

MORE POWER – LESS SPACE®



CASE STUDY

LONGEVITY ANALYSIS OF VRLA BATTERY SYSTEM

East Penn Announces Real World Application Results through Independent Longevity Testing

East Penn products have one of the highest quality reputations in the world. The company continues to be on the forefront of accurate battery testing methods and evaluation standards to maintain this reputation. Over a half century of experience and innumerable lead-acid battery powered applications have given the company a broad knowledge base and resources for quality control methods and analytical procedures. As a result of the company's quality culture, the company is continually committed to proving its Deka Unigy products' superior performance through stringent evaluations, laboratory analysis, and extensive testing. The following case study is further evidence of the company's industry-leading commitment to extensive product evaluation to deliver results in real world applications.



INTRODUCTION

Valve Regulated Lead Acid (VRLA) back up batteries have made outstanding inroads as dependable power and cost saving solutions for critical back up power systems. Its leading-edge design has many advantages over a traditional flooded battery. However, a VRLA battery is a newer technological offering for powering back up power systems compared to the standard flooded product. Therefore, VRLA battery longevity analysis relies mostly on standard lab testing using Telecordai (SR-4228) accelerated life testing. This has given the flooded battery product an advantage in being able to tout its recorded longevity in field-testing and real world analysis. Now, through a continued commitment to product evaluation, East Penn proves that in addition to the company's VRLA product's significant design functionality and cost of ownership advantages, it has real world independent evidence that further validates its longevity of service.

LONGEVITY ANALYSIS

In November of 2002, a Deka Unigy II 2-Volt VRLA battery system was installed for a highly prominent, global telecommunications provider. In March 2012, 2 strings (48 individual cells) were independently tested on-site while the batteries were in full operation. The testing was done by Test Product Incorporated (TPI) Engineering, an independent testing group which specializes in providing nationwide evaluations, testing, and commissioning services for standby power systems in the telecommunications, utility, and financial industries.

RESULTS

The independent testing showed that after nine years in full operation, with standard testing temperature correction, one string was operating at a remarkable capacity of 94%. The second string also showed tremendously favorable results operating at a capacity of 92%.

The extremely high capacity of both strings after nine years of service in full operation is a highly reliable indication of the expected longevity and dependable performance of the Deka Unigy II VRLA battery design. (*see charts*)

FUTURE ANALYSIS & STUDIES

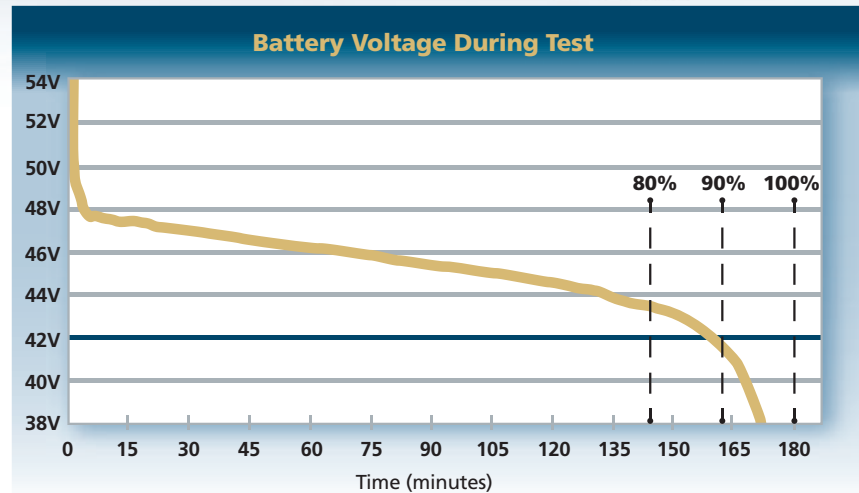
These cells continue to remain in full service and will be tested on a regular basis to further prove capacity and long life. East Penn also continues to aggressively test other Deka Unigy II VRLA applications and closely monitor the company's extensive global installations that serve its customers' critical back up power needs.

CONCLUSION

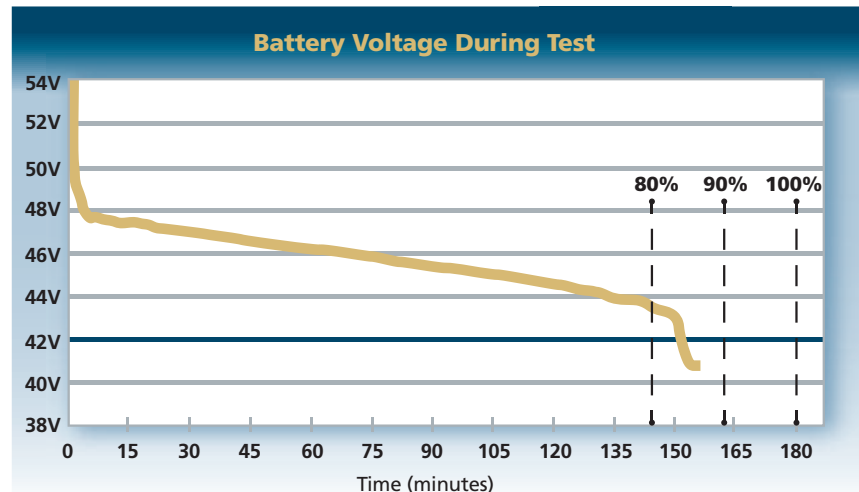
The independent testing by TPI Engineering proves the extended life capacity of the Deka Unigy II 2-Volt VRLA product. These results are further evidence of the quality commitment of the company's processes from start to finish. This gives the company's customers confidence in the product's longevity as well as the many advantages this superior product delivers over a flooded design such as:

- A MAINTENANCE-FREE VRLA DESIGN requires no handling of electrolytes or hydrometers
- A SPILLPROOF, NO FREE FLOWING ELECTROLYTE, VRLA DESIGN avoids the need for complicated and expensive spill containment systems
- AN EXCLUSIVE ONE-WAY, PRESSURE-RELIEF VALVE only allows a small amount of gas released to the atmosphere enabled by its internal gas recombination process. This avoids expensive ventilation systems that include hydrogen detection and evacuation systems.
- MICROCAT™ a catalyst, is built into the exclusive valve. This catalyst assists the battery with the recombination process by lowering float current, decreasing internal temperatures, and decreasing the rate of dry out.
- MORE POWER IN LESS SPACE with a highly efficient VRLA designed footprint that maximizes floor space and saves costly real estate expenses.

VRLA Battery String operating at 94%*



VRLA Battery String operating at 92%*



*Note: Chart data is temperature corrected. Operating results prior to are 89% and 85% respectively.

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