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KA-01777 Artura eCompressor Insulation Resistance Test Log Guide

Document Information

Location: Hybrid / Electrical

Topic: Artura eCompressor Insulation Resistance Test Log Guide

Condition: Intermittent

Diagnostic Trouble Codes: P21F14D P21F14C P186909

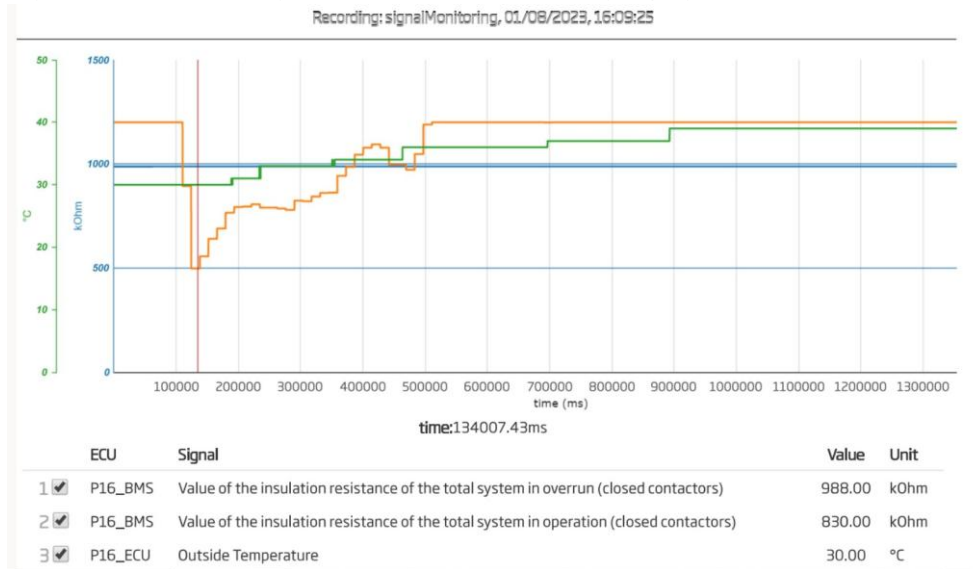
Measure

In the event of insulation monitoring or ground fault detection (GFD) DTC's on P16 stored in the BMS or ZC1, the least intrusive test to be carried out on a safe system would be an insulation resistance measurement using the MDS 2 AV logging function. For the insulation resistance measurement to be carried out during eCompressor use, please follow the steps below:

Care Point: A TR must be raised with detailed description of concern and highlight the intention of following this KA BEFORE proceeding.

Care point: If the car is in permanent GFD state you will need to carry out GFD counter reset in MDS 2 using HV System Recovery sequence in ZC1 sequences. Then clear DTC's and sleep the vehicle.

Log the 3 values in the image (below) on MDS 2. (There is a grouping for this which can be found in grouped values)



Use KA-01661 to help set the MDS 2 up for logging and for saving the log.

Once the log is set up proceed as follows:

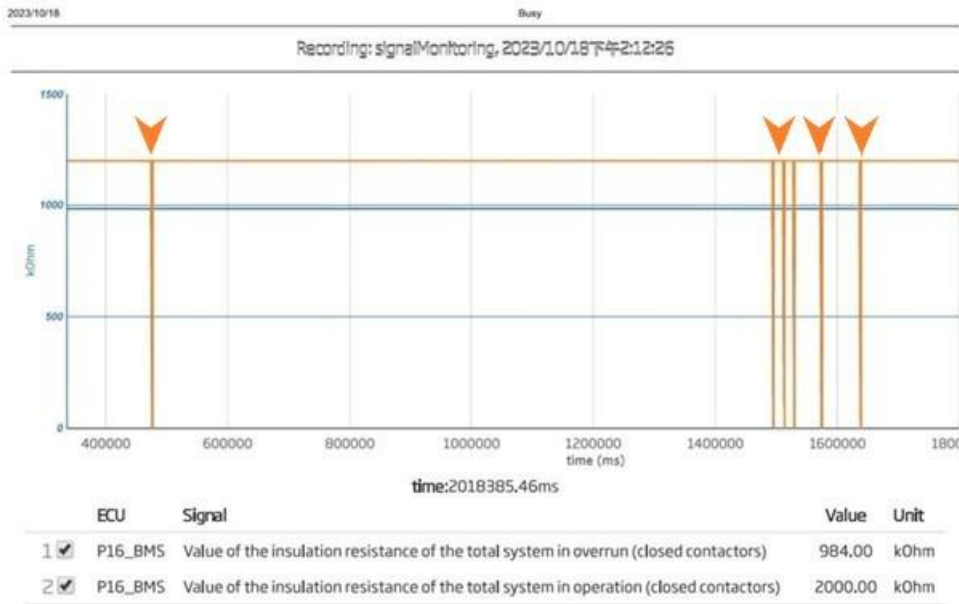
- Read and then Clear DTCs, save cleared DTC read and attach to TR at the end.
- Start the log.
- Measure 5 minutes of idle no HVAC
- 10 minutes of Quick Cool while idling
- 5 minutes of quick heat while idling
- 10 minutes while idling of: Quick Cool on for 1 minute and 1 minute Quick Cool off

During this test the insulation resistances need to be recorded with MDS 2.

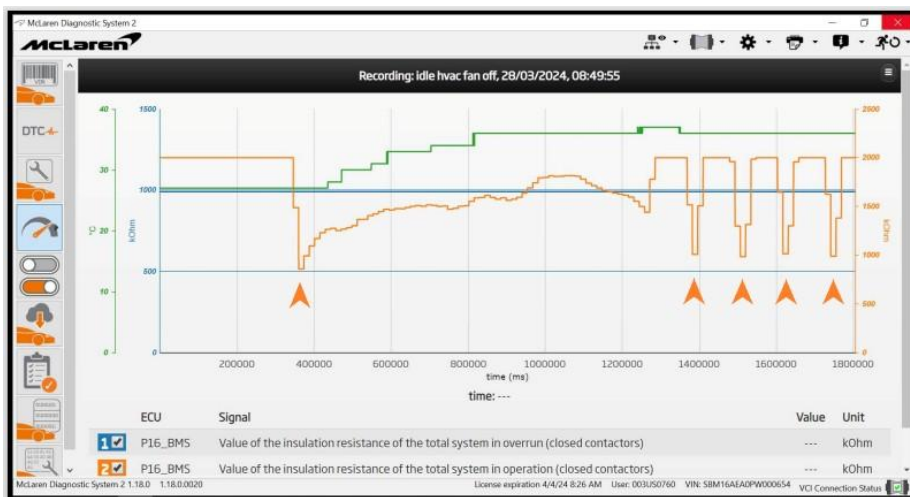
Once completed, stop the log and attach the log to the TR. It should look similar to the one in the first image below, see the second image below for an example of a bad reading. Then read DTCs and attach to TR.

Solid orange insulation resistance value = OK system. Ignore the instantaneous drops shown with orange arrows as they are drops in measurement resolution.

Good signal shown below.



Internal eCompressor insulation resistance value degrades shown by the orange arrows in the images below = NOK



Care point: If the resistance is constantly below 500 KOhms, the whole HV system would require testing to identify the underlying cause. Please seek further assistance through TR BEFORE continuing.

Once the log has been captured and saved along with the colour key matrix (KA-01661), please attach to the TR for review.

Parts Information

N/A

Attachments

N/A

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