GPTech

1500VDC READY

SmartPV WD3.0 Power Inverter Family

1100/1500 Vdc High-Capacity Modular Inverters

EXTREME POWER CAPACITY TO OPTIMIZE PV PROJECTS

- Minimize design costs while provide the higher efficiency to obtain the best performance.
- Flexible power operation range until 3,3 MVA
- Wide DC operation range due to the 4275 A maximum input current
- Voltage DC input up to 1500 Vdc
- Maintains maximum power at extreme ambient conditions with the advanced air cooling system which ensures the reliability.

DESIGNED FOR UTILITY-SCALE NEEDS

- Easy integration to the grid with advanced power control functions to ensure the stability.
- Remote control of active and reactive power
- Ramp rate response of programmable power in order to guarantee the grid balance.
- Instant power regulation according to frequency variations.
- Built up with NEMA 3R, IP54 protection degree to work at the most harshest environmental conditions.

SmartPV-WD3 1100V

PV940WD3LV450 / PV1880WD3LV450 /PV2820WD3LV450

	PV940WD3LV450	PV1880WD3LV450	PV2820WD3LV450
DC Input			
Voltage range [1]	670 – 950Vdc		
Max. input voltage	1100Vdc		
Rated input current @ 670Vdc, Tamb=35°C	1590A	3180A	4770A
Max. short circuit input current	1925A	3850A	5775A
Max. Number of DC Inputs [2]	Up to 12	Up to 24	Up to 36
DC Cabinet	Integrated		
AC Output			
Frequency	50/60Hz		
Frequency operation range	47 – 63Hz		
Rated AC power @ 95°F/35°C	1045 kVA	2090 kVA	3135 kVA
Rated AC power @ 122°F/50°C	940 kVA	1880 kVA	2820 kVA
Rated voltage [3]	450 Vac		
Total Harmonic Distortion (THD)	< 3%		
Power factor (PF)	Adjustable		
Efficiency			
Efficiency[4]	>98%		
Self-consumption in standby	< 250W	< 400W	< 550W
Self-consumption in operation[5]	< 3kW	< 5.5kW	< 8kW
Ambient Conditions			
Operation ambient temperature	14°F / 140°F (-10°C / 60°C)		
Operation ambient temperature (without de-rating)	14°F / 122°F (-10°C / 50°C)		
Storage and transport temperature	-40°F / 149°F (-40°C / 65°C)		
Maximum relative humidity	100%		
Fresh air consumption	5750 m3/h	11500 m3/h	16500 m3/h
Max. altitude above sea level without derating	1000m		
Max. altitude above sea level allowed	4000m		
Mechanical characteristics			
Dimensions (W x D x H)	1710 x1000 x2200mm	3420 x1000 x2200mm	4630 x1000 x2200mm
Protection degree	NEMA 3R, IP54		
Power control features			
Anti-islanding protection	Yes		
Active power curtailment	Yes		
Active power ramp rate constraint	Yes		
Reactive power closed-loop control	Yes		
Power factor closed-loop control	Yes		
Frequency Ride Through (FRT) capability	Yes		
Voltage Ride Through (VRT) capability	Yes		
Over frequency active power response	Yes		
Reactive power injection for VRT	Yes		
STATCOM mode: Reactive injection at night	Optional		
Interfaces			
Touch-HMI	Optional		
Communications Channel	2 x Ethernet ports: 10 or 100 Mbps (no switched) for external communications (SCADA or Energy Management System)		
Communications Ports Connectors	RJ45 Female or Fiber (optional)		
Communication Protocols	Modbus TCP and NTP		
Luminous indicator, start/stop control and emergency stop	Yes		
Legal standards			
Legal standards	Designed and manufactured according to IEC62019-1, IEC62109-2, IEC61000-3-4, IEEE1547, UL840		

Notes

1. At 100% $U_{AC\ nom}$ and cos = 1
2. Different DC fuse sizes are available under request.
3. Other voltage configurations are possible under request
4. At rated AC power @PF=1 @ 35°C (95 °F). Self-consumption is not considered in the efficiency measurement
5. Self-consumption at rated operation

SmartPV-WD3 1500V

PV1000WD3HV550 / PV2000WD3HV550 /PV3000WD3HV550

	PV1000WD3HV550	PV2000WD3HV550	PV3000WD3HV550
DC Input			
Voltage range [1]	820 – 1250Vdc		
Max. input voltage	1500Vdc		
Rated input current @ 820Vdc, Tamb=35°C	1380A	2760A	4140A
Max. short circuit input current	1700A	3400A	5100A
Max. Number of DC Inputs [2]	Up to 12	Up to 24	Up to 36
DC Cabinet	Integrated		
AC Output			
Frequency	50/60Hz		
Frequency operation range	47 – 63Hz		
Rated AC power @ 95°F/35°C,	1111 kVA	2222 kVA	3333 kVA
Rated AC power @ 122°F/50°C	1000 kVA	2000 kVA	3000 kVA
Rated voltage [3]	550 Vac		
Total Harmonic Distortion (THD)	< 3%		
Power factor (PF)	Adjustable		
Efficiency			
Efficiency[4]	>98%		
Self-consumption in standby	< 250W	< 400W	< 550W
Self-consumption in operation[5]	< 3kW	< 5.5kW	< 8kW
Ambient Conditions			
Operation ambient temperature	14°F / 140°F (-10°C / 60°C)		
Operation ambient temperature (without de-rating)	14°F / 122°F (-10°C / 50°C)		
Storage and transport temperature	-40°F / 149°F (-40°C / 65°C)		
Maximum relative humidity	100%		
Fresh air consumption	5750 m3/h	11500 m3/h	16500 m3/h
Max. altitude above sea level without derating	1000m		
Max. altitude above sea level allowed	4000m		
Mechanical characteristics			
Dimensions (W x D x H)	1710 x1000 x2200mm	3420 x1000 x2200mm	4630 x1000 x2200mm
Protection degree	NEMA 3R, IP54		
Power control features			
Anti-islanding protection	Yes		
Active power curtailment	Yes		
Active power ramp rate constraint	Yes		
Reactive power closed-loop control	Yes		
Power factor closed-loop control	Yes		
Frequency Ride Through (FRT) capability	Yes		
Voltage Ride Through (VRT) capability	Yes		
Over frequency active power response	Yes		
Reactive power injection for VRT	Yes		
STATCOM mode: Reactive injection at night	Optional		
Interfaces			
Touch-HMI	Optional		
Communications Channel	2 x Ethernet ports: 10 or 100 Mbps (no switched) for external communications (SCADA or Energy Management System)		
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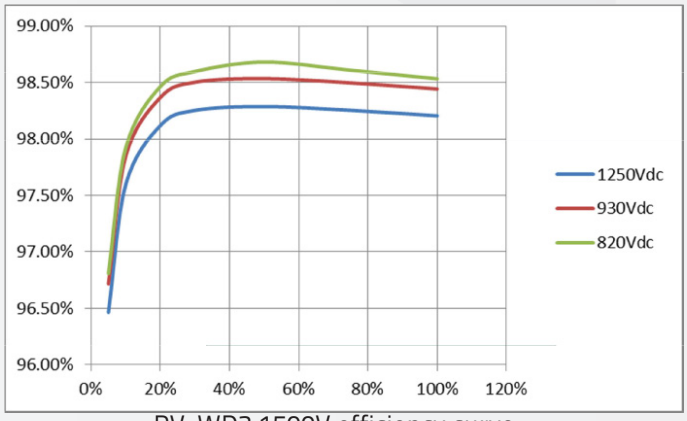
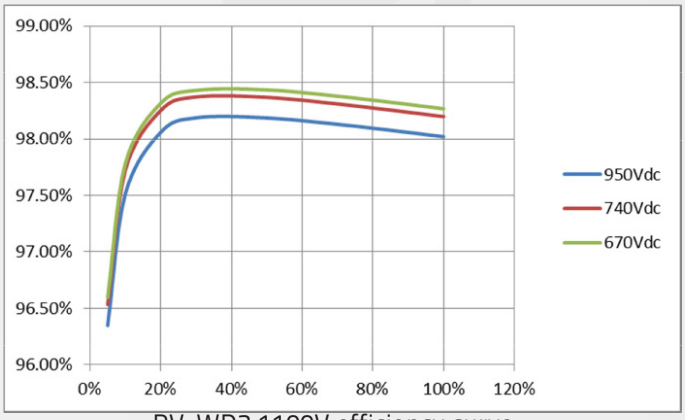
Created for Large-Scale Projects

Turnkey outdoor solutions specially designed to offer complete conversion stations with an extended DC input voltage range and power range up to 3,3MW.

GPTech SmartPV PVWD3.0 is the best option for PV plants development operating with the new generation of 1500Vdc solar modules, offering the best way to solve the challenges of Utility-Scale projects.



PV-WD3 1500V efficiency curve



PV-WD3 1100V efficiency curve

Certifications

- UL1741, cUL1741
- IEEE 1547
- CEC/CIS Performance Testing (California)
- IEC
- EMC
- CE Marking

Optionals

- Reactive power compensation at night. No extra devices needed for VAR support
- Up to 36 DC inputs protected by fuses (see configurations)
- Remote monitoring
- Extended warranty according to customer needs

Services and Warranty

- Global After Sales Service, Maintenance and Technical Assistance 24/7
- Warranty Services
- Preventive Maintenance Programs
- Training Programs

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