

# TIGO TS4-R MODULE

TS4-R-M / TS4-R-O



RETROFIT KIT COMPATIBLE WITH ALL MAJOR INVERTER BRANDS.

## Optimize your system

- Optimize yields
- Monitor your PV system on the module level

## Ultimate flexibility

- Selective deployment: use of DC optimizers only where required
- Function (e.g., monitoring, optimization) of each optimizer is freely selectable
- Compatible with all standard modules

## Fast installation

- Save over 2.5 hours with a 30-module installation compared with competitor technologies
- Easy installation at ground level reduces roof work

## Maximum reliability

- Reduced probability of failure thanks to fewer components
- Long service life due to demand-specific bypass operation
- Comprehensive service for the entire system – from SMA

## TIGO TS4-R MODULE RETROFIT KIT

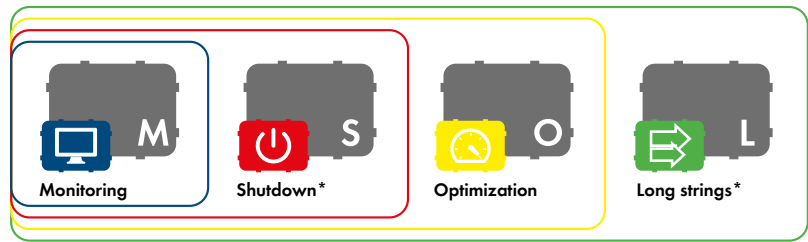
### Optimization redefined

The innovative Tigo TS4-R platform is a game-changing approach toward the optimization of PV systems. With this innovative platform, for the first time, every single PV module can be selectively equipped with an additional function. Higher energy yields can also be achieved for complex roofs, while system costs are reduced at the same time. Whether for shading, shutdown or other challenges, the Tigo TS4-R is the most reliable and cost effective solution for adding PV module level electronics to any PV system.



### End-to-end functionality with Tigo TS4-R

The TS4-R platform is available with various covers containing power electronics. Functionality increases with each unit, which includes new benefits in addition to the functionality of the preceding unit.



\* Shutdown available for the US market.

\*\*"Long strings" available at a later date. Currently available as a module-integrated version only.

Technical Data	Monitoring	Optimization
<b>Electrical ratings</b>		
Rated DC input power	375 W	375 W
Max. PV module open circuit voltage ( $V_{oc}$ )	52 V	52 V
Max. current	12 A	10 A
PV module $V_{MP}$ range	16 V to 48 V	16 V to 48 V
<b>Output</b>		
Output power range	0 W to 375 W	0 W to 375 W
Output voltage range	0 V to $V_{oc}$	0 V to $V_{oc}$
Communications	802.15.4, 2.4 GHz	802.15.4, 2.4 GHz
Rapid shutdown verified (NEC 2014 690.12)	No	Yes
Impedance matching capability	No	Yes
Output voltage limit	No	No
Maximum system voltage	1000 V	1000 V
Max. series fuse rating	15 A	15 A
<b>Mechanical</b>		
Operating temperature range	-40°C to +75°C (-40°F to +167°F)	
Storage temperature range	-40°C to +75°C (-40°F to +167°F)	
Cooling concept	Natural convection	
Dimensions (with cover)	195.5 mm x 158 mm x 23 mm	
Weight (without cover)	470 g	
Degree of protection	IP65 / IP67, NEMA 3R	
<b>Cabling</b>		
Cabling type	PV1-F	
Output cable length	1.0 m; other lengths upon request	
Connector	MC4	
UV resistance	500 h with UVB light between 300 to 400 nm at 65°C	
Max. string voltage	600 V UL / 1000 V IEC or 1000 V UL / IEC	
Outer cable diameter	6.25 mm ± 0.25 mm (600 V UL) / 7.15 mm ± 0.25 mm (1000 V UL)	
Conductor cross-section	4.0 mm <sup>2</sup> (12 AWG)	
Warranty	25 years	
Type designation	TS4-R-M	TS4-R-O

### Communications set - only needed for monitoring and shutdown

The communications set is a practical package for the quick and easy connection of the Tigo TS4-R to the SMA Sunny Boy. The outdoor communications set is perfectly suited to installation outdoors, where the communications technology is installed in a separate enclosure.

Module-based data are transmitted via WLAN across the rooftop from the TS4-R optimizers to the gateway, which is connected via RS485 to Cloud Connect Advanced (CCA). The relevant performance data can be viewed on Sunny Portal.

#### Communications set for installation indoors



#### Outdoor communications set for installation outdoors

