1939 voltages

Jim Gjerseth 16 posts since Aug 27, 2019

1939 voltages Sep 30, 2020 4:25 PM

Vin N14578, intermittent no start. Four ways flash and right headlight on. Key on voltage at 9 pin from A to D is 2.2 -2.3 volts and from A to C is about the same. Fault 231/12 for 1939 data link bad component or device. Voltage at A to C will at times be 2.6 and cel will go out and flashers quit and unit will start. While measuring voltage at cavity C on 9 pin I unplugged chm, bhm, engine oem connector on ecm(CAT C7) and abs ecu, no difference. ??

Robert Cadell Jr *2,640 posts since Nov 9, 2014*

Re: 1939 voltages Sep 30, 2020 4:45 PM

Check your V batts to the BHM, CHM, grounds. please see attached, at the PDM, on top of left fender, all that calls out is BUlkhead, Chassis I think please also verify voltages at pin outs example Bhm M4 pin j, make sure you have 12.0v, if needed load test the battery feeds, personally I like a old school H6054 headlight.

Hope this helps

- Electrical Guide-M2106 M2112 108SD 114SD_RevD-2019.pdf 4.4 MB Preview

Kyle Siebert *4,007 posts since Nov 14, 2014*

Re: 1939 voltages Sep 30, 2020 4:47 PM

Sounds like j1939 is intermittently shorted together somewhere. Disconnect batteries, measure c and d to ground and take note of it, should be over 2k ohms. Then measure resistance between c and d. Ideally it should be 0 ohms in YOUR situation. If it's 60 ohms, which is correct, you're going to have a intermittent issue and a rough time. Could very well be a module that is shorting it intermittently. If it is 0 ohms, unplug the firewall passthru 76 pin connector and if resistance jumps to 120 ohms the issue is outside the cab. If it stays at 0 ohms it's inside the cab. Much easier to track down that way.

Robert Cadell Jr *2,640 posts since Nov 9, 2014*

Re: 1939 voltages Sep 30, 2020 4:48 PM

the hazards flashing and right headlight on mean the BHM is not talking to the CHM (bulkhead module) and (Chassis Module), either you have (most likely) a Vbatt (battery feed) issue this document keep in mind you have a 250 K databus meaning solid yellow and solid green wiring this will help you with your databus checking.

- Checking and Testing J1939 and Truck CAN Networks1.docx 1.0 MB Preview

 Jim Gjerseth *16 posts since Aug 27, 2019*

Re: 1939 voltages Sep 30, 2020 8:18 PM

Disconnected batteries and have 11K ohms on C to gnd and D to gnd at 9 pin. C to D is 59.8 ohms. Load test power and ground circuits to bhm vbat circuits and found no issues. Plug back in bhm connectors and cel went out, had 2.6 volts at cavity C of 9 pin and unit started. I also have an air pressure issue with this unit, it has an ADIS and triple air tank. Secondary air only going up to 60-75 psi, this will be looked at after starting issue is resolved. After unit started and ran for awhile and I verified air pressure readings I shut off unit and it would not restart as voltage at cavity C of 9 pin was same as cavity D around 2.3-2.4 volts. The bhm does not come online when voltage is low at cavity C but the chm does and CAT ET can read engine. Fault in cat et is 231/12 for missing data link device and not receiving messages. They suggest powertrain data link circuit test, which I think is essentially 1939 troubleshooting. I was trying to get clearer 1939 routing on unit and looked at G06-43822(10 pages). How does 1939 get its voltage? Is it through the modules? Is there such thing as a "test" bhm.

 Kyle Siebert *4,007 posts since Nov 14, 2014*

Re: 1939 voltages Sep 30, 2020 8:33 PM

Do you have a 4th Gen Alllison TCU failure

 Kyle Siebert *4,007 posts since Nov 14, 2014*

Re: 1939 voltages Sep 30, 2020 8:39 PM

J1939 gets its voltages thru the modules. Essentially, if you unplug a Ecu like a TCU, supply power ground and ignition to it, still unplugged, it will read about 2.4-2.6 volts on the J1939 pins.

 Michael Palumbo *1,453 posts since Nov 13, 2014*

Re: 1939 voltages Sep 30, 2020 11:33 PM

> Key on voltage at 9 pin from A to D is 2.2 -2.3 volts and from A to C is about the same.

.A to C should not be the same. It should be higher in he 2.6 - 2.7 range.

From the Document Robert Cadell Jr added at 11:48am today, look at:

> NOTE: BATTERY CONDITION IS IMPORTANT!
> With the ignition "on" and engine off, test voltage at the Diagnostic Connector between pins A & C. Voltage should be 2.6v +/- 0.1v.
> With the ignition "on" and engine off, test voltage at the Diagnostic Connector between pins A & D. Voltage should be 2.3v +/- 0.1v.

> If there is no voltage, there is a short in the J1939/H1939 backbone or in one of the modules itself.
> If voltage is fluctuating, there could be a polarity problem at one of the modules or one of the inline harness connectors on J1939/H1939.
> **If voltage is out of range, (IE**. 1.9 low side or 2.8 high side) there is a module on J1939/H1939 that is causing the issue. Start unplugging modules one at a time, starting with the ABS module, until voltage comes back into spec. Once the voltage comes back into spec, the last module disconnected will need to be checked for proper voltage, ground and J1939/H1939 voltage.

In this reference I believe your A to C qualifies for the IE.

 Jim Gjerseth *16 posts since Aug 27, 2019*

Re: 1939 voltages Oct 1, 2020 3:01 AM

I unplugged the bhm,chm,abs, and engine one at a time and voltage never increased to 2.6 on C I walked away from unit yesterday while four ways flashing and when coming back toward the truck they stopped and voltage was back to normal...could the bhm be coming online intermittent or have a "wake up" issue?

 Jim Gjerseth *16 posts since Aug 27, 2019*

Re: 1939 voltages Oct 1, 2020 3:03 AM

unit has manual transmission

 Jon Cecil *846 posts since Nov 25, 2014*

Re: 1939 voltages Oct 1, 2020 3:44 AM

I ran into a similar problem with all these symptoms. Found a pushed in pin on the ABS ECM. Didn't think this was my fix but repaired the problem at hand. Customer left with unit and came back 3 days later same problem. Replaced the BHM on a whim and the customer has not had an issue with it. There were codes in the BHM for J1939. You can try this, with all modules disconnected except the BHM and CHM, you should be able to talk to them.

 Jim Gjerseth *16 posts since Aug 27, 2019*

Re: 1939 voltages Oct 1, 2020 7:56 PM

I could unplug the bhm, chm, and abs ecu's at the same time and voltage would be in correct range at C and D. Put in call to Freightliner support and talked to Darryl...long story short the bhm was seeing inputs for wake up circuits and not always knocking down the voltage at B1-B to around 5 volts. Left door switch broken also. Replace bhm and left door switch and all is working so far. Before and after programming new bhm the "no charge" indicator is on in the ICU, did not see parameter or feature in DL8 for bhm unless I am missing it??

 Michael Palumbo *1,453 posts since Nov 13, 2014*

Re: 1939 voltages Oct 1, 2020 10:30 PM

G06-44490-000 in BOM 81b for your VIN shows -NC- next to No Charge Indicator. I'm guessing -NC- means Not Connected. If indeed there is not a wire at ICU connector C1, terminal A9, this might be an internal ICU issue.

 Michael Palumbo *1,453 posts since Nov 13, 2014*

Re: 1939 voltages Oct 1, 2020 10:34 PM

I'm not sure if SS 468883 M2 Charging System Problem - Missing Alternator Remote Sense Circuit 123E applies but it does mention No Charge Indicator.

 Jim Gjerseth *16 posts since Aug 27, 2019*

Re: 1939 voltages Oct 6, 2020 6:10 PM

Found issues with wake up circuit in bhm, inputs o.k. but output would not always drop voltage to around 5.6 volts to signal bhm to wake up. Replaced bhm, after programming had "no charge" indicator on, in the ICU, added parameter per service solution I found to turn off the "no charge" lamp. Thanks for all your help.