Larson Electronics LLC
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SPG-1.8K-1040AL-IVT7-ISDG-M1

1.8KW Hybrid Solar Generator - (6) 300W Panels, (26) 40aH Batteries, 500W Inverter, BC - Backup Diesel Genset/N3R Enclosure

Product ID: 284061



Image: SPG-1.8K-1040AL-IVT7-ISDG-M1

Larson Electronics LLC manufactures a wide variety of products, including custom built to spec designs. The pictures displayed for this unit are a general representation of form factor for the product line and may not accurately represent this exact configuration in every detail due to custom builds and changes between similar products in our standard catalog. The specifics for this configuration are listed in the specification table and supporting documentation (CAD files, Dimensional Drawing, Name Plate Diagram, Wiring Diagram, etc.). This means that specific details (receptacles, plugs, wires, connections, mounting brackets, external finishes, etc.) may not be accurately represented in images vs specifications. Please review specifications and do not order based solely on images.

SPG-1.8K-1040AL-IVT7-ISDG-M1 Solar Generator w/ Trailer
Panels: (6) 300 Watt Panels
Method of Solar Panel Deployment: Adjustable Sliders
Average Charge Capacity: 75A per Hour
Panel Protection: Fused Combiner Box
System Protection: Battery Over/under and Ground Fault
System Voltage: -
Battery Bank: (26) 40 aH Lithium Iron Phosphate
Battery Capacity: 1,040 aH Battery Bank, 100% Usable
Charge Controller: 80A
Inverter: 500W 120/240V
Battery Charger: Grid Tie to 120V Power Sources
Receptacles: (1) L6-30R [240V], (1) 5-15/5-20R T-slot [120V]
Backup Generator: 5 kW Diesel Generator w/ Auto Start
Trailer Coating: Powder Coated or 2-part Epoxy Steel
Trailer Axle: Rated for 3500 lbs
Trailer Tongue: Removable
Leveling: (4) 1200 lb Rated Leveling Jacks

Dimensions (Deployed): 111.4"H x 187.54"L x 71"W
Weight: -

Features
(6) 300W Solar Panels
NEMA 3R Ventilated Enclosure

Special Orders - Special Requirements
Contact us for special requirements
Intl: 1-903-270-1187
Toll Free: 1-800-369-6671
Fax: 1-903-765-7664
E-mail: sales@larsonelectronics.com

Made in the USA

The SPG-1.8K-1040AL-IVT7-ISDG-M1 Solar Generator from Larson Electronics includes six 300-watt solar panels, solar charging system and battery bank mounted on trailer with leveling jacks and removable tongue. This 1.8 kW solar generator system replenishes 200 amp hours of usable battery capacity per day, assuming 5.5 hours of peak charging sunlight. This unit comes with a 5kW backup diesel generator with autostart. System components are located inside a NEMA 3R ventilated enclosure.

PLEASE NOTE: ANY FREE SHIPPING OFFERS DO NOT APPLY TO MASTS OR TRAILERS

Solar Panel Assembly: This unit is comprised of six 300-watt solar panels, generating a total maximum output of 1.8 kW. The panels are mounted to the roof of a NEMA 3R ventilated enclosure. The solar panels deploy using an adjustable slider, which expands all solar panels for maximum sunlight exposure. Solar panel deployment can be done easily by one person. The entire process takes just a few minutes.

In order to optimize the sun capture, the panels can be set to +/- 15 degrees of the latitude of the trailers location on the earth. Houston, Texas, for example, is at latitude of 30 degrees, so the winter setting is 45 degrees and the summer setting would be 15 degrees. While this doesn't make a huge difference, every little bit helps.

Solar Charging System: Each panel is terminated with a fused combiner box with a single lever action cut-off switch. With the switch set to the `on` position, the combiner box passes power to the 80-amp capacity Outback Extreme charge controller. A 500-watt inverter allows operators to power 240V and 120V equipment. The following receptacles are available on the system: (1) L6-30R receptacle for 240V equipment and (1) 5-15/5-20R T-slot receptacle for 120V equipment.

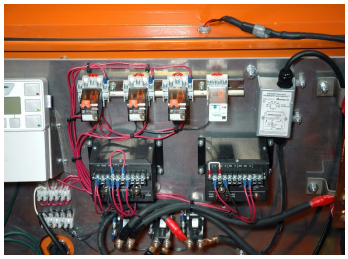
This solar light tower uses the Outback Extreme series since it standard temperature threshold is more than 160 degrees Fahrenheit, due to its integrated heat sink and fan assembly. Oddly enough, most charge controllers aren't rated past 104 degrees Fahrenheit despite the fact the will always be close to direct sunlight. In the summer time in Texas, our fabrication shop is normally warmer than that, so this solar light tower uses a charge controller that would support the southern heat. We improve on that capability shading the charge controller and adding additional air flow from the exhaust of a 1400 CFM component cooling system.

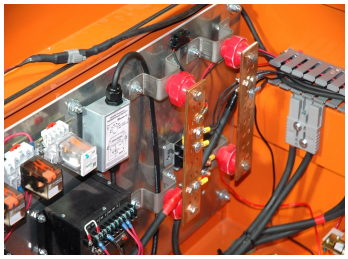
Battery Bank System: The battery bank consists of twenty-six 40 aH lithium-iron phosphate batteries that are mounted to a removable tray. The batteries are spaced apart, strapped to the battery tray. The construction of the battery tray system enables the batteries to ventilate while securing them. Much like a forklift battery bank, the entire battery tray system can be replaced in one operation. The trailer includes room for an additional battery bank system or a supplemental generator, both of which can be purchased separately and installed in the field. A 120V battery charger is available for grid tie connections to 120V power sources.

Backup Generator: This system comes with a 5 kW diesel generator for backup power. The generator features an autostart function.

Component Control Center: In order to ensure that the 50% threshold on the batteries is controlled, this solar trailer includes a system of min/max voltage sensors and relays that monitor the voltage produced by the batteries. This protects the batteries from failure. We also include ground fault protection and an Outback Mate 3 monitoring system to track and log all activities related to the charger controller and battery health. In the event there is an issue with the solar trailer, the SD card can be removed from the Mate 3 and sent to Larson Electronics for analysis.

All the electrical components, including the combiner panel, charge controller, over/under battery monitoring and ground fault isolation are protected by a NEMA 3R ventilated enclosure. Since most of these components are not rated for high heat, our component cooling system circulates air within the job box at 1400 CFM when the ambient temperature exceeds 90 degrees Fahrenheit. The component control center also includes a terminal block so that customers can mount additional electronic gear without interfering with the charging systems.





Click Photos to Enlarge

Wire Management: The trailer itself houses a built in wire raceway that handles power from the component control center and batteries. There is an accessible panel at the base for making connections from the power source to customer-provided equipment.

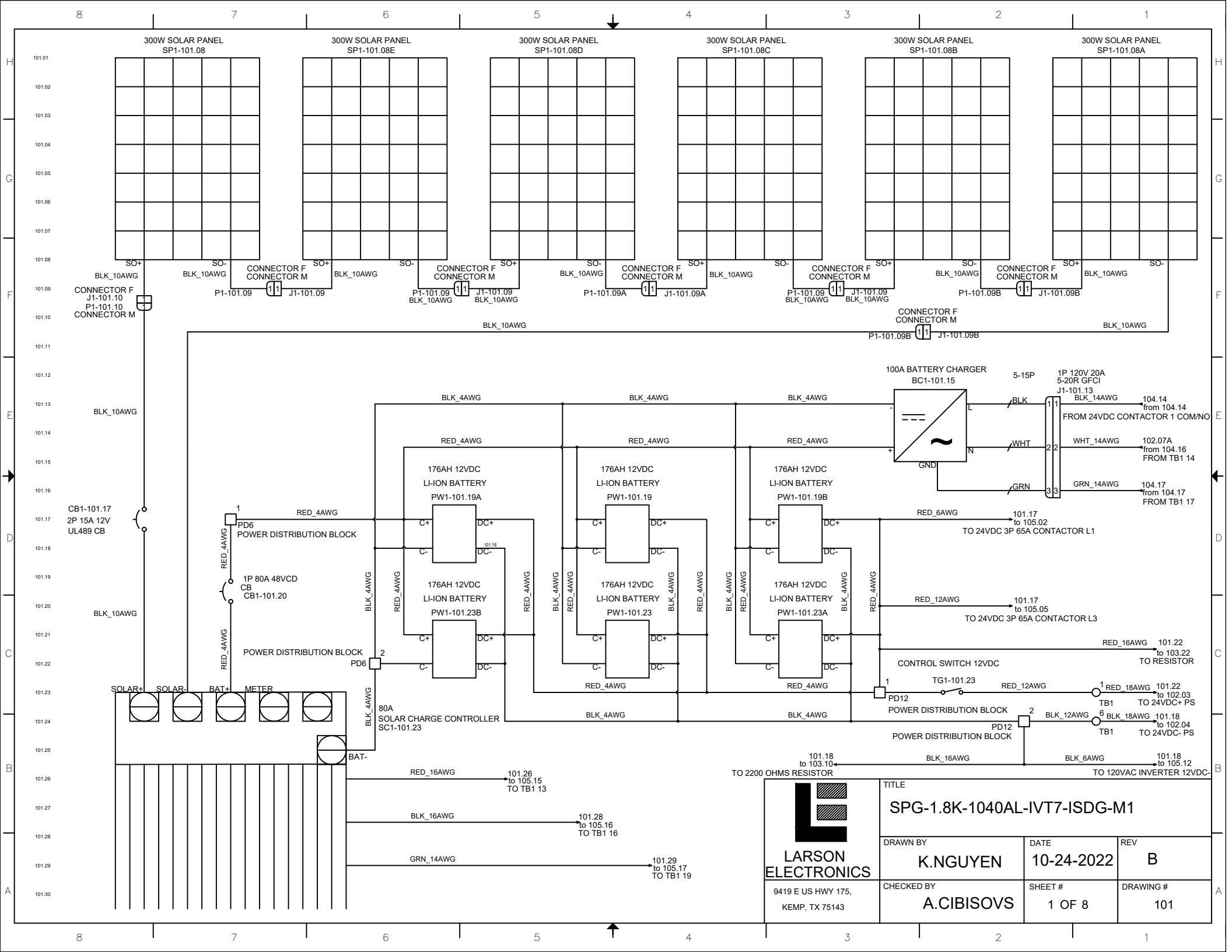
Trailer: All components are located inside a NEMA 3R rated ventilated enclosure. The trailer itself is built on a 3500-pound rated axle and is approximately 16 feet long and 6 feet wide. The trailer is equipped with a removable tongue for storage, transport and security purposes. For an additional charge, we offer removable wheels in addition to the removable tongue for extra security. Four 1200 lbs hand crank leveling jacks are used for leveling the unit up to a 37 degree slope. Jacks can be leveled by hand crank or attachment provided for power drills.

At Larson Electronics, we do more than meet your lighting needs. We also provide replacement, retrofit, and upgrade parts as well as industrial grade power accessories. Our craftsmen can custom build any lighting system and/or accessories to fit the unique demands of your operation. A commitment to honesty, quality, and dependability has made Larson Electronics a leader in the lighting and electronics business since 1973. Contact us today at 800-369-6671 or message sales@larsonelectronics.com for more information about our custom options tailored to meet your specific industry needs.

REV	DESCRIPTION	DATE
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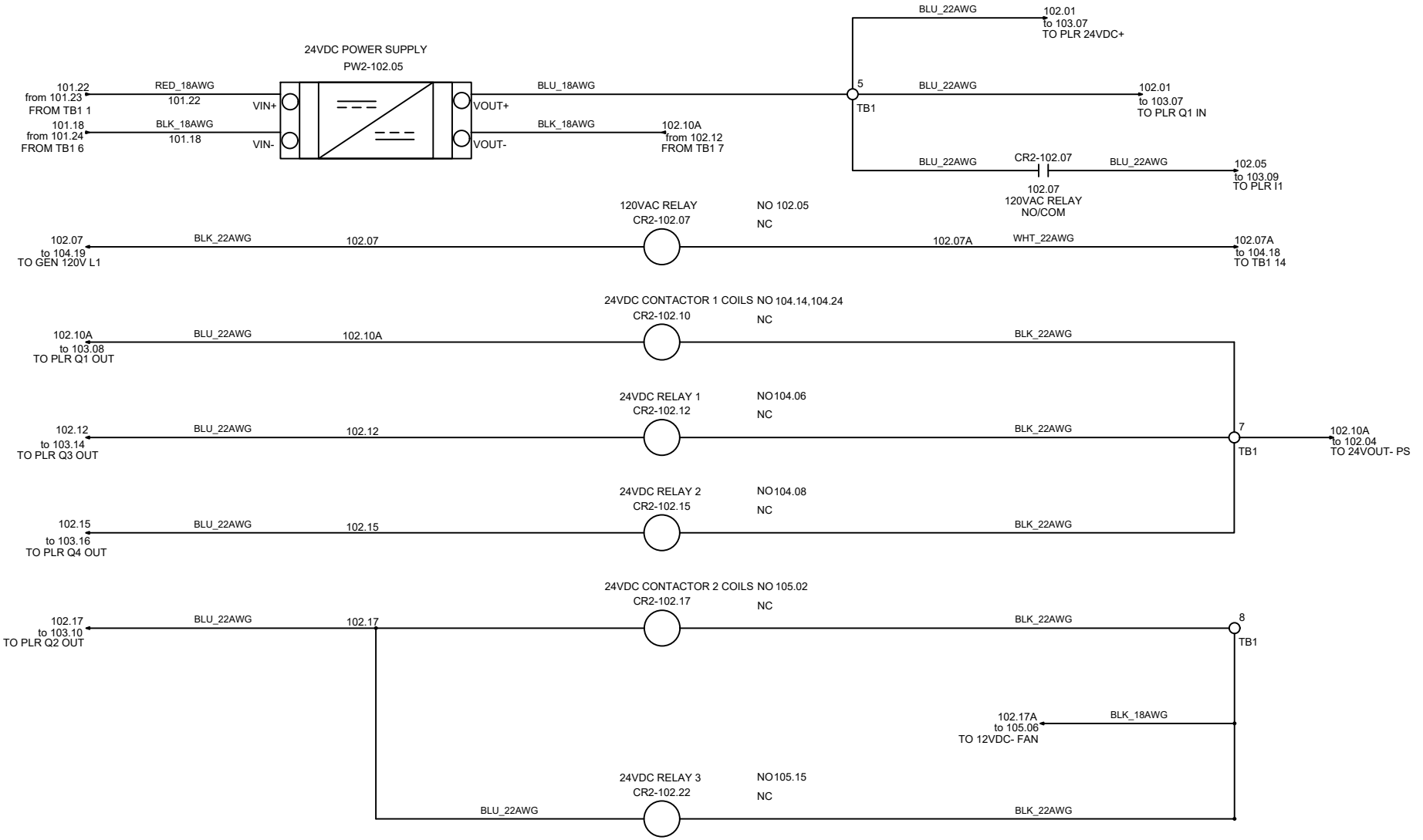
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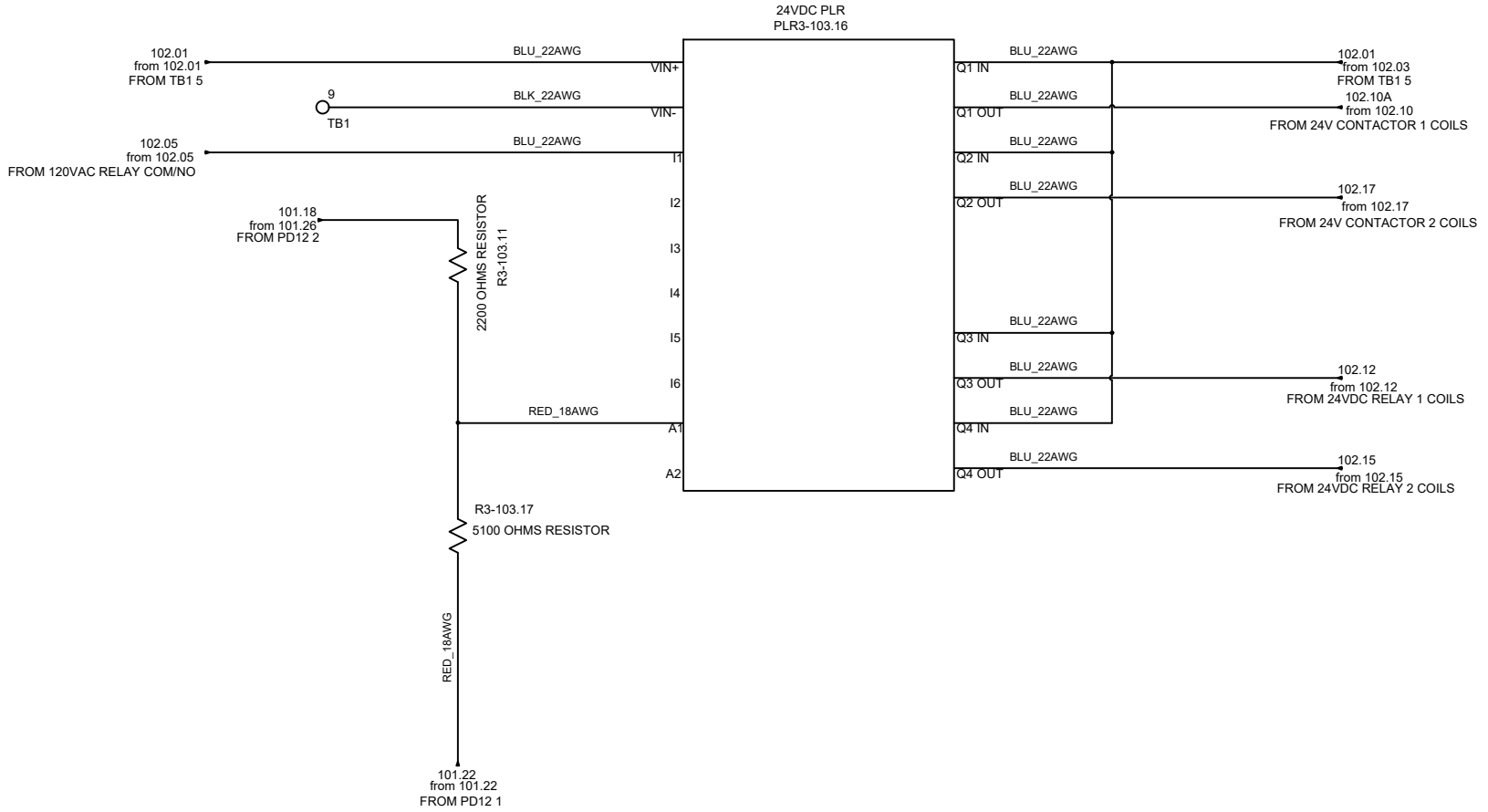
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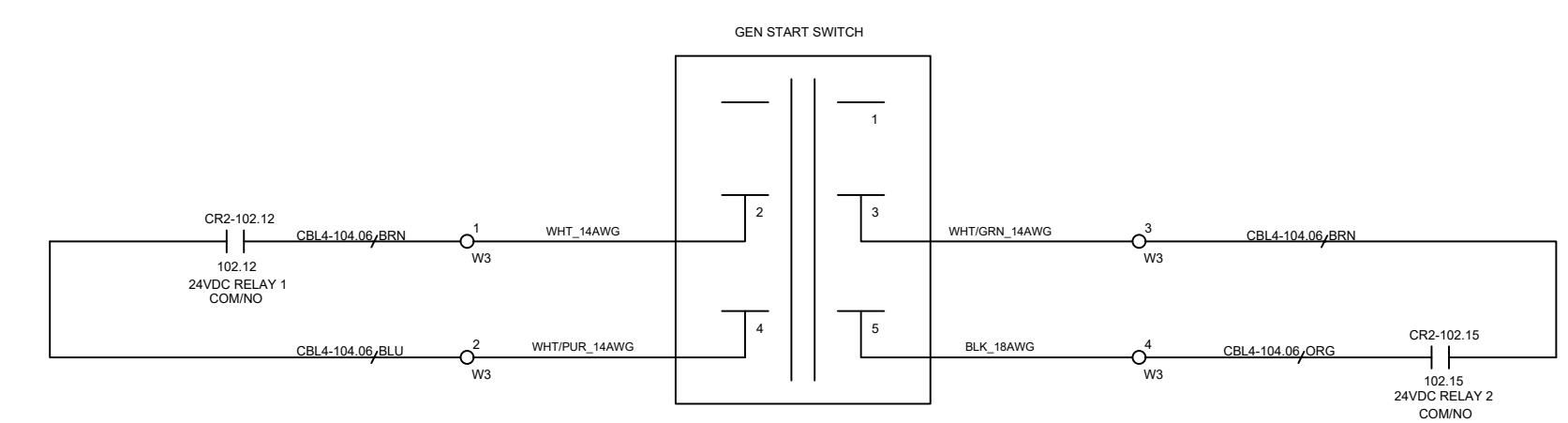
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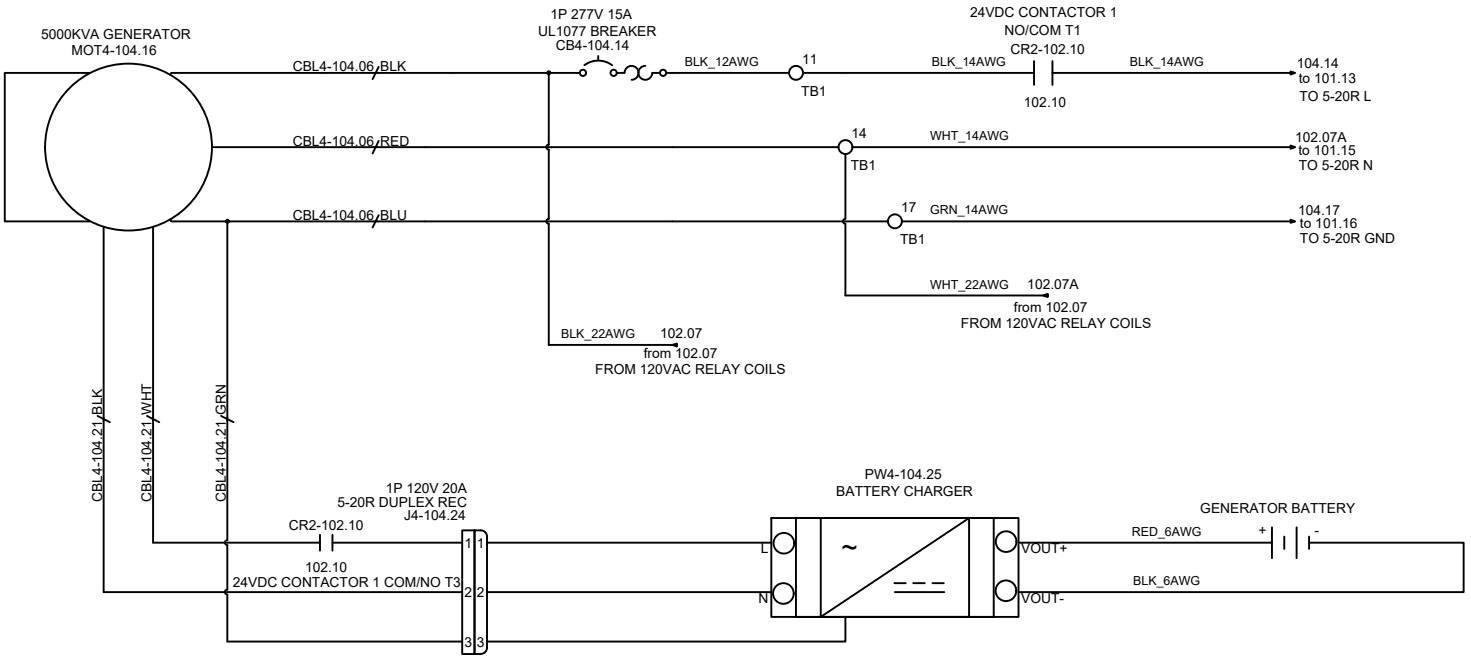
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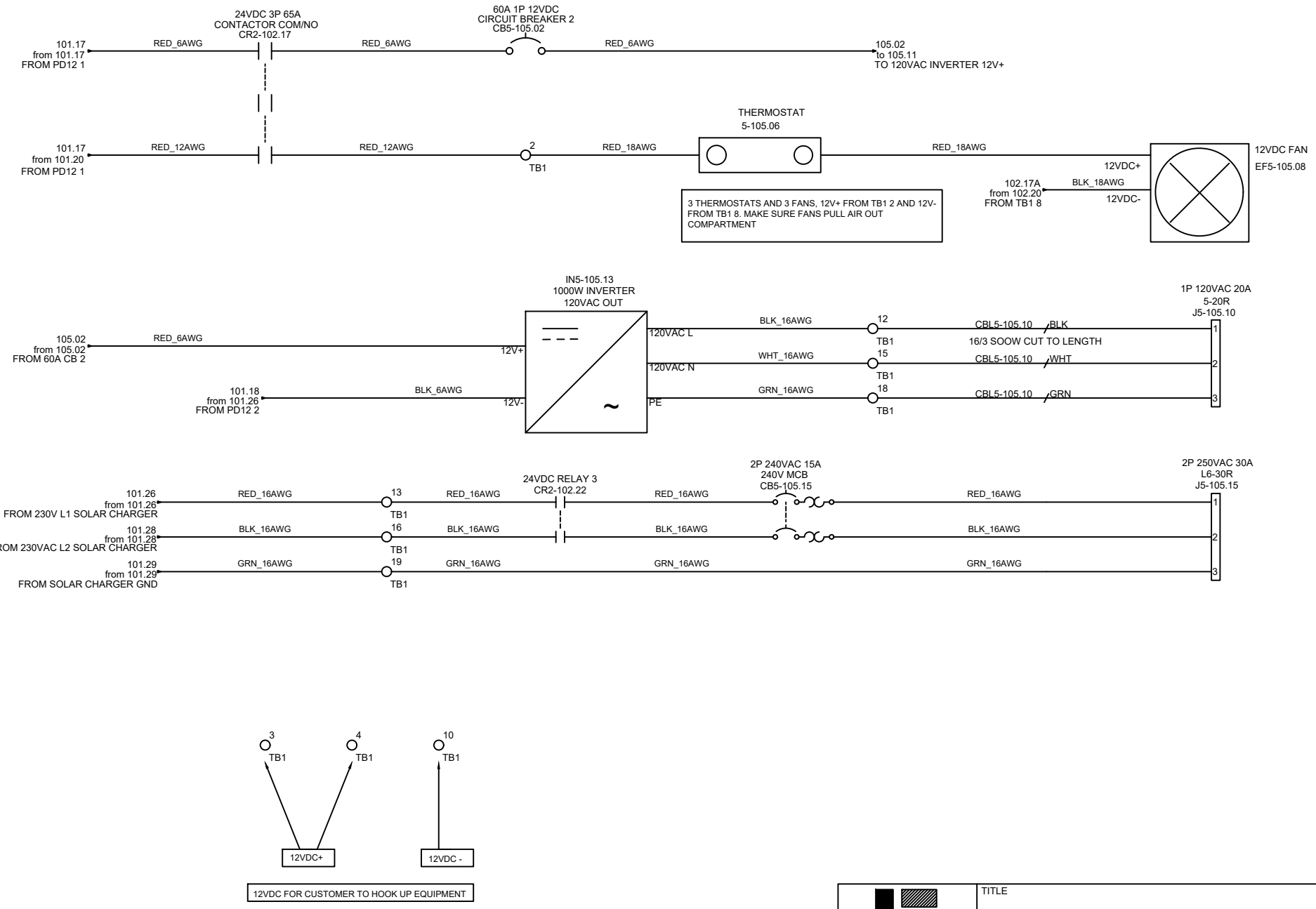
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TB1													
Device1	Pin1	Wire1	Type1	T1	Number	T2	Manufacturer	Catalog	Type2	Wire2	Pin2	Device2	Jumper
R3-103.17			RED_18AWG		1		PHOENIX CONTACT	UNV0001397 4	RED_12AWG			TG1-101.23	
			RED_18AWG										
CR			RED_12AWG		2		PHOENIX CONTACT	UNV0001397 4	RED_18AWG			5-105.06	
					3		PHOENIX CONTACT	UNV0001397 4					
					4		PHOENIX CONTACT	UNV0001397 4					
PLR3-103.16	VIN+		BLU_20AWG		5		PHOENIX CONTACT	UNV0001397 4	BLU_18AWG				
PLR3-103.16	Q1 IN		BLU_20AWG						BLU_20AWG			CR2-102.07	
PD12	2		BLK_12AWG		6		PHOENIX CONTACT	UNV0001397 4	BLK_18AWG				
			BLK_18AWG		7		PHOENIX CONTACT	UNV0001397 5	BLK_20AWG			CR2-102.10	
CR2-102.12			BLK_20AWG						BLK_20AWG			CR2-102.15	
CR2-102.17			BLK_20AWG		8		PHOENIX CONTACT	UNV0001397 5	BLK_18AWG		12VDC-	EF5-105.08	
PLR3-103.16	VIN-		WIRES		9		PHOENIX CONTACT	UNV0001397 5	WIRES			R3-103.11	
					10		PHOENIX CONTACT	UNV0001397 4					
CB4-104.14			BLK_12AWG		11		PHOENIX CONTACT	UNV0001397 4	BLK_14AWG			CR2-102.10	
IN5-105.11	120VAC L		BLK_16AWG		12		PHOENIX CONTACT	UNV0001397 4	WIRES		1	J5-105.10	
IN5-105.16	240VAC L1		RED_16AWG		13		PHOENIX CONTACT	UNV0001397 4	WIRES		1	J5-105.15	
J1-101.13	2		WHT_14AWG		14		PHOENIX CONTACT	UNV0001397 5	WHT_20AWG	102.07A		CR2-102.07	
MOT4-104.16			WHT_12AWG										
IN5-105.11	120VAC N		WHT_16AWG		15		PHOENIX CONTACT	UNV0001397 4	WIRES		2	J5-105.10	
IN5-105.16	240VAC L2		BLK_16AWG		16		PHOENIX CONTACT	UNV0001397 4	WIRES		2	J5-105.15	
J1-101.13	3		GRN_14AWG		17		PHOENIX CONTACT	UNV0001398 9	GRN_12AWG			MOT4-104.16	
IN5-105.11	PE		GRN_16AWG		18		PHOENIX CONTACT	UNV0001398 9	WIRES		3	J5-105.10	
IN5-105.16	PE		GRN_16AWG		19		PHOENIX CONTACT	UNV0001398 9	WIRES		3	J5-105.15	

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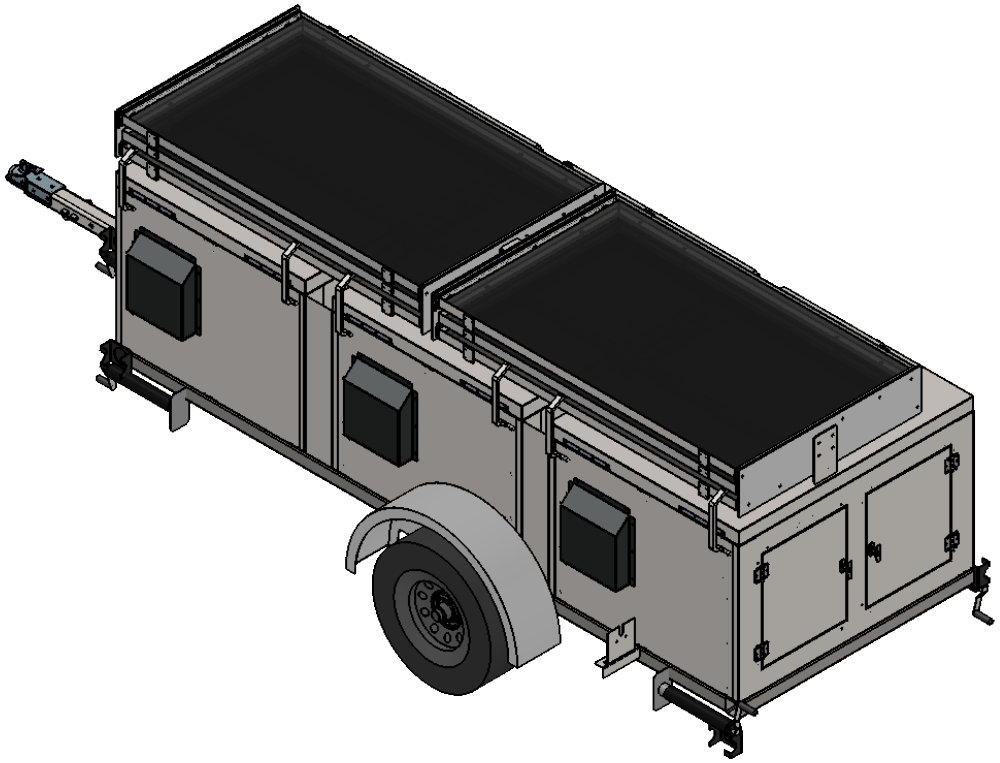
TAGS	QTY	CATALOG	DESCRIPTION
J1-101.13	1	UNV00002760	5-20R DUPLEX RECEPTACLE 125V 20A GFCI
J4-104.24	1	UNV00014533	5-20R GFCI 125/250V 20A
J1-101.09 J1-101.09A J1-101.09B J1-101.10	7	UNV00001349	SOLAR CONNECTOR MALE
P1-101.09 P1-101.09A P1-101.09B P1-101.10	7	UNV00001350	SOLAR CONNECTOR FEMALE
J5-105.15	1	UNV00007127	250V 30A TWIST LOCK RECEPTACLE L6-30R
J5-105.10	1	UNV00012694	20A 120V DUPLEX RECEPTACLE
CB5-105.02	1	UNV00001791	60AMP 12-48VDC BREAKER
CB1-101.20	1	187080F-03-1	48VDC CIRCUIT BREAKER 80A
CB4-104.14	1	UNV00015143	15A 1P 277 UL 1077 BREAKER
CB5-105.15	1	UNV00015147	15A 2P 480V CIRCUIT BREAKER
CB1-101.17	1	UNV00015148	BREAKER 15A 2P 480V 489
CR2-102.17	1	SC-E3G-24VDC	24VDC @ COILS 3P 65A CONTACTOR
CR2-102.07	1	UNV00010791	GENERAL PURPOSE RELAYS9A MINI POWER SPDT-NO, 30A
CR2-102.12 CR2-102.15 CR2-102.22 CR2-102.25	4	UNV00009121	24VDC GENERAL PURPOSE RELAY SPDT
CR2-102.10	1	WDP30-1L-24	24VAC @ COILS CONTACTOR 32A SHUNT TRIP
EF5-105.08	1	UNV00015879	12VDC ELECTRIC COOLING FAN 1400CFM

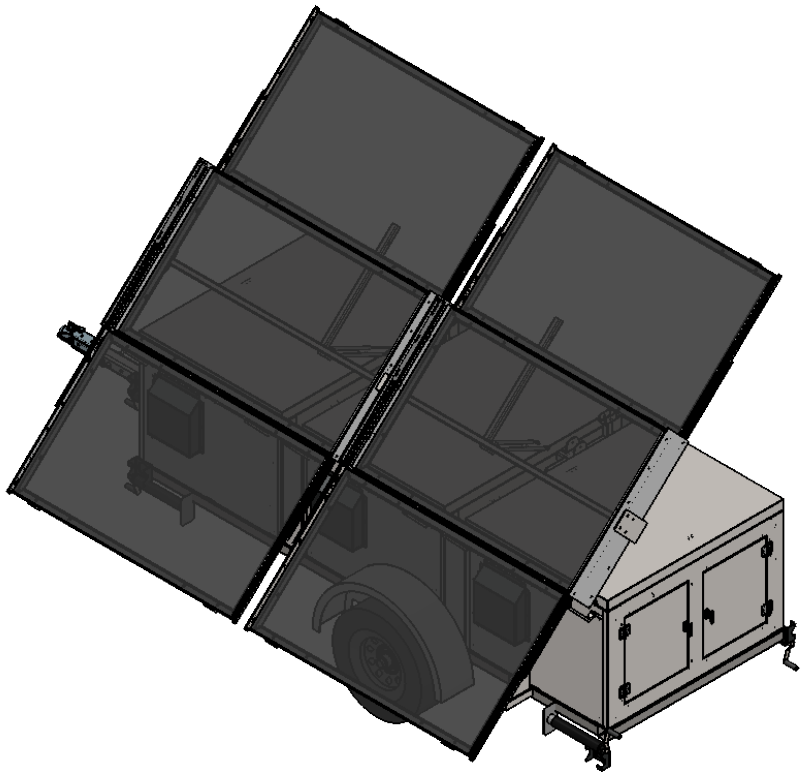
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BC1-101.15	1	PM4 100A	100A 110VAC TO 12VDC POWER CONVERTER WITH BUILT IN SMART BATTERY CHARGER
IN5-105.13	1	UNV00015869	1000W 12VDC - 120VAC POWER INVERTER
PLR3-103.16	1	UNV00007648	24VDC PLR W/ ANALOG INPUT
SC1-101.23	1	B09NDBKL6W	12VDC SOLAR INVERTER, 230VAC OUTPUT 1500W, BUILT IN 80A MPPT SOLAR CHARGE CONTROLLER
5-105.06	1	UNV00009886	THERMOSTAT
MOT4-104.16	1	UNV00014160	5000KVA DIESEL POWERED GENERATOR
PW2-102.05	1	UNV00014102	CONVERTER 12-24VDC 8A
PW4-104.25	1	UNV00012456	BATTERY CHARGER 12V 26A
PW1-101.19 PW1-101.19A PW1-101.19B PW1-101.23 PW1-101.23A PW1-101.23B	6	UNV00011978	LITHIUM BATTERY 12V 176AH
R3-103.17	1	RESISTOR	3000 OHMS RESISTOR 1/4W
R3-103.11	1	RESISTOR	2800 OHMS RESISTOR 1/4W 1
TG1-101.23	1	UNV00014267	CONTROL SWITCH 300A 24VDC
PD6	2	UNV00016633	1 LINE 6 LOAD POWER DITRIBUTION BLOCK 380A
PD12	2	UNV00015085	POWER DISTRIBUTION BLOCK 570A
TB1	12	UNV00013974	4 HOLE GREY TB
TB1	4	UNV00013975	4 HOLE BLUE TB
TB1	2	UNV00013976	RED JUMPER FOR 2 HOLE TERM BLOCK
TB1	3	UNV00013989	2 HOLE GREEN TB
W3	4	UNV00011954	3 HOLE WAGO
CBL2-102.25	1	UNV00002075	16/2 SOOW - Price per Foot
CBL4-104.21	1	UNV00007524	16/3 SOOW CABLE- BLACK
CBL4-104.06	1	UNV00013941	14/7 SOOW CABLE
CBL5-105.10	1	UNV00007524	CORD 16/3 SOOW UL 90C BLK CABLE

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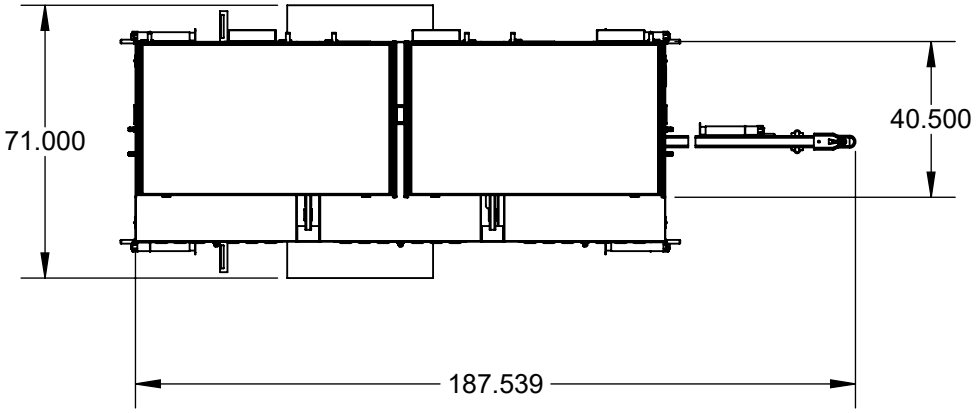
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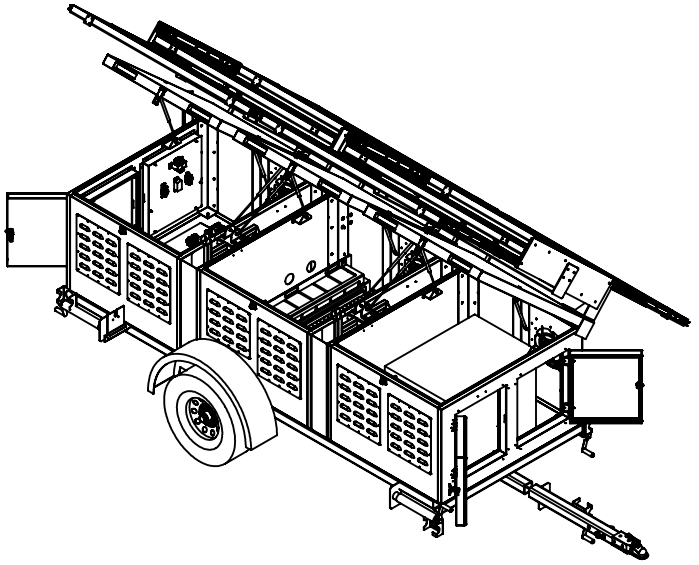
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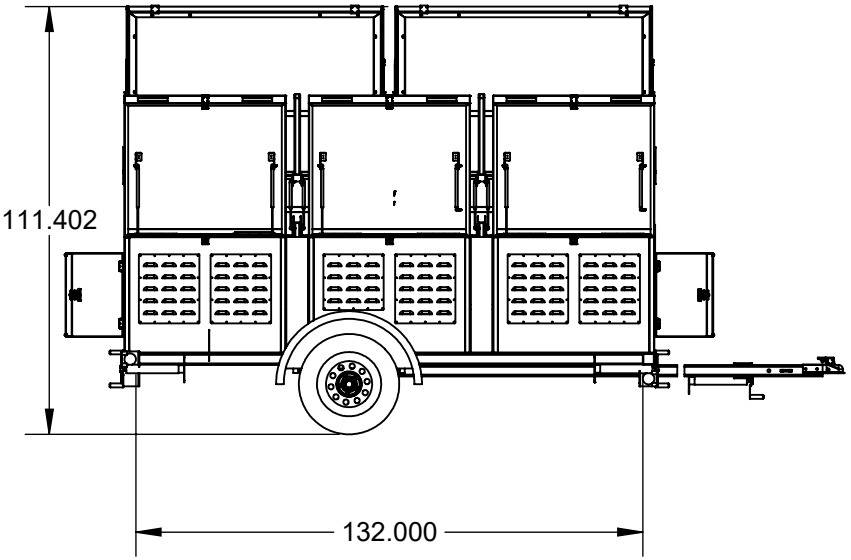
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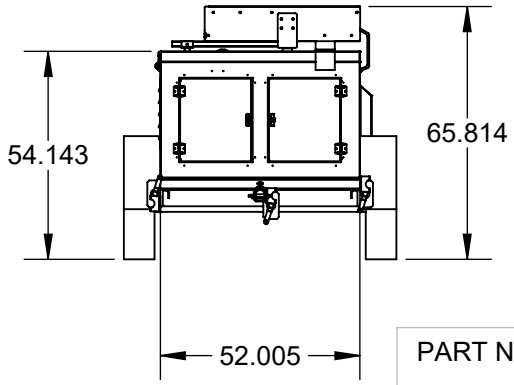
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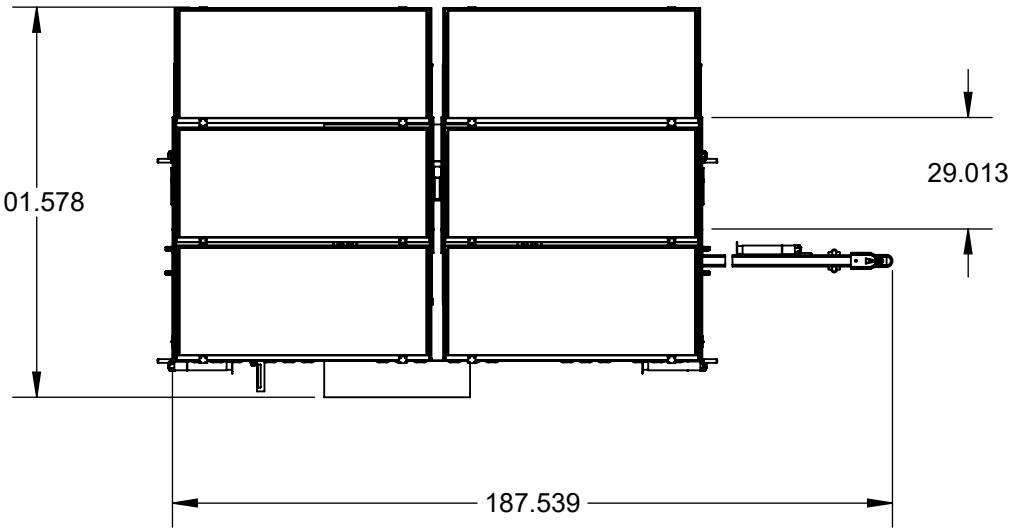
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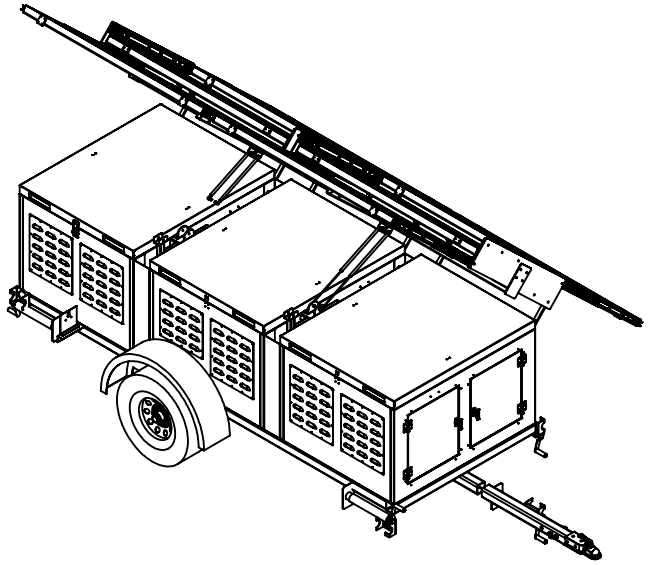
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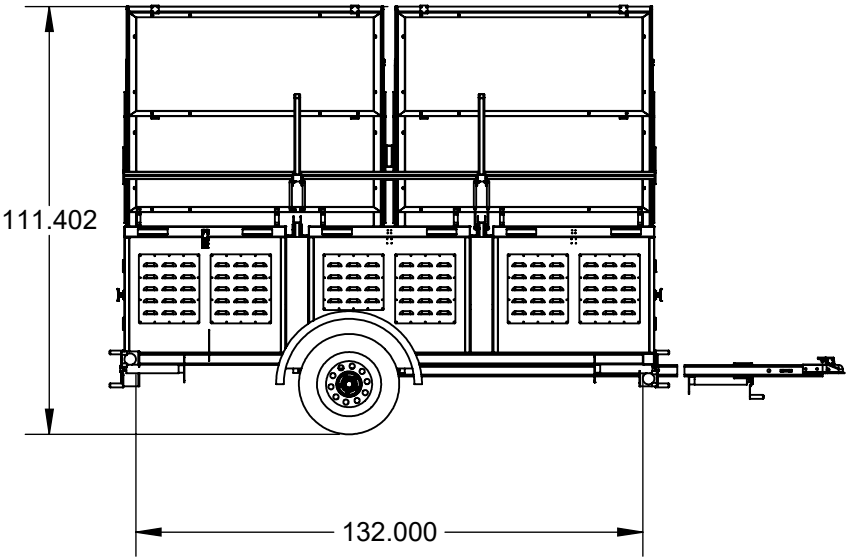
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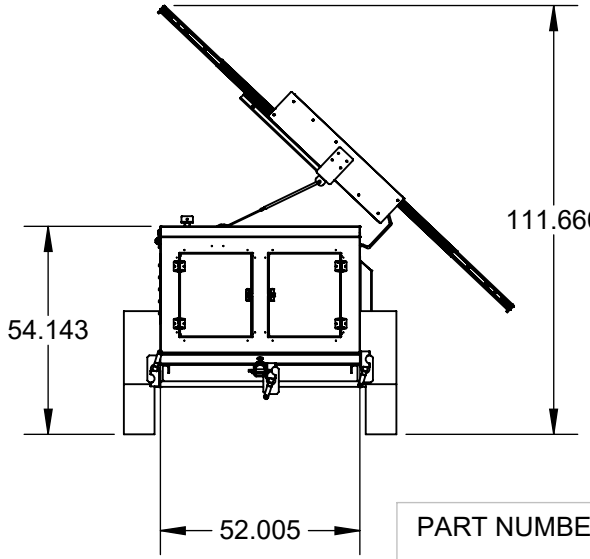
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SHEET 3 OF 3

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Frequently Asked Questions (FAQ)

There are no Faqs