INDEX

Energy

Transmission and distribution

Industry

UPS

always ON

ENERGY

In **ZIGOR** we offer **power generation systems and solutions**, optimizing the management of the different energy sources available. The particular needs of the different projects have provided us with information on market concerns, offering customizable solutions for each project and customer, facilitating integration into their facilities, increasing the reliability of the whole system and reducing installation and maintenance costs.

All this has allowed us to provide **grid-tied photovoltaic solar inverters** capable of operating at full power in extreme conditions of temperature and altitude. Moreover, we can design and supply **Central Inverters** (Power Station) **for generation plants optimizing the initial investment or its operating costs and productivity.**

Likewise, **ZIGOR** has a **wide range of solar inverters for residential and industrial self-consumption** applications that enable optimizing the electricity bill by taking advantage of solar radiation both at the time it occurs and at night time using efficient battery storage systems of various technologies.

Our range of solutions for **power generation in remote or disconnected locations** makes possible to tackle with projects from tens of watts to hundreds of kilowatts, managing installation components such as photovoltaic inverters, batteries, generators, etc. and providing high quality and reliable systems. Thanks to our experience we have performed **rural electrification facilities** (domestic and community), power to remote telecommunication nodes, electrification in farms, etc.

ZIGOR has **Innovation** as its hallmark; we are currently participating in storage system projects in support of the distribution grid in Low and Medium Voltage. Our **bi-directional converters** are capable of operating with **traditional** (Lead, Ni-Cd) **and new** (Lithium, Redox, Flyweel) **storage systems**, always from our commitment to the development of new systems that provide advantages to our customers.

ZGR PCS
ENERGY STORAGE

always ON

ZGR PCS are 3-phase On-Grid bidirectional inverters specially designed for energy storage systems.

ZGR PCS is designed to meet the needs of all types of energy storage plants with respect to the power grid. ZGR PCS range of 30/50/100/150 kVA combines design and versatility with its simplicity of handling and modularity. Thanks to its versatility, it allows multiple MVA installations and is compatible with most storage technologies (Pb-Acid, Ni-Cd, Redox).

CHARACTERISTICS

- » Wide range of battery voltage
- » Complete IGBT bridge
- » Output voltage standard, 400V
- » Low harmonic distortion THD < 3%
- » Selectable power factor
- » Direct grid connection
- » Possibility of parallel connection without limitation
- » Anti-island surveillance with automatic disconnection
- » LCD equipment monitoring
- » Galvanic isolation through transformer*
- » IP21 degree of protection

- » Protection against:
  - Reverse polarizations
  - Short-circuits
  - Overvoltages
  - Isolation fault with output to relay
- » Automatic reactive regulation
- » Integrated web server for display parameters, data logging, etc.
- » Compatible with Pb-Acid, Ni-Cd, Redox

* *Optional*

CONNECTIVITY AND MONITORING

INTEGRATED WEB SERVER

Web server to provide full access to all information of ZGR PCS equipment, to monitor and integrate it with plant controllers.

TECHNICAL SPECIFICATIONS								
Equipment	ZGR PCS 30		ZGR PCS 50		ZGR PCS 100		ZGR PCS 150	
Model	30 kVA T	30 kVA TL	50 kVA T	50 kVA TL	100 kVA T	100 kVA TL	150 kVA TL	
Nominal power	30 kVA		50 kVA		100 kVA		150 kVA	
ELECTRICAL CHARACTERISTICS								
AC nominal voltage	380 - 400 V (Three-phase)							
Nominal frequency	50 / 60 Hz							
Power factor	1 adjustable ± 0.8							
AC power	30 kW		50 kW		100 kW		150 kW	
Maximum battery discharge power	≥ 31 kW		≥ 52 kW		≥ 105 kW		≥ 158 kW	
AC maximum current	44 A		73 A		145 A		218 A	
AC current distortion	< 3 % THD at nominal power [1]							
Battery voltage	350 – 720 Vdc							
Maximum battery voltage	880 V [2]							
Num. max. equipments in parallel	N x 30 kW		N x 50 kW		N x 100 kW		N x 150 kW	
Peak efficiency	96 %	98 %	96 %	98 %	96 %	98 %	97,6 %	
COMMUNICATIONS								
Monitoring	Web interface, LCD screen							
Communications	Ethernet, SNMP							
PROTECTIONS								
DC reverse – polarity	Yes							
AC surge/ AC undervoltage	Yes							
DC overvoltage	Yes							
AC and DC isolators	Integrated into the system							
Over/Under frequency	Yes							
Monitoring: self-testing	Yes							
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS								
Range ambient temperature	- 10 °C to + 50 °C [3]							
Degree of environmental protection	IP21							
Operating altitude	< 1000 m without power loss							
Relative humidity	0 to 95 % without condensation							
Dimensions (HxWxD)	2150 x 800 x 600 mm				2150 x 1200 x 600 mm		2150 x 800 x 600 mm	
Approx. Weight	500 kg	270 kg	600 kg	320 kg	1020 kg	490 kg	450 kg	
STANDARDS								
Marks	CE							
General directives	2004/108/CE (UNE-EN 61000-6-2/UNE-EN 61000-6-4), 2006/95/CE (EN 50178)							
Regulations	IEC 62116 (2008)-Anti –islanding protection							

[1] For THDV < 1% and nominal power
[2] The voltage of the battery must not exceed this value in any case.
[3] Without power reduction for temperatures under 45 ºC.
** Other values of battery voltage and AC connection voltage are possible. Check with ZIGOR.*
** These specifications may change without notice.*

DIMENSIONS

ZGR PCS 30 / 50

ZGR PCS 100

ZGR PCS GRID
ADVANCED ENERGY STORAGE

always ON

ZGR PCS GRID has advanced grid stabilization and regulation functions.

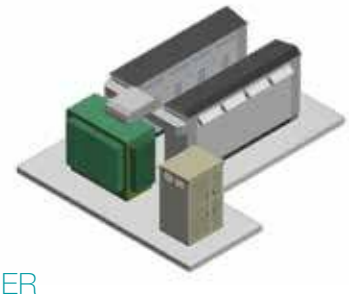
ZGR PCS GRID is a three-phase inverter with the latest bidirectional technology. The objective of the equipment is to convert the energy of the grid into energy in batteries and return it when there is energy demand.

This system facilitates the integration of renewable energies and allows reducing investments in the grid to improve its stability or demand growth.

Thanks to its different operating modes, ZGR PCS GRID offers grid operators and other grid agents an integral tool for a more flexible energy distribution by regulating power, voltage and frequency, guaranteeing the availability of the electrical grid; it also has Black-Start function, increasing the manageability of the energy within the installation. In addition, ZGR PCS GRID inverters can be integrated into a container-type solution providing the necessary flexibility and robustness to power generation systems. This type of integral solutions guarantees the operation and monitoring of the installation at all times, with a considerable reduction of the operation and installation costs.

Container solutions are a perfect solution for large-scale storage projects and are specially designed to meet the most demanding specifications and to operate under adverse environmental conditions.

SKID



CONTAINER

CHARACTERISTICS

- Automatic operation modes:
  - Frequency control
  - Black-Start (island mode)
  - Active energy reserve
  - Voltage control
  - Active / Reactive power control
- Low harmonic distortion, HF filter integrated
- Quick response to set point changes
- Wide range of working temperatures, from 0 ºC to +50 ºC
- Scalable, parallel equipments of 300 kVA
- AC protections:
  - Short-circuits and overcharges
  - Overvoltages and low voltages
  - High frequency
- DC protections:
  - Overvoltage
- AC and DC isolator integrated
- Galvanic isolation*
- Local monitoring via LCD screen
- Remote monitoring via Web Server
- Supports various communications standards: SNMP, TPC/IP
- Other communication standard on demand: IEC 104, etc.

* *Optional*

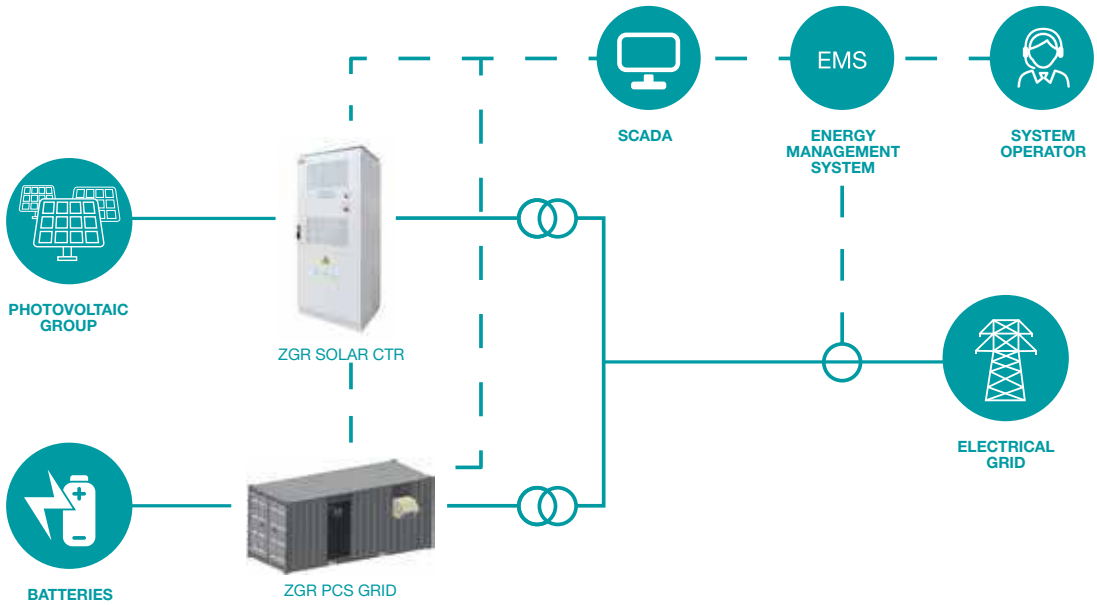
CONNECTIVITY AND MONITORING

Communication gateway integrated. It enables the communication via Web server (http). The web server provides full access to all information of ZGR PCS GRID: voltage and current measures, alarms, configuration, etc.

TECHNICAL SPECIFICATIONS		
Model	ZGR PCS GRID 150	ZGR PCS GRID 300
ELECTRICAL CHARACTERISTICS		
AC nominal voltage	150 kVA	300 kVA
AC nominal voltage	3 x 400 V	
Nominal frequency	50 / 60 Hz	
Power factor	1 adjustable ± 0.8 (without exceeding the apparent power of the inverter)	
Phase nominal current	217 A	435 A
AC current distortion	< 3 % THD at nominal power (1)	
Battery voltage	600 – 850 Vdc (2)	
DC maximum current	257 A	515 A
DC maximum current	97 %	
Battery charging current limitation	Configurable	
COMMUNICATIONS		
Monitoring	Web interface, LCD control panel, LED signalling	
Communications	SNMP, Ethernet	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Protections	AC surge, AC low voltage, oven and under frequency, DC surge	
Cooling	Forced ventilation	
Range ambient temperature	- 10 °C to + 50 °C	
Degree of environmental protection	IP 21	
Operating altitude	< 1000 m without power loss	
Relative humidity	0 a 95 % without condensation	
Dimensions (HxWxD)	800 x 2150 x 600 mm	
Approx. Weight	360 kg	450 kg
STANDARDS		
Marks	CE	
General directives	2004/108/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-4), 2006/95/CE (EN 50178)	

(1) For THDV < 1% and nominal power.
(2) The voltage of the battery must not exceed this value in any case.
** To customize the equipment consult ZIGOR*
** These specifications may change without notice.*

USE CASE



ZGR SOLAR STR 2/3/4/5
STRING SINGLE-PHASE INVERTERS

always ON

ZGR STR 2/3/4/5
inverters offer high energy efficiency with compact and lightweight design, being ideal for residential integrations.

ZGR SOLAR STR string inverters are easy-to-use devices that have been designed to meet the needs of residential grid connection.

In an effort to improve the functionalities of domestic photovoltaic installations, these inverters offer efficiency greater than 97% as well as local and remote monitoring functionalities.

This new range of string inverters offers a power range between 2 and 5 kW, with a noise level below 25 dB, not affecting the comfort of the household.

APPLICATIONS

DOMESTIC USE

PHOTOVOLTAIC

ENERGY SAVINGS

SELF-CONSUMPTION

CHARACTERISTICS

- Maximum Power Point Tracking (MPPT)
- Efficiency greater than 97%
- Reduced harmonic distortion <3%.
- Suitable for integration into self-consumption facilities
- Local monitoring via LCD
- Easy installation (Plug & Play)
- Compact and lightweight design
- Reduced noise level
- Cooling by natural ventilation

TECHNICAL SPECIFICATIONS				
Model	ZGR SOLAR STR 2	ZGR SOLAR STR 3	ZGR SOLAR STR 4	ZGR SOLAR STR 5
Power	2000 W	3000 W	4000 W	5000 W
INPUT ELECTRICAL CHARACTERISTICS				
FV maximum voltage	500 Vdc			
Voltage range (MPPT)	100 – 490 Vdc			
Voltage range (MPPT) for full power	190 – 400 Vdc	240 - 400 Vdc	165 – 400 Vdc	240 - 400 Vdc
Number of MTTP	1		2	
DC maximum current per input	11 A	13 A	2 x 13 A	2 x 13 A
OUTPUT ELECTRICAL CHARACTERISTICS				
Output maximum power	2000 W	3000 W	4000 W	5000 W
AC output nominal voltage	230V ± 20%			
Frequency range	50 / 60 Hz (± 5 Hz)			
Power factor	1 (± 0,9 - adjustable)		1 (± 0,8 - adjustable)	
THDi	< 3 %			
COMMUNICATIONS				
Monitoring	LCD display			
Communications	RS 485			
PROTECTIONS				
AC leakage current fault	Yes			
Ground fault detection	Yes			
Anti-islanding	Yes			
Reverse – polarity	Yes			
AC surge	Yes			
DC overvoltage	Yes			
GENERAL CHARACTERISTICS				
Maximum efficiency	97,6 %		97,5 %	
European efficiency	97 %			
MPPT efficiency	> 99,9 %			
Cooling	Natural convection			
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS				
Range ambient temperature	-25°C to +60°C			
Degree of environmental protection	IP 65			
Relative humidity	0 a 95 % without condensation			
Noise level	< 25 dB			
Dimensions	264 x 326 x 127 mm		329 x 466 x 149 mm	
Approx. Weight	8,1 kg	8,6 kg	14,9 kg	15,5 kg

** These specifications may change without notice.*

DIMENSIONS

ZGR SOLAR STR 2/3

ZGR SOLAR STR 4/5

CONNECTIONS

ZGR SOLAR STR 4/5

ZGR SOLAR STR 20/50
THREE-PHASE STRING INVERTERS

always ON

ZGR STR 20/50 solar inverters offer high energy efficiency with a compact and lightweight design.

String inverters ZGR SOLAR STR are easy-to-use devices that have been designed to meet the needs of all solar power plants connected to the grid.

In an effort to improve the performance of solar plants, these inverters offer high energy efficiency, greater than 98%.

ZGR SOLAR STR inverters have an LCD display, to make it easier for the user to access the information of the inverter and its parameters.

This new range of string inverters offers a DC input voltage range between 480 to 800 Vdc and an IP 65 tightness rating.

APPLICATIONS

INDUSTRY

PHOTOVOLTAIC

SELF-CONSUMPTION

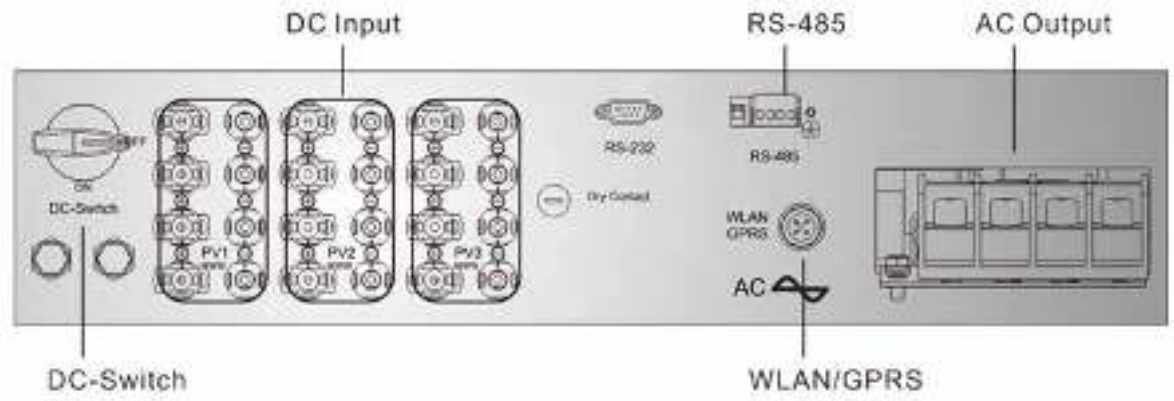
CHARACTERISTICS

- Maximum Power Point Tracking (MPPT)
- High efficiency, greater than 98%
- Reduced harmonic distortion, THD <3%
- Direct grid connection
- Parallel connection without limitation
- Anti-island protection with automatic disconnection
- Local monitoring via LCD
- Protection against:
  - Reverse - polarity
  - Short-circuits
  - Overvoltages
  - Isolation faults
- Compact and lightweight design, easy installation

TECHNICAL SPECIFICATIONS		
Equipment	ZGR SOLAR STR 20	ZGR SOLAR STR 50
Model	20K	50K
INPUT ELECTRICAL CHARACTERISTICS		
Maximum AC power	22kW	55kW
FV maximum voltage	1000V	
FV nominal voltage	620 V	
Voltage range (MPPT)	250 V ~ 950 V	
Voltage range (MPPT) at nominal power	480V~ 800V	
MTTP number	2	3
Maximum input current	2 x 21A	3 x 36A
OUTPUT ELECTRICAL CHARACTERISTICS		
Output nominal power	20KW	50KW
Maximum output current	32A	80A
AC output voltage	400Vac ± 20%	
Frequency range	50 / 60Hz ± 5Hz	
Power factor range	0.8 capacitive / inductive	
THDi	< 3%	
Wiring type	3 Phases + N + Ground / 3 Phases + Ground	
COMMUNICATIONS		
Monitoring	LCD display	
Communications	RS485	
GENERAL CHARACTERISTICS		
Maximum efficiency	98%	98.6%
European efficiency	97,5%	98.2%
Cooling	Natural convection	Forced ventilation
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Range ambient temperature	-25°C to +60°C	
Degree of environmental protection	IP65	
Nivel de ruido	< 40dB	< 60dB
Operating altitude	< 3000m without power loss	
Relative humidity	0 a 95% without condensation	
Dimensions (AlxAnxF)	715 x 553 x 228mm	958 x 636 x 260mm
Approx. Weight	39kg	68kg

** These specifications may change without notice.*

CONNETIONS ZGR SOLAR STR 50



DIMENSIONS

ZGR SOLAR 20

ZGR SOLAR 50

ZGR SOLAR HITC
CENTRAL HYBRID THREE-PHASE INVERTERS

always ON

ZGR SOLAR HITC
solar inverters are the ideal solution for off-grid applications.

The range of ZGR SOLAR HITC hybrid solar inverters are designed to meet the energy needs where the power grid does not reach, for rural electrification and/or electrification of remote areas.

The main characteristic of ZGR SOLAR HITC hybrid inverters is that it is able to generate electricity from different resources: photovoltaic, batteries, grid or generator set.

The three-phase hybrid inverters of ZGR SOLAR HITC can aggregate energies from different sources and simultaneously control all energy contributions from a single system.

APPLICATIONS

ISOLATED GRIDS

CHARACTERISTICS

- Wide range of input voltage (350-700 Vdc) for solar panels
- Very low harmonic distortion, THD< 3%
- Grid input or Generator set
- Photovoltaic field input through internal charger
- Back up battery
- Degree of environmental protection IP21
- Galvanic isolation through transformer
- Protection against:
  - Reverse - polarity
  - Short-circuits
  - Overvoltages
  - Isolation faults
- Local monitoring via LCD
- Remote monitoring via Web Server

CONNECTIVITY AND MONITORING

INTEGRATED WEB SERVER

Communication gateway integrated. It enables the communication via Web server (http). The web server provides full access to all information of ZGR SOLAR HITC: voltage and current measures, alarms, configuration, etc.

TECHNICAL SPECIFICATIONS					
Model	ZGR HITC 30	ZGR HITC 50	ZGR HITC 100	ZGR HITC 100+	ZGR HITC 150
AC OUTPUT ELECTRICAL CHARACTERISTICS					
Nominal active power	30 kW	50 kW	100 kW	100 kW	150 kW
Output nominal voltage	208 / 220 / 240 ó 380 / 400 / 440 Vac (3F + N)				
Frequency range	50 – 60 Hz				
Maximum current per phase	46 / 83 A	76 / 139 A	152 / 278 A	152 / 278 A	228 A
AC surge protection	Yes				
Short-circuit protection	Yes				
FV INPUT ELECTRICAL CHARACTERISTICS					
FV field recommended power	32 kWp	52 kWp	105 kWp	102 kWp	157 kWp
Maximum input current	76 A	125 A	250 A	250 A	375 A
Input numbers	1				
FV voltage range	350~700 Vdc				
FV optimum generation voltage range	420~470 Vdc				
DC open circuit maximum voltage	880 Vdc(1)				
DC overvoltage protection	Yes				
Reverse – polarity connection protection	Yes				
GENERATOR SET INPUT ELECTRICAL CHARACTERISTICS					
Nominal power	≥ 70 kVA	≥ 95 kVA	≥ 180 kVA	≥ 280 kVA	≥ 340 kVA
Input nominal voltage	208 / 220 / 240 or 380 / 400 / 440 Vac (3P + N)				
Frequency range	50 / 60 ± 5 Hz				
Maximum current per phase	76 / 139 A	106 / 194 A	213 / 389 A	345 / 595 A	420 / 725 A
Set start control	Dry contact (230 Vac / 4 A max.)				
Short-circuit protection	Yes				
BATTERY					
Nominal voltage	340 Vdc				
Voltage range	300~420 Vdc				
Charge maximum current	50 A	50 A	100 A	300 A	300 A
Discharge maximum current	105 A	173 A	350 A	350 A	510 A
Short-circuit protection	Yes				
Reverse – polarity connection protection	Yes				
Over-discharge protection	Yes				
Charge management	Yes				
OTHERS					
Efficiency	>96 % transformer included. Between renovable resource and AC output				
Control panel	2 lines display, keyboard and 3 signalling LEDs				
Monitoring	Auto checking / Data and events log / Web interface				
Communications	Ethernet – Web Server, SNMP				
AC and DC isolators	Integrated into the system				
Isolation transformer	Integrated into the system				
Cooling	Forced ventilation				
Range ambient temperature	-10~50 ºC				
Degree of environmental protection	IP21				
Operating altitude	< 1000 m without power loss				
Relative humidity	0 ~ 95% without condensation				
Dimensions (mm)	1950 x 1200 x 730		2150 x 1600 x 630	2150 x 2400 x 630	
Approx. Weight	850 kg	850 kg	1320 kg	1420 kg	1480 kg
STANDARDS					
Marks	CE				
General directives	2006/95/CEE-93/68/CEE, 2004/108/CEE				
Regulations	IEC - 62109 - 1				

(1) This voltage must not be exceeded in any case.
** To customize the equipment consult ZIGOR.*
** These specifications may change without notice.*

ZGR SOLAR CTR 150/300
CENTRAL THREE-PHASE INVERTERS

always ON

ZGR SOLAR CTR 150/300 inverters are specially designed to improve the performance of medium-large solar plants.

ZGR SOLAR CTR inverters have been specially designed to improve performance and reduce volume in medium-large solar plants. The range of three-phase inverters ZGR SOLAR CTR is 150 and 300 kW.

Likewise, the range of ZGR SOLAR CTR inverters offers high reliability and guarantee of operation. It should be noted that with these inverters has been achieved an unbeatable power density per unit of volume, making possible a significant reduction in the space required for medium-large solar plant investors.

Another important feature is its automatic reactive regulation and its communication capabilities between them and the centralized supervision and control system. All its parameters are configurable locally and also remotely.

ZGR SOLAR CTR inverters operate with a 3 x 400 V output voltage and are adapted to several regulations for compliance with the response requirements for voltage sags without disconnection.

APPLICATIONS

CHARACTERISTICS

- » Wide input voltage range (590 - 850 Vdc)
- » Maximum Power Point Tracking (MPPT)
- » High energy efficiency MPPT > 99%
- » Very low harmonic distortion THD < 3%
- » Selectable power factor
- » Parallel connection without limitation
- » Anti-island protection with automatic disconnection
- » Local monitoring via LCD
- » Remote monitoring via Web Server
- » Degree of environmental protection IP20
- » DC and AC protections included
- » Protection against:
  - Reverse - polarity
  - Short-circuits
  - Overvoltages
  - Isolation faults
- » Automatic reactive power regulation
- » Peak efficiency of 98,5%
- » Level II box integration with current measurement *
- » Communications: Ethernet

* *Optional*

CONNECTIVITY AND MONITORING

INTEGRATED WEB SERVER

Communication gateway integrated. It enables the communication via Web server (http). The web server provides full access to all information of ZGR SOLAR CTR 150/300: voltage and current measures, alarms, configuration, etc.

TECHNICAL SPECIFICATIONS		
Model	ZGR SOLAR CTR 150	ZGR SOLAR CTR 300
ELECTRICAL CHARACTERISTICS		
Output maximum power (AC)	150 kVA	300 kVA
FV recommended maximum power	+5 % to +20 %	
AC nominal voltage	3 x 400 V	
Frequency range	50 / 60 Hz	
Power factor	1 adjustable ± 0,8 (without exceeding the apparent power of the equipment)	
AC nominal line current	217 A	435 A
AC current distortion	< 3% THD at nominal power	
AC maximum fault current	250 A	450 A
AC maximum overcurrent protection	250 A	450 A
DC maximum Power Point Tracking range (MPPT)	590- 850 Vdc	
DC maximum input current	260 A	521 A
Peak efficiency	98,5 %	98,5 %
European efficiency	97,9 %	98,2 %
COMMUNICATIONS		
Monitoring	Webserver via Ethernet	
Control panel	LCD display	
PROTECTIONS		
Protections	Reverse – polarity, AC surge/ AC overvoltage, Over/Under frequency, DC overvoltage	
Isolators (AC and DC)	Integrated into the system	
Monitoring and self diagnosis	Yes	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Range ambient temperature	-10 °C to +55°C	
Cooling	Forced ventilation	
Degree of environmental protection	IP20	
Operating altitude	1000 m without power loss	
Relative humidity	0 to 95 % without condensation	
Approx. Weight	350 kg	450 kg
STANDARDS		
Marks	CE	
General directives	2004/108/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-3), 2006/95/CE (IEC 62109-1, IEC 62109-2)	
Regulations	IEE 1547	
International regulations Spain	P.O. 12.3	
International regulations Germany	BDEWTG	

** Customized configurations under demand. Consult ZIGOR.*
** These specifications may change without notice.*

DIMENSIONS

ZGR SOLAR CTR 300

ZGR SOLAR CTR 1250 - 1500
CENTRAL THREE-PHASE INVERTERS

always ON

ZGR SOLAR CTR 1250 - 1500 inverters provide high performance with reduced dimensions.

ZGR SOLAR CTR 1250 - 1500 inverters have been specially designed to improve performance and reduce volume in medium-large solar plants. Three-phase ZGR SOLAR CTR inverters from 1250 to 1500 kW stand out for their high efficiency.

Likewise, the range of ZGR SOLAR CTR 1250 - 1500 inverters offer high reliability and guarantee of operation. It should be noted that with these inverters an unbeatable power density per unit of volume has been achieved, making possible a significant reduction in the space required for medium-large solar plant investors.

Another important feature is its automatic reactive regulation and its communication capabilities between them and the centralized supervision and control system. All its parameters are configurable locally and also remotely. ZGR SOLAR CTR 1250 - 1500 inverters are adapted to several regulations to meet the requirements for response to voltage dips without disconnection.

Moreover, container solutions are a perfect for medium-large-scale projects and are specially designed to meet the most demanding specifications and to operate under adverse environmental conditions.

CONTAINER

APPLICATIONS

PV ON-GRID

PV MEDIUM VOLTAGE

ENERGY SAVING

CHARACTERISTICS

- Input voltage range (800-1300 Vdc)
- Maximum Power Point Tracking (MPPT)
- High energy efficiency MPPT > 99%
- Very low harmonic distortion, THD < 3%
- Selectable power factor
- Anti-island protection with automatic disconnection
- Equipment monitoring by graphic display
- Degree of environmental protection IP21(in container IP 54)
- Easy maintenance
- Protection against:
  - Reverse - polarity
  - Short-circuits
  - Overvoltages
  - Isolation faults with relay output

TECHNICAL SPECIFICATIONS		
Model	ZGR SOLAR CTR 1250	ZGR SOLAR CTR 1500
Power	1250 kW	1500 kW
ELECTRICAL CHARACTERISTICS		
PV recommended power	+ 5 % to -20 %	
Nominal voltage	3 x 550 V	3 x 600 V
Nominal frequency	50 / 60 Hz	
Power factor	1 adjustable ± 0,9	
AC nominal line current	1312 A	1443 A
AC current distortion	< 3% THD at nominal power	
Maximum Power Point Tracking range (MPPT)	800 - 1300V	900 - 1300V
Maximun open circuit voltage	1500 V	
Stand-by losses	< 50 W	
DC maximum input current	1750 A	1870 A
Peak efficiency	99 %	
European efficiency	98,7 %	
PROTECTIONS		
AC leakeage current fault	Yes	
Ground fault detection	Yes	
LVRT	Yes	
Anti-islanding	Yes	
Reverse – polarity	Yes	
AC / DC overvoltage suppressors	Yes	
AC surge/ AC undervoltage	Yes	
DC overvoltage	Yes	
AC and DC isolators	Integrated into the system	
Over/Under frequency	Yes	
Monitoring: self-testing	Yes	
COMMUNICATIONS		
Monitoring	Graphical interface	
Communications	Modbus RTU	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Cooling	Forced ventilation	
Range ambient temperature	-10 °C to +60°C	
Derating	> 55 ºC	> 50 ºC
Degree of environmental protection	IP21 (in container IP64)	
Operating altitude	3000 m without power loss	
Relative humidity	0 a 95 % without condensation	
Noise level	< 65 dB	
Dimensions	1600 x 750 x 2100 mm (container option 2991 x 2438 x 2591 mm)	
Approx. Weight	1600 kg	

** These specifications may change without notice.*

DIMENSIONS

INDOOR

OUTDOOR

ZGR SOLAR PS
POWER STATION 2500/6250

always ON

ZGR SOLAR PS 2500

ZGR SOLAR PS 6250

ZGR SOLAR PS is the ideal turnkey solution for large photovoltaic plants.

ZGR SOLAR PS is a plug and play solution in a metal container, fully equipped with inverters connected to a transformation centre and medium-voltage switchgear, in addition to auxiliary services and communications for use in photovoltaic plants.

It is a turnkey solution that allows increasing the overall efficiency of a conversion system and reducing installation costs.

All the electronic equipments that compose system are adapted according to the technical specifications required and combined to reach maximum performance, efficiency and uninterrupted operation throughout its useful life

APPLICATIONS

PV ON-GRID

PV MEDIUM VOLTAGE

ENERGY SAVING

CHARACTERISTICS

- Wide range of input voltage
- Up to 60 DC inputs
- Active and reactive power control
- LVRT / HVRT / FRT functions
- Standard container of 20/40 feet
- Easy installation (Plug & Play)
- Medium voltage transformer
- Multiple protections
- Modular interior design for easy maintenance

TECHNICAL SPECIFICATIONS		
Model	ZGR SOLAR PS 2500	ZGR SOLAR PS 6250
Power	2500 kW	6250 kW
INPUT ELECTRICAL CHARACTERISTICS		
Voltage range	1500 Vdc	
Maximum Power Point Tracking range (MTTP)	800 – 1300 Vdc	900 - 1300 V
Number of Inputs	20 - 24	60
MTTP number	2	4
Maximum DC input current	3500 A	8160 A
OUTPUT ELECTRICAL CHARACTERISTICS		
Output nominal power	2500 kW/kVA	6250 kW /kVA
Output maximum power	2750 kW	7200 kW
LV output nominal voltage	0,55 kV	630 kV
MV output nominal voltage	10 – 35 kV	10 -35 kV
Frequency range	50 / 60 Hz (± 4,5 Hz) (adjustable)	50 / 60 Hz (± 5 Hz) (ajdustable)
Power factor	1 (± 0,9) (adustable)	1 (± 0,8) (adjustable)
THDi	< 3 %	
PROTECTIONS		
AC leakeage current fault	Yes	
Ground fault detection	Yes	
LVRT	Yes	
Anti-islanding	Yes	
DC reverse – polarity	Yes	
AC surge	Yes	
DC overvoltage	Yes	
GENERAL CHARACTERISTICS		
Maximum efficiency	99 %	
European efficiency	98,7 %	
MPPT efficiency	> 99 %	
Cooling	Forced ventilation	
Communications	RS 485, Ethernet (optional)	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Range ambient temperature	-40 °C a +60 °C (derating from 50 °C)	
Degree of environmental protection	IP54	
Operating altitude	2000 m	
Relative humidity	0 to 95 % without condensation	
Noise level	< 65 dB	< 60 dB
Dimensions	6058 x 2438 x 2896 mm (20 feet)	12192 x 2438 x 2896 mm (40 feet)

** These specifications may change without notice.*

DIMENSIONS

ZGR SOLAR PS 2500

ZGR SOLAR PS 6250

always ON

TRANSMISSION AND DISTRIBUTION

In recent years, the growth in **electricity supply** needs and, above all, the **connection** needs of new generation plants derived from new **distributed energy sources** is unquestionable. Thus, this is a challenge for energy management and conversion efficiently.

Under this commitment, in **ZIGOR** we develop customized solutions for the **conversion of energy and safe power supply.** We focus specially in the equipment related to the **lines and substations of electrical transformation** in charge of transporting the energy from the points where it is generated to the consumption centres. Besides, our developments are configurable in response to the growing market needs and to the requirements of the different applications in a dynamic and particular way.

Endorsed by an experience of more than 20 years we provide innovative solutions adapted to the specific needs of the main **electricity companies and industrial consumers**.
For that purpose, we have a complete range of products that guarantee management, continuity and quality of energy supply, e**ven eliminating interruptions or disturbances** in the energy conversion. Hence, we provide our customers high value-added products from initial conception to installation, including maintenance and during the entire life of our implemented solutions and / or control systems.

ZGR TPS 120
COMPACT SWITCHING CHARGER – RECTIFIER

always ON

STANDARD

CABINET

Thanks to the switching technology, **ZGR TPS 120** are high performance compact equipments.

The range of ZGR TPS 120 chargers based on high frequency switching technology benefits from the advantages inherent in such technology achieving a compact and easy-to-use equipment that can be installed in confined spaces.

ZGR TPS 120 units integrate all the functions of a high-performance charger in the same module, such as load management, battery disconnector, remote alarms, protections, etc.

The ZGR TPS 120 are offered as independent modules or integrated into complete systems, which are adapted to the needs of the customer and available in voltages of 48 Vdc, 24 Vdc or 12 Vdc.

APPLICATIONS

TELECOM · INDUSTRY · DATA CENTERS · RAILWAY SECTOR · FACILITIES · ELECTRICITY SECTOR

CHARACTERISTICS

- » Cost-effective and reliable
- » Connection strip built into the unit itself
- » Natural convection
- » Easy installation and maintenance of batteries
- » Switching technology
- » Wide range of voltage from 12 to 48V

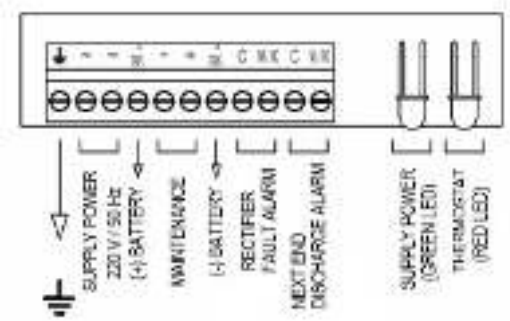
* *Optional*

- » Control and signalling
  - Battery minimum voltage
  - Voltmeter and ammeter *
  - Charger fault
  - Dry contacts for remote signalling
- » Battery management:
  - Ni-Cd or Lead-acid batteries
  - Battery and load protection fuses
  - Current limitation
  - Low Voltage Disconnection (LVD)

TECHNICAL SPECIFICATIONS				
Model	TPS 120			
INPUT ELECTRICAL CHARACTERISTICS				
Nominal voltage *Customized configurations under demand*	220 V ± 10 %			
Nominal frequency	50 Hz ± 5 %			
OUTPUT ELECTRICAL CHARACTERISTICS				
Presence of mains and charged battery	TPS 120	Flotation voltage (Pb)	Maximum voltage (Ni-Cd)	Units (Ni-Cd)
	12 V / 10 A	13,65 V ± 1 %	-	-
	24 V / 5 A	27,3 V ± 1 %	27 V	18
	48 V / 2,5 A	54,6 V ± 1 %	55,5 V	37
Mains absence	Battery	Battery capacity in Ah (20 h at 1,75 V/cell)	Autonomy at nominal current (8-10 A)	Maximum recharging current of the battery
	Pb 48 V 2,5 A	7	2 h.	0,7 A
		12	3 h. 45 m.	1,2 A
		17	6 h.	1,7 A
	Pb 24 V 5 A	12	1 h. 30 m.	1,2 A
		17	2 h.40 m.	1,7 A
		27	4 h.15 m.	2,7 A
	Pb 12 V 10 A	17	1 h.	1,7 A
		25	1 h. 45 m.	2,5 A
		37	3 h.	3,7 A
	Ni-Cd 48 V 2,5 A	4	1 h. 30 m.	0,13 A
		7	2 h. 30 m.	0,23 A
		14	5 h.	0,46 A
	Ni-Cd 24 V 5 A	4	45 m.	0,13 A
		7	1 h. 15 m.	0,23 A
		14	2 h. 30 m.	0,46 A
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS				
Operation temperature range	0 °C ÷ 50 °C			
Storage temperature	-40 °C ÷ 80 °C			
Cooling	Natural convection			
Operating altitude	≤ 1000 m			
Relative humidity	5 - 95 % (without condensation)			
Dimensions (HxWxD)	100 x 122 x 285 mm			
Approx. Weight	2,2 kg			
STANDARDS				
Low voltage european directive	73/23/CEE-93/68/CEE			
EMC european directive	89/336/CEE-93/68/CEE			

** These specifications may change without notice.*

CONNECTIONS



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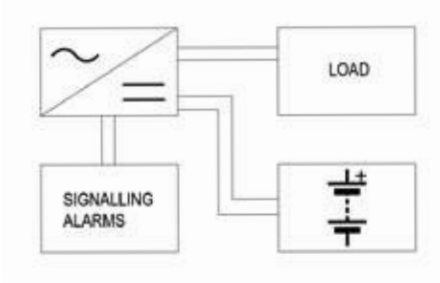


ZGR TPS 120/200 NG
COMPACT SWITCHING CHARGER – RECTIFIER
SMART GRID

always ON

ZGR TPS 120/200 NG
have compact design
in high frequency
technology.

ZGR TPS 120/200 NG equipments are 48 V battery rectifiers-chargers, capable of managing lead batteries of up to 18 Ah of capacity for industrial applications, remote controls, remote control for transformer centres and applications a power supply secure tele-controlled in needed.

The total powers that these equipments can supply are 120 W and 200 W respectively. They can also supply (without battery) 10 seconds lasting peaks of 180 W and 400 W, depending on the model. The galvanic isolation between input and remaining circuits is 1 0kV. Unlike other equipments, ZGR TPS 120/200 NG range includes a system to test the state of health of the battery. This battery test can be done automatically or manually from outside.

ZGR TPS 120/200 NG has an Ethernet connection through which locally or remotely, it can be monitorized, make changes over the settings, even update the equipments firmware. It also supports SNMP to incorporate in the supervision systems.

APPLICATIONS

TELECOM
INDUSTRY
DATA CENTERS
RAILWAY SECTOR
FACILITIES
ELECTRICITY SECTOR

CHARACTERISTICS

» Compact design
» High efficiency
» High frequency switching
» Easy installation and maintenance
» Battery management:
- Automatic and periodic battery test
- Autonomous Energy Management

» Control and signalling
- Integrated communications with web services for configuration and reading of equipment measurements
- Web interface for displaying variables and status, setting parameters and alarms, viewing event log, sending orders and updating firmware remotely
- Dry contact alarms
- LED signalling on the front

CONNECTIVITY AND MONITORING

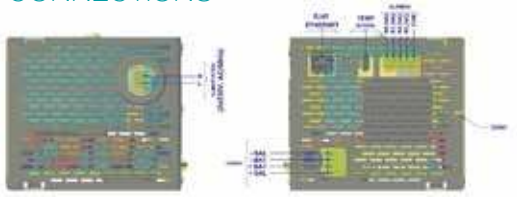
Communication gateway integrated: It enables the communication via Web server (http). It includes advanced authentication (LDAP), parameterization, (XML) and time synchronization (NTP) features.

The web server allows the user to access the following data: status, measurements, configuration, alarms, control, network, equipment, etc.

TECHNICAL SPECIFICATIONS		
Model	ZGR TPS 120 NG	ZGR TPS 200 NG
AC INPUT ELECTRICAL CHARACTERISTICS		
Power supply voltage	230 Vac - 20% / +15% (1)	
Nominal frequency	50 – 60 Hz	
Power factor	> 0,6	
OUTPUT ELECTRICAL CHARACTERISTICS		
Output voltage / Battery in fast charge mode	59 V ± 0,5 % Configurable temperature compensation	
Output voltage/ Battery in flotation mode	54,24 V ± 0,5 % Configurable temperature compensation	
Voltage range	39 – 60 V	
Ripple	< 50 mVpp	
Maximum total permanent current	3 A	5,2 A
Maximum current during 10”	4,6 A	10,3 A
Permanent total power	120 W	200 W
Total power during 10”	180 W	400 W
Efficiency	> 75 %	
Battery charge current limitation (2)	0,25 A	1,3 A
COMMUNICATIONS		
Monitoring	Web interface	
Communications	Ethernet, SNMP	
PROTECTIONS		
Battery	Temperature compensation (configurable), electronic limitation of the charging current, protection against deep discharge of the battery by means of a relay in series	
AC input	Overcurrent protection by input fuse	
DC output	Varistor surge protection, electronic limitation of the charger current	
Dielectric rigidity Input - Other circuits	10 kVAC 50 Hz 1 min.	
Dielectric rigidity Ground - Output	2 kVAC 50 Hz 1 min	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Cooling	Natural convection	
Range ambient temperature	-10 °C to 60 °C	
Degree of environmental protection	IP20	
Operating altitude	< 1000 m without power loss	
Relative humidity	5 to 90 % without condensation	
Dimensions (W x D x H)	250 x 115 x 130 mm (rear fixing 280 x 115)	
Approx. Weight	5 kg	
STANDARDS		
Marks	CE	
General directives	2006/95/CE (UNE-EN 61000-6-2 UNE-EN 61000-6-4)2006/95/CE (EN 50178)	

DIMENSIONS

CONNECTIONS



CONNECTIVITY

www

Modbus

(1) Optional other input voltages .
(2) Parameterizable according to the characteristics of the battery up to the maximum current of the equipment.
* These specifications may change without notice.

ZGR TPS 150 NG

COMPACT SWITCHING CHARGER – RECTIFIER
SMART GRID

always ON

ZGR TPS 150 NG has compact design in high frequency technology.

ZGR TPS 150 NG equipments are 12 / 48 V battery rectifiers-chargers, capable of managing lead batteries of up to 75 Ah of capacity for industrial applications, remote controls, remote control for transformer centres and applications a power supply secure tele-controlled in needed.

ZGR TPS 150 NG can supply a total power of 150W. However, they can also supply (without battery) 10 seconds lasting peaks of 275 W. Unlike other equipments, ZGR TPS 150 NG range includes a system to test the state of health of the battery. This battery test can be done automatically or manually from outside.

ZGR TPS 150 NG has an Ethernet connection through which locally or remotely, it can be monitorized, make changes over the settings, even update the equipments firmware.

APPLICATIONS

TELECOM
INDUSTRY
DATA CENTERS
RAILWAY SECTOR
FACILITIES
ELECTRICITY SECTOR

CHARACTERISTICS

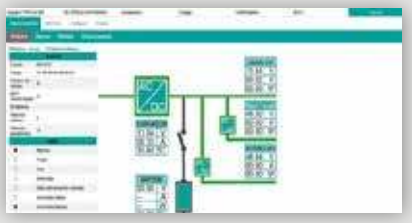
» Compact design
» High efficiency
» High frequency switching
» Easy maintenance
» Wall mounting
» Battery management:
- Automatic and periodic battery test
- Autonomous Energy Management
- Forced output switch off

» Control and signalling
- Integrated communications with web services for configuration and reading of equipment measurements
- Web interface for displaying variables and status, setting parameters and alarms, viewing event log, sending orders and updating firmware remotely
- Dry contact alarms
- LED signalling on the front

CONNECTIVITY AND MONITORING

Communication gateway integrated. It enables the communication via Web server (http). It includes advanced authentication (LDAP), parameterization, (XML) and time synchronization (NTP) features.

The web server allows the user to access the following data: status, measurements, configuration, alarms, control, network, equipment, etc.



TECHNICAL SPECIFICATIONS	
Model	ZGR TPS 150 NG
AC INPUT ELECTRICAL CHARACTERISTICS	
Power supply voltage	115 / 230 Vac -20 % / +15 % (1)
Nominal frequency	49,5 – 50,5 Hz
Power factor	> 0,6
OUTPUT ELECTRICAL CHARACTERISTICS	
Output 1 nominal voltage	12 V
Output 2 and 3 nominal voltage	48 V
Maximum total permanent current - Output 1	15, 7 A
Maximum current during 10” - Output 1	29 A
Maximum total permanent current - Output 2	0,83 A
Maximum total permanent current - Output 3	3,2 A
Maximum current during 10” - Output 3	5,7 A
Voltage regulation- Output 1	9,6 – 15 V
Voltage regulation - Output 2 y 3	±1 V
Ripple - Output 1	< 50 mVpp
Ripple - Output 2 y 3	< 100 mVpp
Permanent total power	150 W
Total power during 10”	275 W
Efficiency	> 75 %
Battery charge current limitation (2)	15,7 A
COMMUNICATIONS	
Monitoring	Web inteface, Web Services
Communications	Ethernet
PROTECTIONS	
Battery	Temperature compensation (configurable), electronic limitation of the charging current, protection against deep discharge of the battery by means of a relay in series
AC input	input fuse
DC output	Varistor surge protection, electronic limitation of the charger current
Galvanic isolation Input - Other circuits	2 kV 50 Hz 1 min
Dielectric rigidity Ground - Output	2 kV 50 Hz 1 min
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS	
Cooling	-25 °C to 60 °C
Operation temperature range	Natural convection
Degree of environmental protection	IP 20
Operating altitude	< 1000 m without power loss
Relative humidity	5 to 90 % without condensation
Dimensions (W x D x H)	(280 / 260) x 115 x 90 mm
Approx. Weight	1,31 kg
STANDARDS	
Marks	CE
General directives	2006/95/CE (UNE-EN 61000-6-2 / UNE-EN 61000-6-4) 2006/95/CE (EN 50178)

(1) Optional other input voltages .
(2) Parameterizable according to the characteristics of the battery up to the maximum current of the equipment.
** These specifications may change without notice.*

ZGR SWIT NG
SWITCHING CHARGER - RECTIFIER

always ON

ZGR SWIT NG
modules provide maximum efficiency with a highly compact design.

The range of ZGR SWIT NG chargers, based on high frequency switching technology, benefits from the advantages inherent in such technology achieving a compact and easy-to-use equipment that can be installed in 19 ”cabinets.

ZGR SWIT NG units integrate all the functions of a high-performance charger in the same module, such as charge management, battery current limitation, remote alarms, end of discharge, protections, among other functions.

ZGR SWIT NG are offered as independent modules or integrated into complete systems. ZIGOR has developed the ZGR SWIT NG range, a rectifier / charger system that ensures the supply of consumers at all times, both in the presence of the mains and in the absence of it, until the end of the system’s battery autonomy.

ZGR SWIT NG SYSTEM

ZGR SWIT NG MODULE

APPLICATIONS

TELECOM · INDUSTRY · RAILWAY SECTOR · ELECTRICITY SECTOR

CHARACTERISTICS

- » High efficiency
- » Wide range of customized solutions from 500 to 1000 W in 24/48/110/125V
- » Integrated battery disconnector
- » Reduced harmonic distortion
- » Low input current distortion
- » Battery temperature compensation *
- » Easy installation, front wiring
- » Ni-Cd or sealed Pb battery management
- » Installation in integrated wall cabinet, module 19´´ and battery

- » Control and signalling
  - Rectifier defect
  - Battery ground leakage *
  - Maximum output voltage
  - Next end of autonomy
  - Presence of mains
  - Voltmeter and ammeter *
  - Dry contacts for remote signalling
- » Protections:
  - Magnetothermal battery protection
  - Overvoltage protection
  - Input fuse protection
  - Module over-temperature
  - Short-circuit
  - Current limitation
  - Low Voltage Disconnection (LVD)

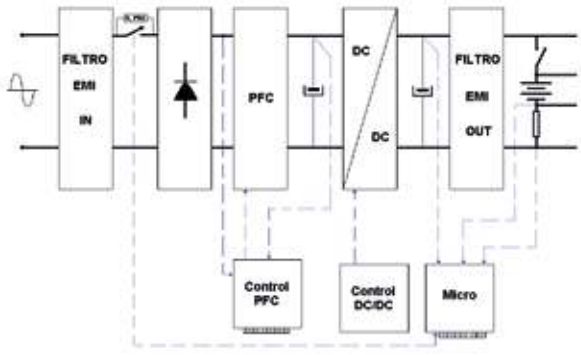
* *Optional*

FULL SYSTEM WITH BATTERIES

TECHNICAL SPECIFICATIONS			
Model	ZGR SWIT NG		
Output voltage	24 Vcc	48 Vcc	110/125 Vcc
INPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	230V ± 15 %		
Nominal frequency	50Hz ± 10 %		
Power factor	0,99 for charge > 60 %		
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	24 Vcc	48 Vcc	110 / 125 Vcc.
Nominal frequency	20 or 40 A	10 or 20 A	4 or 8 A
Output voltage ripple	< 100 mv rms < 200 mvpp	< 100 mv rms < 200 mvpp	< 100 mv rms < 300 mvpp
Charge current limitation	20 A ± 5 %	10 A ± 3 %	4 A ± 5 %
Short-circuit current	< 20 A	< 10 A	< 5,5 A
Efficiency	> 87 %		
BATTERIES			
Num. of elements Pb	12	24	54 or 60
Num. of elements Ni - Cd	18 ÷ 20	36 ÷ 40	86 or 98
Output voltage	18 - 30 Vcc	36 - 60 Vcc	83 - 144 Vcc
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Protections	Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation		
Operation temperature range	0 °C to 50 °C		
Storage temperature	-40 °C to 80 °C		
Operating altitude	≤ 1000 m without power loss		
Relative humidity	< 95 % without condensation		
Dimensions (HxWxD)	132 x 483 x 278 mm		
STANDARDS			
Low voltage european directive	CE UNE - EN 50178 (1998)		
EMC european directive	UNE - EN 61000-6-2 (2001), UNE - EN 61000-6-4 (2001)		

** Special configurations on demand.*
** These specifications may change without notice.*

INTERNAL ARCHITECTURE



DIMENSIONS

ZGR TELSIS APS
MODULAR SWITCHING CHARGER - RECTIFIER

always ON

ZGR TELSIS APS rectifiers / chargers range combines great flexibility with high performance.

ZGR TELSIS APS battery chargers / rectifiers have been designed to respond to the new needs of the battery charger market, improving the performance and flexibility of the system for both telecom and industrial applications.

Being modular equipment, it is not necessary a baseline oversizing, which means an initial investment savings. Their small size and high energy density allow them to be installed in the same locations of the loads and as a result, shorter distances and wiring sections are required, obtaining improvements in distribution. High frequency switching technology allows parallel connection with automatic load sharing. They also allow the configuration of redundant systems n + 1, n + 2.

Moreover, ZGR TELSIS APS operates autonomously without the need for any auxiliary elements and is controlled and managed at all times by the Central Management Unit. Thanks to the possibilities of remote communication, the system can be controlled and monitored in real time from a single control center. This feature allows diagnosing possible problems with sufficient anticipation to plan maintenance interventions, both preventive and corrective, which will result in a reduction in costs (manpower, travel, etc.).

APPLICATIONS

TELECOM · INDUSTRY · RAILWAY SECTOR · ELECTRICITY SECTOR

CHARACTERISTICS

- » Compact design
- » High efficiency
- » Easy maintenance
- » Control and supervision of the equipment via web server
- » Possibility of progressive power increase
- » Configuration of redundant systems n + 1, n + 2

- » Applications:
  - Telecommunications
  - Action on high and medium voltage distribution circuits through on / off switches
  - Power supply of converters, emergency lighting systems, operating rooms, large areas, etc.
  - Signalling, control and command centers
  - Solar energy applications
  - DC security applications
  - Substations and Power Plants

CONNECTIVITY AND MONITORING

ZGR TELSIS APS provides centralized monitoring, control and management of chargers - rectifiers. Supervision is based on a series of elements that incorporate microprocessors and are linked by an internal communications network.

The fundamental elements are:

Central Management Unit

It presents the status of the equipment, allows local action and configuration and acts as an external communication link.

Communications gateway (optional)

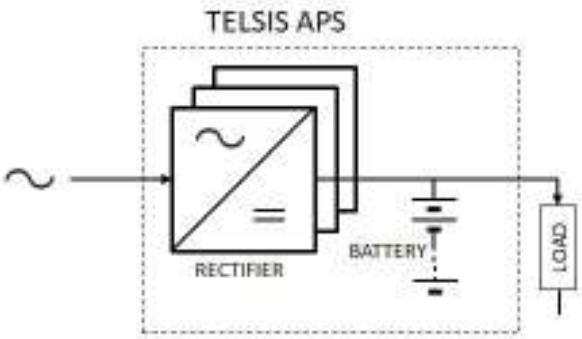
It allows remote communication via SNMP and WEB (http).
The central supervision unit and the gateway (optional) are integrated.

Rectifier module

It includes the intelligence necessary for monitoring its status, alarms, cooling control, output voltage, current limitations, etc.
This web server allows the user to access the following menus in different languages:

- Status
- Configuration
- Events
- Orders

BLOCK DIAGRAM



ZGR TELSIS APS ELEMENTS

- AC Distribution board
- Rectifier rack
- CC distribution rack
- Mixed rectification and distribution board
- Reserve board and continuity (Batteries)
- Auxiliary systems
- Central Management Unit

RECTIFIER MODULES

ZR2048 Rectifier module

ZR3048 Rectifier module

ZR30110 Rectifier module

TELSIS APS 48 V 2000- 18000 W			
ZR 2048 RECTIFIER MODULE			
RACK	UNITS	POWER	IMAX RACK @ V NOMINAL OUTPUT
1 U / 19''	1 - 4	2000 - 8000 W	166 A
3 U / 19''	1 - 9	2000 - 18000 W	375 A

TELSIS APS 48 V 3000- 27000 W			
ZR 3048 RECTIFIER MODULE			
RACK	UNITS	POWER	IMAX RACK @ V NOMINAL OUTPUT
1 U / 19''	1 - 2	3000 - 6000 W	120 A
5 U / 19''	1 - 9	3000 - 27000 W	540 A

TELSIS APS 120 V 3000 - 27000 W			
ZR 30110 RECTIFIER MODULE			
RACK	UNITS	POWER	IMAX RACK @ V NOMINAL OUTPUT
1 U / 19''	1 - 2	3000 - 6000 W	50 A
3 U / 19''	1 - 9	3000 - 27000 W	225 A

Rack 4 x ZR2048

Rack 9 x ZR2048

Rack 2 x ZR3048 o 2 x ZR30110

Rack 9 x ZR3048 o 9 x ZR30110

RECTIFIER MODULES TECHNICAL SPECIFICATIONS			
Voltage	ZR2048	ZR3048	ZR30110
Model	48 V	48 V	125 V
INPUT ELECTRICAL CHARACTERISTICS			
Voltage	230 Vac, 50 / 60 Hz		
Voltage range	175 Vac - 300 Vac (at full output power) 90 Vac - 175 Vac (at reduced output power)		
Frequency range	45 - 65 Hz		
Power factor	> 0,99 de 20 % - 100 % output power		
Efficiency	> 92 % (> 50 % output power)		
Maximum input current	12,7 A	19 A	19 A
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal power	48 V	48 V	125 V
Voltage range	43 - 58 V	43 - 58 V	80 - 155 V
Maximum current	41,7 A	60 A	27,3 A
Maximum power	2000 W	3000 W	3000 W
PROTECTIONS			
Over-temperature	Auto power off		
Reverse – polarity	Output fuse with diode		
Overvoltage	Adjustable limit		
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Operation temperature range	-10 °C to 50 °C		
Extended temperature range	50 °C to 70 °C with automatic power reduction (derating)		
Storage temperature	-20 °C to 70 °C		
Operating altitude	< 2500 m		
Relative humidity	5 to 95 % without condensation		
STANDARDS			
Marks	CE		
General directives	2004/108/CEE		

** These specifications may change without notice.*

DIMENSIONS OF THE COMPLETE SYSTEM

TELSIS ZGR APS 48 V 27 kW *

TELSIS ZGR APS 110 V 27 kW *

** Customizable equipments. Orientative photos and measurements.*

ZGR MIT NG
HIGH RELIABILITY CHARGER - RECTIFIER

always ON

ZGR MIT NG
range, thanks to the robustness of its design, ensures a high-reliability continuous current supply.

ZGR MIT NG range consists of battery chargers - rectifiers of conventional thyristor technology, controlled by microprocessor, in single-phase and three-phase product versions.

Zigor has combined the proven reliability of thyristor technology with the microelectronics functionalities, offering the ZGR MIT NG range at a maximum level in terms of performance and features.

The ZGR MIT NG range ensures the user a quality continuous supply. Zigor's wide experience in power electronics systems has allowed the design of a range of easily customizable equipment.

APPLICATIONS

TELECOM · INDUSTRY · DATA CENTERS · RAILWAY SECTOR · FACILITIES · ELECTRICITY SECTOR

CHARACTERISTICS

- » Galvanic isolation
- » Complete thyristor bridge
- » Automatic disconnection due to minimum battery voltage (LDV) *
- » Voltage dropping device *
- » Temperature and electrolyte level sensors *
- » Insulation coil
- » Hall effect current sensors *
- » Customized output voltage filtering according to user specification *
- » Thermomagnetic input protection
- » Overvoltage protection by varistors at input and output
- » Distribution adaptable to user requirements

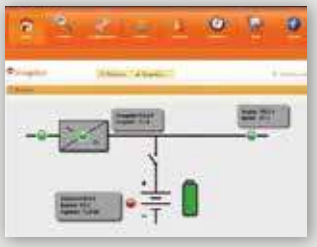
- » Control and signalling
  - Battery voltage and load measurements
  - Charger, battery and load current measurements
  - Comprehensive monitoring and signalling of charger status
  - Local alarms with LCD and remote with relays
  - Communications and remote management gateway with the possibility of implementing different protocols: MODBUS, SNMP, etc. *
- » Battery management
  - Charge Ni-Cd and Pb batteries
  - Battery and charger current limitation
  - Charging modes:
    - » Ni-Cd: flotation, automatic fast charge, exceptional charge
    - » Pb: flotation, automatic fast charge

* *Optional*

CONNECTIVITY AND MONITORING

Communication gateway integrated. It enables the communication via Web server (http).

The web server provides full access to all information of ZRG MIT NG: status, measurements, configuration, alarms, control, network, equipment, etc.

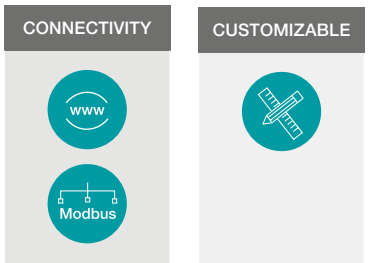


TECHNICAL SPECIFICATIONS		
Model	ZGR MIT NG 1	ZGR MIT NG 3
INPUT ELECTRICAL CHARACTERISTICS		
Nominal voltage (1)	230 V + 10 - 15 %* (Single-phase)	400 V + 10 - 15 %* (Three-phase)
Frequency	50 / 60 Hz ± 5 %	
Power factor	0,7 ~ 0,95 (on request)	
OUTPUT INPUT ELECTRICAL CHARACTERISTICS		
Nominal voltage	12 / 24 / 48 / 110 / 125 / 220 V	
Ripple voltage with batteries	± 1,5 %	
Ripple voltage without batteries	< 2 %	
Ripple current in batteries (1)	≤ 5 %	
Voltage stability (1)	± 1/2 % (with/without battery)	
Dynamic regulation	< 2 % (10 – 90 % of charge)	
Charger current limitation (1)	100 % (up to 120 % optional)	
Battery charge current limitation	Configurable	
Transfer time	< 300 ms	
COMMUNICATIONS		
Monitoring	Websever TCP/IP, control panel	
Communications	RS232, ModBus RS485	
OTHERS		
Active parallel	Optional (up to 2 units)	
Dry contacts	4 (8 optional)	
Battery test	Battery capacity monitorization	
Protections	Overvoltage, over-temperature, current limitation, short-circuit, input/output high/low voltage	
Cooling (1)	Natural convection	
Working temperature	0 a 50 °C	
Protection degree	IP 20 (on request up to IP54)	
Noise level	< 63 dBA	
Operating altitude	< 4500 m without power loss	
Relative humidity	0 - 95 % without condensation	
STANDARDS		
Marks	CE	
General directives	EN 50178 (1998), EN 61000-6-4 (2001), EN 61000-6-2(2001), EN 61000-3-2, EN 61000-3-3, IC 60146-1-1	

(1) Special configurations on request.
**These specifications may change without notice.*

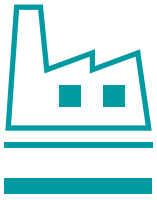
ZGR MIT NG STANDARD RANGE

Ouput voltage	Model	Current (A) 5	7.5	10	15	25	35	50	75	100	125
12 V	MIT NG 1	■	■	■	■	■	■	■	■		
	MIT NG 3							■	■	■	■
24 V	MIT NG 1	■	■	■	■	■	■	■	■		
	MIT NG 3							■	■	■	■
48 V	MIT NG 1	■	■	■	■	■	■	■			
	MIT NG 3						■	■	■	■	■
110-125 V	MIT NG 1	■	■	■	■	■	■				
	MIT NG 3					■	■	■	■	■	
220 V	MIT NG 1	■	■	■	■						
	MIT NG 3			■	■	■	■	■	■		



always ON

INDUSTRY



At **ZIGOR** we offer **backup solutions against electrical disturbances and energy quality improvement** for the most demanding industrial environments. The deep knowledge of the issues of the critical processes of our clients, allows us to design **taylor-made solutions** with a reduced impact on the final installations, so that they can focus on what they do best.

Nowadays industry requires more r**obust and flexible solutions**, with scalable powers and autonomies to work in very diverse environments. Hence, in **ZIGOR** we offer the market the largest range of powers and back-up support in **application specialized equipment**, from small consumption to large scale facilities.

Since more than 10 years, we continue developing solutions applied to industrial processes whose stoppage causes millions losses. As in the case of **Oil & Gas sector**, **Manufacturing industry or Data Centres** that require high reliability of continuous processes avoiding machine failures or data loss.

Moreover, working on the five continents gives us the visibility to develop **global solutions**, meeting the specific needs of each sector.

Thanks to our commitment to **innovation** we can offer the highest technology in protection solutions against disturbances of the electricity grid and, support the critical processes in which even the lives of people are at stake.

Likewise, **ZIGOR** has a w**ide range of solar inverters for industrial self-consumption applications.** Our equipments help optimizing the electricity bill by taking advantage of solar radiation both at the time it occurs and at night time using efficient battery storage systems of various technologies. These equipments are under the **Energy** range where you can check for more details.

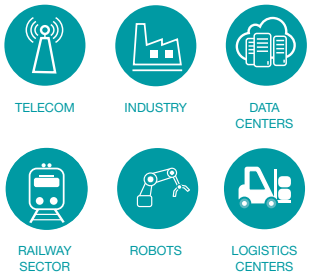
ZGR AVC DVR
DYNAMIC VOLTAGE RESTORER

always ON

ZGR AVC DVR is an innovative system of compensation of voltage sags for the continuity of industrial processes.

ZGR AVC DVR is an innovating system designed to mitigate and eliminate the effect of electrical disturbances on critical industrial processes through the elimination of sags and a continuous regulation for minor disturbances. ZGR AVC DVR guarantees the quality of the grid meeting the demands of industrial production processes while keeping stable and constant the output voltage regardless of energy grid voltage variations. It consists of a transformer, a reversible rectifier unit, plus an inverter. The aim of the ZGR AVC DVR is to compensate disturbances, voltage imbalances, and to regulate them in case of possible fluctuations and overvoltages. Moreover, ZGR AVC DVR monitors, controls and records events that occur in the system, allowing subsequent viewing through the monitoring interface or its touch control panel.

APPLICATIONS



CHARACTERISTICS

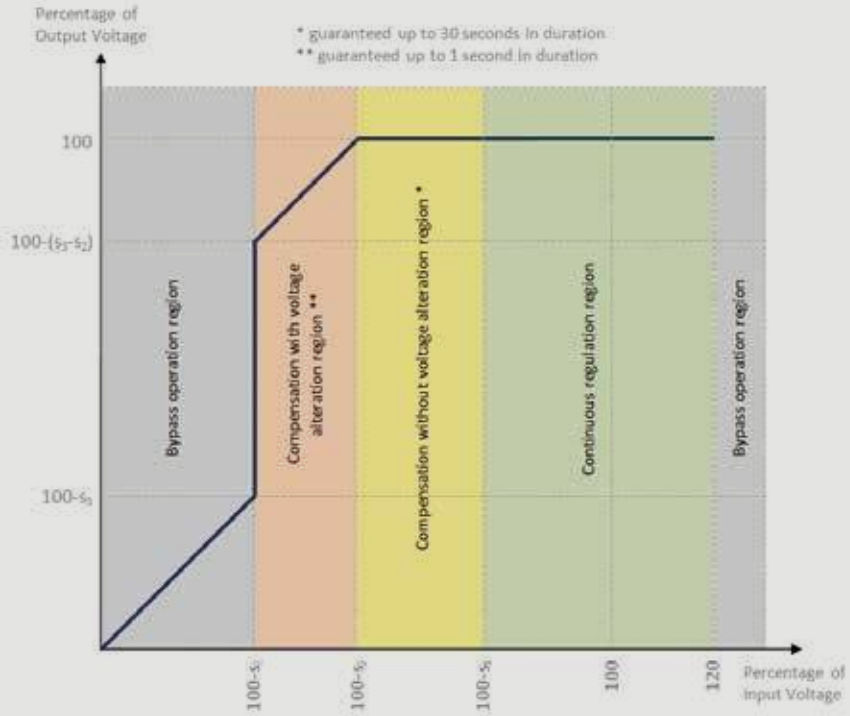
- Mitigates three-phase voltage sags up to 70% of depth or single-phase interruptions
- Continuous regulation to offer high stabilization (± 0,5 %)
- High efficiency supply system > 98,5 %
- It does not require battery or other energy storage components
- Compensation of voltage sags even for long times (up to 30 sec)
- Swell compensation up to +20%
- Independent compensation per phase
- Compensation of balanced and unbalanced voltage drops
- Automatic bypass
- Withstand 150% overload for 1 second in normal mode
- Less than 3 milliseconds response
- Energy flow in both directions
- Quick response speed
- Touch control panel
- Web interface to monitor and control
- Customizable for other powers and/or sags
- Modular design which facilitates maintenance and repairs
- Easy for connecting in parallel up to 3 equipments
- Mitigates voltage sags according the standards: SEMI F47, IEC 61000-4-11 and IEC 61000-4-34 (depends on the model)

CONNECTIVITY AND MONITORING

Communication gateway integrated. It enables the communication via Web server (http).

The web server allows the user to access the following data: status, measurements, configuration, alarms, control, network, equipment, etc. These same data are accessible directly from the touch control panel on the front of the device.

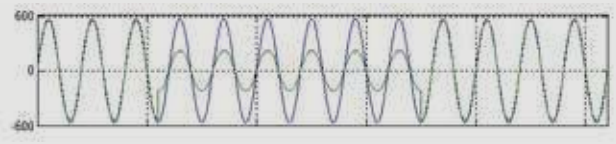
THREE-PHASE CORRECTION CAPACITY



THREE-PHASE CORRECTION CAPACITY CURVE							
SYSTEM PARAMETER	VALUE	ZGR AVC DVR 30	ZGR AVC DVR 40	ZGR AVC DVR 50	ZGR AVC DVR 150	ZGR AVC DVR 220	ZGR AVC DVR 300
Lower limit of continuous regulation	s1	25%	20%	15%	30%	25%	20%
Upper limit of continuous regulation	-	20%	20%	15%	20%	20%	20%
Maximum sag without voltage disturbance	s2	60%	50%	40%	60%	50%	40%
Maximum sag without bypass	s3	70%	70%	70%	70%	70%	70%

OPERATION

ZGR AVC DVR eliminates both three-phase and single-phase sags, considering that it compensates each phase independently. When a sudden drop in the input voltage (in green) occurs, ZGR AVC DVR acts quickly compensating it to ensure that the output voltage (in blue) remains stable.

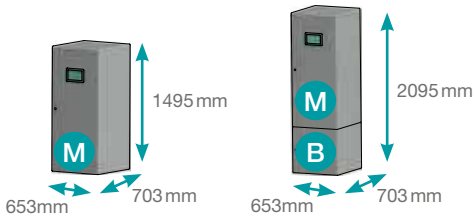


TECHNICAL SPECIFICATIONS							
Model		ZGR AVC DVR 30	ZGR AVC DVR 40	ZGR AVC DVR 50	ZGR AVC DVR 150	ZGR AVC DVR 220	ZGR AVC DVR 300
Output power		30 kVA	40 kVA	50 kVA	150 kVA	220 kVA	300 kVA
INPUT ELECTRICAL CHARACTERISTICS							
Nominal voltage [1]		200/208/220/480 ó 380/400/415 Vac					
Voltage range (Vac)		+ 20 % - 60%	+ 20 % - 50%	+ 20 % - 40%	+ 20 % - 60%	+ 20 % - 50%	+ 20 % - 40%
Phase		3 phases + ground (neutral opcional)					
Frequency		50/60 Hz					
OUTPUT ELECTRICAL CHARACTERISTICS							
Active power		30 kW	40 kW	50 kW	150 kW	220 kW	300 kW
Voltage [1]		200/208/220/480 or 380/400/415 Vac					
Regulation		± 0,5 %					
Phase		3 phases + ground (neutral opcional)					
Frequency		50 / 60 Hz					
Response time		< 3 ms					
Transfer time to Bypass		< 0,5 ms					
Overcharge capacitity in normal mode		110 % - 30 s, 150 % - 1 s					
Overcharge capacitity in bypass mode		200 % - 60 s, 500 % - 10 s, 3000% - 0,2 s					
COMMUNICATIONS							
Monitorization		Touch panel and web					
Communication		Webserver, Modbus TCP/IP, SNMP, Modbus RTU (optional)					
GENERAL CHARACTERISTICS							
Maximum efficiency		> 98 %			> 98,5 %		
Dielectric rigidity		2.5 – 1 kV minute					
Protecciones		Short-circuits, current limitation, overload, necessary disconnections					
Paralellable		Yes, up to 3 units					
Cooling		Forced ventilation					
Operating temperature		0 ~ 40 °C					
Storage temperature		0 ~ 85 °C					
Noise level		< 65 dB					
Degree of environmental protection		IP 21					
Operating altitude		< 1000 m					
Relative humidity		0 ~ 95 % without condensation					
Approx. Weight [1]	AVC DVR	330 kg			1050 kg		
	Bypass (configuration: master only)	50 kg			250 kg		
	Bypass (configuration: 1 slave)	100 kg			300 kg		
	Bypass (configuration: 2 slaves)	150 kg			400 kg		
STANDARDS							
Marks		CE					
General directives		2006/95/CE, UNE-EN 50178 (1998), 2004/108/CEE, EN 61000-6-3, EN 61000-6-2					

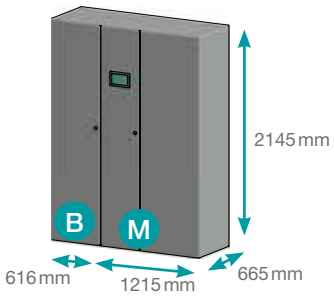
(1) Non-380 / 400 / 415 Vac systems require an input transformer. Consult dimensions and weights.
** For voltages, powers or configurations before different gaps, consult ZIGOR.*
** For any other technical need or modification of existing ones, consult ZIGOR.*
** These specifications may change without notice.*

DIMENSIONS

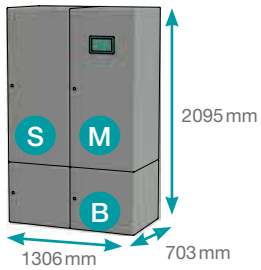
AVC DVR 30 / 40 / 50 + BYPASS CABINET
(1 MASTER)



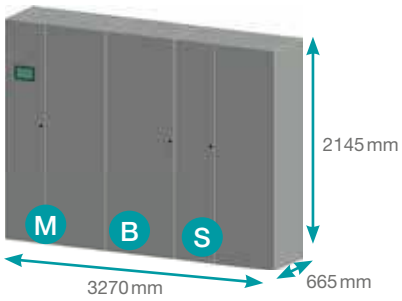
AVC DVR 150 / 220 / 300 + BYPASS CABINET *
(1 MASTER)



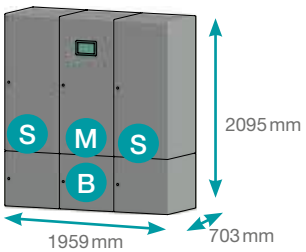
DVR 30 / 40 / 50 + BYPASS CABINET
(1 MASTER + 1 SLAVE)



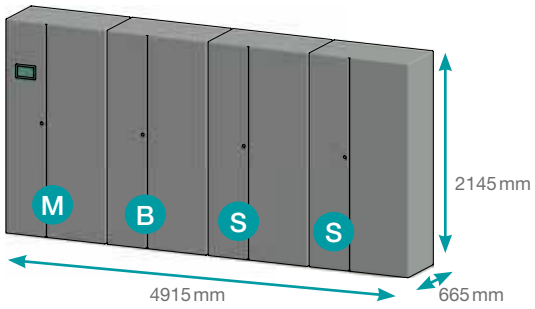
AVC DVR 150 / 220 / 300 + BYPASS CABINET *
(1 MASTER + 1 SLAVE)



AVC DVR 30 / 40 / 50 + BYPASS CABINET
(1 MASTER + 2 SLAVES)



AVC DVR 1 50 / 220 / 300 + BYPASS CABINET *
(1 MASTER + 2 SLAVES)



** Non-380 / 400 / 415 Vac systems Consult dimensions.*

PARALLEL SYSTEMS						
CONFIGURATION	AVC DVR 30	AVC DVR 40	AVC DVR 50	AVC DVR 150	AVC DVR 220	AVC DVR 300
Master + 1 slave	60 kVA	80 kVA	100 kVA	300 kVA	440 kVA	600 kVA
Master + 2 slaves	90 kVA	120 kVA	150 kVA	450 kVA	660 kVA	900 kVA

M MASTER
B BYPASS
S SLAVE

ZGR DVC SEPEC
OFFLINE UNINTERRUPTIBLE POWER SUPPLY

always ON

ZGR DVC SEPEC is guarantee of continuity of supply for critical industrial processes

ZGR DVC SEPEC industrial UPS range is equipped with high performance technology to reduce the effect of electrical disturbances that may affect industrial processes.

Its design allows eliminating variations in voltage and frequency as well as voltage sags and small interruptions for most critical industrial processes. ZGR DVC SEPEC guarantees the continuity of the power supply in all those processes in which the maximum reliability of the supply is a fundamental requirement.

Its internal architecture enables it to work together with emergency generation units ensuring the complete elimination of interruptions in the supply network and avoiding zero crossings.

APPLICATIONS

TELECOM
INDUSTRY
DATA CENTERS
RAILWAY SECTOR
ROBOTS
LOGISTICS CENTERS

CHARACTERISTICS

- High-efficiency emergency supply system > 99,5 %
- From 200 KVA to 800 KVA (expandable units)*
- Compatible with already installed protection systems
- Maximum robustness
- Integrable with existing supply guarantee systems: emergency generator units, etc.
- Web interface for monitoring and control
- Touch control panel
- LED signalling for quick visualization of the status of the inverters and batteries
- Greater reliability, MTBF and life cycle
- Voltage impulse elimination system*
- DSP digital control system
- Autonomy greater than 5 minutes (depending on consumption)
- Advanced management system, battery verification and diagnostics
- High efficiency batteries with low charging time and 100 % recyclable
- Possibility of integrating a network analyser*
- Low energy consumption
- Does not introduce harmonics into the installation (upstream)
- Timed relay for emergency mode
- Capable of operating with regenerative loads (braker)*
- Battery cabinet air-conditioned*
- Security and reliability with minimum necessary investment and reduction of operating costs
- Improved insulation with zigzag transformer for neutral

** Optional*

TECHNICAL SPECIFICATIONS				
Model	ZGR DVC/SEPEC 200	ZGR DVC/SEPEC 400	ZGR DVC/SEPEC 600	ZGR DVC/SEPEC 800
INPUT ELECTRICAL CHARACTERISTICS				
Phases	3 phases + ground (neutral opcional)			
Nominal voltage	380 / 400 Vac ± 15 %			
Frequency	50 / 60 Hz ± 10 %			
Current harmonic distortion	Does not introduce			
OUTPUT ELECTRICAL CHARACTERISTICS				
Apparent power	200 kVA	400 kVA	600 kVA	800 kVA
Power factor	1 (normal mode), 0.8 (emergency mode)			
Phases	3 phases + ground (neutral optional)			
Nominal voltage	380 / 400 Vca ± 15 %			
Frequency	50 / 60 Hz ± 10 %			
Voltage harmonic distortion	< 1,5 % (in emergency)			
Waveform	Sine wave			
Inverter active redundance	Inverters in parallel			
Crest factor	3 : 1			
Power KVA / KW (1)	200 / 200	400 / 400	600 /600	800 /800
BATTERY				
Battery type	Sealed lead VRLA			
Batteries current ripple	0 A (permanent regime)			
Service life diagnosis	Emergency cycle counter			
Air conditioned battery cabinets	Optional			
COMMUNICATIONS				
Monitoring	Web, touch control panel, LED signalling post			
Communications	Web Server, Modbus TCP/IP, SNMP, ModBus RTU (optional)			
PROTECTIONS				
Voltage impulses	Optional. Not degradable, performance threshold UNx1,1, Energy >900 jules			
Short-circuit protection	Yes			
Current limitation	Yes			
Overcharge	Yes			
Static and manual Bypass	Yes (without zero-crossing)			
Battery charger protection	Yes			
Battery temperature compensation	Yes			
OTHERS				
Total efficiency	99,5 %			
Overcharge	120 % in permanent regimen, 150 % during 10 seconds			
Range ambient temperature	IP21			
Cooling	Forced ventilation			
Operating temperature	0 ~ 40 °C			
Storage temperature	0 ~ 85 °C (excluding battery)			
Noise level	< 65 dB			
Operating altitude	< 1000 m			
Relative humidity	0 ~ 95 % (excluding battery)			
Approx. Weight	650 kg	950 kg	1345 kg	1575 kg
STANDARDS				
Marks	CE			
General directives	73/23/CEE-93/68/CEE, 2004/108/CEE			

(1) Equipment only FP = 1, equipment with standard batteries FP = 0,8. For other FP of equipment-battery set consult.

** Other voltages / autonomies on demand.*

** Dimensions and weight without braker. Consult dimensions and weight of cabinets with/without air conditioned.*

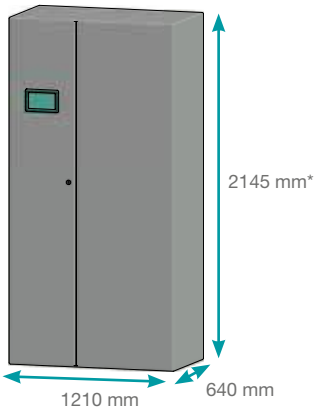
** These specifications may change without notice.*

CONNECTIVITY AND MONITORING

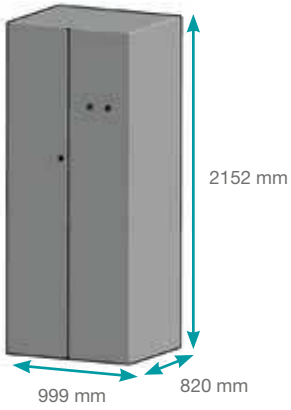
Communication gateway integrated. It enables the communication via Web server (http).

The web server allows the user to access the following data: status, measurements, configuration, alarms, control, network, equipment, etc. These same data are accessible directly from the touch control panel on the front of the device.

ZGR DVC SEPEC 200

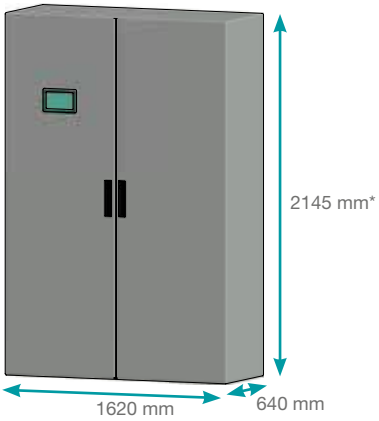


BATTERIES CONFIGURATION

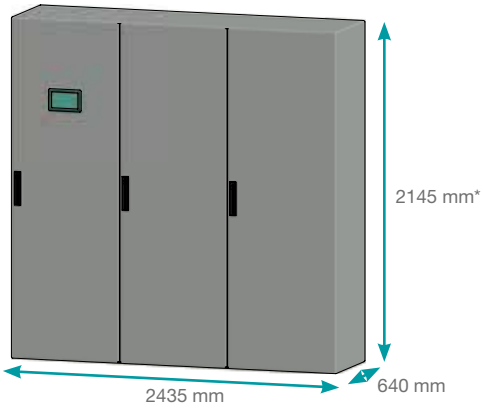


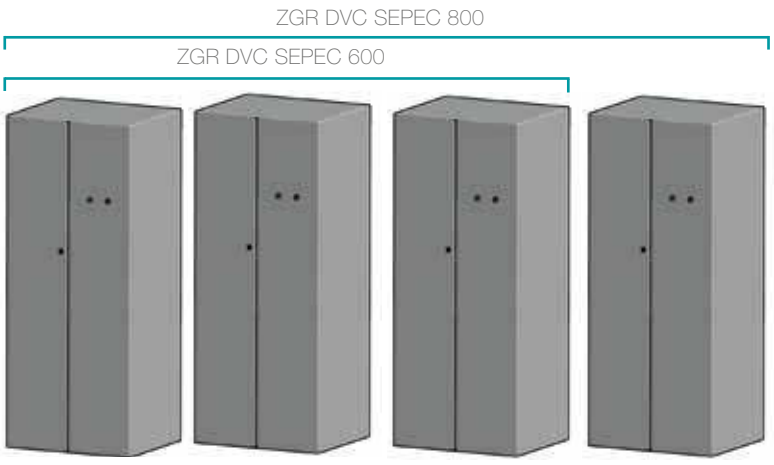
** Equipment with signalling post: 2445 mm*
**Equipment with braker option: 2555 mm*

ZGR DVC SEPEC 400



ZGR DVC SEPEC 600-800






always ON

always ON

UPS

From **ZIGOR**, a leading company with its own design and engineering, and more than 20 years of experience in the sector, we have developed a new range of UPS with the purpose of providing customized solutions to the new demands of the market in safe energy.

We have a complete range of electrical protection and management solutions. Single-phase and three-phase UPSs for all kind of applications from small offices and domestic environments to large industrial plants. In the event of a problem in the power supply, whether we need to make a safe shutdown or if we need to protect the integrity of the data, **ZIGOR** UPSs provide a reliable solution. In addition, all our professional devices have communication accessories for dry contact cards, SNMP card for network management or MODBUS protocols.

To help you find the most appropriate solution, we have divided our UPS catalogue into three main categories:

Small Office-Home Office (SOHO). Where you can find the best solution to protect your PC, workstations, or audio-visual environments: ZGR Inio, ZGR Quick, Zgr Optime, ZGR Steady.

Networks and servers. Double conversion online equipment to work in a professional environment with servers, Voice and data (VOIP), and other critical applications: ZGR Tower Pro, ZGR Efficient.

Industry and Data Centres. Three-phase equipment to guarantee the continuity and control of critical applications, industrial processes, infrastructures and Data Centres: ZGR Scalable, ZGR Influence.

Our experienced technical support engineers are available to answer all your questions so that they can give you the necessary support when you need it.

Continuous improvement and Innovation are the two main objectives of **ZIGOR** that make our products always at the forefront of the efficiency and protection of Business Continuity in the five continents.

ZGR QUICK 600 – 800 VA
LINE-INTERACTIVE UPS

always ON

ZGR QUICK is the perfect solution for protecting against grid distortions at household and small office.

ZGR QUICK is the solution for protecting household and office equipment with a compact and versatile design.

AVR technology allows stabilizing a wide range of input under/over voltages, preventing the excesive use of the UPS function, thus reducing the battery discharge / charge cycles and increasing its life.

In absence of grid power, the load is supplied by the inverter that provides a simulated sine wave for sufficient time for secure shutdown of the most critical computer systems through control and monitoring software.

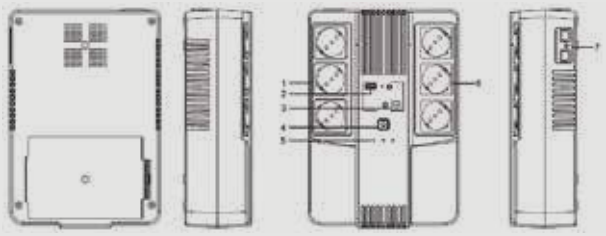
A push-button, a LED synoptic and user-replaceable battery make it a ideal device for everyone to protect against surges and small power failures.

DOMESTIC USE | PLUG & PLAY | USB PLUG | SCHUKO PLUG

CHARACTERISTICS

- USB charger ports up to 2A included for mobile devices, tablets, etc.
- 6 Schuko and 1 RJ45 sockets
- Compact and ergonomic
- 3 Sockets protected against power failures (UPS function)
- 3 Sockets protected against surges to power devices with high current peaks (laser printers …)
- Cold Start and Auto Restart function
- Output stabilization with AVR system
- User replaceable batteries
- USB interface for UPS monitoring
- Desktop or on the floor placement
- 2 year warranty

CONNECTIONS



1. UPS output
2. USB charger
3. USB monitorization
4. Power on
5. Informative LED
6. UPS output
7. LAN/modem protection

TECHNICAL SPECIFICATIONS		
Model	ZGR QUICK 600	ZGR QUICK 800
Power	600 VA / 360 W	800 VA / 480 W
INPUT ELECTRICAL CHARACTERISTICS		
Voltage range	162 - 290 Vac (allows use with generators)	
Frequency	50 / 60 Hz ± 10 %	
OUTPUT ELECTRICAL CHARACTERISTICS		
Nominal voltage	220 / 230 / 240 Vac ± 10 %	
Frequency (battery mode)	50 / 60 Hz ± 1 %	
Waveform (battery mode)	Simulated Sine	
Transfer time	Typical 2 - 6 ms / 10 ms max	
BATTERY		
Type / Capacity	1 x 12 V / 7 Ah	1 x 12 V / 9 Ah
Hot Swap	Yes (user replaceable)	
Charge time	6 - 8 h / 90 %	
Protection	Overload and deep discharge	
Autonomy	5 min (depends on load consumption and battery status)	
MONITORIZATION		
Informative	LED (LCD screen optional)	
Alarms	Acoustic depending on alarm	
Software	Windows / Linux / MAC	
CONNECTIONS		
Input	1 x IEC	
Output	6 x Schuko	
Protection	Opcional modem/LAN RJ45	
Communication	USB (Software monitorización)	
Extra	2x USB charger 1A	
FUNCTIONS		
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)	
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Cooling	Natural convection	
Operation temperature	0 - 40 °C	
Noise level (at 1m)	< 45 dB	
Relative humidity	0 - 95 % without condensation	
Dimensions (WxHxD)	190 x 90 x 270 mm	190 x 90 x 270 mm
Approx. Weight	3,6 kg	4,9 kg

** Green Power design that minimizes self consumption during normal operation.*
** Battery charging system even with the UPS turned OFF.*
** These specifications may change without notice.*

IEC 62040 - 3

VI TYPE

ZGR OPTIME 600 – 800 VA
LINE-INTERACTIVE UPS

always ON

ZGR OPTIME provides protection against overvoltages and transients surge form input power grid thanks to the latest digital technology.

The ZGR OPTIME series is a compact version managed by microprocessor and with LCD screen that provides real-time information of grid voltage and battery status.

ZGR OPTIME keeps your devices powered with a simulated sine wave long enough to eliminate small power failures.

The use of standard Schuko sockets avoids the need for additional adapter wires.

In addition, the connected equipment will be protected against mains surges, while the data lines (Internet / Telephone / Fax) are provided with protection against transients.

DOMESTIC USE

PLUG & PLAY

SCHUKO PLUG

CHARACTERISTICS

- Automatic restart (once the battery is discharged and/or mains return)
- Output stabilization with AVR technology and EMI / EMC filters for interference suppression
- Cold start function and automatic restart
- Available 600 and 800 VA models
- With LCD display for easy reading mains voltage and battery status
- Fast charge function
- Self-diagnosis for battery and UPS
- High battery reliability with microprocessor, battery status monitoring
- Schuko sockets to avoid adapter wires
- USB monitoring and control software
- Plug and Play system

CONNECTIONS

TECHNICAL SPECIFICATIONS		
Model	ZGR OPTIME 600	ZGR OPTIME 800
Power	600 VA / 360 W	800 VA / 480 W
INPUT ELECTRICAL CHARACTERISTICS		
Voltage range	162 - 290 Vac (allows use with generators)	
Frequency	50 / 60 Hz ± 10 %	
OUTPUT ELECTRICAL CHARACTERISTICS		
Nominal voltage	220 / 230 / 240 Vac ± 10 %	
Frequency (battery mode)	50 / 60 Hz ± 1 %	
Waveform (battery mode)	Simulated Sine	
Transfer time	Typical 2 - 6 ms / 10 ms max	
BATTERY		
Type / Capacity	1x 12 V / 7Ah	1x 12 V / 9 Ah
Charge time	6 - 8 h / 90 %	
Protection	Overload and deep discharge	
Autonomy	5 mins (depends on load consumption and battery status)	
MONITORIZATION		
Informative	LED + LCD screen	
Alarms	Acoustic depending on alarm	
Software	Windows / Linux / MAC	
CONNECTIONS		
Input	1x IEC	
Output	2x Schuko	
Protection	Modem / LAN RJ45	
Communication	USB y RS232 (Monitorization software)	
FUNCTIONS		
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)	
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Cooling	Convección natural	
Operation temperature	0 - 40 °C	
Noise level (at 1m)	< 45 dB	
Relative humidity	0 - 95 % without condensation	
Dimensions (WxHxD)	101 x 142 x 298 mm	101 x 142 x 298 mm
Approx. Weight	4,3 kg	4,7 kg

** Green Power design that minimizes self consumption during normal operation.*
** Battery charging system even with the UPS turned OFF.*
** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
TOWER	VI TYPE

ZGR STEADY 1000-1500-2000 VA
LINE-INTERACTIVE UPS

always ON

ZGR STEADY is the range that improves the control and power reliability of your critical devices.

ZGR STEADY offers an UPS solution with high efficiency level and confidence for all critical devices that need continuity and reliability in the power supply. They have very compact tower format to save space in server rooms, small offices and household use.

Likewise, the technology provided is Line-Interactive through AVR technology and managed by microprocessor. It allows to eliminate electrical grid fluctuations and keep output voltage stable with pure sinewave, which is the best quality to power all types of loads, even the most sensitive to small power outages.

Thanks to AVR, a lower use of the batteries is obtained, increasing their useful life and their availability to 100% in case of intervention.

Its pure sine waveform output reduces the cost of complex filters and the electromagnetic interference (EMI).

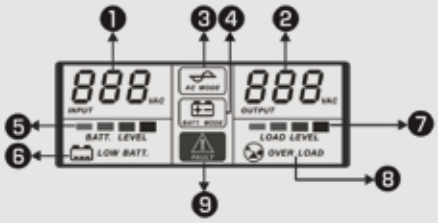
For an intuitive use, it has a LCD display with all the available information (input / output voltage,% of charge,% of battery, ...) and also, it has connectivity via USB interface with HID protocol, for use with monitoring software.

DOMESTIC USE PLUG & PLAY IEC PLUG

CHARACTERISTICS

- Available 1000/1500 / 2000VA models
- Pure sinewave allows you to connect equipment that is not exclusively intended for the IT sector, so the range of uses is extended
- Automatic restart after a electrical grid failure
- Output stabilization with AVR system and EMI filters
- Cold Start function in mains absence
- LCD display
- IEC sockets and adapter wire included
- Communications: RS232 and USB
- Monitoring and control software
- Self-diagnosis for battery and UPS
- Compatible with APFC equipment power without non power factor correction

DISPLAY



1 - Input voltage
2 - Output voltage
3 - Online mode
4 - Battery mode
5 - Battery level
6 - Battery low alarm
7 - Load level
8 - Overcharge alarm
9 - General alarm

TECHNICAL SPECIFICATIONS			
Model	ZGR STEADY 1000	ZGR STEADY 1500	ZGR STEADY 2000
Power	1000 VA / 700 W	1500 VA / 1050 W	2000 VA / 1400 W
INPUT ELECTRICAL CHARACTERISTICS			
Voltage range	162 - 290 Vac (allows use with generators)		
Frequency	50 / 60 Hz ± 10 %		
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	220 / 230 / 24 Vac		
Frequency (battery mode)	50 / 60 Hz ± 1 %		
Waveform (battery mode)	Pure sine		
Transfer time	Typical 2 - 6 ms / 10 ms max		
BATTERY			
Type / Capacity	2x 12 V / 7 Ah	2x 12 V / 9 Ah	2x 12 V / 9 Ah
Charge time	6 - 8 h / 90 %		
Protection	Overload and deep discharge		
Autonomy	5 min (depends on load consumption and battery status)		
MONITORIZATION			
Informative	LCD display		
Alarms	Acoustic depending on alarm		
Software	Windows / Linux / MAC		
CONNECTIONS			
Input	1x IEC		
Output	4 x IEC		
Protection	Modem / LAN RJ45		
Communication	USB y RS232 (Monitorization software)		
FUNCTIONS			
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)		
Auto Restart	Yes (restart the UPS functions after mains failure or deep battery discharge)		
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Cooling	Natural convection		Fan
Operation temperature	0 - 40 °C		
Noise level (at a 1m)	< 45 dB		< 55 dB
Relative humidity	0 - 95 % without condensation		
Dimensions (WxHxD)	146 x 160 x 350 mm	146 x 205 x 397 mm	146 x 205 x 397 mm
Approx. Weight	8 kg	10,5 kg	11,5 kg

** Green Power design that minimizes self consumption during normal operation.*
** Battery charging system even with the UPS turned OFF.*
** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
TOWER	VI TYPE

ZGR TOWER PRO 1 - 3 KVA
ON-LINE SINGLE-PHASE UPS

always ON

ZGR TOWER PRO
double conversion online technology for maximum reliability and protection.

ZGR TOWER PRO uses double conversion On-Line technology that completely isolates mains voltage and frequency variations providing a high quality power to your devices.

They are tower format, include automatic self-test and three optimized battery charge levels, in addition to ECO mode.

Ideal for business continuity applications that require long battery operation.

It is possible to extend the autonomy several hours using the LBT (Long Back up Time) model with a reinforced battery charger.

PF 0.9

APPLICATIONS

INDUSTRY · EMERGENCY · DOMESTIC USE · DATA CENTERS

CHARACTERISTICS

- » Power Factor of 0,9
- » Pure sinewave output
- » Intelligent port for SNMP communications *
- » Long autonomy models
- » 1, 2 and 3 kVA models
- » 3-level intelligent charger
- » LCD display
- » ECO function with performance> 96%
- » Cold Start and Auto Restart function
- » Management and monitoring via software
- » Self battery and UPS diagnosis

- » Double conversion online (Rectifier / Inverter)
  - It completely isolates customer loads from mains voltage and frequency variations and noise.
- » EPO (Emergency Power OFF) function
  - Rear panel terminal or front panel button.
- » Programmable output
  - Guarantees autonomy to priority loads.
- » Frequency converter function

* *Optional*

TECHNICAL SPECIFICATIONS			
Model	ZGR TOWER PRO		
Power	1000 VA / 900 W	2000 VA / 1800 W	3000 VA / 2700 W
Power factor	0,9		
INPUT ELECTRICAL CHARACTERISTICS			
Voltage range	162 - 290 Vac (allows use with generators)		
Frequency	45 - 65 Hz (auto detect)		
Power factor	> 0,98		
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	220 / 230 / 240 Vac		
Frequency (battery mode)	50 / 60 Hz ± 0,02 Hz		
Waveform (battery mode)	Pure sine		
Harmonic distortion THD (100% load)	< 3 % lineal / < 5 % non lineal		
Transfer time	0 ms battery / < 4 ms bypass		
Permissible peak current	3:1		
EFFICIENCY			
Inverter mode	90 %		
BATTERY			
Type / Capacity	2x 12 V / 9 Ah	4x 12 V / 9 Ah	6x 12 V / 9 Ah
Charge time	5 h / 90 %		
Protection	Overload and deep discharge		
Autonomy	5 mins (expandable with battery pack)		
MONITORIZATION			
Informative	LED + LCD screen		
Alarms	Acoustic depending on alarm		
Software	Windows / Linux / MAC		
CONNECTIONS			
Input	1x IEC / 1x Anderson (for long autonomy batteries)		
Output	8x IEC (4 programmable)		
Protection	Modem / LAN RJ45 (opcional)		
Communication	USB y RS232 (monitorization software)		
Intelligent port	Yes (SNMP optional / dry contacts)		
FUNCTIONS			
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)		
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)		
EPO (Emergency Power OFF) function	Front button / Back panel contact		
Paralellable	No		
Frequency converter 50 - 60 Hz	Yes		
Programmable outputs	Yes		
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Cooling	Forced fan cooling		
Operation temperature	0 - 40 °C		
Noise level (at 1m)	< 50 dB		
Relative humidity	0 - 95 % without condensation		
Dimensions (WxHxD)	114 x 215 x 400 mm	191 x 336 x 468 mm	191 x 336 x 468 mm
Approx. Weight	10,4 kg	15,4 kg	26 kg

** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
 TOWER	

ZGR TOWER PRO 6 - 10 KVA
ON-LINE SINGLE-PHASE UPS

always ON

ZGR TOWER PRO
double conversion online technology to protect your installation with maximum efficiency (PF1,0).

In this range of equipments there are 6 and 10 kVA available models with parallel function included up to 4 units. This feature allows a gradual upgrade of user installation without the need to invest in a new UPS.

It also integrates Frecuency Converter function that enables to adapt the operating frequency in different countries 50 / 60Hz.

Ideal for business continuity applications that require long battery operation.

It is possible to extend autonomy several hours using the LBT versions with reinforced battery charger.

APPLICATIONS

INDUSTRY · EMERGENCY · DOMESTIC USE · DATA CENTERS · RAILWAY SECTOR

CHARACTERISTICS

- » Power Factor of 1,0
- » Parallelable up to 4 units
- » Can be configured as common battery
- » Pure sinewave output
- » SNMP communications card and dry contacts *
- » 3-level smart charger
- » LCD display
- » ECO function with performance > 96%
- » Cold Start and Auto Restart function
- » Self battery and UPS diagnosis
- » Double conversion online (Rectifier / Inverter)
  - It completely isolates consumer loads from mains voltage and frequency variations and noise.
- » Long autonomy models available
- » Management and monitoring
  - Via software
  - USB / RS232 connection
- » EPO (Emergency Power OFF) function
  - Rear panel terminal or front panel button
- » Frequency converter function

** Optional*

TECHNICAL SPECIFICATIONS		
Model	ZGR TOWER PRO	
Power	6 kVA / 6 kW	10 kVA / 10 kW
Power factor	1,0	
INPUT ELECTRICAL CHARACTERISTICS		
Voltage range	120 - 276 Vac (allows use with generators)	
Frequency	45 - 65 Hz (auto detect)	
Power factor	0,99	
THDi (100% load)	< 3 % lineal	
OUTPUT ELECTRICAL CHARACTERISTICS		
Nominal voltage	220 / 230 / 240 Vac	
Frequency (battery mode)	50 / 60 Hz ± 0,02 Hz	
Waveform (battery mode)	Pure sine	
Harmonic distortion THD (100% load)	< 2 % lineal / < 4 % non lineal	
Transfer time	0 ms battery / 0 ms bypass	
Permissible peak current	3:1	
Overcharge	1 min < 130 % , 300 ms > 150 %	
EFFICIENCY		
Inverter mode	93 %	
BATTERY		
Type / Capacity	96 / 108 / 120 V (12 V - 7/9 Ah)	
Charge time	6 - 8h / 90 %	
Protection	Overload and deep discharge	
Autonomy	5 min (expandable with battery pack)	
MONITORIZATION		
Informative	LED + LCD display	
Alarms	Acoustic depending on alarm	
Software	Windows / Linux / MAC	
CONNECTIONS		
Input	Terminal panel	
Output	Terminal panel	
Communication	USB y RS232 (Software monitorización)	
Intelligent port	Yes (SNMP optional / dry contacts)	
FUNCTIONS		
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)	
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)	
EPO (Emergency Power OFF) function	Back panel contacts	
Paralellable	Yes (up to 4 units)	
Frequency converter 50 - 60 Hz	Yes	
Programmable outputs	No	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Protection switches	Yes	
Cooling	Forced fan cooling (PWM variable speed)	
Operation temperature	0 - 40 °C	
Noise level (at a 1m)	< 55 dB	
Relative humidity	0 - 95 % without condensation	
Dimensions (WxHxD)	191 x 720 x 460 mm	191 x 720 x 460 mm
Approx. Weight	60 kg	61 kg

** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
 TOWER	VFI TYPE ONLINE

ZGR EFFICIENT RT 1 - 3 KVA
ON-LINE SINGLE-PHASE UPS

always ON

EFFICIENT RT compact and convertible Rack / Tower series.

EFFICIENT RT are high density double conversion On-Line UPS, adapted to supply power to a wide range of devices such as servers, storage systems, VoIP telephone devices and network, as well as industrial ones.

It is ideal to supply and protect Blade Server systems thanks to its high power factor. With only 2U EFFICIENT RT can perfectly be integrated in 19 ”rack cabinets.

ZGR has always been concerned with energy savings and has introduced in all UPS series the ECO function that minimizes self consumption during normal operation and improves efficiency.

APPLICATIONS

INDUSTRY · EMERGENCY · DOMESTIC USE · DATA CENTERS · RAILWAY SECTOR

CHARACTERISTICS

- » Power Factor of 0,9
- » Rack / tower format
- » SNMP communications cards and dry contacts*
- » Long autonomy models
- » 1, 2 and 3 kVA models
- » Pure sinewave output
- » 3-level smart charger
- » LCD screen
- » Cold Start and Auto Restart function
- » Self battery and UPS status diagnosis
- » Frequency converter function 50Hz <-> 60Hz

- » Management and monitoring
  - Via software
  - USB / RS232 connection
- » EPO (Emergency Power OFF) function
  - Rear panel terminal or front panel button
- » ECO function
  - Minimizes the UPS self consumption
- » Power off function
  - Power sheeding function guarantees autonomy to priority loads
- » Double conversion online (Rectifier / Inverter)
  - It completely isolates the customer loads from mains voltage and frequency variations and from noise

* *Optional*

TECHNICAL SPECIFICATIONS			
Model	ZGR EFFICIENT RT		
Power	1000 VA / 900 W	2000 VA / 1800 W	3000 VA / 2700 W
Power factor	0,9		
INPUT ELECTRICAL CHARACTERISTICS			
Voltage range	162 - 290 Vac (allows use with generators)		
Frequency	45 - 65 Hz (auto detect)		
Power factor	> 0,98		
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	208 / 220 / 230 / 240 Vac		
Frequency (battery mode)	50 / 60 Hz ± 0,02 Hz		
Waveform (battery mode)	Pure sinewave		
Harmonic distortion THD (100% load)	< 3 % lineal / < 5 % non lineal		
Transfer time	0 ms battery / < 4 ms bypass		
Permissible peak current	3:1		
EFFICIENCY			
Inverter mode	90 %		
BATTERY			
Type / Capacity	2x 12 V / 9 Ah	4x 12 V / 9 Ah	6x 12 V / 9 Ah
Hot Swap	Yes [1]		
Charge time	5 h / 90 %		
Protection	Overload and deep discharge		
Autonomy	5 mins (expandable with battery pack)		
MONITORIZATION			
Informative	LED + LCD display		
Alarms	Acoustic depending on alarm		
Software	Windows / Linux / MAC		
CONNECTIONS			
Input	1x IEC / 1x Anderson (LBP)		
Output	6x IEC (3 programmable)		
Protection	Modem / LAN RJ45 (optional)		
Communication	USB y RS232 (monitorization software)		
Intelligent port	Yes (SNMP optional / dry contacts)		
FUNCTIONS			
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)		
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)		
EPO (Emergency Power OFF) function	Front button / Back panel contact		
Parallelable	No		
Frequency converter 50 - 60 Hz	Yes		
Programmable outputs	Yes		
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Rack mounting guides	Optional		
Cooling	Forced fan cooling		
Operation temperature	0 - 40 °C		
Noise level (at 1m)	< 50 dB		
Relative humidity	0 - 95 % without condensation		
Dimensions (WxHxD)	440 x 86,5 x 430 mm	440 x 86,5 x 430 mm	440 x 86,5 x 600 mm
Approx. Weight	14 kg	19 kg	24 kg

[1] Battery easily replaceable by the user.
** Vertical or horizontal mounting.*
** These specifications may change without notice.*

IEC 62040 - 3

VFI TYPE ONLINE

ZGR EFFICIENT R 6 - 10 KVA
ON-LINE SINGLE-PHASE UPS

always ON

PF 0.9

ZGR EFFICIENT R
maximum efficiency supply for critical systems.

ZGR EFFICIENT R goes one step further, and seeks to meet the needs of customers with greater demand for protected power in 6 and 10 kVA versions, providing the best power solution for vital applications and critical devices that require maximum reliability and efficiency thanks to its Power Factor and efficiency of up to 93%

It also supports parallel of up to 4 units for greater versatility and growth according to the evolution of load consumption in your installation.

Perfect for protecting industrial applications, servers, banks, IT equipment and networks.

APPLICATIONS

INDUSTRY · EMERGENCY · DOMESTIC USE · DATA CENTERS · RAILWAY SECTOR

CHARACTERISTICS

- » Power Factor of 0,9
- » Parallelable up to 4 units
- » Common battery configurable
- » Communications card and dry contacts
- » Pure sinewave output
- » Efficiency > 93 %
- » 3-level smart charger
- » LCD display
- » Cold Start and Auto Restart function
- » Self battery and UPS diagnosis
- » Frequency converter function
- » Long autonomy models available

- » Management and monitoring
  - Via software
  - USB / RS232 connection
- » EPO (Emergency Power OFF) function
  - Rear panel or front panel button
- » ECO function
  - Minimizes UPS self consumption
- » Power sheeding function
  - Guarantees autonomy to priority loads
- » Double conversion online

* *Optional*

TECHNICAL SPECIFICATIONS		
Model	ZGR EFFICIENT R	
Power	6 kVA / 5,4 kW	10 kVA / 9 kW
Power factor	0,9	
Format	Rack	
INPUT ELECTRICAL CHARACTERISTICS		
Voltage range	120 - 276 Vac (allows use with generators)	
Frequency	45-65 Hz (auto detect)	
Power factor	0,99	
THDi (100% load)	< 3 % lineal, < 5 % non lineal	
OUTPUT ELECTRICAL CHARACTERISTICS		
Nominal voltage	208 / 220 / 230 / 240 Vac	
Frequency (battery mode)	50 / 60 Hz ± 0,01 Hz	
Waveform (battery mode)	Pure sinewave	
Harmonic distortion THD (100% load)	< 3 % lineal / < 5 % non lineal	
Transfer time	0 ms battery / 0 ms bypass	
Permissible peak current	3:1	
Overcharge	1 min < 130 %, 300 ms > 150 %	
EFFICIENCY		
Inverter mode	93 %	
BATTERY		
Type / Capacity	96 / 108 / 120 V (12 V - 7 / 9 Ah)	
Hot Swap	Yes (battery pack)	
Charge time	6 - 8 h / 90 %	
Protection	Overload and deep discharge	
Autonomy	5 mins (expandable with battery pack)	
MONITORIZATION		
Informative	LED + LCD display	
Alarms	Acoustic depending on alarm	
Software	Windows / Linux / MAC	
CONNECTIONS		
Input	Terminal panel	
Output	Terminal panel	
Communication	USB, RS232	
Intelligent port	Yes (SNMP optional / dry contacts)	
FUNCTIONS		
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)	
Auto Restart	Yes (restart the UPS functions after mains failure or deep battery discharge)	
EPO (Emergency Power OFF) function	Back panel contact	
Parallelable	Yes (up to 4 units)	
Frequency converter 50 - 60 Hz	Yes	
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS		
Protection switches	Yes	
Cooling	Forced fan cooling (PWM speed control)	
Operation temperature	0 - 40 ºC	
Noise level (at 1m)	< 55 dB	
Relative humidity	0 - 95% without condensation	
Dimensions (WxHxD)	440 x 88 x 585 mm	440 x 88 x 585 mm
Approx. Weight	14 kg	18 kg

** These specifications may change without notice.*

IEC 62040 - 3

VFI TYPE ONLINE

ZGR VERSATILE 10 - 20 KVA
ON-LINE THREE-PHASE UPS

always ON

ZGR VERSATILE
is our best bet on a flexible three-phase single phase (1:3:1).

ZGR VERSATILE is a transformer-less UPS, in tower format and available in 10 - 15 - 20 kVA models with three-phase / single-phase input and single-phase output.

ZGR VERSATILE incorporates the most advanced technologies in DSP (digital signal processor), three-level inverter and maximum protection against critical loads, always optimizing energy savings.

This series anticipates the evolution from your single-phase installation to future needs for three-phase input grid. Extends your single-phase installation life reducing costs.

It is an ideal equipment to protect industrial processes, data centers, transportation, emergencies and security.

PF 0.9

APPLICATIONS

INDUSTRY · EMERGENCY · DATA CENTERS · RAILWAY SECTOR · SECURITY

CHARACTERISTICS

- » Power Factor of 0,9
- » Convertible 1:1 / 3:1
- » Parallelable up to 4 units
- » Online double conversion with DSP control
- » Low current distortion
- » Long autonomy models available
- » Green concept design to save energy
- » Compatible with generators
- » Configurable battery voltage
- » Allows common battery in parallel mode
- » Estimated backup time on display
- » Smart card bay: RS485, SNMP, potential free contacts
- » Communication software included
- » Cold start
  - It allows UPS operation even without mains power
- » ECO function
  - Minimize UPS self consumption power.
- » Double conversion online

TECHNICAL SPECIFICATIONS			
Model	ZGR VERSATILE		
Power	10 kVA / 9 kW	15 kVA / 13,5 kW	20 kVA / 18 kW
Power factor	0,9		
Format	Tower		
INPUT ELECTRICAL CHARACTERISTICS			
Voltage range	305 - 478 Vac (allows use with generators)		
Frequency	40 - 70 Hz (auto detect)		
Power factor	0,99		
THDi (100% load)	< 5 % non lineal		
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	220 / 230 / 240 Vac (3 phases + N + PE) ± 2 %		
Frequency (battery mode)	50 / 60 Hz ± 0,2 Hz		
Waveform (battery mode)	Pure sinewave		
Harmonic distortion THD (100% load)	< 2 % lineal / < 5 % non lineal		
Transfer time	0 ms battery / 0 ms bypass		
Permissible peak current	3:1		
Overcharge (Online)	3 min < 110 %, 30 s < 125 %, bypass > 150 %		
Overcharge (Battery)	30 s < 110 %, 1 s < 125 %, off > 150 %		
EFFICIENCY			
Inverter mode	90 %		
BATTERY			
Charger maximum current	6 A		
DC bus voltage	± 192 Vdc (32 pcs / 12 V)		
Autonomy	Depending on battery capacity		
MONITORIZATION			
Informative	LED + LCD display		
Alarms	Acoustic depending on alarm (dry contacts optional)		
Software	Windows		
CONNECTIONS			
Terminal panel	Input / Output / Bypass / Battery		
Protection switch	Input		
Bypass maintenance switch (MCB)	60 A	100 A	125 A
Bypass input	No		
Communication	USB / RS232		
Intelligent port	Yes (SNMP optional / dry contacts)		
FUNCTIONS			
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)		
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)		
ECO mode	Yes		
EPO (Emergency Power OFF) function	Back panel contact		
Parallelable	Yes (up to 4 units)		
Bypass operation limits	Configurable		
Frequency converter 50 - 60 Hz	Yes		
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Cooling	Forced fan cooling (PWM speed control)		
Operation temperature	0 - 40 °C		
Noise level (at 1m)	< 60 dB		
Relative humidity	0 - 95 % without condensation		
Dimensions (WxHxD)	250 x 655 x 590 mm		
Approx. Weight	40 kg	45 kg	45 kg
STANDARDS			
Marks	CE		
General directives	IEC/EN 62040-1, IEC/EN 62040-2 , IEC61000-4-2 , IEC61000-4-3 , IEC61000-4-4 , IEC61000-4-5, IEC61000-4-6 , IEC61000-4-8, IEC/EN 60950-1		

** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
TOWER	VFI TYPE ONLINE

ZGR VERSATILE RT 10 KVA
ON-LINE THREE-PHASE UPS

always ON

ZGR VERSATILE RT
is our flexible three-phase / single-phase (1: 3: 1) for 19 ” rack mount UPS.

ZGR VERSATILE RT is our bet on 10 kVA power and compact Tower / Rack convertible format that best adapts to 19 ”cabinet space limitations.

The ZGR VERSATILE RT series seeks to optimize your investment in a UPS and, among other possible functionalities, allows connection to both single-phase and future expansion to three-phase.

It is designed for paralleling up to 4 units to enable a gradual upgrade according to your protected power needs thanks to Double Conversion technology and a high efficiency up to 93.5%.

PF 0.9

APPLICATIONS

INDUSTRY · EMERGENCY · DATA CENTERS · RAILWAY SECTOR · SECURITY

CHARACTERISTICS

- » Power Factor of 0,9
- » Convertible 1:1 / 3:1
- » Parallelable up to 4 units
- » Online double conversion with DSP control
- » Rotating LCD screen
- » Low current distortion
- » Long autonomy models available
- » Compatible with generator sets.
- » Periodic battery test configurable
- » Configurable battery voltage (16/18/20 12 V Pb elements)
- » Allows common battery in parallel mode
- » Estimated back up time on display
- » Connection terminals on rear panel
- » Cold start
  - It allows UPS operation even without mains power
- » ECO function
  - Minimize UPS self consumption of the UPS itself
- » Communications
  - Smart card bay: RS485, SNMP, dry contacts
  - Communications software included

TECHNICAL SPECIFICATIONS	
Model	ZGR VERSATILE RT
Power	10 kVA / 9 kW
Power factor	0,9
Format	Rack, tower
INPUT ELECTRICAL CHARACTERISTICS	
Voltage range	305 - 478 Vac (allows use with generators)
Frequency	40 - 70 Hz (auto detect)
Power factor	0,99
THDi (100% load)	< 5 % non lineal
OUTPUT ELECTRICAL CHARACTERISTICS	
Nominal voltage	220 / 230 / 240 Vac (3 phases + N + PE) ± 2 %
Frequency (battery mode)	50 / 60 Hz ± 0,2 Hz
Waveform (battery mode)	Pure sinewave
Harmonic distortion THD (100% load)	< 2 % lineal / < 5 % non lineal
Transfer time	0 ms battery / 0 ms bypass
Permissible peak current	3:1
Overcharge (Online)	3 min < 110 %, 30 s < 125 %, bypass > 150 %
Overcharge (Battery)	30 s < 110 %, 1 s < 125 %, off > 150 %
EFFICIENCY	
Inverter mode	93,5 %
BATTERY	
Charger maximum current	10 A
DC bus voltage	± 192 Vdc (32 pcs / 12 V)
Autonomy	Depending on battery capacity
MONITORIZATION	
Informative	LED + LCD display
Alarms	Acoustic depending on alarm (dry contacts optional)
Software	Windows
CONNECTIONS	
Terminal panel	Input / Output / Bypass / Battery
Protection switch	Input
Bypass maintenance switch (MCB)	60 A
Communication	USB / RS232
Intelligent port	Yes (SNMP optional / dry contacts)
FUNCTIONS	
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)
Auto Restart	Yes (restart the UPS functions after mains failure or deep battery discharge)
ECO mode	Yes
EPO (Emergency Power OFF) function	Back panel contact
Parallelable	Yes (up to 4 units)
Bypass operation limits	Configurable
Frequency converter 50 - 60 Hz	Yes
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS	
Cooling	Forced fan cooling (PWM speed control)
Operation temperature	0 - 40 °C
Noise level (at 1m)	< 55 dB
Relative humidity	0 - 95 % without condensation
Dimensions (WxHxD)	443 x 131 x 580 mm
Approx. Weight	30 kg
STANDARDS	
Marks	CE
General directives	IEC/EN 62040-1 , IEC/EN60950-1, IEC/EN 62040-2 , IEC61000-4-2 , IEC61000-4-3 , IEC61000-4-4 , IEC61000-4-5, IEC61000-4-6 , IEC61000-4-8

** These specifications may change without notice.*

IEC 62040 -3

VFI TYPE ONLINE

ZGR INFLUENCE 10 – 40 KVA
ON-LINE THREE-PHASE UPS

always ON

ZGR INFLUENCE
advanced and compact three-phase technology with efficiency up to 94.5%.

ZGR INFLUENCE consists on a small-sized UPS, in tower format and available in 10K, 20K, 30K and 40K models with three-phase input and output.

ZGR INFLUENCE incorporates the most advanced DSP (Digital Signal Processor) technologies, 3-level smart charger and 7 ” colour touch screen, in which you can configure and monitor UPS status in an intuitive way and direct without the need for external software.

It is parallelable up to 4 units with common battery setup, being one of the market smaller footprint solution.

It can be purchased with optional transport wheels and/ or integrated batteries model to provide safe power for a temporary installation.

PF 0.9

APPLICATIONS

INDUSTRY · EMERGENCY · DATA CENTERS · RAILWAY SECTOR · SECURITY

CHARACTERISTICS

- Power Factor of 0,9
- Dual input *
- Parallelable up to 4 units
- Allows common battery in parallel mode
- 7” colour touch screen
- Compatible with generator sets
- Compatible with NiCd / Li (on demand)
- Internal batteries *
- Online double conversion with DSP control
- Low current distortion
- Long autonomy models
- Periodic battery test configurable
- Configurable battery voltage
- Cold start and Auto Restart function
- 2 independent bays for smart cards and dry contacts
- Integrated Input/output/bypass MCB protections

* *Optional*

TECHNICAL SPECIFICATIONS					
Model	ZGR INFLUENCE				
Power	10 kVA / 9 kW	15 kVA / 13,5 kW	20 kVA / 18 kW	30 kVA / 27 kW	40 kVA / 36 kW
Power factor	0,9				
Format	Tower				
INPUT ELECTRICAL CHARACTERISTICS					
Voltage range	208 - 478 Vac (allows use with generators)				323 - 478 Vac
Frequency	45 - 65 Hz (auto detect)				
Power factor	0,99				
THDi (100% load)	< 3 % non lineal				
OUTPUT ELECTRICAL CHARACTERISTICS					
Nominal voltage	380 / 400 / 415 Vac (3 phases + N + PE) ± 1 %				
Frequency (battery mode)	50 / 60 Hz ± 0,1 Hz				
Waveform (battery mode)	Pure sinewave				
Harmonic distortion THD (100% load)	< 2 % lineal / < 4 % non lineal				
Transfer time	0 ms battery / 0 ms bypass				
Permissible peak current	3:1				
Overcharge (Online)	60 mins < 110%, 10 mins < 125%, bypass >150%				
Overcharge (Battery)	10 mins < 110%, 1 mins < 125%, off > 150 %				
EFFICIENCY					
Inverter mode	> 93,5 %			> 94,5 %	
BATTERY					
Charger maximum current	10 A	10 A	10 A	20 A	20 A
Type / Capacity	9 Ah / 20 x 12 V				40 x 12 V
DC bus voltage	± 120 Vdc				± 192 - 240 Vdc
Autonomy	10 mins (depending on battery capacity)				
MONITORIZATION					
Informative	LED + 7” touch screen				
Alarms	Acoustic depending on alarm (dry contacts optional)				
Software	Windows				
CONNECTIONS					
Terminal panel	Input / Output / Bypass / Battery				
Protection switch	Input / Output / Bypass			Input	
Bypass maintenance switch (MCB)	20 A	32 A	40 A	63 A	80 A
Separate bypass input	No (optional)				
Communication	USB / RS232 / RS485 (no simultaneously)				
Smart port	2 bays (SNMP optional/ dry contacts)				
Dry contacts	2 integrated (mains failure, low battery)				
FUNCTIONS					
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)				
Auto Restart	Yes (restart the UPS functions after mains failure or deep battery discharge)				
ECO mode	Yes				
EPO (Emergency Power OFF) function	Back panel contact				
Parallelable	Yes (up to 4 units)				
Bypass operation limits	Configurable				
Frequency converter 50 - 60 Hz	Yes				
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS					
Cooling	Forced fan cooling				
Operation temperature	0 - 40 °C				
Noise level (at 1m)	< 55 dB				< 58 dB
Relative humidity	0 - 95 % without condensation				
Dimensions (WxHxD)	250 x 868 x 828 mm				
Approx. Weight (without batteries)	42 kg	45 kg	45 kg	66 kg	73 kg
STANDARDS					
Marks	CE				
General directives	IEC/EN 62040-1 , IEC/EN60950-1, IEC/EN 62040-2 , IEC61000-4-2 , IEC61000-4-3 , IEC61000-4-4 , IEC61000-4-5 , IEC61000-4-6 , IEC61000-4-8				

** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
 TOWER	VFI TYPE ONLINE

ZGR INFLUENCE HP 50 - 180 KVA
ON-LINE THREE-PHASE UPS

always ON

ZGR INFLUENCE HP
advanced and efficient three-phase technology up to 95.5%.

ZGR INFLUENCE HP expands its options with a range from 50 kVA to 180 kVA and improves its technology with a 3-stage inverter, which results in a lower loss of power in conversion and achieves an efficiency up to 95.5%. High efficiency equipments on a small footprint.

In this range of power, ZGR INFLUENCE HP offers a FP 1.0 for its loads which makes it suitable for all types of installations that demand high energy quality and best energy efficiency.

It is an ideal equipment to protect industrial processes, hospitals, data centers, transportation, emergencies and security.

They are available in a Dual Input version that allows a three-phase auxiliary bypass grid.

PF 1.0

APPLICATIONS

INDUSTRY · EMERGENCY · DATA CENTERS · RAILWAY SECTOR · SECURITY

CHARACTERISTICS

- 3:3 and dual input optional
- Efficiency of 95,5 %
- Parallelable up to 4 units
- Allows common battery in parallel mode
- Compatible with NiCd / Li (on demand)
- Online double conversion with DSP control
- Low current distortion
- Long autonomy models
- Compatible with generator sets
- Configurable battery voltage
- Cold start and Auto Restart function
- Integrated input/output/bypass MCB protections

- Double conversion online (Rectifier / Inverter)
  - It completely isolates consumer loads from main variations of voltage and frequency and from noise
- ECO function
  - Minimize UPS self consumption and improves efficiency up to 98%
- Communications
  - 2 independent bays for smart cards and dry contacts
  - Monitorization software included
- Dual Grid Backup function
  - Allows 2 groups in parallel with 2 independent three-phase grids

TECHNICAL SPECIFICATIONS						
Model	ZGR INFLUENCE HP					
Power	50 kVA / 50 kW	60 kVA / 60 kW	100 kVA / 100 kW	120 kVA / 120 kW	150 kVA / 150 kW	180 kVA / 180 kW
Power factor	1,0					
Format	Cabinet					
INPUT ELECTRICAL CHARACTERISTICS						
Voltage range	305 - 485 Vac (allows use with generators)					
Frequency	40 - 70 Hz (auto detect)					
Power factor	0,99					
THDi (100% load)	< 3 % non lineal					
OUTPUT ELECTRICAL CHARACTERISTICS						
Nominal voltage	380 / 400 / 415 Vac (3 phases + N + PE) ± 1 %					
Frequency (battery mode)	50 / 60 Hz ± 0,1 Hz					
Waveform (battery mode)	Pure sinewave					
Harmonic distortion THD (100% load)	< 1 % lineal / < 4 % non lineal					
Transfer time	0 ms battery / 0 ms bypass					
Permissible peak current	3:1					
Overcharge (Online)	60 min < 11 % / 10 min < 125 % / bypass > 150 %					
EFFICIENCY						
Inverter mode	96 %					
BATTERY						
Charger maximum current	15 A		30 A		45 A	
DC bus voltage	± 180 - 300 Vdc (30 - 50 pcs / 12 V)					
Temperature sensor	External sensor (optional)					
Autonomy	Depending on battery capacity					
MONITORIZATION						
Informative	LED + LCD (optional 7" colour touch screen)					
Alarms	Acoustic depending on alarm (dry contacts optional)					
Software	Windows					
CONNECTIONS						
Terminal panel	Input / Output / Bypass / Battery					
Protection switch	Input / Output / Bypass					
Bypass maintenance switch (MCB)	100 A	125 A	200 A	25 A	320 A	320 A
Separate bypass input	Yes					
Communication	USB / RS232 / RS485 (non simultaneously)					
Smart port	2 bays (SNMP optional/ dry contacts)					
Dry contacts	2 integrated (mains failure, low battery)					
FUNCTIONS						
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)					
Auto Restart	Yes (restart the UPS functions after a failure or deep battery discharge)					
ECO mode	Yes					
EPO (Emergency Power OFF) function	Back panel contact					
Parallelable	Yes (up to 4 units)					
Master/Slave function (LBS)	It enables grouping parallels Master / Slave and control the network switch (STS)					
Bypass operation limits	Configurable					
Frequency converter 50 - 60 Hz	Yes					
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS						
Cooling	Forced fan cooling					
Operation temperature	0 - 40 °C					
Noise level (at a 1m)	< 58 dB	< 60 dB	< 63 dB	< 65 dB	< 66 dB	< 66 dB
Relative humidity	0 - 95 % without condensation					
Dimensions (WxHxD)	250 x 868 x 828 mm		442 x 1200 x 850 mm		442 x 1200 x 850 mm	
Approx. Weight	73 kg	82 kg	150 kg	160 kg	190 kg	200 kg
STANDARDS						
Marks	CE					
General directives	IEC/EN 62040-1 , IEC/EN60950-1, IEC/EN 62040-2 , IEC61000-4-2 , IEC61000-4-3 , IEC61000-4-4 , IEC61000-4-5 , IEC61000-4-6 , IEC61000-4-8					

** These specifications may change without notice.*

FORMAT	IEC 62040 - 3
 TOWER	VFI TYPE ONLINE

ZGR SCALABLE 60 – 300 KVA
ON-LINE MODULAR UPS

always ON

PF 1.0

ZGR SCALABLE enables you to easily increase power and autonomy to meet the changing needs of the end user.

ZGR SCALABLE is the most advanced modular UPS, specially designed for data centers and critical loads offering maximum availability.

The MPW grows as demand for the activity increases, without the need to expand the physical volume of the UPS, optimizing both the initial investment ZGR SCALABLE as well as the total costs of ownership.

ZGR SCALABLE expanding its feeding capacity is really easy thanks to modules of different powers (*).

ZGR SCALABLE fully satisfies the changing demand of the grid environment and enables the end user to easily increase the power within its 3 available cabinet sizes.

APPLICATIONS

DATA CENTERS

CHARACTERISTICS

- 10k / 15k / 20k / 25k / 30k modules *
- Centralized control
- Parallel n + x
- 3-level IGBT technology
- 3 levels of smart charging
- Touch screen
- Power factor up to 1,0
- Efficiency to 95.5%
- 2U module height
- High MTBF and MTTR
- Emergency Power Off (EPO)
- Configurable battery voltage (300 - 600 Vdc)
- Grid Backup function
- Creates 2 groups of parallels to use 2 independent three-phase grids
- Low harmonic distortion THDi

* *Optional*

TECHNICAL SPECIFICATIONS			
Model	ZGR SCALABLE 60k	ZGR SCALABLE 150k	ZGR SCALABLE 300k
Power	10 - 60 kVA / 10 - 60 kW	10 - 150 kVA / 10 - 15 150 kW	10 - 150 kVA / 10 - 150 kW
Cabinet	up to 60 k	up to 150 k	up to 300 k
Modules	10 k / 15 k / 20 k / 25 k / 30 k		
Power factor	1,0		
Format	Cabinet		
INPUT ELECTRICAL CHARACTERISTICS			
Voltage range	305 - 485 Vac (allows use with generators)		
Frequency	40 - 70 Hz (auto detect)		
Power factor	0,99		
THDi (100% load)	< 3 % non lineal		
OUTPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	380 / 400 / 415 Vac (3 phases + N + PE) ± 1 %		
Frequency (battery mode)	50 / 60 Hz ± 0,1 %		
Waveform (battery mode)	Pure sine		
Harmonic distortion THD (100% load)	< 2 % lineal / < 4 % non lineal		
Transfer time	0 ms battery / 0 ms bypass		
Permissible peak current	3:1		
Overcharge (Online)	10 mins < 110%, 1 min < 130%, bypass > 150%		
EFFICIENCY			
Inverter mode	95,5%		
BATTERY			
DC bus voltage	± 216 - 300 Vdc *		
Charger maximum current	18 A (per module)		
Autonomy	Depending on battery capacity		
MONITORIZATION			
Informative	LED + LCD (7" colour touch screen)		
Alarms	Acoustic depending on alarm (dry contacts optional)		
Software	Windows		
CONNECTIONS			
Terminal panel	Input / Output / Bypass / Battery		
Protection switch	Input / Output / Bypass / Battery		
Bypass maintenance switch (MCB)	125 A	200 - 250 A	500 - 600 A
Bypass input	Yes		
Smart port	Yes (optional SNMP / RS485 / CAN / dry contacts)		
FUNCTIONS			
ON/OFF with battery (Cold Start)	Yes (allows to operate the UPS without mains power)		
EPO (Emergency Power OFF) function	Push button / Front panel contacts		
Parallelable	Yes (up to 4 unit with parallel control N + x)		
Frequency converter 50 - 60 Hz	Yes		
Battery temperature sensor	Yes (Optional)		
MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS			
Cooling	Forced fan cooling (PWM speed control)		
Operation temperature	0 - 40 °C		
Relative humidity	0 - 95 % without condensation		
Noise level (at 1m)	< 58 dB	< 61 dB	< 68 dB
Dimensions cabinet (WxHxD)	600 x 1200 x 850 mm	600 x 1200 x 850 mm	600 x 2000 x 850 mm
Approx. Weight cabinet	170 kg	170 kg	260 kg
Dimensions Modules (WxHxD)	400 x 86 x 620 mm		
Approx. Weight Modules	22 kg		
STANDARDS			
Marks	CE		
General directives	IEC/EN 62040-1 , IEC/EN60950-1, IEC/EN 62040-2 , IEC61000-4-2 , IEC61000-4-3 , IEC61000-4-4 , IEC61000-4-5 , IEC61000-4-6 , IEC61000-4-8		

** PF may vary depending on the number of battery elements.*
** These specifications may change without notice.*

IEC 62040 - 3

VFI TYPE ONLINE