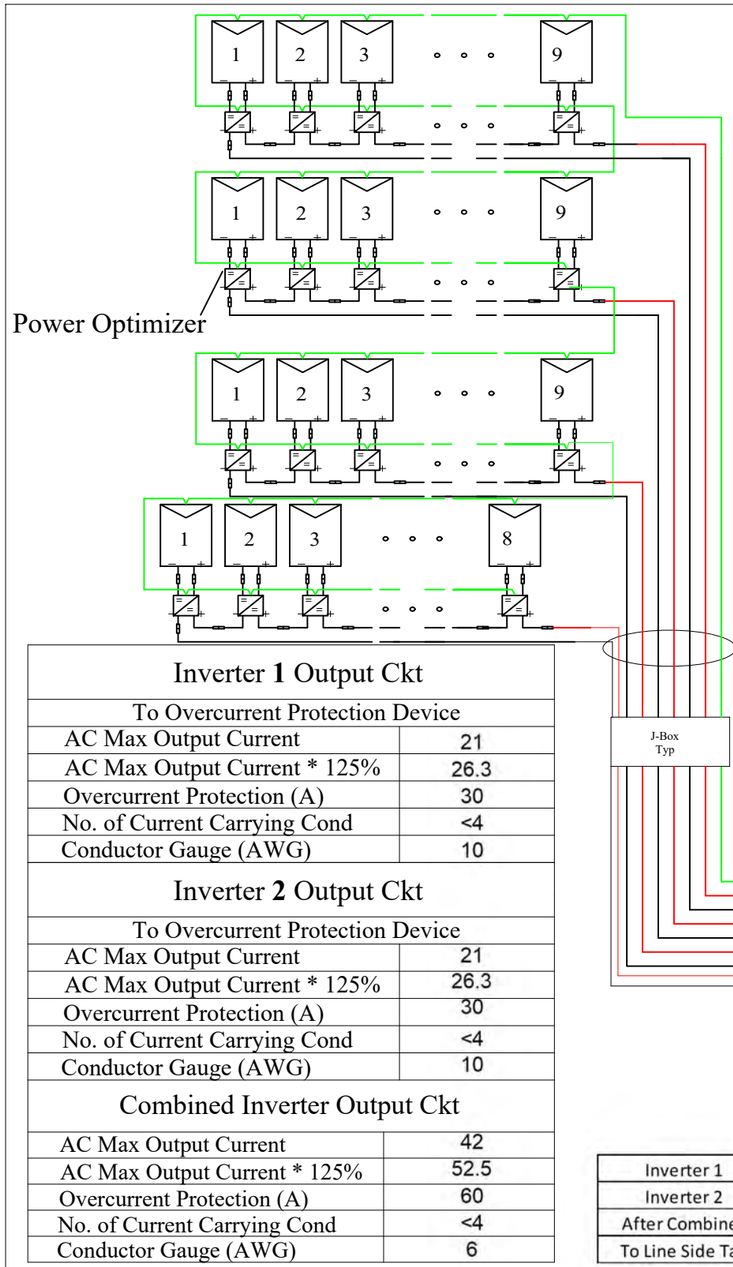


PHOTOVOLTAIC SYSTEM
! AC DISCONNECT !

RATED AC OUTPUT CURRENT: 42A
NOMINAL OPERATING VOLTAGE: 240VAC

! WARNING !

POWER SOURCE OUTPUT CONNECTION:
DO NOT RELOCATE THIS OVERCURRENT DEVICE

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN

Equipment list:
PV:
(35) Q.PEAK DUO BLK-G6+/TS 340
(35) SolarEdge Power Optimizer S440

Inverter **1**:
(1) SolarEdge SE5000H-US
(2) strings of (9) Modules

SolarEdge AC/DC Safety Switch
Inverter **2**:
(1) SolarEdge SE5000H-US
(1) string of (9) Modules
(1) string of (8) Modules
SolarEdge AC/DC Safety Switch

AC Disconnect:
60A Disconnect

All wiring to meet the 2017 NEC and 2018 Energy Code

PHOTOVOLTAIC SYSTEM DC DISCONNECT
MAX CIRCUIT CURRENT: 13.5A
MAX POWER POINT VOLTAGE: 380 VDC
MAX SYSTEM VOLTAGE: 480 DC
MAX RATED OUTPUT CURRENT: 15 A
← Apply to DC disconnect/inverter **1**

PHOTOVOLTAIC SYSTEM DC DISCONNECT
MAX CIRCUIT CURRENT: 13.5A
MAX POWER POINT VOLTAGE: 380 VDC
MAX SYSTEM VOLTAGE: 480 DC
MAX RATED OUTPUT CURRENT: 15 A
← Apply to DC disconnect/inverter **2**

WARNING
ELECTRIC SHOCK HAZARD
IF GROUND FAULT IS INDICATED ALL NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED
← Apply to Inverter

WARNING
ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
← Apply to Disconnects

WARNING
ELECTRIC SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED
← Apply to each J box, combiner box, disconnect,and device where energized, ungrounded circuits maybe exposed during service.

(8) #10 AWG Wire
(1) #8 EGC
In 3/4" Metal Conduit

J-Box Typ

SolarEdge Inverter SE5000H-US w/ Integrated Disconnect

SolarEdge Inverter SE5000H-US w/ Integrated Disconnect

125A Combiner

30A
30A
2 Pole Circuit Breakers

A1,A2

B

C

Main Service Panel
200A Main

Line Side Tap

Manual Lockable Disconnect
60A Service Rated
Fused Disconnect
Neutral to Ground Bond
AC Disconnect
60A Fuse
Located Adjacent to Utility Meter

In Compliance with NEC 705.12(B)

Refer to NEC 312.8 for Conditions on taps in switch and over current devices Enclosures.
If the conditions are not met a tap box will need to be installed and revision completed.

Inverter **1** Output Ckt	
To Overcurrent Protection Device	
AC Max Output Current	21
AC Max Output Current * 125%	26.3
Overcurrent Protection (A)	30
No. of Current Carrying Cond	<4
Conductor Gauge (AWG)	10

Inverter **2** Output Ckt	
To Overcurrent Protection Device	
AC Max Output Current	21
AC Max Output Current * 125%	26.3
Overcurrent Protection (A)	30
No. of Current Carrying Cond	<4
Conductor Gauge (AWG)	10

Combined Inverter Output Ckt	
AC Max Output Current	42
AC Max Output Current * 125%	52.5
Overcurrent Protection (A)	60
No. of Current Carrying Cond	<4
Conductor Gauge (AWG)	6

		Conduit (in)	L1,L2,N (Awg)	Ground (Awg)	OCPD
Inverter 1	A1	0.75	10	8	30
Inverter 2	A2	0.75	10	8	30
After Combiner	B	0.75	6	8	60
To Line Side Tap	C	0.75	6	N/A	60

Including the label below

In Case of Emergency Call
ACDC Solar LLC
at 855-577-7999

Meets 11.12.2.1.5

Note:
-All wiring to meet the 2017 NEC and Florida electric codes.
60A Disconnect
-Type of conduit to be determined on site by contractor.

Install will be done to Manufacturer Spec

GEC NOTES
- Ungrounded system per 690.41(A)(4)
- GEC must be installed per 250.64
- GEC must be continuous un-spliced or irreversibly spliced from inverter to existing service ground system or continuous from the arrays to the existing service ground system.
- GEC must be min #8 AWG and installed in conduit
- If GEC is not in conduit, it must be #6 min

Disconnects will be Visible, lockable, adjacent to and within 10' of utility meter
All Labels & Markings for photovoltaic system will be reflective and meet all requirements for NFPA 11.12

Customer Info:

Jose Moreno
359 SW Ridgeview Pl
Lake City , FL
32024

Godwin Engineering and Design, LLC
8378 Foxtail Loop
Pensacola, FL 32526
D. Chad Godwin, PE
Chad@godwineng.com

AC/DC Solar LLC
605 W Lumsden Rd,
Brandon, FL 33511
855-577-7999

Date:	5/16/2022
Drawn by:	CC
Revised by:	.
Rev #:	00
Rev Date:	.
Page:	11"x17" E-1

Inverter Type:
SolarEdge SE5000H-US
PV Panel:
(35)
Q.PEAK DUO BLK-G6+/TS 340
Total Wattage:
11,900W DC

System meets the grounding requirements of NEC 690.43

The Placard shall be permanently riveted..., and shall be made of red, weatherproof, hard plastic, with engraved white block lettering.

-A placard will be added with instructions and locations to be in compliance with 690.12, 690.56(B) and NEC 705.10

Rapid Shutdown Built in Per Code NEC 690.12

In compliance with NEC 250.58, NEC 690.8, NEC 250.24, NEC250.24(D)

PV AC disconnect is lockable in the open position per code NEC 705.22(7)

Conductors have a min ampacity of 60 amperes Per Code NEC 230.79(D)

Everything will be built to Code without all Specifics labeled on plan

System is in compliance with FFPC 1:11.12 7th Edition.

Smoke Detectors will be added as per FBC 553.883

All Exterior equipment is A minimum of Nema-R3 Rated

Markings shall be placed on all DC Conduits, DC Combiners, Raceways, Enclosures, Junction Boxes, and Cable Assemblies at every 10', turns, and above and below penetrations in compliance with NFPA

All Interactive System(S) Points of interconnection with other sources shall be marked at an accesible location at the disconnecting means as a power source and with the rated ac output current and the nominal operating AC voltage. Per NEC 690.54

Disconnect means shall be provided for all disconnecting all ungrounded conductors that supply or pass through the building or structure Per Code 2017 NEC Section 225.31 & Section 225.32

Disconnect is in compliance 230.72

Supply side disconnect adjacent to Msp

E04. Construction documents specify PV system circuits installed on or in buildings include a rapid shutdown function that controls specific conductors in accordance with NEC article 690.12.

E05. These construction documents specify that a label is provided with the method to initiate rapid shut down per 690.12(4).

E06. Construction drawings specify buildings or structures with both utility service and a PV system, complying with NEC article 690.l2 shall have a permanent plaque or directory including the following wording: “PHOTO VOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN” as per NEC article 690.56 (C).

E07. Construction documents specify PV power circuit labels shall appear on every section of the wiring system that is separated by enclosures, walls, partitions, ceilings, or floors.

E08. Construction documents specify all warning sign(s) or label(s) shall comply with NEC article 110.21 (B). Label warnings shall adequately warn of the hazard. Labels shall be permanently affixed to the equipment, and Labels required shall be suitable for the environment.

Inverter Output Ckt To Overcurrent Protection Device		
Design Temperature(F)	94°F	
Max Amb Temp Range(F)	87-95	310.15(B)(2)(a)
Temp Rating of Conductors (C)	75°C	
Current Carrying	<4	310.15(B)(3)(a)
AC Max Output Current	42A	690.8(A)(3)
AC Max Output Current * 1.25%	53A	690.8(B)
Overcurrent Protection(A)	60A	
Amp Temp Correction Factor	0.94	310.15(B)(2)(a)
Raceway Fill adjustment Factor	100%	310.15(B)(3)(a)
Wire Size(Awg)	6	310.15(B)(16)
Cond. Allowable Ampacity(A)	65A	
Cond Adjusted Ampacity(A)	61A	65A*1*0.94=61.1A
Ampacity Check 1 Per 690.8(B)(1)	Pass	42A*1.25=60A<65A Pass
Ampacity Check 2 Per 690.8(B)(2)	Pass	65A*0.94A*1=61.1A>42A Pass

PV Source Ckt		
Distance above roof	½ in. -3 ½ in.	310.15(B)
Amb. Temp. Adder for Rooftops (°F)	40	
Design temperature (°F)	136.8	
Adjusted Temp. Range for Roof	132-140	310.15(B)(2)(a)
Temp. Rating of Conductor	90°C	
No. of Current Carrying Cond.	4-6	310.15(B)(3)(a)
Max Source Circuit Current	15	690.8(A)(5)
Max Source Circuit Current * 1.25%	18.8	690.8(B)(1)
Amb. Temp Correction Factor	0.71	310.15(B)(2)(a)
Raceway Fill Adjustment Factor	80%	310.15(B)(3)(a)
Cond. Gauge (AWG)	10	310.15(B)(16)
Cond. Allowable Ampacity (Amps)	40	
Cond. Adjusted Ampacity (Amps)	23	40*.71*.8=22.7

In compliance with 230.71

In Case of Emergency Call
ACDC Solar LLC
at 855-577-7999

← Apply to Main Disconnect

Permanent sticker added to disconnect

-All Electrical Service Equipment shall be located at or above BFE+1' or 8.00' NAVD

Line Side Tap will be done in Main Service Panel Inside Garage

-Markings Shall Be reflective, Weather Resistant and suitable for the environment.
-Markings Shall be red with white lettering with minimum ⅜" Capital Letters

Over Current Protection Device is "Next size up" Based on Inverter Maximum Continuous Output Current Rating 2017 NEC 240.4(B)

-All new equipment located adjacent to Meter on exterior wall

Labels will be placed in the correct location Per Code NEC 690.56(B), 690.56(C), & 690.53

Smoke Alarms per F.S. 553.883

Include required label for metallic raceways and conduits to sheet E-1 per NEC article 690.31(G)(3).

Add required label to sheet E-1 per NEC article 705.10.

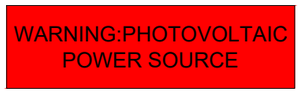
Include required label to sheet E-1 per NEC article 705.12(B)

Photovoltaic AC disconnect shall be capable of being locked in the open position per NEC article 705.22(6).

Photovoltaic AC Overcurrent protection shall be located within 10 feet of the point where conductors are connected to the service per NEC 705.31.

Note:
-Subject PV Systems has been designed to meet the requirments of the NEC **2017**, and those set forth by the Florida Solar Energy Center Certification, Including Maximum Number of Module Strings, Maximum number of modules per string, Maximum Output, Module Manufacturer and model number, inverter manufacturer and model number, as applicable.

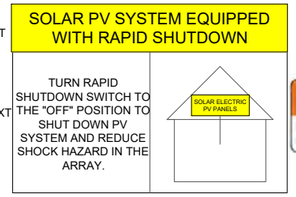
NEC 705.10 A permanent plaque or directory, denoting the location of all electric power source disconnecting means on or in the premises, shall be installed at each service equipment location and at the location(s) of the system disconnect(s) for all electric power production sources capable of being interconnected. One sign required for each PV system.



705.12(B)(3)

705.12(B)(2)(3)(b)

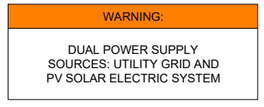
3/8 IN MIN. TEXT

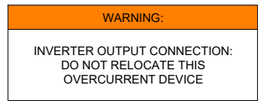


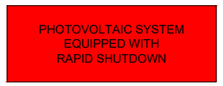
3/16 IN MIN. TEXT

NEC 690.31 (G)(3)

Figure 690.56(C)(1)(a) Label for PV Systems that Shut down the array and the conductors leaving the array







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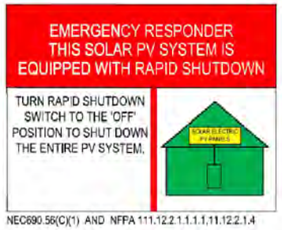
Plans Satisfy NEC 250.94 & NEC250.53(A)(2)



NEC 690.35

Install will be done to Manufacturer Spec

Including the label below

In Case of Emergency Call
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at 855-577-7999

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Inverter Type:
SolarEdge SE5000H-US
PV Panel:
(35)
Q.PEAK DUO BLK-G6+/TS 340
Total Wattage:
11,900W DC