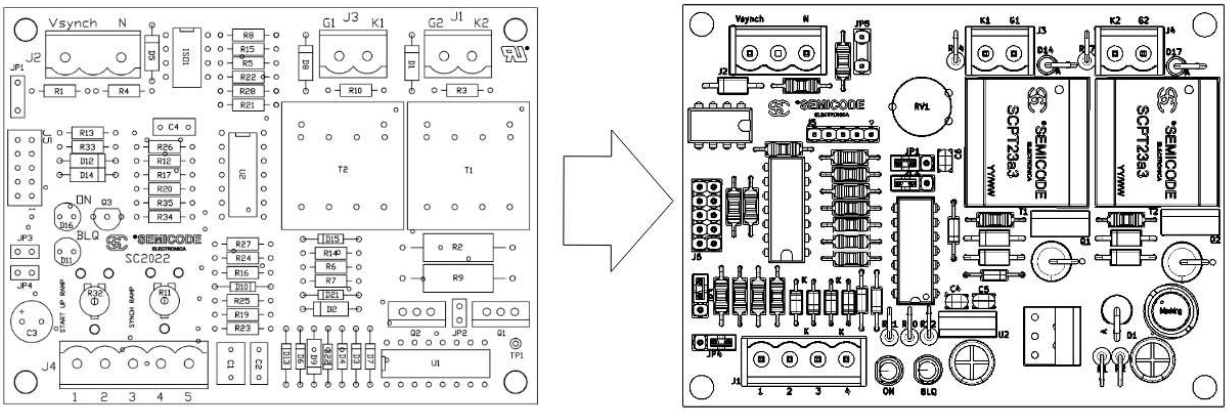
REPLACEMENT GUIDE SC2022 TO SC2024



1 DOCUMENT'S SCOPE

The following document is intended to be a quick installation guide for the SC2024 card in applications where the SC2022 card were currently used. The operations to follow to effectively replace one control card with another will be defined step by step.
The installer must follow and proceed with the execution of all the steps described in this document to correctly configure the new firing and control card.

In case of doubt all the technical information regarding both control and firing cards is available in the following links:

SC2022:

- SC2022 Datasheet

SC2024:

- SC2024 Datasheet

2 PREVIOUS CONSIDERATIONS

The dimensions and anchoring points of the SC2024 card are identical to those of the SC2022, and connectors are placed at the same location, so mechanically changing one card for the other can be done directly and without any previous modification of the cabinet or location of old control card.

As for the wiring of signals and card's power supply; as the SC2024 implements some new features, it will be necessary to rewire the signal and power connectors to adapt them to the new board as well as to configure the jumpers on the board.

In the following sections of the document it will described step by step the changes to be performed on the control board and internal configurations to replace one card for the other.

All the necessary plug-in connectors and anchoring screws are included in the box of the SC2024. For its installation only be necessary in some cases (apart from cutting tools and screwdriver) a multimeter to calibrate the progressive start-up time of the SC2024.

2.1 Safety requirements for the card installer/operator

The operator / installer of the card must take into consideration and follow the following points:

- That all safety devices (switches, housings, protections, danger symbols, etc.) are present and in perfect condition and used correctly.
- That the security regulations that apply are contemplated.
- That the personnel have access to the operating instructions and safety regulations at all times.
- That the operating conditions and restrictions resulting from the technical information are contemplated.
- In case of overvoltage, noise, temperature increase, abnormal vibration or similar, the device should be put out of operation immediately and the maintenance personnel should be informed.

Reserves the right to change limits, test conditions and dimensions given in this data sheet at any time without previous notice.

3 PROCEDURE

3.1 REWIRING OF THYRISTOR GATE CONNECTORS

SC2024 and SC2022's firing connectors are mechanically and functionally identical, the wiring of all applications must remain unchanged.

3.2 REWIRING OF THE REFERENCE, BLOCKING AND POWER SUPPLY CONNECTORS

The pin count in the connector has been reduced from 5 to 4 as the ±15 V power supply in the SC2022 has been replaced with a single 24 V power supply in the SC2024, simplifying the connection and reducing the number of inputs. The rest of the connection had been rearranged as it can be seen in *figure 1*.

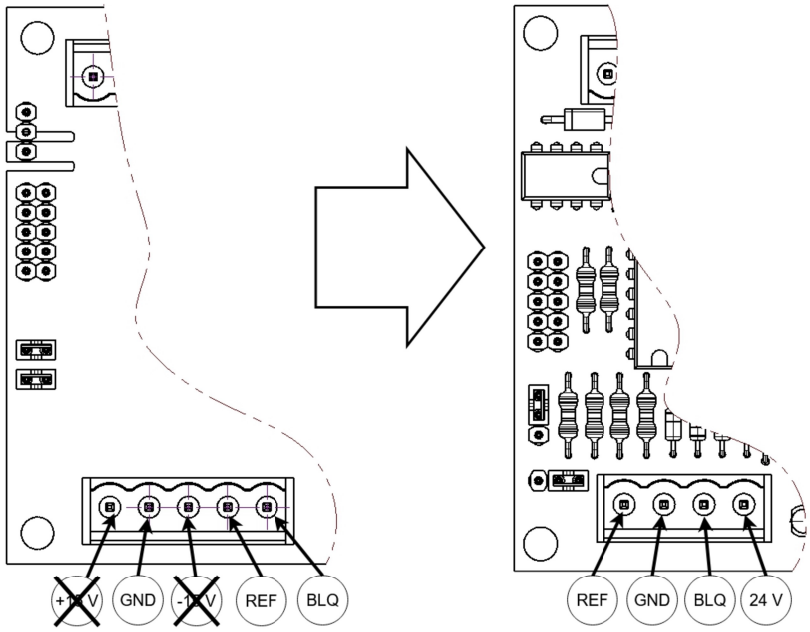


Figure 1: Control connector rewiring detail.

The reference input has been modified to allow different input options. While in the SC2022 this input only worked from 0 to 10 V, in the SC2024 it can work also from 0-5 V or in current mode from 4-20mA, in order to configure the board to the desired mode check the *"Reference signal type setting"* in the SC2024 datasheet.

3.3 REWIRING OF SYNCHRONISM

For the synchronism input, the wiring does not need any adjustments, it is placed in the same position, with the same connections and works in exactly the same range.

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3.4 BOARD ADJUSTMENTS

POWER-ON RAMP

As the SC2022, the SC2024 allows the adjustment of the he progressive start-up duration can be adjusted with the potentiometer on board RV1 from 0 to 20 seconds.

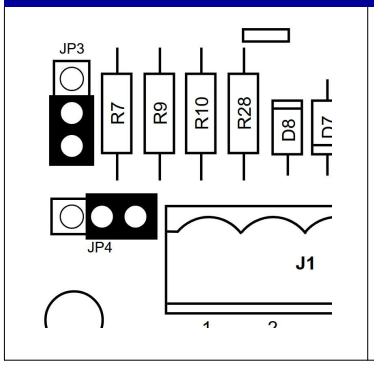
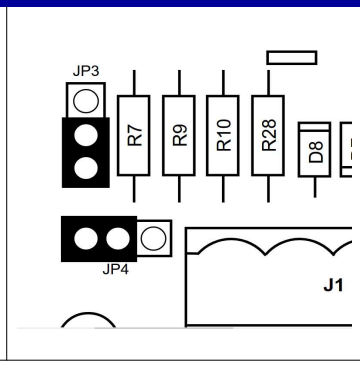
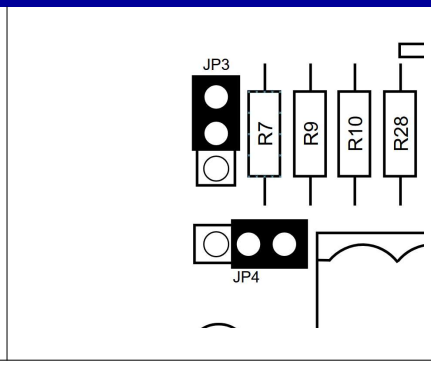
Master/Slave setting (JP1 and JP2 jumpers)

For the correct performance of the SC2024 in multiple phase applications one board must be configured as master and the rest as slave. The reference input must be connected to the master board and the rest of the bard will be connected to the master board and to its own synchronism input.

JP1 and **JP2** jumpers must be placed between the centre and right pins in order for the board to work in single-phase or in master mode in a multi-phase application, and between middle and left pin in order to work as slave in multi-phase applications.

Reference signal type setting (JP3 and JP4 jumpers)

JP3 and **JP4** are meant to set the input signal type to be used. I put configuration must be made in the **master board**, this configuration will not have any effect on boards set as slave.

Voltage		*Current*
0-5V	*0-10V*	*4-20 mA*
		

Synchronism input setting:

JP5 jumper must be active when the synchronism voltage is below **230 V_{RMS}**, and disabled when then voltage synchronism is above **230 V_{RMS}**, or **540 V_{RMS}** in the HV version.

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