

SC112G

SERENE Four Glass Sided Fridge

Type: HSC112A/Z089



serene®

from SKOPE

SC112G
SERENE Four Glass Sided Fridge
Type: HSC112A/Z089
Service Manual

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1 Specifications

SC112G Description: SERENE Four Glass Sided Fridge
Type: HSC112A/Z089

Table 1: SC112G specifications

Dimensions		
	<i>External</i>	<i>Internal</i>
<i>Height</i>	1080 to 1095 mm	740 mm
<i>Width</i>	470 mm	340 mm
<i>Depth</i>	470 mm	350 mm
<i>Floor area</i>	0.22 m ²	
Refrigeration system	Bottom-mounted, integral, electronically controlled refrigeration system	
Electronic controller	CAREL S4	
Refrigerant	R134a/135 g	
Operating temperature range	+1°C to +7°C	
Tested climate	25°C @ 60% relative humidity (climatic class 3)	
Electrical	220-240 volts a.c. 50 Hz, single phase supply, 1.2 amps	
Nominal capacity	235 watts (@ -15°C SST) CECOMAF rating condition	
Sign lighting	Bottom sign: 2 × horizontal LED lights (total 2 W)	
Internal lighting	4 × vertical corner LED lights (total 8 W)	
Doors	2 × double-glazed, single low-e, lockable, toughened glass swing doors (right hand hinged)	
Shelves	3 × adjustable height wire shelves (351 mm × 357 mm)	
Internal volume	109 litres	
Total weight	52 kg	

Tools required for servicing may consist of the following:

- Screwdriver with Pozidriv PZ1 and PZ2 bit
- Small slotted screwdriver (for electrical connectors)

2 Electronic Controller

Electronic Controller Operations

Overview The SC112G fridge is fitted with a CAREL S4 electronic controller. The electronic controller is visible on the front panel and is housed inside the controller box at the front of the refrigeration system.

The electronic controller controls and displays the fridge temperature and signals temperature alarms. It uses two temperature probes within the refrigeration system to collect data, and runs the fridge accordingly.

The electronic controller is pre-programmed; SKOPE does not recommend changing the settings unless it is absolutely necessary. To ensure efficient operation, the electronic controller automatically forces a defrost cycle when required.

IMPORTANT

The electronic controller must only be adjusted by an authorised service agent.



Figure 1: CAREL S4 electronic controller

Faceplate Because the electronic controller plays such an important role, it's helpful to know the parts of the faceplate you may use.

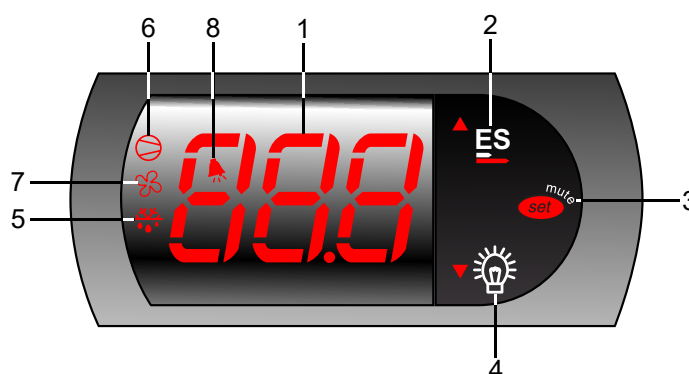


Table 2: Controller faceplate

No.	Item	Description
1		Digital display of cabinet temperature or messages. The temperature is what the sensor inside the fridge detects, and not necessarily the product temperature. However, they may be very close depending on how the controller is set to sense temperature.
2		Energy Save (up): Press to view the current mode. “EnS” = Energy Saving and “nor” = Normal. Press and hold for 3 seconds to switch the fridge between “Energy Save” and “Normal” mode.
3		Set (mute): Press to mute the alarm. Press and hold to access the parameters.
4		Light (down): Press and hold to switch the cabinet lights on and off.
5		Defrost: ON when the defrost is activated. Flashes when the activation of the defrost is temporarily delayed due to procedures in progress.
6		Compressor: ON when the compressor and condenser fan starts. Flashes when activation of the compressor is temporarily delayed.
7		Fan: ON when the internal cabinet fans are activated. Flashes when activation of the fans is temporarily delayed.
8		Alarm: ON when alarm is signalled.

Running the Fridge

- Operating Modes** The electronic controller will automatically switch the fridge between Normal and Energy Saving modes depending on use. If the front door (on the electronic controller side) is not opened for four hours, the fridge will automatically enter Energy Saving mode and the sign and interior lights will switch off. To manually switch the fridge between Normal and Energy Saving modes, press and hold the Energy Save (up) button on the electronic controller faceplate. The fridge can also be brought into Normal mode by holding the front door (on the electronic controller side) open for up to ten seconds.
- Compressor** The compressor cycles on and off during Normal and Energy Saving modes. It does not run when the fridge is in Defrost mode. If the electronic controller displays "Err" there is a fault within the refrigeration system and the compressor will not run.
- Evaporator Fan** The evaporator fan starts a few minutes after the fridge is turned on and runs continuously while the compressor is running or during Defrost mode, and cycles on and off while the compressor is off. It stops when the front door is open or if the electronic controller displays "Err", indicating a fault within the refrigeration system.
- Condenser Fan** The condenser fan runs continuously when the fridge is on except if the electronic controller displays "Err", indicating a fault within the refrigeration system.
- Temperature Probes** Two temperature probes feed data to the electronic controller – the control probe and the evaporator probe. The control probe controls the fridge temperature, provides the fridge temperature for the electronic controller to display, and notifies the electronic controller of any erratic or abnormal temperatures that could identify a problem within the refrigeration system. The evaporator probe controls the refrigeration system defrost start and finish.
- Door Switch** The fridge is fitted with a door switch below the front door (on the electronic controller side). A small magnet in the door frame activates the switch. The door switch tells the electronic controller to turn off the evaporator fan motor (i.e. if door opened) during normal run operation, start Energy Saving mode if the door is not opened for four hours and to reactivate Normal mode if the door is opened for a period of time during Night mode.
- Defrost Cycle** The first automatic defrost occurs 3 hours after the fridge is switched on. During the defrost cycle the compressor stops and the evaporator fan runs continuously. The defrost cycle will stop when the evaporator probe reaches $\geq 4^{\circ}\text{C}$ or after the defrost cycle has been running for 20 minutes.
- Lighting** The fridge is fitted with bottom sign lights and interior pillar lights. The lights will come on when the fridge is first plugged in. When in Normal mode the sign and interior lights are on. When in Energy Saving mode the sign and interior lights are off. Press the Light button on the electronic controller faceplate to manually switch the sign and interior lights on and off (see page 7).

Messages and Alarms

Controller Display The following table explains messages that the electronic controller displays and related alarms. Alarms signal unexpected operational changes in the fridge and can be muted by pressing the Alarm Mute (up) button on the electronic controller faceplate (see page 7).

Table 3: Controller display

Display	Description
20	The fridge is in Normal mode and the electronic controller displays the fridge temperature.
E n5	The fridge is in Energy Saving mode. When in Energy Saving mode the temperature inside the fridge is moderated and the cabinet lights turn off. You can switch the lights on and off by pressing the light button on the controller faceplate, and switch the fridge into Normal mode by pressing the Energy Saving button on the electronic controller faceplate.
door	The front door has remained open for over two minutes. An alarm sounds, and the compressor and evaporator fan turn off.
E0	Control probe fault.
E1	Evaporator probe fault.
E3	There is a refrigeration system error and the controller turns the fridge off to avoid damage. An alarm sounds, and the compressor and evaporator fan turn off.

Programming the Electronic Controller





Parameters The parameter configuration program is set by SKOPE at the factory. A label on the controller box indicates the parameter configuration program number (e.g. the SC112G fridge uses program 088).

The electronic controller parameters can be modified using the keypad. Access to the parameters is protected by a password to prevent accidental or unauthorised modifications. Only an authorised service agent should modify the parameters.

Procedure 1: To access the parameters

1. Press and hold the **Set (mute)** button for 5 seconds until the display shows **PS** (password).
2. Press the **Set (mute)** button. The display shows **0**.
3. Use the **ES (up)** and **Light (down)** buttons to select password **22** (default password).
4. Press the **Set (mute)** button to confirm the password. The display shows **PS**.
5. Use the **ES (up)** and **Light (down)** buttons to scroll the parameter codes and locate the required parameter.

You can identify parameter categories by the initial symbol or letter of the code, and the icon displayed on the electronic controller faceplate:

Category	Initial	Icon
Probe parameters	/	—
Control parameters	r	—
Compressor parameters	c	
Defrost parameters	d	
Alarm parameters	A	
Fan parameters	F	

6. Press the **Set (mute)** button to display the value associated with the parameter code.
7. Use the **ES (up)** and **Light (down)** buttons to increase or decrease the value of the parameter.
8. Press the **Set (mute)** button to temporarily save the new value. The display shows the parameter code.

Note: If no buttons are pressed for 60 seconds or the power is disconnected before the temporarily saved values are permanently saved, the temporarily saved values will be cancelled and the previous setting will be restored.

9. If necessary, repeat steps 5 to 9 to change other parameters as required.
10. Press and hold the **Set (mute)** button for 3 seconds to permanently save the parameters and exit the parameter menu.

Parameter list – SC112G program 088



Electronic Controller Parameter Sheet

This sheet is only for use in SKOPE product(s) **SC112G**Controller Type **SKOPE S4**Controller Model & Revision **PZSKCOH001K (Rev 1.211)**SKOPE Part Number **ELZ11042-088****088**

Revision: 1.3

Full List

SET0

CPS1016-088-SET0

Last Revised on

2 July 2015

Parameter	Setting	Unit	Access Level	Range		Description of Parameter
				Min	Max	
Probe Parameters						
PS	22	-	F	0	200	Password
/2	4	-	C	1	15	Probe measurement stability
/4	1	-	C	1	3	Select probe displayed
/5	0	-	C	0	1	Select °C/°F (0 = °C, 1 = °F)
/6	0	-	C	0	1	Disable decimal point
/C1	3.5	°C/°F	C	-12.7°C	12.7°C	Probe 1 off set
/C2	0.0	°C/°F	C	-12.7°C	12.7°C	Probe 2 off set
Control Parameters						
St	2.0	°C/°F	F	r1	r2	Set point
rd	3.0	°C/°F	C	0.0°C	19°C	DAY differential
r1	0.0	°C/°F	C	-50.0°C	r2	Minimum set point value
r2	4.0	°C/°F	C	r1	150°C	Maximum set point value
r4	1.0	°C/°F	C	1°C	50°C	Night Mode set point delta
r5	4.0	°C/°F	C	0°C	19.0°C	Night differential
r6	90	hrs	F	0	90	Automatic Day to Night Mode: Time Period with Door Closed
r7	1	hrs	F	1	90	Automatic Night to Day Mode: Time Period in Night mode
r8	10	sec	C	0	90	Time allowed for door closure after entering Night mode via keypad
CCt	2.0	°C/°F	H	0.1°C	20.0°C	CCP Mode: Temperature Delta
CCd	30	min	H	0	199	CCP Mode: delay
Compressor Parameters						
c0	2	min	C	0	200	Compressor start delay on power-up
c1	6	min	C	0	100	Minimum time between consecutive compressor starts
c2	5	min	C	0	100	Minimum compressor off time
c3	0	min	C	0	100	Minimum compressor on time
c4	20	min	C	0	100	Compressor on time with duty setting
Defrost Parameters						
d0	1	-	C	0	2	Type of defrost
d1	3	hrs	C	0	199	Compressor Runtime between Defrosts
dt	8.0	°C/°F	C	-50.0°C	127°C	Defrost Termination Temperature
dP	60	min	C	1	199	Maximum defrost duration
d4	0	-	C	0	1	Defrost when switching the instrument on (0:no 1:yes)
d5	0	min	C	0	199	Defrost delay on power-up (when d4=1)
d6	1	-	C	0	1	Freeze temperature display during defrost
dd	3	min	C	0	15	Dripping time
d8	0	hrs	C	0	15	Bypass high and low temperature alarms (AH,AL) after defrost
d9	0	-	C	0	1	Defrost priority over compressor protectors
d/	-	°C/°F	C	-	-	Defrost probe reading
d10	-10.0	°C/°F	C	-50.0°C	127°C	Start defrost condition: evaporator temperature threshold
d11	127	°C/°F	C	-50.0°C	127°C	Enabling defrost condition: Control probe threshold
d12	30	min	C	A10	200	No Downward Tendency Defrost - Start Delay
d20	3	min	H	0	200	Sample time of Tendency evaluation (minutes)
d21	1	-	H	1	5	Number of allowed defrost before RSF alarm
d22	0.1	°C/°F	H	1.0°C	5.0°C	Temperature gap of Tendency evaluation (°C/°F)
Alarm Parameters						
A0	2.0	°C/°F	C	-20°C	20°C	Temperature Alarm Differential
AL	0.0	°C/°F	C	-50°C	150°C	Low Temperature Alarm Setpoint. (Absolute if A0≤0, relative A0>0)
AH	0.0	°C/°F	C	-50°C	150°C	High Temperature Alarm Setpoint. (Absolute if A0≤0, relative A0>0)
Ad	0	min	C	0	199	Temperature Alarm Delay
A10	2	min	C	0	10	Open Door Alarm Delay
Fan Parameters						
F0	3	sec	C	1	100	Start delay when FAN ON is required by the Regulation
Fd0	100	min	C	1	100	Fan DAY Duty Cycle : ON time
FdF	1	min	C	1	100	Fan DAY Duty Cycle : OFF time
Fn0	100	min	C	1	100	Fan NIGHT Duty Cycle : ON time
FnF	1	min	C	1	100	Fan NIGHT Duty Cycle : OFF time
Configuration Parameters						
H0	1	-	C	0	207	Supervisor Serial address
H4	0	-	C	0	1	Disable buzzer
H5	88	-	C	0	199	ID code (read-only)

Warning:

1. Only make program modifications with reference to relevant Operating Manual.
2. This parameter sheet is exclusively for SKOPE refrigeration systems with its dedicated Carel controller.
3. Any alteration from this program may adversely affect the SKOPE Refrigeration System operation.
4. Specification may change without notice. Please check with Skope Customer Service for latest version.

3 Replacement Procedures

Shelves

Adjusting the Shelves The fridge is supplied with three wire shelves which may be positioned at different heights to suit various products. Each shelf is held in place with four shelf clips which engage in the corner shelf support strips.

Procedure 2: To adjust the cabinet shelves

1. Remove the shelves from the fridge.
 2. Remove the shelf clips from the four shelf support strips at each corner of the fridge interior.
 3. Securely engage a shelf clip in each of the shelf support strips at the required height.
 4. Sit the shelves onto the shelf support clips.
-

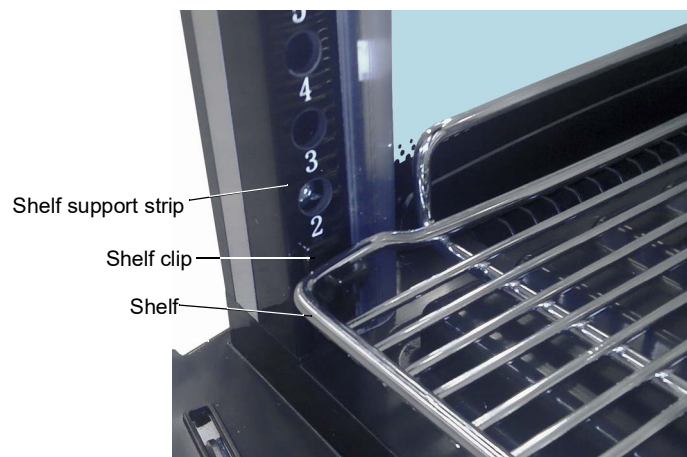


Figure 2: Shelf detail

Lights

The fridge is lit by four interior pillar lights and two bottom sign lights. All lights are powered by a 12Vdc LED power supply located within the refrigeration system (see page 16). If one or several individual light/s fail on a light strip, the remaining lights will still receive power and should work. If an LED strip is damaged (and the circuit is broken) no lights will go (including the sign lights). If all of the lights are off, check operation via the light switch on the electronic controller (see page 8) before replacing LED strip lighting.

Interior Lights The cabinet interior is lit by four vertical corner pillar LED lights. Each corner pillar light is made up of two LED strip lights (see page 31 for spare parts).

Procedure 3: To replace a single LED interior light strip

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
 2. Remove the shelves from the fridge.
-

3. Access the fridge interior via the appropriate door and unclip the diffuser to expose the failed LED light strip.



4. Unplug the failed LED strip and unscrew from the pillar to remove.



5. Fit the new light and plug it into the circuit.
 6. Refit the diffuser and the shelves.
 7. Test the cabinet for correct operation.
-

Bottom Sign Lights The fridge has two bottom lit signs, one at the front and one at the back. Each sign is lit by one LED strip light (see page 31 for spare parts).

Procedure 4: To replace a bottom sign light

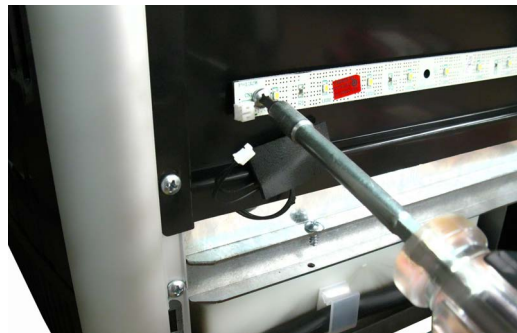
1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.

2. Remove the lower bottom panel by undoing the three fixing screws.

3. Remove the sign panel and decal from the sign.



4. Unplug and unclip the LED strip light, and remove from the fridge.



5. Fit the new light and plug it into the circuit.
6. Reassemble the cabinet and test for correct operation.

Doors

The fridge is fitted with a front and back door. The front door is on the electronic controller side and is fitted with a door switch to monitor door openings. The front door should be directed towards the customer. The rear door is not fitted with a door switch and should face away from the customer. It is used for restocking product.

Replacing Door Gasket The one-piece door gasket clips into the door frame and runs around the perimeter of the door. You can remove the gasket by peeling it from the door frame, starting at a corner.

If the gasket is out of shape after you fit it, use a hair dryer to heat and reshape it.



Figure 3: Door gasket

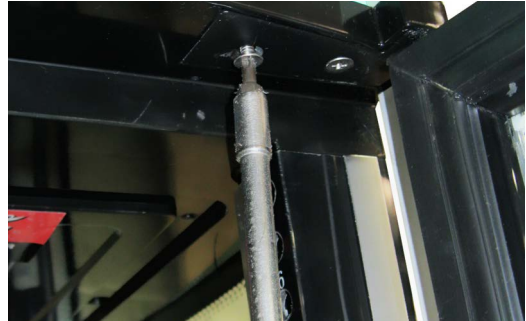
Removing and Fitting Doors

For ease of servicing the doors can be removed from the fridge.

Procedure 5: To remove a door

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.

2. Detach the top hinge from the cabinet by opening the door and undoing the two fixing screws.



3. Lift the door up and off the cabinet.

Procedure 6: To refit a door

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.

2. Use a flat hex spanner or strong 2 mm steel pin to rotate the capstan about half a turn in the direction of door closing.



3. While holding the tension with the spanner, slot the capstan into the hole on the bottom of the door opening and lock in place.

4. Reattach the top hinge and fix in place with two fixing screws.

5. Check the tension.

Adjusting Door Tension

Each glass door has an internal torsion bar, pretensioned at the factory, that lets the door self-close. If necessary, the torsion can be adjusted by rotating the capstan mounted at the bottom of the door.

Procedure 7: To adjust the door tension

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Remove door from the cabinet (see Procedure 5).
3. Refit door to cabinet (see Procedure 6) adjusting the tension via the capstan as necessary.

Refrigeration System

The SC112G refrigeration system is a bottom-mounted, electronically controlled serviceable system. It is made up of three levels each containing specific parts and assemblies. Specifications for the refrigeration system are in the following table. Verify basic requirements before servicing.

Table 4: Refrigeration system specifications

Compressor	ACC GY66AA
Compressor capacity	235 Watts (@ -15°C SST) CECOMAF rating condition
Refrigerant	R134a
Charge	135g

Refrigeration Cartridge Assembly

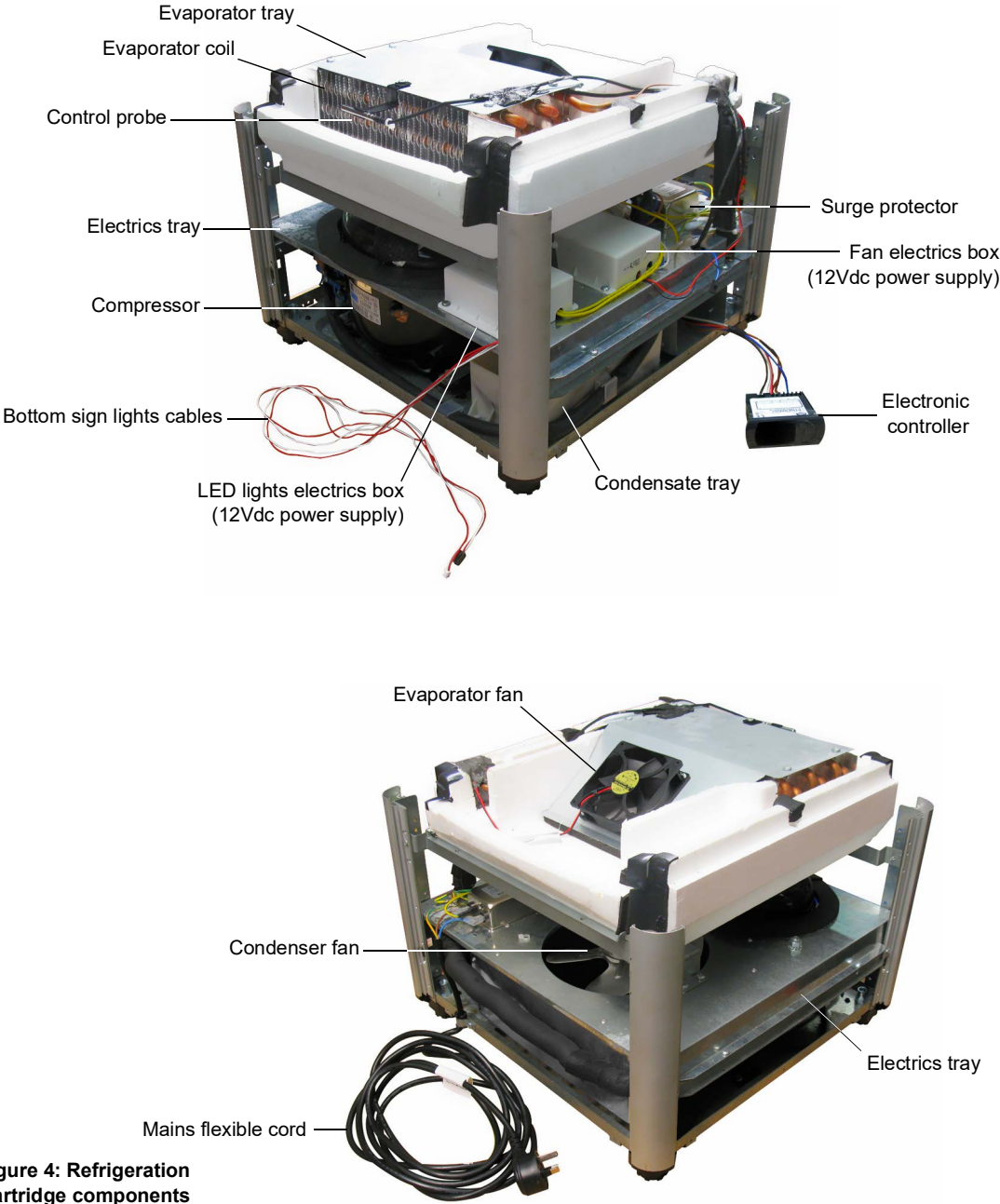


Figure 4: Refrigeration cartridge components

Refrigeration System Access

The following instructions explain how to access the refrigeration system. Servicing can be completed by separating the top cabinet assembly from the bottom refrigeration system.

Procedure 8: To access the refrigeration system

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.

2. Remove the front and back lower bottom panels by undoing the three fixing screws and sliding them down.



3. Remove the sign panel and decal from the sign.

4. Remove the side lower bottom panels by undoing the three fixing screws and sliding the panels down.



5. Unclip the upper bottom panels.

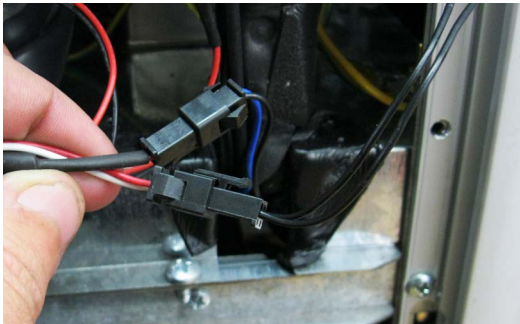
6. Remove the front and back light panels by undoing the fixing screws.



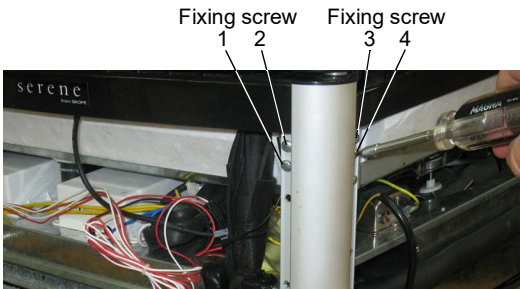
7. Unplug the light panels.

Procedure 8: To access the refrigeration system (continued)

8. Unplug the two plugs from the front of the cabinet above the electronic controller.



9. Detach the top part of the fridge by undoing the top four screws from each refrigeration system pillar support bracket (16 screws in total).



10. Lift the top cabinet assembly from the bottom refrigeration system. It may be necessary for a second person to hold the bottom refrigeration system while separating.

Refrigeration System Dismantling

The refrigeration system is made up of three layers, each containing specific components and parts as detailed in the table below:

Table 5: Refrigeration system layers

Level	Components and parts
1 (bottom)	Compressor, compressor electrics, condensate tray, condenser coil.
2 (middle)	Condenser fan, fan motor power supply electrics, LED light power supply electrics, surge protector.
3 (top)	Evaporator fan, evaporator coil.

Follow the instructions below to dismantle the refrigeration system and access different levels.

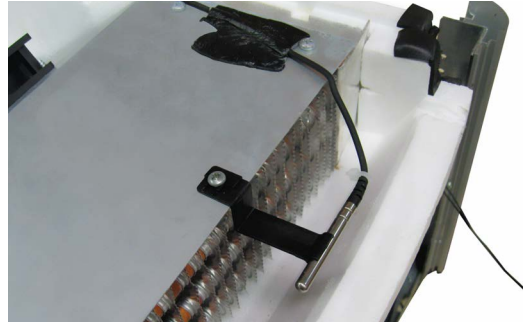
Procedure 9: To dismantle the refrigeration system

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the from the bottom refrigeration system to access the refrigeration system (see Procedure 8 on page 17).

You can now access the components on level three.

Procedure 9: To dismantle the refrigeration system (continued)

3. Unclip and detach the control probe and cable from the evaporator shroud.

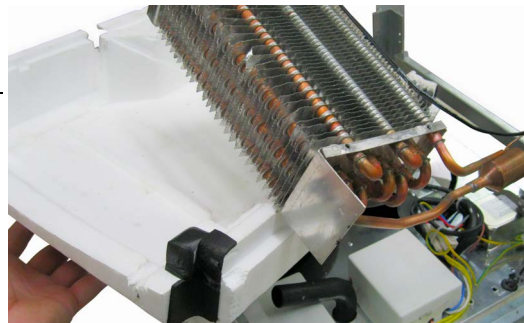


4. Detach the evaporator shroud by undoing the four fixing screws. Place aside.



5. Free all pipes and cables from the putty on the evaporator tray edge.

6. Detach the drain pipe from the bottom of the evaporator tray, and carefully pivot the evaporator tray out from under the evaporator coil.



7. Place the tray aside.

You can now access the components on level two.

6. Remove the two horizontal struts from the sides of the refrigeration system by undoing the two fixing screws from each strut.

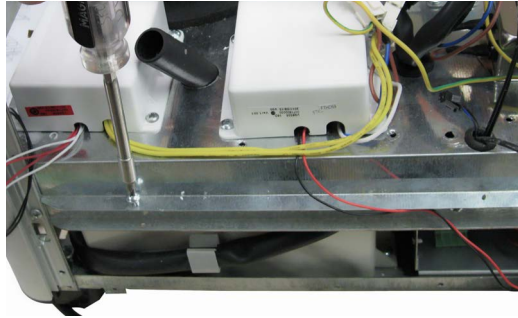


7. Detach the mains flexible cord from the base of the assembly by undoing the mains flexible cord bracket fixing screw.



Procedure 9: To dismantle the refrigeration system (continued)

8. Undo the eight fixing screws (two on each edge) and detach the electrics tray from the assembly.



9. Partially lift the electrics tray and hold the capacitor to detach the compressor capacitor from the electrics tray.



10. Tilt electrics tray up and support with a block.



You can now access the components on level one.

Evaporator Fan The evaporator fan is located on level three (the top) of the refrigeration system. It is mounted on the evaporator shroud, on top of the evaporator tray. The complete fan (motor and blade) is replaced as one part.

Procedure 10: To replace the evaporator fan

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level three of the refrigeration system (see Procedure 9 on page 18).

4. Detach the fan electrics box, trace evaporator fan cable to the fan electrics box and unplug it.



Procedure 10: To replace the evaporator fan (continued)

5. Detach the failed evaporator fan from the evaporator shroud by undoing the four fixing screws.



6. Fit the new fan, ensuring the cables follow the original path.

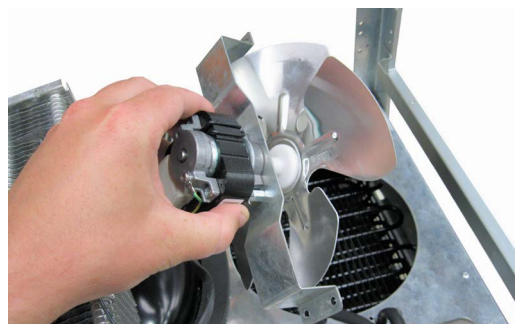
7. Reassemble the cabinet and test for correct operation.

Condenser Fan The condenser fan is located on level two (the middle) of the refrigeration system. It is mounted on the electrics tray. The fan blade and fan motor can be replaced as individually as necessary.

Procedure 11: To replace the condenser fan blade and condenser fan motor

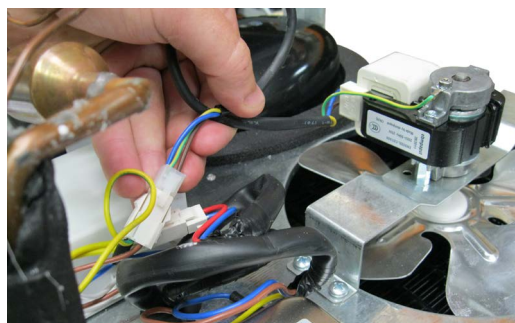
1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level two of the refrigeration system (see Procedure 9 on page 18).

4. Detach the condenser fan assembly by undoing the four fixing screws from condenser fan bracket.



5. Remove the fan blade by undoing the fixing nut. Either:
 - Replace the fan blade, or
 - Continue following the steps to replace the fan motor.

6. Trace the condenser fan cable to its connector plug and unplug the condenser fan, cutting the cable ties if necessary.

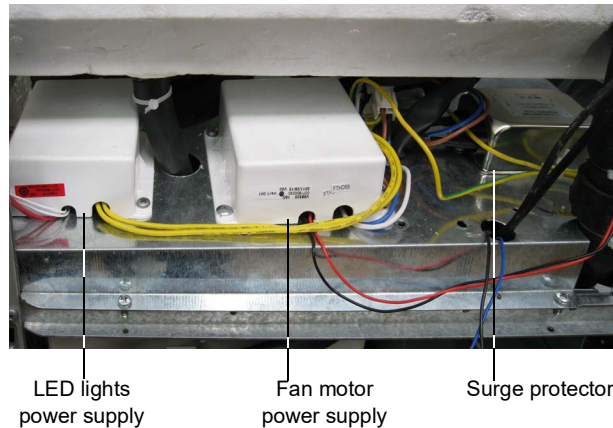


7. Detach the condenser fan motor by undoing the two nuts on the underside of the condenser fan baffle.
8. Fit the new condenser fan motor, ensuring the cables follow the original path and are cable-tied in place.
9. Reassemble the cabinet and test for correct operation.

Power Supply and Surge Protector

The evaporator and condenser fan motor power supply, the sign and interior LED lights power supply, and the surge protector are located on level two (the middle) of the refrigeration system. Parts within each power supply cannot be replaced individually. If a power supply has failed, you must replace the assembly.

Figure 5: Fan and light power supply, and surge protector



Procedure 12: To access the power supplies

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level two of the refrigeration system (see Procedure 9 on page 18).
4. Service as necessary.
5. Reassemble the cabinet and test for correct operation.

Compressor

The compressor is located on the bottom layer (level one) of the refrigeration system. If the compressor is causing excessive noise, check the mountings to ensure there is no damage to the rubber, or the washers, nuts and screws.

Before replacing the compressor, check all plugs and connections and ensure that the compressor electrics are operating correctly (see below). The compressor must be supplied with consistent voltage over 220 volts. Ensure that the voltage does not drop at start-up. If the voltage does drop, ensure the refrigeration system has a direct power supply (not from a multi-box or extension cord).

Procedure 13: To access the compressor

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level one of the refrigeration system (see Procedure 9 on page 18).
4. Service as necessary.
5. Reassemble the cabinet and test for correct operation.

Compressor Electrics The compressor electrics are located on the side of the compressor and include the start capacitor, motor protector and run capacitor. The complete assembly is supplied as a spare part if required.

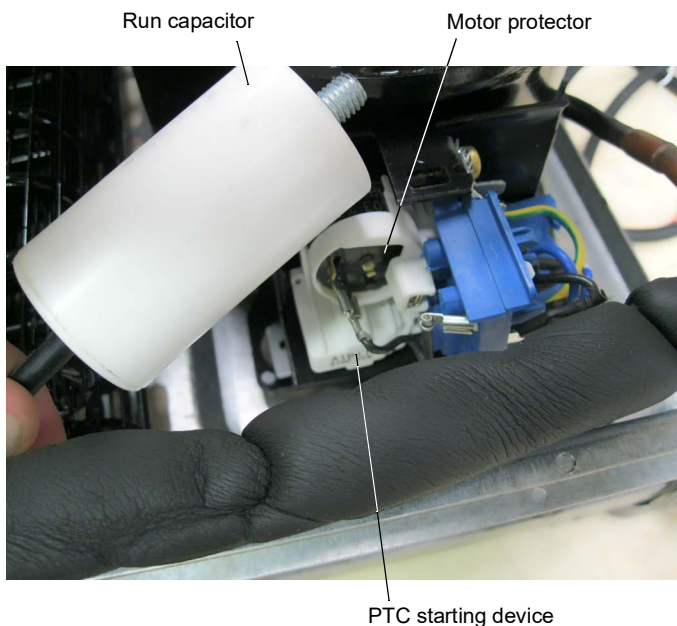


Figure 6: Compressor electrics

Procedure 14: To access the compressor electrics

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level one of the refrigeration system (see Procedure 9 on page 18).

4. Lever the compressor electrics cover off with a slotted screwdriver.



5. Service as necessary.
6. Reassemble the cabinet and test for correct operation.

Electronic Controller

Electronic Controller Assembly

The electronic controller is located at the front of the fridge behind the lower bottom panel and is visible from the front of the fridge. For information on operation and programming, see “Electronic Controller” on page 6.

Procedure 15: To access the electronic controller terminals

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.

2. Remove the front lower bottom panel by undoing the three fixing screws and sliding it down.

You can now access the terminals at the rear of the electronic controller



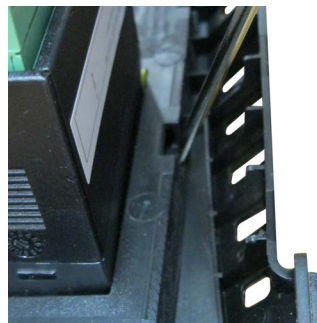
Procedure 16: To remove the electronic controller terminals

1. Follow Procedure 15 above to access the rear of the electronic controller.
2. Unplug the terminals from the rear of the controller.

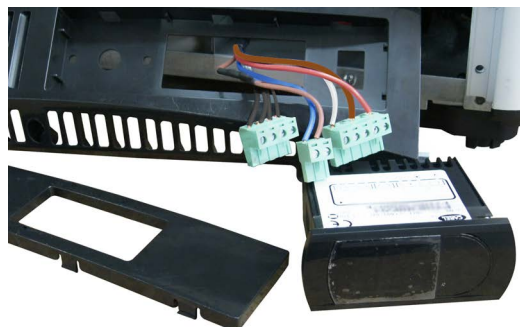
3. Detach the electronic controller from its housing by pressing in the yellow tabs and sliding the tabs off.



4. Gently lever the front panel controller insert from the front lower bottom panel with a small slotted screwdriver.

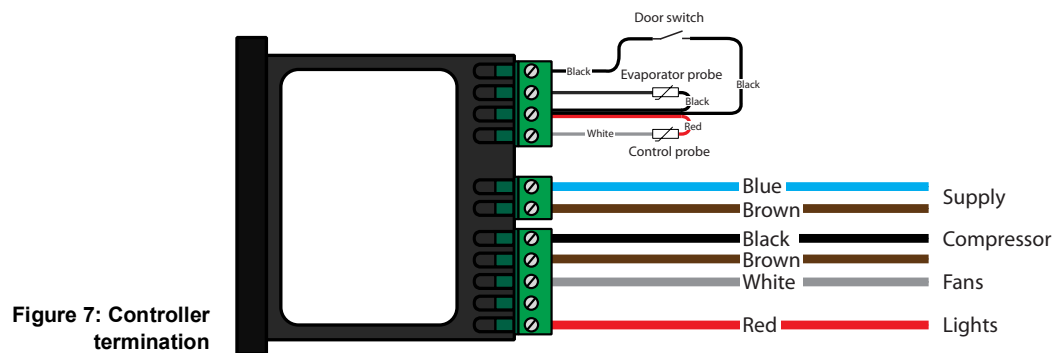


5. Pull the electronic controller through the front lower bottom panel to remove it.



Controller Terminals

Refer to Figure 7 below for controller termination details.

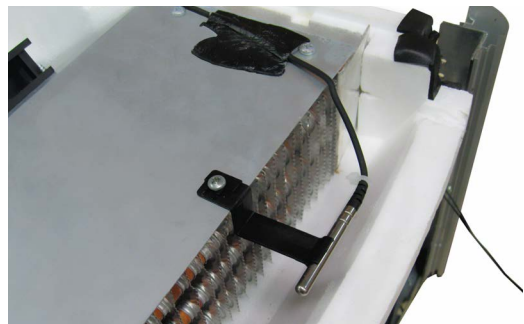


Control Probe The control probe is attached to a bracket on the evaporator shroud and plugs into the rear of the electronic controller.

Procedure 17: To replace the control probe

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level three of the refrigeration system (see Procedure 9 on page 18).
4. Gain access to the terminals at the rear of the electronic controller (see Procedure 15 on page 24).

5. Unclip and detach the control probe and cable from the evaporator shroud.



6. Trace the cable back to the terminals at the rear of the electronic controller and detach it.
7. Attach the new control probe cable to the terminals at the rear of the electronic controller and fit the cable following the same path as the original probe cable.
8. Clip the probe into the bracket on the evaporator shroud.
9. Reassemble the cabinet and test for correct operation.

Evaporator Probe The evaporator probe is located inside the evaporator coil and plugs into the rear of the electronic controller.

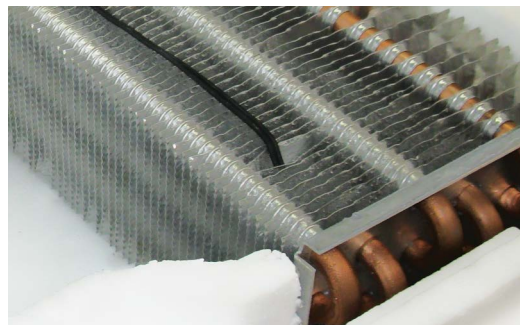
Procedure 18: To replace the evaporator probe

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
2. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
3. Gain access to level three of the refrigeration system (see Procedure 9 on page 18).
4. Gain access to the terminals at the rear of the electronic controller (see Procedure 15 on page 24).
5. Unclip and detach the control probe and cable from the evaporator shroud (see step 5 in Procedure 17 on page 25).

6. Detach the evaporator shroud by undoing the four fixing screws. Place aside.

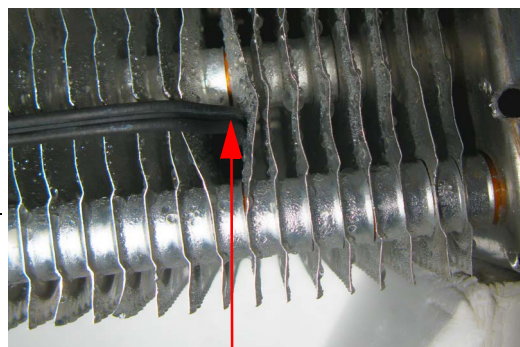


7. Pull the probe from the evaporator coil and trace the probe cable back to the terminals at the rear of the electronic controller.



8. Unplug the cable from the controller.

9. Attach the new evaporator probe cable to the terminals at the rear of the electronic controller and fit the cable following the same path as the original probe cable.



Probe entrance point

10. Position the probe between the first and second pipes, in between the eighth and ninth fins.

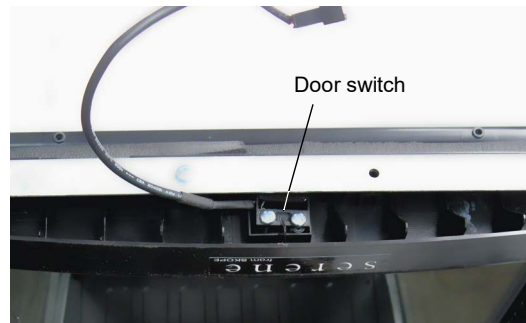
11. Reassemble the cabinet and test for correct operation.

Door Switch The front door (on the electronic controller side) is fitted with a door switch (page 8). The switch is located under the liner bottom below the front door and is activated by a magnet at the bottom of the front door frame.

Procedure 19: To replace the door switch

1. Disconnect the fridge from the mains power supply by unplugging it from the wall socket.
 2. Remove the shelves from the cabinet
 3. Lock/secure the doors.
 4. Separate the top cabinet assembly from the bottom refrigeration system (see Procedure 8 on page 17).
-

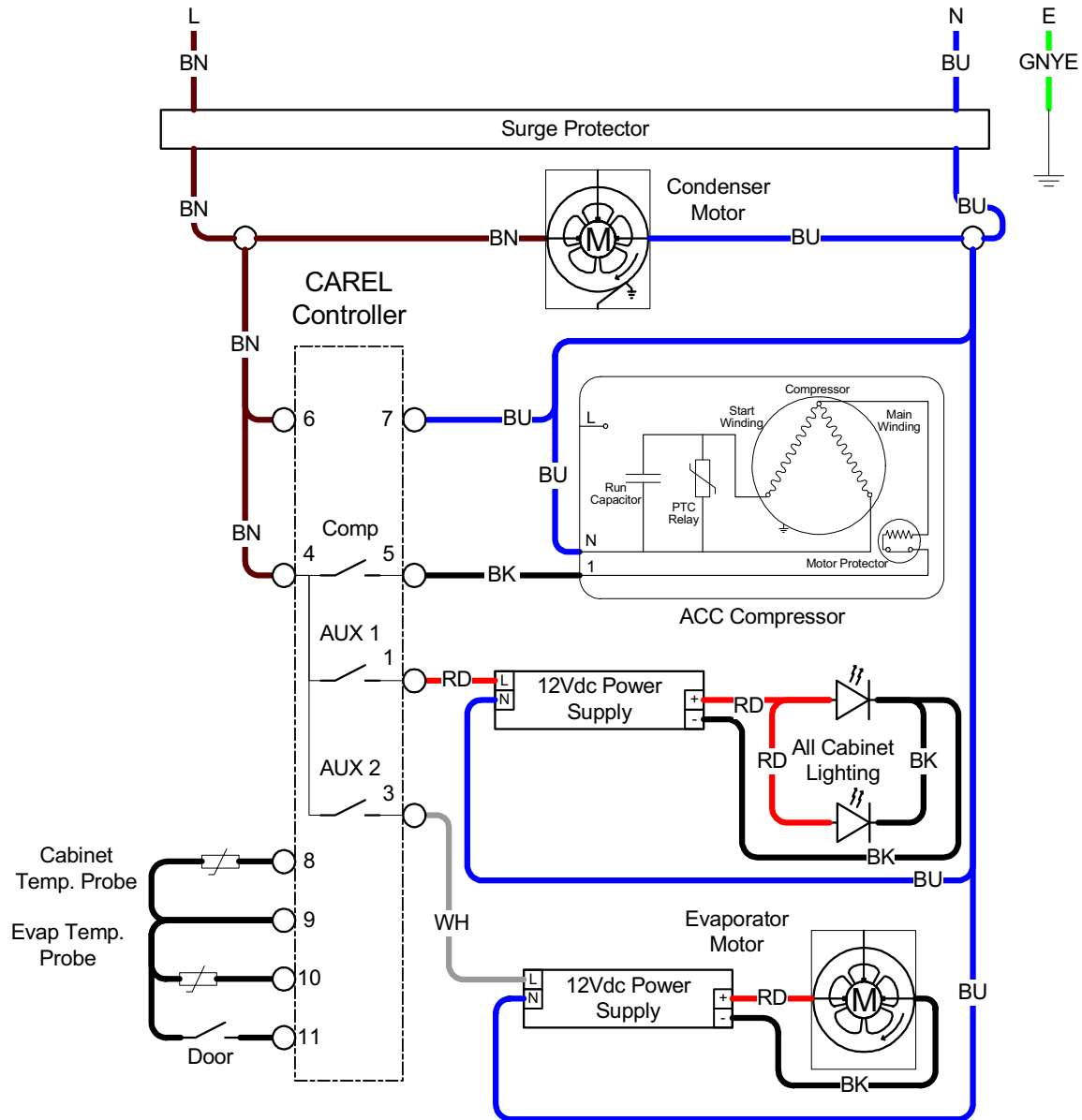
5. Flip the cabinet assembly over and place gently onto its roof to access the door switch.



6. Undo and replace the door switch.
 7. Reassemble the cabinet and test.
-
-

4 Wiring

Model: SC112G



Wire colours

BK	Black
BN	Brown
RD	Red
OG	Orange
GN	Green
BU	Blue
GY	Grey
WH	White
GNYE	Green-Yellow

Based upon IEC 757 Standard

Notes

[illegible]

5 Spare Parts

Cabinet Assembly

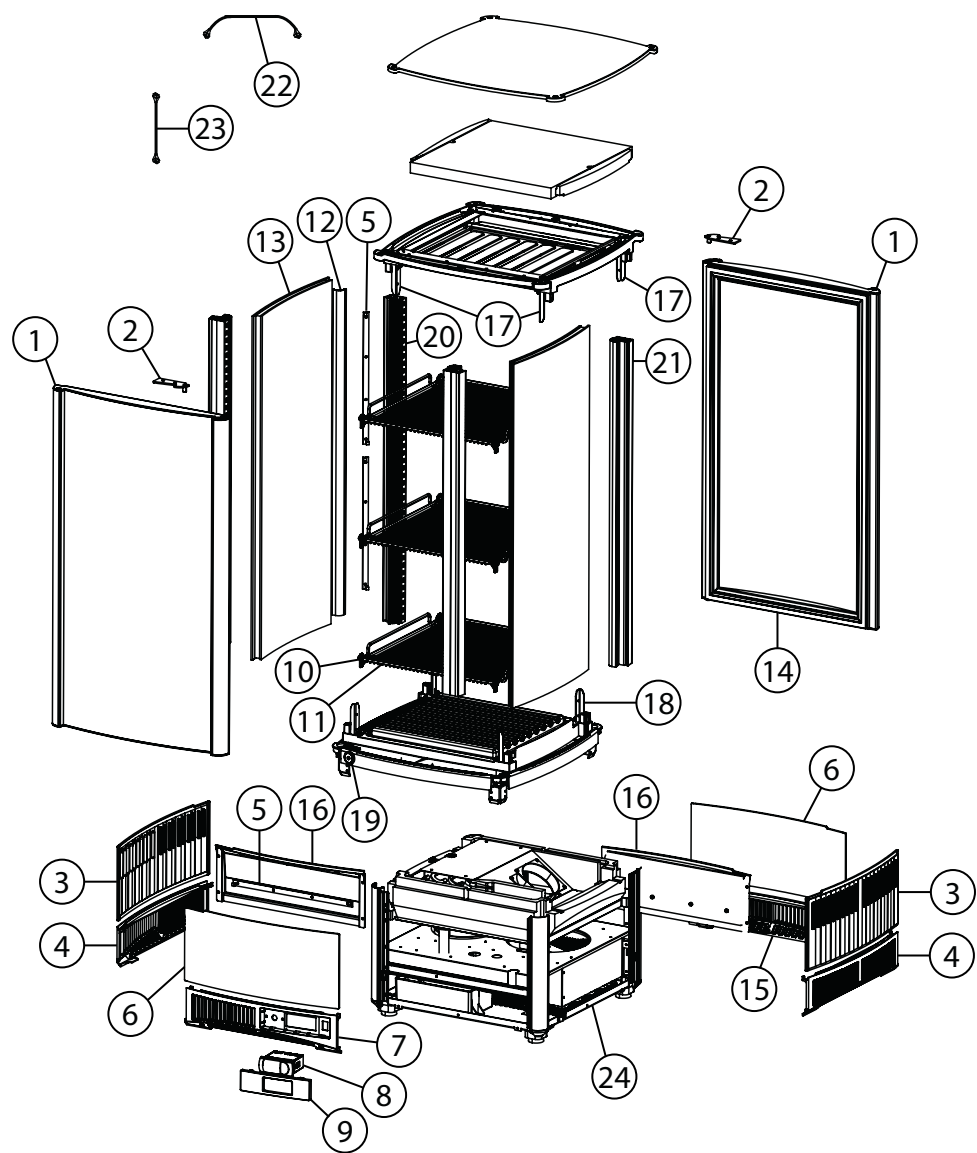


Table 6: Parts – Cabinet

Item	Description	SKOPE part no.	Customer part no.
1	Glass door assembly	HB0070807597A	
2	Top hinge	HB0070109359	
3	Side panel	HB0070204927	
4	Lower side panel	HB0070204933	
5	LED strip light (bottom sign)	HB0071800053	
6	Bottom sign panel (transparent)	HB0070509671	
7	Lower control panel	HB0070204936	
8	Electronic controller (CAREL S4)	ELZ11478-102	
–	Control probe (not shown)	ELZ1255	
–	Evaporator probe (not shown)	ELZ7644	
–	Door switch (including cable and magnet) (not shown)	HB0074091496	
9	Controller insert	HB0070204937	
10	Shelf clip	HB0070204928	
11	Wire shelf	HB0070109355	
12	Diffuser	HB0070204930	
13	Side glass	HB0071400156	
14	Door gasket	HB0070204932	
15	Lower side panel (with flex outlet)	HB0070204961	
16	LED reflector	HB0070204935	
17	Top cover bracket	HB0070109297	
18	Floor bracket	HB0070109301	
19	Door lock	HB0070804947	
20	Shelf support strip – left hand	HB0070204934	
21	Shelf support strip – right hand	HB0070204934A	
22	Light supply loom (supply from unit)	HB0070400418	
23	Light link loom (to link LED strips)	HB0070402344	
24	Refrigeration system assembly	HB0070807879	

Refrigeration System Assembly

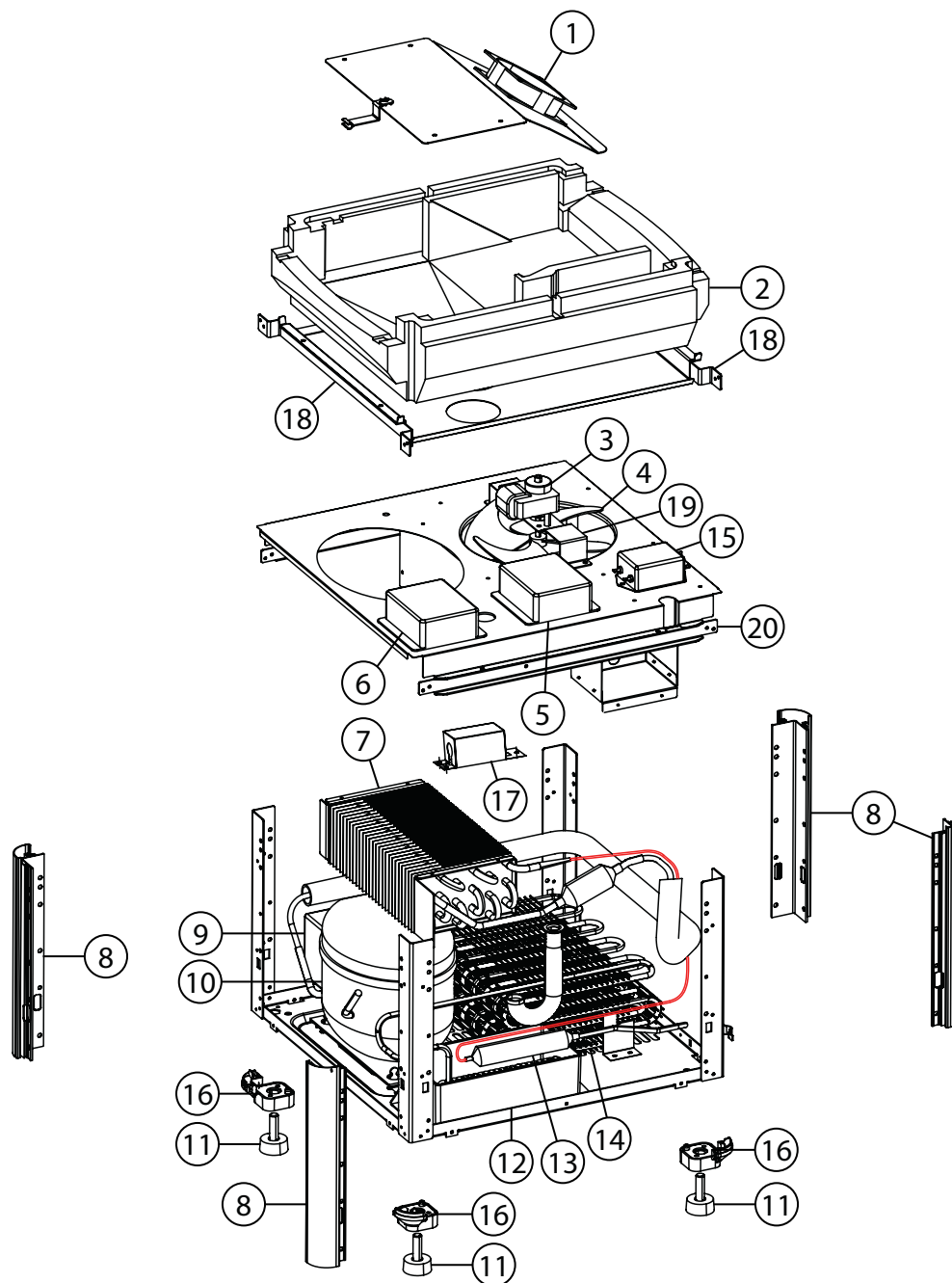


Table 7: Parts – Refrigeration system

Item	Description	SKOPE part no.	Customer part no.
	Refrigeration system assembly	HB0070807879	
1	Evaporator fan motor	HB0074000370	
2	Evaporator tub	HB0070509640	
3	Condenser fan motor	HB0074000234	
4	Condenser fan blade	HB0074000311	
5	Fan motor 12Vdc power supply	HB0071800030	
6	LED lights 12Vdc power supply	HB0071800044	
7	Evaporator coil	HB0070700492	
8	Lower outer extrusion	HB0070109356A	
9	Compressor electrics box assembly	HB0074000114	
10	Compressor	HB0074000114	
11	Adjustable foot	HB0070101405	
12	Condensate tray	HB0070204929	
13	Drier	HB0060703262	
14	Condenser coil	HB0070700493	
15	Surge protector	HB0074600001	
16	Base foot	HB0070204924	
17	Capacitor cover	HB0070109553	
18	Tub side support	HB0070109349	
19	Condenser fan bracket	HB0070109354	
20	Side chassis support	HB0070109350	

6 Troubleshooting

Diagnostics For problems with the cabinet and refrigeration cartridge, refer to Table 8.

Table 8: Cabinet and refrigeration cartridge troubleshooting

Problem	Possible cause	Suggestions
• Fridge not operating	• Loss of power supply.	• Check the mains power supply.
• Sign and/or interior lights not on	• Electronic controller displays "EnS" indicating the fridge is in Energy Saving mode.	• Switch the light on while keeping the fridge in Night mode by pressing the light button on the electronic controller faceplate. • Change the fridge into "Normal" mode by pressing and holding the ES button on the electronic controller faceplate, or holding the door open for ten seconds.
	• Light switched off.	• Switch the light on via the button on the electronic controller faceplate.
	• Electronic controller displays "Err" indicating a refrigeration system error.	• Arrange a service call.
	• Failed LED light.	• Arrange a service call.
• Product is too warm	• Frequent door opening.	• Limit door openings.
	• Door not closing properly.	• Check and clean the door gasket.
	• Refrigeration cartridge operating too hot.	• Ensure the cabinet has good ventilation around the refrigeration cartridge. • Ensure the cabinet is within the maximum operating conditions.
	• Electronic controller displays "EnS" indicating the fridge is in Night mode	• Change the fridge into Day mode by pressing and holding the Day - Night button on the electronic controller faceplate, or holding the door open for 10 seconds.
• Moisture build up on door or exterior	• High humidity.	• Check the ambient operating temperature and reposition the fridge if necessary.
	• Frequent door opening.	• Limit door openings.
	• Door not closing properly.	• Check and clean the door gasket.
• Fridge door does not shut properly	• Fridge is on an uneven surface.	• Level the fridge.
	• Door is obstructed.	• Check the shelves and product.

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