Tigo Energy®
Module Maximizer™-ES (MMJ-ES)

Data Sheet
Junction Box
Version

For residential, commercial and utility scale photovoltaic solar arrays, the Tigo Energy® Maximizer™ system optimizes the power output of each module (solar panel); delivers module level data for operational management and performance monitoring; and provides the ability to deactivate the high voltage DC bus for safer installation, maintenance or fire fighting. Tigo Energy Module Maximizers are key components of the system as an integrated part of modules provided by leading solar module OEMs. The Module Maximizer provides data acquisition, communication to the Tigo Energy® Maximizer™ Management Unit, and energy harvesting control. The very small electronics footprint has been designed to minimize cost and maximize reliability. Solar modules with an integrated Tigo Energy Maximizer MMJ-ES are ideal for new installations worldwide.

The Tigo Energy output optimization starts with dynamic module balancing – a Module Maximizer (patented) integrated within each module manages the energy harvest and send information to the Maximizer Management Unit for reporting and control. Modules with the integrated Maximizer are connected in a normal series topology.

MMJ-ES maintains best-in-class system conversion efficiencies at statistically 99.5%.
The Tigo Energy Module Maximizer includes a unique technology which greatly enhances the safety of a PV solar installation. As part of the Tigo Energy Maximizer system, this function can be activated with a safety button or via a remote management console. The system can be installed, maintained or approached by fire personnel without the exposure to voltage levels typically in excess of 400 volts.

The Tigo Energy Module Maximizer is packaged in a NEMA3R enclosure (water and weather resistant), conforms to UL and IEEE safety standards. There are Module Maximizer options to integrate into any PV module (crystalline silicon or thin-film) regardless of output voltage or nominal power rating.

Solar modules which contain the Tigo Energy Module Maximizer integrated into the junction-box will be available in 1H'2011 from leading PV module manufacturers.

Module Maximizer J-ES
Technical Specifications

Input data	MMJ-ES50	MMJ-ES75
Maximum power	300W	350W
Maximum input DC voltage (Voc)	52V	75V
Vmp range *	16-48V	30-65V
Maximum continuous current (Imp)	9.5A	6.5A
Maximum input current (Isc)	10A	7.5A

* Vmp = Voltage at maximum power = Maximum power voltage

Output Data (DC)		
Maximum output power	300W	350W
Maximum continuous current	9.5A	6.5A
Nominal Voltage/range	variable	variable

Mechanical Data	
Operating temperature range	-40°C +85°C
Cooling	Natural Convection

Features	
Panel connector	NEC 2008 compliant MC4 compatible (for retrofit) MC3 connectors
Bus connector	NEC 2008 compliant 40AMP

Specifications subject to change. Always check the table on the Tigo Energy Module Maximizer label for specifications as supported by that particular unit.

Optimize the energy harvest of your PV system using the Tigo Energy Maximizer to:

- accelerate system payback

- maximize the power output of individual modules

- reconsider previously rejected projects because of unfavorable shade or orientation

- maintain best-in-class conversion efficiency

- manage the system with module-level data to minimize operational costs and keep the system at peak performance throughout its lifetime

- introduce an unprecedented level of safety for new and existing PV solar installations (patented)

- simplify the balance-of-system design, especially for high Voc or thin-film modules

Tigo energy®

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