

SMART MODULE PLATFORM

The TS4 universal platform enables plug-and-play functionality for any solar module. The base provides a single interface that can be matched with one of several electronic covers to address a range of functions and budgets. Together they form a new generation of module-level power electronics: flexible, replaceable, upgradeable, and accompanied by a powerful PV 2.0 communication backend.

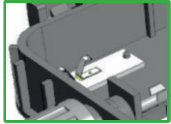


INTEGRATED MODULAR PLATFORM

TS4-B

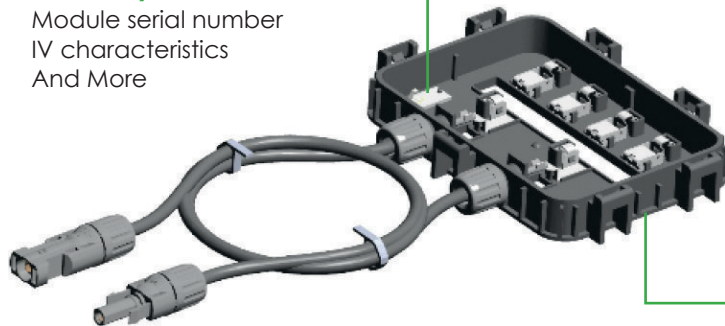
Type: TS4-B (base up to 1500V)

INTEGRATED JUNCTION BOX BASE

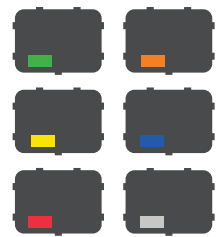
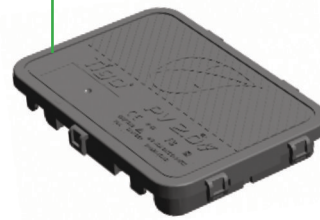


Electronically Readable:

- Module serial number
- IV characteristics
- And More



Choice of Electronic Covers
Removable TS4 covers with different levels of functionality



PV Module Integrated Jbox Base

Factory-installed for smart-ready solar

MECHANICAL SPECIFICATIONS

Mechanical

Operating Temperature Range -40°C to +85°C (-40°F to +185°F), RH < 85%

Storage Temperature Range -40°C to +85°C (-40°F to +185°F), RH < 60%

Cooling Method Natural Convection

Dimensions (with cover) 152.5mm x 108mm x 25.3mm

Weight (base without cover) 270g

Outdoor Rating IP67/IP68, NEMA 3R

Cabling

Type H1Z2Z2-K

Output Cable Length Standard 1.0m, other lengths on request

Rating Options 1000V rated
1500V rated

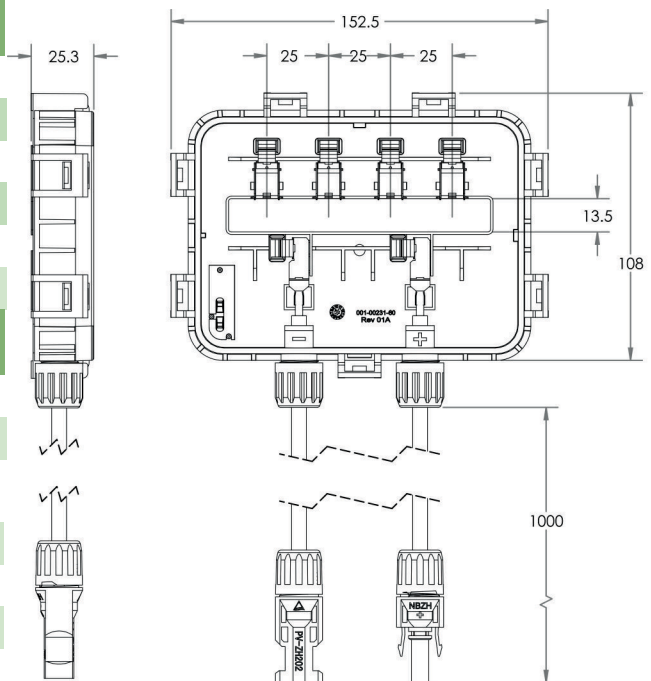
Cable Cross-Section $6.3 \pm 0.3\text{mm}$

Connectors MC4, MC4 comparable, EVO2

UV Resistance 500hr with UV light between 300-400nm @65°C

Maximum String Voltage 1500V UL/IEC¹

¹ All TS4 covers are 1500V compatible. Specify max system voltage when ordering modules with TS4 bases for appropriate cables & connectors.



MEET YOUR PROJECTS' NEEDS WITH TS4

Tigo has expanded its smart module platform to provide multiple levels of customization. With a universal base and a range of covers containing the Flex MLPE, TS4 increases your freedom of choice when selecting features for a particular project and budget. TS4 cover options range from standard diodes all the way to fully optimized performance and safety features.

LONG STRINGS

TS4-L



Diodes



Monitoring



Safety



Optimization



Long Strings

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

- Inverter optimization
- Lower wire-losses
- Plus all the benefits of Optimization, Safety, and Monitoring

OPTIMIZATION

TS4-O



Diodes



Monitoring



Safety



Optimization

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

- Maximized roof usage
- Plus all the benefits of Safety and Monitoring

SAFETY

TS4-S



Diodes



Monitoring



Safety

- NEC 2014 & 2017 690.12 rapid shutdown compliant
- Module-level deactivation

- Automatic or manual shutdown
- Plus all the benefits of Monitoring

FIRE SAFETY

TS4-F



Diodes



Fire Safety

- NEC 2014 & 2017 690.12 rapid shutdown compliant
- Module-level deactivation

- Automatic or manual shutdown
- PLC signaling

MONITORING

TS4-M



Diodes



Monitoring

- Reduced O&M costs
- PV-2.0 data synchronization
- Module bar code tracking

- CRM integration
- Warranty tracking
- Fleet management

DIODES

TS4-D



Diodes

- Similar to a standard junction box
- Standardization on basic TS4 baseplate

- Field replaceable and upgradeable
- Heat dissipation away from the module

TS4 COVERS



DIODES
TS4-D



MONITORING
TS4-M



FIRE SAFETY
TS4-F



SAFETY
TS4-S



OPTIMIZATION
TS4-O



LONG STRINGS
TS4-L

ELECTRICAL RATINGS

INPUT

Rated DC Input Power	-	475W	475W	475W	475W	475W
Maximum Input Voltage	-	90V	90V	90V	90V	90V
Maximum Continuous Input Current (I _{MAX})	12.5A	12A	12.5A	12A	12A	12A
Maximum V _{OC} @ STC	-	75V	75V	75V	75V	75V
Minimum V _{MP}	N/A	16V	16V	16V	16V	16V

OUTPUT

Output Power Range	0 - P _{MAX}	0 - 475W	0 - 475W	0 - 475W	0 - 475W	0 - 475W
Output Voltage Range ¹	0 - V _{OC}	0 - V _{OC}	0 - V _{OC}	0 - V _{OC}	0 - V _{OC}	0 - V _{MAX}
Communication Type	n/a	802.15.4 2.4GHz	PLC	802.15.4 2.4GHz	802.15.4 2.4GHz	802.15.4 2.4GHz
Rapid Shutdown UL Listed ² (NEC 2014 & 2017 690.12)	Need additional RS device	Need additional RS device	Yes	Yes	Yes	Yes
Impedance Matching	No	No	No	No	Yes	Yes
Output Voltage Limit	No	No	No	No	No	Yes
Maximum System Voltage	1500V	1500V	1500V	1500V	1500V	1500V

¹ Output voltage limit of TS4-L is factory-set.

² Cloud Connect Advanced (CCA) and TAP/Gateway required for rapid shutdown compliance.

ORDERING INFORMATION

Integrated Smart Module

TS4-B 1000V TÜV / UL, MC4 comparable, 1m cable

Options

- ☐ Connectors (1000V TÜV / UL): MC4, EVO2
- ☐ 1.2M Cable
- ☐ 1500V TÜV / UL, EVO2, or MC comparable

Covers

Features

TS4-D	Diodes
TS4-M	Monitoring
TS4-F	Fire Safety
TS4-S	Safety
TS4-O	Optimization
TS4-L	Long Strings

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For additional info and product selection assistance, use Tigo's online design tool at www.tigoenergy.com/design



PV 2.0