



EG4 Rapid Shut Down Wiring Instruction User Guide

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EG4 ELECTRONICS



RAPID SHUT DOWN WIRING

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SAFETY

1.1 SAFETY INSTRUCTIONS

International safety regulations have been strictly observed in the design and testing of the inverter. Before beginning any work, carefully read all safety instructions, and always observe them when working on or with the unit. The installation must follow all applicable national or local standards and regulations.



WARNING! To reduce the risk of injury, read all instructions ”

Incorrect installation may cause:

- Injury or death to the installer, operator or third party
- Damage to the inverter or other attached equipment

1.2 IMPORTANT SAFETY NOTIFICATIONS



DANGER! Hazardous Voltage Circuits!

There are various safety concerns that must be carefully observed before, during, and after the installation, as well as during future operation and maintenance. The following are important safety notifications for the installer and any end users of this product under normal operating conditions.

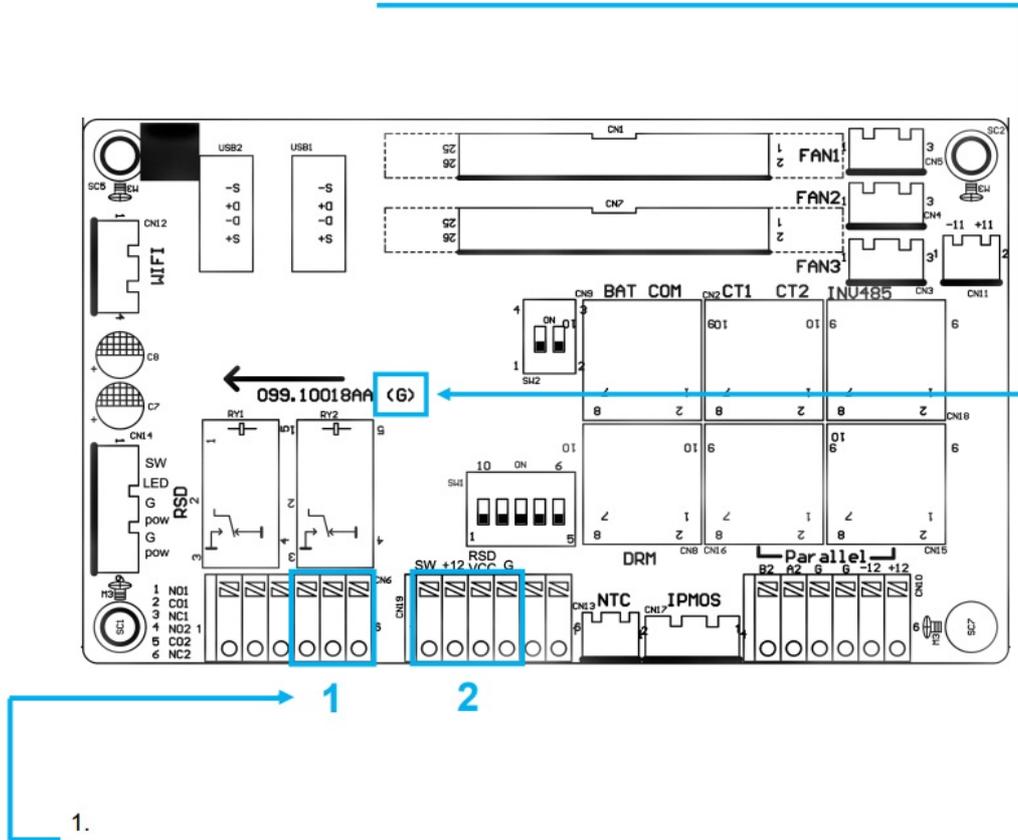
1. Beware of high PV voltage. Please install an external DC disconnect switch or breaker and ensure it is in the “off” or “open” position before installing or working on the inverter. Use a voltmeter to confirm there is no DC voltage present to avoid electric shock.
2. Do not make any connections or disconnections (PV, battery, grid, communication, etc.) while the inverter is operating.
3. An installer should make sure to be well protected by reasonable and professional insulative equipment [e.g., personal protective equipment (PPE)].
4. Before installing, operating, or maintaining the system, it is important to inspect all existing wiring to ensure that it meets the appropriate specifications and conditions for use.
5. All warning labels and nameplates on the inverter should be clearly visible and must not be removed or covered.
6. The installer should consider the safety of future users when choosing the inverter’s correct position and location as specified in this manual.
7. Please keep children from touching or misusing the inverter and relevant systems.

INTRODUCTION

This guide includes a set of wiring instructions for Rapid Shut Down (RSD) switches for 2 versions of EG4 inverter interface boards (Version G & Version I). The simplest way to identify the two versions of the board is by looking in the location marked by the blue box below where a “(G)” or an “(I)” will be visible.

RSD SYSTEM WIRING INSTRUCTIONS

3.1 RSD INTERFACE WIRING INSTRUCTION FOR VERSION G BOARD



The image above shows the terminal block locations that will be used for the wiring of an external RSD.

1. Terminals 4 through 6 of the left terminal block (“1” shown above) and terminals 1 through 4 of the center terminal block (“2” shown above) can be used for RSD wiring.

3.1.1 SINGLE INVERTER DEFAULT RSD WIRING

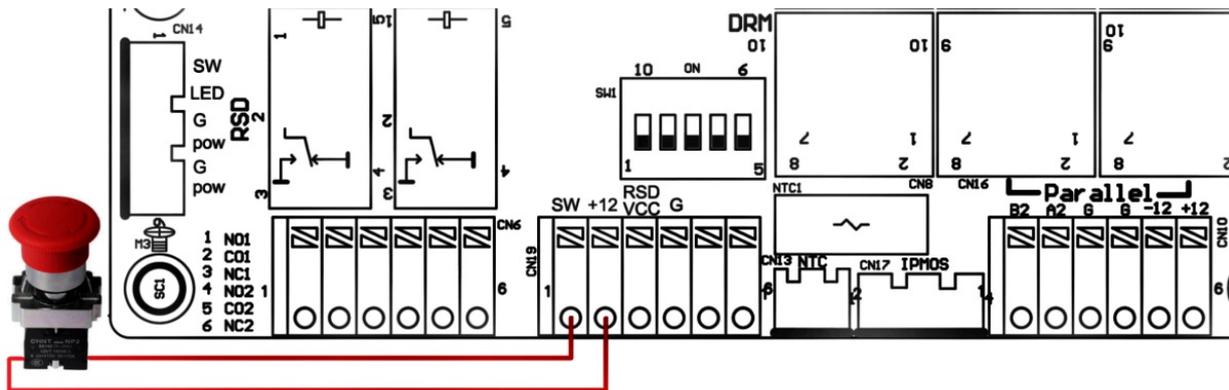
When using a single inverter with a built-in RSD switch, the short circuit jumper connecting terminals 1 and 2 of the center terminal block must remain in place, as shown in the blue box below, otherwise RSD function will be affected.



3.1.2 SINGLE INVERTER WITH EXTERNAL RSD SYSTEM WIRING

Connecting an external RSD switch to a single inverter can be accomplished by using the steps below:

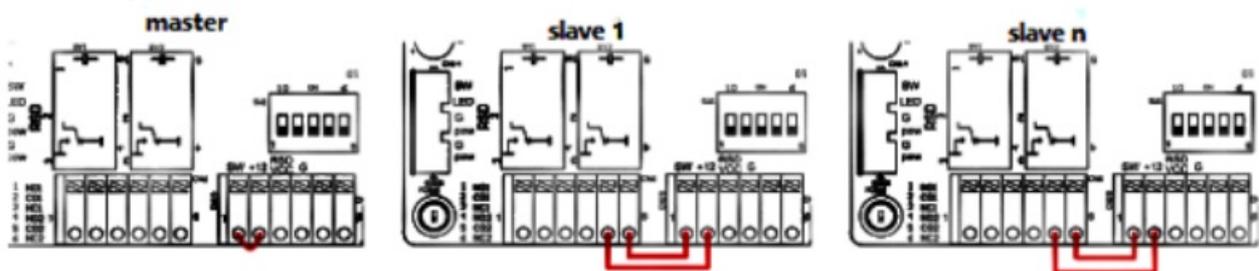
1. The emergency switch should be a NC (Normally Closed) switch.
2. Connect the switch to the board as shown below, using terminals 1 and 2 of the center terminal block.



3.1.3 PARALLEL INVERTERS DEFAULT RSD WIRING

When using parallel inverters with built-in RSD switches, refer to following instruction:

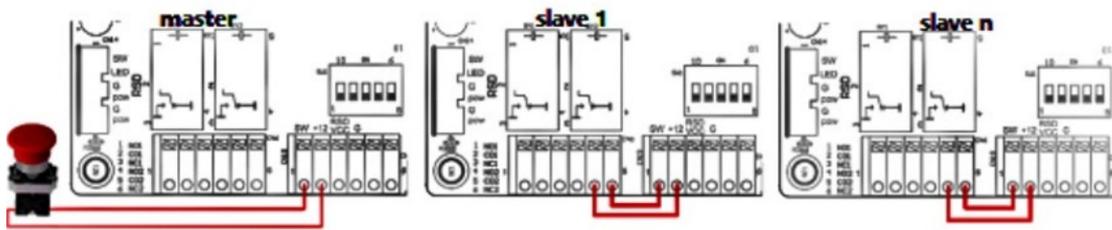
1. Configure one inverter as the master unit, then mark the unit with a label.
2. Keep the master unit's RSD wiring in its original state from the manufacturer. The default orientation will only trigger the RSD switch on the master unit if rapid shutdown is required.
3. RSD wiring instruction for slave units is shown below:
 - a. Remove the existing short circuit jumper.
 - b. Connect terminal 1 on the center terminal block to terminal 6 of the left terminal block
 - c. Connect terminal 2 of the center terminal block to terminal 5 of the left terminal block.



3.1.4 PARALLEL INVERTERS WITH EXTERNAL RSD SYSTEM WIRING

To install an RSD emergency switch for a paralleled system, follow the instructions below:

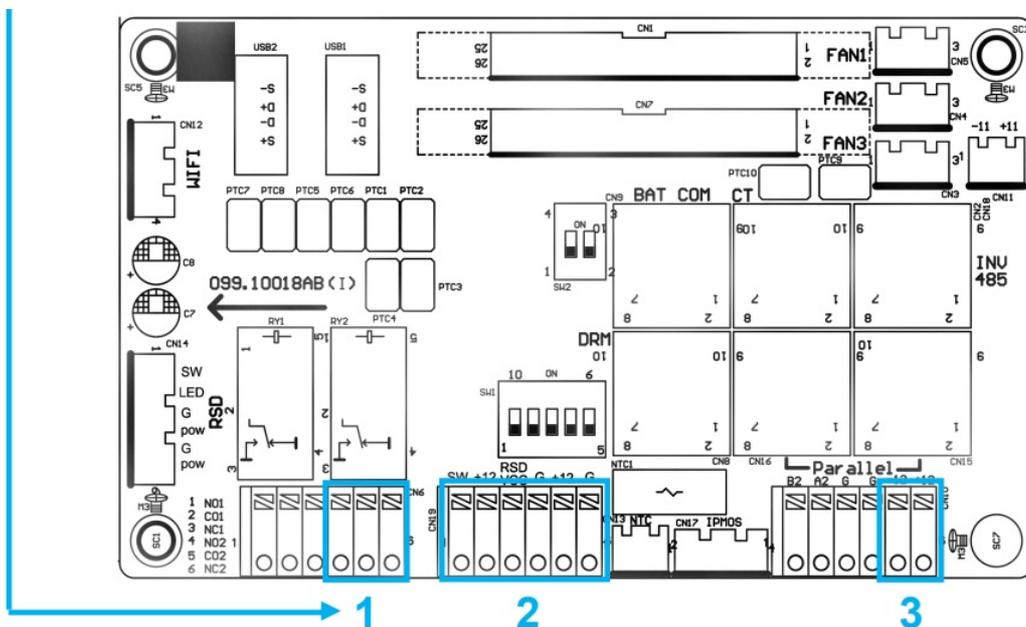
1. Remove the existing short circuit jumper on the master unit, then connect the emergency switch to terminals 1 and 2 on the center terminal block.
2. Slave unit RSD wiring shown below:
 - a. Remove the existing short circuit jumper running between terminals 1 and 2 on the center terminal block
 - b. Connect terminal 1 on the center terminal block to terminal 6 on the left terminal block
 - c. Connect terminal 2 on the center terminal block to terminal 5 on the left terminal block



3.2 RSD SYSTEM WIRING FOR VERSION I BOARD

The terminal locations for wiring with the Version I board are shown in the figure below:

1. Terminals 4 through 6 of the left terminal block ("1" shown below) and terminals 1 through 6 of the center terminal block ("2" shown below) can be used for RSD wiring
2. Additionally, terminals 5 and 6 ("3" shown below) on the right terminal block can be used for the unique wiring needs of certain RSD modules.



3.2.1 SINGLE INVERTER DEFAULT RSD WIRING

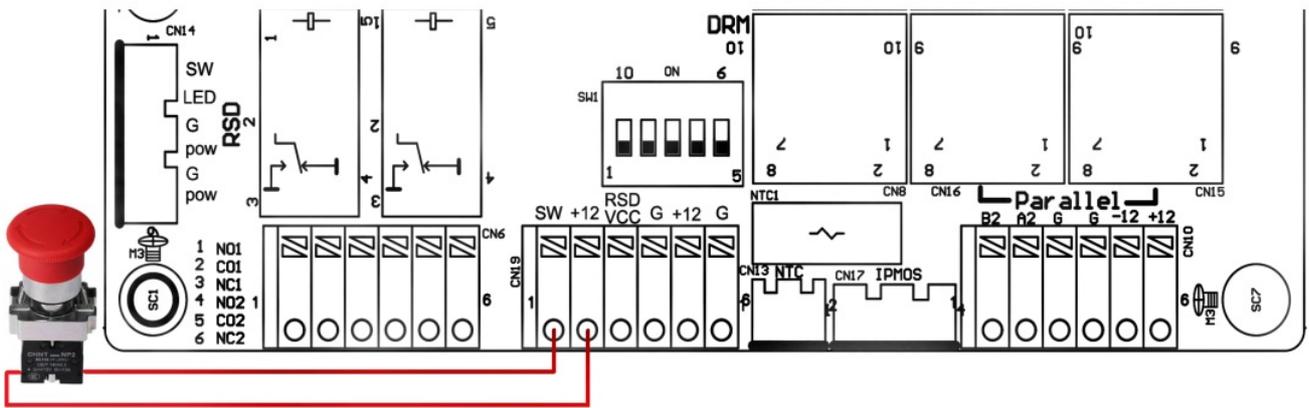
When using a single inverter with a built-in RSD switch, the short circuit jumper connecting terminals 1 and 2 of the center terminal block must remain in place, as shown in blue box below, otherwise RSD function will be affected.



3.2.2 SINGLE INVERTER WITH EXTERNAL RSD SYSTEM WIRING

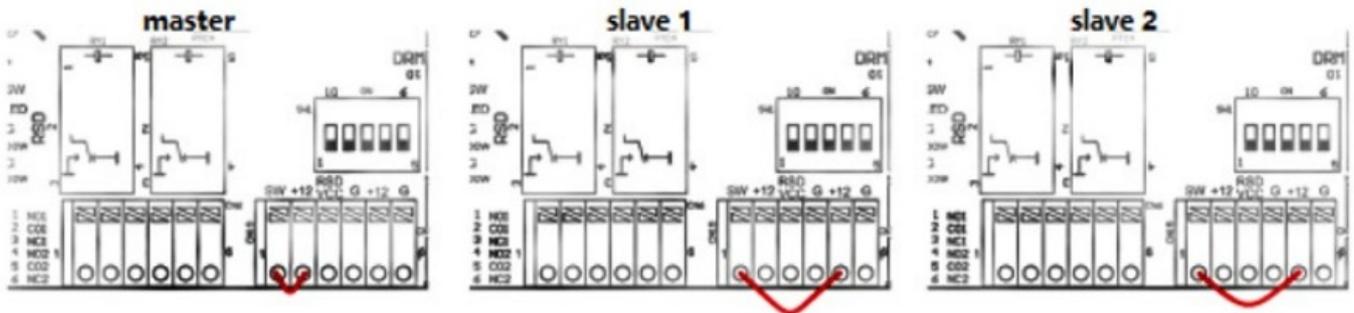
Connecting an external RSD switch to a single inverter can be accomplished by using the steps below:

1. The emergency switch should be a NC (Normally Closed) switch.
2. Connect the switch to the board as shown below, using terminals 1 and 2 of the center terminal block.



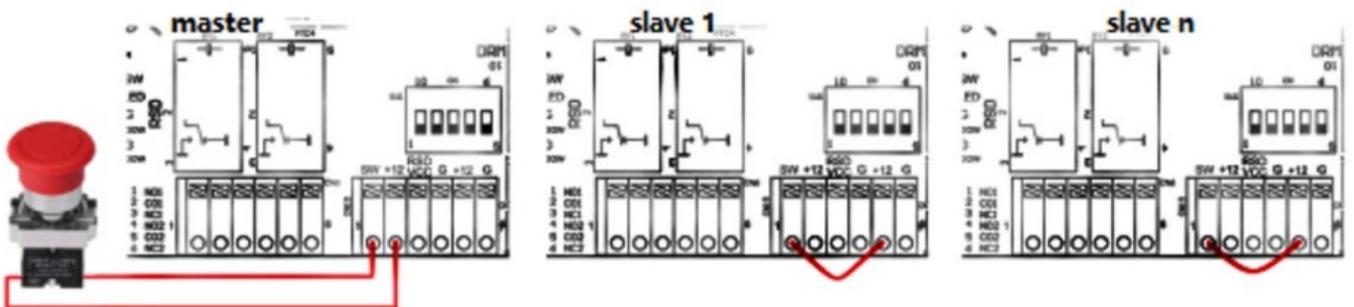
3.2.3 PARALLEL INVERTERS DEFAULT RSD WIRING

1. Configure one inverter as the master unit, then mark the unit with a label.
2. Keep the master unit's RSD wiring in its original state from the manufacturer. The default orientation will only trigger the RSD switch on the master unit if rapid shutdown is required.
3. RSD wiring instruction for slave units is shown below:
 - a. Change the short circuit jumper on the center terminal block from terminals 1 and 2 to terminals 1 and 5.



3.2.4 PARALLEL INVERTERS WITH EXTERNAL RSD SYSTEM WIRING

1. Connect the emergency switch to the master unit.
2. Remove the existing short circuit jumper on the master unit, then connect terminals 1 and 2 on the center terminal block to the emergency switch.
3. RSD wiring instruction for slave units is shown below:
 1. Change the short circuit jumper on the center terminal block from terminals 1 and 2 to terminals 1 and 5.

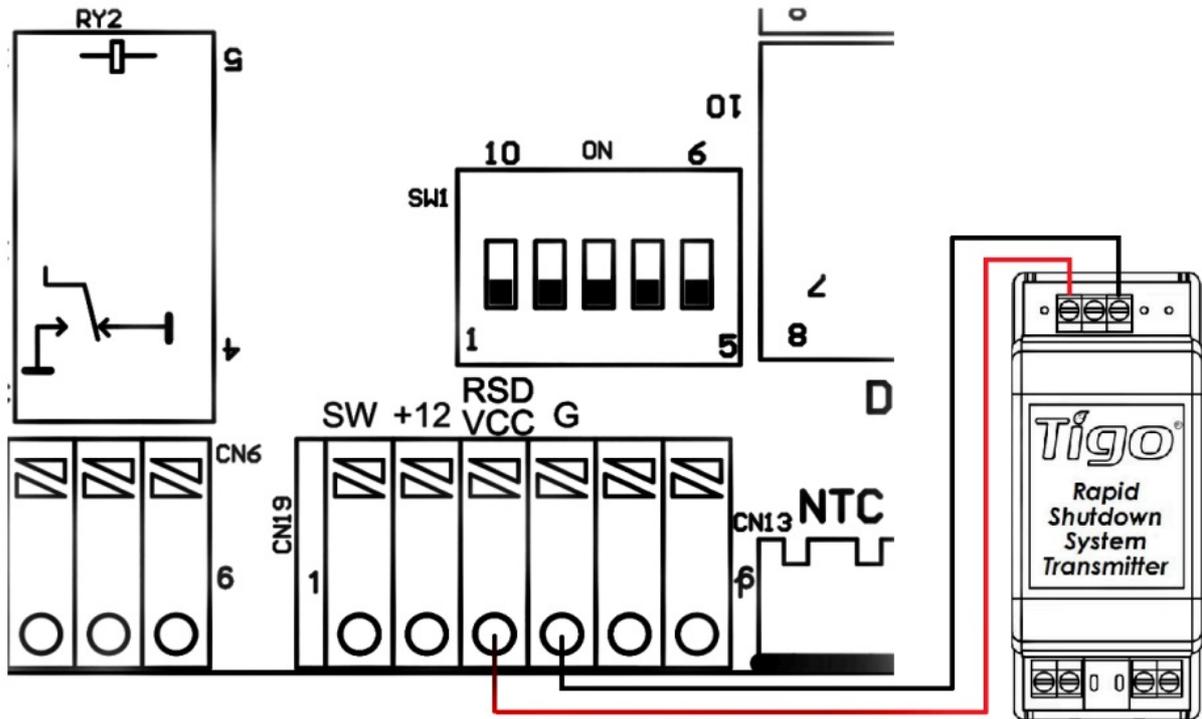


3.3 TIGO RSD MODULE WIRING & BATTERY INTEGRATION

3.3.1 TIGO RSD MODULE WIRING WITH 12V POWER SUPPLY

To install a Tigo RSD module, first remove the original RSD module, then connect the Tigo module to terminals 3 and 4 of the center terminal block. Also note, the connection steps are the same for both master and slave inverters.

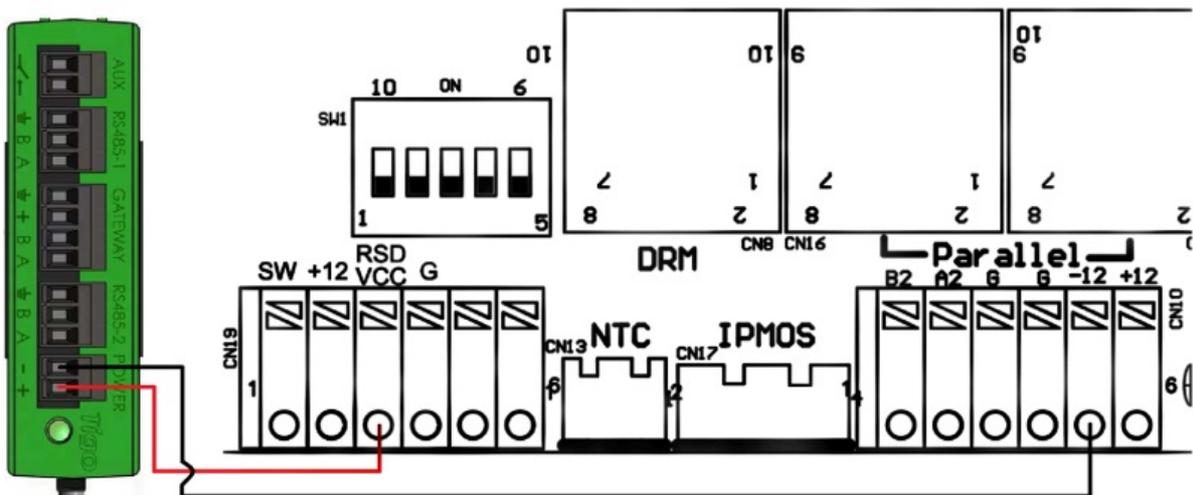
See the below image for wiring:



3.3.2 TIGO RSD MODULE WIRING SOLUTIONS WITH 24V POWER SUPPLY

To install a Tigo RSD module, first remove the original RSD module, then connect the Tigo module to terminals 3 and 5 of the center terminal block. Also note, the connection steps are the same for both master and slave inverters.

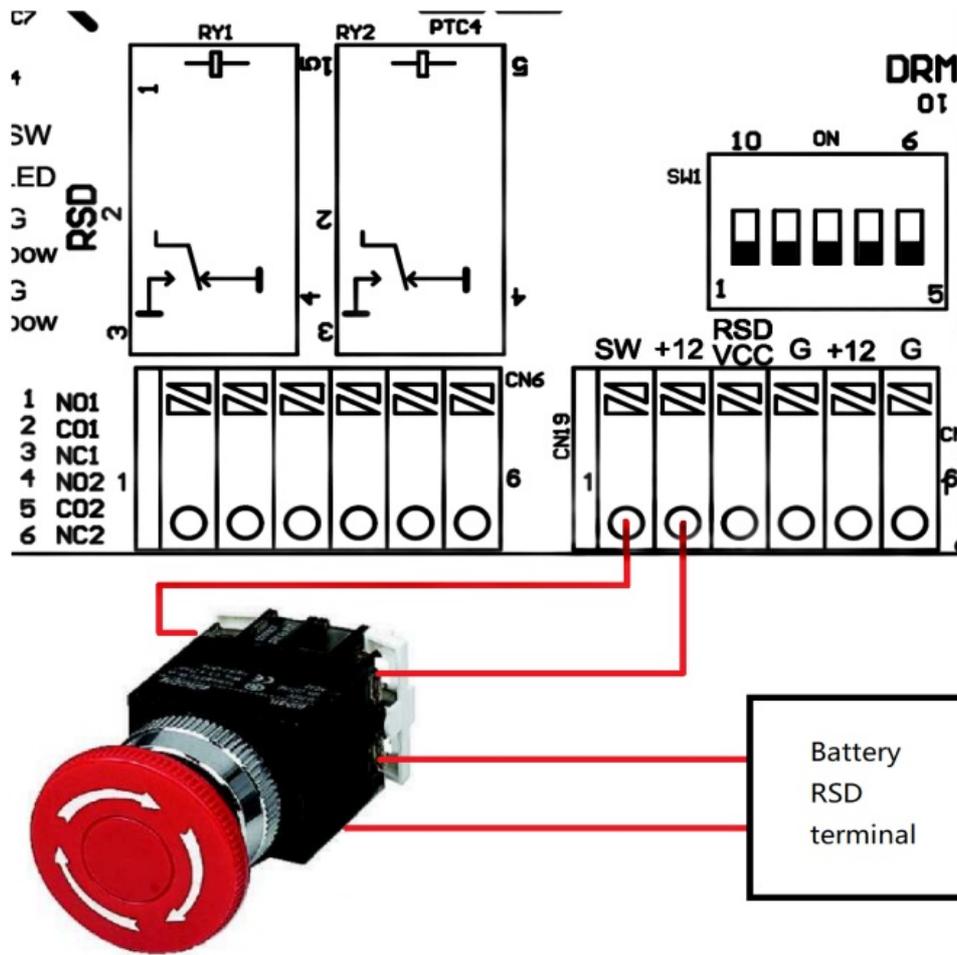
See the below image for connection instruction:



3.3.3 RSD SYSTEM BATTERY INTEGRATION DESCRIPTION

If the battery's BMS protocol does not support RSD activation via CAN protocol, users will need to connect an external RSD switch to enable battery RSD functionality using CAN. It is recommended to use a DPDT-NC (Double Pole Double Throw Normally Closed) switch to control the RSD system.

See the below image for wiring:



CONTACT US

support@eg4electronics.com

903-609-1988

www.eg4electronics.com

Documents / Resources

	<p>EG4 Rapid Shut Down Wiring Instruction [pdf] User Guide 18kPV-Version-1, Version G Board, Version I Board, Rapid Shut Down Wiring Instruction, Shut Down Wiring Instruction, Down Wiring Instruction, Wiring Instruction, Instruction</p>
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References

- [EG4 Electronics](#)
- [User Manual](#)

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