

SMARTER ENERGY SOLUTION

Preventive Maintenance Solar System



Customer Name : Makus W08 Maintenance : MA Date : 7 December 2024

Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
<u>EX1001</u>	<u>EX480TC</u>	<u>20</u> Kwpc	<u>52</u> Panels	<u>Solis</u>	<u>SB-EH3P20K-ND-H</u>	<u>1033160245100122</u>

Before Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current				Time	Inspection		Remark
String 1	Panels Voc <u>695.0</u> Vdc	Vmp <u>678.0</u> Vdc	Isc <u>4.98</u> A.		<u>12:40</u>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 2	Panels Voc <u>693.0</u> Vdc	Vmp <u>660.1</u> Vdc	Isc <u>3.22</u> A.		:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 3	Panels Voc <u>625.0</u> Vdc	Vmp <u>599.9</u> Vdc	Isc <u>4.95</u> A.		:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 4	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 5	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 6	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 7	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 8	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 9	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 10	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 11	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 12	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	

After Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current				Time	Inspection		Remark
String 1	Panels Voc <u>708.0</u> Vdc	Vmp <u>696.6</u> Vdc	Isc <u>7.76</u> A.		<u>13:30</u>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 2	Panels Voc <u>715.0</u> Vdc	Vmp <u>692.7</u> Vdc	Isc <u>8.66</u> A.		:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 3	Panels Voc <u>692.0</u> Vdc	Vmp <u>604.0</u> Vdc	Isc <u>6.74</u> A.		:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 4	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 5	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 6	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 7	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 8	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 9	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 10	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 11	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 12	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.		:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	

Inverter Inspection

Device	Readings from Smarter Meter	Readings from Inverter Display	Field Measured Readings	Remark	
Inverter	AC Line Voltage		AC Line Voltage		Back up voltage L1 228.1 vac L2 226.4 vac L3 227.4 vac
	Phase L1 to Grd : _____ Vac	Phase L1 to Grd : _____ Vac	Phase L1 to Grd : <u>226.9</u> Vac		
	Phase L2 to Grd : _____ Vac	Phase L2 to Grd : _____ Vac	Phase L2 to Grd : <u>223.3</u> Vac		
	Phase L3 to Grd : _____ Vac	Phase L3 to Grd : _____ Vac	Phase L3 to Grd : <u>223.8</u> Vac		
	AC Line Current		AC Line Current		
	Phase L1 to Grd : _____ A	Phase L1 to Grd : _____ A	Phase L1 to Grd : <u>4.40</u> A		
	Phase L2 to Grd : _____ A	Phase L2 to Grd : _____ A	Phase L2 to Grd : <u>4.38</u> A		
	Phase L3 to Grd : _____ A	Phase L3 to Grd : _____ A	Phase L3 to Grd : <u>2.86</u> A		

Comment : _____

SMARTER ENERGY SOLUTION

Electrical Room Inspection



Customer Name :				Date :		
Solar Panel			Inverter			
Brand	Model	Capacity	Install	Brand	Model	S/N
		Kwp.	Panels			

Device	Ambient Temperature	Temperature				Remark
Inverter	41.8 C	Inside : 30.2 C	Outside : 44.4 C	Heatsync : 52.3 C		
AC Cabinet	38.9 C	MCB Breaker : 40 A	RCCB Breaker : _____ A.	AC SPD : 3 Phase		
		38.9 C	_____ C	38.1 C		
		AC Cable : 10 Sq.m.	Smart Meter : _____ C	CT Ratio : _____ A.		
		AC Terminal : 38.6 C	Phase Meter Ratio : _____ A.			
		String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector
DC Cabinet 1	40.0 C	String 1	40.9 C	41.1 C	40.9 C	39.7 C
			_____ A.	_____ Vdc A.	_____ Vdc A.	_____ C
		String 2	41.0 C	39.9 C	40.0 C	39.6 C
			_____ A.	_____ Vdc A.	_____ Vdc A.	_____ C
		String 3	41.3 C	40.7 C	39.9 C	40.1 C
			_____ A.	_____ Vdc A.	_____ Vdc A.	_____ C
		String 4	39.6 C	39.4 C	40.1 C	38.7 C
			_____ A.	_____ Vdc A.	_____ Vdc A.	_____ C
EE Room	39.7 C	AC Cable : _____ Sq.m.	Main Breaker : _____ A.	MCCB Feed : _____ A.		
		Wireway : _____ C	MDB / LC : _____ C	_____ C		

Comment : _____

Inspection By : _____
 (Bunharn Libnoy)
 Project Engineer
 Date : ____/____/____

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Preventive Maintenance Solar System



Item	Solar System Inspection	Inspection		Remark
1	Clean the Solar panel (Use clean water) ทำความสะอาดแผงโซลาร์ เซลล์ (ใช้น้ำสะอาด)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
2	Check to see if the solar panel's condition ตรวจสอบการแตกร้าวของแผงโซลาร์ เซลล์	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
3	Inspect the mounting points of the roof mounting support legs for the risk of water leaking. (Use water Proof , Polyurethane PU,Sika MultiSeal AP to prevent water leakage) ตรวจสอบจุดยึดของ Support ที่ยึดกับหลังคา ว่ามีจุดเสี่ยงที่จะทำให้เกิดน้ำรั่วได้หรือไม่ (ใช้ water proof , สิริโครบรณ PU , แผ่นซีก้าป้องกันน้ำ)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
4	Inspect the mounting parts of the solar cell. ตรวจสอบสภาพโครงสร้างทั้งหมด เพื่อดูว่า PV, Mounting และอุปกรณ์ประกอบอื่นๆ ไม่หลวม	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
5	Inspect the condition of all cables to make sure The cables does not sag down to the roof. ตรวจสอบสภาพของสายทั้งหมดเพื่อให้แน่ใจว่า สายไม่หย่อนลงไปด้านหลังคา	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6	Inspect the tightness of the wire terminals. ตรวจสอบความแน่นของขั้วสายไฟ			
6.1	-AC - Grid in Inverter	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.2	-Back - up in Inverter (Specific model Hybrid)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.3	-Battery (Specific model Hybrid)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.4	-AC Breaker	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.5	-DC Breaker	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.6	-Fuse Holder	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.7	-Surge Protection	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.8	- Smarter Meter & CT (Current Transformer)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
7	Check whether the SISO Switch is defective ตรวจสอบ SISO Switch ว่าชำรุดหรือไม่	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
8	Inspect for malfunctions of the inverter and other related electrical equipment. ตรวจสอบความผิดปกติของอินเวอร์เตอร์และอุปกรณ์ไฟฟ้าอื่น ๆ ที่เกี่ยวข้อง	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
9	Inspect heat of the solar panel whether there is an abnormal heat point or not (checked by using a thermal camera) การตรวจสอบความร้อนของแผงโซลาร์เซลล์ว่ามีจุดความร้อนผิดปกติหรือไม่ (ตรวจสอบโดยใช้กล้องถ่ายภาพความร้อน)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	

Comment : _____

Inspection By : _____
 (Bunharn Libnoy)
 Project Engineer
 Date : ____ / ____ / ____