

KA-02042

McLaren Artura Drive Motor 'A' Position Diagnosis Guide

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Document Information

Location: Powertrain

Topic: Hybrid Warning displayed due to Drive Motor A faults

Condition: N/A

Diagnostic Trouble Codes:

P0A3F1C - Drive Motor 'A' Position Sensor Circuit- Circuit Voltage Out of Range

P0A3F64 - Drive Motor 'A' Position Sensor Circuit - Signal Plausibility Failure

P0A3F62 - Drive Motor 'A' Position Sensor Circuit - Signal Compare Failure

P0A3F31 - Drive Motor 'A' Position Sensor Circuit - No Signal

P0A3F61 - Drive Motor 'A' Position Sensor Circuit - Signal Calculation Failure

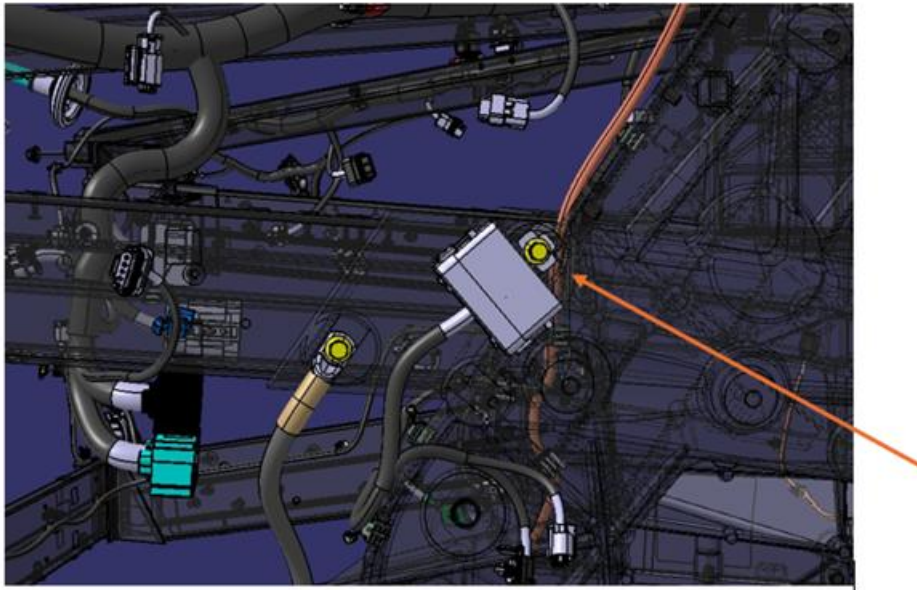
P0A9049 - Drive Motor 'A' Position Sensor Circuit - Internal Electronic Failure

Measure

In the event of being presented with a McLaren Artura displaying a Hybrid Warning in the instrument cluster accompanied with the above DTCs, please follow this guide before submitting a Technical Request.

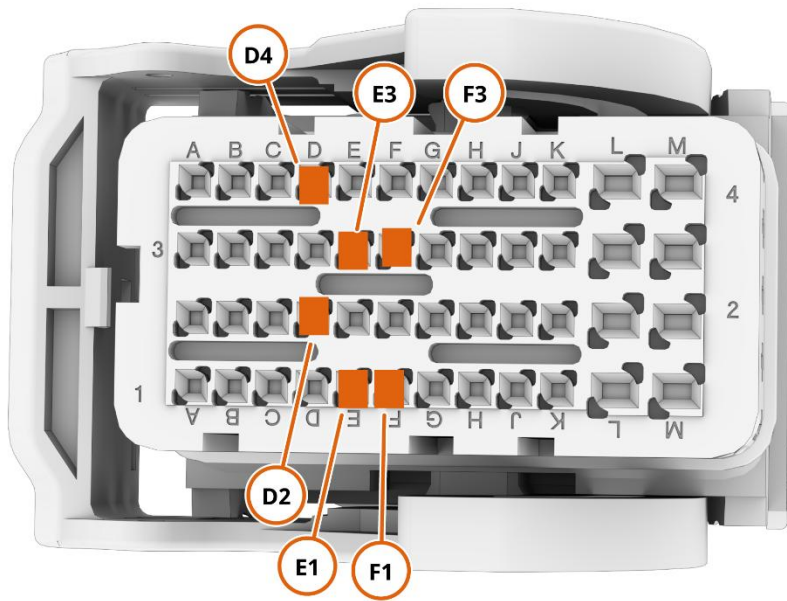
Care Point: The vehicles Hazardous Voltage (HV) system **MUST** be de-activated **BEFORE** continuing. Please follow McLaren Service Portal instructions Remove/Install Manual Service Disconnect (MSD).

1. Inspect CGRND2 located to the rear left of the chassis frame. Remove the bolt and the casing to ensure the ground is clean and was correctly torqued. Gently remove the ground cap and inspect all ground pins are tight and free from corrosion or contamination.

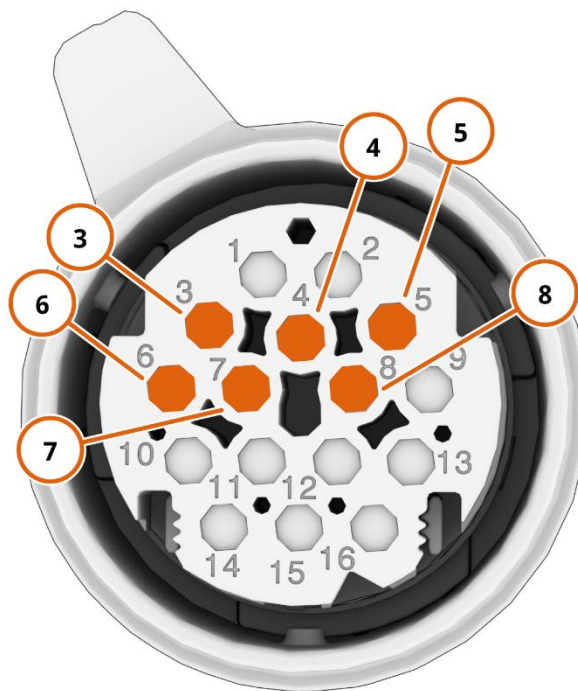


Care Point: Do not disturb the Engine Bay inline connector (I_MBC_TRE1-F I_MBC_TRE1-M) at this point.

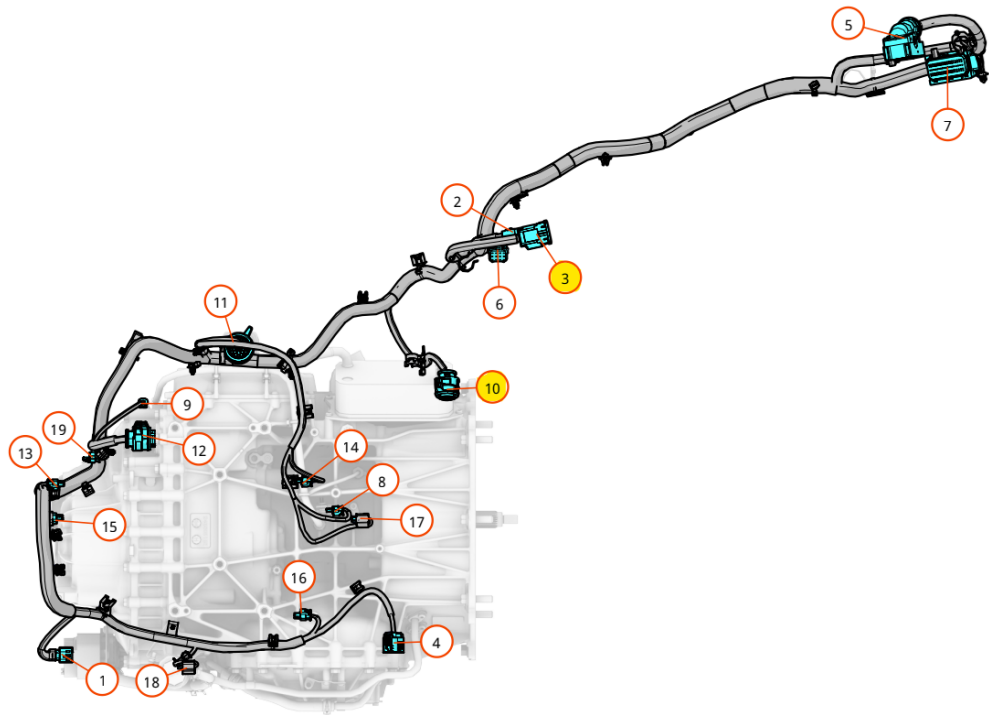
2. Remove the HV Battery and Fuel Tank following MSP instructions and carry out resistance checks for the Rotor Position wiring from the MCU connector to the HTM harness at the front of the transmission. Checking for excess pin drag, contamination and corrosion.
3. Carry out resistance checks for the MCU ground from connector MBC027 to CGRND2.
4. Carry out resistance checks for the MCU power to Fuse 14, located in the Electric City fusebox.
5. Inspect the MCU casing ground. Ensure the ground is clean and was correctly torqued.



MCU Connector MBC027



HTM Harness I_TRE_TRI2-F I_TRE_TRI2-M



ID	Description
1	Geometrical Bundle2.1\CONNECTORS.2\334713301.1\MANIFOLD SOLID_BREP #43657
2	Geometrical Bundle2.1\CONNECTORS.2\BodyC_TO_ExtTransPWR_ExtTransPWR\7282-3214-30
3	Geometrical Bundle2.1\CONNECTORS.2\BodyC_TO_ExtTransSig_ExtTransSig\TE CONN. - 1-936429-2 - 42 PIN
4	Geometrical Bundle2.1\CONNECTORS.2\eDiff_Motor\Kostal
5	Geometrical Bundle2.1\CONNECTORS.2\eDiff_Trans_Pump_Controller\IC-5-1718321-3-D-3D.1\ MSBR1
6	Geometrical Bundle2.1\CONNECTORS.2\Engine_TO_TransmissionExternal_TransmissionExternal\VAZAKI - 7123-7923-40
7	Geometrical Bundle2.1\CONNECTORS.2\HYCU_A\10SP-RIGHT ASM.Conn.1\ MSBR2
8	Geometrical Bundle2.1\CONNECTORS.2\Temperature_Cluth_Oil_Transmission\MANIFOLD SOLID_BREP #16005
9	Geometrical Bundle2.1\CONNECTORS.2\Temperature_Gearbox_Sump_Transmission\MANIFOLD SOLID_BREP #16005
10	Geometrical Bundle2.1\CONNECTORS.2\TransmissionExternal_TO_TransmissionHTM_TransmissionExternal\Geometrical Set.1

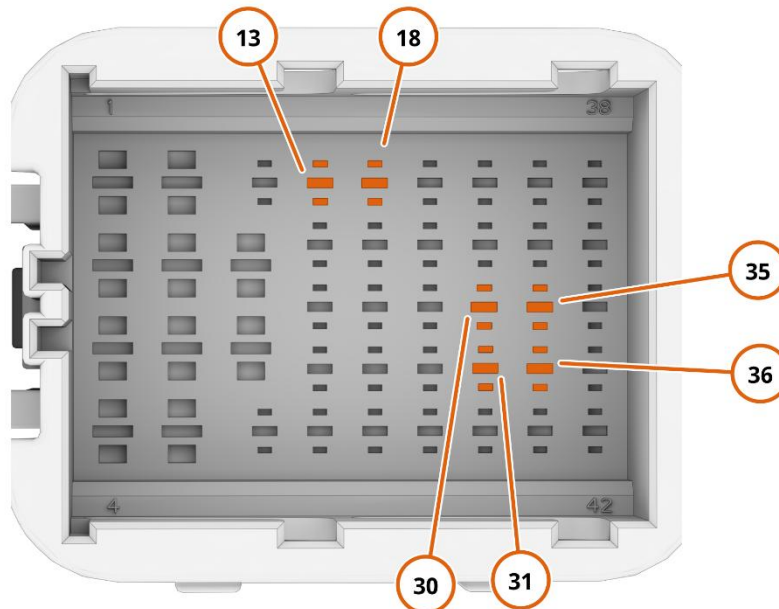
ID	Description
11	Geometrical Bundle2.1\CONNECTORS.2\TransmissionExternal_TO_TransmissionInternal_TransmissionExternal\MSBR1
12	Geometrical Bundle2.1\CONNECTORS.2\Transmission_ePump\KOSTAL
13	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Gear_Position_Sensor_1_3\Part Body
14	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Gear_Position_Sensor_2_4\Part Body
15	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Gear_Position_Sensor_7_5\Part Body
16	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Gear_Position_Sensor_8_6\Part Body
17	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Speed_Input_Shaft\HIRSCHMANN - 805-120-521
18	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Speed_Output_Shaft\HIRSCHMANN - 805-120-521
19	Geometrical Bundle2.1\CONNECTORS.2\Transmission_Speed_Shaft_2_Even\Body.3

Transmission Harness

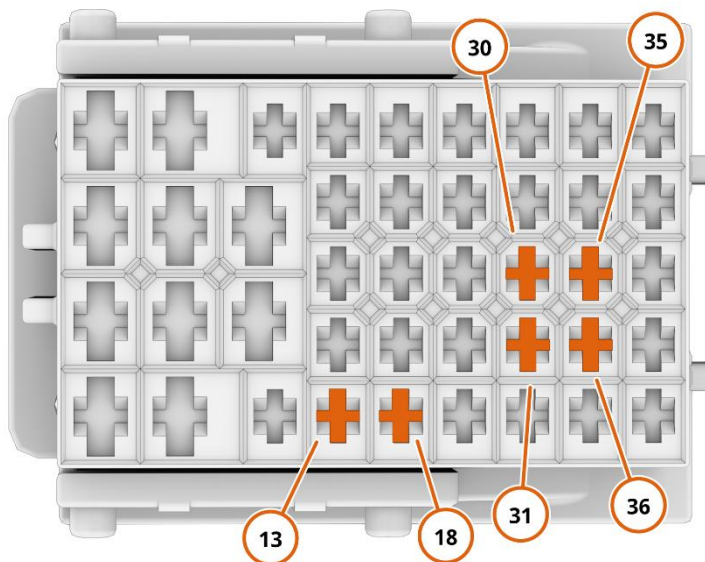


MCU Case Ground

6. If high resistance is found in the wiring between the MCU and HTM connectors, inspect the Engine Bay inline connector I_MBC_TRE1-F I_MBC_TRE1-M. Checking for excess pin drag, contamination and corrosion. If concerns are found with this connector, capture images before cleaning.



Engine Bay inline connector I_MBC_TRE1-F



Engine Bay inline connector I_MBC_TRE1-M

MCU	HTM	Resistance Reading (Ω)
D2	4	
F1	3	
D4	6	
F3	5	
E1	8	
E3	7	

Care Point: If there is no high resistance found in the wiring between the MCU and HTM connectors, still continue with the following steps.

7. Carry out further resistance checks from the Engine Bay inline connector to the MCU and HTM connectors.

Inline Connector	MCU	Resistance Reading (Ω)
18	D2	
35	F1	
13	D4	
31	F3	
36	E1	
30	E3	
Inline Connector	HTM	Resistance Reading (Ω)
18	4	
35	3	
13	6	
31	5	
36	8	
30	7	

8. Carry out resistance checks between each of the 3 eMotor phase cables to the rear subframe. This reading should be in milli ohms ($m\Omega$).



	Resistance Reading (Ω)
Phase Cable 1	
Phase Cable 2	
Phase Cable 3	

Once all checks have been completed, submit a Technical Request with a detailed description of the concern along with supporting evidence of concerns found during the inspections.

Parts Information

N/A

Attachments

Rotor Position Wiring

Transmission Harness

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