

SSGNS-200A-01

200 Amp Rectification and Regulation Unit w/ Integrated Starter Controls

Typical Applications:

- Unmanned Air Vehicles (UAV's) and Unmanned Ground Vehicles (UGV's)
- Remote Power Generation
- Auxiliary Power Units (APUs)

Featuring:

- 3 Phase AC input, 20 - 55 VDC output, up to 200 Amp Output.
- Integrated controls to drive Sullivan Starter-Alternator for automatic engine starting
- Internal DC-DC regulator provides secondary output from 6 - 28 VDC up to 15 Amps
- Operates up to 96% efficiency at peak power.
- Parallel connection to system batteries with microprocessor controlled charge limiting configurable to support LiPo, Lilon, LifePO4, NiCad, NiMH, SLA, and Lead Acid Batteries.
- Voltage regulation achieved by microprocessor controlled throttle modulation.
- Optional data via RS-232

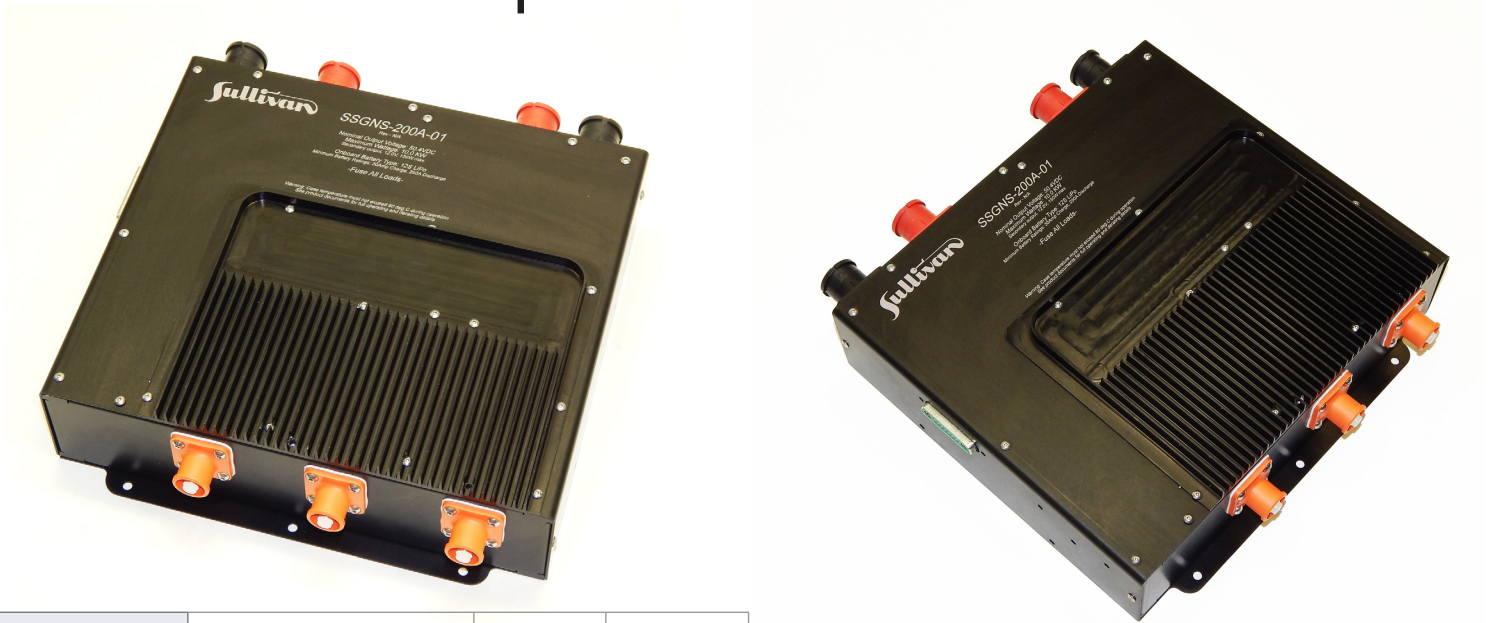


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Specifications



Output:	Conditions	Min	Max
Main Output:	200A/10000W Max	20 VDC*	55 VDC*
Secondary Output:	15A/350W Max	6 VDC*	28 VDC*
Tertiary Output:			
Maximum Total Power:			10000 W
Peak Efficiency:	Primary/Secondary		96%/91%
Self Protection:	Inherently protected when properly integrated into generator systems		
Maximum Overload Current:	Up to 10mS duration		125%
Output Ripple, Maximum:	p-p All Outputs		500mV
Voltage Regulation:	PID to Throttle		
Status Signal:	N/A		
Battery Charger Type:	Parallel to primary output w/ factory adjustable current limit		
Maximum Output Amperage:	200A from Alternator 200A from Battery 300A from Alternator and Battery		

Input:	Conditions	Min	Max
Alternator Input Voltage:	3Ø 0 - 1 KHz	15 VAC	50 VAC
Backup Battery:	LiPO, Lilon, LifePO4, NiCad, NiMH, SLA, Lead Acid**	20 VDC	55 VDC
External Shore Power:	N/A		
Battery Switch Time:	No interruption of Output		N/A
Mechanical:	Conditions		
Enclosure Material:	Black Anodized Aluminum		
Dimensions:	260 mm x 230 mm x 65 mm		
Weight:	2550g		
Connectors:	MIL-C-5015 CA-Bayonet		
Design Standard:	MIL-STD 1275E		
Conformal Coating:	MIL-I-46058C Type UR		
Cooling:	Heat sink plate, 80C Max		
Operating Temperature:	-20C to 55C Ambient		
Storage Temperature:	-40C to 85C		

*Factory Adjustable

** Must Match System Voltage

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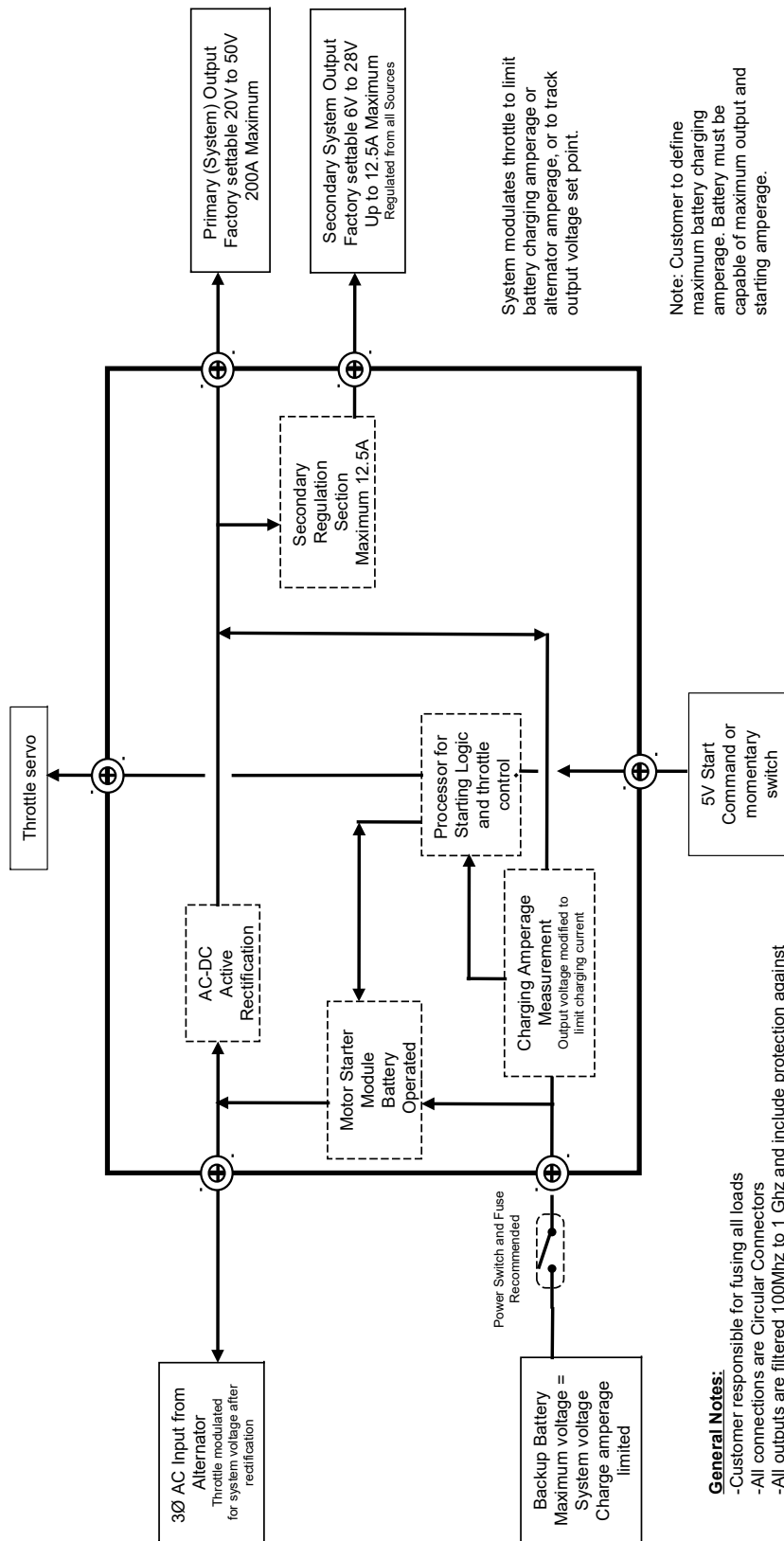
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SULLIVAN UV SSGNS-200A-01 PMU Block Diagram

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

Created: June 30, 2018
Revised:



General Notes:

- Customer responsible for fusing all loads
- All connections are Circular Connectors
- All outputs are filtered 100Mhz to 1 Ghz and include protection against Reverse Polarity and Transients
- RS-232 Optional Outputs; RPM, Battery Amperage (bidirectional), System Amperage, System Voltage, Servo Position, Board Temperature

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

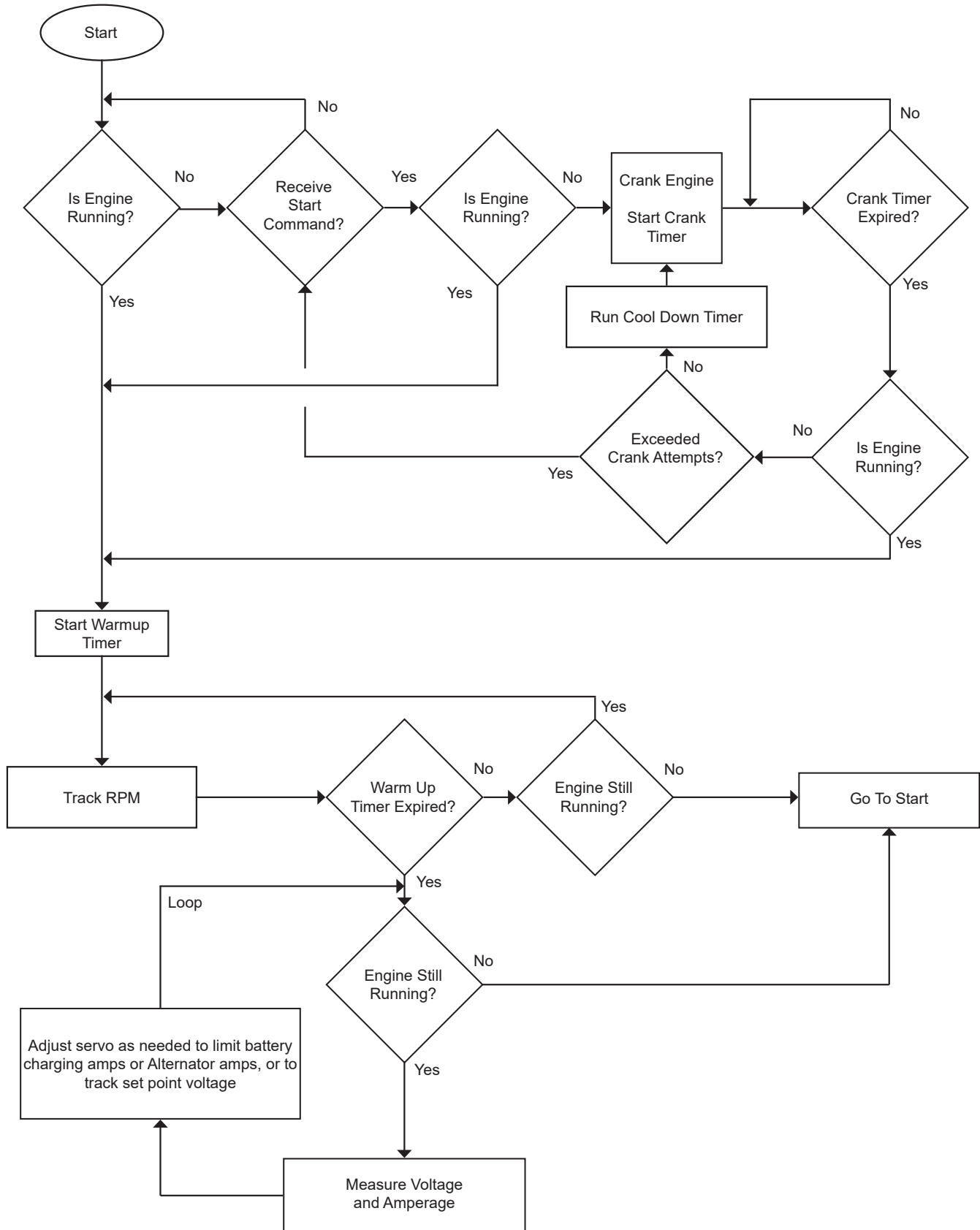
Starter Actuation Method = 5V signal
From either digital signal or from manual switch
Optional RS232 data output

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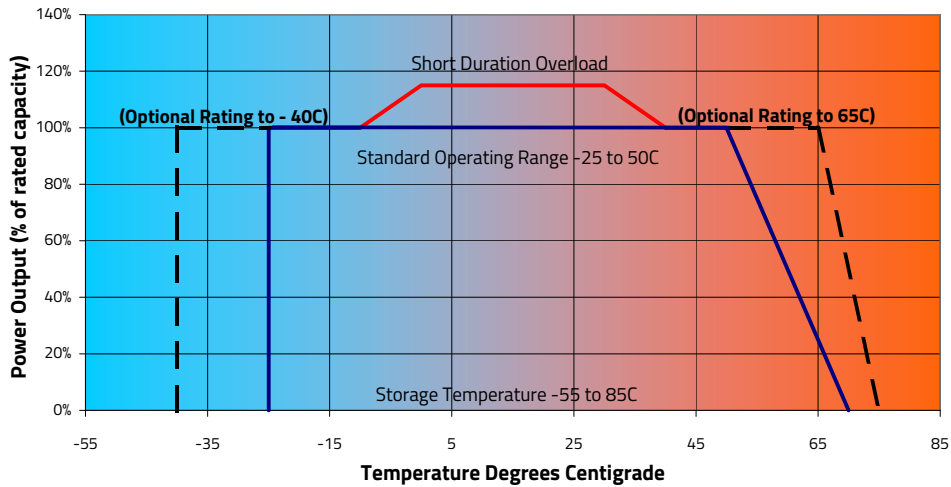


SSGNS-200A-01 Control Cycle Flow Chart 2018-06-30

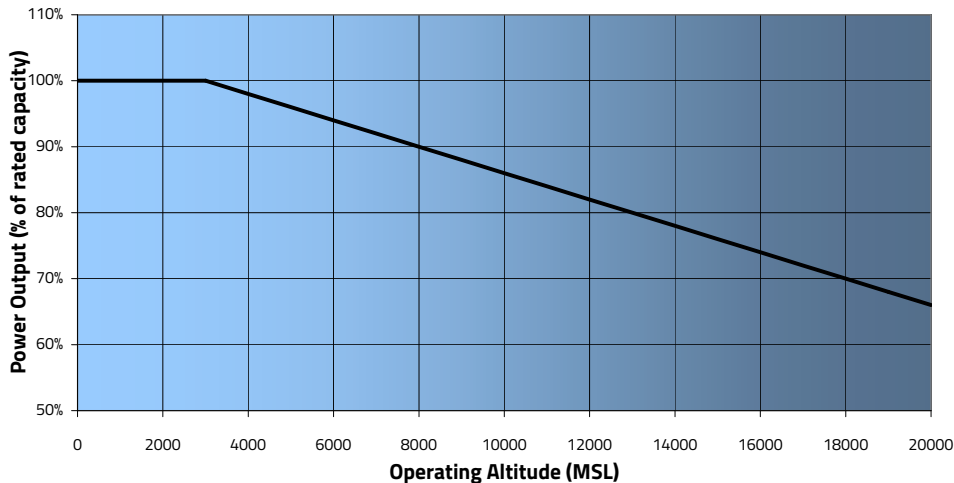


Performance

Allowable Storage and Operating Temperature Profile



Power Derating due to Altitude



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.

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

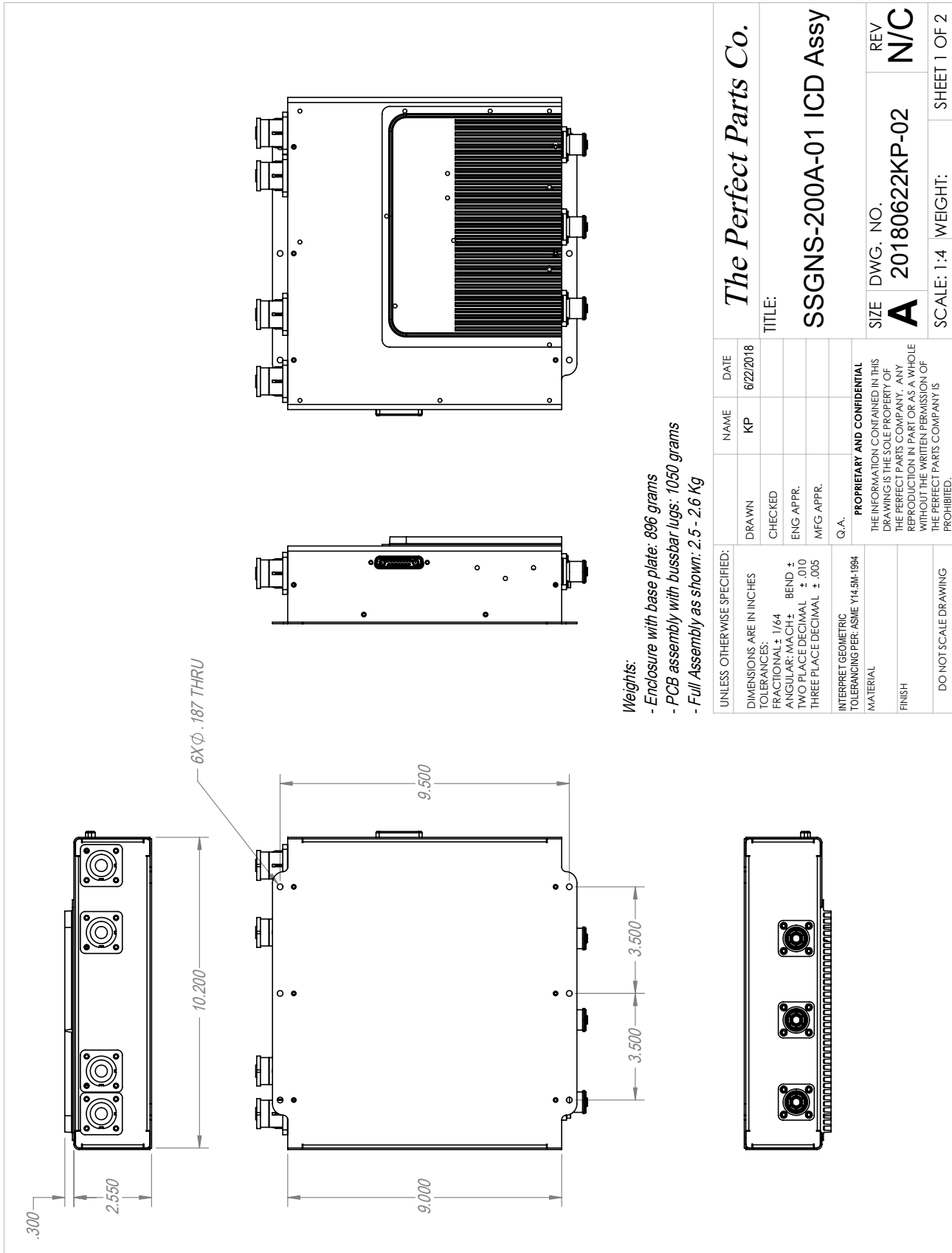
At 3800 RPM, a 225W load with a 90% efficient regulator and 80% efficient alternator, the torque load would be $0.419\text{HP} * 5252 / 3800 = 0.579 \text{ Ft-Lbs}$.

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

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

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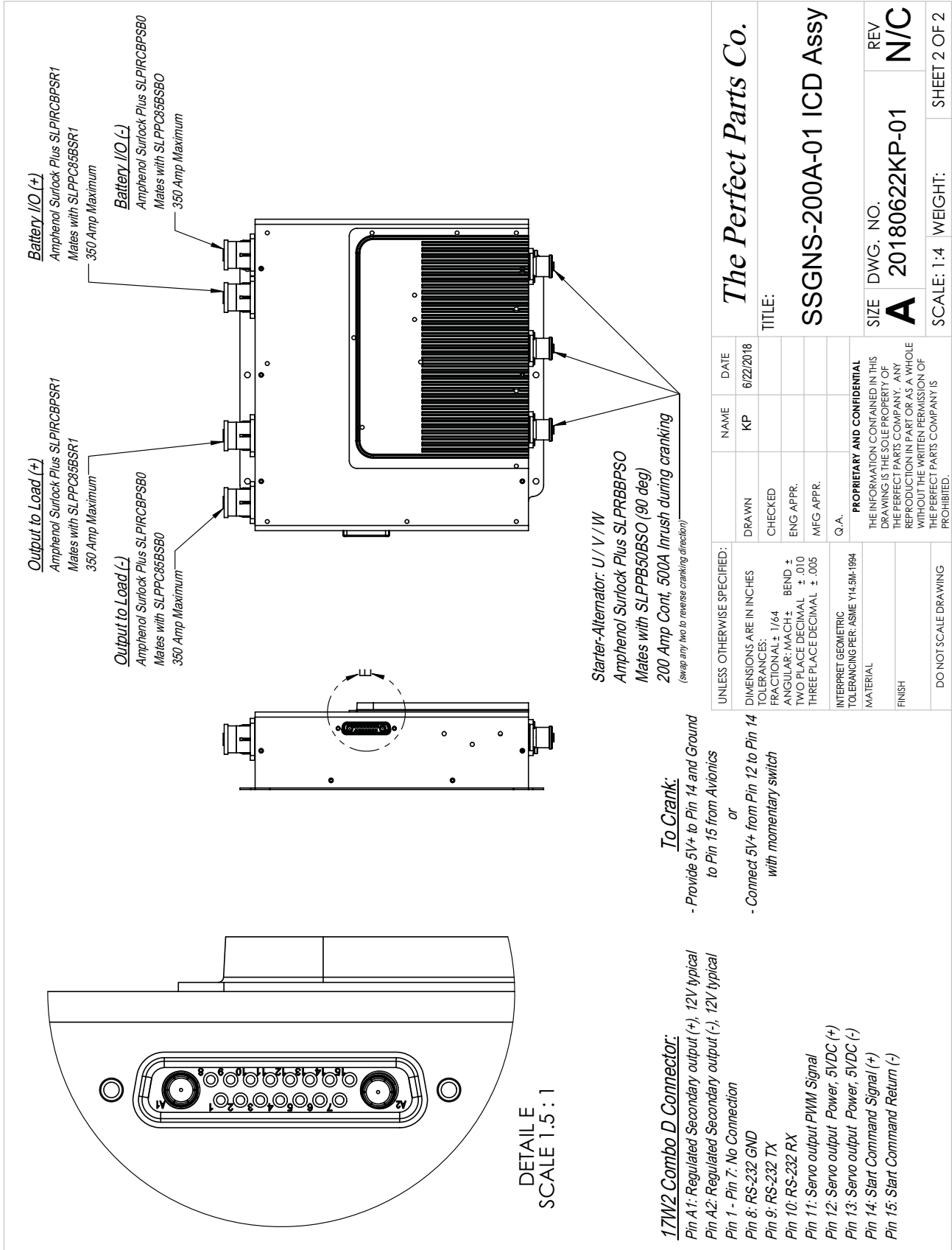


- Weights:**
- Enclosure with base plate: 896 grams
 - PCB assembly with bussbar lugs: 1050 grams
 - Full Assembly as shown: 2.5 - 2.6 Kg

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THREE PLACE DECIMAL ± .005		MFG APPR.			SHEET 1 OF 2
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