- Technology: Solar PV
  Maximum Power: 100 kW
- 3. Contribution to fault levels: N/A
- 4. Size & rating of the relevant Transformer: N/A
- 5. Single line diagram: refer to following page
- 6. Protection Systems & Communication Systems: refer to following page
- 7. Voltage Control and reactive power capability: N/A8. Details specific to the location of facility: N/A

ITEMSPECIFICATIONQTYMODULEDUOMAX 260W384INVERTERSMA STP 25000TL2SMA STP 20000TL1SMA STP 15000TL2TOTAL99.84kWP				Image: Description      Image: Description        Image: Description      Description      Description        Image: Desc	Image: Section 2016      Image: Section 2016 <thimage: 2016<="" section="" th="">      Image: Section 2016</thimage:>	Solgen Energy PTV LTD AND MUST NOT BE RETAINED, COPIED FOR USED
ARRAY 1-2	ARRAY 3	ARRAY 4	ARRAY 5	DC Cable Residurace (0hm*sm2/m)      0.0172        Min cable size (mm2)      2.06      2.08        Cable Size size(odd (mm2))      4      4        Voltage drop (N)      0.82      0.82	DC Cable Resistance (Drim "mm2/m)      0.0172        Min cable alsa (mm2)      2.50      2.50        Cable Sessetted (mm2)      4      4        Volkage drop (%)      0.62      0.62	WITHOUT THE EXPRESS PERMISSION OF SOLGEN ENERGY PTY LTD.
				String Protection Needed NO NO  Distance to Inverter (m) 40  Dictable Resistance (Ohm*mm2/m) 0.0172	String Protection Needed      NO      NO        Distance to Invertee (m)      40      0        DC Cable Restance (Dhm "mm2/m)      0.0172      1.40        Min cable also (mm2)      1.40      1.40	2. DO NOT SCALE FROM THE DRAWINGS.  3. ALL DIMENSIONS ARE IN MILLIMETERS  AND LEVELS IN MILLIMETERS UNLESS
PV FRAMES 2 2 2 2 INSTALLATION EARTH	V FRAMES ON EARTH 2 2 2 2 2 INSTALLATION EARTH		V FRAMES ON EARTH 2 2 2	Min cable size (mm2)      1.12      1.12        Cable Size selected (mm2)      6      6        Violarge drop (in part 4)      0.46      0.46        Total Wange drop (inpart 4)      0.46      0.46        Consider min water (Ch)      0.49      0.58        Consider min water (jere poly ording) (VI)      963.26      983.26	CxMc Size selected (mm2)      6      6        Vohage drop (%)      0.56      0.56        Todav vohage drop (sensitivereter) (%)      1.18      1.18        DC Isolution min voltage [per pole rating] (M)      819.18      819.18	AND LEVELS IN MILLIME TERS UNLESS NOTED OTHERWISE. 4. EXACT LOCATION OF ALL PARTS OF
				DC isolation min Current (A)      22.75      22.75        Phase surget      3        Max AC current (gr phase; line to neutral) [A)      36.15        AC Breaker min Current (A)      36.15	DC lookston min Gurrert (A)      22.75      22.75        Phases output      3        Max AC current (per phase; line to neutral) (A)      29.00        // Cliensier min Gurrert (A)      29.00	THE INSTALLATION TO BE DETERMINED ON SITE.
				AD Breaker mox Current (A)      72.31        AD Breaker Chosen (A)      40        Distance IDO(Te)      10.00        Cable Impedance (Oftim**mm2/m)      0.018	A/G Brooker max Current (A)      \$8.00        A/C Brooker Chosen (A)      32        Distance 50 PCD (m)      10.00        Cable Impedance (0hm*trm2/m)      0.013	5. MCB TO MATCH MAKE, MODEL AND FAULT CURRENT OF EXISTING CIRCUIT
24 24 24 24 34 4 4mm² PV1-F 6 6 6 7 4 SDI SOLAR S	20 20 20 20 20 20 20 20 20 20 20 20 20 2		mm <sup>2</sup> PV1.F	Min cable size (mm2)      5.42        AC Cable size (mm2)      10.00	Min cable size (mm2)      4.35        JAC Cable size (mm2)      6.00	BREAKERS.
			CABLE	ARRAY 4        MPPT1      MPPT2        Famil Type      Trina Durmax        Trina Durmax      200°	ARRAY 5	
DC JUNCTION ISOLATOR BOX 1 32A AT 1000V		C ZFV32 ISOLATOR	ZFV32 ISOLATOR 23A AT 800V	Fault Type      Trice Desmars 2600      Trice Desmars 2600        Number of Paulel Storig:      2      2      1        Total Number of Paulel Storig:      2      1      1        Total Number of Paulel Storig:      600      00      1        Total Number of Paulel Storig:      5004 STP (S0071-10)      5004 STP (S0071-10)	Number of Panels is Series (N)      18      16        Number of Panels Series      2      1        Total Number of Panels      52      1        Lisenter Type      SAAA STPI SCOOTI-10      54	
DC ZFV32/2 ISOLATION ISOLATOR + 9 BOX 1 32AAT 1000V / / / 1 BOX 2 BOX 3	ZFV32X2 ISOLATOR 2 22AAT 900V / / / 1 32AAT 900V / / / 1 BOX 4 BOX 4	ZFV32 DC DC DC ISOLATION ISOLATION ISOLATION BOX 7	ZFV32 ISOLATOR - BOX 8 23A AT 800V	Kurber of Individual MRPTs      2        Jaket Braker (W)      10055      5178        Totalin Jaket Graver (W)      15591      1593        Family KK (V)      37.6      127.6        Paralitik (K)      9.1      9.1        Family KK (V)      0.5590/254      0.75940/254        Fill Storer      0.75940/254      0.75940/254	Namber Of Indi Katal MPPTs      2        Rated Reserv (W)      9355      4155        Total Rated Reserv (W)      13513         Panel Krick (V)      37.6      37.6        Panel Krick (V)      9.1      9.1	
	mm <sup>2</sup> PV1-F 6mm <sup>2</sup> PV1-F		mm <sup>2</sup> PV1-F	FB Jaser      0.75040254      0.75040254        Input Vic (V)      752      752        Input Ic (A)      182      5.1        PV Army Mix Voltage      480.6      480.6	Table Opp      3.1      3.1        Fill Statur      0.7594602144      0.7594602144        Irgut Noc VI      676.8      601.6        Irgut Noc VI      676.8      601.6        Irgut Noc VI      676.8      501.6        Point Noc VI      676.8      501.6        Point Noc VI      676.8      501.6	
SDI SOLA CABLE TO MAIN	SDI SOLAR CABLE SMA STP 20000TL TO MAIN (INVERTER 3)	SMA STP 15000TL (INVERTER 4)	SDI SOLAR CABLE TO MAIN	Distance to Junction Box (m)      50        DC Cable Resistance (Ohm*mm2/m)      0.0172        Min cable size (mm2)      2.06	PY Array Max Voltage      737.44      655.50        Dotate to Junction Box (m)      50      50        DC Cable Besture (bitm*rm2/m)      0.0177      100        Min cable size (mm2)      2.31      2.60	
	EARTH = MAINSPRO 	EARTH = 63A.4P N/0 CONTACTOR		Cable star salektod (mn2)      4      4        Voltage doop (mn2)      6.52      5.52        String Totochton Needed      NO      NO        Datance to Inserter (m)      40      40        Oc Cable Presidence (0m <sup>+</sup> mn2/m)      0.0172      100	Cable Sex selected (mm2)      4      4        Voltage drop (M)      0.58      0.65        Sing Protection Needed      NO      NO        Distance to Invester (m)      40      UC Coble Reservace (Init mm2/m)      0.012	
CONTROLLED BY RELAY	CONTROLLED BY RELAY	CONTROLLED BY RELAY 25A MCB	ZÓNYTROLLED BY RELAY ZSA MCB	Disk cash sectors (nmm)      0.0212        Disk cash sector (nm2)      1.34      0.67        Cash Six selected (nm2)      6      6        Vidtage dop (N)      0.56      0.28        Total vidtage dop (N)      0.66      0.28	DC CoSe Resistance (Dmir mm2/m)      0.0122        Min cable size (mm2)      1.53      0.89        Cable Size celetrate (mm2)      6      6        Voltage datas (M)      0.62      0.35        Total voltage cong (sameH-inverter) (N)      1.19      1.00	
SOLAR DISTRIBUTION BOARD				DC isolation mix workage (per pole noting) (V)      819.38      819.38        DC isolation mix Current (A)      22.75      11.38        Phases output      3      Mixed Current (jer phase); line to neutral) (A)      22.60	DC Isolation min vertage [per pole rating] (M)      737.44      655.50        DC Isolation min Gurrett (A)      22.75      11.38        Phases output      3      Mark AC current (per phase; time to neutral) (A)      19.58	
	2504 MCCB (NOTE 5)			AC Breaker min Current (A)      22.60        AC Breaker max Current (A)      41.19        AC Breaker Conson (A)      23        Distance to FOC (n)      23	AC Breaker min Current (A)      19.58        AC Breaker max Current (A)      39.17        AC Breaker (None) (A)      25        Distance to POC (m)      10.00	
MAIN SWITCHBOARD	MCCB (EXISTING)			Cable Impediance (Other*mar2/n)      0.018        Min cable size (mm2)      3.19        AD Cable size (mm2)      6.00	Cable impedance (Nem*ant2/m)      0.018        Min cable iaio (nm2)      2.94        AC Cable size (nm2)      6.00	B ISOLATORS UPDATED 08.12.15
	E KWN BH	ORECTIONAL IN METER				A PRELIMINARY DESKIN 22.07.15 Rev Description Date Checked Authorised PROJECT:
					92	
	TYPICAL SYSTEM SCHEM					CLIENT:
LEGEND:	NTS	<u></u>			MAX	
-o	GLE PHASE CIRCUIT		260W POLYCRYSTALL <b>INE</b> SOLAR MODULE	<sup>59</sup> 26	ow DULE	SOLGEN ENERGY PTY LTD
<i>,</i>	100A 100A DENO	DTES 100AMPS RATING DTES MINIMUM FRAME SIZE	2000 FOLTORISTALLINE SULAR MUDULE			DRAWING TITLE:
Ϋ́	R MAINSPRO	RELAY	INVERTER			99.84kWP PHOTOVOLTAIC SYSTEM SCHEMATIC
EARTH POTENTIAL	TH CONDUCTOR SYMBOL	kWh	MAIN METER	MC	DULE NTS	SCALE DRAWN CHECKED AUTHORISED SIZE AS SHOWN Date. Use. A3
	CONTROL \					DRAWING No.      Rev        D-EL-25123P7-201      B

	SOLAR DB COMPONENT SCHEDULE					
PART NR.	ID	MANUFACTURER	DESCRIPTION			
1	MCB 1	GE	40A 3P MCB (INV 1 CONNECTION)			
2	MCB 2	GE	40A 3P MCB (INV 2 CONNECTION)			
3	МСВ 3	GE	32A 3P MCB (INV 3 CONNECTION)			
4	MCB 4	GE	25A 3P MCB (INV 4 CONNECTION)			
5	MCB 5	GE	25A 3P MCB (INV 5 CONNECTION)			
6	MCB 6	GE	6A 1P MCB (CONTROL SUPPLY)			
7	MCB 7	GE	6A 1P MCB (RELAY POWER SUPPLY)			
8	MCB 8	GE	6A 3P MCB (RELAY VOLTAGE REFERENCE)			
9	MAIN SWITCH	GE	250A 3P ISOLATOR			
10	CONTACTOR 1	ELKO	63A 4P N/O CONTACTOR (INV 1 CONTROL)			
11	CONTACTOR 2	ELKO	63A 4P N/O CONTACTOR (INV 2 CONTROL)			
12	CONTACTOR 3	ELKO	63A 4P N/O CONTACTOR (INV 3 CONTROL)			
13	CONTACTOR 4	ELKO	63A 4P N/O CONTACTOR (INV 4 CONTROL)			
14	CONTACTOR 5	ELKO	63A 4P N/O CONTACTOR (INV 5 CONTROL)			
15	MAINSPRO	ComAP	MAINSPRO MAINS DECOUPLING RELAY			

MULTIFUNCTION RELAY TERMINAL SCHEDULE				
TERMINAL	FUNCTION	DEFAULT STATE		
RE 1	SPARE	/		
RE 2	SPARE	/		
RE 3	SPARE	/		
RE 4	!CommTrpPer	N/O		
RE 5	!InternFail	N/O		

CABLE SCHEDULE				
INVERTER TO SOLAR DB	4C + E 10mm² Cu			
SOLAR DB TO MSB	4C + E 70mm² Cu			
AC CONTROL CIRCUITS	1.5mm <sup>2</sup> COPPER			

### O/U VOLTAGE SETTINGS

	Set Point	
Protection Setting	Value	Units
OV Pick Up	270	V
OV Timing	1.0	S
UV Pick Up	200	V
UV Timing	1.0	S

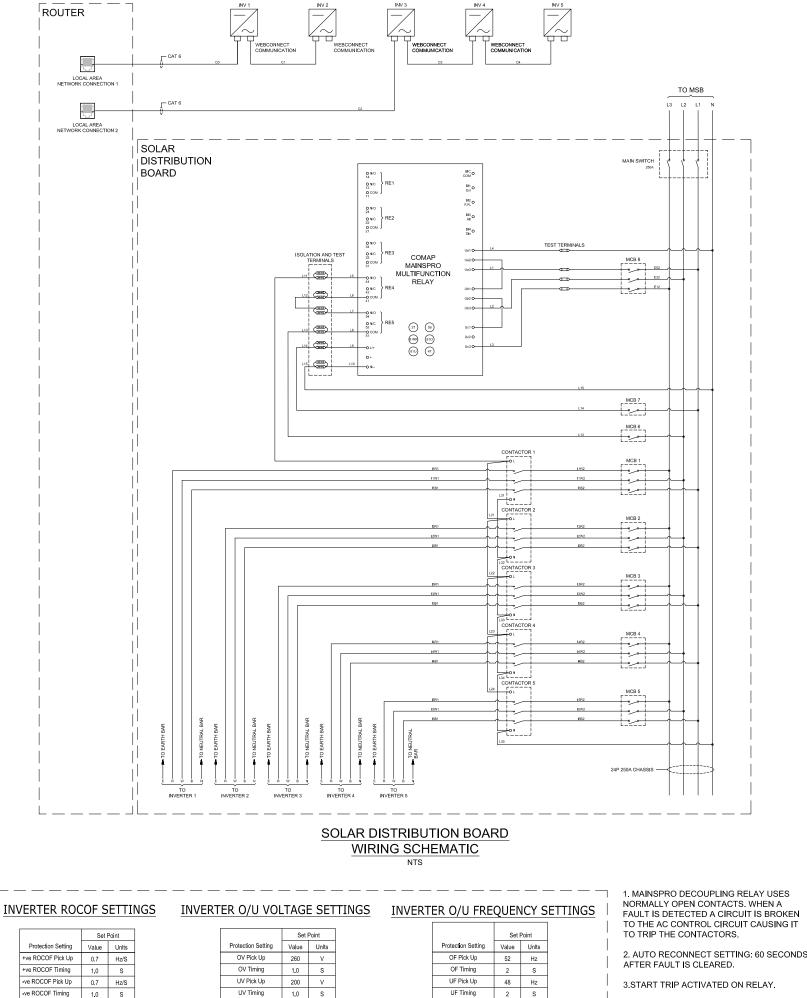
#### ROCOF SETTINGS

	Set Point	
Protection Setting	Value	Units
+ve ROCOF Pick Up	0.7	Hz/S
+ve ROCOF Timing	1.0	s
-ve ROCOF Pick Up	0.7	Hz/S
-ve ROCOF Timing	1.0	S

O/U FREQUENCY SETTINGS						
Set Point						
Protection Setting	Value	Units				
OF Pick Up	52	Hz				
OF Timing	2.0	S				
UF Pick Up	48	Hz				
UF Timing	2.0	S				

## VECTOR SHIFT SETTINGS

	Set Point	
Protection Setting	Value	Units
+ve Vector Shift Pick Up	8	Degrees
-ve Vector Shift Pick Up	8	Degrees





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- 2. DO NOT SCALE FROM THE DRAWINGS.
- 3. EARTH CABLE ROUTE NOT SHOWN FOR CLARITY
- 4. CABLE SIZED ACCORDINGLY FOR THE APPROPRIATE RATINGS.
- 5. SOLAR POWER SYSTEM COMPLIES WITH CLASS II INSTALLATION
- 6. INSTALLATION TO COMPLY WITH AS4777, AS5033, AS3000, AS3430, STATE SERVICE AND INSTALLATION RULES AND ENERGY AUTHORITY
- NETWORK RULES 7. SOLAR AC SWITCHGEAR SIZED FOR MAXIMUM INVERTER AC OUTPUT.

В	INVERTER ROCOF SETTINGS ADDED	01.02.16		
А	PRELIMINARY DESIGN	15.12.15		
Rev	Description	Date	Checked	Authorlsec
PR	DJECT			

CLIENT:

SOLGEN ENERGY PTY LTD

DRAWING TITLE:

### SOLAR DB WIRING AND PROTECTION SETTINGS

SCALE	DRAWN	CHECKED	AUTHORISED	SIZE
AS SHOWN	Date:	Date:	Date:	A3
	15.12.2015	15.12.2015		
DRAWING No.				
D-EL-25123P7-203				