



# PCB Filter connection check and replacement process

SandenVendo February 2023

## References:

| Type  | Model                      |
|-------|----------------------------|
| CDU-L | R06A2B<br>R06A2C           |
| CDU-M | R04A1B<br>R04A1C<br>R04A1D |
| CDU-S | R02A1B<br>R02A1D           |

This document explain the positioning of the connections and replacement process of the PCB filter for condensing unit SANDEN VENDO CDU-L / CDU-M et CDU-S

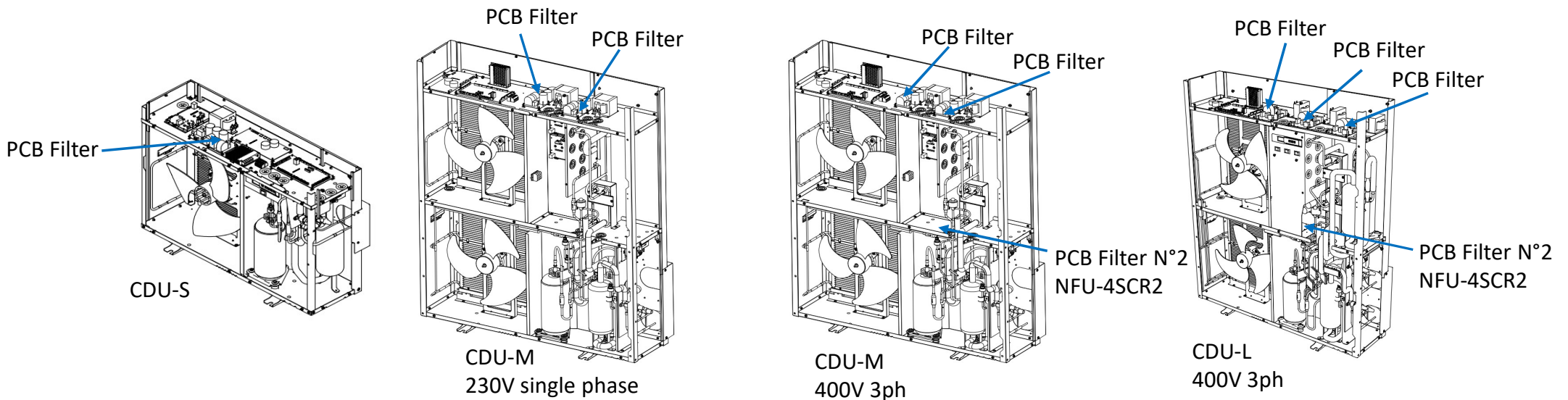
100% CO2 Condensing units

## ECO-FRIENDLY REVOLUTION

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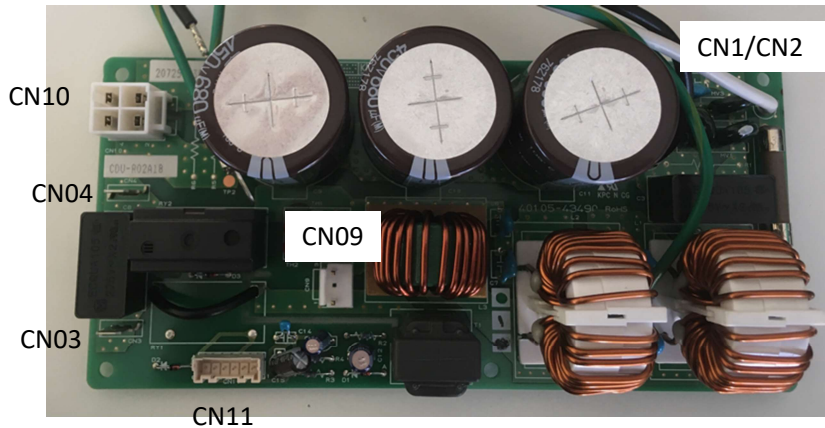


1. PCB Filter 230V single phase CDU-S & CDU-M
2. PCB Filter 400V triple phase CDU-M & CDU-L
3. PCB Filter replacement process





# 1. PCB Filter 230V single phase

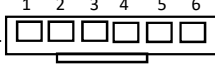
**FOR CDU MODEL: R02A1B/R02A1D et R04A1D**  
**REFERENCE : 20725-13570**



CN01/CN02 power supply 230VAC pre-wired  
 CN03/CN04 linked to PCB inverter  
 Between CN03 & CN04 : 230V AC  
 E042 error when connector disconnected

CN10  Linked to PCB Inverter  
 E042 error when disconnected connector

CN09  Power supply 230VAC to control PCB and Fan PCB  
 Between pin 1 & 2 : 230V AC  
 No CDU function when disconnected connector

CN11  Linked to PCB Controller  
 Between the pin 1 & 6 : 24V DC  
 E042 error when disconnected connector

**Test on the board:**

- 1 board per cooling loop A and C
- Test for the presence of inter-phase voltage (230 VAC) at input and output

**FOR CDU MODEL: R04A1B/R04A1C et R06A2B/R06A2C**  
**REFERENCE : NFU-4SCR1 /NFU-4SCR3 et NFU-4SCR2**

NFU4SCR1 version with fixed brazed fuses  
 NFU-4SCR3 version with removable fuses

**Filter inlet**

CN01/CN02 :400V AC  
 CN01/CN03: 400V AC  
 CN02/CN03: 400V AC  
 CN04 : GND

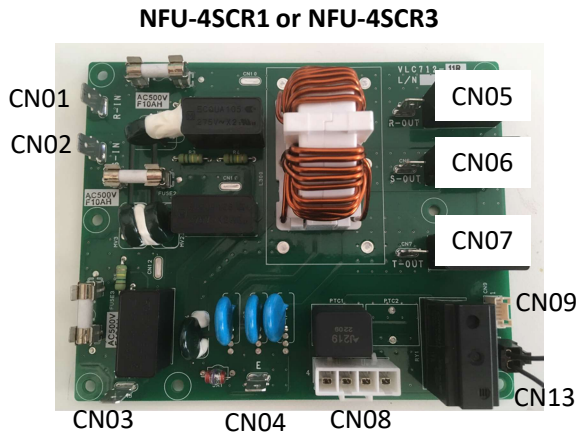
**Filter outlet**

CN05/CN06 :400V AC  
 CN05/CN07: 400V AC  
 CN06/CN07: 400V AC

CN13 : shunt  
 Error E10 H56 if shunt missing

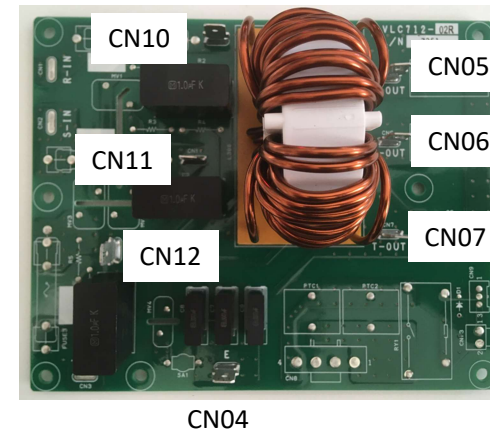
CN08 :1/2 to reactor  
 3/4 to PCB inverter  
 Between pin 1 or 2or 3or 4 & Gnd : 280V DC  
 E10-H14 error when disconnected connector

CN09 :1/2/3 PCB IFU  
 No measurement  
 E42 when disconnected connector



## 2. PCB Filter 400V triple phase

**NFU-4SCR2**



**Filter inlet**

CN10/CN11 :400V AC  
 CN10/CN12: 400V AC  
 CN11/CN12: 400V AC  
 CN04 : GND

**Filter outlet**

CN05/CN06 :400V AC  
 CN05/CN07: 400V AC  
 CN06/CN07: 400V AC

**Test on the board:**

- 1 board per cooling loop A/B and C
- Test for the presence of inter-phase voltage (400 VAC) at input and output
- Test off voltage, the continuity of the fuses
- E10-H4C error if one phase disconnected or 1 fuse damaged
- E10-H14 error if 2 or 3 phases disconnected or 2 or 3 fuses damaged

**Test on the board:**

- 1 board for all loops
- Test for the presence of inter-phase voltage (230 VAC) at input and output
- E10-H4C error if one phase disconnected
- E10-H14 error if 2 or 3 phases disconnected



### 3.PCB Filter replacement process

1. Switch OFF all compressors with front switches
2. Shut OFF power supply main circuit breaker.
3. Unplug the connector from the PCB Filter to be replaced
4. Pinch the plastic plots with fingers or helped with dedicated tool or pliers.
- 5.Remove the failed PCB Filter. In the case of a PCB 400V 3ph NFU-4SCR1/NFU-4SCR3, keep the small shunt to put on the new PCB
6. Install the new PCB Filter and check absence of screws or foreign matter when installing the new part.
7. Plug all the connector .
8. Switch ON Power supply main circuit breaker.
9. Switch ON all compressors with front switches.
10. Confirm that no error code remain and check the correct operation of the CDU