Agilent E4416A series power meter

Date (https://groups.io/g/HP-Agilent-Keysight-equipment/topic/89122282?p=Created%2C%2C%2C20%2C2%2C0%2C0)

younesshilali048@gmail.com

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122455)

I have agilent E4416A series power meter. the voltages are ok 12v,-12v, 5v and the battery measures 2.9v the stand by light is on but when I press the power button nothing happens you can help me and thank you in advance.

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Greg Muir

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122459)

I have a E4418B power meter that uses the E9287A battery. It is a 12V battery. Does your meter use the same? Part number and normal voltage should be printed on a label on it. If yours is the same your measurement of 2.9 volts is not acceptable.

I'll try to itemize a few thoughts:

1. The "Standby" light merely tells you that the unit is under power and the power switch is off. Depending upon how this unit is designed it could be indicating that the power supply may be keeping an internal OCXO warm and/or charging the internal battery.

2. How did you measure the battery? With meter power on or off? With battery connected or disconnected? If disconnected, battery under an external load?

3. If power meter is off, battery connected and the low voltage is seen the battery may simply be bad. This would be based upon if the unit charges the battery only when powered up.

4. If power meter is on, battery connected and the low voltage is seen the battery may have an internal issue drawing the charger output down or the charger circuit may also be bad and you are seeing a depleted battery since it is getting no charge.

5. Check battery voltage with the unit powered up. If the voltage goes to the specified level I suspect the battery needs replacement.

Greg

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Greg Muir

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122461)

My apologies. I May have misunderstood your issue. I was thinking about the internal battery option for use of the instrument without any mains power applied.

The 2.9V you measured most likely applies to the internal NVRAM backup battery.

Some basic diagnostics:

Make sure that all inter-assembly connectors are secure and contacts are not dirty or corroded.

Have you checked to make sure that the processor assembly A2 is active (processor clock running, signals seen on various devices on the board?)

Can you look for any signal activity on the connecting cable to the front panel? If present you maybe looking at a defective display.

It is unfortunate that the Keysight manual troubleshooting flowcharts don't even address a problem like this but merely deal with communication problems. It's sort of a "dumbed-down" approach given to the user, traditional with today's products.

Greg

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younesshilali048@gmail.com

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122465)

the battery is 3v.https://youtu.be/KV6pEl5kAUw
I measured the battery connected and the device is not connected to the 220 v sector. my device a month ago works well I was on vacation when I came back I tried to make it work so it does not work only the indicator light is lit in orange and when I press the on button for the display to light up, nothing happens.

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Mark Bielman (/g/HP-Agilent-Keysight-equipment/profile/502679)

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122466)

Agree w/Greg on the poor service manual. No schematics!

You need to investigate the "soft start" circuit. There should be a standby supply voltage present for that to work.
This repair video talks about this. Different unit but might be similar.
https://www.youtube.com/watch?v=eMlRnO_bFAI&t=320s (https://www.youtube.com/watch?v=eMlRnO_bFAI&t=320s)

Good luck!

Mark

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Greg Muir

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122470)

If I am correct in a quick interpretation in the service manual the power switching comes from MOSFETs located on the processor board which distribute the power to the remainder of the instrument. This is stated on page 88 of the manual. This might be a good place to check if you can recognize the transistors which perform that function If any of them do not prove to be defective and they they do not switch then it may take some back tracing to the controlling source. It sounds like that source is probably of a fairly simple design.

Greg

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Tom B

Feb 13 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122471)

The E4416A is very similar to the E4418/19 series. The power circuit is the same. The measurement boards are different. The schematics for the E4418B are in this package http://ftb.ko4bb.com/getsimple/index.php?id=download&file=HP_Agilent/Agilent_E4418B_Power_Meter_Service_Manual-Agilent_Power_Meter_EPM_Documentation_CD-ROM.zip (http://ftb.ko4bb.com/getsimple/index.php?id=download&file=HP_Agilent/Agilent_E4418B_Power_Meter_Service_Manual-Agilent_Power_Meter_EPM_Documentation_CD-ROM.zip)

See the file labeled E4418B CLIP VO2.pdf

The battery is fine at 3V. The usual problem with this series of meter is the flex keyboard in the front panel.

Tom Bryan
N3AJA

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Greg Muir

Feb 14 (https://groups.io/g/HP-Agilent-Keysight-equipment/message/122481)

There were a couple of Agilent service notes relating to problems in the E4418B meter through a wide range of serial numbers where the units would not power up or at least give a display. I'll see if I can find them.

Greg

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