IS 12950:2023

BATTERY HYDROMETER PORTABLE SYRINGE TYPE FOR LEAD-ACID BATTERIES SPECIFICATION (First Revision)

The Indian Standard IS 12950:2023 defines the requirements for a portable, syringe-type battery hydrometer designed for lead-acid batteries. This tool measures the density of the battery's electrolyte, which is an indicator of its state of charge. The standard is crucial for maintaining the reliability and longevity of lead-acid batteries, particularly in critical applications like computers, emergency lighting systems, and vehicles.

Basic Test Requirements:

The standard outlines various tests to ensure the hydrometer's quality and performance. These tests assess:

Accuracy of the Float: The float's readings must be accurate to within ± 0.005 g/cm^3 when compared to a standard hydrometer.

Performance of Elastomeric Components: The bulb and nozzle must be airtight, resist degradation from the electrolyte, and efficiently draw and expel the liquid.

Resistance to Thermal Shock: The glass barrel must withstand rapid temperature changes without damage, ensuring durability.

Resistance to Mechanical Shock: The packaged hydrometer must withstand drops from a specified height without damage to the components, ensuring it can withstand normal handling.

Benefits: Using a hydrometer conforming to this standard offers several advantages:

Accurate Assessment of Battery Health: By providing precise density measurements, the hydrometer allows for a reliable evaluation of the battery's charge level and overall health.

Preventative Maintenance: Regular checks with the hydrometer can help identify potential issues early on, facilitating timely maintenance and preventing unexpected battery failures.

Extended Battery Life: Proactive monitoring with the hydrometer enables users to optimize battery charging and maintenance practices, contributing to a longer lifespan for the battery.

The standard also details sampling procedures and criteria for conformity, ensuring consistent quality across manufactured batches. By adhering to these guidelines, manufacturers can contribute to the production of reliable battery hydrometers, ultimately supporting the performance and longevity of critical lead-acid battery systems.