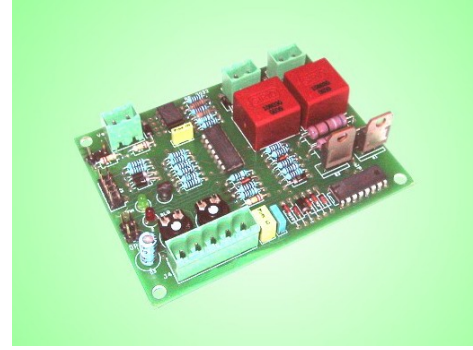


PRELIMINARY TECHNICAL INFORMATION
HIGHLIGHTS

- Modular system.
- Pulse train firing signal.
- Wide range of application topologies.
- Standard dimensions for 72 mm DIN rail platform.
- SC2022HV version for higher voltages (up to 700V).



non-contractual photo

GENERAL DATA

Supply voltage	+15 / 0 / -15 V _{DC}
Converter voltage	50 to 480 V
Load connections	100 to 700V (SC2022HV version)
Single phase application circuits	single phase / multi phase
Three phase application circuits	W1C, M2CA, M2CK, B2HZ, B2HK, B2HA, B2C
Six phase application circuits	W3.2C, W3C, B6HA, B6HK, B6C
Optional application circuits	M6CA, M6CK, M3.2CA, M3.2CK
Optional application circuits	W1H, M1C, W3H, M3CA, M3CK

CONTROL OPTIONS

Supply voltage	External 4k7 potentiometer 0-10V _{DC} analogic signal
External blocking	External open contact

INTERNAL ADJUSTMENTS

Power-on ramp	Potentiometer on board 0.1 to 20"
---------------	-----------------------------------

SIGNALING

External blocking	Red LED
Powered system	Green LED

FIRING

Minimum firing current (pulse train)	200 mA ⁽¹⁾
Maximum firing voltage (pulse train)	3 V ⁽¹⁾
Maximum voltage applied to pulse transformers	700 V _{RMS}

(1) Measured with 20Ω load.

CONNECTIONS

Selecting options	Jumpers on board
Power supply, control and firing	type MSTBVA 2,5 (Phoenix contact)

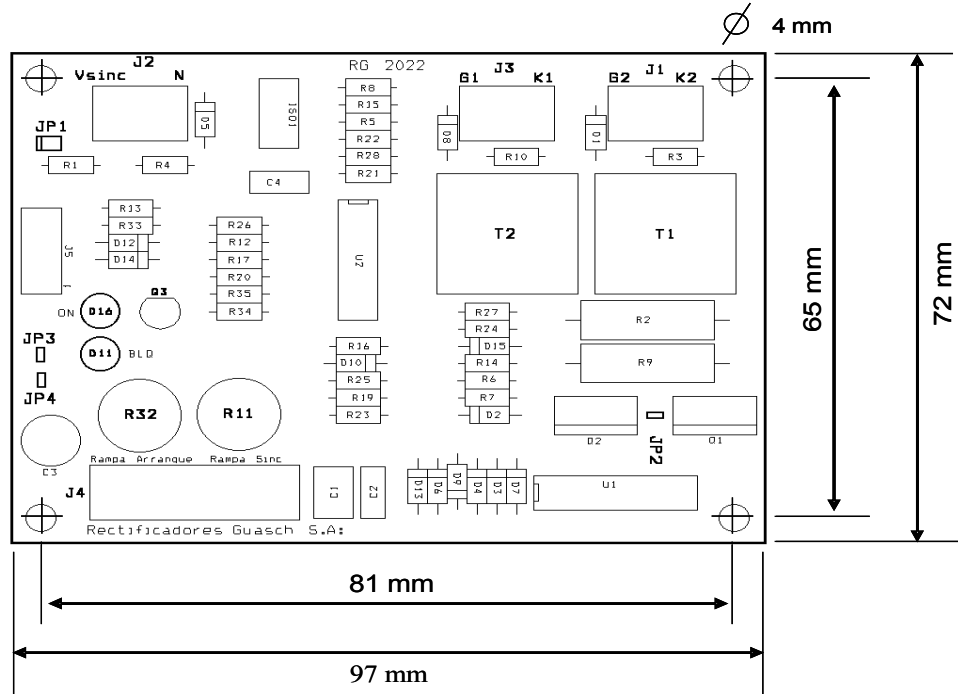
ENVIRONMENTAL SPECS

Protection grade	IP-00
Maximum humidity	50% Rh @ 35°C / 70% Rh @ 20°C
Pollution grade	III
Supply isolation	2500 V _{RMS} @ 1min

111115 Rev.:1

DIMENSIONS

PCB	97x72x26 mm
Fixations	Drill holes Ø 4.2 mm
Weight	78 gr.



ACCESSORIES

The board is supplied with the following accessories:

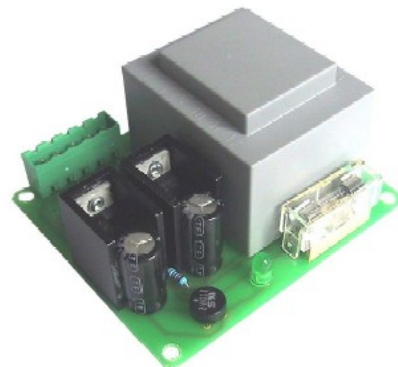
- Isolators and fixing screws.
- Plugging connectors.
- Configuration jumpers.

As option can be request:

- Interconnection flat cable for multiphase assemblies (SCCAB22 reference).
- External power supply (SCFA2x15 standard type).



SCCAB22



SCFA2x15

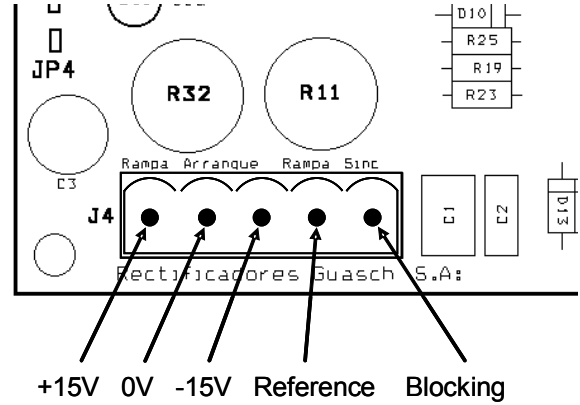
CONTROL & SUPPLY CONNECTORS:

J4 CONNECTOR:

1- Pins **+15V**, **0V**, **-15V** are the board's connection for input power supply. It's required an external power supply $\pm 120\text{mA}$.

2- **Reference** Pin is an external reference 0 – 10V, referred to 0V Pin.

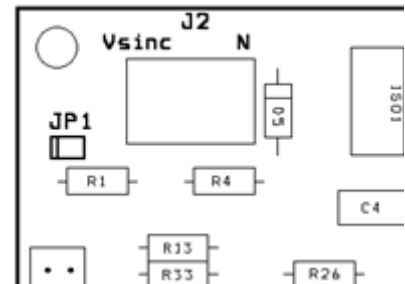
3- Connecting the **Blocking** pin to **0V**, the board suppress the thyristors' firing pulses, and the converter output voltage becomes 0V. In case that, the function start up ramp has been selected, when the board is unblocked, then starts a progressive start up with a fixed duration.



J2 CONNECTOR:

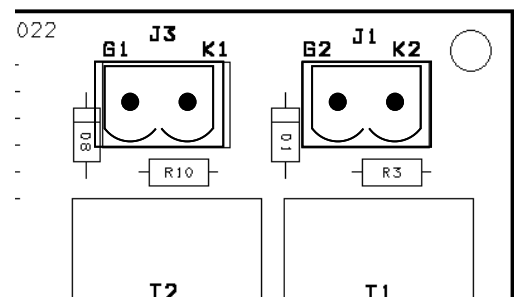
J2 connector, is the synchronism voltage. Consider different connection types following the schemes below.

The synchronism voltage is obtained normally by the corresponded thyristors cathodes. The connection schemes for each configuration are specified in the following pages.



J1 AND J3 CONNECTORS:

J1 and **J3** connectors are the thyristors gate outputs. It has been used the nomenclature **G1** as gate 1, **K1** as cathode 1, **G2** as gate 2, and **K2** as cathode 2.



J5 CONNECTOR:

This connector is used for interconnect different boards in the case of a multiphase application. A flat cable, which must be previously requested by the customer, brings the power supply, blocking and control signals, as well as, the progressive startup.

JUMPER SELECTABLE OPTIONS:

JP1 JUMPER:

JP1 jumper must be active when the synchronism voltage is below $230V_{RMS}$, and disabled when then voltage synchronism is above $230V_{RMS}$.

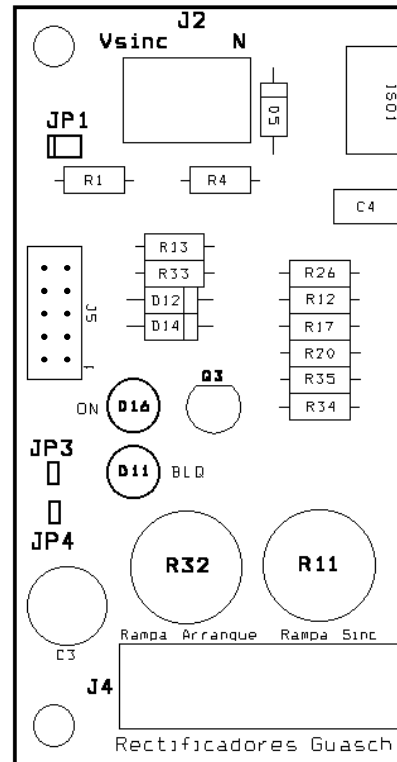
JP3 JUMPER:

JP3 jumper is used to activate the progressive start up. In the case of a multiphase assembly, **JP3** will be activated only at the master board.

JP4 JUMPER:

JP4 jumper, will be connected only in the master board for a multiphase assembly or to the control board for a single phase assembly with a single SC2022 board.

For multi-phase assemblies one board must be set as master (**JP4** connected) connected with the rest, left as slave boards (**JP4** unconnected). To master board must be connected to **J4** the power supply and external control signals. User must leave unconnected slave **J4** connectors.



RAMP ADJUST POTENTIOMETER:

Potentiometer **Rampa arranque**, allows to set the progressive start up. time.

SYNC RAMP POTENTIOMETER:

Potentiometer **Rampa sinc** is preset and it mustn't be modified.

LIGHTNING INDICATIONS:

ON LED, indicates that the board power supply is on.

BLQ LED, indicates the blocking condition.

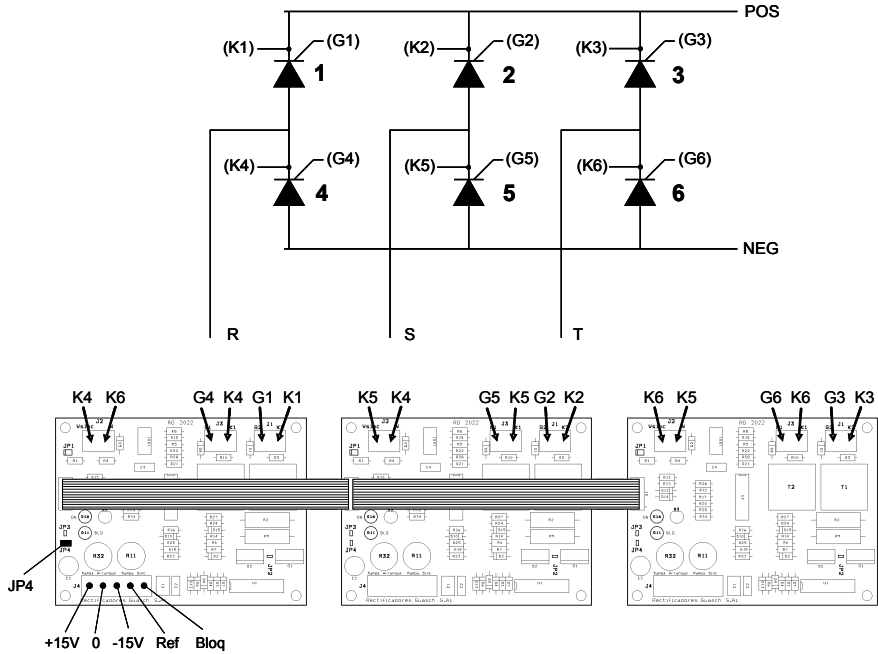
MOUNTING CONSIDERATIONS

- 1- Avoid using long cables for the firing system, so that, use twisted or shielded cables. This advice is also for the control potentiometer cables.
- 2- Protect the control board in front of strong magnetic fields, for example, large power transformers. It's recommended to locate the board over a surface connected to ground.
- 3- After mounting the system, it's advisable to make some working measures with small loads and reduced voltages. In this way, any possible error in the connections will be detected on time and won't be produced any serious consequences for the application.
- 4- In critical applications, with variable loads, parasitic in the network, regulation with minimum currents and voltages, etc... can produce non desirable regulation oscillations. For these cases, **contact our technical department to study an optimal solution.**
- 5- For specific and exclusive applications, which are not described in this brief, it is possible to make adaptations of the board and connect auxiliary control modules. So please, contact our technical department.

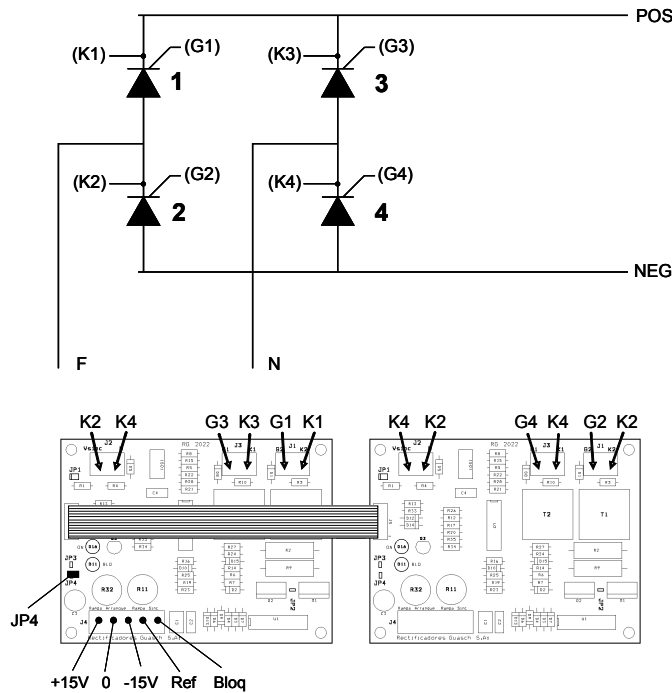
CONNECTION SCHEMES

Following you can find the most typical topology scheme connections. Regarding other configurations please contact us.

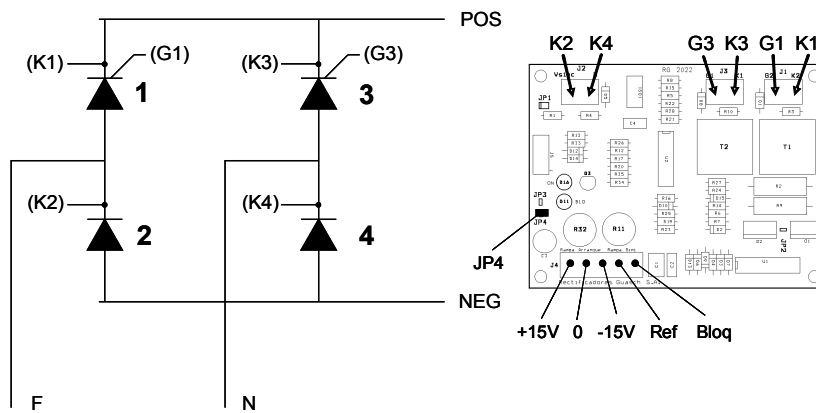
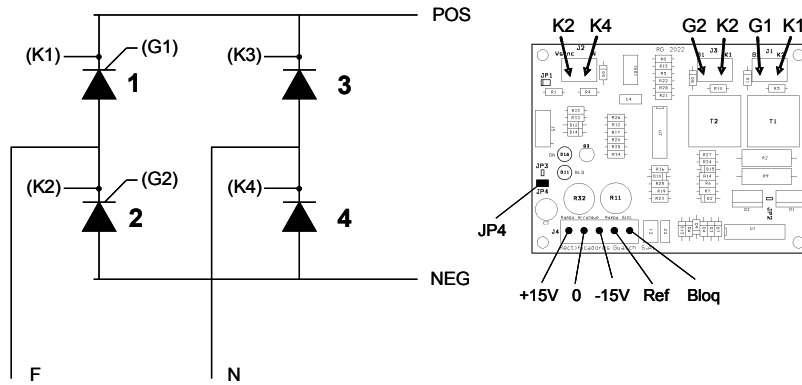
B6C (THREE PHASE CONTROLLED BRIDGE).



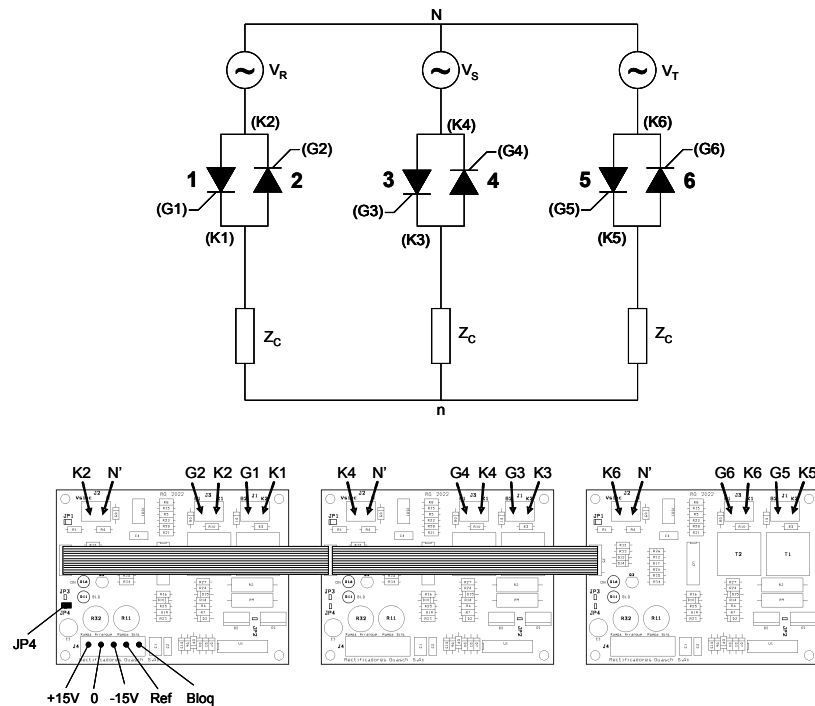
B2C (SINGLE PHASE CONTROLLED BRIDGE).



B2HK (SINGLE PHASE SEMICONTROLLED BRIDGE).

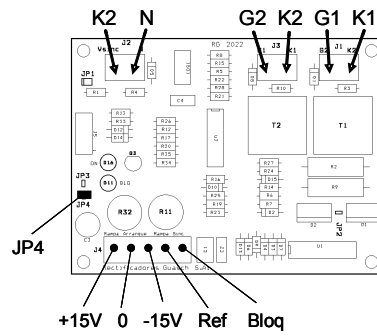
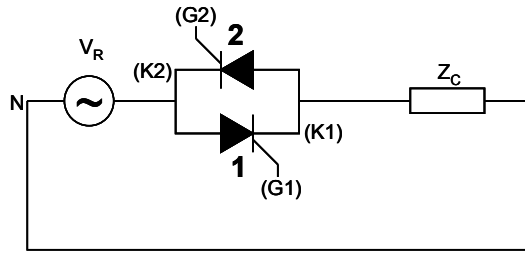


W3C (THREE PHASE WYE AC/AC CONVERTER).

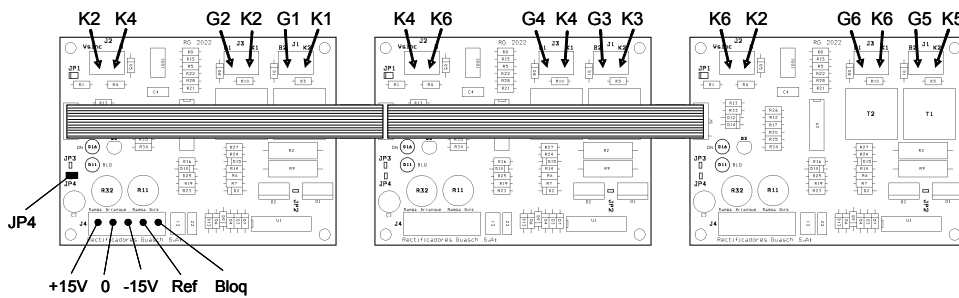
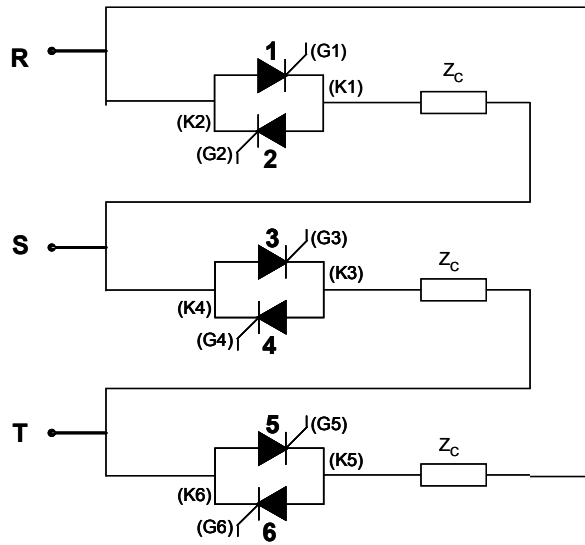


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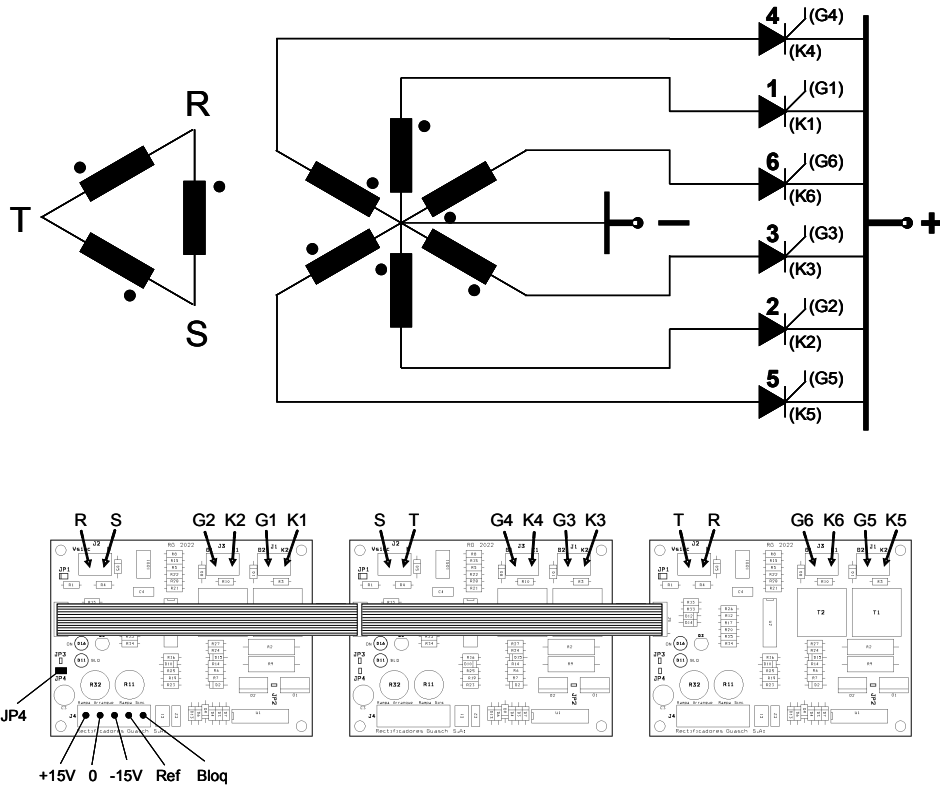
W1C (SINGLE PHASE AC/AC CONVERTER).



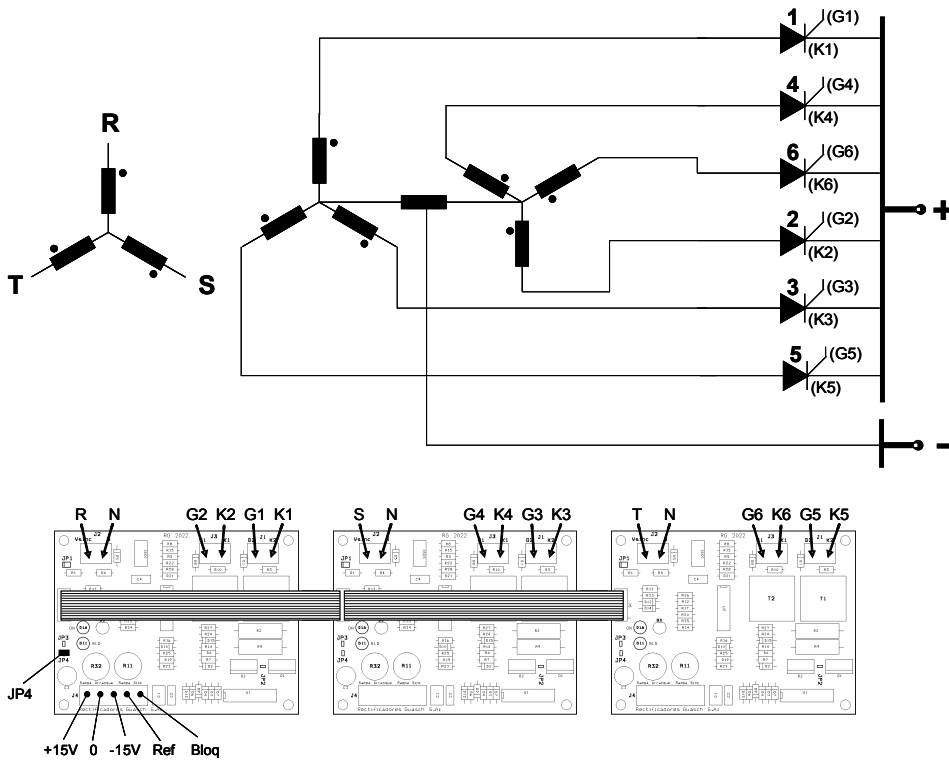
W3C (THREE PHASE DELTA AC/AC CONVERTER).



M6CK (SIX PHASE AC/DC CONVERTER).



M3.2CK (SIX PHASE STAR AC/DC CONVERTER).



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