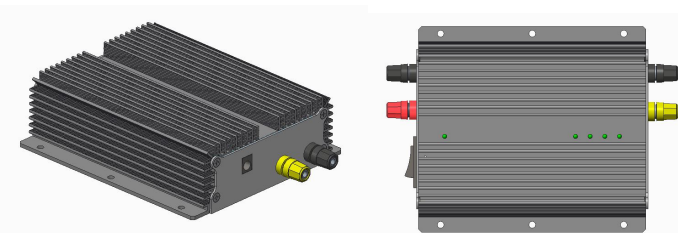


240W, Ultra-wide Input, isolated DC-DC converter

Output



Patent Protection RoHS



## FEATURES

- High reliability power supply, specifically designed for Maritime navigation and radiocommunication equipment and systems
- Ultra-wide input voltage range 18 - 60VDC
- I/O isolation test voltage  
Input-output 1500VDC/650VAC  
Input and output to case 1000VDC /650VAC
- Radiation emission meets IEC60945-2002
- Input under-voltage protection, reverse input-voltage, output short circuit, over-voltage, over-current protection
- Meets requirements of salt mist / vibration test
- Industrial ambient temperature range -40℃ to 70℃

URD482412CCS-240W is one of the first MORNSUN power converters for Marine type applications. This product is designed and developed specifically for ship-borne satellite communication, navigation and positioning equipment systems. The converter has a wide input voltage range that meets applications of 24/36/48VDC that supplied from ship. This product offers a high level of insulation, a full set of protection features, high efficiency and excellent EMI performance.

## Selection Guide

Part No.	Input Voltage (VDC)		Output				Full Load Efficiency (%)Min./Typ.	Capacitive Load (μF)Max.	
	Nominal (Range)	Max. <sup>①</sup>	Voltage (VDC)		Current (A) Max.				
URD482412CCS-240W	36 (18-60)	65	Vo1	Vo2	Vo1	Vo2	83/85	Vo1	Vo2
			24	12	9.5	0.83		1000	470

Notes:

① Absolute maximum stress rating without damage (not recommended);

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load)	nominal input voltage	--	7843	8032	mA
Start-up Voltage		--	--	18	VDC
Input Under-voltage Protection		12	14	--	
Hot Plug		Unavailable			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Voltage Accuracy	Vo1	--	±1	±2	%
	Vo2	--	±1	±3	
Linear Regulation	Input voltage variation from low to high at full load	--	±0.5	±2	
Load Regulation	0%-100% load	--	±1	±2	%/℃
Temperature Coefficient	Full load	--	--	±0.03	
Ripple & Noise	20MHz bandwidth, connect with electrolytic capacitor(100uF) at test point	--	200	500	mVp-p
Over-voltage Protection		110	130	160	%Vo
Over-current Protection		110	160	230	%Io
Short circuit Protection	Input voltage range	Hiccup, continuous, self-recovery			

## General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Insulation	Electric Strength Test for 1 minute with a leakage current of 1mA max.	1500	--	--	VDC
	Electric Strength Test for 1 minute with frequency for 50Hz and leakage current of 8mA max.	650	--	--	VAC
Insulation Resistance	Input-output insulation voltage at 500VDC	100	--	--	MΩ
Operating Temperature		-40	--	+70	°C
Storage Temperature		-40	--	+105	
Storage Humidity	Non-condensing	5	--	95	%RH
Vibration		IEC 60068-2-6, General vibration condition			
Salt Mist		IEC 60068-2-52			
MTBF	MIL-HDBK-217F@25°C	500	--	--	K hours

## Mechanical Specifications

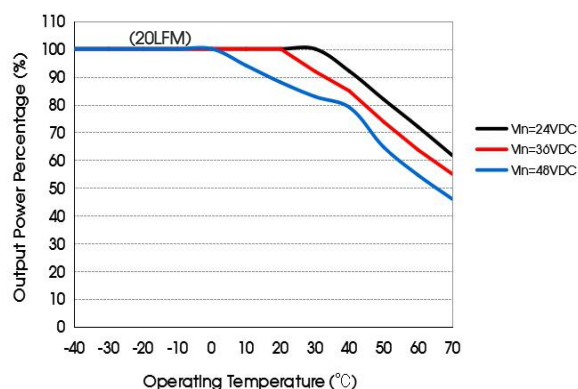
Case Material	Aluminum alloy
Dimension	155 x 140 x 46.5mm
Weight	1220g
Cooling method	Free air convection(20LFM)

## Electromagnetic Compatibility (EMC)

Emissions	RE	Quasi peak value meets below standard			
		IEC60945-2002			
		150KHz--300KHz	80~52dB		
		300 KHz--30MHz	52~34dB		
		30MHz--156MHz and 165MHz--2GHz	54dB		
Immunity		156MHz--165MHz	24dB		
		ESD	IEC61000-4-2	Contact ±6KV Air ±8KV	perf. Criteria B
		RS	IEC61000-4-3	10V/m	perf. Criteria A
		EFT	IEC61000-4-4	±2KV	perf. Criteria B
		Surge	IEC61000-4-5	line to line 0.5KV	perf. Criteria B
	CS	IEC61000-4-6	10 Vr.m.s		perf. Criteria A

## Typical Characteristic Curves

Temperature Derating Curve (Vo1 = 24V)



Temperature Derating Curve (Vo2 = 12V)

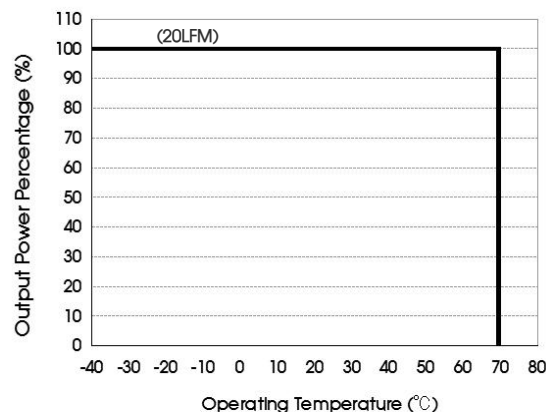
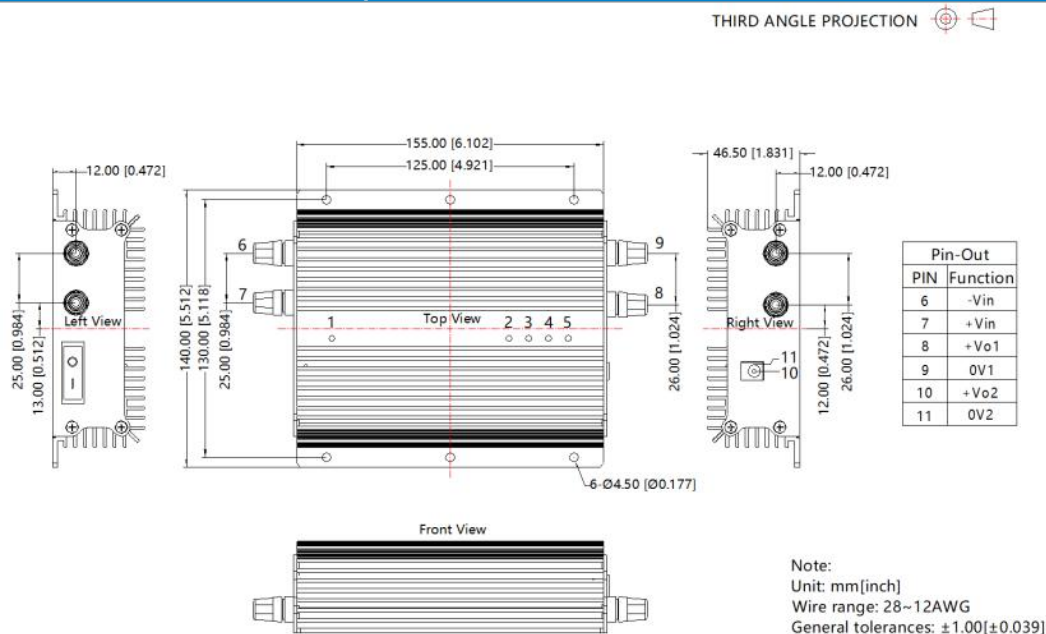


Fig. 1

## Design Reference

1. The products do not support parallel connection of their output
2. For more information please refer to DC-DC converter application notes on [www.mornsun-power.com](http://www.mornsun-power.com)

## Dimensions and Recommended Layout



LED instructions for voltage and current		
LED	Type	Mark
1	Input voltage	LED off: without input voltage LED on: with input voltage
2	Vo1 output voltage	LED off: without output voltage LED off: with output voltage
3	Vo1 output current	LED 3/4/5 on: output current > 9.5A
4	Vo1 output current	LED 4/5 on and LED 3 off: $6.2A < \text{output current} < 9.5A$
5	Vo1 output current	LED 5 on and LED 3/4 off: $2.2A < \text{output current} < 6.2A$ LED off: output current < 2.2A
Note: Above output current with difference of $\pm 0.5A$ .		

### Note:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number 58210067;
2. The maximum capacitive load offered were tested at input voltage range and full load;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^\circ\text{C}$ , humidity<75%RH with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on Company's corporate standards;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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