

# Vestfrost Solutions

Maintenance and Repair Presentation VLS 026/056 RF SDD

# Topics

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1. Overview of VLS 026\_056 RF SDD
2. General required maintenance
3. Vital components
4. Warning
5. Required basic Tools
6. Replacement of components
  - Thermostat
  - Starting Device ECU
  - Thermometer
  - Thermostat Sensor
  - Fan
  - Fuse
7. Trouble shooting
8. On-Site Checklist
9. Technical Support

# Overview of VLS 026/056 RF SDD

Combined Vaccine Chest Refrigerators and Freezer  
SDD – Solar Direct Drive

WHO PQS Approved Codes:

- E003/091
- E003/092

## Technical specifications:

- +43°C hot zone
- Grade A
- Compressor Secop BD35K
- Refrigerant R600a
- Galvanized pre-painted cabinet
- Inner lining pre-painted aluminium
- Insulation cyclopentane 100 & 120 mm
- Automatic temperature control
- Solar connection - Plug & Play
- Voltage 10-45V
- Lock and key



# General required maintenance

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## Daily Check:

Monitor Temperature  
Internal lid is placed properly  
Lid fits and lock tight to cabinet  
Lid gasket not faulty

## Monthly:

Clean grill for compressor compartment

## 6 Month:

Clean condenser coils

## Yearly:

Check electrical connections and components  
Check electrical connections, cables, wirings from PV panel system

## Regularly:

Clean Solar Panels  
Check Solar Panels are not shaded at any time of the day



# Vital Components

Position	Item no	Description
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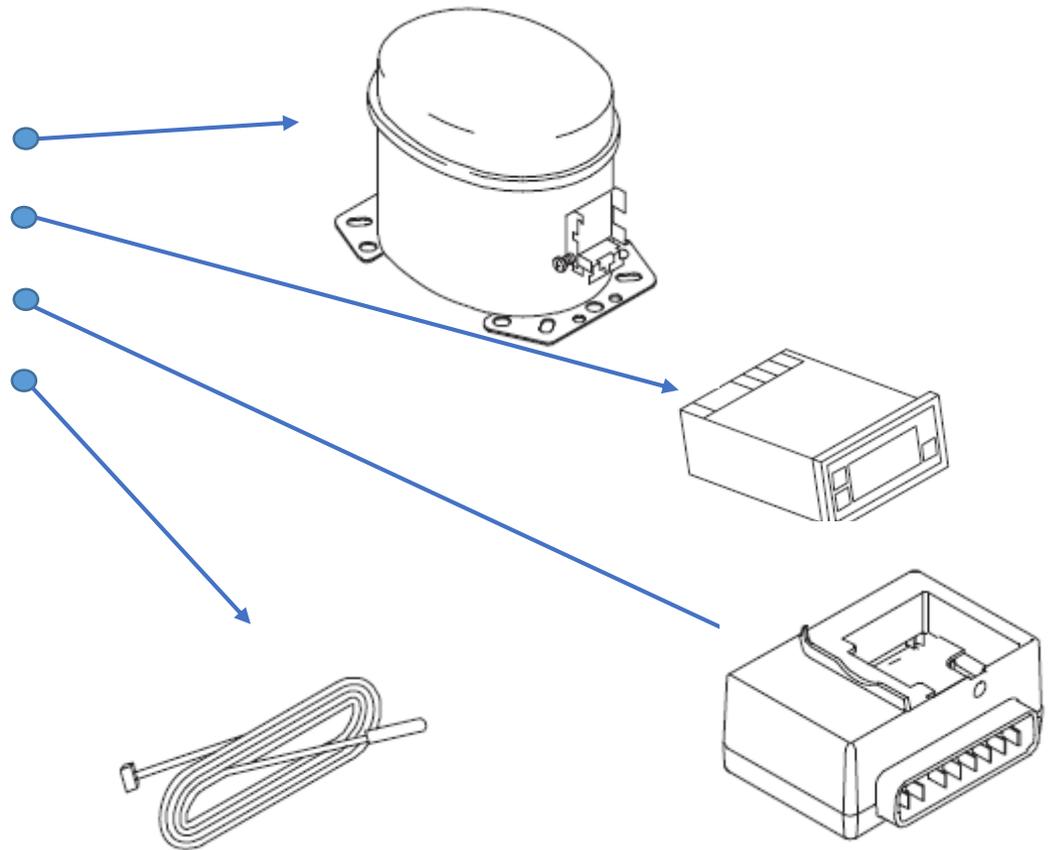
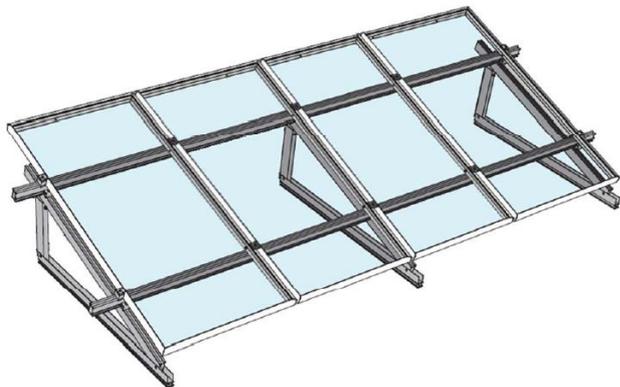
129	8-036510214	Compressor
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5712	702090013	Thermostat
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5727	6520845	Starting Device ECU
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0899	7020311	Thermostat sensor
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PV Solar Panel Kit



# Warning!

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Before any repair job be aware of following!

**WARNING:**

Before servicing or cleaning the appliance, disconnect it from power source.

**WARNING:**

Danger risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained personnel.



# Required Basic Tools

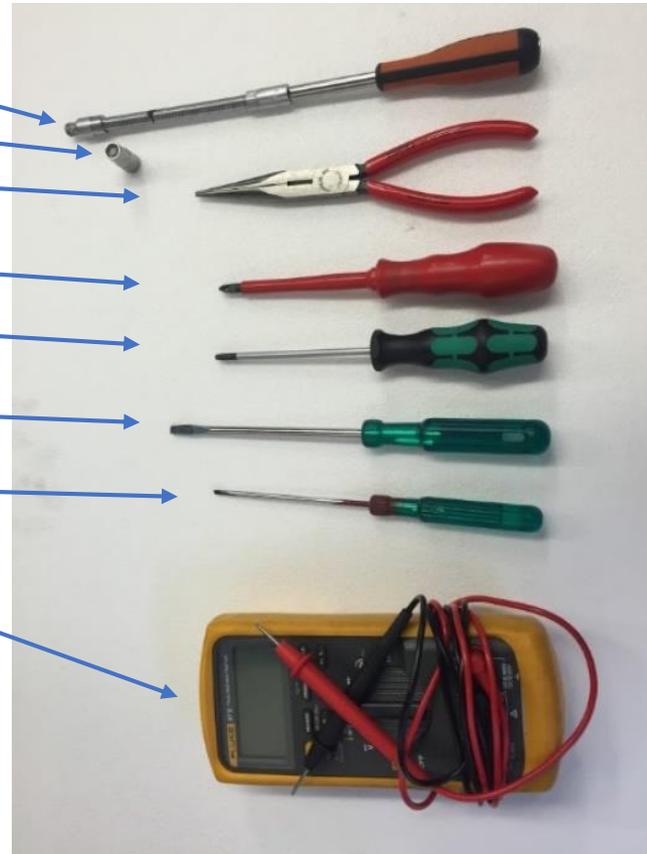
1. Flexible socket wrench
2. Socket wrench - size 7mm
3. Nose plier
4. Phillips screwdriver
5. Torx screwdriver - size t10+t20
6. Screwdriver - size 1,0x6,0
7. Screwdriver – size 0,6x3,5
8. Multimeter

Proposed additional service kit/items

Sealing kit

Tar tape

Extra self-tapping screws



# Replacement of components

1. Motor Compartment
2. Thermostat
3. Starting Device ECU
4. Thermometer
5. Thermostat sensor
6. Fan

# Motor Compartment

How to get access to the motor compartment.

- 1. On the backside you will find two engine compartments each covered with a metal grill



- 2. Unscrew the two screws on each grill

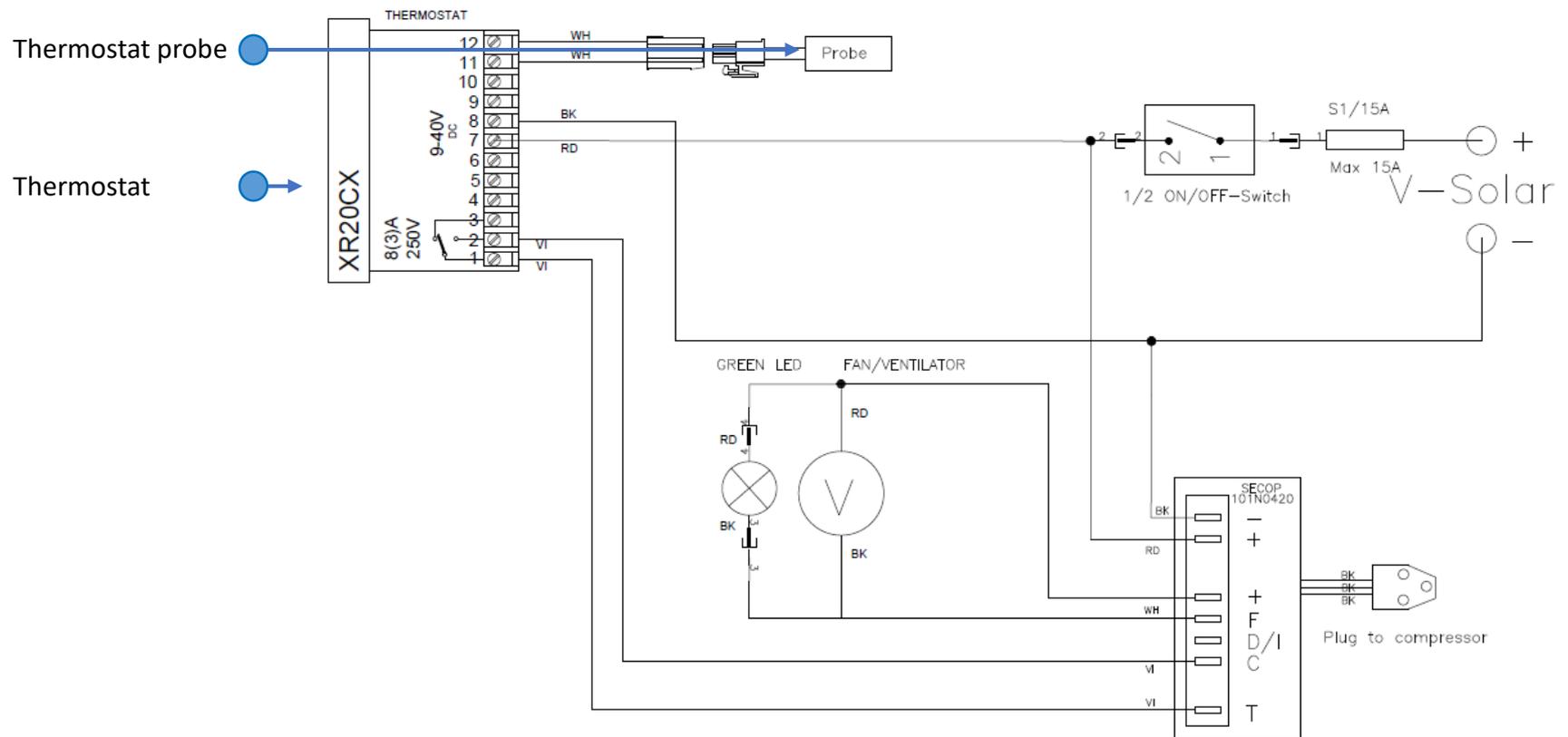


- 3. Remove the grill



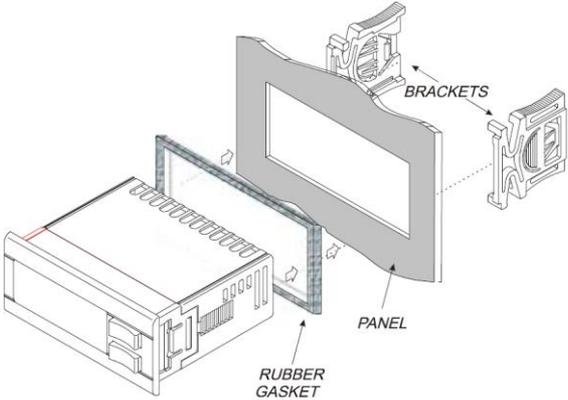
# Thermostat

## Wiring Diagram Vaccine Refrigerator



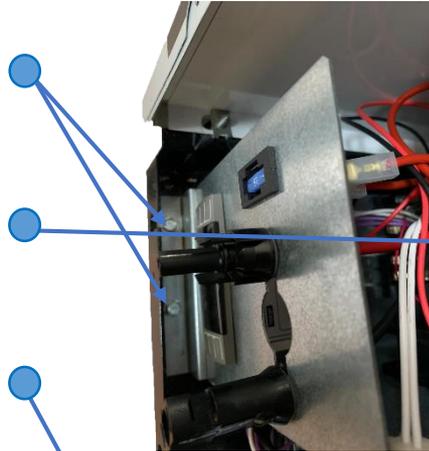
# Refrigerator Thermostat Replacement

The thermostat is placed in the left corner of the compressor compartment



# Refrigerator Thermostat Replacement

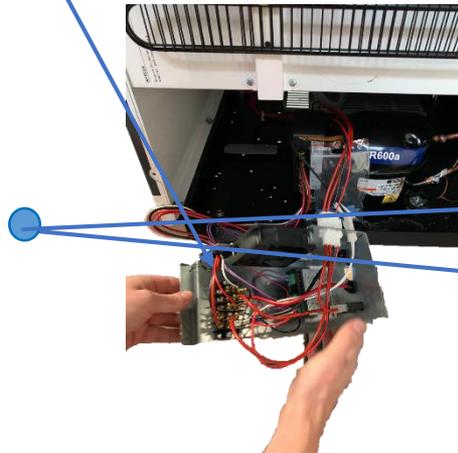
1. Remove the two screws holding the fan/controller bracket in place



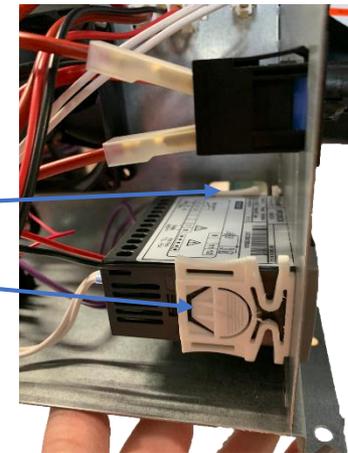
2. Pull the fan/controller bracket out



3. Flip it around to allow easy access to thermostat

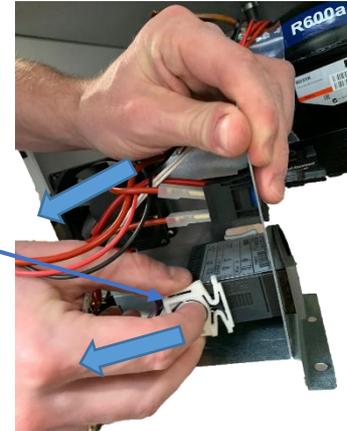
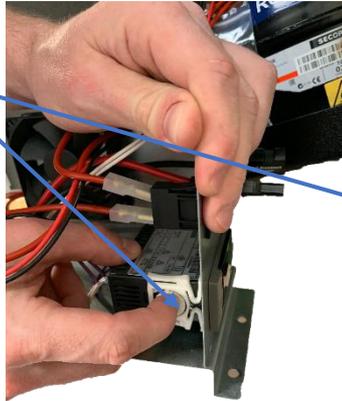


4. Remove the two clamps holding the thermostat in place

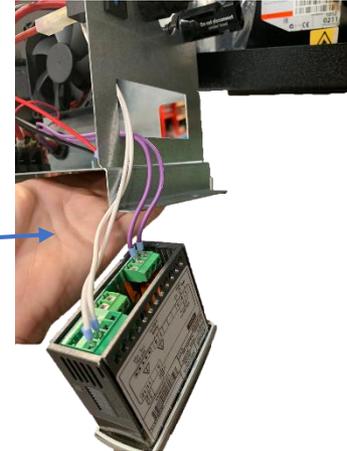
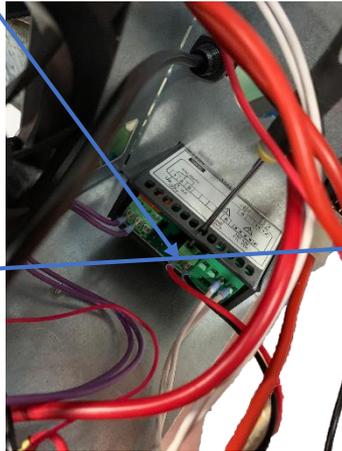


# Refrigerator Thermostat Replacement

5. To remove the clamps press in the middle and slide it back



6. After clamps have been removed use a screwdriver to remove the two power wires



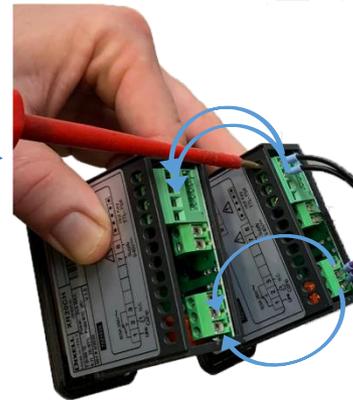
7. Now pull the controller out to allow easy access to the remaining wires



# Refrigerator Thermostat Replacement

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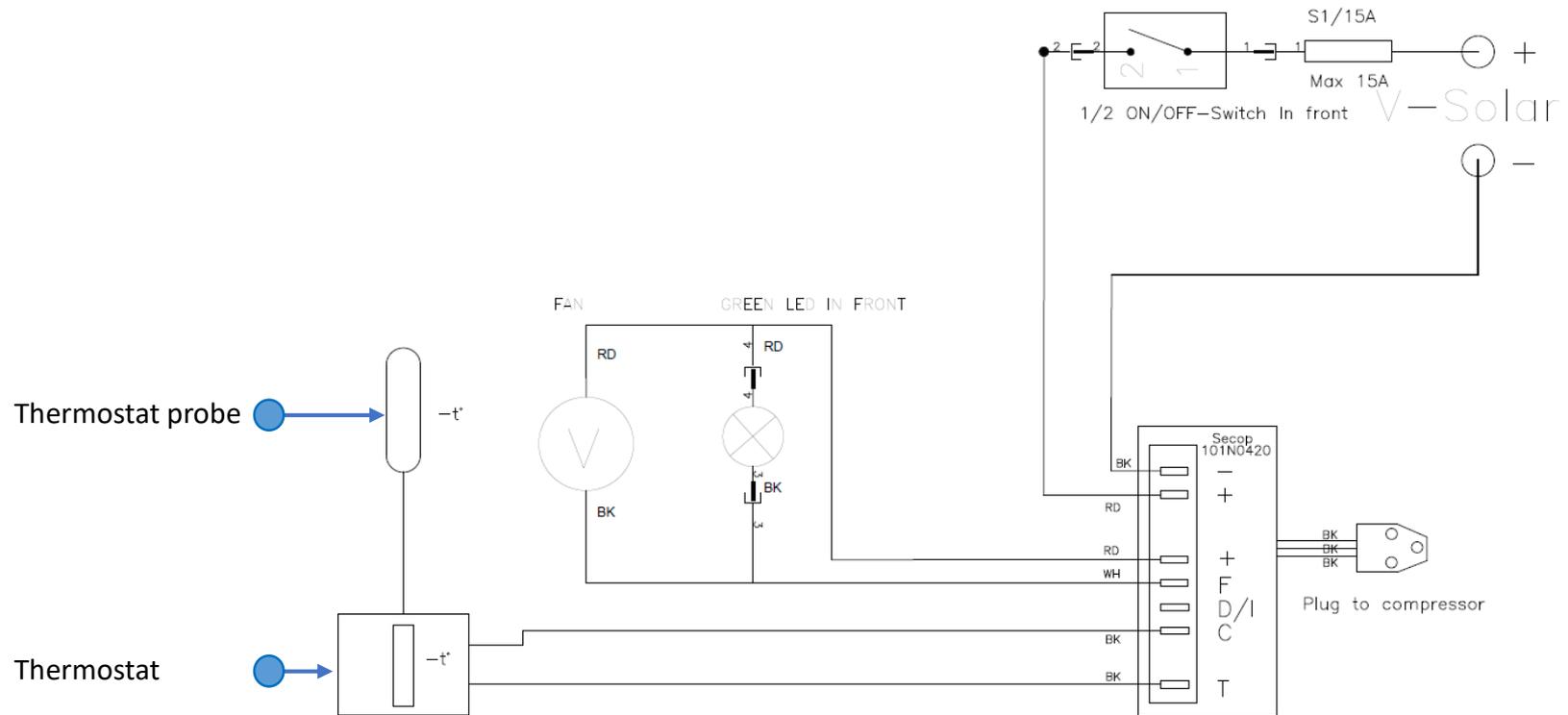
8. Exchange the wires 1/1 from the old thermostat to the new



9. Reverse the previous step 7 to 1  
install the new thermostat

# Thermostat

## Wiring Diagram Waterpack Freezer



# Freezer Thermostat Replacement

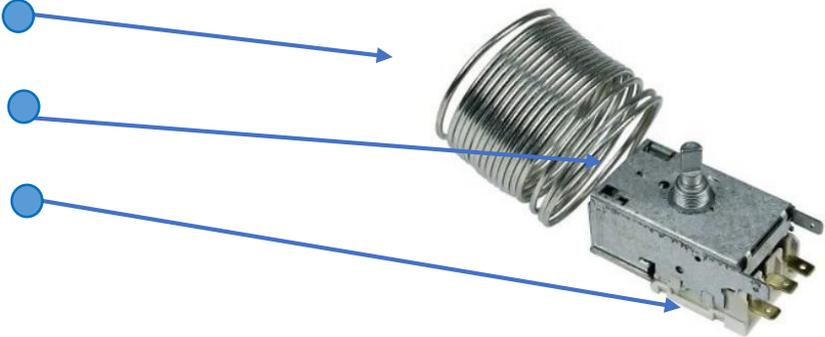
The thermostat is placed in the left corner of the compressor compartment



Thermostat wire/sensor

Adjustment

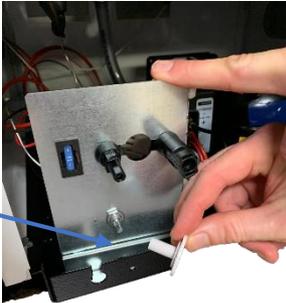
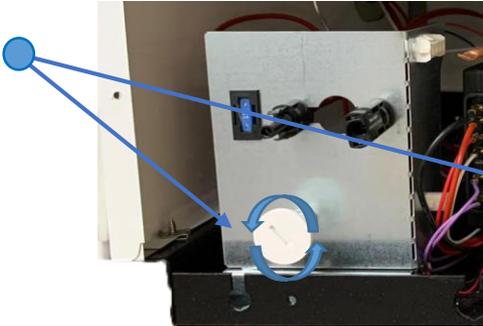
Back with electric terminals



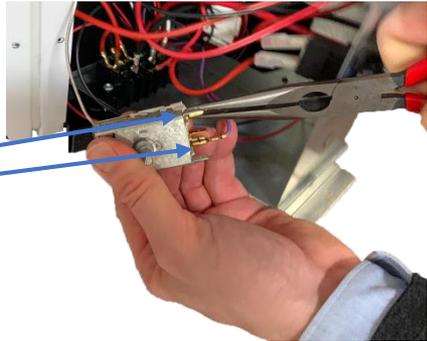
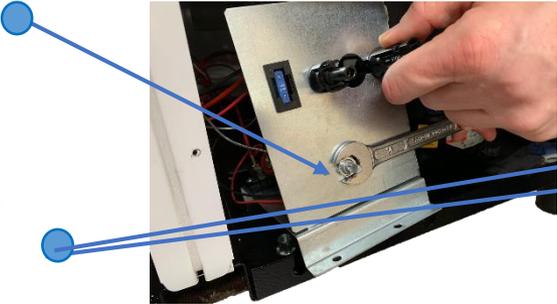
# Freezer Thermostat Replacement

1. Screw the adjustment dial off

1. Adjustment:  
Rotation clockwise warm to cold  
**Important**  
Always keep in coldest position



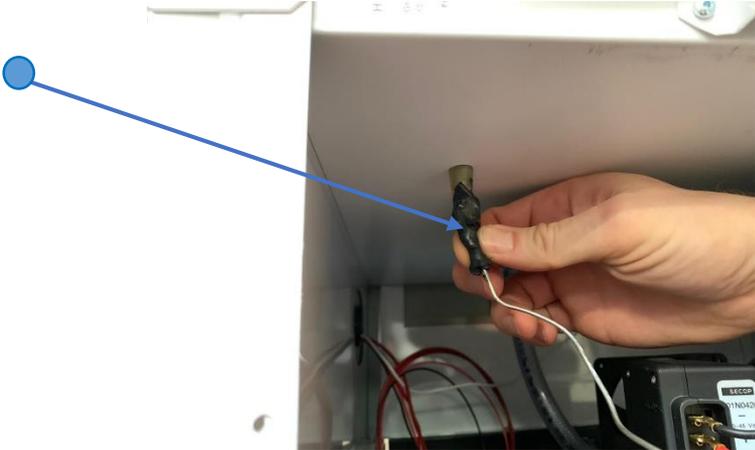
2. Screw the size 14 bolt holding the thermostat in place off



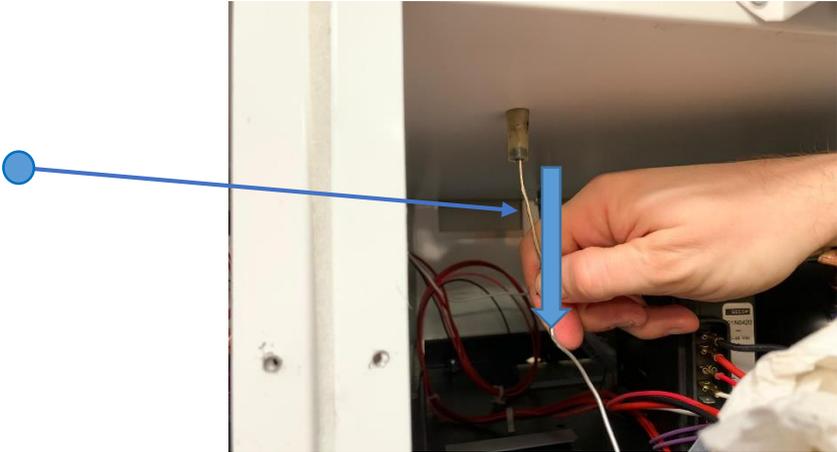
3. Remove the two power wires

# Refri Freezer gerator Thermostat Replacement

4. Remove sealing kit from thermostat wire tube

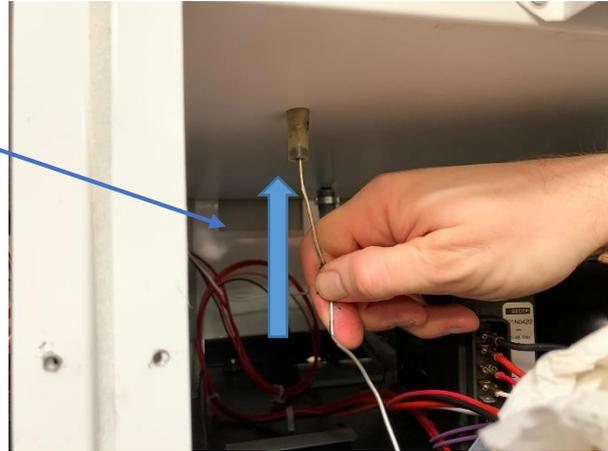


5. Carefully pull the thermostat wire out

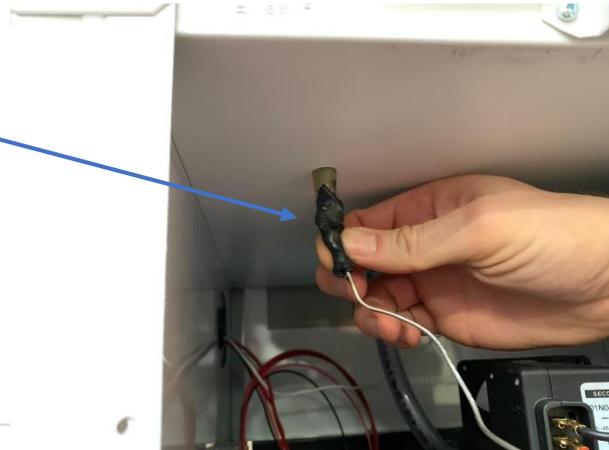


# Refri Freezer gerator Thermostat Replacement

6. Push the new thermostat wire back up with care and make sure it is inserted all the way.



- 7. IMPORTANT!**  
Remember to put the sealing kit back in place



# Thermostat Programming

## 4. FRONT PANEL COMMANDS



**SET**: To display target set point; in programming mode it selects a parameter or confirm an operation.

 **(DEF)** To start a manual defrost

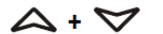
 **(UP)**: To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value.

 **(DOWN)** To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.

 To switch the instrument off, if onF = oFF.

 Not enabled

### KEY COMBINATIONS:

 To lock & unlock the keyboard.

**SET** +  To enter in programming mode.

**SET** +  To return to the room temperature display.

## 6. MAIN FUNCTIONS

### 6.1 HOW TO SEE THE SETPOINT

- SET** 
1. Push and immediately release the **SET** key: the display will show the Set point value;
  2. Push and immediately release the **SET** key or wait for 5 seconds to display the probe value again.

### 6.2 HOW TO CHANGE THE SETPOINT

1. Push the **SET** key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the “°C” or “°F” LED starts blinking;
3. To change the Set value push the  or  arrows within 10s.
4. To memorise the new set point value push the **SET** key again or wait 10s.

### 6.4 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

1. Enter the Programming mode by pressing the **Set** +  keys for 3s (the “°C” or “°F” LED starts blinking).
2. Select the required parameter. Press the “**SET**” key to display its value
3. Use “**UP**” or “**DOWN**” to change its value.
4. Press “**SET**” to store the new value and move to the following parameter.

To exit: Press **SET** + **UP** or wait 15s without pressing a key.

**NOTE:** the set value is stored even when the procedure is exited by waiting the time-out to expire.

# Starting Device Replacement

Starting device

Back

Front  
with terminal  
board



The starting device is mounted to the left side of the compressor



1: Loosen the phillips screw a couple of turns



2: Place a screwdriver in the small vent in the plastic cover



3: Unclick plastic cover/starting device from compressor bracket



4: Use a screwdriver to disconnect the socket from compressor



# Starting Device Replacement

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Video

How to dismount



**VESTFROST**  
*SOLUTIONS*

The logo features the word "VESTFROST" in a bold, blue, sans-serif font. The letter "O" is replaced by a stylized eight-pointed starburst or snowflake symbol. Below "VESTFROST", the word "SOLUTIONS" is written in a smaller, blue, italicized sans-serif font.

**Service video**

# Starting Device Replacement

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Video

How to install



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**Service video**

# Thermometer Replacement

The thermometer is placed in at the front of the appliance



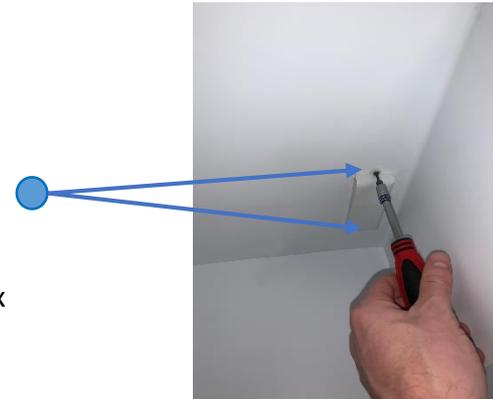
Thermometer display



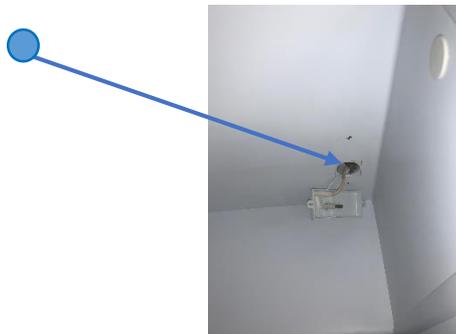
The temperature probe is placed inside the compartment of the appliance



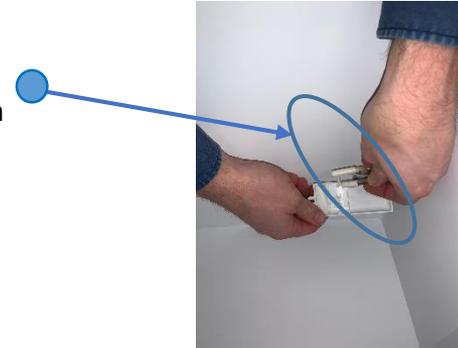
1: Dismount the temperature sensor cover by loosen the 2xtorx screws – size 10



2: Remove wire sealing



3: remove the two sensors from the housing



# Thermometer Replacement

4: Remove black sealing tar-kit and gently pull the white wire until the probe is visible



6: Thermometer comes with wire and sensor

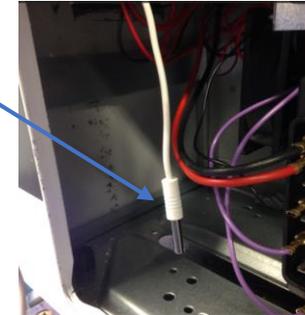


8: **IMPORTANT!** When re-mounting the new thermometer remember to properly seal the wire feedthrough



Tar kit

5: Temperature sensor



7: **IMPORTANT!** When re-mounting the new thermometer make sure the wire sealing plug is placed properly

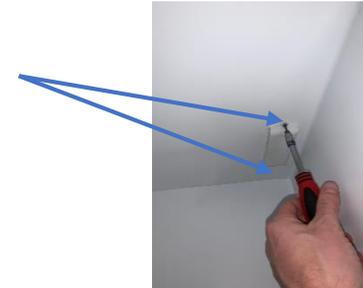


# Thermostat Sensor Replacement

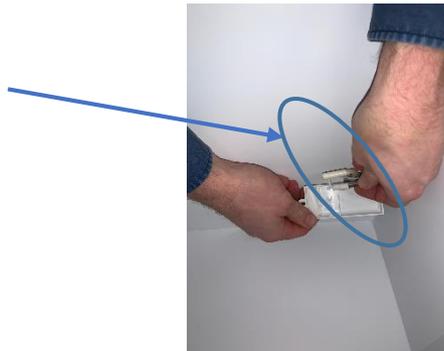
The thermostat sensor is placed inside the compartment of the appliance



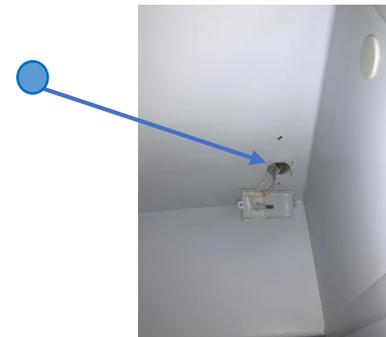
1: Dismount the temperature sensor cover by loosen the 2xtorx screws – size 10



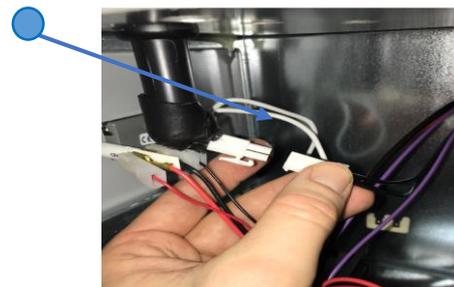
2: remove the two sensors from the housing



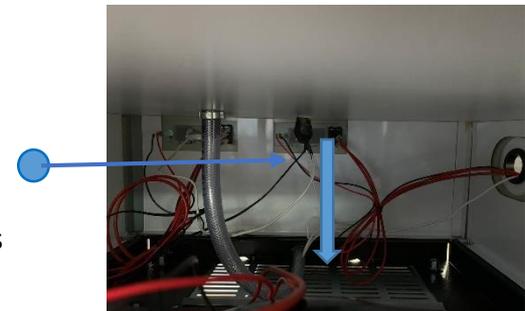
3: Remove wire sealing



4: Unplug the probe connector from thermostat



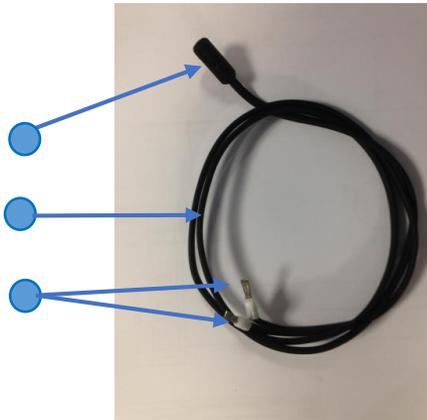
5: Remove black sealing tar-kit and gently pull the black wire until the probe is visible



# Thermostat sensor replacement

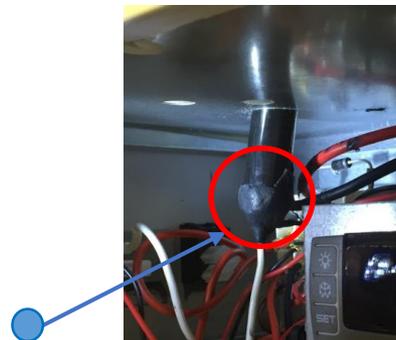
6: The thermostat sensor comes with

- Probe
- Wire
- Cable sockets



7: **IMPORTANT!**  
When re-mounting the new thermometer remember to properly seal the wire feedthrough

Tar kit



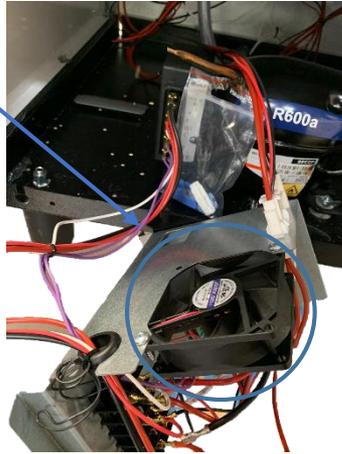
8: **IMPORTANT!**  
When re-mounting the new thermometer make sure the wire sealing plug is placed properly



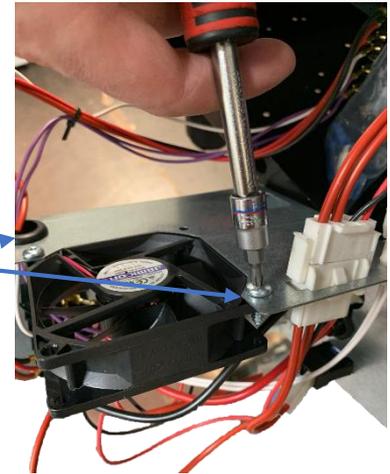
# Refrigerator fan replacements

The fan is placed in the motor compartment on the fan/controller bracket

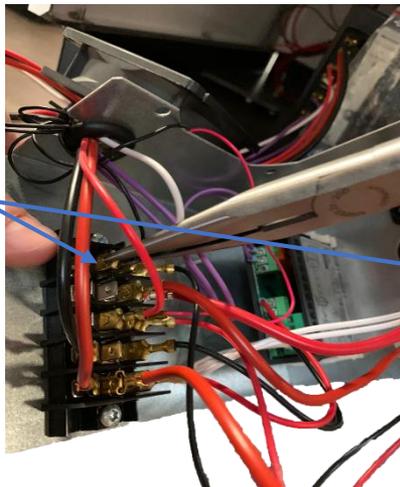
1: Dismount the fan/controller bracket as discribed in section - "thermostat replacement"



2: Loosen the two screws



3: Unplug the red and black power cable from the terminal bord



# Fuse exchange

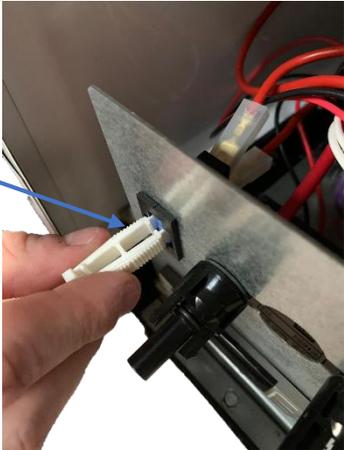
If the fuse is burned  
It need to be replaced.  
The fuse is placed on the  
fan/controller bracket



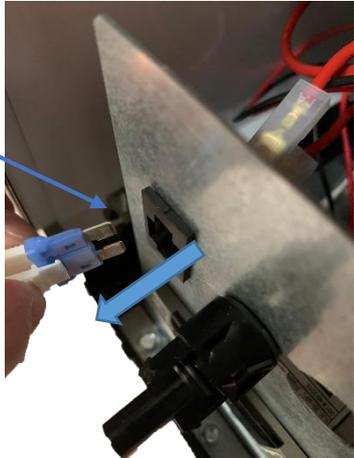
1. Use the small fuse- tool supplied together with spare fuses in the small plastic bag together with appliance or a plier .



2. Pinch the tool to the fuse



3. Pull the tool and fuse



# Compressor Replacement

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Procedure of compressor switch.

- 1: WARNING! Drain coolant R600a from refrigeration system by vacuum suction
- 2: IMPORTANT! Blow refrigeration system with NO/Nitrogen

### 3: Cut

- A: Suction and pressure tube
- B: Capillary tube
- C: Dry filter

- 4: Dismount starting device ECU
- 5: Dismount old compressor
- 6: Insert new compressor
- 7: Install starting device ECU

### 8: Solder

- A. Suction and pressure tube
- B. Capillary tube
- C. Dry filter

IMPORTANT! When solder copper tubes to iron tubes use silver tin

### Filling of new refrigerant

- 8: Drain refrigeration system by vacuum suction
- 9: Fill 50g of R600a refrigerant on the system

# Compressor Replacement

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Video



# Trouble-shooting

Fault	Possible cause	Remedy
Compressor is not running	Be patient, it is most likely that the compressor will start within a few minutes.	If this is not the case, check the following: - Check that power is connected and that the wire from the solar panel to the appliance is intact. - Check the fuse and replace it if necessary. - If the above is OK, call technical supervisor.
Compressor is running, and the temperature is too high	The ventilation grill is blocked. The lid is not closed properly. The fan in the compressor compartment is blocked or defective. The temperature in the room in which the appliance is installed is too high.	Ensure unhindered air circulation. Ensure that the lid is closed properly. Check that the fan is running, if not it should be replaced. See section: Service Shield the appliance against direct sun light and ensure more ventilation to the room.
Temperature in VLS 054 SDD is too low	To low set point on digital controller	Contact technical supervisor for adjustment.
No temperature is displayed	There is not enough light for the solar sensor.	Turn on the light.
No light in green diode during day time	Switch is turned OFF Fuse is burned Diode is defect	Turn on the switch Replace the fuse. Replace diode.





# On-site Checklist

## Service technician to check

- Is the green diode in the control panel on (Power check)
- Is the internal temperature inside the acceptable range of +2° to +8°
- Is the vaccine compartment clean and without condensation (water)
- Is the Compressor is running
- Is baskets used and in place
- Is the appliance placed according to instruction in the manual.
- Does the lid close tight to cabinet and is the lid gasket in good condition
- Is the grill for compressor compartment clean
- Is the condenser coils on the backside clean
- Is all electrical components working properly
- Is there condensation on electric parts (water condensation)?
- Is there a risk of water leakage from the refrigeration compartment to the thermostat? (where temperature sensor cable is passing through?)
- Over all condition of the cabinet –internal and external: any corrosion, rusting, cracks?
- Inspection of the refrigeration line ( the condenser, evaporator, the whole refrigeration circuit/line)
- Panel installation condition and the power reaching at the input of the compressor during sunshine
- Condition of the cables from the panel to the compressor including the lightning protection
- Temperature records ( manual records, FT2 data)
- Action taken by local technicians to address the problem
- Is the Solar panels clean and mounted according to the instruction



# Technical Support

If contacting Vestfrost Solutions technical support please supply below information:

1. Model
2. Serial number
3. What is the issue

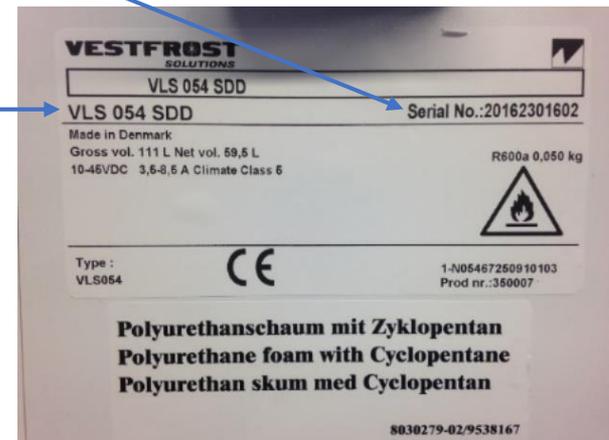


Rating plate



Serial no

Model





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