

	CONDUIT	WIRE	RATING	DERATE FOR TEMPERATURE	ISC	WIRE	VOLTAGE DROP CALCULATION 10AWG	RUN LENGTH	AMPS	VOLTAGE DROP	VOLTAGE DROP %	VOLATGE T LOAD		
A	¾" PVC SCHEDULE 40 CONDUIT	(3) 10 AWG THHN (Black, Red, White)	(1) 8 AWG Cu Bond Conductor (Green or bare)	10 AWG RATE 90°C - 40A	TEMPERATURE DE-RATING @ 104°F - 0.91	40A x 0.91 = 36.4A	ISC x 1.25 x 1.25 = 15.52A	10 AWG OK IAW NEC 690.8 (B)(1)	50	25	3.11	1.28	236.89	IF 1-WAY LENGTH OF CIRCUIT EXCEEDS 50' RECALCULATE Vd TO VERIFY LIMITS
B	¾" EMT CONDUIT	(2) 10 AWG THHN (Positive, Negative)	(1) 8 AWG Cu Bond Conductor (Green or bare)	10 AWG RATE 90°C - 40A	TEMPERATURE DE-RATING @ 104°F - 0.91	40A x 0.91 = 36.4A	ISC x 1.25 x 1.25 = 15.52A	10 AWG OK IAW NEC 690.8 (B)(1)	50	15	1.86	0.78	238.14	IF 1-WAY LENGTH OF CIRCUIT EXCEEDS 50' RECALCULATE Vd TO VERIFY LIMITS
C	PV WIRE IN FREE AIR OR THHN IN CONDUIT	MINIMUM 10 AWG Cu (90° RATED) WIRE	POSITIVE, NEGATIVE	BARE Cu EGC OR INSULATED EGC IN CONDUIT										

2"x2" AHJ APPROVAL STAMP

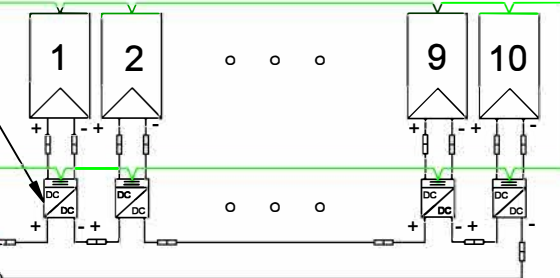
UTILITY METER
BI-DIRECTIONAL (NET)
CL 200, FM25, 60Hz
1-PHASE, 3W, 120/240V
METER # 2415347

CONTROLLED CONDUCTORS ARE LIMITED TO:
 * NOT MORE THAN 30 VOLTS AND 240 VOLTAMPERES WITHIN 30 SECONDS OF RAPID SHUTDOWN INITIATION OUTSIDE THE ARRAY.
 * NOT MORE THAN 80 VOLTS AND 240 VOLTAMPERES WITHIN 30 SECONDS OF RAPID SHUTDOWN INITIATION INSIDE THE ARRAY.
 THE RAPID SHUTDOWN INITIATION IS PERFORMED BY EITHER DISCONNECTING THE AC FEED TO THE INVERTER OR - IF THE INVERTER DC SAFETY SWITCH IS READILY ACCESSIBLE - BY TURNING OFF THE DC SAFETY SWITCH.

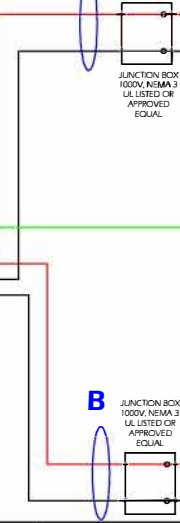
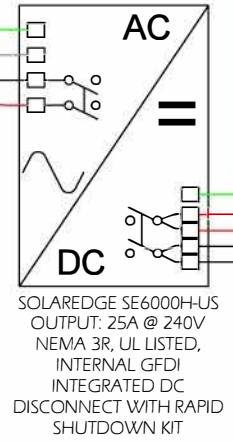
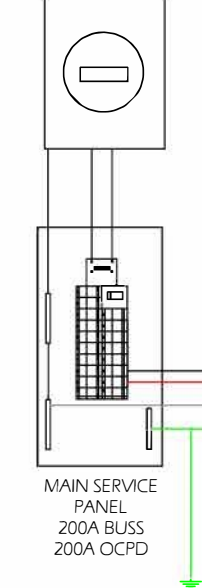
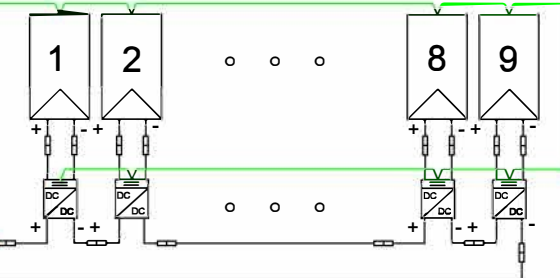
PHOTOVOLTAIC SYSTEM EQUIPPED WITH INVERTER-EMBEDDED AUTOMATIC, RAPID SHUTDOWN

SolarEdge Power Optimizer P370
 DC Input Power: 370 watts
 Maximum Input Voltage: 48 Vdc
 MPPT Range: 8 to 48 Vdc
 Maximum Short Circuit Current (Isc): 11 Adc
 Maximum Output Voltage: 60 Vdc
 Limitations: 8 to 25 Optimizers per string
 Maximum Power Per String: 6000W

(1) STRING OF 10 HYUNDAI HiA-365HI MODULES CONNECTED IN SERIES



(1) STRING OF 9 HYUNDAI HiA-365HI MODULES CONNECTED IN SERIES



DESCRIPTION	DATE	REVISION
INITIAL	4/9/19	1

Solar Developer
 System Engineer
 Customer Info

Project Details
6.94 KW ROOFTOP PV SYSTEM
TILT 67°20'30"
AZIMUTH 90°/180°/270°
SOLAR MODULE HYUNDAI HiA-S365HI
INVERTER SOLAREEDGE SE6000H-US

Module Information
PV MODULE: HYUNDAI HiA-S365HI
<u>ELECTRICAL DATA PER MODULE (STC):</u>
MAXIMUM POWER - Pmax (Wp): 365
MAXIMUM POWER VOLTAGE - Vmpp (V): 39.39
MAXIMUM POWER CURRENT - Impp (A): 9.72
OPEN CIRCUIT VOLTAGE - Voc (V): 47.21
SHORT CIRCUIT CURRENT Isc (A): 9.77
MODULE EFFICIENCY: 18.40%

Inverter Specifications
SOLAREEDGE SE6000H-US
RATED/MAXIMUM AC POWER OUTPUT: 6000W
MAX. CONTINUOUS OUTPUT CURRENT: 25A
MAX DC INPUT POWER: 9300@240V
MAX. INPUT VOLTAGE: 480V
NOMINAL DC INPUT VOLTAGE: 380V
MAX. INPUT CURRENT: 16.5A@240V
CEC WEIGHTED EFFICIENCY: 99%
MAX. EFFICIENCY: 99.2%

Conductor Calculation
<u>MAX BRANCH DC CONDUCTOR AMPACITY:</u>
365W x 10 = 3650W / 380V = 9.61A x 125% = 12.01A
P370 MAXIMUM OUTPUT CURRENT = 15A
10 AWG Cu 90° RATED = 40A(.91) = 36.4A(1) = 36.4A
36.4A ≥ 12A OK TO INSTALL IAW NEC 690.8(B)(1-2)
<u>MAX BRANCH AC CONDUCTOR AMPACITY:</u>
25A MAXIMUM CONT. OUTPUT CURRENT
10 AWG Cu 90° = 40A x .91 = 36.4A x 1 = 36.4A
36.4A ≥ 25A OK TO INSTALL IAW NEC 690.8(B)(1-2)

Interconnection Method
SOLAR CIRCUIT CONNECTED INTO EXISTING 200A MAIN SERVICE PANEL WITH NEW 2P40A SOLAR BREAKER (OCPD) TO BE INSTALLED AT OPPOSITE END OF BUSS BAR FROM OCPD PROTECTING THE BUSS. NEC 705.12(B)(2)(3)(B)
200A RATED BUSS x 120% = 240A - 200A MAIN OCPD = 40A 2P30A BREAKER OK
INSTALL PERMANENT LABEL ADJACENT TO THE BACK-FED BREAKER WITH FOLLOWING OR EQUIVALENT WORDING: WARNING: POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

ESTIMATED ANNUAL PRODUCTION
5791 kWh/yr
Drawing
ELECTRICAL LINE DIAGRAM
Sheet
E-1