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Case Number: S2308000120 Rev. D

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Symptom/Vehicle Issue: Rain Sensing Auto Wipers and Auto on Head Lamps Inoperative

Owner Complaint/Technician Observation: The owner complains that the rain-sensitive wipers and/or the automatic headlamps are not functioning. The technician observed one or more of the following Diagnostic Trouble Codes (DTCs) have set dependent on the vehicle.

B221D-00 Rain Sensor Module (RSM) Internal

B221D-49 - Rain Sensor Module (RSM) Internal Electronic Failure

B23AA-01 - Implausible Data Received from Rain Sensor - General Electrical Failure

B225F-49 - Light sensor Internal

B11FA-49 - Humidity Sensor Internal

Repair Procedure: Verify that the auto-on wiper selection within the radio settings is set to on and verify the customer-selected headlamp switch position is positioned for AUTO-ON headlamps. Inspect the windshield area where the light rain sensor is located, make sure nothing is blocking the sensor like windshield tint or any other aftermarket equipment, make sure there are no cracks in the windshield and if a replacement glass, inspect the area of the sensor mounting location.

CAUTION: During installation or removal process of the sensor, the SILGel membrane and Humidity Flex PCB must not be handled/touched, as this may cause sensor malfunctions see steps 1-5.

1. Visually inspect the sensor at the glass, looking for air bubbles from a sensor area that is properly wetted to the glass surface. If there are air bubbles or any other damage to the SILGel membrane check if the windshield was replaced recently or the sensor was removed and re-installed recently. This issue might have been caused by not being careful enough when removing and re-installing the sensor.
2. Functionally check the rain sensing wipers by splashing some water near the area where the sensor is located. Ensure the vehicle is in "Park" position and the ignition is on to test

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wipers activation. Confirm that the rain-sensitive wipers feature is activated on the cluster screen or radio (if applicable). Note: The wipers will not operate in the high-speed mode if the vehicle is in “Park” or travelling below 4 MPH (7 km/h). A car wash is not a reliable test method due to the limitations mentioned above. For the auto headlamps functional check, block the light going into the sensor from exterior glass using an opaque object. Ensure the headlamp switch is in auto mode and verify proper operation.

3. Record DTCs and environmental data by checking the battery voltage recorded when the DTC is set. If the DTC is triggered due to low battery voltage, do not remove the sensor. Instead, erase the DTC and repeat the process.
4. Remove the rear-view mirror cover (inside) and make sure the connector to the sensor is secure, use the push-pull-push method to secure a loose connection. If secure, disconnect the connector and check for bent or pushed-out terminals and repair if needed. Verify the light-rain sensor and harness are secure. Verify that the sensor is fully retained by the bracket, ensuring the two steel retaining clips on the sensor are fully secured to the housing bracket.
5. Erase the DTCs and perform a key cycle, the key cycle should be key off for 1 minute with wiTECH disconnected. Removing power from the light rain sensor is required for proper sensor calibration. Perform a battery disconnect of the light rain sensor by disconnecting the fuse (fuse number/location dependent upon vehicle) to allow recalibration of the sensor. Make sure all doors/hood and gate are closed, then turn the ignition back on and test the operation following step 2 checking for proper operation. If no DTCs return release the vehicle. If DTCs return, perform a battery disconnect and at least 3 key cycles to make the sensor relearns the calibration. If DTCs return, follow Service Library DTC diagnostics as needed.

NOTE: Removed parts must be protected using the plastic cover from the new part, and tape should be applied to prevent the removed part from being further damaged during shipping. This ensures that root cause analysis can be performed by Engineering and the supplier.

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