



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 20-014

Date Opened: 09/21/2020

Investigator: Kareem Habib

Approver: Stephen Ridella

Subject: Rear Wheel Speed Sensor Failure

Date Closed: 03/30/2021

Reviewer: Gregory Magno

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Daimler Vans USA, LLC

Products: MY 2012-2018 Mercedes-Benz Sprinter 2500/3500

Population: 49,293

Problem Description: Moisture intrusion into the rear wheel speed sensors (RWSS) may cause one or both axle sensors to fail, illuminating brake system warning lamps. Other intermittent sensor faults may result in slightly increased vehicle speed while in cruise control, degraded ESP/ABS performance, erratic transmission shifting or limp-home mode operation.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	74	358	432
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	0	6,320	6,320
*Description of Other: Warranty claims that relate to repair or replacement of the subject component in Sprinter vehicles upfitted to campers or recreational vehicles			

ACTION / SUMMARY INFORMATION

Action: This Preliminary Evaluation is closed. Recall 21V-042.

Summary:

The Office of Defects Investigation (ODI) analyzed complaint data provided by Daimler Vans USA, LLC (Daimler) as well as complaints submitted to ODI from consumers to identify incidents related to Rear Wheel Speed Sensors (RWSS) failures.

ODI's analysis identified 6,710 incidents of RWSS failure (unique VINs) in MY 2012-2018 Mercedes-Benz and Freightliner Sprinter vehicles upfitted to campers or recreational vehicles (RVs) representing 81 percent of all Sprinter RWSS reports. Complaint and warranty analysis indicated that the majority of incidents (approximately 99%) were related to RWSS moisture intrusion condition in the Sprinter 3500 5-ton variant, which accounts for 98 percent of upfit campers, where moisture build-up and crystal dendrite formation develop in parked RVs and lead to sensor failures.

According to the Daimler Information Request (IR) response, if the wheel speed information is detected as implausible by the Electronic Stability Program (ESP) control unit, the ESP system enters a failsafe mode where:

- Driver torque requests are no longer accepted;
- Cruise control, if used, would be deactivated;
- The ESP/ABS system shuts off; and
- Multiple warning lamps and messages advise the operator to take the vehicle to the workshop.

While the majority of reports involved only ABS and/or ESP warning lights and messages on the instrument cluster due to faulty sensor signals triggering a failsafe mode, some reports cited intermittent sensor failures resulting in

increased vehicle speed while in cruise control and degraded ABS or ESP. Degraded ESP functionality may impact driving stability of the 5-ton vehicle.

On Feb 3, 2021, following discussion with ODI, Daimler submitted a Defect Information Report (DIR) to NHTSA describing a defect in the RWSS disabling the ESP control unit functions in approximately 48,667 MY 2012 through 2018 Mercedes-Benz and Freightliner Sprinter 3500 vehicles manufactured from Jan 4, 2012 through Oct 25, 2018 (Recall 21V-042). In its DIR, Daimler indicated that RWSS sensor failures are prevalent in camper vans due to sustained periods of non-use, during which time the moisture may not dry out, remaining inside the plastic housing package. If the moisture within the RWSS dries and the RWSS returns to normal operation, the failsafe mode and the warning lights will disappear at the next ignition cycle, but the sensor fault remains stored within the ESP control unit and can be accessed through a diagnostic evaluation. ODI will continue to monitor field experience in Sprinter non-RVs and Sprinter 2500 RVs 3-ton and 3.5-ton variants (approximately 626 vehicles).

Daimler will notify owners of the recalled vehicles and advise them to take their vehicle to a Mercedes-Benz or Freightliner Sprinter dealer, who will replace the RWSS with a repackaged sensor with high robustness against moisture intrusion. Daimler began notifying dealers and owners in Feb 2021. This Preliminary Evaluation is closed.

The ODI reports cited above can be reviewed at [NHTSA.gov](https://www.nhtsa.gov) under the following ID numbers:

11352380 11351299 11350521 11348969 11342776 11342464 11341988 11341151 11340388 11338230 11337921
11331832 11331829 11331476 11331427 11331066 11328671 11325768 11325693 11322814 11322346 11320295
11319376 11317336 11311647 11310621 11308318 11254223 11253828 11252220 11196530 11194330 11164250
11145019 11141273 11139000 11138785 11124129 11094122 11394837 11390889 11390039 11389262 11387883
11387713 11386418 11383887 11383866 11382947 11377384 11376615 11376973 11375781 11375403 11374997
11374151 11373892 11373111 11366293 11365920 11365594 11365355 11365194 11364253 11364346 11363990
11363787 11362948 11362944 11362556 11362276 11361679 11361275 11364340