



## Utility Ready Solar PV Inverters

# Total System Performance Optimization

## Unparalleled Performance

With power ratings ranging from 30 kW to 1 MW, Satcon offers the widest range of solar PV inverter solutions in the industry, enabling you to closely match array capacities and achieve maximum energy throughput.

## Edge MPPT

- Features a proprietary maximum power point tracking (MPPT) system
- Provides rapid and accurate control
- Boosts overall PV plant kilowatt yield
- Provides a wide range of operation across all photovoltaic cell technologies, including thin film, monocrystalline, and polycrystalline PV panels

## Power and Efficiency Ratings

- Power ratings, ranging from 30 kW to 1 MW (UL, CE, CQC, PEA & Korean standard certified)
- CEC efficiency rating:  
97% to >98% (without transformer)  
96% to 97% (with transformer)
- CE efficiency rating:  
97% to 98.5% (without transformer)
- Ambient temperature range: -30°C (-22°F) to 60°C (140°F)
- Full array nameplate power rating maintained throughout the entire MPPT DC voltage range
- Superior dynamic performance in cloudy conditions

## DC Inputs at Full Power

265–320V DC to 850V DC (UL)  
420V DC to 850V DC (CE)

## Printed Circuit Board Durability

- Wide thermal operating range: -40° C (-40° F) to 85° C (185° F)
- Conformal coated to withstand extreme humidity and air-pollution levels

## Achieve superior performance, higher rates of return and a lower total cost of ownership, for the entire lifespan of your system.

The world's largest solar power installations depend on Satcon™ PV inverters to provide efficient and stable power. That's because Satcon's PV inverters are the most advanced and proven in the industry. Our inverters maximize array performance and uptime through a combination of system intelligence, advanced command and control capabilities, industrial-grade engineering, and total lifecycle performance optimization.

Satcon offers the industry's most comprehensive preventative maintenance and extended warranty plans. Our Global Services organization is dedicated to ensuring that each Satcon solution performs with the highest levels of efficiency and reliability throughout its entire lifespan. All of these benefits combine to deliver the highest levels of system performance that you can depend on.

## PowerGate Plus is the world's most widely deployed large scale, utility ready solution.

PowerGate® Plus inverters maximize system uptime and power production, even in cloudy conditions, due to their advanced system intelligence, next-generation Edge™ MPPT technology, and industrial-grade engineering.



## Equinox delivers best in class 98.7% peak efficiency combined with the industry's widest thermal operating range.

Equinox™ comes with a standard Type 3R/ IP54 enclosure. Equinox is built on the foundation of Satcon PowerGate Plus, the world's most deployed large scale solar inverter solutions, with advanced grid management functions.

## Galaxy provides the compact version inverters for indoor installations

Galaxy is a new series product with advanced grid management functions. The compact size feature makes it suitable for any indoor applications.

## Container Platform delivers a factory integrated 1 to 2 MW medium voltage (MV) solution optimized for utility scale PV installations.

Container Platform comes complete with factory integrated step up transformers, Ring Main Unit (RMU), power conversion electronics and an all-weather outdoor enclosure. Platform comes ready to connect to the PV array and utility grid, enabling fast installation through a modular prepackaged design.

## Streamlined Design

With all components encased in a single, space-saving enclosure, PowerGate Plus PV inverters are easy to install, operate, and maintain.

## Single Cabinet<sup>1</sup> with Small Footprint

- No clearance required for sides and back
- Convenient access to all components
- Large in-floor cable glands make access to DC and AC cables easy

## Rugged Construction

- Engineered for outdoor environments

## Output Transformer

- Provides galvanic isolation
- Matches the output voltage of the PV inverter to the grid
- Transformer built in; standalone transformer available as an option

## Quiet Operation

65 dB(A) standard



## PowerGate Plus Solar PV Inverters

### Commercial and Utility Scale

The world's largest solar power installations depend on Satcon PowerGate Plus PV inverters to provide efficient and stable power—even in the harshest climates.

### Broad Range of Power Ratings

With wide power ratings—ranging from 30 kW to 680 kW (UL, CE, CQC, PEA & Korean standard certified)—Satcon offers the widest range of solar PV central inverter solutions in the industry.

### Advanced, Rugged, and Reliable

Engineered from the ground up to meet the demands of large-scale installations, Satcon PV inverters feature an outdoor-rated enclosure, advanced monitoring and control capabilities, and Edge, Satcon's next-generation MPPT solution.

### History of Innovation

The proven leader in solar PV inverter solutions for commercial installations, Satcon sets the standards for efficient large-scale power conversion. From the introduction of the first single-cabinet PV inverter, to the first high-efficiency power conditioning system for commercial PV inverters—Satcon continues to lead the way.

## Streamline Design

With all components encased in a single enclosure. Equinox PV inverters are easy to install, operate and maintain.

## Advanced Utility-Ready Features

- Remote control of real and reactive power
- Low-voltage ride through
- Power factor control
- Simplified grid interconnection
- Fast communication
- Easily integrated into SCADA systems through standardized communication interfaces

## Rugged Design

- Wide thermal operating range: -22°F to +140°F (-30°C to +60°C)
- Support for external temperatures as low as -40°F with optional Winter climate package
- Designed for optimal performance in Desert, Topical and Winter climates

## Industrial-Grade Engineering

- Fully outdoor rated solution (no concrete station required)
- IP54 enclosure for maximum protection and longevity
- Double wall enclosure eliminates external air circulation from inside inverter
- Solar shields attached to exterior of enclosure dissipate solar radiation, reduce heat buildup



## Best in Class Peak Efficiency of 98.7%

### Profitable PV Power

The Satcon™ Equinox™ PV inverters has a significant impact on the profitability dynamic of large-scale solar PV systems. With its unparalleled system intelligence, next-generation Edge™ MPPT technology, and industrial-grade engineering, the Equinox inverter maximizes system uptime and power production, even in the harshest environments.

### Commercial and Utility Scale

The world's largest solar power installations depend on Satcon Equinox PV inverters to provide efficient and stable power—even in the harshest climates.

### Proven Performance

The proven leader in solar PV inverter solutions for commercial installations, Satcon sets the standards for efficient large-scale power conversion.

### Increased PV Plant Yield in the Widest Range of Environments

Equinox, Satcon's next generation inverter design, features best in class efficiency (98.7%) to provide you with the highest levels of system performance and uptime and the utility scale solar industry's widest thermal operating range.

### Equinox MX Specific Features

Equinox MX series offer multiple MPPT feature and more compact design.

## Advanced Utility-Ready Features

- Remote control of real and reactive power
- Simplified grid interconnection
- Auto switching between on/off-grid modes.
- Provides complete grid management features, including LVRT, HVRT, LFRT, HFRT, etc.
- Supports various energy management modes and customization of specific functions.
- Equipped with intelligent loading regulation function.

## Edge MPPT

- Provides rapid and accurate control that boosts PV plant kilowatt yield.
- Provides a wide range of operation across all photovoltaic cell technologies.

## Rugged Design

- Wide thermal operating range: -22°F to +140°F (-30°C to +60°C)
- PCBA conformal coated to withstand extreme humidity and air-pollution levels

## Proven Reliability

Rugged and reliable, Equinox PV inverters are engineered from the ground up to meet the demands of large-scale installations.

## Safety

- Built-in DC and AC disconnect switches
- Built-in isolation transformer

**New Series**  
Will be launched in Q3  
2017

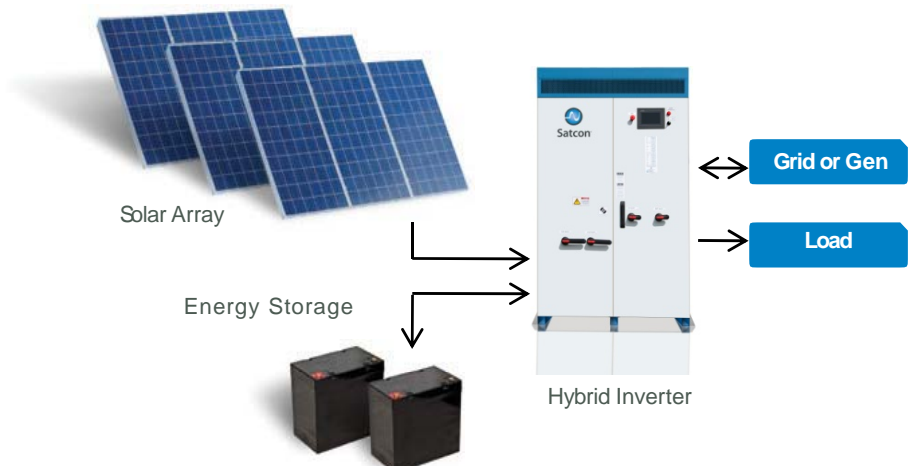


## The World Leader in Large Scale Solar Solutions

Built on the industry's most tested and proven commercial and utility scale inverter technology platform, Satcon's Equinox hybrid inverter is a bi-directional, 50kW & 250kW, solar/battery-integrated solution.

Offering a wide input voltage range, the Equinox innovative design can be configured for a variety of ON or OFF-grid and energy storage applications including:

- Micro-grids for dedicated loads
- Grid stabilization
- Reduction of diesel gen-set run time
- Back-up power system



## Factory integrated MV Power system

- 1MW to 2MW power rating
- Customer specified oil-filled transformer
- Integrated Ring Main Unit (RMU)
- Inverter and transformer on same transportable platform allowing for “ship and drop” installation

## Edge MPPT

- Provides rapid and accurate control that boosts PV plant kilowatt yield
- Provides a wide range of operation across all photovoltaic cell technologies

## Printed Circuit Board Durability

- Wide thermal operating range: -30°C (-22°F) to 60°C (140°F)
- Conformal coated to withstand extreme humidity and air-pollution levels

## Proven Reliability

Rugged and reliable PV inverters are engineered from the ground up to meet the demands of large-scale installations.

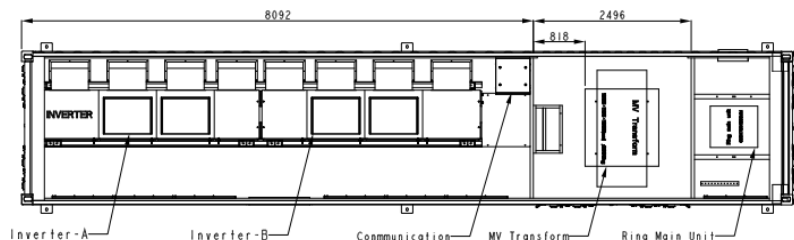
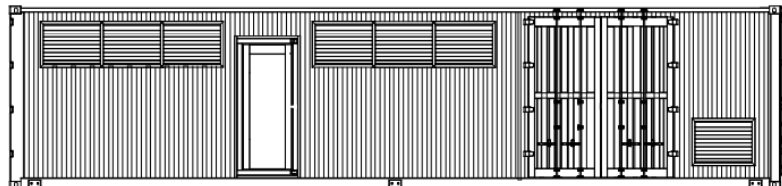
## Low Maintenance

Modular components make service efficient



## Satcon MV Power Platform is a fully integrated medium voltage solution

Leveraging Satcon’s industry standard setting solar PV inverters, Satcon MV Power Platform is a utility grade megawatt platform, complete with factory integrated step-up transformers, Ring main unit (RMU), and power conversion electronics.



\* Above layout is the 1.36MW system with 2 units of 680kW PowerGate Plus inverters.

# Satcon Product Family



## PowerGate Plus



30 kW    50 kW    75 kW    100 kW    135 kW

250 kW    375 kW    500 kW / 625 kW

100 kW CE    250 kW CE    500 kW / 625 kW CE

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## Equinox



250kW    500kW/630kW    750kW/850kW/1M

## Equinox MX



500 kW / 630 kW    1MW

## Equinox Hybrid



50kW    250kW

## MV Inverter Platform



1W to 2MW

# Specifications



## Specifications

### Central Inverters

## PowerGate Series



Parameters	30KW	50KW	50KW	99.4KW	99.4KW	100KW
DC Input Voltage Range (V)	305-600	305-600	300/305-600	315-600	420-850	315-600
Maximum Array Input Voltage (V)	600	600	600	600	900	600
PV Array Configuration	Neg	Neg	Neg	Neg	Floating	Neg
Nominal AC Output Frequency (Hz)	60	60	50	60	60	60
Integrated Transformer	Yes	Yes	Yes	Yes	Yes	Yes
Nominal AC Output Voltage (V)	208/240/480	208/240/480	380/400	380	380	208/240/480
Power Factor, Full Load	>99%	>99%	>99%	>99%	>99%	>99%
Dynamic Power Factor Control	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8
Maximum Harmonic Distortion (%)	3	3	3	3	3	3
Efficiency (%)	95 (CEC)	95.5 (CEC)	93.4(Euro)	95.42 (Euro)	95.31 (Euro)	96 (CEC)
Tare Losses (W)	65-76	75-94	75-94	62-66	64.5	62-66
Cooling	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air
Noise Level (3 meters) (dB(A))	<65	<65	<65	<65	<65	<65
Operating Temperature Range (°C)	-20 - +50	-20 - +50	-20 - +50	-20 - +50	-20 - +50	-20 - +50
Storage Temperature Range (°C)	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70
Protection Rating	NEMA 3R	NEMA 3R	IP44	IP44	IP44	NEMA 3R
Weight (kg)	547	788	788	1068	1135	1068
Standard Warranty	5 Year	5 Year	5 Year	5 Year	5 Year	5 Year
Extended Warranty	Optional	Optional	Optional	Optional	Optional	Optional
Standards	UL	UL	Korean/CQC	Korean	Korean	UL

All the specifications are subject to change



# Specifications



## Specifications

### Central Inverters

## PowerGate Series



Parameters	100KW	135KW	250KW	250KW	375KW	500KW
DC Input Voltage Range (V)	420-850	310-600	320-600	420-850	320-600	320-600
Maximum Array Input Voltage (V)	900	600	600	900	600	600
PV Array Configuration	Floating	Neg/Pos	Neg/Pos	Floating	Neg/Pos	Neg/Pos
Integrated Transformer	50	Yes	Yes	No	Yes (Ext)	No
Nominal AC Output Frequency (Hz)	Yes	60	60	50/60	60	60
Nominal AC Output Voltage (V)	400	208/240/480	208/240/480	265	480	200
Power Factor, Full Load	>99%	>99%	>99%	>99%	>99%	>99%
Dynamic Power Factor Control	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8
Maximum Harmonic Distortion (%)	3	3	3	3	3	3
Efficiency (%)	95.5 (Euro)	96 (CEC)	96 (CEC)	97.5 (Euro)	95.5 (CEC)	97% (CEC)
Tare Losses (W)	64.5	63-64	100-120	140	124	138
Cooling	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air
Noise Level (3 meters) (dB(A))	<65	<65	<65	<65	<65	<65
Operating Temperature Range (°C)	-20 - +50	-20 - +50	-20 - +50	-20 - +50	-20 - +50	-20 - +50
Storage Temperature Range (°C)	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70
Protection Rating	IP44	Type 3R	Type 3R	IP44	Type 3R	Type 3R
Weight (kg)	1135	1220	2409	1598	1496	2682
Standard Warranty	5 Year	5 Year	5 Year	5 Year	5 Year	5 Year
Extended Warranty	Optional	Optional	Optional	Optional	Optional	Optional
Standards	CE/CQC/PEA	UL	UL	CQC/PEA/ Korean	UL	UL/Korean

All the specifications are subject to change

# Specifications



## Specifications

### Central Inverters

## PowerGate Series



Parameters	500KW	500KW	500KW	625KW	500KW	625kW/680kW
DC Input Voltage Range (V)	320-600	420-850	450/500-850	515-850	420-850	500/550-850
Maximum Array Input Voltage (V)	600	900	1000	900	900	1000
PV Array Configuration	Neg/Pos	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg	Neg
Integrated Transformer	Yes (Ext)	No	No	No	No	No
Nominal AC Output Frequency (Hz)	60	50	50	50	60	60
Nominal AC Output Voltage (V)	480	265	270/315*	320	265	320/360
Power Factor, Full Load	>99%	>99%	>99%	>99%	>99%	>99%
Dynamic Power Factor Control	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8
Maximum Harmonic Distortion (%)	3	3	3	3	3	3
Efficiency (%)	96 (CEC)	97.3 (Euro)	97.7	97.4(Euro)	97 (CEC)	97.5 (CEC)
Tare Losses (W)	138	170	170	155	170	170
Cooling	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air
Noise Level (3 meters) (dB(A))	<65	<65	<65	<65	<65	<65
Operating Temperature Range (°C)	-20 - +50	-20 - +50	-20 - +50	-20 - +50	-20 - +50	-20 - +50
Storage Temperature Range (°C)	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70
Protection Rating	NEMA 3R	IP54	IP54	IP54	NEMA 1	NEMA 1
Weight (kg)	4614	2810	2810	2810	2700	2700
Standard Warranty	5 Year	5 Year	5 Year	5 Year	5 Year	5 Year
Extended Warranty	Optional	Optional	Optional	Optional	Optional	Optional
Standards	UL	CE/CQC	CQC	CE/CQC	UL	UL

All the specifications are subject to change

Remarks:

# Available for CE & CQC models only

\* AC output voltage for CQC model.

# Specifications



## Specifications

### Central Inverters

## Equinox Series



Parameters	250KW	500KW	630KW	750KW	850KW	1MW
DC Input Voltage Range (V)	500-850	500-850	585-850	500-850	560-850	615-850
Maximum Array Input Voltage (V)	1000	1000	1000	1000	1000	1000
PV Array Configuration	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg/Pos/Floating#
Integrated Transformer	Yes	No	No	No	No	No
Nominal AC Output Frequency (Hz)	60	50/60	50/60	50/60	50	50/60
Nominal AC Output Voltage (V)	480	315*/320	315*/360	320	360	400
Power Factor, Full Load	>99%	>99%	>99%	>99%	>99%	>99%
Dynamic Power Factor Control	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8	+/-0.8
Maximum Harmonic Distortion (%)	3	3	3	3	3	3
Efficiency (%)	97(CEC)	98.5(CEC)	98.5(CEC)	98.5(CEC)	98.0(Euro)	98.5(CEC)
Tare Losses (W)	100	100	100	150	150	150
Cooling	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air
Noise Level (3 meters) (dB(A))	<65	<65	<65	<65	<65	<65
Operating Temperature Range (°C)	-30 - +60	-30 - +60	-30 - +60	-30 - +60	-30 - +60	-30 - +60
Storage Temperature Range (°C)	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70	-30 - +70
Protection Rating	Type 3R	Type 3R / IP54	Type 3R / IP54	Type 3R / IP54	Type 3R / IP54	Type 3R / IP54
Weight (kg)	2510	1870	1870	3090	3090	3090
Standard Warranty	5 Year	5 Year	5 Year	5 Year	5 Year	5 Year
Extended Warranty	Optional	Optional	Optional	Optional	Optional	Optional
Standards	UL	UL/CE/CQC	UL/CE/CQC	UL/CE/CQC	CE	UL/CE/CQC/MEA

All the specifications are subject to change

Remarks:

# Available for CE & CQC models only

\* AC Voltage for CQC model

# Specifications

## Specifications

### Central Inverters

## Equinox MX Series



Parameters	500KW	630KW	1MW			
DC Input Voltage Range (V)	500-850	615-850	615-850			
Maximum Array Input Voltage (V)	1000	1000	1000			
No. of independent MPP Inputs	2	2	3			
PV Array Configuration	Neg/Pos/Floating#	Neg/Pos/Floating#	Neg/Pos/Floating			
Integrated Transformer	No	No	No			
Nominal AC Output Frequency (Hz)	50/60	50/60	50			
Nominal AC Output Voltage (V)	315*/320	400	400			
Power Factor, Full Load	>0.99	>0.99	>0.99			
Dynamic Power Factor Control	+/-0.8	+/-0.8	+/-0.8			
Maximum Harmonic Distortion (%)	3	3	3			
Efficiency (%)	98.5(CEC)	98.5(CEC)	98.5			
Tare Losses (W)	<100	<100	<150			
Cooling	Forced Air	Forced Air	Forced Air			
Noise Level (3 meters) (dB(A))	<65	<65	<65			
Operating Temperature Range (°C)	-30 - +60	-30 - +60	-30 - +60			
Storage Temperature Range (°C)	-30 - +70	-30 - +70	-30 - +70			
Protection Rating	Type 3R /IP54	Type 3R /IP54	Type 3R /IP54			
Weight (kg)	1200	1200	2000			
Standard Warranty	5 Year	5 Year	5 Year			
Extended Warranty	Optional	Optional	Optional			
Standards	UL/CQC	UL/CQC	CQC			

All the specifications are subject to change

Remarks:

# Available for CQC model only

\* AC Output voltage for CQC model

# Specifications

## Specifications

### Hybrid Inverters

## Hybrid Series



Will be launched in 2023

Parameters	50KW	50KW	250KW	250KW		
PV MPPT Voltage Range (V)	330-850	330-850	500-850	500-850		
Maximum Array Input Voltage (V)	1000	1000	1000	1000		
Nominal Battery Voltage (V)	300	300	300	300		
Battery Voltage Range (V)	96-750	96-750	96-750	96-750		
Integrated Transformer	Yes	Yes	Yes	Yes		
<b>On-Grid AC Parameters</b>						
Nominal Power (KW)	50	50	250	250		
Nominal Frequency (Hz)	60	50	60	50		
Nominal Output Voltage (V)	480	400	480	400		
Output Range (V)	422-528	320-460	422-528	320-460		
Nominal Output Current / Phase (A)	60	72	301	361		
Power Factor, Full Load	>99%	>99%	>99%	>99%		
Dynamic Power Factor Control	+/-0.8	+/-0.8	+/-0.8	+/-0.8		
Total Harmonic Distortion THDi (%)	<3	<3	<3	<3		
<b>Off-Grid AC Parameters</b>						
Nominal Apparent Power (KVA)	50	50	250	250		
Output Voltage (V)	480 +/- 3%	400 +/- 3%	480 +/- 3%	400 +/- 3%		
Nominal Output Current / Phase (A)	60	72	301	361		
Output Frequency (Hz)	60 +/- 0.5	50 +/- 0.5	60 +/- 0.5	50 +/- 0.5		
Total Harmonic Distortion THDi (%)	Linear Load <3; Non-Linear Load <5	Linear Load <3; Non-Linear Load <5	Linear Load <3; Non-Linear Load <5	Linear Load <3; Non-Linear Load <5		
Crest Factor	3:1	3:1	3:1	3:1		
Power Factor	+/-0.7	+/-0.7	+/-0.7	+/-0.7		
PV Maximum Efficiency (%)	95.0	95.0	97.0	97.0		
BAT Maximum Efficiency (%)	94.0	94.0	95.5	95.5		
Tare Losses (W)	<100	<100	<100	<100		
Cooling	Forced Air	Forced Air	Forced Air	Forced Air		
Noise Level (3 meters) (dB(A))	65	65	65	65		
Operating Temperature Range (°C)	-30 - +60	-30 - +60	-30 - +60	-30 - +60		
Storage Temperature Range (°C)	-30 - +70	-30 - +70	-30 - +70	-30 - +70		
Protection Rating	Type 3R	IP54	Type 3R	IP54		
Weight (kg)	650	650	1800	1800		
Standard Warranty	5	5	5	5		
Extended Warranty	Optional	Optional	Optional	Optional		
Standards	UL	CE	UL	CE		