



Peridot Solar
GREEN ENERGY SOLUTIONS

Progettazione definitiva finalizzata all'autorizzazione di una centrale di energia rinnovabile e delle relative opere di connessione denominata "Caltagirone 1", costituita da un impianto Agrivoltaico accoppiato ad un sistema di accumulo di energia, di potenza complessiva pari a 127,2164 MW [DC] (di cui 86,904 MW di Agrivoltaico) e potenza in immissione pari a 106,81 MW [AC] (di cui 72,42 MW impianto Agrivoltaico e 34,39 MW sistema di accumulo). La centrale sarà realizzata in c.da Bosco di Mezzo nel comune di Caltagirone (CT) – Sicilia.



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IMPIANTI ELETTRICI
SCHEMA TECNICO MODULO ALIMENTAZIONE ACCUMULO

C451	CT1	D	EL	0014	r00
Codice commessa	Sito	Fase	Disciplina	Numero	Revisione

Revisione	Data	Motivo	Redatto	Controllato	Approvato
00	21/03/2024	Emissione	G.C	G.C.	U.L.

SC5000UD-MV

Power Conversion System



HIGH YIELD

- Advanced three-level technology, max. efficiency 99%
- Wide DC voltage operation window, full power operation at 1500V



SMART O&M

- Modular design, easy for maintenance
- IP65 protection degree, easy for outdoor installation
- C5 anti-corrosion degree, adjust to applications close to the sea



FLEXIBLE APPLICATION

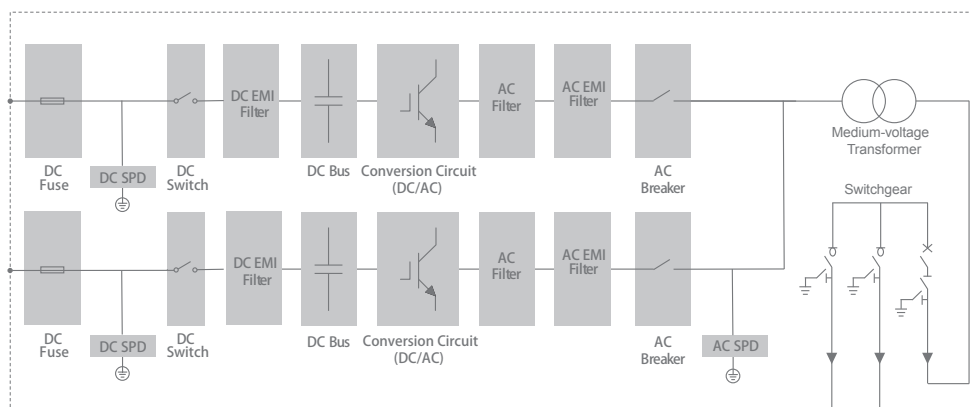
- Bidirectional power conversion system with full four-quadrant operation
- Compatible with high voltage battery system, low system cost
- Battery charge & dis-charge management and black start function integrated



GRID SUPPORT

- Compliant with CE, IEC 62477, IEC 61000 and grid regulations
- Fast active/reactive power response
- L/HVRT, FRT, soft start/stop, specified power factor control and reactive power support

CIRCUIT DIAGRAM



Type Designation	SC5000UD-MV
DC side	
Max. DC voltage	1500 V
Min. DC voltage	1300 V
DC voltage range	1300 – 1500 V
Max. DC current	2154 A*2
No. of DC inputs	2
AC side (Grid)	
AC output power	5000 kVA @ 40 °C / 5500 kVA @ 30 °C
Converter port max. AC output current	3208 A @ 40 °C / 3528 A @ 30 °C
Converter port nominal AC voltage	900 V
Converter port AC voltage range	792 – 990 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
Harmonic (THD)	< 3 % (at nominal power)
Power factor at nominal power / Adjustable power factor	> 0.99 / 1 leading – 1 lagging
Adjustable reactive power range	-100 % – 100 %
Feed-in phases / AC connection	3 / 3
AC side (Off-Grid)	
Converter port nominal AC voltage	900 V
Converter port AC voltage range	792 – 990 V
AC voltage Distortion	< 3 % (Linear load)
DC voltage component	< 0.5 % Un (Linear balance load)
Unbalance load Capacity	100 %
Nominal frequency / Frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
Efficiency	
Converter max. efficiency	99 %
Transformer	
Transformer rated power	5000 kVA
Transformer max. power	5500 kVA
LV / MV voltage	0.9 kV / 20 – 35 kV
Transformer vector	Dy11
Transformer cooling type	ONAN
Oil type	Mineral oil (PCB free) or degradable oil on request
Protection	
DC input protection	Load break switch + fuse
Converter output protection	Circuit breaker
AC output protection	Circuit breaker
Surge protection	DC Type II / AC Type II
Grid monitoring / Ground fault monitoring	Yes / Yes
Insulation monitoring	Yes
Overheat protection	Yes
General Data	
Dimensions (W*H*D)	6058*2896*2438 mm
Weight	18000 kg
Degree of protection	IP54 (Converter: IP65)
Operating ambient temperature range	-35 to 60 °C (> 40 °C derating)
Allowable relative humidity range	0 – 100 %
Cooling method	Temperature controlled forced air cooling
Max. operating altitude	4000 m (> 2000 m derating)
Display	LED, WEB HMI
Communication	RS485, CAN, Ethernet
Compliance	CE, IEC 62477-1, IEC 61000-6-2, IEC 61000-6-4
Grid support	L/HVRT, FRT, active & reactive power control and power ramp rate control, Volt-var, Volt-watt, Frequency-watt

