





## 6 LED Status




			
Charging batteries from solar	●		
Sleeping	●		
Solar Fault	●		
Normal Operation		●	
Thermal Throttling		●	
System Fault		●	
System Off		○	
Battery Full			●
Battery Low			●
Battery Critical			●
Blinking — Battery Equalise			

## 7 User Manual

For full wiring diagrams, system optimization and instructions, consult the user manual.

The full Nomad manual is available on <http://www.mltinverters.com>.



info@mltinverters.com   
+27 (0) 21 201 1335   
www.mltinverters.com 



# NOMAD

## 1 PV string lengths

When choosing the number of panels in series to connect to each Nomad port, use the *PV String Length Calculator* on <http://www.mltinverters.com>. Alternatively consult the PV panel specifications sheet and use the following formula:

$$\text{Maximum panels per string} \leq 400 / (\text{Voc} + (\text{Voc} \times (\text{Tmin} - 25) \times \text{Tc} / 100))$$

Voc – Open circuit voltage at Standard Test Conditions (STC).

Tmin – Coldest ambient temperature the PV panels will ever be exposed to.

Tc – Temperature coefficient of Voc in %/°K.



### Caution:

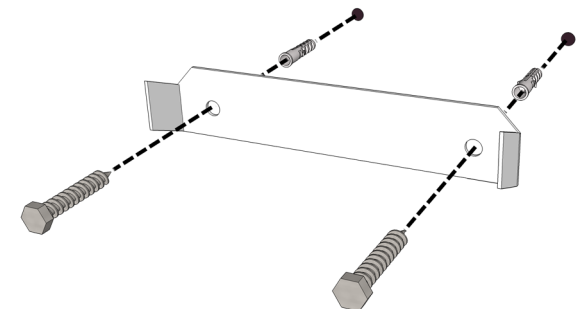
PV input voltages above 400Vdc will void the product warranty.

## 2 Mounting the Nomad

The Nomad must be mounted in a location with sufficient airflow. Leave a 200mm clearance around the charge controller.

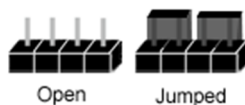
Mounting the Nomad using the provided M5x35 wall anchors:

1. Drill bit two holes 45mm deep and 135mm apart into the wall using a masonry bit. It is recommended to use the bracket as a template.
2. Insert the wall anchor bolts and fix the bracket in place.
3. Lift the Nomad onto the mounting bracket.



### 3 Select correct GFDI protection

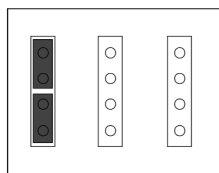
A ground fault is the undesirable condition of current flowing through the grounding conductor. The cause of this undesirable current flow is an unintentional electrical connection between a current-carrying conductor in the PV system and the equipment grounding conductor.



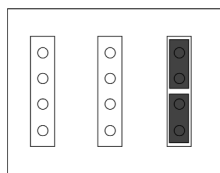
The Nomad GFDI works by checking if there is a voltage difference between the *Fuse +* and *Fuse -* points. If a ground fault exists, a current will flow through the ground fuse causing the fuse to blow (at 600mA). Once the fuse blows the voltage difference is detected and the Nomad will stop operation and display a warning message indicating that a ground fault was detected.

After removing the cover from the Nomad, use two provided jumpers to select the relevant four pins as shown below. There are four options available: Battery Positive, PV Positive, Battery/PV Negative and PV Floating. For the first three options, ensure that the GFDI option is enabled on the MPPT Settings configuration screen.

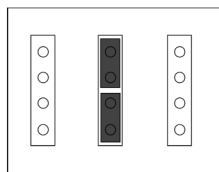
If the panels are floating, do not use any jumpers, and disable ground fault detection via the MPPT Settings configuration screen.



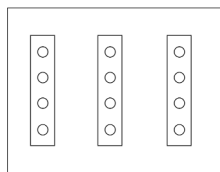
**Battery Positive**  
Select this if your battery bank is positively grounded.



**PV Positive**  
Select this if your panels are positively grounded.



**Battery/PV Negative**  
Select this if your panels/battery is negatively grounded (*most common*).



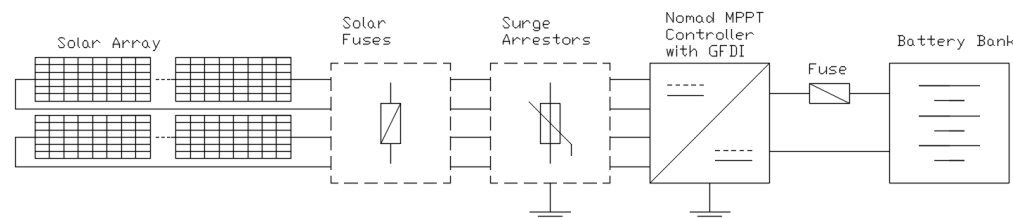
**PV Floating**  
Select nothing and disable GFDI via the config screen.

**Warning:** Selecting more than one configuration will result in equipment damage and is a safety risk.

### 4 Connect DC cables

Connect the PV strings to the two input ports of the Nomad using 1000V-rated UV-resistant solar conductors, appropriately sized. It is recommended to fuse and insert surge arrestors on the incoming conductors.

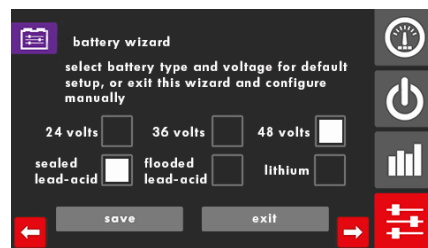
Connect the battery cables to the Nomad. A minimum 25mm<sup>2</sup> conductors is recommended. Fuse the conductors appropriately.



**Caution:** All installations must comply with national and local electrical codes. Professional installation is recommended.

### 5 Configure Nomad Settings

The Nomad has various settings that can be set and adjusted, including relay functionality, MPPT tracking control, and warning notifications. At a minimum, the battery voltages and charging current must be set.



#### Battery Settings

1. Power up the Nomad.
2. To access the Battery Wizard, select the Settings icon. Select Battery Setup.
3. The configuration password is **1918**.
4. Press the left arrow once (to go to the third screen).
5. Select the battery type and system voltage.
6. If required, fine tune the default battery settings and charging currents. *Always follow manufacturer's specifications with regard to batteries.*

