

Photon-4 48V/4000W

Solar Charger



To support renewable installations in telecom networks in areas of poor grid or no grid, Exicom has introduced a Photon-4 48V/4000W Solar Charger. With the MPPT algorithm ensuring close to 100% panel utilization and converter efficiency up to 96.0%, the galvanic isolated solar charger sets new standards for renewable power in telecom.

Key Specification



High efficiency of 96.0% of solar charger and MPPT efficiency of >99%



Galvanic isolation required as per telecom standards



Inbuilt firmware for daily energy calculation of solar kWh



Wide input voltage range of 120 - 400Vdc ensures max utilization of daylight and supports optimization of I&C costs



Global Compliance



Works with M2000 controller platform with minor configuration change making future expansion flexible

Application

- Telecom: Renewable or hybrid base station sites, LTE/WiMax, hub sites
- Smart Cities: Solar powered smart poles, surveillance etc.
- Commercial & Industrial solar installations, DC homes

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Technical Introduction

DC Input

Voltage (Nominal)	176 - 350Vdc
Voltage (Operating)	120-400Vdc
Max Input Current	23A Max
Input Protection	Off < 120-400Vdc < Off Fuses on both lines (+&-) MOV transient protection
MPPT Efficiency	>99%
Galvanic Isolation	
Input to Output	3700Vdc
Input to Ground	2500Vdc
Output to Ground	700 Vdc

DC Output

Output Power	4000W above 176Vdc 2800W at 150Vdc
Maximum Current	83.3A @48V
Current Sharing	± 5% of max. current
Static Voltage regulation	± 0.5% for 10%-100% load
Dynamic Voltage Regulation	± 5% for 90% - 10% load
Hold up time Ripple	>10ms
Noise	<200 mVp-p 30MHz bandwidth
Output Protection	Over voltage shutdown Short circuit proof Hot-plugin inrush current limiting, output fuse Over temperature shut-off
Efficiency	Peak 96.0 %

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Technical Introduction

Other Specification

MTBF	>300,000 Hrs. (25°C ambient)
Operating Temperature	- 40°C to + 75°C, linear derating from 45°C onwards
Storage Temperature	- 40°C to + 85°C
Cooling	5% to 95% non-condensing
Humidity	Forced Air
Acoustic Noise	Less than 55 dB (A)
Communication Interface	CAN bus
Control & Monitoring	M2000 controller
Dimension (wxhxd)	105x40.8x269(mm)
Weight	2.0 kg
LED Indications	
Green	On: No faults Flash - Charger comm. ok Slow flash - Sleep mode
Yellow (warnings)	On - Input low/high, charger in power de-rate mode, current limit Flash - Charger comm fail
Red (Alarms)	On - Abnormal temp or input shutdown, low O/p voltage alarm, over-voltage shutdown on output Flash - Charger fan fail

Applicable Standards

Electrical Safety	EN60950-1, IEC62368-1
EMC / EMI	EN 55022 (Class B), EN 55024
Environmental	EN 300019-1-1/-2/-3, ROHS complied

Part No. Description

HE513460	Photon-4 48V/4000W Charger
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