



Inverter energy storage

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What are energy storage inverters? You may already know that regular PV inverters convert direct current (DC) energy to alternating (AC) energy. The main difference with energy storage inverters is that they are...

The main function of energy storage is to control the charging and discharging of the battery. The direct current generated by photovoltaic power generation is converted into alternating current through the...

The CPS-3000 is a 3,000kW, outdoor-rated unit that can be paralleled for project size scaling. It consists of two 1,500kW power blocks. The CPS-1500 is available in both indoor and outdoor configurations, and likewise is parallelable to meet the needs of any grid-tied or microgrid application. Outdoor-rated CPS inverter models are enclosed in a NEMA 3R container that can be easily moved and allows for placement on gravel or concrete pylons for cost-effective installation.

The CPS-3000 and CPS-1500 inverters contain all required protective features, including an AC output breaker and DC disconnect switch. This creates a cost savings compared to other inverters that require additional add-on items needed for battery integration. In addition, our patented Dynamic Transfer(TM) feature monitors grid stability and will disconnect and transition to stand-alone mode if a disturbance is detected.

The CPS includes the ability to run islanded mode (voltage source) operation, also called UF mode. In islanded mode, the CPS accepts Voltage (U) and Frequency (F) setpoints. The CPS can handle full real power transitions with extremely tight voltage and frequency regulation forming a "stiff backbone" to the microgrid.

Dynapower's proprietary Dynamic Transfer(TM) algorithm monitors grid stability and, upon detecting a grid disturbance, disconnects from the grid and transitions to stand-alone battery backup power mode on the load connection. The transition is seamless to the critical loads and supports 100% phase imbalance in UF mode.

In the event of a complete system power outage, our patented black start restores power to the facility without the need for external power. Dynapower's black start technology can start distribution networks even with transformer magnetizing currents that exceed the power rating of the inverters. Multiple CPS(R) units can be restarted at once.

F-Comp monitors the grid frequency for deviations from nominal, and if a deviation exceeds a max allowed, the CPS will automatically follow a user-defined frequency correction curve. F-Comp is ideally suited to very rapid Fast Frequency Regulation applications as well as power quality correction of critical facility loads.

E-Comp monitors the grid voltage for deviations from nominal and automatically attempts to correct three-phase voltage magnitude deviations (usually voltage sags) experienced by a critical load in an effort to

avoid the need to transfer to backup power mode.

The CPS has AC current limiting, so that the system will deliver up to (but not exceed) full rated AC current to avoid nuisance AC overcurrent faults due to excessive load inrush current demand. When current limiting in UF, the AC voltage and frequency may deviate from nominal and this is permissible within the CPS abnormal voltage frequency limits and timers. It is expected that, if the system is properly sized to the microgrid, any voltage or frequency deviations due to large inrush loads will be very minor and short duration, and not affect the load.

Knowing what is available to you in the world of renewable solar energy is key to benefiting from the latest and greatest in photovoltaic (PV) technology. Inverters in particular are essential to saving you energy (and money) by making your solar power more efficient in the long run.

To get you started, we've put together a comprehensive guide to energy storage, including an overview of what energy storage inverters actually are, the different types - from hybrid inverters to battery inverters - as well as what Hoymiles can provide for your PV energy needs.

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