SUNZET SP

New single-phase on-grid string inverters range

Description

The SUNZET SP string inverters are easy operation devices that have been designed to cover the needs of all mains connected solar generation plants.. In an effort to improve the yield of solar plants, the SUNZET SP inverters offer a very high efficiency, exceeding 97%.

The SUNZET SP stands out due to its Web server application, accessible through its SNMP connection and through a WIFI connection (optional). In addition to this, the new SUNZET SP range provides a LCD display, where the customer is able to access all inverter information, including production data.
The SUNZET SP can work at input DC voltages between 120 to 500 VDC and it´s housing has IP54 / IP65.

Sunzet SP 5 KW

Features

- Maximum power point tracking (MPPT)
- High energy efficiency, higher than 97%
- Very low harmonic distortion, THD <3%
- Direct mains connection
- Unlimited parallel connection arrangements
- Anti-islanding protection with automatic shut down
- Monitoring from the unit with LCD
- Protection against: inverse polarity, short-circuits, overvoltages, isolation failure
- SNMP connection: Web server included
- Range of input DC voltages (120-500 VDC)
- Compact size, light weight, easy installation
- WIFI connection (optional)
- Ipad ® application (optional)
- Built-in production log capacity (optional)
- Remote SCADA (SWS 1000): communications system, parameter display, inverter records control, production data storage etc, (optional)

Connectivity and accessories

- **Sunzet Web server integrated**

  PC-based Web server program for full access to inverter data by Zigor, to monitor and communicate with SUNZET SP inverters. (integrated)

- **SWS 1000**

  The SWS 1000 Scada system is a platform for monitoring and registers variables, check and modify the settings as well as customize all parameters from the SUNZET SP inverters. (optional)

See more information about connectivity and accessories on page 48

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ELECTRICAL CHARACTERISTICS					
Model	**Sunzet SP 2**	**Sunzet SP 3.6**	**Sunzet SP 4**	**Sunzet SP 5**	**Sunzet SP 6**
Reference	301203	301204	301221	200075	301205
Max. output power	2 KW	3.68 KW	4 KW	5 KW	6.6 KW
SYSTEM					
Conversion mode	High frequency PWM				
Electromechanical method	Low loss transformer (optional)				
DC INPUT					
Nominal DC voltage	360V				
Maximum DC voltage	500V				
Operating range DC	120-500V				
Operating range DC for MPPT	150-450V				
No. independient MPPT	1(14.6 A Max)	2(12.2 A Max)	2(14 A Max)	2(17.65 A Max)	2(23.4 A Max)
AC OUTPUT					
No. phases/No. wires	1- phase/2- wires or 1 – phase/ 3 – wires (LNG)				
Nominal voltage AC	230V				
Nominal frequency	50/60 Hz				
Nominal output current AC	8.7 A	16 A	17.4 A	21.7 A	28.7 A
Harmonic distortion range for nominal current	<3%				
Power factor	Over 0.99 (at nominal output current)				
Maximum effciency	97%	97%	97.10%	97.10%	97.10%
European efficiency	96.5%	96.6%	96.6%	96.8%	96.7%
PROTECTION					
Input	Ground fault / DC isolation fault				
Output	Over-undervoltage/ Over-under frequency / Islanding				
Protection class	IP 54 / IP 65				
INTERFACE					
Standard	TCP/IP Ethernet/USB				
Optional	WIFI/RS485				
ENVIRONMENTAL CHARACTERISTICS					
Temperature	-20ºC to +50ºC/ -4ºF to 122ºF				
Relative humidity	0-90% without condensation				
Altitude	< 2000m				
MECHANICAL CHARACTERISTICS					
Dimensions mm (WxHxD)	470x525x195				
Estimated weight kg	30				
Cooling	Intelligent fan cooling				
STANDARDS					
Certificates	CE Marking				
Directives	2004/108/CE 2006/95/CE				
Standards	UNE-EN 61000-6-3, UNE-EN 61000-6-2 UNE-EN 50178 IEC 62116				
Countries standards					
USA	UL 1741				
Italy	DK5940				
Germany	VDE 0126-1-1				
England	G83/1-1				
Australia	AS				

These specifications may be changed without notice.

SUNZET TL

Single-phase on-grid solar inverters range

Description

The SUNZET TL combines design and versatility with ease of operation. An outstanding feature of SUNZET TL inverters is their 96% efficiency without transformer.
The SUNZET TL stands out because of its RS-485 communications with the centralized supervision and control system and all its parameters can be configured locally (optional).
The SUNZET TL offers a range of input DC voltages of between 120-500 vdc and IP65 watertightness.

Sunzet 5 TL

Features

- Range of input voltages (120-500 VDC)
- Maximum power point tracking (MPPT)
- High energy efficiency, higher than 96%
- Very low harmonic distortion, THD < 4%
- Direct mains connection
- Unlimited parallel connection arrangements
- Anti-islanding protection with automatic shut down
- Monitoring from the unit with LCD
- Protection against: inverse polarity, short-circuits, overvoltages, isolation failure
- RS-485 communication port (optional)
- Compact size, light weight
- Remote SCADA (SWS 200): communications system, parameter display, inverter records control, production data storage etc. (optional)

Connectivity and accessories

- **SWS 200**

  The SWS 200 Scada system is a platform for monitoring and registers variables, check and modify the settings as well as customize all parameters from the SUNZET TL inverters. (optional)

See more information about connectivity and accessories on page 48

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ELECTRICAL CHARACTERISTICS					
Model	**Sunzet TL 2**	**Sunzet TL 3**	**Sunzet TL 3.6**	**Sunzet TL 4**	**Sunzet TL 5**
Reference	20104	20105	20106	20107	20108
Max. output power	2 KW	3 KW	3.6 KW	4 KW	5 KW
SYSTEM					
Conversion mode	High frequency PWM				
Electromechanical method	Low loss transformer (optional)				
DC INPUT					
Nominal DC voltage	360V				
Maximum DC voltage	500V				
Operating range DC	120-500V				
Operating range DC for MPPT	150-450V				
No. input circuits	1(14.6A Max. x circuit)	1(22A Max. x circuit)	2(12.2A Max. x circuit)	2(14A Max. x circuit)	2(17.65A Max. x circuit)
AC OUTPUT					
No. phases/No. wires	1- phase/2- wires or 1 – phase/ 3 – wires (LNG)				
Nominal voltage AC	230V				
Nominal frequency	50/60 Hz				
Nominal output current AC	8.7 A	13 A	15.2 A	17.4 A	21.7 A
Power factor	Over 0.99 (at nominal output current)				
European efficiency	96%				
PROTECTION					
Input	Ground fault / DC isolation fault				
Output	Over-undervoltage/ Over-under frequency / Islanding				
Protection class	IP 65				
Anti-islanding detection	Active method: reactive power control				
INTERFACE					
Standard	RS232				
Optional	RS485				
ENVIRONMENTAL CHARACTERISTICS					
Temperature	-10°C to +50°C				
Relative humidity	0-90% without condensation				
Altitude	< 2000m				
MECHANICAL CHARACTERISTICS					
Dimensions (WxHxD) mm	170x455x430		170x445x510		
Weight kg	22		29		
Cooling	Free convection				
STANDARDS					
Certificates	CE Marking, UL, VDE				
Directives	73/23/CEE-93/68/CEE 2004/108/CEE				
Standards	EN50178 EN 61000-6-2, EN 61000-6-3,EN 61000-3-2,EN 61000-3-3 IEC60146				
Countries standards					
USA	UL1741, IEEE1547 FCC				
Italy	ENEL				
Germany	VDE0126-1-1				
Australia	AS/NZS3100:2099, AS/NZS4777.2:2005 AS/NZS4477.3:2005				

Power derating protection at low DC input & high room temperature.
These specifications may be changed without notice.

SUNZET TP

Three-phase central inverters range with and without transformer

Description

The SUNZET TP three-phase central inverters range goes from 20 to 166 KW and combines design and versatility with easy operation and modularity.
An outstanding feature of SUNZET TP inverters is their 96% efficiency with transformer (T model) and 98% (TL model) without it. SUNZET TP inverters provide high reliability and guaranteed operation. Another outstanding function is the high-energy efficiency of its MPPT, which is over 99%. As an important feature, its automatic regulation of reactive power and built in communications tools. All its parameters are configurable both locally and remotely. SUNZET TP inverters operate with an output voltage 3x400 V and comply with most European regulations concerning the support of voltage sags without disconnection. Due to theirs double-conversion architecture they never generate dangerous overvoltages when disconnecting from mains.

Sunzet TP 30 TL

Sunzet TP 100 TL

Features

- Range of input DC voltage (300-700 VDC)
- Maximum power point tracking (MPPT)
- High energy efficiency MPPT > 99%
- Very low harmonic distortion, THD < 3%
- Selectable power factor
- Direct mains connection (T & TL model)
- Unlimited parallel connection
- Anti-islanding protection with automatic shut down
- Monitoring from the unit with LCD
- Galvanic isolation through the transformer (T model)
- Strings current monitoring (with option “Sunzet String Box“)
- IP21 protection level
- Protection against: inverse polarity, short-circuits, overvoltages, insulation failure with output to relay
- Service life of more than 20 years
- Automatic reactive energy regulation
- PC-based Web server program for full access to inverter data
- Maximum yield of solar plants
- Modularity
- Output voltage 3x 400 V (T & TL model)
- DC and AC surge protections included
- Compatible with thin film modules
- ETHERNET communications ports
- Easy access through any web browser
- Remote SCADA (SWS 1000): communications system, parameter display, inverter records control, production data storage etc, (optional)

Web server for three-phase SUNZET TP inverters

This is a PC-based Web server program to provide full access to the inverter data and to monitor and communicate with three-phase SUNZET TP inverters.
The Web server let the user to communicate with the inverters in different languages and record the following data.

- Status
- Parameters
- Events
- Event Log
- Production

SWS 1000
SCADA system for SUNZET three-phase TP inverters

The SWS 1000 Scada system is a platform for monitoring and registers variables, check and modify the settings as well as customize all parameters from the three-phase SUNZET TP inverters. It can control up to 20 units, which makes the SWS 1000 a suitable tool to monitor a generation plant through a unique fixed IP address.

The SWS 1000 has a Web server in several different languages (selectable by the user) where the following functions can be run:

SWS 1000

See more information about connectivity and accessories on page 48

> Sunzet TP model with transformer

ELECTRICAL CHARACTERISTICS							
Modelo	**Sunzet 20 TP T**	**Sunzet 25 TP T**	**Sunzet 30 TP T**	**Sunzet 50 TP T**	**Sunzet 75 TP T**	**Sunzet 100 TP T**	**Sunzet 133 TP T**
Reference	16112	13038	17698	17173	16113	17038	301206
Continuous output power	20 KW **	25 KW **	30 KW	50 KW	75 KW ***	100 KW	133 KW
Nominal DC power	≥ 21 KW	≥ 27 KW	≥ 31 KW	≥ 52 KW	≥ 78 KW	≥ 105 KW	≥ 140 KW
Nominal AC voltage AC	380-400 V 3P+N						
Nominal frequency	50 Hz						
Power factor	1 adjustable ± 0.8						
Nominal line current AC	29 A	36 A	43 A	72 A	108 A	180 A	191 A
Current distortion AC	< 3% THD of nominal power (1)						
Maximum open circuit voltage DC	880 V (2)						
Power tracking range (MPPT) DC *	300 to 720 V						300 to 720 V
Maximum input current DC	70 A	90 A	103 A	173 A	260 A	350 A	462 A
Maximum efficiency	96%						
European efficiency	94.95%						
ENVIRONMENTAL AND MECHANICAL FEATURES							
Range of ambient temperatures	-10ºC +50ºC (3)						
Type and grade of environmental protection	IP21						
Aproximate weight	270 Kg	290 Kg	310 Kg	390 kg	1020 Kg		950 Kg
Dimensions (HxWxD) (4)	2150 X 800 x 600				2150 x 1200 x 600		
Operating height	<1000m without power loss						
Relative humidity	0 a 95% without condensation						
GENERAL FEATURES							
Cooling method	Internal forced ventilation External fan control (6 Amax.)						
Protection functions	Inverse polarity / Over/Sub-voltage AC / Over/Sub-frequency / Overvoltage DC						
User interfase	Screen LCD						
Breakers (AC and DC)	Integrated in the system						
Communication software	Web server through Ethernet connection						
Equipment supervision: self diagnostic	Yes						
Data acquisition	SNMP						
SWS 1000 scada system (option)	Ethernet / GSM modem (option) / Data logger / Monitoring programme						
External measurements	2 analogue inputs for monitoring (option) Digital Inputs/Outputs						
STANDARDS							
Certificates	CE Marking, VDE, ENEL						
Directives	2004/108/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-3) 2006/95/CE (EN 50178)						
Standards	IEC 62116 (2008) - Anti-islanding protection						
Countries standards							
Spain	PO 12.3						
Germany	VDE 0126-1-1						
Italy	DK5940 (Chapter 8.2 Annex 17. TERNA Adjustment)						
UK	G83						
France	Decree: Ministerial Order dated April 23, 2008						

(1) For THD V< 1% and Nominal Power.

(2) This voltage must not be exceeded under any circumstances.

(3) Under 40°C, the system operates with nominal values, at 50°C nominal values are maintained for two hours.

(4) Dimensions of the equipment without packing.

** Minimum voltage 250V working with thin film solar modules at nominal power.*
** * This unit is the Sunzet 30 TP T with output power limited by software.*
**** This unit is the Sunzet 100 TP T with output power limited by software.*

These specifications may be changed without notice.

> Sunzet TP model transformerless

ELECTRICAL CHARACTERISTICS								
Model	**Sunzet 20 TP TL**	**Sunzet 25 TP TL**	**Sunzet 30 TP TL**	**Sunzet 50 TP TL**	**Sunzet 75 TP TL**	**Sunzet 100 TP TL**	**Sunzet 100 TP TL**	**Sunzet 166 TP TL**
Reference	16114	16115	16116	17174	16117	15754	200186	200104
Continuous output power	20 KW **	25 KW **	30 KW	50 KW	75 KW ***	100 KW	150 KW	166 KW
Nominal DC power	≥ 20.4 KW	≥ 25.5 KW	≥ 30.6 KW	≥ 51 KW	≥ 76.5 KW	≥ 102 KW	≥ 160 KW	≥ 170 KW
Nominal AC voltage AC	400 V AC 3P							
Nominal frequency	50 Hz							
Power factor	1 adjustable ± 0.8							
Nominal line current AC	29 A	36 A	43 A	72 A	108 A	180 A	215 A	240 A
Current distortion AC	< 3% THD of nominal power (1)							
Maximum open circuit voltage DC	880 V DC (2)							
Power tracking range (MPPT) DC *	300 to 720 V							
Maximum input current DC	66.6 A	83.3 A	102 A	170 A	255 A	340 A	533 A	475 A
Maximum efficiency	98 %						97.60 %	97.13 %
European efficiency	96.78%						96.27 %	95.79 %
ENVIRONMENTAL AND MECHANICAL FEATURES								
Range of ambient temperatures	-10°C a +50°C (3)							
Type and grade of environmental protection	IP21							
Aproximate weight	230 Kg	250 Kg	270 Kg	320 Kg	490 Kg		450 Kg	580 Kg
Dimensions (HxWxD) (4)	2150 X 800 x 600							
Operating height	<1000m without power loss							
Relative humidity	0 a 95% without condensation							
GENERAL FEATURES								
Cooling method	Internal forced ventilation External fan control (6 Amax.)							
Protection functions	Inverse polarity / Over/Sub-voltage AC / Over/Sub-frequency / Overvoltage DC							
User interfase	Screen LCD							
Breakers (AC and DC)	Integrated in the system							
Communication software	Web server through Ethernet connection							
Equipment supervision: self diagnostic	Yes							
Data acquisition	SNMP							
SWS 1000 scada system (option)	Ethernet / GSM modem (option) / Data logger / Monitoring programme							
External measurements	2 analogue inputs for monitoring (option) Digital Inputs/Outputs							
STANDARDS								
Certificates	CE Marking, VDE, ENEL							
Directives	2004/108/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-3) 2006/95/CE (EN 50178)							
Standards	IEC 62116 (2008) IEE 1547							
Countries standards								
Spain	PO 12.3							
Germany	VDE 0126-1-1							
Italy	DK5940 (Chapter 8.2 Annex 17. TERNA Adjustment)							
UK	G83							
France	Decree: Ministerial Order dated April 23, 2008							

(1) For THDV< 1% and Nominal Power.

(2) This voltage must not be exceeded under any circumstances.

(3) Under 40°C, the system operates with nominal values, at 50°C nominal values are maintained for two hours.

(4) Dimensions of the equipment without packing.

** Minimum voltage 250V working with thin film solar modules at nominal power.*
** * This unit is the Sunzet 30 TP TL with output power limited by software.*
**** This unit is the Sunzet 100 TP TL with output power limited by software.*

These specifications may be changed without notice.

SUNZET MV

Modular three-phase central inverter for mid voltage plants

Description

The SUNZET MV has been specially designed for mid voltage grid connected solar generation plants. An outstanding feature of SUNZET MV 125 and 166 KW inverters is their 98% efficiency.
SUNZET MV inverters provide high reliability and guaranteed operation. Another outstanding function is the high-energy efficiency of its MPPT, which is over 99%.
Another important feature is its automatic regulation of reactive power and communications tools between it and the centralized supervision and control system. All its parameters are configurable both locally and remotely.
SUNZET inverters operate with an output voltage 3x450 V and are adapted to meet with the requirements of response against voltage sags in accordance with several European Regulators.

Sunzet 125 MV

Features

- Range of input DC voltage (350-720 VDC)
- Maximum power point tracking (MPPT)
- High energy efficiency MPPT > 99%
- Very low harmonic distortion THD < 3%
- Selectable power factor
- Unlimited parallel connection
- Anti-islanding protection with automatic shut down
- Monitoring from the unit with LCD
- Strings currents monitoring (with option “Sunzet String Box“)
- IP21 protection level
- Protection against: inverse polarity, short-circuits, overvoltages, insulation failure with output to relay
- Automatic reactive energy regulation
- PC-based Web server program for full access to inverter data
- Maximum efficiency
- Modularity
- DC and AC surge protections included
- Compatible with thin film modules
- ETHERNET communications ports
- Easy access through any web browser
- Remote SCADA (SWS 1000): communications system, parameter display, inverter records control, production data storage etc, (optional)

Connectivity and accessories

- **Sunzet Web server integrated**
  PC-based Web server program for full access to inverter data by Zigor to monitor and communicate with SUNZET MV inverters. (integrated)
- **SWS 1000**
  The SWS 1000 Scada system is a platform for monitoring and register variables, check and modify the settings as well as customize all parameters from the SUNZET MV inverters. (optional)

See more information about connectivity and accessories on page 48

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ELECTRICAL CHARACTERISTICS		
Model	**Sunzet 125 MV**	**Sunzet 166 MV**
Reference	17570	200103
Continuous output power	125 KW	166 KW
Maximum recommended PV power	+5% to +20%	
Nominal DC power	≥ 128 KW	≥ 170 KW
Nominal AC voltage	3x450 V	
Nominal frequency	50 Hz	
Power factor	1 adjustable ± 0.8	
Nominal line current AC	160 A	212 A
Current distortion AC	<3% THD of nominal power (1)	
Maximum open circuit voltage DC	880 V (2)	
Power tracking range (MPPT) DC	300 to 720 V	
Maximum input current DC	360 A	575 A
Maximum efficiency	98%	97.60 %
European efficiency	97.34%	96.27 %
ENVIRONMENTAL AND MECHANICAL FEATURES		
Range of ambient temperatures	-10°C to +50°C (3)	
Type and grade of environmental protection	IP21	
Aproximate Weight	490 Kg	450 kg
Dimensions (HxWxD)	2150 x 800 x 600 mm	
Operating height	<1000 m without power loss	
Relative humidity	0 to 95% without condensation	
GENERAL FEATURES		
Refrigerating method	Internal forced ventilation External fan control (6 Amax.)	
Protection functions	Inverse polarity, Over/Sub-voltage AC Over/Sub-frequency, Overvoltage DC	
User interface	LCD screen	
Breakers (AC and DC)	Integrated in the system	
Communication software	Web server through Ethernet connection	
Equipment supervision: self diagnostic	Yes	
Data acquisition	SNMP	
SWS 1000 Scada System (option)	Ethernet, GSM modem (option), Data logger, Monitoring program	
STANDARDS		
Certificates	CE Marking, VDE, ENEL	
Directives	2004/108/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-3) 2006/95/CE (EN 50178)	
Standards	IEC 62116 (2008) IEE 1547	
Countries standards		
Spain	PO 12.3	
Germany	VDE 0126-1-1	
Italy	DK5940 (Chapter 8.2 Annex 17. TERNA Adjustment)	
UK	G83	
France	Decree: Ministerial Order dated April 23, 2008	

(1) For THDV< 1% and Nominal Power.

(2) This voltage must not be exceeded under any circumstances.

(3) Under 40°C, the system operates with nominal values, at 50°C nominal values are maintained for two hours

These specifications may be changed without notice.

SUNZET POWER STATION

Concrete building containing inverters, medium-voltage transformer & medium-voltage cells

Description

Zigor Corporación offers PV solar market a plug-and-play solution to reduce the engineering and civil works while designing and building a Megawatt PV plant.
The Sunzet Power Station, available in 250 KW, 500 KW and 1 MW power is the key solution to improve reliability and yield of solar plants. It has been designed to optimize wiring and size as well as to easy PV plant construction.
The Sunzet Power Station is delivered completely finished with the internal wiring fully done. The customer has only to connect the solar field and the Grid to the building inlets.

Sunzet Power Station

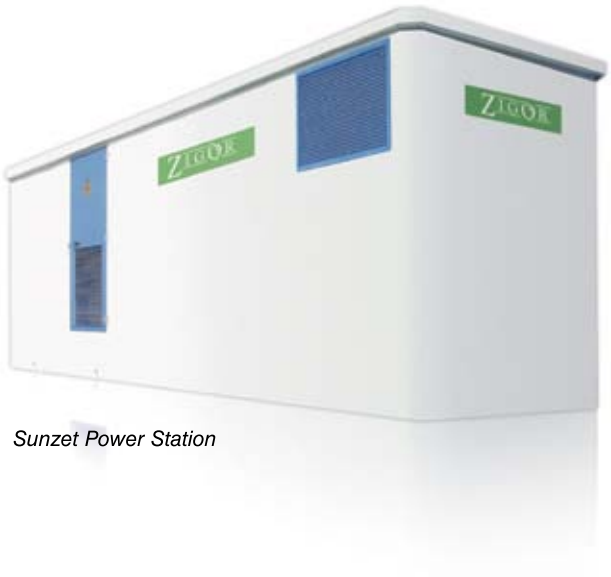
Features

The Sunzet Power Station includes:

> Concrete building
> PV inverters (250 KW, 500 KW or 1 MW)
> Medium voltage transformer up to 36 KV (reduced losses)
> Medium voltage cells according to National Grid Codes
> Security and protective devices
> Integrated cooling system to assure optimum performance
> Lighting, power sockets, grounding network
> AC protection board with breakers
> Complete internal wiring between devices
> Start-up at the site

Options:

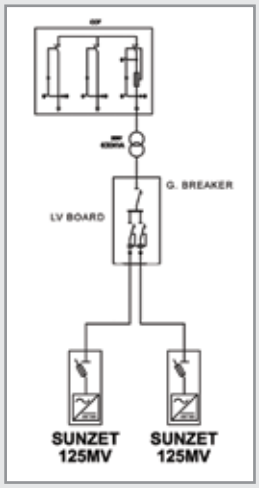
> Concentration boxes - Level II
> SWS 1000 SCADA System for monitoring
> Metering equipment

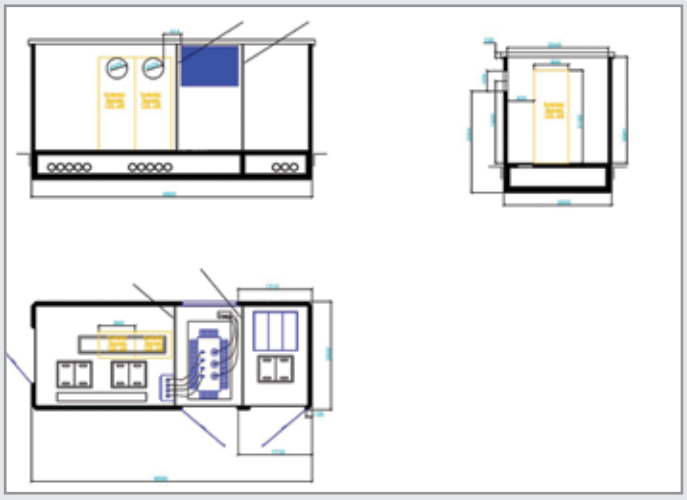


Sunzet Power Station

> Model 250 KW.

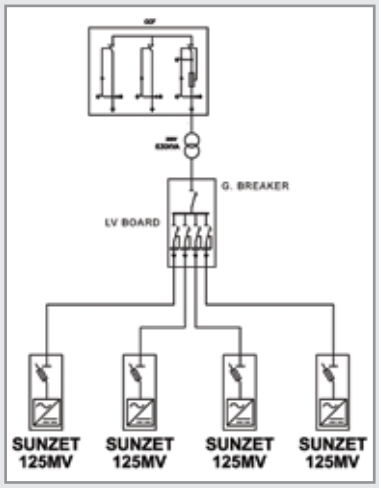
Electrical scheme and configuration

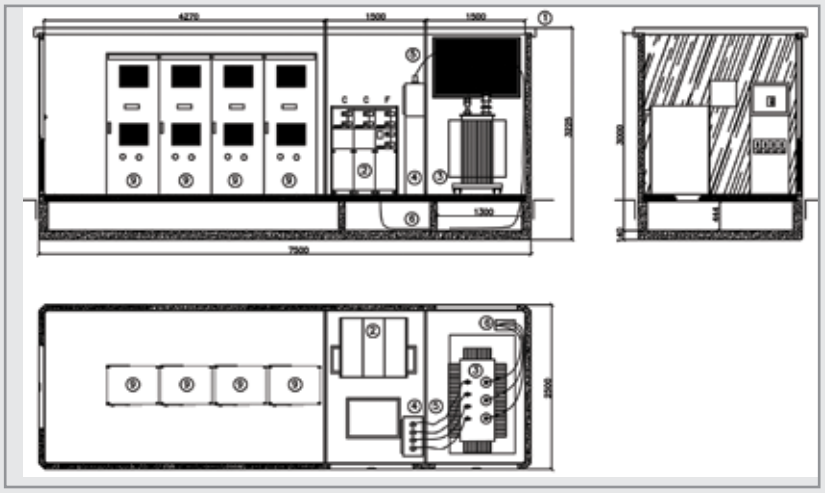




> Model 500 KW.

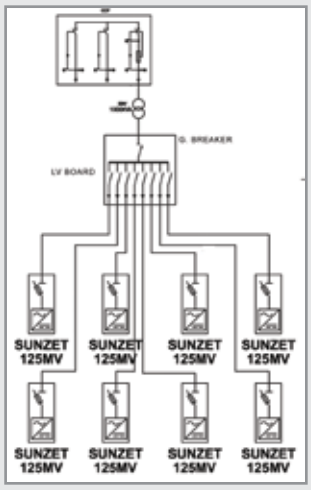
Electrical scheme and configuration

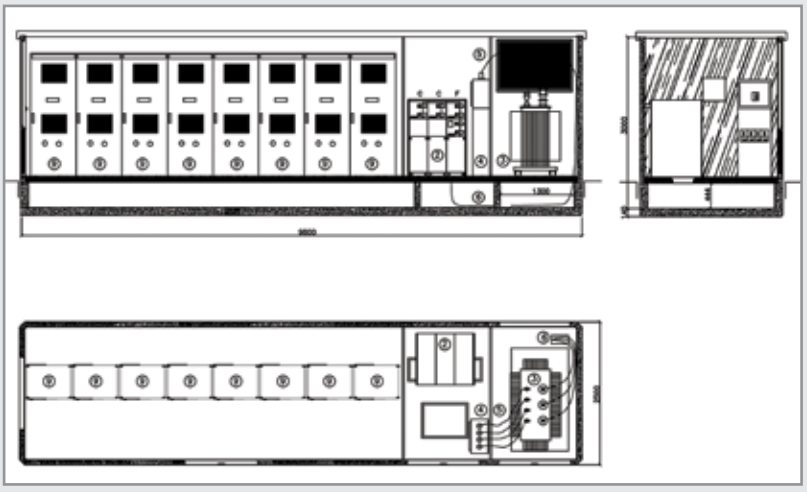




> Model 1MW.

Electrical scheme and configuration





MODULAR SUNZET TP

Three-phase on-grid central inverters range
Parallel modular architecture based on independent inverters T/TL/MV

Description

The high power range of Modular SUNZET TP central inverters is defined through a parallel compatible modular architecture based on independent Sunzet inverters, each one managing its own solar field with its own MPPT. These inverters and their parallel modular architecture have been thought to get the maximum yield of big solar plants.
Modular SUNZET TP central inverters provide high reliability and guaranteed operation. Another outstanding function is the high-energy efficiency of its MPPT, which is over 99%. One remarkable feature is its automatic regulation of reactive power and communications tools of every inverter. All its parameters are configurable both locally and remotely. Modular SUNZET TP inverters operate with an output voltage 3x450 V and comply with most European regulations concerning the support of voltage sags without disconnection. Due to their double-conversion architecture they never generate dangerous overvoltages when disconnection from mains.

Sunzet 500 TL

Features

- Range of input voltage (300-700 VDC)
- Maximum power point tracking (MPPT)
- High energy efficiency MPPT > 99%
- Very low harmonic distortion, THD < 3%
- Selectable power factor
- Direct mains connection (T & TL model)
- Unlimited parallel connection
- Anti-islanding protection with automatic shut down
- Monitoring from the unit with LCD
- Galvanic isolation through the transformer (T model)
- Strings current monitoring (with option “sunzet String Box“)
- IP21 protection level
- Protection against: inverse polarity, short-circuits, overvoltages, insulation failure with output to relay
- Service life of more than 20 years
- Automatic reactive energy regulation
- PC-based Web server program for full access to inverter data
- Maximum yield of solar plants
- Modularity
- Output voltage 3x400 and 3x450 V (T & TL model)
- DC and AC surge protections included
- Compatible with thin film modules
- ETHERNET communications ports
- Easy access through any web browser
- Remote SCADA (SWS 1000): communications system, parameter display, inverter records control, production data storage etc, (optional)

Connectivity and accessories

- **Sunzet Web server integrated**
  PC-based Web server program for full access to inverter data by Zigor to monitor and communicate with Modular SUNZET TP inverters. (integrated)
- **SWS 1000**
  The SWS 1000 Scada system is a platform for monitoring and registers variables, check and modify the settings as well as customize all parameters from the Modular SUNZET TP inverters. (optional)

See more information about connectivity and accessories on page 48

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ELECTRICAL CHARACTERISTICS			
Model	**Sunzet 500 T**	**Sunzet 500 TL**	**Sunzet 500 MV**
Continuous output power AC	500 KW		
Maximum recommended PV power	+5% to +20%		
Nominal DC power	≥ 512 KW		
Nominal AC voltage	3x400 V	3x450 V	
Nominal frequency	50 Hz		
Power factor	1 adjustable ± 0.8		
Maximum line current AC	640 A		
Current distortion AC	<3% THD of nominal power (1)		
Maximum open circuit voltage DC	880 V (2)		
Power tracking range (MPPT) DC	300 to 720 V		
Maximum input current DC	1440 A		
Maximum efficiency	96 %	98 %	98%
European efficiency	94.95%	96.78%	97.34 %
ENVIRONMENTAL AND MECHANICAL FEATURES			
Range of ambient temperatures	-10°C to +50°C (3)		
Type and grade of environmental protection	IP21		
Weight	3800 kg	1960 kg	1350 Kg
Dimensions (WxHxD) mm	880x2150x600	3600x2150x600	
Operating height	<1000 m without power loss		
Relative humidity	0 to 95% without condensation		
GENERAL FEATURES			
Cooling	Internal forced ventilation External fan control (6 Amax.)		
Protection	Inverse polarity, Over/Sub-voltage AC Over/Sub-frequency, Overvoltage DC		
User interface	Standard LCD		
Breakers (AC and DC)	Integrated in the system		
Communication software	Web server through Ethernet connection		
Equipment supervision SELF DIAGNOSTIC	Yes		
Data acquisition	SNMP		
SWS 1000 Scada system (option)	Ethernet, GSM modem (option), Data logger / Monitoring programme		
External measurements	2 analogue inputs for monitoring (option) Digital Inputs/Outputs		
STANDARDS AND SAFETY			
Certificates	CE Marking, VDE, ENEL		
Directives	2004/108/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-3) 2006/95/CE (EN 50178)		
Standards	IEC 62116 (2008) - Anti-islanding protection		
Countries standards			
Spain	PO 12.3		
Germany	VDE 0126-1-1		
Italy	DK5940 (Chapter 8.2 Annex 17. TERNA Adjustment)		
UK	G83		
France	Decree: Ministerial Order dated April 23, 2008		

(1) For THDV< 1% and Nominal Power.

(2) This voltage must not be exceeded under any circumstances.

(3) Under 40°C, the system operates with nominal values, at 50°C nominal values are maintained for two hours.

These specifications may be changed without notice.

Web server for single-phase SUNZET SP inverters

This is a PC-based Web server program to provide full access to the inverter data and to monitor and communicate with single-phase SUNZET SP inverters.
The Web server let the user to communicate with the inverters in different languages and record the following data.

- Status
- Parameters
- Events
- Event Log
- Production

The SUNZET SP range can be monitored remotely via the built-in Web server available in all models.
In order to use this monitoring tool, the inverter has to be connected to a TCP/IP network and to have a valid IP address within the LAN.
It´s needed a computer also connected to the same LAN and, in order to get access to the inverter's Web server, a browser program. Once launched the browser, the user has to type the IP address of the inverter to get access to it.
This tool provides the user a graphic and friendly environment to completely manage the solar plant.
The Web server is also capable to advise the user by sending e-mails of any possible dysfunction of the system in order to improve the maintenance tasks as well as the yield of the solar plant.

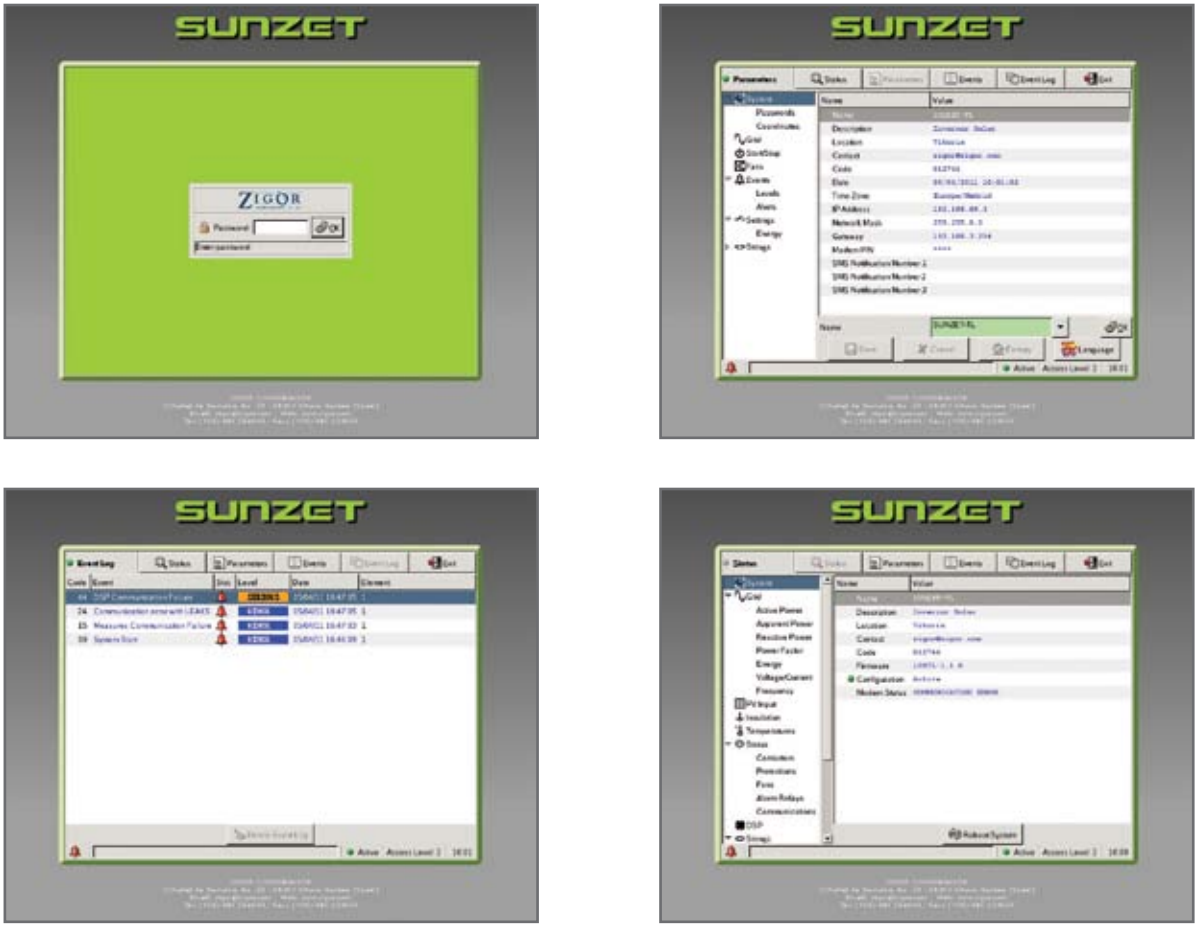
Web server for Sunzet SP inverter

Web server for three-phase SUNZET inverters

This is a PC-based Web server program to provide full access to the inverter data and to monitor and communicate with three-phase SUNZET inverters.
The Web server let the user to communicate with the inverters in different languages and record the following data.

- Status
- Parameters
- Events
- Event Log
- Production

The range of three-phase SUNZET can be monitored remotely via the built-in Web server available in all models. In order to use this monitoring tool, the inverter has to be connected to a TCP/IP network and to have a valid IP address within the LAN.
It´s needed a computer also connected to the same LAN and, in order to get access to the inverter's Web server, a browser program. Once launched the browser, the user has to type the IP address of the inverter to get access to it.
This tool provides the user a graphic and friendly environment to completely manage the solar plant.
The Web server is also capable to advise the user by sending e-mails of any possible dysfunction of the system in order to improve the maintenance tasks as well as the yield of the solar plant.



Web server for three-phase Sunzet inverters

SWS 100
SCADA System for string inverters SUNZET 5 OUT

The SWS 100 is the Scada Monitoring Systems designed by Zigor to monitor and communicate with single-phase SUNZET inverters through their RS485 serial port. The SWS 100 let the user to communicate with the inverters in different languages and record the following data:

> Daily production of each inverter
> Historical Production of each inverter (up to one year)
> Event log of every inverter (up to 20)

All recorded information can be downloaded by the user so that it can be post-processed through a CVS format file.
The SWS 100 is compatible with all SUNZET 5 OUT inverters models of its nominal power and can also monitor up to 25 units.

SWS 100

SWS 200
SCADA System for string inverters SUNZET TL

The SWS 200 is the Scada Monitoring Systems designed by Zigor to monitor and comunicate with single-phase inverters SUNZET through their RS485 serial port. The SWS 200 let the user to communicate with the inverters in different languages and record the following data:

> Daily production of each inverter
> Historical Production of each inverter (up to one year)
> Event log of every inverter (up to 20)

All recorded information can be downloaded by the user so that it can be post-processed through a CVS format file.
In order to make the SUNZET TL inverters capable to get monitored with the SWS 200 scada system, they have to be equipped with the RS485 card pluggeg in the available slot (option).

SWS 200

SWS 1000
SCADA system for three-phase SUNZET inverters and SUNZET SP inverters

The SWS 1000 Scada system is a platform for monitoring and register variables, check and modify the settings as well as customize all parameters from the three-phase SUNZET inverters and SUNZET SP. It can control up to 20 units, which makes the SWS 1000 a suitable tool to monitor a generation plant through a unique fixed IP address.

The SWS 1000 is compatible with three-phase SUNZET inverters and single-phase SUNZET SP inverters.

The SWS 1000 has a Web server in several different languages (selectable by the user) where the following functions can be run:

> Monitor any registration of variables of every SUNZET three-phase and SUNZET SP
> IP address settings, both of SUNZET inverter and Scada system
> Define and set the variables from the inverters to be queried
> Display the set values of every inverter on a selected date
> Download the variables from every inverter on a CSV format file

SWS 1000

When there´s not any Ethernet network available, the SWS 1000 Scada system can be access by using the Modem GSM (optional) offered by Zigor.