

## Achieving Module Level Shutdown

### with Yaskawa Solectria Solar and Tigo

#### How is module level shutdown achieved?

Yaskawa Solectria Solar's three-phase string inverters, PVI 23/28/36/50/60TL paired with Tigo's module level electronics provide a certified solution to UL1741 as a PV Module Level Rapid Shutdown System, for compliance with NEC 2014 & 2017 690.12(D) requirements. To meet these requirements, Tigo's UL and IEC-certified optimizers, TS4-F, TS4-L and TS4-O, discharge the capacitors in the inverter to ensure the voltage is below the limit.

#### Which products are compatible?

Yaskawa Solectria Solar's PVI 23/28/36/50/60TL are fully compatible with Tigo's Integrated (TS4) or Retrofitted/Add-On (TS4-R) module junction box covers.

#### What options are available for rapid shutdown?

Tigo's Module Junction Box covers product offers an assortment of options to choose from. The Fire (TS4-F), Safety (TS4-S), Optimization (TS4-O), and Long Strings (TS4-L) offer a solution to meet NEC 690.12 rapid shutdown requirements.



**Tigo**® Integrated with TS4-D, TS4-M, TS4-F, TS4-S, TS4-O, TS4-L covers

#### Tigo's Module Junction Box Cover Options for Rapid Shutdown

##### FIRE SAFETY TS4-F



- Meets NEC 690.12 rapid shutdown requirements
- Module-level deactivation

- Automatic or manual shutdown
- Over-temperature protection
- SunSpec signaling

##### SAFETY TS4-S



- Meets NEC 690.12 rapid shutdown requirements
- Module-level deactivation

- Automatic or manual shutdown
- Over-temperature protection
- Plus all the benefits of Monitoring (TS4-M)

##### OPTIMIZATION TS4-O



- Shade and age tolerance
- Enhanced energy yield
- Greater design flexibility

- Maximized roof usage
- Plus all the benefits of Safety (TS4-S) and Monitoring (TS4-M)

##### LONG STRINGS TS4-L



- String length increased by up to 30%
- Fewer BOS components
- Faster installation
- Inverter optimization

- Lower wire-losses
- Plus all the benefits of Optimization (TS4-O), Safety (TS4-S) and Monitoring (TS4-M)

For additional options and to learn more about Tigo's TS4 Platform, visit [www.tigoenergy.com/ts4](http://www.tigoenergy.com/ts4)