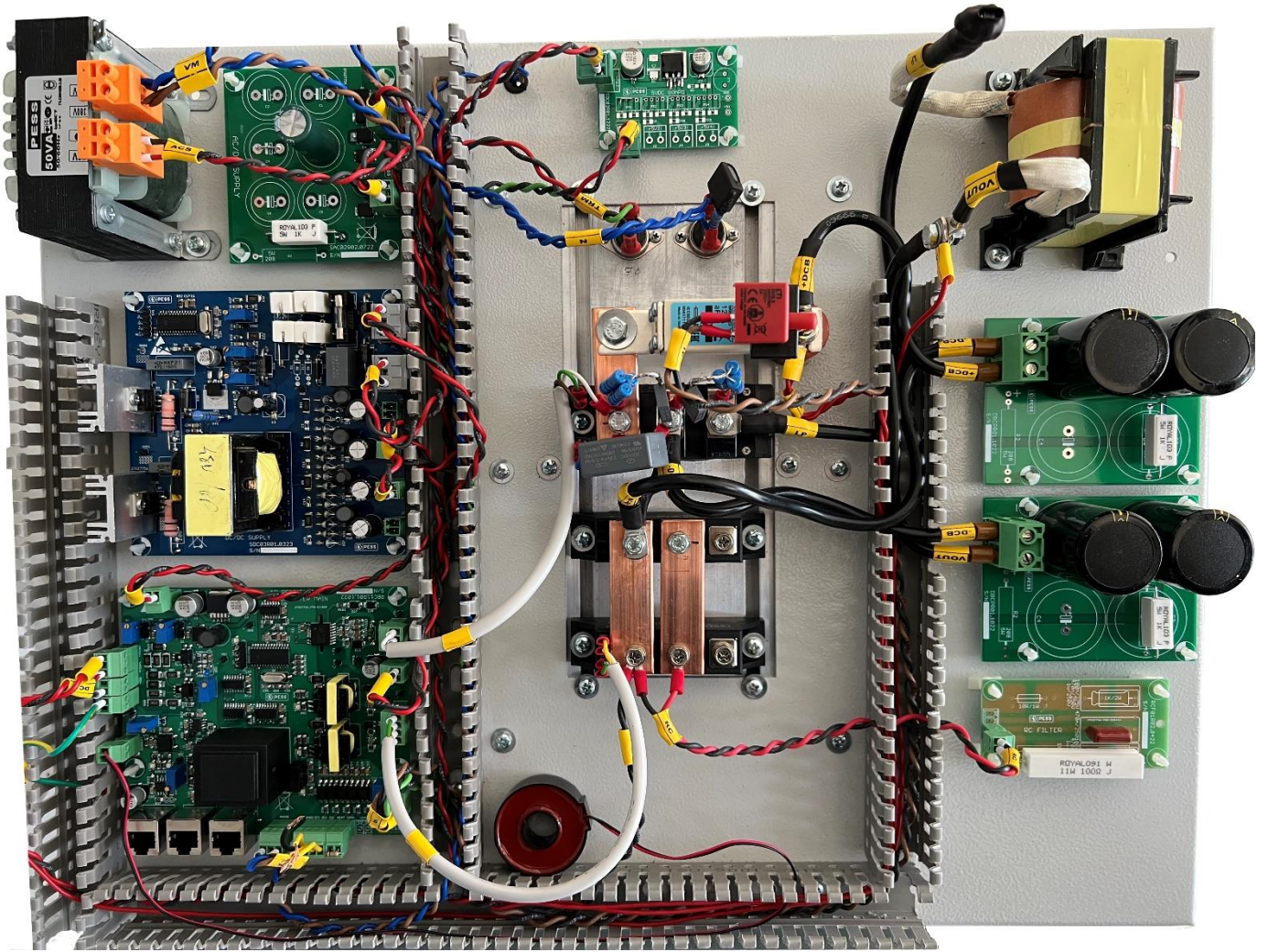
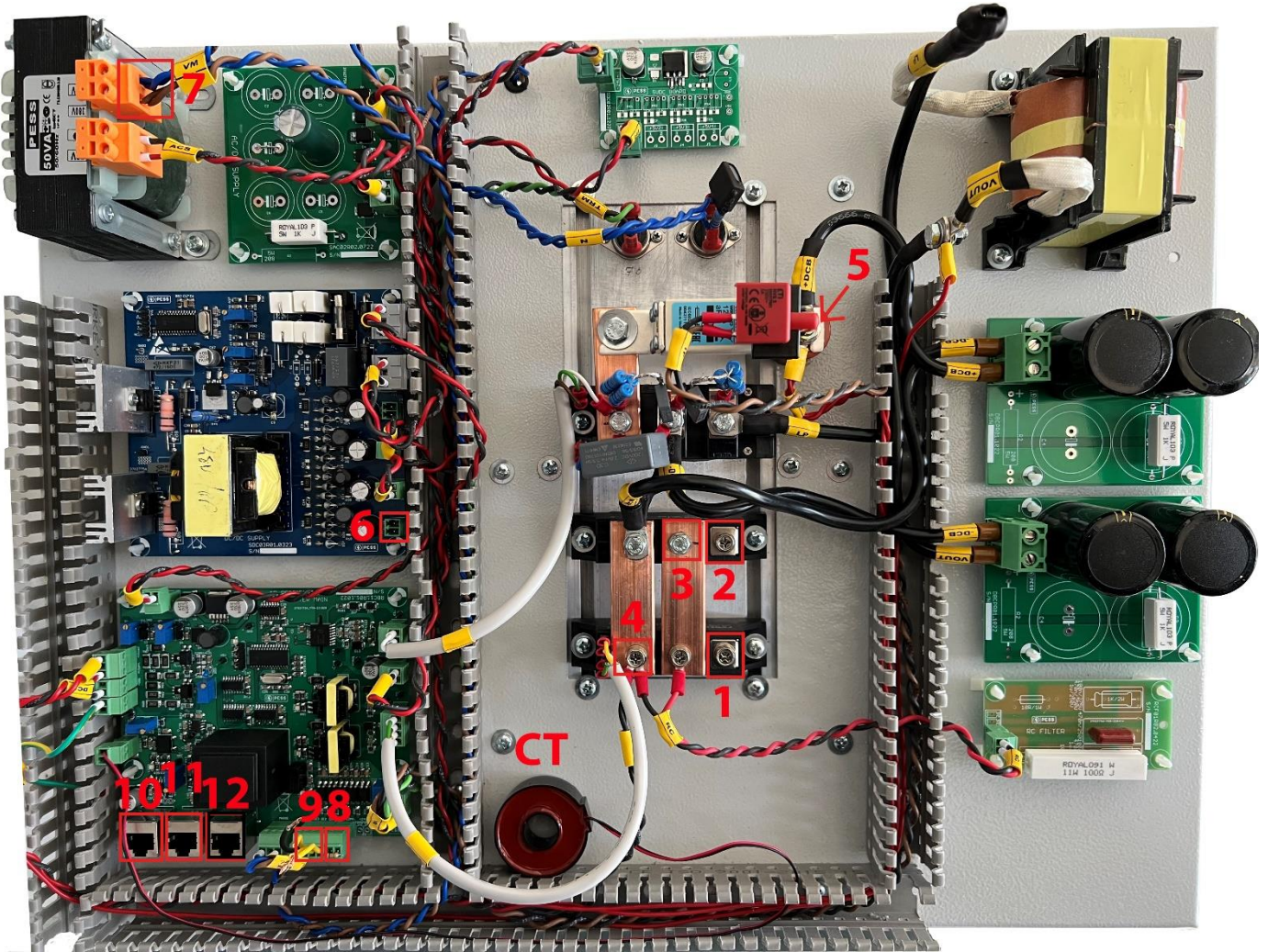


Quick Installation Guide for PESS Open Frame Devices



1. Connection Points



2. Cabling Description

Please read this section carefully. PESS company doesn't accept any responsibility if the connection method specified in this document is not followed or the wrong connection is made.

1. Point : Phase Input

Before the phase input cable is connected to the 1st point, the current transformer labeled as "CT" must be passed through this cable.

You need to connect **Ø10 mm² NYAF cable with cable lug** from transformer secondary to the point 1. Cable connection mustn't to be loose but please careful about give damage to the thyristor module.

Caution ! Please do not change the phase and neutral cable connection points.

2. Point : Neutral Input

You need to connect **Ø10 mm² NYAF cable with cable lug** from transformer secondary to the point 1. Cable connection mustn't to be loose but please careful about give damage to the diode module.

Caution ! If you don't follow the pinout connection sequence, the LEM module will be damaged.

3. Point : Inductor Input

You need to connect **Ø10 mm² NYAF cable with cable lug** to the point 3(+DC Copper bar). Cable connection mustn't to be loose.

* The other terminal of the inductor should be connect to the DC BUS Capacitor. The recommend ratings for DC BUS Capacitor is 1-4 piece 10000 uF 63 VDC. The quantity of the capacitor depends on the desired ripple performance.

** Due to the large number of connections, we strongly recommend using an electrical isolator for easy connection at the junction of the inductor and capacitor or user continue with free hanging bolt and nut connection with proper isolation precautions.

4. Point : DC BUS Capacitor (-) Input

The positive terminal of the DC BUS capacitor is already connected together with the inductor. The negative terminal of the DC BUS capacitor should be connected to the point 4. Please careful about the thin wires that connected to this point. First remove these cables then connect the **Ø10 mm² NYAF cable with cable lug** after that you can connect the thin wires on this cable. **Please don't forget re-connect this thin cable again.**

Caution ! Please careful about the polarity of the capacitor. Wrong connection may be cause to the explosion and also user should be sure about the capacitor is discharged.

5. Point : +DC BUS Voltage Input for DC-DC Converter Circuit

To provide +DC input voltage of DC-DC Converter circuit, 10 mm² NYAF cable should be connected together with cable lug at the junction of inductor and capacitor. This cable should be short as possible as for best converter efficiency and performance.

6. Point : +24 VDC Supply for relay board.

In order to provide 24 VDC supply to the relay card, 2x0.5 or 2x0.75 mm² NYAF cable must be drawn from point 6 to the supply input of the relay card.

Caution ! Please careful about the polarity of the dc voltage. Wrong polarity causes a permanent damage to the relay board.

7. Point : AC Monitoring Input

2x0.5 or 2x0.75 mm² NYAF cable should be drawn from the transformer primary winding to the 7th point and also **there are some other cables on the point 7 please don't forget re-connect these cables again.**

8. Point : Heat Compansation Input

Our rectifier devices has heat compensation ability for the rectifier batteries. When battery temperature is increased rectifier protect the batteries.

Factory default we insert a 10K resistor for terminate this option. If user deside to use this option resisitive temperature sensor should be connect to this terminal.

Caution ! If this connector floating, it's causes a undesired voltage flactuations at the DC BUS voltage

9. Point : Digital Inputs

There are auxillary digital inputs for monitoring of the circuit breakers tripped or not. User if you want to use this option do cabling according to the device schematics. If the user don't want to use this these digital inputs, user should be do short circuit all pins in this connector.

10. Point : HMI Communication

For the front panel to work, the internal-1 connector on the front panel and the 10th point must be connected with an RJ45 cable.

Caution ! We strongly recommend all communication cables should be keep short as possible as and shielded cables should be used.

11. Point : Rectifier LEM Input

User should be connect HASS 50-S DC Current measurement module to the 11th point via RJ45 cable.

Caution ! We strongly recommend all measurement cables should be keep short as possible as and shielded cables should be used.

12. Point : Battery LEM Input

User should be connect HASS 50-S DC Current measurement module to the 11th point via RJ45 cable.

Caution ! We strongly recommend all measurement cables should be keep short as possible as and shielded cables should be used.

3. Transformer Ratings and Polarity Check

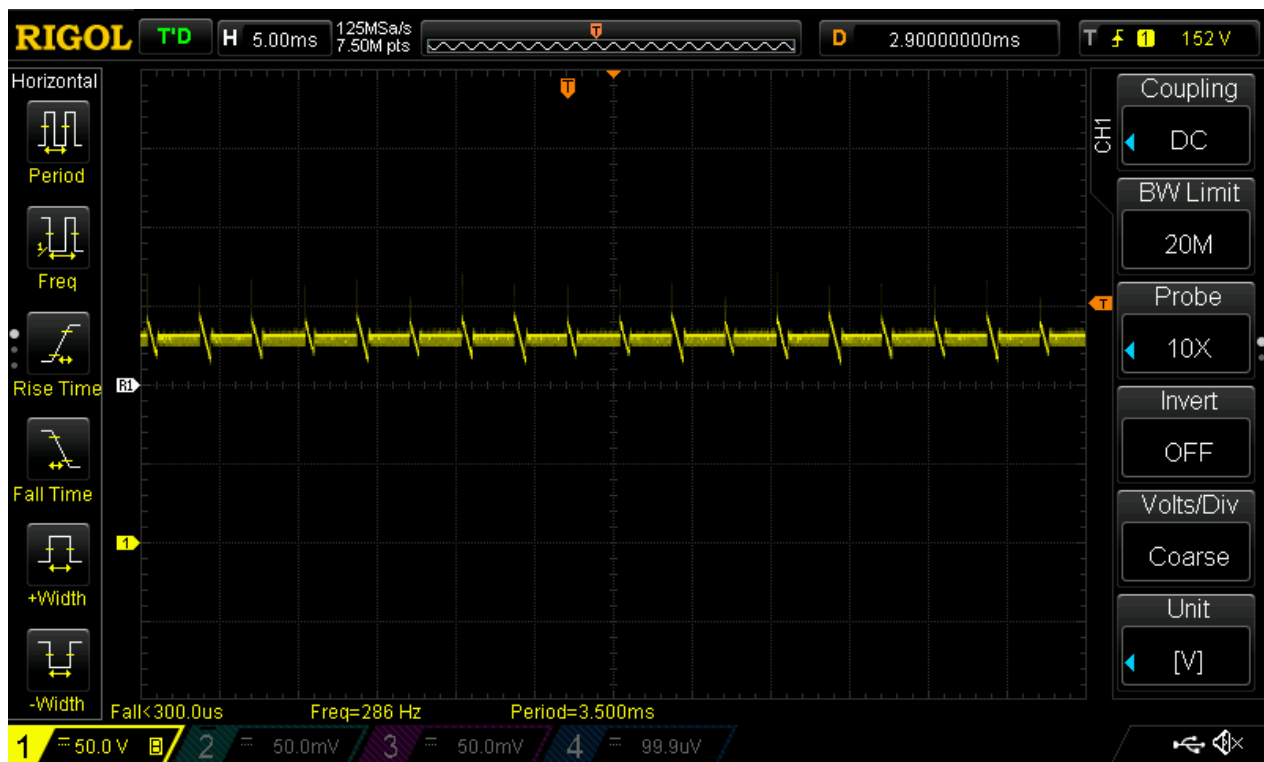
The main high power transformer ratings for 48 VDC 30 A single phase open frame rectifier is 2 kVA 220 / 76 VAC. The quality of the transformer directly effects to the rectifier quality and efficiency.

PESS, recommends use anti-vibration and isolation wedges when the mounting the transformer and inductor. Also, transformer core should be varnished and necessary electrical indication labels should be placed and correct.

PESS recommends that the user, request transformer polarity marking from their transformer manufacturer. It will be very user for detect polarity of the transformer otherwise it should be detected directly by user at the installation site.

There is one more very important step that needs to be care about before turn-on rectifier.

Please disconnect the rectifier output inductor(point 3) and connect oscilloscope to the copper bar on the device. The settings for the oscilloscope is 50V/div and 5 mSec/div.



If don't see a waveform like this picture please change secondary cables of the transformer. It's mean the polarity of the transformer is wrong. Also, you need to see voltage raises in slowly. If the suddenly rises to peak value it's also dangerous for the rectifier capacitors. In this case please do not connect the inductor.

If you are turn-on the rectifier without do these tests. It's may be cause to fatal damage on the device. So you need to change secondary cables than one more time check and if you see this wave form you can connect inductor and turn-on rectifier.