HIS

Single-phase hybrid inverter for batteries and grid or emergency generator

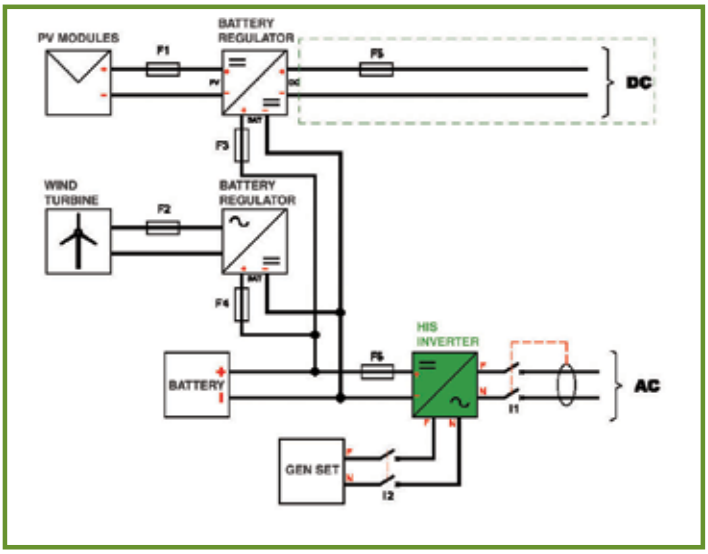
Description

The range of HIS hybrid inverters is designed to meet power requirements in locations not covered by the grid or where electricity is very expensive.
The main feature of hybrid HIS inverters is that they are capable of generating electricity from Batteries, from the Grid or Emergency Generator, in a controlled manner.
Hybrid HIS inverters combine the power from a fossil fuel to the DC resource, prioritizing the consumption from DC energies over the rest.
This function allows high energy savings in installations fitted with an emergency power generator. Optionally, they implement management strategies oriented towards energy saving.

HIS 6 & 8 models

Features

- Grid or Emergency Generators Input
- Wind Turbine and PV field compatible through external battery charge regulator
- Back-up battery
- Very low harmonic distortion THD< 3%
- Monitoring from the unit with LCD
- Galvanic isolation via transformer
- IP21 protection level
- Protection against: Inverse polarity, short circuits, overvoltages, isolation failure with relay output
- As back-up or for clients with high power availability requirements: Telecom installations, IT installations
- ECO mode available: inverter will not work if there´s no consumption
- Output to start external emergency Generation



on-grid solar plants | mid voltage solar plants | hybrid generation | energy saving | telecom back up | wind energy

ELECTRICAL CHARACTERISTICS						
Model	**HIS 1.2**	**HIS 2.4**	**HIS 3.6**	**HIS 5**	**HIS 6**	**HIS 8**
Reference	18718	18717	18716	18715	18714	18712
VA / Watts	1.2KVA/800W	2.4KVA/ 1600W	3.6KVA/ 2400W	5KVA/4000W	6KVA/6000	8KVA/8000
Nominal Input Voltage	220VAC(+20%~-45%) ; 120VAC(+20%~-45%) ; 50Hz(±10%) ; 60H z(±10%)					
Output Voltage	220VAC (230V or 240VAC readjustable by means of the LCD panel) 110 VAC (115V or 120VAC readjustable by means of the LCD panel)					
Voltage regulation	< 3% of the efficient value for the entire voltage range of the battery					
Output frequency	50Hz or 60Hz					
Frequency Regulation (Battery Mode)	± 0.1Hz					
Power Factor	0.8				1.0	
Waveform	Pure sinusoidal wave					
Efficiency	AC-AC >98% DC-AC > 75%	AC-AC >98% DC-AC > 75%			AC-AC >98% DC-AC > 80%	
Overload Protection	110% ~ 150% for 30sec. >150% for 200ms					
Typical Transfer Time	< 8 ms.					
BATTERY						
Battery voltage	24V				48V	
Reserve time (with complete load)	In function of battery power range					
Maximum charging current (5 selectable steps)	> 30A				> 60A	
Maximum Solar charging current	50A					
GENERAL FEATURES						
Acoustic Noise (dB)	<55 dBA (at 1m)					
Type of Protection	IP20					
Temperature Range	0ºC ~ +40ºC : 32 ~ 104ºF					
Relative Humidity	0-95% without condensation					
Dimensions(WxHxD) mm	298x400x150	298x450x190	298x450x190	415x600x260	415x600x260	415x600x260
Weight (Kg)	14	21	23	49.2	51.4	53.6
STANDARDS						
Certificates	CE Marking					
Directives	73/23/CEE-93/68/CEE 2004/108/CEE					
Standards	EN 62040-1-1 EN 62040-2, EN 61000-3-2, EN 61000-2-2, EN 55022					

These specifications may be changed without notice.

HITC

Three-phase hybrid inverter
(for solar or wind generation, batteries and grid or emergency)

Description

The range of HITC hybrid inverters is designed to meet power requirements in locations not covered by the grid, hybrid rural electrification and distributed generation. The main feature of hybrid HITC inverters is that they are capable of generating electricity from Solar or Wind resources, from Batteries, from the Grid or Genset.
Zigor three-phase HITC hybrid inverters have been designed to add energy from several different sources while controlling all of them from a unique management system.

HITC 100 KW

Features

- Grid or Genset
- Wind Turbine or PV field input through internal regulator
- Back-up battery
- Range of input DC voltages (450-700 VDC) for solar panels
- Maximum power point tracking (MPPT) for solar panels
- High energy efficiency MPPT > 99%
- Very low harmonic distortion THD< 3%
- Monitoring from the unit with LCD
- Galvanic isolation via transformer
- Strings Currents monitoring for solar panels (option)
- IP21 protection level
- Protection against: Inverse polarity, short circuits, overvoltages, isolation failure with relay output
- Web server program on PC for full access to HITC inverter data
- Hybrid mains connection consumption points with limited power capacity or in which energy saving is a necessity
- As back-up or for clients with high power availability requirements: Telecom installations, IT installations
- Web server through Ethernet communication port
- Easy access through any web browser

Connectivity and accessories

- **Sunzet Web server integrated**

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

See more information about connectivity and accessories on page 48

on-grid solar plants | mid voltage solar plants | **hybrid generation** | **energy saving** | **telecom back up** | **wind energy**

ELECTRICAL CHARACTERISTICS			
Model	**HITC 30**	**HITC 50**	**HITC 100**
Reference	16288	300552 (50 Hz) 300553 (60 Hz)	016290 (50 Hz) 016291(60 Hz)
Maximum Continuous output power	30 KW	50 KW	100 KW
Recommended PV for rated power	≥ 31 Kwp	≥ 52 Kwp	≥105 Kwp
Nominal output frecuency	50 / 60 Hz		
Power factor at full load	>0.99		
Maximum output current per phase	83/45 A	139/76 A	278/152 A
Voltage distortion AC	<3% at full load (2,5%)		
Nominal output voltage	208/220/240/380/400/440 Vac (3F+N)		
Maximum power efficiency	>96% (including transformer)		
MPPT efficiency	99%		
Internal consumption in operation	<1% at full load		
Isolation transformer	Internal		
AC / DC Switches	Internal		
Monitoring and supervision	Autochecking / Data and event log / Graphics software for communications		
User interface	2-line display, keyboard and 3 leds		
External interface	Standard: Ethernet, SNMP / Option: GSM modem		
INPUT GENERATOR SET			
Nominal power	≥ 30 KW	≥ 50 KW	≥ 100 KW
Nominal voltage	208/220/240/380/400/440 Vac (3F+N)		
Nominal frecuency	50 / 60 Hz		
Maximum current per phase	139/76 A	194/106 A	389/213 A
BATTERY			
Nominal voltage	350 Vdc		
Voltage range	300 / 420 Vdc		
Charge maximum current	50 A	50 A	100 A
Discharge maximum current	103 A	173 A	350 A
INPUT PV			
MPPT voltage range	420 / 700 Vdc		
Maximum current	74 A	125 A	250 A
Maximum voltage	880 Vdc (1)		
Number of inputs	1		
GENERAL INFORMATION			
Operating ambient temperature range	-10ºC to +50ºC		
Cooling	Forced Air and external fan control (6 A)		
Relative Humidity	0% to 95% Non condensing		
Operating altitude	<1000 m without loss of power		
Enclosure rating	IP21 - standard		
Cabinet dimensions (HxWxD) (mm)	1950x1200x630 (400 Vac model) 1950x1300x630 (500 Vac model)		2150 x 1600 x 600
Cabinet Weight	830 Kg	850 Kg	1320 Kg
STANDARDS			
Certificates	CE Marking		
Directives	2006/95/CEE-93/68/CEE 2004/108/CEE		
Standards	IEC-62109-1		

(1) This voltage must not be exceeded under any circumstances

These specifications may be changed without notice.

328ENFT02

HITD

Hybrid Inverters for Distributed Micro-Grid Applications and Rural Electrification

Description

In order to attend the growing demand for Rural Electrification and Distributed Generation based on Hybridizing renewable and fossil power sources, Zigor has developed a range of Hybrid Inverters for medium and high power solutions, covering from 30 KVA to 1800 KVA and based on two different topologies: HITC (for small mini-grid and centralized systems) and HITD for those installations where it is more suitable to distribute the Generations Resources along the micro-grid. The Hybrid Inverter Range HITD has been specially designed to build distributed hybrid micro-grid, allowing sharing the electricity generation from several different sources based on renewable as well as other generating or storage sources.

The Hybrid Inverter Range HITD can also be connected to Fuel Generators so that avoids any blackout in the micro-grid in case the renewable generation cannot cover the load demand. The Hybrid Inverter Range HITD is also capable to be connected to existing distribution grid. In these cases, the HITD Inverters will manage the energy flow between the micro-grid and the Distribution Grid. This functionality makes possible the energy return to the Distribution Grid when the generation exceeds the consumption as well as to work autonomously even if the Distribution Grid is not available.

HITD 300 KW

Features

- Hybrid System that allows the integration of different generation sources along the micro-grid, assuring the stability of the micro-grid either connected or isolated from a Distribution Grid
- Nominal Power from 150 KVA to 1800 KVA (based on inverter modules of 150 KVA)
- Compatible with the existing protection Systems already installed
- Maximum strength of the system
- Compatible with other emergency generation Systems, like Generation Sets.
- Allows the micro-grid Management through TCP/IP
- Digital Management System DSP
- Capable of managing batteries of high capacity for big autonomies

The HITD Hybrid Inverters consists of the following five basic systems:

1. Generation System (Hybrid Inverter HITD)
2. Energy Storage System (Battery)
3. Regulation and Control System (CONTROL V/F)
4. Monitoring and Management System (SCADA)
5. Bypass system

* Additionally, the Hybrid Inverter HITD architecture allows the integration of PV Solar, Wind and Battery Generation Systems from Zigor: SUNZET, BATGEN, WINDZET.

on-grid solar plants | mid voltage solar plants | hybrid generation | energy saving | telecom back up | wind energy

Web server for HITC

This is a PC-based Web server program to provide full access to the inverter data and to monitor and communicate with three-phase hybrid inverters HITC.

The Web server let the user to communicate with the inverters in different languages and record the following data:

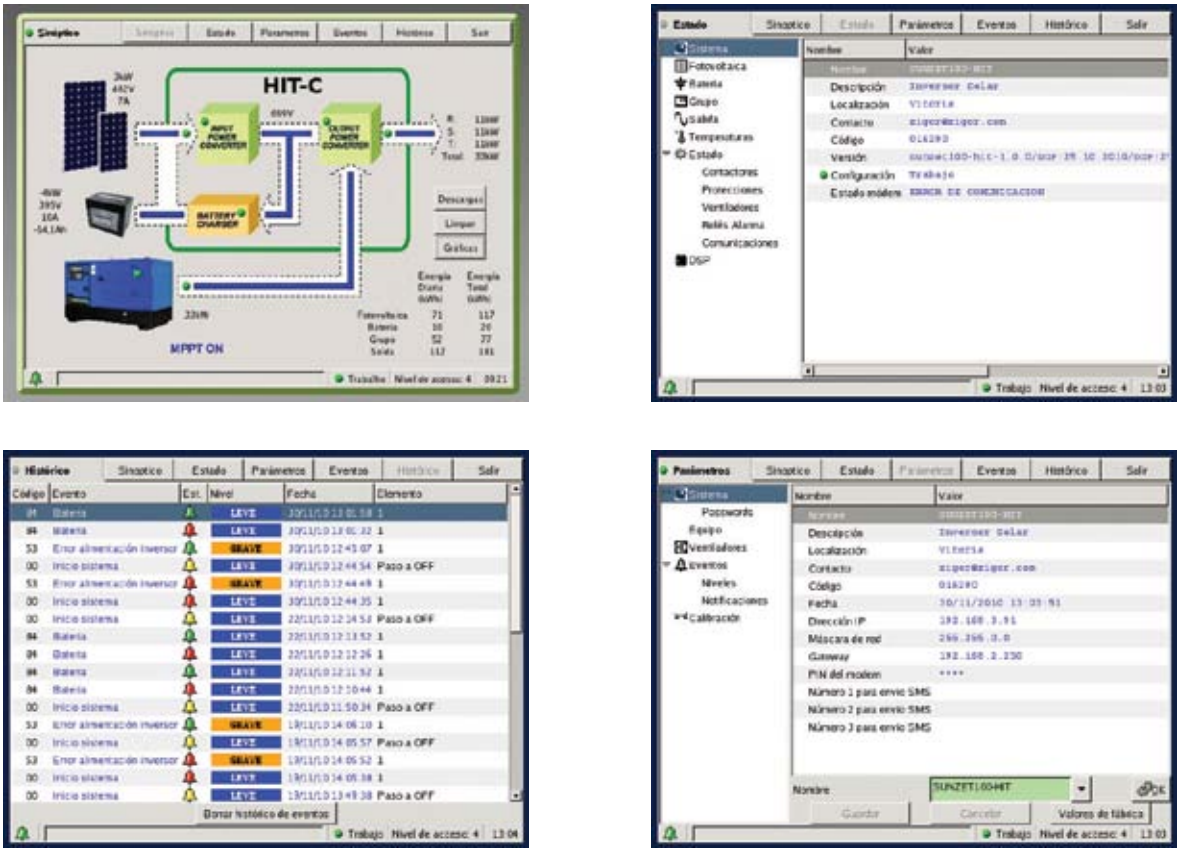
- Status
- Parameters
- Events
- Event Log
- Production

The range of HITC 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 hybrid inverter HITC

Web server for BAT GEN system

This is a PC-based Web server program to provide full access and to monitor and communicate with BAT GEN systems.
The Web server let the user to communicate with the BAT GEN systems in different languages and record the following data:

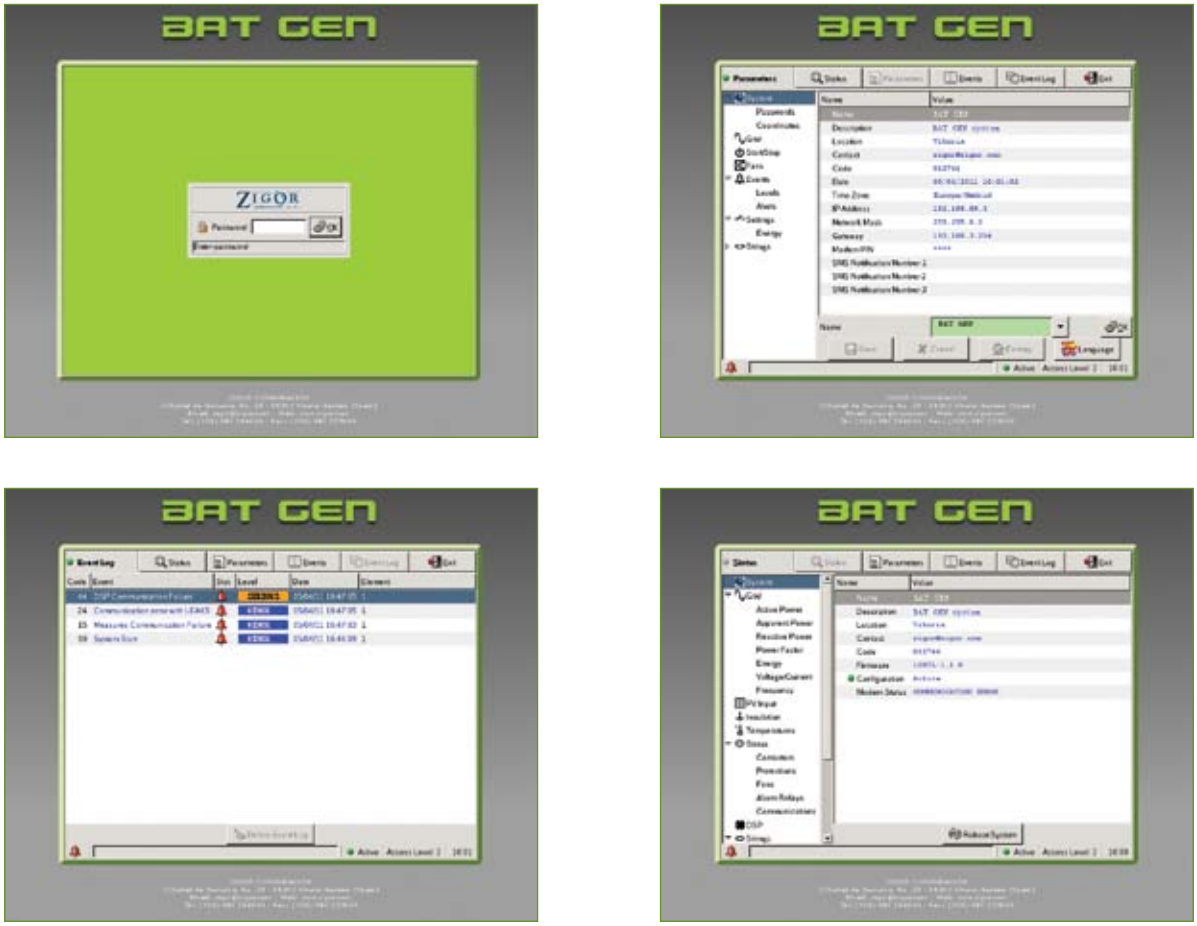
- Status
- Parameters
- Events
- Event Log
- Production

The range of BAT GEN systems can be monitored remotely via the built-in Web server available in all models.

In order to use this monitoring tool, the system 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 BAT GEN´s Web server, a browser program. Once launched the browser, the user has to type the IP address of the system to get access to it.

This tool provides the user a graphic and friendly environment for a complete management. 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.



Web server for BAT GEN system

SWS 2000
SCADA system for hybrid inverters HITC

The SWS 2000 Scada system is a platform for monitoring and register variables, check and modify the settings as well as customize all parameters from the hybrid inverters HITC. It can control up to 20 units, which makes the SWS 2000 a suitable tool to monitor a generation plant through a unique fixed IP address.

The SWS 2000 is compatible with hybrid inverters HITC.

The SWS 2000 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 hybrid inverter HITC
- IP address settings, both of HITC inverter and SCADA system
- Display the set values of every inverter on a selected date
- Download the variables from every inverter on a CSV format file

SWS 2000

When there´s not any Ethernet network available, the SWS 2000 Scada system can be access by using the Modem GSM (optional) offered by Zigor.