

## INSTALLATION, MAINTENANCE AND USE OF LEAD ACID BATTERIES (revised 01.2020)

1. Always install the batteries in properly ventilated environments.
2. Install in environments with temperatures compatible with the characteristics of the batteries (see data sheets).  
WARNING: temperatures below 25°C decrease the capacity (autonomy), while temperatures above 25/30°C reduce the life of the batteries and consequently compromise their warranty.
3. Connect in series only batteries of the same model (code), NEVER mix new batteries with used ones.  
ATTENTION NOT TO ACCIDENTALLY CONNECT THE TWO POLES OF THE SAME BATTERY.
4. When using the clamps for the AP (conical) battery poles, be sure to widen the clamps well before inserting them into the poles. NEVER use a hammer to apply the clamps.
5. Connect batteries in series, using cables with a cross-section suitable for the discharge/charge current and the distance between the battery and the load. If necessary, contact U.B.S. UNION BATTERY SERVICE.
6. In case of connection in series, periodically alternate (once or twice a year, according to use) the position of all batteries.
7. For parallel connection contact U.B.S. UNION BATTERY SERVICE.
8. Carefully tight the poles screws, according to what follows:
 

-	M5	terminal:	5,9/6,1	Nm
-	M6	terminal:	11,9/12,1	Nm
-	M8	terminal:	22,5/23,2	Nm
-	M10	terminal:	24,5/27,0	Nm

Overheating of the poles due to incorrect tightening is not covered by the warranty.
9. Recharge IMMEDIATELY after the discharge.
10. Use chargers with suitable charging curves (see battery data sheets)

11. In case of long periods of non-use, recharge the batteries periodically. High storage temperatures require more frequent "refresh" charges (ask U.B.S. for details of correct refresh charges).

**(ZL, ZGL, ZPC, ZLS)**

Storage temperature 10°C to 20°C

every 9 months

Storage temperature 20°C to 30°C

every 6 months

Storage temperature 30°C to 40°C

every 3 months

12. In STAND-BY application the use of push-button hold charging cycles is recommended.
13. Correctly size batteries according to their discharge current (see battery data sheets): incorrect sizing will immediately invalidate any warranty.
14. Use batteries ONLY for applications compatible with their construction solution. See table below. Non-compatible use will immediately void all warranties. The table below, which is not exhaustive, will help you to understand the correct application of the various battery families:

<b><u>Applications/Series of batteries</u></b>	<b><i>ZGL</i></b>	<b><i>ZPC</i></b>	<b><i>ZL</i></b>	<b><i>ZLS</i></b>
Stand-by, UPS, emergency, alarms	YES	NO	YES	YES
Services for boats and campers	YES	YES	YES	YES
Starting	NO	YES	NO	NO
Fork lift, DEEP-CYCLE, storage, wheel-chairs, electric vehicles	NO	NO	YES	YES
Hybrid: service for boat/camper and starting. Boat trusther, Hi-Fi car	NO	YES	NO	NO

15. WARNING: ZL batteries are not suitable for golf trolley. We recommend to use ONLY ZLS batteries.
16. Periodically discharge the batteries to 80%. The frequency depends on the use, but it may be necessary to discharge the batteries once a month. For details, contact U.B.S. UNION BATTERY SERVICE

17. Prevent/ remove any oxidation on the poles. It is always recommended to use rubber terminal covers. These terminals are also important to AVOID accidental short circuits on the battery poles.
18. If the battery is equipped with an automatic topping up system, it is important to disassemble it and remove any deposits at least once a year. At the same time, check that the floats are working properly.
19. NEVER interrupt the refilling cycle. ALWAYS wait for the charging cycle to finish automatically (read the instructions for use of the charger supplied). Incomplete recharges will void the warranty.
20. Deep-cycle batteries (i.e. ZL, ZLS) may only be used once per day, 220 cycles per year. Any other use, unless agreed in writing, will invalidate the warranty.
21. NEVER discharge more than 80%.
22. All maintenance activities in this document MUST be properly documented to ensure that they have been carried out.
23. All installation and maintenance activities must be carried out wearing the appropriate Personal Protective Equipment (PPE).
24. For anything not indicated, consult your supplier.