APPENDIX 5-C

Inverter Specification Sheets

SG3425UD-MV/ SG3600UD-MV

New

SUNGROW
Clean power for all

Turnkey Station for North America 1500 Vdc System - MV Transformer Integrated

HIGH YIELD

- Advanced three-level technology, max. efficiency 98.9%
- Full power operation at 45 ℃ (113 ℉)
- Effective cooling, wide operation temperature
- Max. DC/AC ratio up to 2.0

SMART O&M

- Integrated current, voltage and MV parameters monitoring function for online analysis and trouble shooting
- Modular design, easy for maintenance

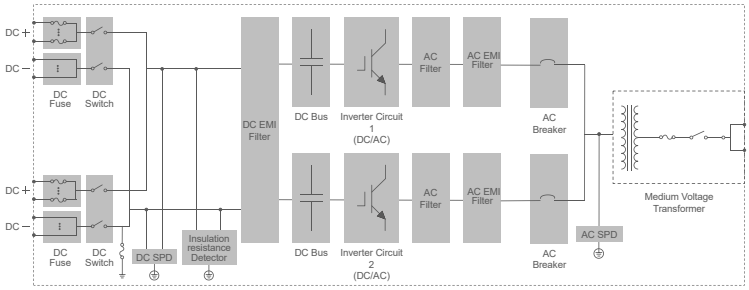
SAVED INVESTMENT

- Low transportation and installation cost due to 20-foot container size design
- DC-coupled storage interface and charging power from the grid, low system cost
- Integrated MV transformer and LV auxiliary power supply
- Q at night optional

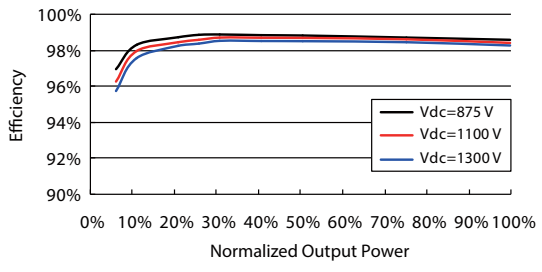
GRID SUPPORT

- Compliance with standards:UL 1741,UL 1741 SA, IEEE 1547, Rule 21 and NEC code
- Low / High voltage ride through (L/HVRT), L/HFRT, soft start/stop
- Active & reactive power control and power ramp rate control

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SG3425UD)



Type designation	SG3425UD-MV	SG3600UD-MV
Input (DC)		
Max. PV input voltage	1500 V	
Min. PV input voltage / Startup input voltage	875 V / 915 V	915 V / 955 V
Available DC fuse sizes	250A, 315A, 400A, 450A, 500A	
MPP voltage range	875 – 1300 V	915 – 1300 V
No. of independent MPP inputs	1	
No. of DC inputs	20 (optional: 22 / 24 / 26 / 28)	
Max. DC short-circuit current	10000 A	
PV array configuration	Negative grounding or floating	
Output (AC)		
AC output power	3425 kVA @ 45 ℃ (113 ℉), 3083 kVA @ 50 ℃ (122 ℉)	3600 kVA @ 45 ℃ (113 ℉), 3240 kVA @ 50 ℃ (122 ℉)
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 50 – 65 Hz	
Harmonic (THD)	< 3 % (at nominal power)	
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading - 0.8 lagging	
Efficiency		
Inverter Max. efficiency	98.9 %	
Inverter CEC efficiency	98.5 %	
Transformer		
Transformer rated power	3425 kVA	3600 kVA
Transformer max. power	3425 kVA	3600 kVA
LV / MV voltage	0.6 kV / (12 – 35) kV	0.63 kV / (12 – 35) kV
Transformer vector	Dy1 or Dy11	
Transformer cooling type	ONAN (Optional: KNAN)	
Protection		
DC input protection	Load break switch + fuse	
Inverter output protection	Circuit breaker	
AC MV output protection	Load break switch + fuse	
Overvoltage 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 238.5'' * 114.0'' * 96.0''	
Weight	18000 kg 39683.2 lbs	
Degree of protection	NEMA 4X(Electronic for Inverter) / NEMA 3R(Others)	
Auxiliary power supply	5kVA, 120Vac/240Vac; Optional: 30kVA, 480Vac/277Vac	
Operating ambient temperature range	-35 to 60 ℃ (> 45 ℃ derating) / optional: -40 to 60 ℃ (> 45 ℃ derating) -22 to 140 ℉ (> 113 ℉ derating) / optional: -40 to 140 ℉ (> 113 ℉ derating)	
Allowable relative humidity range	0 - 100 %	
Cooling method	Temperature controlled forced air cooling	
Max. operating altitude	1000 m (Standard) / > 1000 m (Customized) (3280.8 ft (standard) / > 3280.8 ft (Customized))	
DC-coupled storage interface	Optional	
Charging power from the grid	Optional	
Communication	Standard: RS485, Ethernet; Optional: optical fiber	
Compliance	UL 1741, IEEE 1547, UL1741 SA, NEC 2017, CSA C22.2 No.107.1-01	
Grid support	Q at night function (optional), L/HVRT, L/HFRT, Active & reactive power control and power ramp rate control, Volt-var, Frequency-watt	

SG3150U-MV

Turnkey Station for North America 1500 Vdc System - MV Transformer Integrated

SUNGROW
Clean power for all

HIGH YIELD

- Advanced three-level technology, max. efficiency 98.8%
- Effective cooling, full power operation at 45 ℃
- Max. DC/AC ratio up to 1.5

EASY O&M

- Integrated current and voltage monitoring function for onlione analysis and trouble shooting
- Modular design, easy for maintenance
- Convenient external touch screen

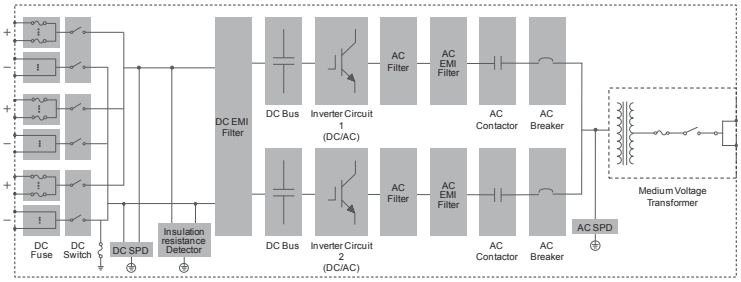
SAVED INVESTMENT

- Low transportation and installation cost due to 20-foot container design
- 1500V DC system, low system cost
- Integrated MV transformer and LV auxiliary power supply

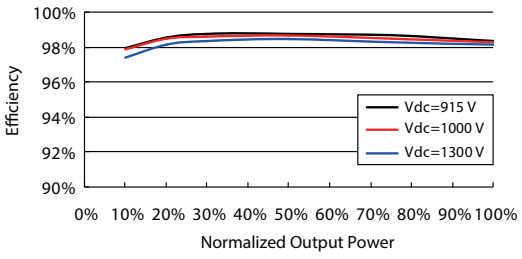
GRID SUPPORT

- Complies with UL 1741,UL 1741 SA, IEEE 1547, Rule 21 and NEC code
- Grid support including L/HVRT, L/HFRT, active & reactive power control and power ramp rate control

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SG3150U)



Type designation	SG3150U-MV
Input (DC)	
Max. PV input voltage	1500V
Min. PV input voltage / Startup input voltage	915 V / 955 V
MPP voltage range for nominal power	915 – 1300 V
No. of independent MPP inputs	1
No. of DC inputs	21 (18 – 24)
Max. PV input current	3510 A
Max. DC short-circuit current	4800 A
Output (AC)	
AC output power	3150 kVA @ 45 ℃ (113 ℉)
AC voltage range	34.5 kV
Nominal grid frequency / Grid frequency range	60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Ajustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / connection phases	3 / 3
Efficiency	
Inverter max. efficiency	98.8 %
Inverter CEC efficiency	98.5 %
Transformer	
Transformer rated power	3150 kVA @ 45 ℃ (113 ℉)
Transformer max. power	3150 kVA @ 45 ℃ (113 ℉)
LV / MV voltage	0.63 kV / 34.5 kV
Transformer vector	Dy1 or Dy11
Transformer cooling type	ONAN (Optional: KNAN)
Oil type	Mineral oil (PCB free) or degradable oil on request
Protection	
DC input protection	Load-break switch + fuse
Inverter output protection	Circuit breaker
AC MV output protection	Load-break switch + fuse
Overvoltage protection	DC Type II / AC Type II
Grid monitoring / Ground fault monitoring	Yes / Yes
Insulation monitoring	Optional
Overheat protection	Yes
General Data	
Dimensions (W*H*D)	6058 * 2896 * 2438 mm (238.5'' * 114.0'' * 96.0'')
Weight	18000 kg (39683.2 lbs)
Degree of protection	NEMA 3R
Auxiliary power supply	110 Vac, 7.5 kVA / Optional: 480 Vac, 30 kVA
Operating ambient temperature range	-30 to 60 ℃ (> 45 ℃ derating) (-22 to 140 ℉ (> 113 ℉ derating))
Allowable relative humidity range (non-condensing)	0 – 95 %
Cooling method	Temperature controlled forced air cooling
Max. operating altitude	1000 m (standard) / > 1000 m (optional)
Display	Touch screen
Communication	Standard: RS485, Ethernet; Optional: optical fiber
Compliance	UL 1741, IEEE 1547, UL1741 SA, NEC2017
Grid support	Q at night function (optional), L/HVRT, L/HFRT, active & reactive power control and power ramp rate control, Volt-var, Frequency-watt