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Technical Notes: ATMOCE MS-7K-U AC Round-Trip Efficiency

I. Overview

This technical note presents the AC round-trip efficiency performance of the ATMOCE MS-7K-U energy storage system. The test was conducted under controlled laboratory conditions using a 0.1 P constant power charge and discharge profile, representing low-rate operation commonly used for efficiency characterization.

II. Test Conditions

Item	Description
Ambient temperature	28 °C – 30 °C
Charge / discharge mode	0.1 P constant power
Cell voltage range	2.5 V – 3.6 V
Measurement point	AC side (grid-connected interface)

III. Test Results

Parameter	Value
AC charging energy	8,319.00 Wh
AC discharging energy	7,493.34 Wh
AC round-trip efficiency	90.08 %

The **AC round-trip efficiency** is calculated as:

$$AC\ Round-trip\ efficiency = \frac{AC\ discharging\ energy}{AC\ charging\ energy} \times 100\%$$

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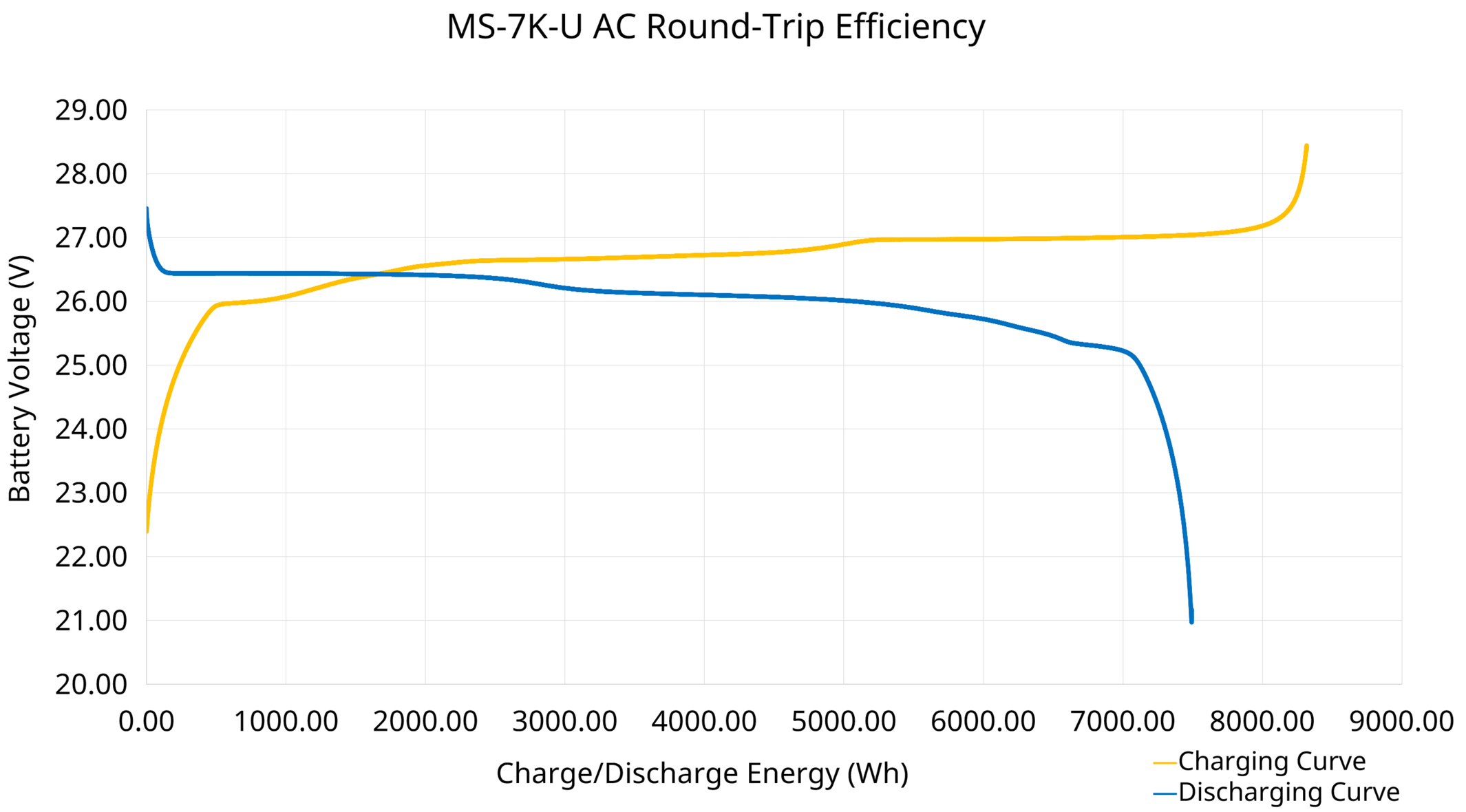
IV. Efficiency Curve

The MS-7K-U AC round-trip efficiency test curve reflects stable charging and discharging behavior under the specified test conditions.

The results demonstrate consistent power control and energy conversion performance across the full charge–discharge cycle.



V. Conclusion

Under a 0.1 P constant power charge and discharge profile and an ambient temperature of 28 °C to 30 °C, the ATMOCE MS-7K-U energy storage system achieved an AC round-trip efficiency of 90.08 %.

This performance indicates:

- High efficiency in AC–DC–AC energy conversion
- Stable system operation under low-rate charging and discharging

VI. Notes

- The test data were obtained in a laboratory environment.
- Actual efficiency may vary depending on operating conditions, temperature, system configuration, and installation environment.

Revision History

Version 1.0, Dec 2025 -Initial release