

## HE solar charger for Telecom applications

With the MPPT\* algorithm ensuring close to 100% panel utilization and an efficiency up to 96.9%, the galvanic isolated solar charger sets new standards for renewable power in telecom.

The combination of innovative design, efficiency and reliability makes the Flatpack2 HE SOLAR stand out.



# FLATPACK2 60/2000 HE SOLAR

## SOLAR CHARGER MODULE

Doc 241115.675.DS3 – v2

### APPLICATIONS

#### TELECOM MOBILE

- RADIO BASE STATIONS/ CELL SITES
- MICROWAVE

#### TELECOM – FIXED

- CENTRAL OFFICE
- TELEPHONY SERVERS / SWITCHES
- FIBER OPTICS / FTTX
- MICROWAVE
- CABLE
- BROADBAND



POWER SHELF (P/N 200507)



FLATPACK2 SYSTEM IN TYPE3 OUTDOOR CABINET

### KEY FEATURES

- HIGH EFFICIENCY – 96.9%
- MPPT – MAXIMUM POWER POINT TRACKING
- TELECOM SPECIFICATION
- FULLY INTEGRATED IN ELTEK CONTROL SYSTEM
- GLOBAL COMPLIANCE
- PATENTED HE TECHNOLOGY



SMARTPACK2 AND FLATPACK2 HYBRID POWER CORE

Advice Electronics Ltd

# FLATPACK2 60/2000 HE SOLAR

## SOLAR CHARGER MODULE



Model		60/2000 HE SOLAR
Part number	241115.675	
<b>INPUT DATA</b>		
Voltage (nominal)	185 - 275 V <sub>DC</sub>	
Voltage (operating range)	85 - 300 V <sub>DC</sub>	
Voltage (start-up)	150 V <sub>DC</sub>	
Current (maximum)	11.6 A <sub>RMS</sub>	
Protection	Fuse in + & -, Varistor, Reversed Polarity	
<b>OUTPUT DATA</b>		
Voltage (default)	67 V <sub>DC</sub>	
Voltage (adjustable range)	52.5 - 72 V <sub>DC</sub> <sup>1)</sup>	
Power (maximum)	2000 W	
Power @ 85 V <sub>DC</sub> (maximum)	850 W	
Current (maximum)	33.3 A (@ 60 V <sub>DC</sub> )	
Current sharing (10 - 100% load)	Passive to optimize power available from each string of solar panels	
Static Voltage regulation (10 - 100% load)	±0.5% <sup>2)</sup>	
Dynamic Voltage regulation	±5.0% for 10-90% or 90-10% load variation, regulation time < 50ms	
Ripple	< 250 mV peak to peak, 30 MHz bandwidth	
Protection	Fuse, Short circuit proof, High temperature protection, Overvoltage shutdown, Hot plug-in inrush current limiting	
<b>OTHER SPECIFICATIONS</b>		
Efficiency	96.90 %	
Isolation	3.0 kV <sub>AC</sub> - input to output, 1.5 kV <sub>AC</sub> - input to earth, 500 V <sub>DC</sub> - output to earth	
Alarms (Red LED)	High and low temperature shutdown, Charger Failure, Overvoltage shutdown on output, Fan failure, Low output voltage alarm, CAN bus failure	
Warnings (Yellow LED)	Charger in power de-rate mode, Low input voltage shutdown, Remote battery current limit activated, Input voltage out of range, Loss of CAN bus communication with controller	
Normal (Green LED)	Input and output ok	
Cooling	Fan (front to back airflow, temperature regulated speed)	
Acoustic noise, full load @ T <sub>ambient</sub> = 30°C	< 52 dBA	
MTBF (Telcordia SR-332 Issue I method III (a))	>350 000 (@ T <sub>ambient</sub> : 25 °C)	
Operating temperature	-40 to +75°C (-40 to +167°F), humidity 5 - 95% RH non-condensing	
Temperature de-rating above 45°C (113°F)	2000W to 1350W @ 75°C (167°F)	
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing	
Dimensions[WxHxD] / Weight	109 x 41.5 x 327mm (4.25 x 1.69 x 13") / 1.85 kg (4.1 lbs)	
<b>DESIGN STANDARDS</b>		
Electrical safety	UL 60950-1:2007, IEC 60950-1:2005 + A1:2009 EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011	
EMC	EN 61000-6-1:2007, -6-2:2005, - 6-3:2011, - 6-4:2011 ETSI EN 300 386 V.1.6.1, FCC Part 15 Subpart 109	
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) ETSI EN 300 132-2 RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant	

1) Minimum output voltage will increase when V<sub>IN</sub> > 230 V<sub>DC</sub>  
2) Based on supplied power not limited by PV panels