Honeywell

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US Department of Transportation
1200 New Jersey Avenue SE
West Building, Ground Floor, Room W12-140
Washington, DC 20590

RE: Docket No. NHTSA-2024-0012

I. Introduction

Honeywell International Inc. ("Honeywell") has been a manufacturer of battery safety sensors since the initial transposition of GTR No. 20 to various country-specific regulations, offering tailored sensing solutions utilizing optical, gas, and pressure detection for a wide range of lithium-ion battery types, and is thus well-positioned to provide input on the requirements relating to battery safety sensing.

Honeywell supports the proposed requirement for an audio and visual warning to the driver if a thermal event occurs in the rechargeable energy storage system (REESS) during the "active driving possible mode."

II. Comment on Performance Test Methodology for Thermal Event Warning (page 26723)

The proposed test procedure (page 26723, column 2, paragraph 5) requires that a heater be attached to "a cell or cells in the REESS in a manner that puts at least one cell in the REESS into thermal runaway." The methodology does not provide guidance on the maximum or recommended number of cells to be put into thermal runaway. Honeywell believes that language requiring detection based on heating only a single cell (or, if not practicable, as few cells as possible) would better ensure that the thermal event warning system achieves its intended purpose – i.e., alerting of an urgent, safety-critical situation as early as possible.

We recommend that the test procedure on (page 26723, column 2, paragraph 5) be changed to the following: "In the proposed test procedure, the REESS is removed from the vehicle, if possible, and the REESS casing is opened to attach the heater to the fewest number of cells practicable in the REESS in a manner to put one cell into thermal runaway."

III. Thermal event warning for parking and charging modes

The NPRM proposes a documentation requirement, mandating that manufacturers provide information to NHTSA about their efforts to identify and address potential safety problems with single-cell thermal runaway and propagation during operation in the external charging mode, active driving possible mode, and parking mode. This requirement acknowledges the need to identify distinct risks and risk mitigations for each of the operational modes.

With respect to the thermal event alarm, however, the NPRM imposes the requirement only in active driving mode. Given the potential risks in all operational modes, Honeywell recommends that a thermal event alarm in the form of an external audible alarm (such as is present in theft alarm systems) also be required when the vehicle is in either of the parked or charging modes. Such a requirement will provide early warning to enable relocation of adjacent vehicles, evacuation of building occupants, and alerts to bystanders. The South Korea statistics relating to fires that originated when the electric vehicle was parked (page 26720, column 3, paragraph 2) substantiate this need.

To the extent there are any concerns expressed by manufacturers relating to power consumption for sensors in the parked mode, Honeywell notes that sensors are available that support low power consumption with an economy mode feature requiring as low as 1.2mW (e.g., Honeywell's Battery Pressure Sensor) to still support battery safety sensing while the vehicle is parked. Accordingly, Honeywell believes that requiring the thermal event warning in the parked mode is feasible and will not significantly increase costs to manufacturers.

IV. Low-speed vehicle requirements (page 26728, column 2, paragraph 1)

The NPRM requests comments on applying aspects of FMVSS 305a to low-speed vehicles. A low-speed vehicle REESS often utilizes the same battery cell types as cars or has repurposed EV batteries and, therefore, is at risk for thermal events. Accordingly, it is recommended that the thermal event warning requirement be expanded to this class of vehicle to improve the safety of such vehicles.

V. Conclusion

Honeywell appreciates NHTSA developing FMVSS 305a to address requirements and test procedures covering new aspects of electric vehicle safety with focus on the REESS and to further efforts to harmonize the FMVSS with the GTR No. 20 requirements. We remain committed to working with NHTSA in a constructive way to harness the power of innovative continuous monitoring technology to reduce REESS thermal events and enhance electric vehicle safety.

Should you have any questions, please contact Chavonne Yee at Chavonne.Yee@honeywell.com, Romina Khananisho at Romina.Khananisho@honeywell.com, or Victor Verissimo at Victor.Verissimo@honeywell.com.