

PDEOZE PowerContainer

Ordinary grid-connected inverter modified to prevent backflow



Overview

What is the control design of a grid connected inverter?

The control design of this type of inverter may be challenging as several algorithms are required to run the inverter. This reference design uses the C2000 microcontroller (MCU) family of devices to implement control of a grid connected inverter with output current control.

How does an inverter achieve anti-backflow?

Upon detecting current flow towards the grid, the inverter will reduce its output power until the countercurrent is eliminated, thereby achieving anti-backflow. It is important to note that the CT and meter themselves do not have anti-backflow capabilities; they simply collect data to enable the inverter to adjust its output accordingly.

How does a grid-connected inverter work?

Install a CT (Current Transformer) or meter on the grid-connected busbar to monitor real-time current direction and magnitude, which is then communicated to the inverter. Upon detecting current flow towards the grid, the inverter will reduce its output power until the countercurrent is eliminated, thereby achieving anti-backflow.

Can a grid connected inverter be left unattended?

Do not leave the design powered when unattended. Grid connected inverters (GCI) are commonly used in applications such as photovoltaic inverters to generate a regulated AC current to feed into the grid. The control design of this type of inverter may be challenging as several algorithms are required to run the inverter.

How does a grid forming inverter work?

For the islanded mode, the grid-forming inverter uses voltage and frequency (VF) control to form the stiff bus voltage, and other DERs continue the PQ

control. Therefore, it is necessary to reconfigure the control structure (between the current and voltage control) of the grid-forming inverter during microgrid transition operation.

How does a Deye inverter anti-backflow work?

4. The solution?

Deye inverter anti-backflow working principle: install an meter with CT or current sensor at the grid-connected point. When it detects that there is current flowing to the grid, it will feed back to the inverter, and the inverter will immediately change its working mode and track from the maximum power point of MPPT.

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Reverse flow protection is a critical feature of photovoltaic (PV) inverters that ensures solar energy flows in the correct direction--away from the inverter to the home or grid, but never the other ...

The invention provides an anti-backflow method for a grid-connected power generation system.

After receiving the command, the inverter responds in seconds and reduces the inverter output power, so that the current flowing from the photovoltaic power station to the grid is always kept ...

Abstract--This paper develops an integrated synchronization control technique for a grid-forming inverter operating within a microgrid that can improve the microgrid's transients during ...

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Active power backflow is a unique problem of three-phase isolated cascaded H-bridge (CHB) PV inverter during asymmetric grid voltage fault, resulting in the continuous rise ...

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The photovoltaic system with CT (Current Transformer) has anti-backflow function, which means that the electricity generated by photovoltaics is only supplied to loads, ...

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