



AC/DC converter replacement process

SandenVendo August 2021

This document explain the process of AC/DC generation replacement for condensing unit SANDEN VENDO CDU-L

Reference:

Type	Model
CDU-L	R06A2B

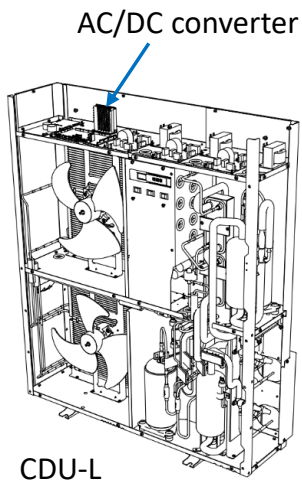
100% CO2 Condensing units

ECO-FRIENDLY REVOLUTION

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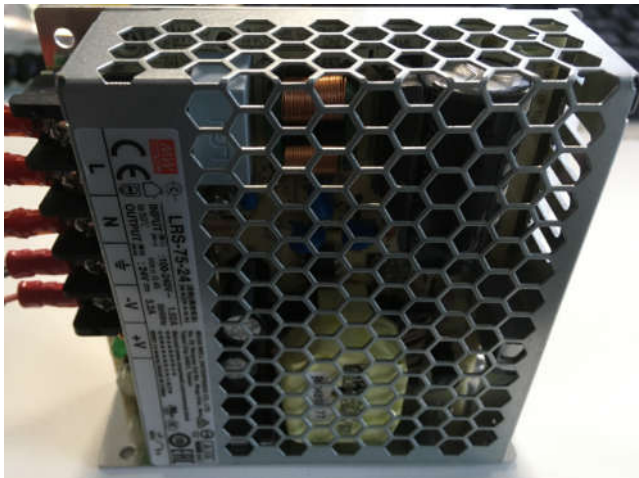


1. Old AC/DC converter electrical diagram
2. New AC/DC converter electrical diagram
3. Old AC/DC converter removal
4. New AC/DC converter installation



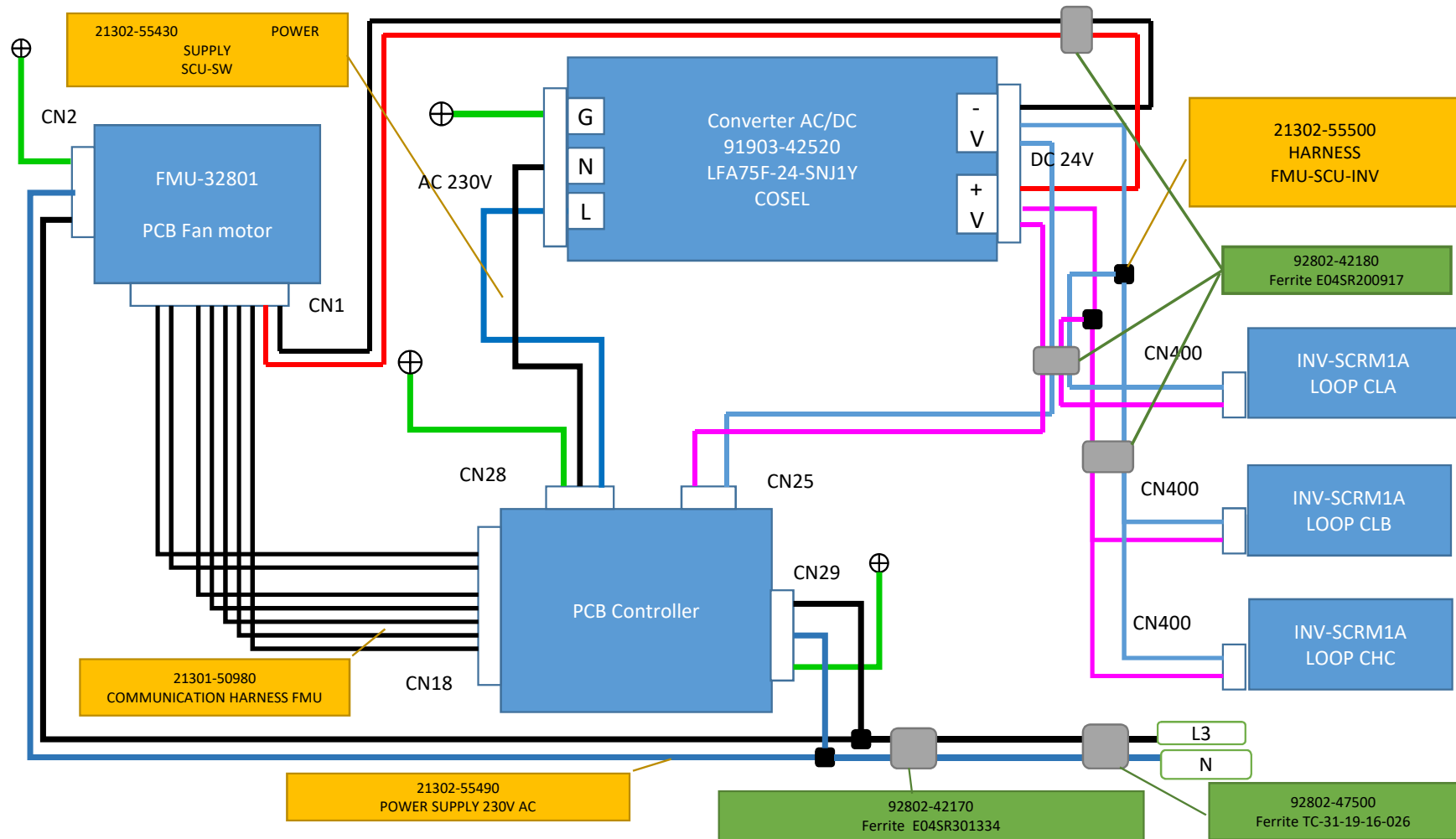


Old design
AC/DC model 91903-42520

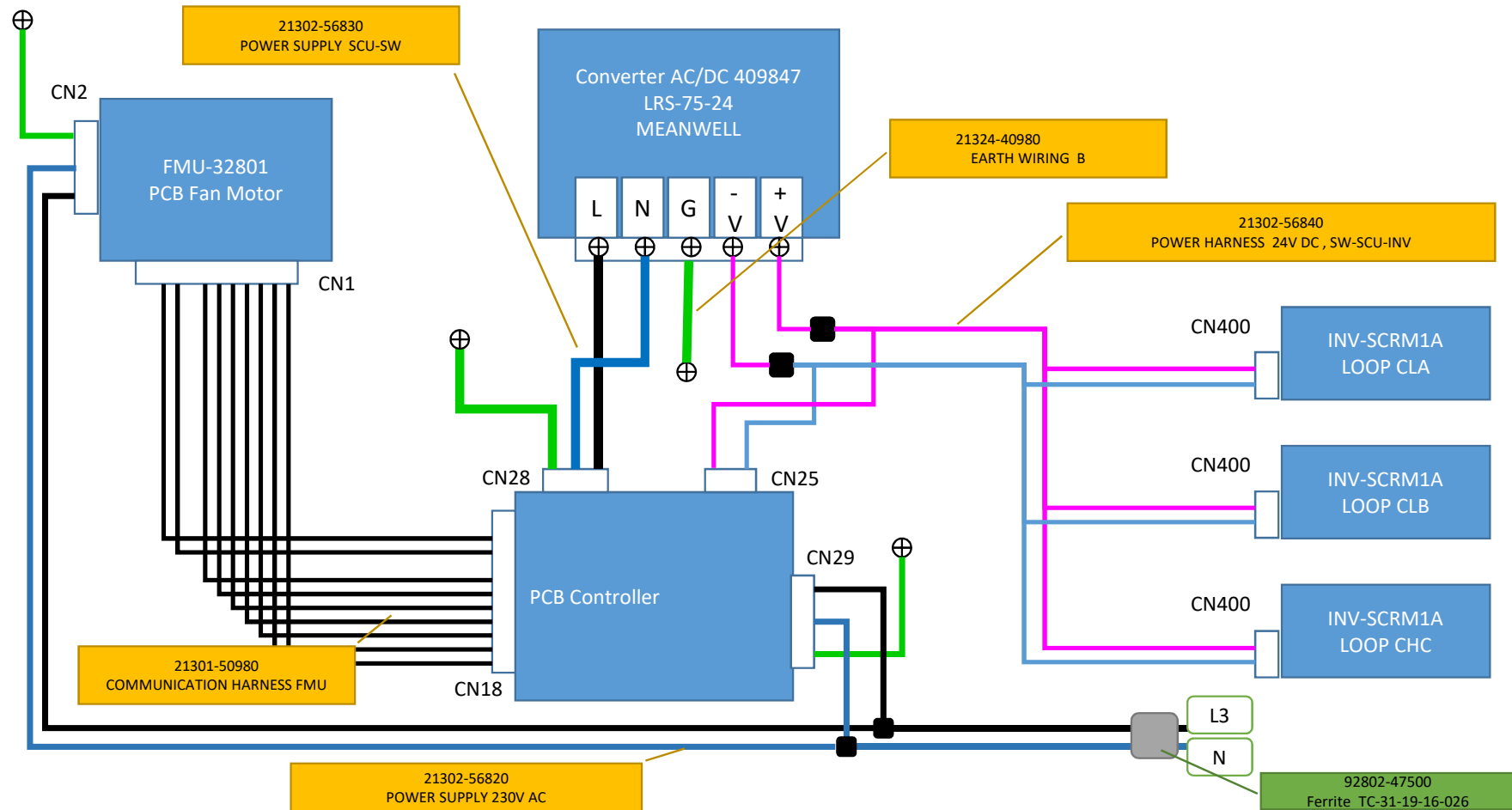


New design
AC/DC model 409847

1.Old AC/DC converter electrical diagram

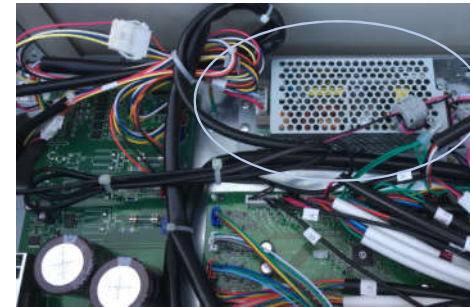
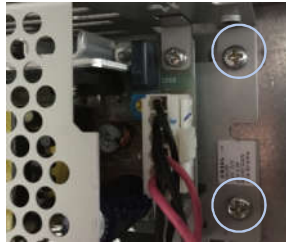
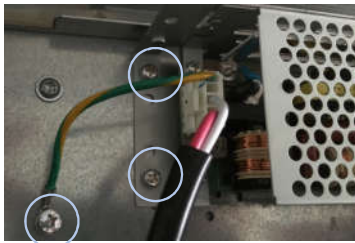


2.New AC/DC converter electrical diagram

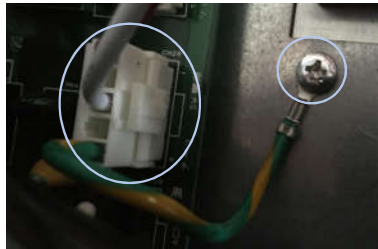


3.Old AC/DC converter removal

- 1.Power supply switch off.
- 2.Remove CDU-L top casing (7 bolts)
- 3.Remove the CDU-L right front panel (12 bolts)
- 4.Checking of no voltage on power supply terminal block.
- 5.Remove the old AC/DC converter
 - 5.1. Remove the 4 AC/DC fixing bolts and earth wire bolt.



- 5.2. Remove power supply harness and PCB controller earth wire harness (CN28)



- 5.3. Remove PCB controller 24V DC harness (CN25)

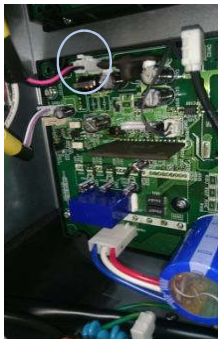


3.Old AC/DC converter removal

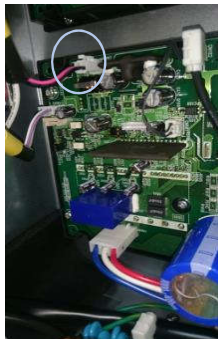
5.4. Remove display inlet panel (4 bolts)



5.5. Remove 24V DC harness of the 3 PCB Inverter CLA/CLB/CHC (CN400)



CLA



CLB

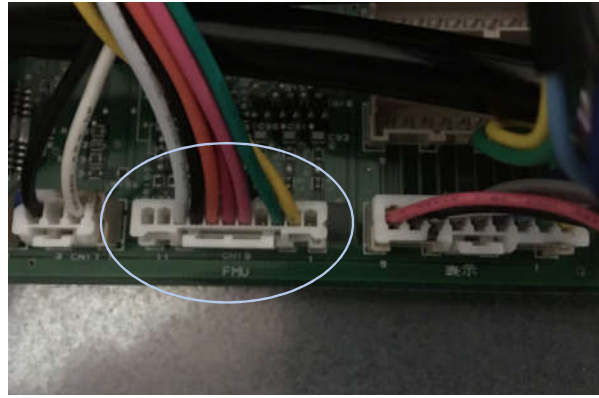
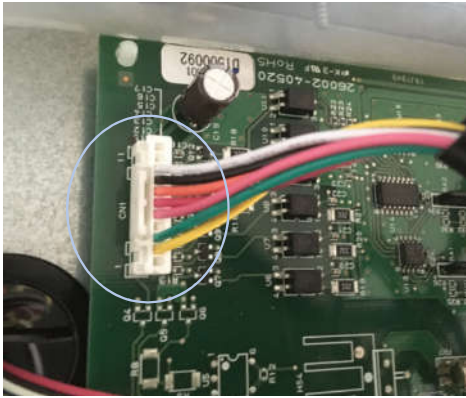


CHC

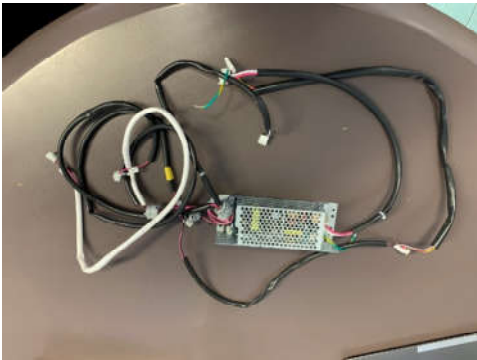


3.Old AC/DC converter removal

6.Remove Communication harness FMU between the PCB fan motor (CN1) & the PCB Controller (CN18-FMU)

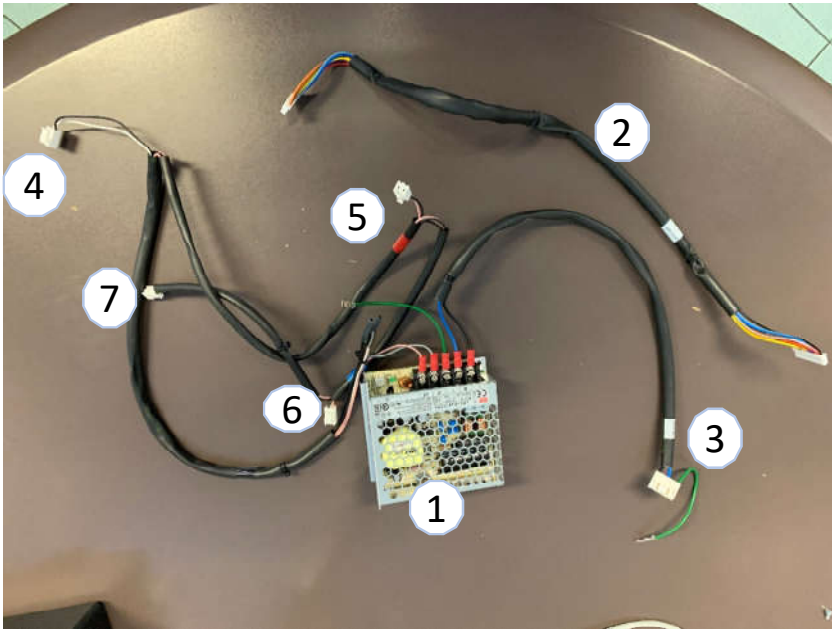


7.Remove the AC/DC converter and the 6 harnesses.



4. New AC/DC converter installation

Kit AC/DC converter



1. AC/DC converter
2. Communication harness FMU
3. Power supply harness 230V
4. 24V DC PCB controller harness
5. 24V DC PCB Inverter CLA harness
6. 24V DC PCB Inverter CLB harness
7. 24V DC PCB Inverter CHC harness

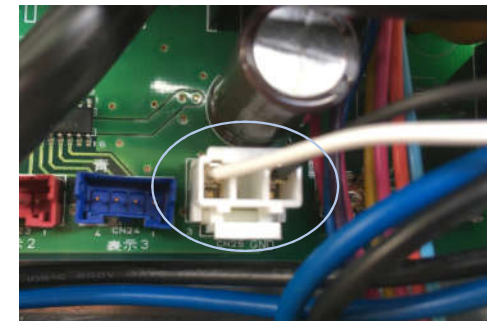
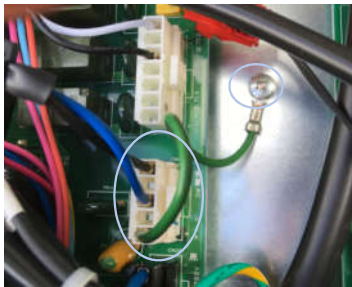
4. New AC/DC converter installation

1. Installation of the new AC/DC converter

1.1. Installation of AC/DC fixing bolt and earth wire.



1.2. Installation of the power supply harness and earth wire (CN28)



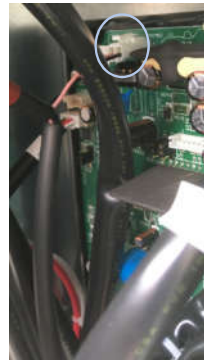
1.3. Installation of 24V DC harness on the PCB controller (CN25)

4. New AC/DC converter installation

1.4. Installation of the 24V DC harness on the 3 PCB Inverter CLA/CLB/CHC (CN400)



CLA



CLB



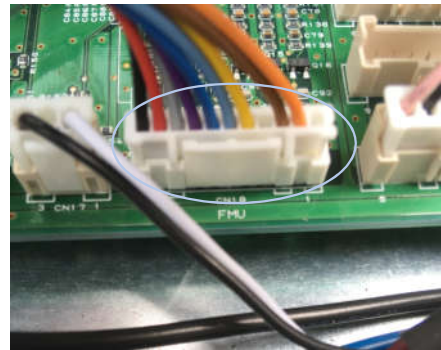
CHC

1.5. Installation of the display inlet panel (4 bolts)



4.New AC/DC converter installation

2.Installation of the Communication harness FMU between the PCB fan motor (CN1) & the PCB Controller (CN18-FMU)



- 3.Installation of the CDU-L top casing
- 4.Power supply switch ON
- 5.Check function of the 3 loops CLA/CLB/CHC
- 6.Installation of the CDU-L front right panel
- 7.Installation of all the bolts on casing.

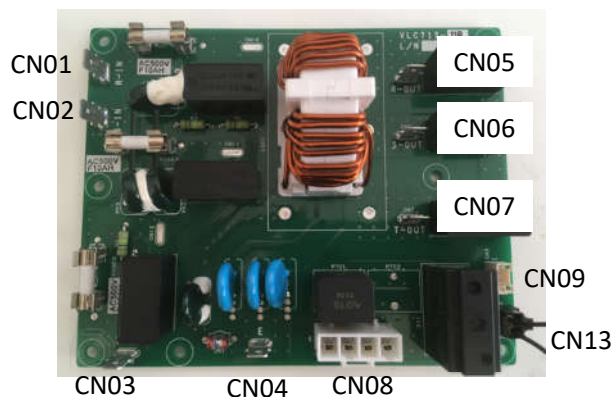


2. PCB Filter 400V triple phase

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

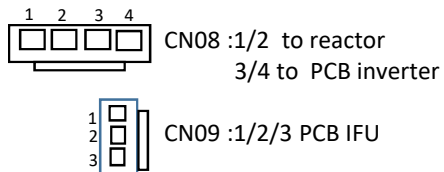
NFU-4SCR1 ou NFU-4SCR3



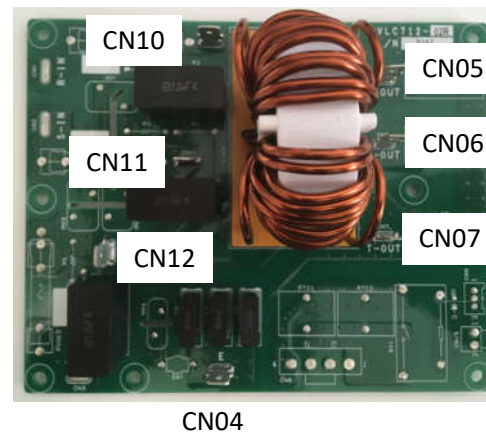
Filter inlet
 CN01/CN02 :400V AC
 CN01/CN03: 400V AC
 CN02/CN03: 400V AC
 CN04 : GND
 Filter outlet
 CN05/CN06 :400V AC
 CN05/CN07: 400V AC
 CN06/CN07: 400V AC
 CN13 : shunt (error E10 H56 if shunt missing)

Test on the board:

- 1 board per lcooling cooling A, B and C
- Test for the presence of inter-phase voltage (230 VAC) at input and output
- Test off voltage, the continuity of the fuses



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



3.PCB Filter replacement procedure

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