



KUS fuel sending units

Discussion created by **Jon Cecil** on Feb 18, 2021
Latest reply on Feb 19, 2021 by Keith Krebs

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VIN KY8455
2020 Renegade Verona

Customer brought in unit complaining of inaccurate fuel gauge. Gauge was reading 7/8. Removed sending unit and reconnected the wiring. Moving the float up and down causes the gauge to move accordingly. Verified correct sending unit was installed. Customer had the unit at another location with the same complaint. That dealer replaced the sending unit which did not solve the issue. After initial diagnosis, customer advised tanks only read 3/4 when tank is filled up. Also complained they would drive 200 miles and it would read empty. This was determined to be a no problem found as the customer was not filling the tanks all the way. The pumps were cutting the nozzles off before they were full. We also verified fuel was being pulled and returned to the tanks evenly.

I have noticed with these newer KUS sending units that they read empty fairly sooner than the older style sending units. This issue appears as a common complaint on units with square tanks vs the round tanks. I've been told the fuel sending units don't go all the way to the bottom so the customer doesn't run the unit out of fuel or if the unit is on unlevel ground. I've had the complaint of the fuel tanks only taking 30 gallons of a 50 gallon tank in each side when the gauge reads empty. The only literature I found was talking about the new style sending units and a video to remove them from the tanks.

I wanted to share this scenario as we see very common complaints that I see in FCCC with M2 chassis' or just the M2 chassis with Summit Hauler or Sport Chassis.

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Last modified on Feb 18, 2021 4:49 PM

Tags: fccc m2 fuel gauge kus fuel sending unit inaccurate

Categories: Fuel System, Throttle, Intake, and Exhaust M2

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10 Replies

Mike Sparkes
Feb 18, 2021 6:48 PM

I recall the P4's had a similar issue with the KUS brand - ended up being a parameter issue i believe.

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Jon Cecil
@ Mike Sparkes on Feb 18, 2021 7:05 PM

Everyone that I have spoken with at FCCC says the fuel gauge is working the way it was designed. There are no changeable parameters in the ICU3's. I do recall a parameter fix for the ICU4 clusters in the P4. I haven't measured where the float sits at the bottom of the sending unit compared to how far away it is from the bottom of the tank. It seems they could have made these sending units a little longer. However, there may have been worse issues requiring to pull the fuel tanks to replace the sending units.

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Share this content eyes on it and ask it to your activity stream opinion.

 Robert Cadell Jr 

Feb 18, 2021 8:23 PM

Jon, does this help?

Jon Cecil

ATTACHMENTS

- Revised_Diagnostic_Procedure.pdf

831.0 KB Preview
- ultrasonic fuel sender.pdf

6.1 KB Preview

⚙️ Actions

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 Robert Cadell Jr 

@ Robert Cadell Jr on Feb 18, 2021 8:27 PM

If I sited the wrong fuel sender, my apologies.

⚙️ Actions

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 Robert Cadell Jr 

Feb 18, 2021 8:26 PM

the pics in parts pro are vague, does it have a float or is it the new style sender?

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 Jon Cecil

@ Robert Cadell Jr on Feb 18, 2021 8:37 PM

That sender you attached is for the ultrasonic version. The first senders had an arm with a float on the end. Those ones were changed to the KUS sending units which looks a lot like the DEF header floats. It's just a shaft that the float rides up and down on. The KUS sending units are a stepped resistive system compared to the previous versions that would change the resistance as the arm was moved. I attached a picture that shows the resistive values of the KUS sending units. We used to be able to look at this information through EZ wiring but was removed during the purge.

ATTACHMENTS

- Fuel sender resistance valves.PNG

42.4 KB

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 Robert Cadell Jr 

@ Jon Cecil on Feb 18, 2021 8:48 PM

SO THE EMPTY SPEC IS 255.5 OHMS AND FULL IS 31 OHMS PLUS OR MINUS 2. WELL THEN i HAVE A QUESTION, PER THE M2 MANUAL i DONT SEE THE PO OF EMPTY AND EMPTY STOP, i GET IT (LIKE A RESERVE CAPACITY).

Remove the fuel level sending unit from the fuel tank. Connect an ohm meter to the pins at the fuel level sender connector. Slowly move the level of the float arm from full to empty. See [Fig. 1](#) . Does the resistance increase smoothly, without spikes, from 31±2Ω to 247±3Ω?

THE SPEC YOU WERE FURNISHED WITH ARE CLOSE TO BEING OFF TO ME, BUT THIS IS MY OPINION, AND I'M NOT YELLING CDK HAS US USE CAPS LOCK

⚙️ Actions

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**Jon Cecil**

@ Robert Cadell Jr on Feb 18, 2021 9:02 PM

I'm not sure on the empty vs empty stop either. I was measuring 28 ohms at full end stop and 255.5 ohms at empty stop. The M2 manual only shows the troubleshooting for the old sending unit with the arm. It doesn't include the new style. A tech would have to be paying attention on the different styles there are out there and the different ways to troubleshoot them.

Actions

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**Robert Cadell Jr**

@ Jon Cecil on Feb 18, 2021 9:09 PM

I can say this much, even for a CNG (agility), the ohms range is the same as what I copied into the thread. I just went thru this with a CNG unit in Los Angeles, CA. I went back and fourth with agility. The Vin on that unit is MG0402 and has a ICU3s, the fuel gauge t shooting hasn't changed between the ICU3 and the 3s (meaning the one with the larger icu display in the top middle).

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**Keith Krebs**

Feb 19, 2021 12:34 PM

Had a few of these myself, I ended up replacing the fuel level sender. Had no complaint returns yet. The ohms reading were a little off just out of spec.

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