SINGLE-PHASE HYBRID SYSTEM

HIS COMPACT

Hybrid Reliable Microgrid

Single-phase modular hybrid inverter for Solar & Wind generation, Batteries and Grid or Generator

Description

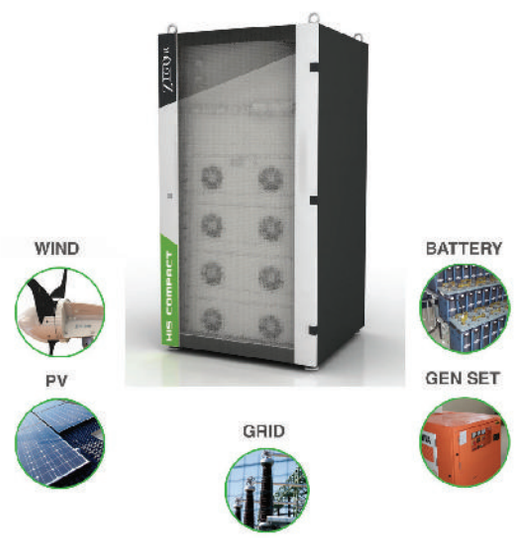
The **HIS Compact** series has been designed to provide Power Supply for those applications where accessibility to grid or cost of electricity is a big issue:

- Off-grid areas
- Rural electrification
- Electricity provided by Diesel Generators

The main feature of Zigor **HIS Compact** series of Hybrid Inverters is the capability to manage energy from various and different sources like PV Field, wind Turbines, Batteries, Diesel Generator and/or Grid.

In addition to this, the **HIS Compact** Hybrid Systems are able to accommodate and sum-up the energy from various sources while controlling all of them through its unique management system. Likewise, the HIS Compact systems are capable to manage the functioning of the assigned Gen Set, keeping them stopped when their energy in not needed.

The Zigor **HIS Compact** series of Hybrid Inverters have a modular and scalable concept where it is very easy to increase the capability by increasing the size of the PV field, the number of Wind Turbines, the power of AC input and/or the size of the battery bank.



HIS Compact

Features

> Best Efficiency
> Competitive Distributed Generation
> Professional Rural Electrification
> Hybrid Solar, Wind, Battery, Grid, GS
> Reliable Energy Micro Grid
> Maintainable, Modular and Scalable
> Easy to Transport, Install and Repair
> Web Server Remote Monitoring (optional)
> Compatible with Lithium Batteries
> Maximum power point tracking (MPPT) for renewable inputs
> Protection against: Inverse polarity, short circuits, over voltages, isolation failure with relay output
> Galvanic isolation through the transformer

Connectivity and accessories

> **HIS Compact Web server integrated (optional)**

The Hybrid Inverter from **HIS Compact** Series is equipped with an internal Web server program to provide full access to the system, to monitor in real time the status and variables of the operation as well as to communicate with them.

The beauty of this communication facility is that the user doesn´t need any special software to be loaded into the computer or a special communication hardware to be configured for it. By having an Ethernet network (TCP/IP), giving a valid IP address to the Hybrid Inverter and launching a Internet Browser, the user gets direct access to all information about the HIS Compact System, this is:

- Status
- Parameters
- Events log
- Alarms

This unique tool provides the user a graphic and friendly environment to completely monitor and manage the HIS Compact system. The Web server is also capable to advise the user by sending mails, about any possible dysfunction of the System. This allows not only to reduce inoperative time of the system but to improve maintenance tasks and the availability of the System.

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

OUTPUT MODULE + RENEWABLE MANAGEMENT: ELECTRICAL CHARACTERISTICS			
Model	**HIS Compact 4**	**HIS Compact 5**	**HIS Compact 7**
Nominal output power	4 kW	5 kW	6,6 kW
Nominal output frequency		50 / 60 Hz	
Power factor at full load		1	
Voltage distortion AC		<3% at full load (2,5%)	
Nominal output voltage		100/120/220/230 (single-phase) 108+108 V (bi-phase)	
Maximum power efficiency		>96% (including transformer)	
Renewable source Nominal Power		2 x 3,3 kW	
Renewable Maximum current		2 x 23,4 A	
Maximum voltage DC		500 Vdc (3)	
MPPT voltage range		150 V ÷ 450 Vdc	
MPPT efficiency		99%	
Number of MPPT inputs	2	2	2
BATTERY MANAGEMENT/GENERATOR SET MODULE (1)			
Gen set Nominal power	6 kVA	7,5 kVA	10 kVA
Gen set Nominal voltage		100/120/220/230 (single-phase) 108+108 V (bi-phase)	
Gen set Nominal frequency		50 / 60 Hz	
Gen set Maximum current	50/26 A	63/33 A	83/44 A
Battery Nominal voltage		264 Vdc	
Battery Voltage range		150 to 350 Vdc	
Battery Maximum charge current		45 A	
Battery Maximum discharge current		49 A	
WIND/PV MANAGEMENT MODULE (2)			
Renewable source Nominal Power		2 x 6,6 kW	
Renewable Maximum current		2 x 46,8 A	
Maximum voltage DC		500 Vdc (3)	
MPPT voltage range		150 V ÷ 450 Vdc	
MPPT efficiency		99%	
Number of MPPT inputs	2	2	2
SYSTEM INFORMATION			
Internal consumption in operation		<1% at full load	
Isolation transformer		Internal	
AC / DC Switches		Optional	
Local monitoring and supervision		Autochecking / Data and event log	
User interface		2-line display, keyboard and 3 leds	
External interface		Option: Ethernet, SNMP / Option: GSM modem	
Operating temperature range		-10°C to +50°C	
Cooling		Forced Air	
Relative Humidity		0% to 95% Non condensing	
Operating altitude		<1000 m without loss of power	
Enclosure rating		IP21 - standard	
STANDARDS			
Certificates		CE Marking	
Directives		2006/95/CEE-93/68/CEE 2004/108/CEE	
Standards		IEC-62109-1	

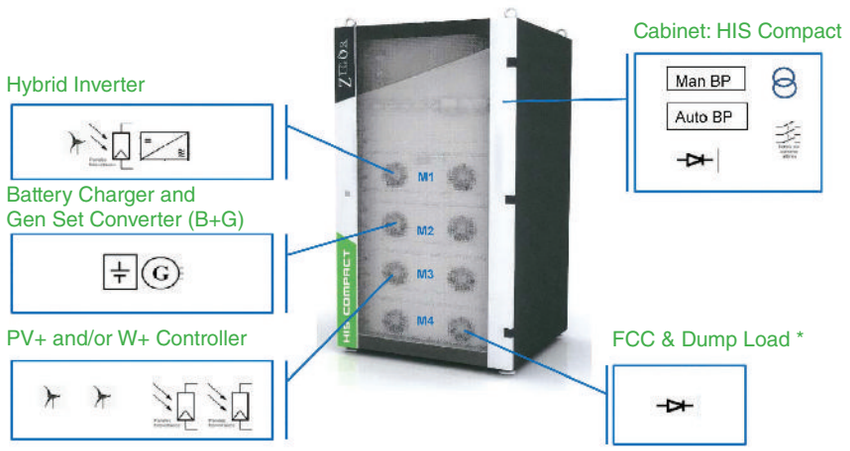
(1) To increase Battery capacity, additional Management Modules could be added to the system.

(2) To increase PV field or wind turbines, additional wind/PV management modules could be added to the system.

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

These specifications may be changed without notice.

> His Compact Possible Configurations



** M4 is reserved for FCC & Dump Load when configuring wind turbines LE2000 or LE6000. LE600 do not require FCC*

SOLAR PANELS CONFIGURATION				
Basic Solar				
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
				Up to 6,6 kWp (2 MPPT)

Medium Solar				
	Module Rack Position			
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
Solar Panel Controller (PV+)			x	
				Up to 19,8 kWp (4 MPPT)

Big Solar				
	Module Rack Position			
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
Solar Panel Controller (PV+)			x	x
				Up to 33 kWp (6 MPPT)

WIND CONFIGURATION				
Basic Wind				
Module Type	M1	M2	M2	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
				Up to 6,6kW (1 or 2 turbines)

Medium Wind				
	Module Rack Position			
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
Wind Controler (W+)			x	
				Up to 19,8kW (2 to 4 turbines)

SOLAR AND WIND CONFIGURATION				
Basic Solar and Wind				
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
				Up to 3,3kWp (1 MPPT) and 1 turbine < 3,3 kW

Medium Solar and Wind				
	Module Rack Position			
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
PV+ or W+			x	
Up to 3,3kWp (1 MPPT) and 1 turbine < 3,3 kW and + 13,2kWp (2 MPPT) or + 13,2kW Wind (1 or 2 turbines)				

Big Solar and Wind				
	Module Rack Position			
Module Type	M1	M2	M3	M4
Hybrid Inverter	x			
Battery Charger and Gen Set Converter (B+G)		x		
PV+			x	x
				Up to 3,3kWp (1 MPPT) and 1 turbine < 3,3 kW and + 20kW PV (4 MPPT)

BATTERY CONFIGURATION	
Charging Parameters	Max Battery Capacity
Charging Current	0 to 50 Amps
Battery Voltage	150 to 350 VDC
Battery technology	Lead Acid, Li, Ni-Cd, Flow

HIS COMPACT CABINET OPTIONS	
Web Server	x
Gen Set Rectifier and Automatic ByPass (230)	x
Gen Set Rectifier and Automatic ByPass (110)	x
PV and Wind Breakers Basic Configuration	x
PV and Wind Breakers Medium Configuration	x
PV and Wind Breakers Big Configuration	x
Battery Breaker	x
Earth Leakeage Detector (230)	x
Earth Leakeage Detector (110)	x
AC Breaker (230)	x
AC Breaker (110)	x
FCC 2000	x

GENERAL CHARACTERISTICS	
HIS Compact output Power	4kW, 5kW and 6,6kW
Output Voltage	110V, 230V, 100V+100V
System Frequency	50Hz/60Hz
Recomended Gen Set Power	1,5 x Output Power