

# **ZGR SWIT NG**

## SWITCHING CHARGER - RECTIFIER

## **ZGR SWIT NG** modules and equipments 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 highperformance 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









### Characteristics

- High efficiency
- Wide range of customized solutions from 500 to 1000 W in 24/48/110/125V
- Integrated battery disconnector
- Reduced voltage 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

Addition					
Apput voltage         24Vcc         48 Vcc         110/125 Vcc           VPUT ELECTRICAL CHARACTERISTICS         30 V ± 15 %         30 Hz ± 10 Mz ± 3 Mz         40 Hz ± 3	TECHNICAL SPECIFICATIONS				
### STATE PROPRET STATE OF S	Model	ZGR SWIT NG			
priminal voltage 230 V ± 15 % or 10 kg and 15 kg around 15 kg and 15 kg around 15	Output voltage	24Vcc	48 Vcc	110/125 Vcc	
Sominal frequency   So Hz ± 10 %	INPUT ELECTRICAL CHARACTERISTIC	cs			
### States	Nominal voltage	230 V ± 15 %	230 V ± 15 %		
### Table 1	Nominal frequency	50 Hz ± 10 %	50 Hz ± 10 %		
prinial voltage       24Vdc       48 Vdc       110 / 125 Vdc         prinial frequency       20 or 40 A       10 or 20 A       4 or 8 A         putput voltage ripple       < 100 mVrms	Power factor	0.99 for charge > 60	0.99 for charge > 60 %		
prinial frequency 20 or 40 A 10 or 20 A 4 or 8 A 4 or 8 A 4 cutput voltage ripple $ \begin{array}{c} 20 \text{ or } 40 \text{ A} & 10 \text{ or } 20 \text{ A} & 4 \text{ or } 8 \text{ A} \\ 400 \text{ mVrms} & < 100 \text{ mVrms} & < 100 \text{ mVrms} \\ 400 \text{ mVpp} & < 200 \text{ mVpp} & < 300 \text{ mVpp} \\ 400 \text{ mVpp} & < 200 \text{ mVpp} & < 300 \text{ mVpp} \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & 3 \% & 4 \text{ A} \pm 5 \% \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & < 5.5 \text{ A} \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & < 5.5 \text{ A} \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & < 5.5 \text{ A} \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & < 5.5 \text{ A} \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & < 5.5 \text{ A} \\ 400 \text{ mort-circuit current} & < 20 \text{ A} & < 10 \text{ A} & < 5.5 \text{ A} \\ 400 \text{ mort-circuit current} & 36 \text{ or } 98 $	OUTPUT ELECTRICAL CHARACTERIST	TICS			
subput voltage ripple    Color module overtemperature range	Nominal voltage	24Vdc	48 Vdc	110 / 125 Vdc	
utput voltage ripple $ < 200  \text{mVpp} \qquad < 200  \text{mVpp} \qquad < 300  \text{mVpp} $ arrage current limitation $ 20A \pm 5\% \qquad 10A \pm 3\% \qquad 4A \pm 5\% $ nort-circuit current $ < 20A \qquad < 10A \qquad < 5.5A $ ficiency $ > 87\% $ ATTERIES $ \text{um. of elements Pb} \qquad 12 \qquad 24 \qquad 54 \text{ or } 60 $ um. of elements Ni - Cd $ 18 \div 20 \qquad 36 \div 40 \qquad 86 \text{ or } 98 $ utput voltage $ 18 - 30  \text{Vdc} \qquad 36 - 60  \text{Vdc} \qquad 83 - 144  \text{Vdc} $ TECHANICAL AND ENVIRONMENTAL CHARACTERISTICS $ \text{Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation  \text{peration temperature range} \qquad 0  ^{\circ}\text{C to } 50  ^{\circ}\text{C}  orage temperature  -40  ^{\circ}\text{C} \sim +80  ^{\circ}\text{C}  orage temperature  = 40  ^{\circ}\text{C} \sim +80  ^{\circ}\text{C}  perating altitude  \leq 1000  \text{m}  \text{without power loss}  elative humidity  < 95  \%  \text{without condensation}  mensions (HxWxD)  132  \times 483  \times 278  \text{mm} $	Nominal frequency	20 or 40 A	10 or 20 A	4 or 8A	
4 200 mVpp $< 200 \text{ mVpp}$ $< 300 \text{ mVpp}$ 10 A $\pm$ 5 % $10 \text{ A} \pm$ 3 % $4 \text{ A} \pm$ 5 %         10 a rot-circuit current $< 20 \text{ A}$ $< 10 \text{ A}$ $< 5.5 \text{ A}$ 10 a rot-circuit current $< 20 \text{ A}$ $< 10 \text{ A}$ $< 5.5 \text{ A}$ 10 a rot-circuit current $< 87 \text{ W}$ $< 87 \text{ W}$ 10 a rot-circuit current $< 87 \text{ W}$ $< 87 \text{ W}$ 10 a rot-circuit current $< 87 \text{ W}$ $< 87 \text{ W}$ 10 a rot-circuit current $< 87 \text{ W}$ $< 87 \text{ W}$ 11 a rot-circuit current $< 87 \text{ W}$ $< 87 \text{ W}$ $< 87 \text{ W}$ 12 a rot-circuit current limitation $< 86 \text{ or } 98$ $< 86 \text{ or } 98$ $< 87 \text{ W}$ $< 87 \text{ W}$ $< 87 \text{ current}$	Output voltage ripple	< 100 mVrms	< 100 mVrms	< 100 mVrms	
ATTERIES  Im. of elements Pb Im. of elements Ni - Cd I		< 200 mVpp	< 200 mVpp	< 300 mVpp	
ATTERIES  Im. of elements Pb  12  24  54 or 60  Im. of elements Ni - Cd  18 ÷ 20  36 ÷ 40  86 or 98  Intuitive voltage  18 - 30 Vdc  36 - 60 Vdc  83 - 144 Vdc  IECHANICAL AND ENVIRONMENTAL CHARACTERISTICS  Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation  Deteration temperature range  0°C to $50$ °C  orage temperature  -40°C $\sim$ +80°C  perating altitude $\leq$ 1000 m without power loss elative humidity  mensions (HxWxD)  132 x 483 x 278 mm	Charge current limitation	20 A ± 5 %	10 A ± 3 %	4A ± 5%	
ATTERIES  um. of elements Pb  12 24 54 or 60  um. of elements Ni - Cd 18 ÷ 20 36 ÷ 40 86 or 98  utput voltage 18 - 30 Vdc 36 - 60 Vdc 83 - 144 Vdc  IECHANICAL AND ENVIRONMENTAL CHARACTERISTICS  Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation  peration temperature range 0°C to 50°C  orage temperature -40°C ~ +80°C  perating altitude ≤ 1000 m without power loss elative humidity  mensions (HxWxD)  132 x 483 x 278 mm	Short-circuit current	< 20 A	< 10 A	< 5.5 A	
tum. of elements Pb  tum. of elements Ni - Cd  tum. of elements Ni -	Efficiency	> 87 %			
tum. of elements Ni - Cd $18 \div 20$ $36 \div 40$ $86 \text{ or } 98$ Let put voltage $18 - 30 \text{ Vdc}$ $36 - 60 \text{ Vdc}$ $83 - 144 \text{ Vdc}$ HECHANICAL AND ENVIRONMENTAL CHARACTERISTICS  Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation  Description temperature range $0^{\circ}\text{C to } 50^{\circ}\text{C}$ Description temperature $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ Description temperature $< 95 \%$ without power loss  elative humidity $< 95 \%$ without condensation $< 132 \times 483 \times 278 \text{ mm}$	BATTERIES				
the purpose of the protection	Num. of elements Pb	12	24	54 or 60	
Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation  peration temperature range  o°C to 50°C  orage temperature  -40°C ~ +80°C  perating altitude  ≤ 1000 m without power loss  elative humidity  mensions (HxWxD)  132 x 483 x 278 mm	Num. of elements Ni - Cd	18 ÷ 20	36 ÷ 40	86 or 98	
Battery circuit breaker protection, surge protection, input fuse protection, module overtemperature, short-circuit, current limitation, end of discharge limitation  peration temperature range  o°C to 50°C  orage temperature  -40°C ~ +80°C  perating altitude  ≤ 1000 m without power loss elative humidity  elative humidity  132 x 483 x 278 mm	Output voltage	18 - 30 Vdc	36 - 60 Vdc	83 - 144 Vdc	
module overtemperature, short-circuit, current limitation, end of discharge limitation  overation temperature range  o°C to 50°C  orage temperature  -40°C ~ +80°C  overating altitude  ≤ 1000 m without power loss  elative humidity  elative humidity  mensions (HxWxD)  mensions (HxWxD)	MECHANICAL AND ENVIRONMENTAL	CHARACTERISTICS			
orage temperature  -40°C ~ +80°C  berating altitude  ≤ 1000 m without power loss  elative humidity  < 95 % without condensation  mensions (HxWxD)  132 x 483 x 278 mm	Protections	module overtempera	module overtemperature, short-circuit, current limitation, end of discharge		
operating altitude ≤ 1000 m without power loss elative humidity < 95 % without condensation mensions (HxWxD) 132 x 483 x 278 mm	Operation temperature range	0°C to 50°C	0°C to 50°C		
elative humidity < 95 % without condensation  mensions (HxWxD) 132 x 483 x 278 mm	Storage temperature	-40°C ~ +80°C	-40°C ~ +80°C		
mensions (HxWxD) 132 x 483 x 278 mm	Operating altitude	≤ 1000 m without po	≤ 1000 m without power loss		
(	Relative humidity	< 95 % without cond	< 95 % without condensation		
TANDARDS	Dimensions (HxWxD)	132 x 483 x 278 mm			
	STANDARDS				

CE, UNE - EN 50178 (1998)

UNE - EN 61000-6-2 (2001), UNE - EN 61000-6-4 (2001)

Special configurations on demand These specifications may change without notice

#### Internal architecture

Low voltage european directive

EMC european directive





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