

# GC16-6RE TOP UPOWER Premium Quality Batteries for Renewable Energy Storage



BATTERIES



SOLAR PV



WIND



GENSET



**U**power  
Unlimited power

## GC2TOP OVERVIEW

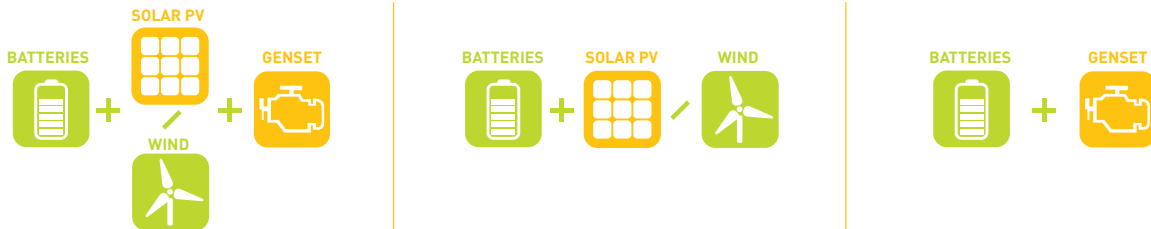
### Vented Flate Plate Batteries for Renewable Energy Applications

GC2TOP is a **premium range**, developed for applications **requiring regular deep cycling**. It is a **low maintenance** energy storage solution that offers significant benefits in terms of cost per cycle, combined with the highest level of **reliability** and **performance** even for remote installations where long discharges occur and excellent recharging properties are essential.

Optimum design, exclusive use of high quality materials, robust construction and state of the art manufacturing processes make GCTOP batteries an **ideal solution for demanding Renewable Energy Storage applications**.

### APPLICATIONS

#### Indicative Battery-Based Power Supply Systems



- **Telecom Networks**  
Autonomous remote communication hubs such as cellular base stations, repeaters and VSATs.
- **Mini-Grids**  
Electricity to isolated off-grid areas or regions with unstable power supply
- **Residential Installations**  
Off-grid or smart grid connected power systems electrifying homes, hotels, hospitals, schools or factories
- **Traffic systems**  
Signaling and lighting to roads, railways, airports and marines

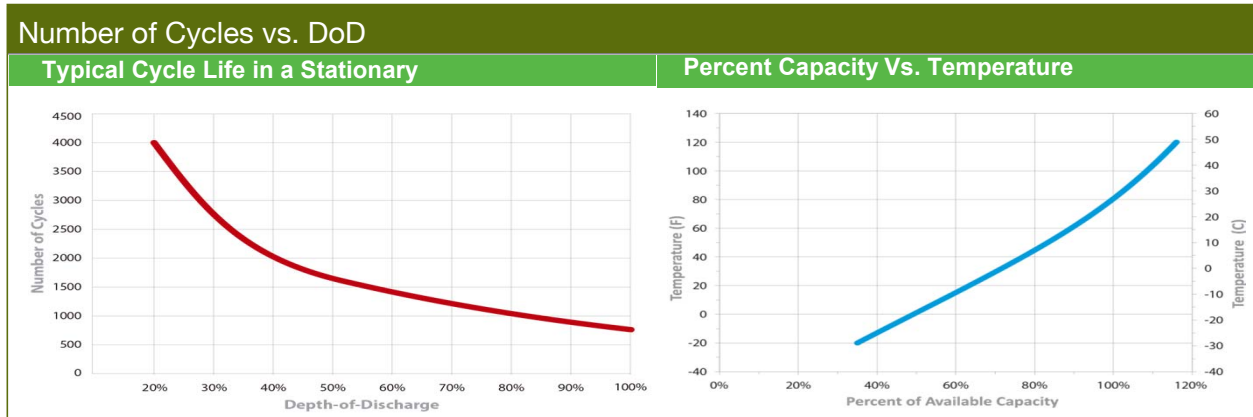
### CERTIFIED QUALITY

- Compliant with IEC 61427 requirements for photovoltaic energy systems
- Fully compliant with IEC 60896-11 requirements for vented lead-acid batteries
- Full conformity to DIN 40736-1 specifications
- Compliant with the safety requirements of EN 50272-2 for stationary batteries
- Manufactured at U-POWER European production facilities, certified with ISO 9001, ISO 14001, BS OHSAS 18001

## QUALITY FEATURES & PRODUCT BENEFITS

### Long cycle life

Positive Plate plates, unique sliding pole design and special alloys composition offer a 60% DoD cycle life 1500 cycles for 6V & 12V blocks.



### Outstanding performance and reliability

Products of optimum design made from high quality raw materials in European state-of-the-art production facilities and cumulative experience on advanced submarine battery manufacturing, ensure reliability in applications demanding high performance.

### Minimum maintenance

Low maintenance design with reduced topping up needs. container for easy visual electrolyte level monitoring.

### Space optimization

Racks designed for optimal space utilization, quick installation and easy battery maintenance.

### Operational safety

Extensive compliance testing performed under European and Global norms and verified by independent 3<sup>rd</sup> party certification agencies.

### Complete battery solution

Complete and ready to install systems, filled and charged or dry charged form with all the necessary accessories. Extensive range of adding value products and services.

### Flexibility

Design and production of customized products and services, high volume orders handling capability, fast delivery.

### Peace-of-mind

24x7 experienced pre-sales and after sales support through MASTERBATTERY Global Partners Network.

### Optimum Total Cost of Ownership (TCO)

Low cost per cycle. Lifetime value maximized especially at hybrid systems where using batteries can greatly reduce the Genset daily run time resulting on fuel savings and less CO<sub>2</sub> emission.

**The ideal energy solution for Renewable Energy Storage applications**

## TECHNICAL FEATURES & PRODUCT BENEFITS

**1 Plates**

- Flate plate design
- Special low antimony lead alloy ( $\leq 1.65\%$  Sb)
- Red Lead in-house production by 99,9% Pure Lead
- Dry Filling process

- ✓ Long cycle life
- ✓ Excellent cycling properties
- ✓ Quality and homogeneity
- ✓ High capacity performance
- ✓ Reduced corrosion
- ✓ Reduced self-discharge rate
- ✓ Increased tolerance even in cases of poor charging conditions

**2 Negative Plates**

- Paste mixture ensures high adherence and cohesion
- Pasted negative plates of grid design
- Optimized low antimony lead alloy
- Robust construction
- Long life expander

- ✓ Stability
- ✓ Increased cyclic performance
- ✓ Long battery life

**3 Gauntlet**

- Highly microporous material
- Fine pore structure
- Low electrical resistance

- ✓ Effective active material retention
- ✓ Eliminates active mass shedding

**13 Monoblocks' Internal Intercell Connectors**

- Copper bars premium design
- Outside of the container connection

- ✓ High conductivity
- ✓ Safe and long operational life

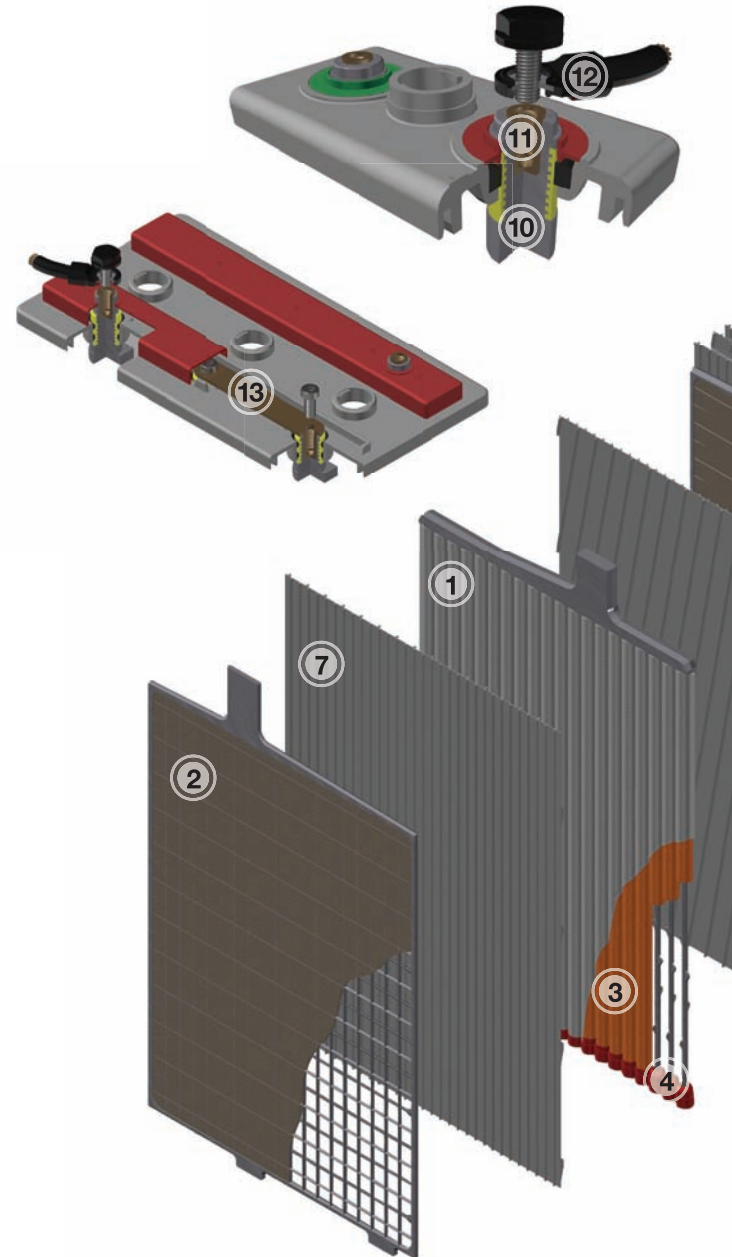
**12 External Intercell Connectors**

- Flexible
- Copper
- Fully insulated
- Fixed with plastic head bolt safety screw and probe hole on the top

- ✓ Allow voltage measurements
- ✓ High conductivity
- ✓ Increased safety

**11 Pole**

- ✓ High conductivity
- ✓ Maximum torque retention



## 4 Bottom Bar

- Ultrasonic welding
- ✓ Secured fit to the gauntlet
- ✓ Long battery life

## 5 Pole bridge

- Welding with high quality alloy
- Optimized design
- ✓ Increased robustness and durability
- ✓ Consistent and uniform poles-bridge-plate block connection

## 6 Electrolyte

- High purity sulphuric acid with nominal density.
- ✓ Low self discharge rates
- ✓ Excellent performance on deep discharges



## 7 Separators

- Manufactured from microporous silica-based PVC material
- Allow migration of ions during charge/discharge
- More acid in the surrounding area of the plates

- ✓ Secured protection against short circuits
- ✓ High temperature stability
- ✓ Mechanical strength
- ✓ Low internal resistance

## 8 Container / Lid

- High impact resistant, for the container
- Robust Material Polypropylene
- Sealing between container - lid with polyurethane Stobicoll resin
- 100% leakage quality control with high precision Froehlich equipment

- ✓ Easy visual electrolyte level monitoring
- ✓ Long term leakage free operation
- ✓ Unsurpassed mechanical strength
- ✓ Robust and durable battery construction

## 10 Sliding Poles

- Premium sliding design with rubber seal in the lid
- Corrosion resistance

- ✓ Effectively prevents top lid cracks and acid leakages
- ✓ Positive plate's expansion is safely absorbed
- ✓ Optimum current conductivity
- ✓ Perfect sealing
- ✓ Allow impedance measurements
- ✓ Safe and long operational life

## 9 Vent Plugs


- Low maintenance design
- Flame arresting
- Funnel plugs also available

- ✓ Efficient containment of acid fumes
- ✓ No electrolyte spillage
- ✓ Reduced water evaporation
- ✓ Funnel plugs allow topping-up and electrolyte density measuring without plug removal
- ✓ Increased safety

## PRODUCT

Charging Instructions at 25C	
Daily charge	7.40V ± 0.05V
Float charge	6.60V
Equalize charge	7.70V ± 0.05V

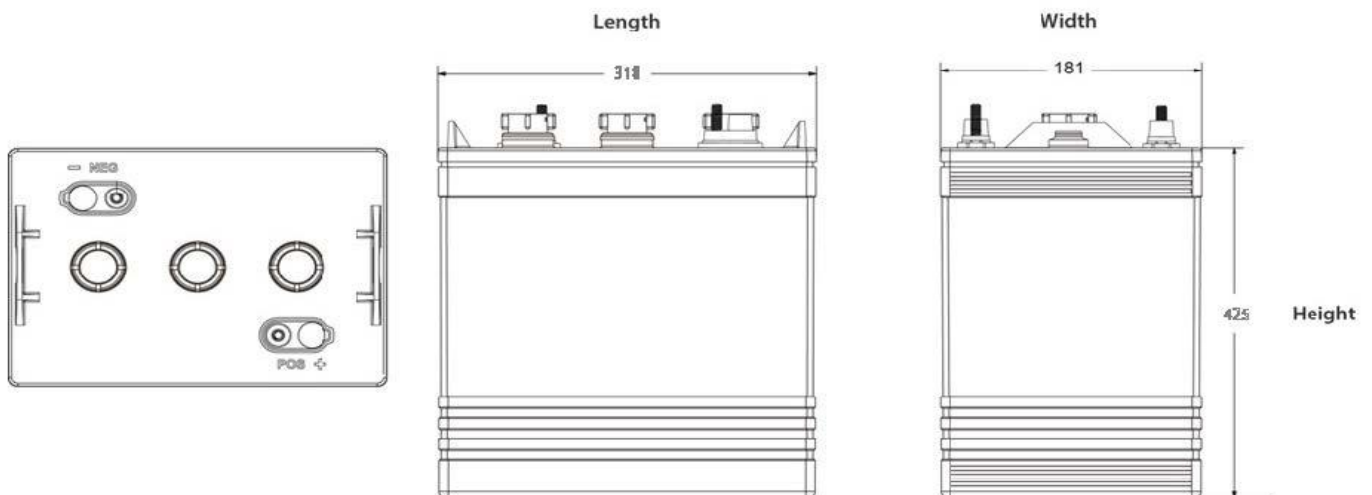
Do not install or change batteries in non-ventilated premises. The charging will severely limit the life of the batteries. If the batteries will stay for an extended period without being used please ensure they are routinely checked, cleaned and fully charged before being stored.

Mechanical Characteristics		
	SI Units	US Units
Length	318 mm	12.52 inches
Width	181 mm	7.12 inches
Height	425 mm	16.73inches
Weight	52 kg	114.6 lb
BCI Group Size		GC2
Cell Layout		0
Base Hold-Down		B0
Terminal Type		DT
 Terminal height: 18.5 mm – 0.73 in Bolt size: 5/16		

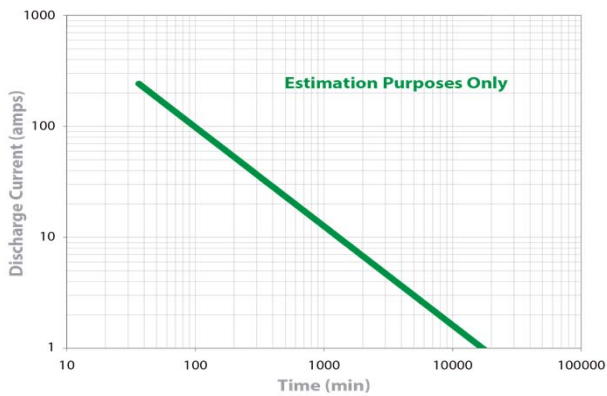
Electrical Characteristics	
Nominal voltage	6 Volts
C120 Rated Capacity (120h)	600Ah
C5 Rated Capacity (5h)	550 Ah
Reserve Capacity @ 25A	880 min
Reserve Capacity @ 75A	225 min

Operational temperature range: -20°C to + 55°C (always keep the battery charged at least 60% at temperatures below 0°C)

## DRAWINGS



## PERFORMANCE



## ADDED VALUE SERVICES

Design and implementation

Installation & maintenance services according to EN50272-2 safety requirements (CE compliance)

360° Technical Support 24x7 through UPOWER Global Partners Network

Training and consulting

Battery Collection and Recycling Services

## WHY UPOWER

### Experience in Battery Business

- TOP 3 in the global advanced technology battery sector
- TOP 5 in the European industrial battery sector
- 98% of battery production is being exported
- Design and manufacturing of numerous premium solutions complying to demanding requirements

### “One Stop Solution”

- From single components/products to turn-key solutions
- Robust high quality products & services portfolio
- Lifetime value maximization & total cost of ownership approach

### Extensive Global Know-how

- Co-operation with TOP market players and equipment providers worldwide
- A fast growing Global Partners Network
- totally independent off-grid Power SupplSystems installed worldwide

### Exceptional Customer Service

- Highly experienced engineering team for design & development
- Pre-Sales & After-Sales Service providing global support
- Project Management competence

**MASTERBATTERY,S.L.**

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