Technical Article

Taking the Lead on Solar-panel Safety with Available Hardware and Software Tools Specifically for Rapid Shutdown

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Did you know that TI is one of the first semiconductor companies to offer designs for the rapid shutdown of solar power systems in the event of a fire or electrical hazard?

In 2017, National Electrical Code (NEC) 2017 mandate 690.12 added a new requirement for the safe shutdown of power circuits from photovoltaic modules to power inverters. In the event of a house fire, firefighters need to be able to rapidly de-energize these circuits for everyone's safety.

The SunSpec Alliance, whose stated objective is to make "plug-and-play communication for distributed energy," has developed a communication protocol for module-level rapid shutdown – emphasizing low cost and time savings while enhancing the overall health and safety of solar power systems.

Because TI engineers participated in the Sunspec working group that developed the Rapid Shutdown protocol specification, I recently participated in a webinar with solar industry leaders from across the globe to show how standardization fostered by the SunSpec Alliance is improving safety and driving down costs.

To learn more, see the rapid shutdown application page and the SunSpec-compatible PLC BoosterPack, now available to order.

To dive deeper into how a C2000 interfaces with an AFE030/1, check out this app note for an FSK example: "Interfacing the C2000 with an AFE030/1: FSK Example." The relevant software for transmit and receive functionality is free and available on C2000Ware and supports both the F2837x as well as the cost-effective F28004x series.

Check it out, and remember that safety and solar should always go hand in hand.

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