



0:14 0:14

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## Circuit Load tester

Video created by [Scott Trippel](#) on Feb 19, 2021

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Here is a Video of [Ryan Hachey](#)'s load tester he made with items off amazon. He said this is a DC load tester, you can you tube it as well.

Here we have an factory installed Espar on a 49X not operating. Has codes for low battery voltage. The factory chassis harness is 18 gauge wire and the Espar connection is 10 gauge.

The fuse is 20 amps. See in the video the voltage drop when 10 amps applied...it is significant. The 18 gauge wire cannot support the load.

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Last modified on Feb 19, 2021 10:21 PM

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[Talbert Simonian](#)  
Feb 19, 2021 10:28 PM

That is significant drop in Voltage. Need to post of list of parts there Scott.

Actions

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[Scott Trippel](#)



@ Talbert Simonian on Feb 19, 2021 11:39 PM

Will do

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Robert Cadell Jr

Feb 19, 2021 11:47 PM

Can you add the vin for this issue too please

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Ryan Hachey

@ Robert Cadell Jr on Feb 22, 2021 3:08 PM

A 49X with factory installed Espar is MW9892. Reference G66-17958, you can see the batt circuit (which is fused at 20a) is wired with 18gauge wire. Factoring in the length of this circuit, even at an amperage of less than 10amps this wire is too small. A quick reference chart shows that at 6' of length, a 16 gauge wire won't sustain 10amps. This circuit is far more then 6' long.

This issue starting with the Espar not working at all, it had no codes logged but every time an attempt to start it up with Easyscan hooked up, it would temporarily show a communication fault. After several attempts it eventually logged a low battery voltage code. I was able to start and run the heater with an aux battery back jumped directly to the Espar harness. This led me to test voltage drop while loading the circuit.

⚙️ Actions

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Scott Trippel

@ Robert Cadell Jr on Feb 22, 2021 3:44 PM

MW9892

⚙️ Actions

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Michael Palumbo

@ Scott Trippel on Feb 22, 2021 6:28 PM

Different use than I expected. On p4 is is used for heating the sleeper. On 49x it is used to heat the engine coolant. Schematic G66-17958-005 WRG-HVAC\_AUX,CHAS A,ESP D5 and G66-17958-001 WRG-HVAC\_AUX,DASH,ESP D5 are found in BOM 142. Both schematics show the heater batt circuit 91j as 18g and powered by VPDM 20a fuse f21. I agree, someone made a booboo, 18 is too mall.

⚙️ Actions

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Kyle Siebert

Feb 19, 2021 11:58 PM

What kind of amperage is the ESPAR heater actually drawing on that circuit? Can you compare that to another proper working unit? 10 amps on a 18 gauge circuit is excessive and im sure grows in voltage drop as that wire gets hotter and hotter.

⚙️ Actions

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Scott Trippel

@ Kyle Siebert on Feb 22, 2021 7:11 PM

We did we used a separate battery to test the system, draws a 600 amp battery to 9 volts on start up. It works on a battery connected to the Espar 10 gauge pigtail.

⚙️ Actions

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Michael Palumbo 

Feb 21, 2021 2:54 PM

Would like to see a 49x VIN with Espar.

For comparison, to a 122SD , the Espar battery circuit 438 is 12g on a 20a fuse while the ignition circuit 81c is 18g on a 5a fuse. Reference KL7062 BOM 70C.

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