



SREGS-525U-01

525 Watt Power Management Unit

Typical Applications:

- Unmanned Air Vehicles (UAV's) and Unmanned Ground Vehicles (UGV's)
- Remote Power Generation
- Power Regulation from Alternative sources, ex. wind or solar

Featuring:

- 3 Phase AC primary input, 25 - 95 VACrms.
- Configurable to support LiPo, Lilon, LifePO4, NiCad, NiMH, SLA, and Lead Acid Battery Backup.
- Three simultaneous output voltages, 20 - 30 VDC 13 Amps, 10 - 13 VDC 13 Amps, and 4.8 - 8 VDC 7 Amps
- MIL-SPEC circular connectors
- Operates up to 91% efficiency at peak power.
- Provides automatic switching for DC ground power, and back up battery sources



SREGS-525U-01

525 Watt Power Management Unit



Specifications



Output:	Conditions	Min	Max	Input:	Conditions	Min	Max
Main Output:	13A/350W Max	24 VDC*	32 VDC*	Alternator Input Voltage:	3Ø 0 - 1 KHz	25 VAC	95 VAC
Secondary Output:	15A/175W Max	12 VDC*	15 VDC*	Backup Battery:	LiPO, Lilon, LifePO4, NiCad, NiMH, SLA, Lead Acid*	24 VDC	32 VDC
Tertiary Output:	7A/42W Max	4.8 VDC*	8 VDC*				
Maximum Total Power:			525 Watts	External Shore Power:	DC	24 VDC	32 VDC
Peak Efficiency:			91%	Battery Switch Time:	No interruption of Output		250nS
Self Protection:	Overvoltage, Undervoltage, Overcurrent, Reverse EMF			Mechanical: Conditions			
Maximum Overload Current:	Up to 10mS duration		125%	Enclosure Material:	Black Anodized Aluminum		
Output Ripple, Maximum:	p-p All Outputs		500mV	Dimensions:	192 mm x 80 mm x 80 mm		
Voltage Regulation:	All outputs		+/-500mV	Weight:	650g		
Status Signal:	5V High Impedance			Connectors:	MIL-SPEC Circular Connectors		
Battery Charger Type:	Basic, Cell monitoring, or Full balance charging options available			Design Standard:	MIL-STD 1275D		
Back-up Battery Charging:	LiPO, Lilon, LifePO4, NiCad, NiMH, SLA, Lead Acid*		900mA	Conformal Coating:	MIL-I-46058C Type UR		
				Cooling:	20 CFM Fan, may be replaced by forced air		
				Operating Temperature:	-20C to 55C Ambient		
				Storage Temperature:	-40C to 85C		

*Factory Adjustable

SREGS-525U-01

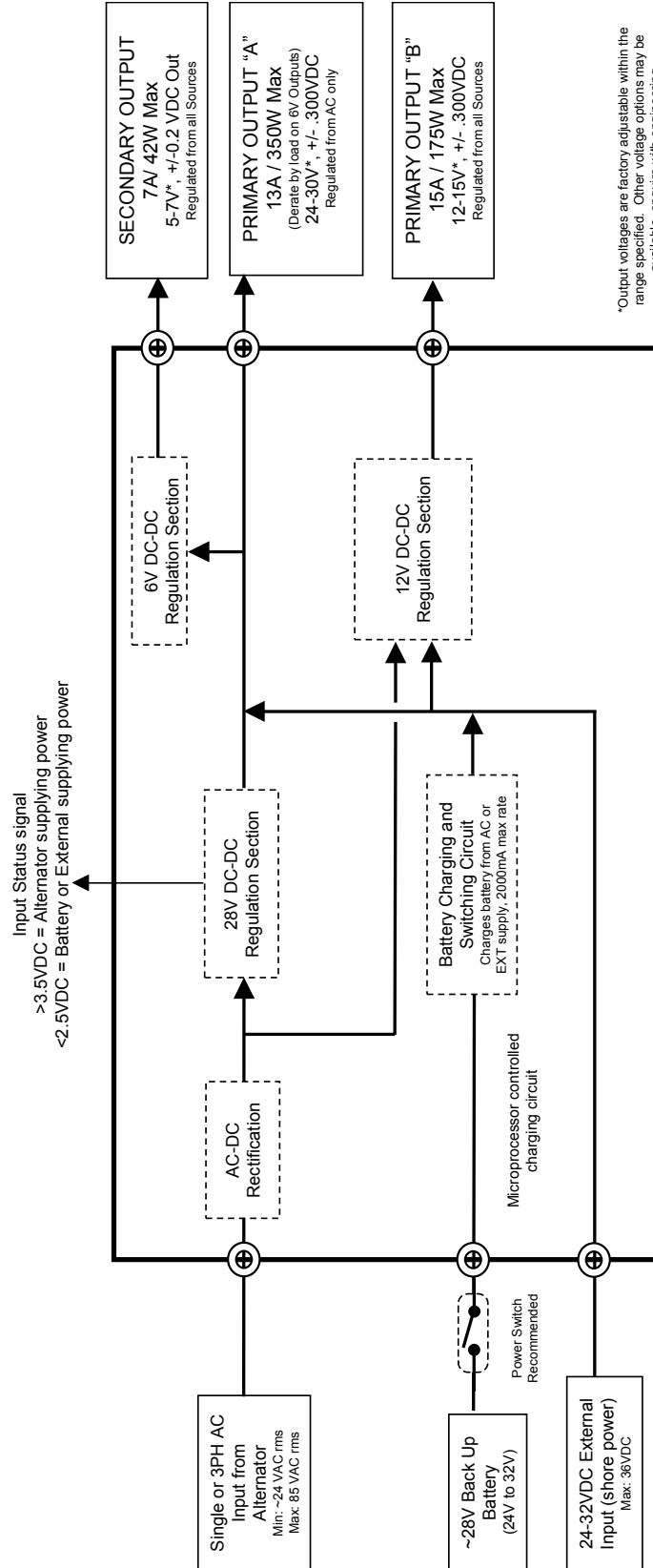
525 Watt Power Management Unit



8950 Yellow Brick Rd
Baltimore MD 21237
(410) 732-3500
www.sullivanuv.com

SULLIVAN UV SREGS-525U-01 PMU Block Diagram

Created: March 19, 2015
Revised: Nov. 24, 2015



*Output voltages are factory adjustable within the range specified. Other voltage options may be available, enquire with engineering

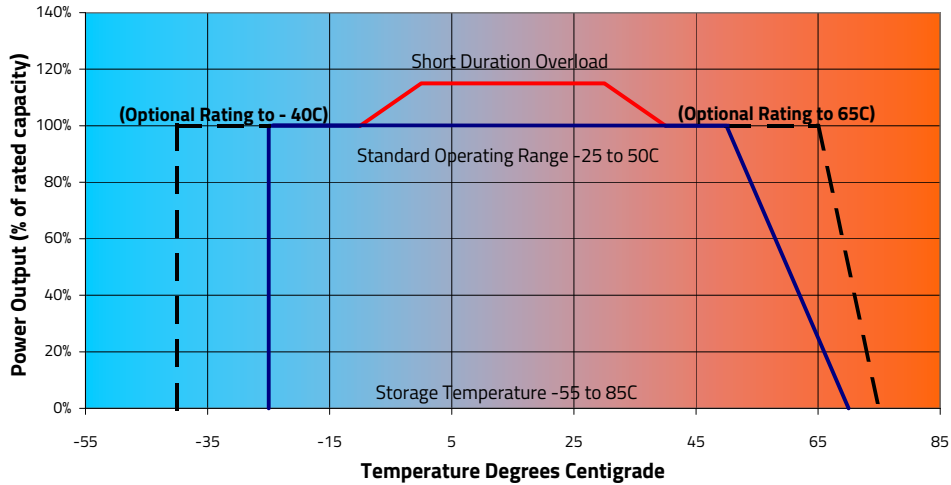
General Notes:

- Customer responsible for fusing all loads
- Battery recharges from External Input or AC input
- Enclosure type: 2CN SREGS V2
- All connections are MIL-5051 Circular Connectors
- All outputs are filtered from 100Mhz to 1 Ghz and include protection against Reverse Polarity Transients, Etc

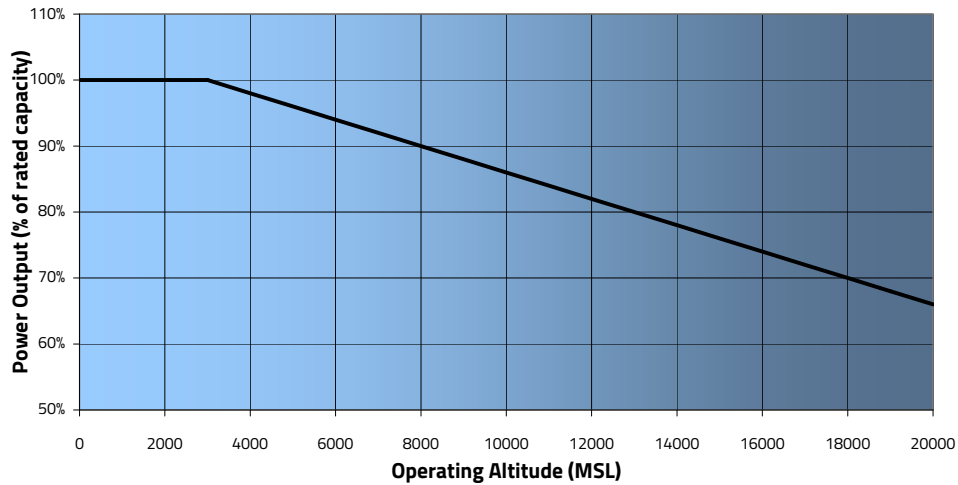
For engineering use only.
For further information contact:
Sullivan Products
(410) 732-3500
www.sullivanuv.com

Performance

Allowable Storage and Operating Temperature Profile

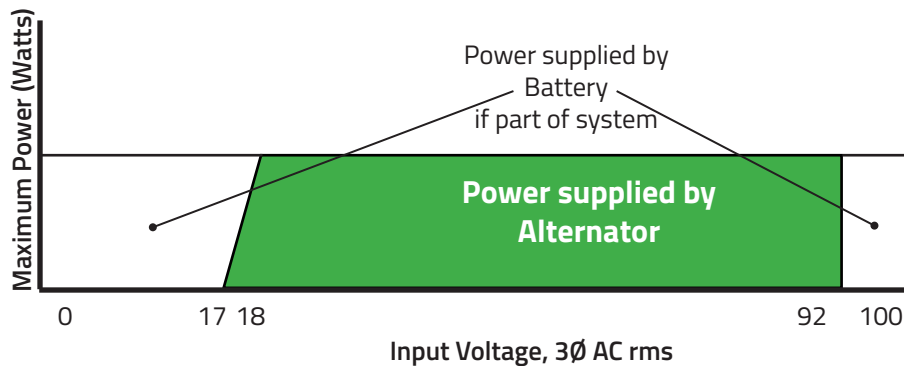


Power Derating due to Altitude



Alternator Input Range

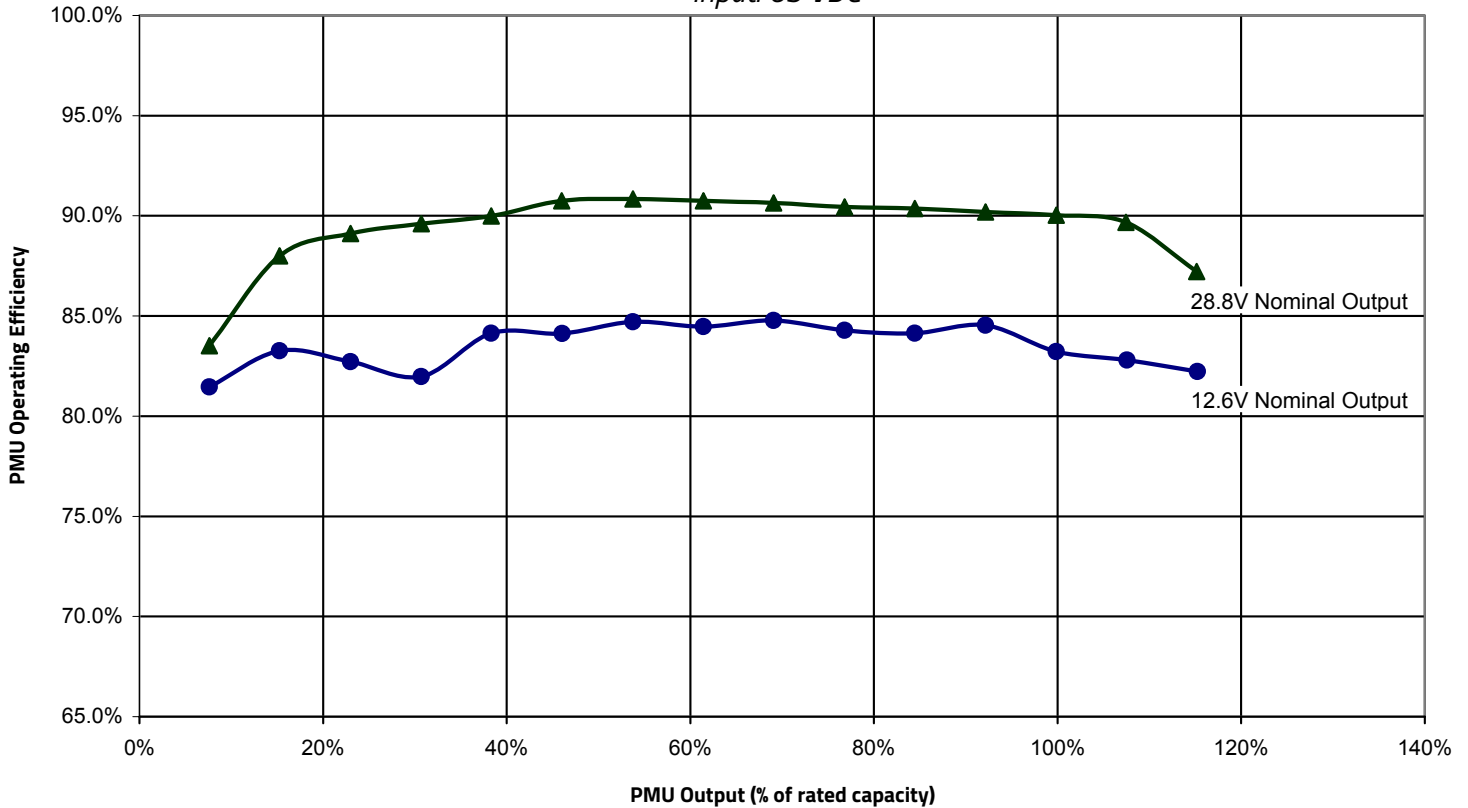
12V Primary Output



Efficiency

Typical PMU Efficiency vs Output Current

Input: 65 VDC



Engine load calculations

$$\text{Engine load} = \text{Output power} / \text{Regulator Efficiency} / \text{Alternator Efficiency}$$

Example: A 225W electrical load at 90% regulator efficiency and 80% alternator efficiency requires $225 / 0.90 / 0.80 = 312.5\text{W}$ of engine power. At 746W/HP, this is 0.419 HP.

$$\text{Ft-Lbs of Torque} = \text{Horsepower} * 5252 / \text{RPM}$$

At 3800 RPM, a 225W load with a 90% efficient regulator and 80% efficient alternator, the torque load would be $0.419\text{HP} * 5252 / 3800 = 0.579 \text{ Ft-Lbs}$.

$$1 \text{ Ft-Lb} = 1.356 \text{ N-M}$$

0.579 Ft-Lbs of torque is 0.785 N-M.

SREGS-525U-01

525 Watt Power Management Unit

