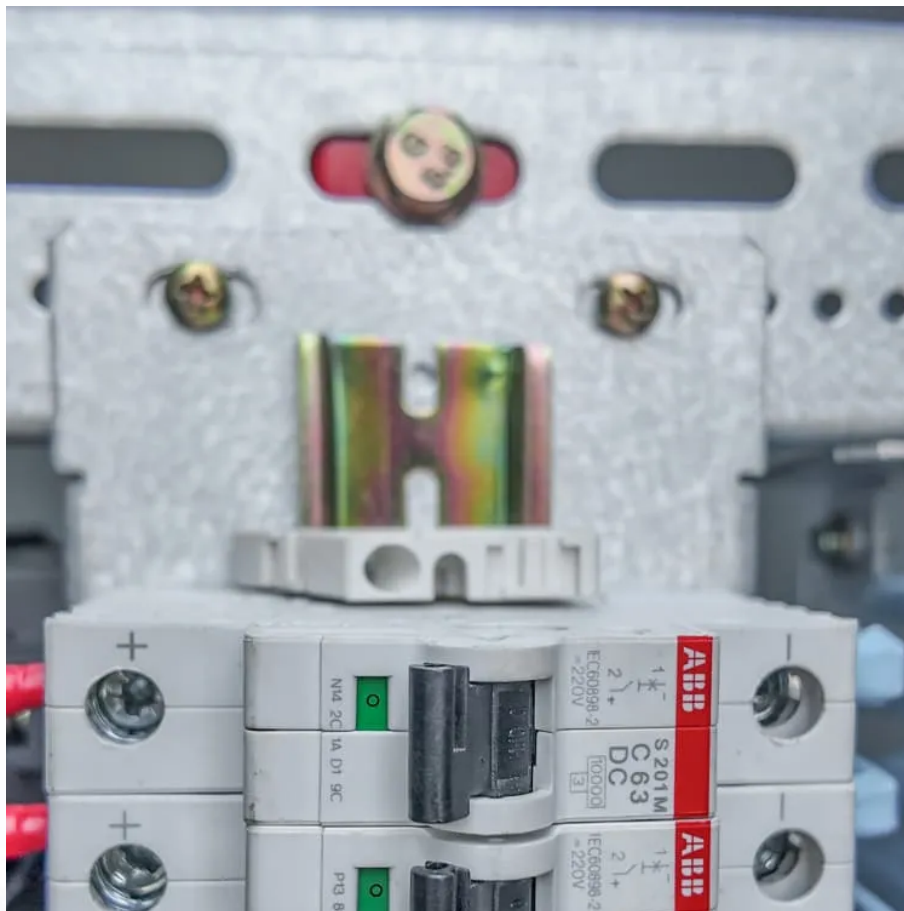


# Overcurrent protection of three-phase inverter





## Overview

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What is over current protection mechanism in PV inverter?

As previously discussed, the simultaneous injection of peak active power from PVs and reactive power into the grid for voltage support can trigger the over current protection mechanism in PV inverter. The triggering of over current protection will lead to disconnection of inverter from the grid which is unfavourable during LVRT period.

Can a 3 phase inverter cause overvoltage?

The three-phase, four-wire topology may have an extra switch leg and a dedicated zero-sequence controller to regulate the zero-sequence current . For three-phase, three-wire inverters, limiting the phase currents in the natural reference frame can cause overvoltage issues , , .

Which subsystem protects the inverter hardware from excessive overcurrents?

The subsystem that protects the inverter hardware from thermal breakdown during excessive overcurrents is current limiting within the inverter control loops.

How does a 3 phase inverter work?

The three-phase inverter is designed to operate from the DC bus voltage up to 390 V. This design uses six IGBTs. The designer has to adjust the position of the IGBT in the layout to fit the external heatsink. The power stage is designed to deliver up to 2-kW output power.



## Overcurrent protection of three-phase inverter

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More details of detecting FUL can be found in [15], [16]. The detailed possible cases for overcurrent in a three-phase inverter is listed as below [7].



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