



TS4-X

Module-level optimization, monitoring, and rapid shutdown

Tigo TS4-X module level power electronics (MLPE) improve production, safety, and intelligence in new designs and existing systems. Patented technology delivers top performance with high efficiency for a fast ROI. Easy installation and long-term reliability reduce system downtime and truck rolls, while Tigo's Energy Intelligence platform enables quicker onsite commissioning and comprehensive remote monitoring.

Features

- Three models – O, F, and S – let you configure the optimal performance for every solar module at your site
- Simple, fast installation – snaps to a standard PV module frame or mounts to racking
- Intelligent optimization – delivers the maximum energy from an array
- Module-level monitoring – full visibility into module- and system-level production
- Rapid shutdown – UL Standards-certified PVRSS components operating wirelessly and/or with power-line communications (PLC)
- Works with any system – fully compatible with thousands of different inverter models from more than 50 inverter brands
- 25-year warranty

Specifications

Functionality

Optimization	TS4-X-O
Monitoring	TS4-X-O/S
Rapid shutdown	TS4-X-O/F/S

Electrical

Maximum current (I_{MP}/I_{SC})	20 A/25 A
Input voltage range (V_{MP})	20 – 80 V
Maximum input voltage	80 V
Maximum system voltage (V_{MAX})	1000 V/1500 V ¹
Maximum output current (I_{MAX})	20 A
Maximum output power (P_{MAX})	800 W
Maximum fuse rating	25 A
Maximum efficiency	99.6%

AS 5033: Operational Output

Maximum output current	$I_{DCU MAX}$
Maximum output voltage	$V_{DCU MAX}$
Maximum output power	$P_{DCU MAX}$

Rapid Shutdown

TS4 conductor AWG	12
Rapid shutdown time limit	<30 sec.
PVRSE-controlled conductor limits	$\leq 240 VA, \leq 8 A, \leq 30 V_{DC}$
UL 1741-compliant PVRSE	Yes
Communications	Wireless ² and/or PLC ³

¹ Depending on UL/IEC certification

² Using Tigo Access Point (TAP) and Cloud Connect Advanced (CCA)

³ Using Tigo RSS transmitter power-line communications



Specifications

Connections	
Input (from module) cable lengths*	0.6 m or 1.2 m
Output (to string) cable lengths*	1.2 m or 2 m
Connectors	MC4/EVO2
Environmental	
Operating temperature range	-40 – 85 °C (-40 – 185 °F)
Storage temperature range	-20 – 65 °C (-4 – 149 °F)
Maximum elevation	3000 m (9840 ft.)
Outdoor IP rating	IP68
Mechanical	
Dimensions (H/W/D)	139.7 x 138.4 x 22.9 mm (5.4 x 5.5 x 0.9 in.)
Weight	520 g (1.15 lb.)
General	
Standards compliance	
FCC, CE-EMC, CE-RED, ETSI EN 301 489, CISPR 31, CSA 22.2, IEC 62109, NEC 690.12, UL 1741 PVRSE/PVRSS	
Warranty	25 years
* Exact lengths within 3%.	

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Ordering Information

Part Number	V _{MAX} Certifications UL/IEC	Cable Lengths* (input/output)	Connectors
TS4-X-O			
501-320612-2501	1500 V/1500 V	0.6/1.2 m	EVO2
501-321220-2501	1500 V/1500 V	1.2/2 m	EVO2
501-340612-2501	1500 V/1000 V	0.6/1.2 m	MC4
501-341220-2501	1500 V/1000 V	1.2/2 m	MC4
TS4-X-F			
509-320612-2501	1500 V/1500 V	0.6/1.2 m	EVO2
509-321220-2501	1500 V/1500 V	1.2/2 m	EVO2
509-340612-2501	1500 V/1000 V	0.6/1.2 m	MC4
509-341220-2501	1500 V/1000 V	1.2/2 m	MC4
TS4-X-S			
506-320612-2501	1500 V/1500 V	0.6/1.2 m	EVO2
506-321220-2501	1500 V/1500 V	1.2/2 m	EVO2
506-340612-2501	1500 V/1000 V	0.6/1.2 m	MC4
506-341220-2501	1500 V/1000 V	1.2/2 m	MC4
* Exact lengths within 3%.			