFrost system

The device has a new StopFrost system. This system significantly reduces the build up of frost and ice so that defrosting is seldom necessary.

The lid can also be immediately reopened after filling the device with cooled / frozen products, since the StopFrost system provides immediate pressure compensation once the lid is closed.

Function: A connection is made between the internal and external environments via a dry cartridge foamed into the device lid.

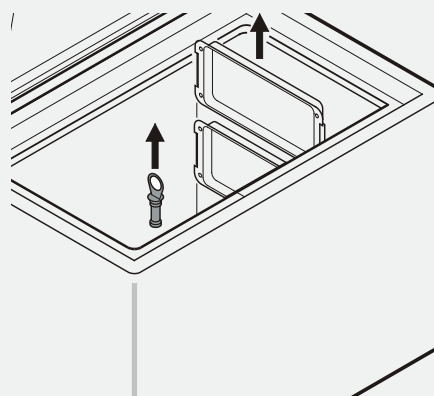
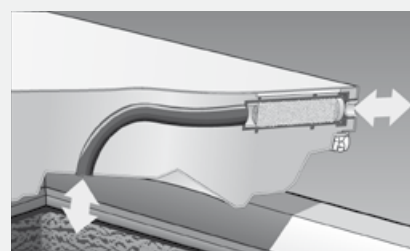
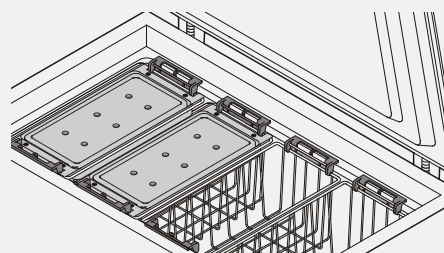
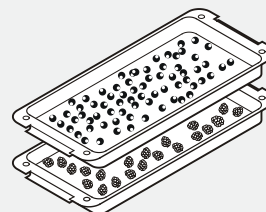
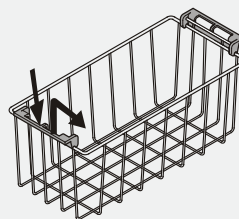
In normal devices, moist air is sucked in via the lid seals during the cooling phase, which leads to the formation of frost and ice over time.

This moisture is taken in by the StopFrost system so that only dry air remains in the inner compartment. During pauses in the cooling process, the dry air flows outside once more, thus drying the dry cartridge.

13 Defrosting

Over longer operating periods, a layer of frost and / or ice forms on the inner walls. This increases the energy consumption. Regular defrosting should be done for this reason.

- Switch off the device for defrosting. Remove the fuse and disconnect the battery or pull the power plug.
- Wrap the cooled / frozen goods in paper or blankets and store them in the baskets in a cool place.
- Pull the condensation water plugs from the outflow opening. Remove the partition wall or freezer tray and place it underneath the device so that the condensation water flows through the outflow opening and into the partition wall or freezer tray.



- Leave the cabinet lid open during the defrosting process. Mop up any remaining condensation water with a cloth and clean the device.

Never use a mechanical device or any other artificial aid for defrosting, other than those recommended by the manufacturer.

14 Cleaning

Always switch the device off before cleaning. Remove the fuse and disconnect the battery or pull the power plug.

Clean the inner compartment, accessories, and outer walls with warm water and a small amount of detergent. Never use cleaning agents containing sand or acidic chemical solvents.

CAUTION

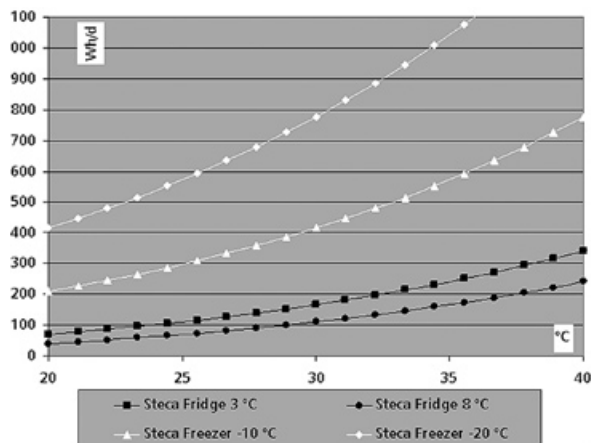
Danger of damage and personal injury.

- ▶ Do not use steam cleaning devices!

-
- Ensure that no cleaning water penetrates into the electrical components or the ventilation grill.
 - Thoroughly dry everything with a cloth.
 - The inlet and exhaust grills must be regularly cleaned. Dust deposits increase the energy consumption. Ensure that no cables or other components are torn off or damaged.

17 Technical data

Steca PF166		
System voltage	12 V	24 V
Energy efficiency class	A++	
Cooling method	compressor	
Energy optimized speed control	yes	
Full digital and electronic control system	yes	
Configurable	yes	
Usable cooling volume	166 liters 5,9 ft ³	
Input voltage range	10 V to 17 V	17 V to 31.5 V
Deep discharge protection	10.4 V	22.8 V
Automatic switch-on threshold	11.7 V	24.2 V
Maximum power consumption	40 - 100 W	
Recommended fuses	15 A	7.5 A
Refrigerator or freezer function	adjustable	
Adjustable internal temperature	yes	
Refrigerator temperature range	2 °C 35.6 °F – 12 °C 53.6 °F	
Freezer temperature range	-20 °C -4 °F – -10 °C 14 °F	
Ambient temperature range	10 °C 50 °F – 43 °C 109 °F	
Display	digital temperature display in lid	
Hanging baskets	2	
Freezer trays	3	
Lock	yes	
Cold battery	1	
Celsius / Fahrenheit temperature display	adjustable	
Display brightness	adjustable	
Automatic energy-saving mode	yes	
External dimensions H x W x D	91.7 x 87.2 x 70.9 cm 36.1 x 34.33 x 27.91 inches	
Weight	61 kg 134 lbs	





722649