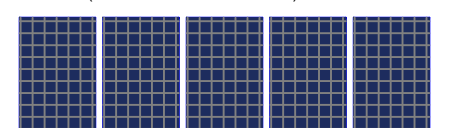
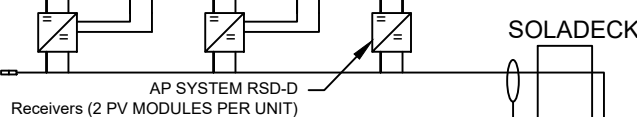
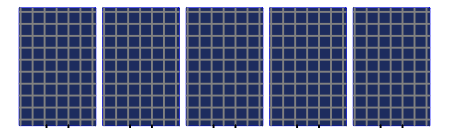
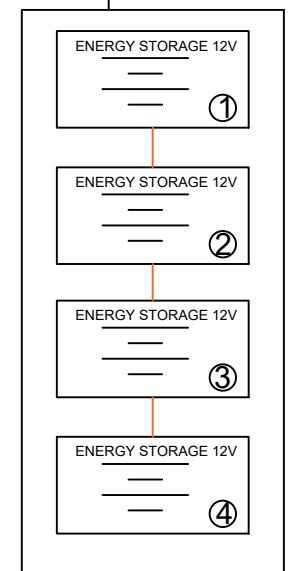
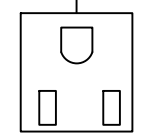
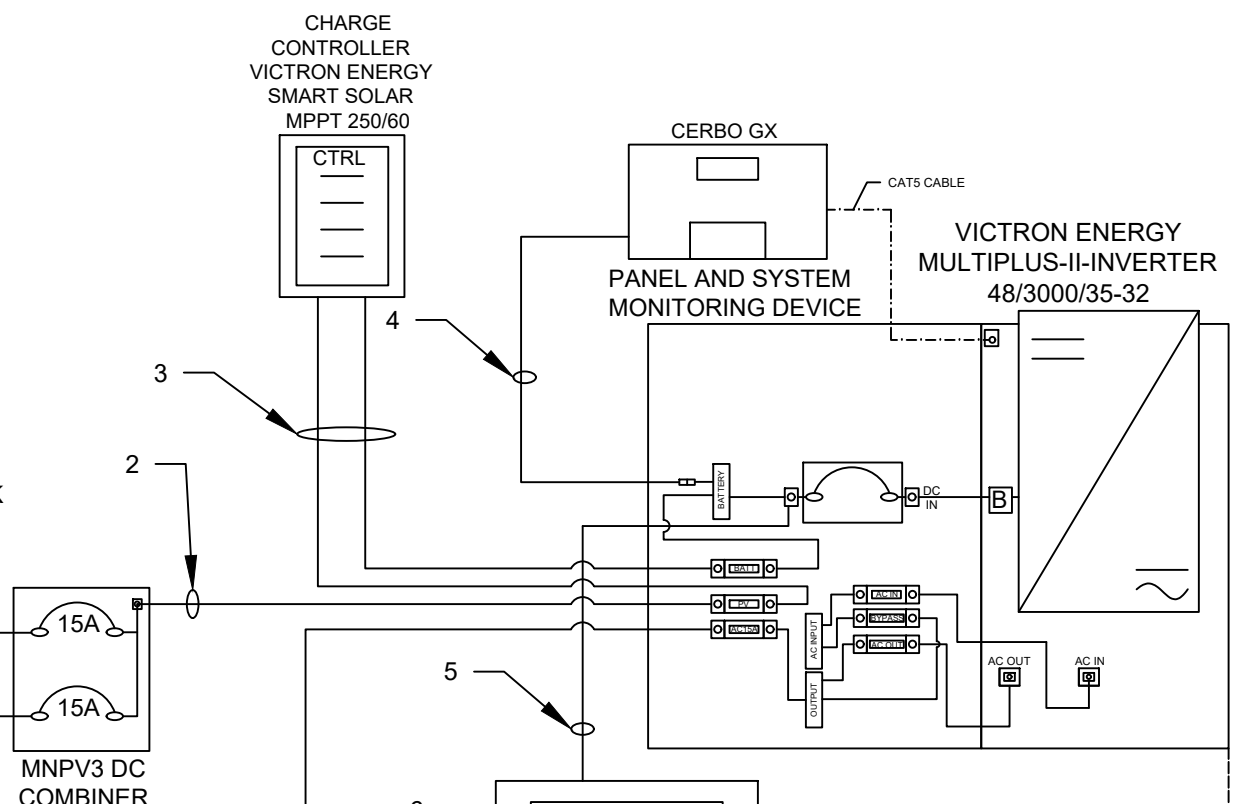


(5) LONGI LR5-54HABB-395M (395W)  
 (3) AP SYSTEM RSD-D  
 (1) STRING OF (5) MODULES  
 STRING A



(5) LONGI LR5-54HABB-395M (395W)  
 (3) AP SYSTEM RSD-D  
 (1) STRING OF (5) MODULES  
 STRING B

1A 1B



(4) ROLLS R12-100 LFP BATTERIES IN SERIES (48V BATTERY BANK)

CONDUIT SCHEDULE					
#	CONDUIT	CONDUCTOR (RED/BLACK)	NEUTRAL (WHITE)	GROUND	
				(GREEN)	(BARE COPPER)
1A	NONE	(2) 10 AWG PV WIRE	NONE	NONE	(1) 6 AWG
1B	NONE	(1) 10/2 MC CABLE W/GND			
2	1/2" LFMC	(2) 8 AWG THHN/THWN-2	NONE	(1) 10 AWG THHN/THWN-2	NONE
3	3/4" LFMC	(2) 6 AWG THHN/THWN-2	NONE	(1) 8 AWG THHN/THWN-2	NONE
		(2) 8 AWG THHN/THWN-2			
4	1/2" LFMC	(2) 14 AWG THHN/THWN-2	NONE	NONE	NONE
5	FREE AIR	(2) 2/0 AWG BATTERY CABLE			
6	1/2" LFMC	(1) 14 AWG THHN/THWN-2	(1) 14 AWG THHN/THWN-2	(1) 14 AWG THHN/THWN-2	NONE

NOTE: FOR PRACTICE INSTALLATION PURPOSES ONLY, NOT TO BE USED FOR ACTUAL CONSTRUCTION

(10) LONGI LR5-54HABB-395M (395W) MODULES.  
 (2) STRINGS OF 5 MODULES CONNECTED IN SERIES.

CONDUCTOR SIZING CALCULATIONS										
CIRCUIT DESCRIPTION	CURRENT	$I_{max}$ (690.8(A)(3))	$I_{cont}$ (690.8(B)(1) calc)	SPECIFIED CONDUCTOR	AMPACITY @ 90c	AMBIENT TEMP c	CURRENT CARRYING COND.	TERMINAL TEMP RATING	AMPACITY @ TERMINAL TEMP. RATING	COND. OF USE APPLIED (690.8(B)(2) calc)
PV SOURCE CIRCUIT	13.65A	$13.65A \times 1.25 = 17.06A$	$17.06A \times 1.25 = 21.33A$	#10 PV WIRE	40A	26-30	4-6	75C	35A	$40A \times 1.0$ (am b. temp.) $\times 0.8$ (raceway fill) = 32A
STRING A & B	13.65A	$13.65A \times 1.25 = 17.06A$	$17.06A \times 1.25 = 21.33A$	#10 MC CABLE	40A	26-30	4-6	75C	35A	$40A \times 1.0$ (am b. temp.) $\times 0.8$ (raceway fill) = 32A
DC COMBINER BOX OUTPUT	27.30A	$27.30A \times 1.25 = 34.13A$	$34.13A \times 1.25 = 42.66A$	#8 THWN-2	55A	26-30	1-3	75C	35A	$55A \times 1.0$ (am b. temp.) $\times 1.0$ (raceway fill) = 55A
CHARGE CONTROLLER OUTPUT	60A	60A	60A	#6 THWN-2	75A	26-30	1-3	75C	65A	$75A \times 1.0$ (am b. temp.) $\times 1.0$ (raceway fill) = 75A
INVERTER OUTPUT CURRENT	32A	32A	$32A \times 1.25 = 40A$	#8 THWN-2	55A	26-30	1-3	75C	35A	$55A \times 1.0$ (am b. temp.) $\times 1.0$ (raceway fill) = 55A
BATTERY CHARGE/DISCHARGE CURRENT	120A	120A	120A	#2/0 THWN-2	195A	26-30	1-3	75C	50A	$195A \times 1.0$ (am b. temp.) $\times 1.0$ (raceway fill) = 195A

OFF GRID - BATTERY BACKUP - VICTRON ENERGY MULTIPLUS-II INVERTER/CHARGER

**INTERSOLAR**  
 123 ANYSTREET  
 CITY, STATE, 00000

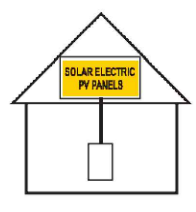
Rev C  
 DATE:12 January 2024

Line Diagram

**INSTALL ON THE MAIN BREAKER PANEL**

**SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



596-0085-03945

**WARNING**

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

596-00499-03945

**WARNING**

POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

596-00813-03945

**CAUTION**

MULTIPLE SOURCES OF POWER

596-00589-03945

**CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED**

596-00113-03945

**DO NOT DISCONNECT UNDER LOAD**

596-00403-03945

**INSTALL EVERY 10 FEET ON EXTERIOR CONDUIT, RACEWAYS**

**PHOTOVOLTAIC POWER SOURCE**

596-00101-03945

**SOLAR PV DC CIRCUIT**

596-00102-03945

**DC PHOTOVOLTAIC SOURCE CIRCUIT**

596-00845-03945

**INSTALL ON THE ESS DISCONNECT**

**ENERGY STORAGE SYSTEM DISCONNECT**

596-01001-03945

**INSTALL ON THE JUNCTION BOX**

**DC JUNCTION BOX**

596-00738-03945

**WARNING**

**PV SOURCE CIRCUIT**

596-03945

**INSTALL ON THE INVERTER**

**WARNING**

THE DISCONNECTION OF THE GROUNDED CONDUCTOR(S) MAY RESULT IN OVERVOLTAGE ON THE EQUIPMENT

596-09323-03945

**PHOTOVOLTAIC DC DISCONNECT**

596-00103-03945

**MAXIMUM DC VOLTAGE OF PV SYSTEM**

596-01001-03945

**RAPID SHUTDOWN FOR SOLAR PV SYSTEM**

596-00104-03945

**DC DISCONNECT**

596-01001-03945

**WARNING**

**ELECTRICAL SHOCK HAZARD**

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

596-00878-03945

**INSTALL ON THE AC DISCONNECT**

**PHOTOVOLTAIC AC DISCONNECT**

RATED AC OUTPUT CURRENT: \_\_\_\_\_  
 NOMINAL OPERATING AC VOLTAGE: \_\_\_\_\_

596-00892-03945

**CAUTION**

**INVERTER OUTPUT CIRCUIT**

596-00750-03945

**WARNING**

**ELECTRICAL SHOCK HAZARD**

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

596-00879-03945

**CIRCUIT 1**

OFF GRID - BATTERY BACKUP - VICTRON ENERGY MULTIPLUS-II INVERTER/CHARGER

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