

# Software Defect Leads Nissan to Recall Thousands of Ariya EVs



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Nissan North America has initiated a recall affecting 9,813 model year 2023 Ariya electric vehicles (EVs) due to a potential software defect issue related to the drive motor. This recall comes as a result of reports filed by the Japanese automaker with the National Highway Traffic Safety Administration (NHTSA).

The problem centers on the inverter software in the Ariya, which has the capability to detect a short circuit. In the event of such a detection, the software may abruptly shut down the entire EV system, leading to a loss of drive power. This software flaw affects both the front-wheel-drive and all-wheel-drive versions of the Ariya.



## The Impact of the Software Defect

Nissan anticipates that all of the recalled vehicles may contain this software defect. The issue arises from tiny conductive particles originating from a component within the drive motor, which can, on occasion, create a momentary short circuit in the slip rings—a crucial component responsible for transmitting power or electrical signals in the motor. To safeguard against potential damage, the system temporarily disconnects power, accompanied by an "EV System Off" message on the dashboard. This could result in the temporary loss of torque to the driven wheels and, if it occurs while driving at high speeds, potentially pose a safety hazard.

To address this issue, Nissan dealerships will perform a reprogramming of the inverter software at no cost to the vehicle owners. Notifications to affected owners are scheduled to be sent out by October 20, 2023.

This problem was first detected by Nissan in January 2022 and subsequently reported by an Ariya owner in China.

Additional reports emerged in California and Oklahoma in September 2023. This latest recall adds to the challenges faced by the Ariya, which earlier in the year experienced a recall of over 1,000 units in North America due to a risk of the steering wheel detaching. These recurring recalls could potentially impact Ariya's rollout in the United States, which began earlier this year.

In the first half of 2023, Nissan sold 9,400 electric vehicles in the U.S., a figure significantly lower than its competitors. The Ariya constituted the majority of these sales, with 5,195 units sold, while sales of the Leaf saw a 44 percent year-over-year decline, with 4,234 deliveries. Notably, neither of these models qualifies for the \$7,500 federal tax credit.

## What Caused the Issue

The 2023 Nissan Ariya, introduced after several delays, is now the subject of a recall due to a software issue that could result in a loss of drive power.

The recall encompasses 9,813 potentially affected units, including both single-motor front-wheel-drive and dual-motor all-wheel-drive models, all from the 2023 model year.

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The issue at the heart of this recall is the potential for conductive fibrous shavings from the drive motors' slip ring assembly to momentarily cause a short circuit between the two slip rings.

While these shavings burn out without causing any damage, the inverter detects the momentary over-current due to the short circuit and initiates a fail-safe protocol, reducing power. Consequently, the torque to the driven wheels is temporarily cut off until the vehicle is powered off and restarted. The dashboard will display an "EV System Off" message during this event.

Nissan has clarified that the Ariya has the capability for over-the-air updates for the entire vehicle. However, it appears that the brand has not yet enabled over-the-air updates for inverter-related issues. As a result, owners of affected vehicles will need to visit dealerships, where the inverter software will be reprogrammed at no cost. Interestingly, this situation bears similarities to the circumstances under which Volkswagen had to recall earlier ID.4 models, necessitating an in-person software update.

The unique motor design utilized in the Ariya is the root cause of this issue, and it does not impact the Nissan Leaf, the automaker's sole other electrified model. The Ariya and the Leaf are unrelated, even utilizing different DC fast-charging standards, with the Ariya employing the Combined Charging Standard (CCS) and the Leaf adhering to the CHAdeMO standard.

### In Conclusion

Nissan is issuing a recall for certain 2023 Ariya electric SUVs due to a defective inverter software that may cause the vehicle to unexpectedly shut down. This recall affects 9,813 Ariya vehicles produced between June 17, 2022, and May 19, 2023. Conductive shavings from the drive motor's slip ring assembly are to blame for momentary short circuits, triggering a fail-safe protocol that temporarily cuts power to the motor and displays an "EV System Off" message on the dashboard. Nissan plans to reprogram the inverter software at no charge to owners, with notifications beginning on October 20, 2023. If you own an affected Ariya, you can contact Nissan's customer service at 1-800-867-7669, with the recall number being R23C6.