

DIMENSIONS:

NV14 is 38” wide and needs four inches of clearance on both sides. The NV24 is 20” wide and needs two inches of clearance on both sides. The NV24 must be installed within 2 feet of the NV14.

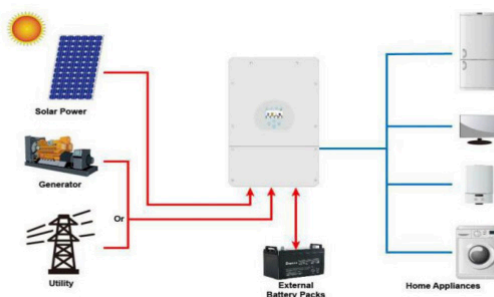
CAPABILITY:

The NV14 is a complete system. It has a 7,680-Watt hybrid (120V/240V) inverter, islanding (grid disconnect), a Lithium Iron Phosphate (LiFePO4) battery system with 14.4 kWh of capacity and comes all in one NEMA Type 3R cabinet (inside/outside installation). We include an Eaton sub-panel with 40 Amp power input breaker as the system provides 32 Amps of output power. The inverter comes preset for 120V/240V power but can easily be converter to accept 120V/208V 3-phase commercial power. Current Transmitters (included) can be added to the Main Service Panel (MSP), which will allow the battery to supplement MSP loads during Time-of-Use (TOU) or rate demand periods.

NV24 additional battery capacity: The NV24 adds 9.6 kWh energy storage to the NV14 for a total of 24.0 kWh of Lithium Iron Phosphate storage. It can be retrofitted to the NV14 at any time (NV14s installed in Dec 2019 or later). The NV24 takes 90 minutes to install.

SOLAR (AC SOLAR, DC SOLAR, OR BOTH AC AND DC SOLAR):

- We can accept 9,200 watts of Solar AC power (string or micro-inverter).
- We can accept up to 10,000 watts of DC solar (two MPPTs with 5000 W, 500 V and 26 Amps maximum per MPPT (typically 9-10 DC panels per string)).
- We can accept both AC and DC solar together up to 10,000 watts of combined solar (maximum of 8,000 AC Solar).



BASICS OF OPERATION

AC SOLAR:

Grid on with AC Solar: When the sun comes up, the inverter prioritizes the homes sub-panel loads. Once they are satisfied, “excess” solar is sent to battery system to recharge. Once batteries are fully charged, “excess” solar is returned to the MSP / Utility. Once sun begins to set and after 4 pm, the battery will supplement the sub-panel. Upon sun set, the NV14 fully powers the sub-panel. System powers loads via battery throughout the night.

Grid Out with AC Solar: When the sun comes up, solar is sent to sub-panel. Excess solar is sent to battery once home loads are satisfied. Once battery is at 95% full, the inverter turns the “grid” signal to the AC solar off. The battery system is now powering the home loads. Once the battery depletes to 90%, a “240 V grid” signal is returned to the AC solar system and solar production is returned. This process continues until sun set. The battery runs the home sub-panel loads continuously until the sun rises the next day and/or until grid power is returned so long as the battery remains above 20%. If the battery depletes to 20%, then you are in blackout until solar recharges the battery to 27% or until the grid returns.

DC SOLAR:

Grid on with DC Solar: When the sun comes up, the inverter passes the DC solar through to the battery. Once the battery is FULL, then excess DC solar is inverted to AC to charge the home loads. Once home loads are satisfied, “excess” solar is set to the MSP/Utility. This setup greatly increases the efficiency as you are inverting solar less often. Once sun begins to set, the battery will supplement the sub-panel and will eventually power the sub-panel once the sun sets. The NV14 powers loads via battery throughout the night.

Grid Out with DC Solar: When the sun arises and 125 V are achieved, solar is sent to battery for recharging. Once the battery is above 27%, DC solar is inverted to AC and sent to the home sub-panel. Upon sun set, the battery runs the home sub-panel loads continuously until the sun rises the next day and/or until grid power is returned.

AC AND DC SOLAR:

Grid on with AC and DC Solar: When the sun comes up, the inverter passes the DC solar through to the battery. AC solar will charge the home critical loads. Once home loads are satisfied, then “excess” AC solar is sent to the MSP/Utility. Once the battery is FULL, then excess DC solar is inverted to AC and sent to the MSP/Utility. Once sun begins to set, the battery will supplement the sub-panel and will eventually power the sub-panel once the sun sets. NV14 powers loads via battery throughout thenight.

Grid Out with AC and DC Solar: When the sun comes up, AC solar is sent to sub-panel. DC solar charges the battery. Once the battery is 95% full, then AC solar will be turned off until the battery discharges to 90%. However, DC solar will continue to be present until the sun sets. Once the sun sets, the battery runs the home sub-panel loads continuously until the sun rises the next day and/or until grid power is returned.

INSTALLATION

Installation: Installation takes 6-8 hours with trained install crew. Half of the time is spent pulling circuits out of the MSP and into the provided Eaton sub-panel. Most of this time is spent making sure that the right neutral is pulled with the corresponding positive. If two positives share a single neutral, then they are either pulled together or not pulled at all. NV14 must be installed inside if above 2500’ in elevation or where the site will experience more than one consecutive days of below freezing temperatures. The NV14 also must be installed inside or must be shaded/protected if installed outside facing south or where summer ambient temperatures will exceed 120 degrees Fahrenheit.

Critical load sub-panel: The NV14 provides 32 Amps of continuous output to the loads. This is 54% more than some of our competitors. We are typically like to see 14 breakers of the 15 to 20 Amp variety (120 V) pulled into the sub-panel. Customers should pull their refrigerator, garage, WiFi, home office, and other circuits that are important to them in a grid outage. Customers should also pull other circuits to maximize their time-of-use savings. 30 Amp breakers can be considered, but this will greatly reduce the total number of circuits that can be backed up and will increase battery usage. If installer wants to pull a 30 Amp breaker, then installer MUST do an energy study/test to verify total amps with circuits powered. Air Conditioners and Well Pumps will require a “soft Start” device. Remember, 32 Amps total is provided by the NV14.